

Analysis of the Impact of RPA Technology on the Finance Middle Office

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Abstract. With the explosive growth of the digital economy, China has actively embraced RPA technology and implemented it extensively in the financial sector. This strategic shift aims to drastically enhance the quality and flexibility of business operations, ultimately leading to the complete automation of business processes. In this article, we delve into the stellar successes of Huawei's We Automation, providing an in-depth analysis of the remarkable application effects of RPA technology in China. Through practical application, RPA has not only significantly raised the bar in business automation, but it has also immensely bolstered the flexibility and adaptability of business operations. Nevertheless, we must acknowledge that RPA also has its limitations, particularly in the realm of cross-platform data interaction, where it faces certain challenges. Nevertheless, looking ahead to the future, the prospects for RPA technology remain bright, as it is poised to spur innovation in financial businesses and further accelerate the digital transformation of enterprise finance.

Keywords: RPA, finance middle office, application effectiveness, finance digital transformation.

1. Introduction

In the Development Plan for Information of Accounting (2021-2025) issued by the Ministry of Finance, it is stated that smart finance as well as automated tools such as financial robots will be gradually promoted to further enhance the acquisition and processing of accounting data, promote the further development of the digital economy and facilitate digital transformation. The finance middle office is a bridge between business activities and financial management, and has an important impact on social and economic development. With the development of science and technology and digital development, RPA technology has been gradually enhanced to better empower the work of the finance centre. However, there are also limitations to be solved.

2. Introduction to Financial Platform and RPA Technology

Finance middle office is the bridge between business activities and financial management, which empowers the front-end business to transform flexibly and ensures the stability and compliance of the back-end by precipitating the core business capabilities and data management capabilities. By divesting the front-end of "core financial capabilities", the front-end can be lightened and the back-end of corporate finance management can operate more stably [1]. Therefore, to jump out of the traditional development mode and enhance digital agility, some leading Internet companies have begun to build more innovative and flexible organizational strategies and business mechanisms.

RPA (Robotic Process Automation), i.e., robotic process automation, is a technology that applies software robots to simulate high-frequency, repetitive operations performed by humans on digital devices such as computers. It aims to increase productivity, reduce human error, and optimize business processes. RPA technology automates repetitive tasks by capturing and parsing user interfaces, delivering significant cost and efficiency benefits to organizations [2].

In China, there are also several well-known companies in the RPA field, and Huawei is a rising star in the RPA market, repackaging several existing in-house technologies and integrating them into a platform that has achieved widespread recognition in the industry. Taking Huawei's RPA technology as an example, Huawei WeAutomate is an intelligent business process automation platform launched by Huawei, which helps enterprises realize efficient automation of business processes, reduce manpower costs, and improve productivity by integrating AI and machine learning technologies.

Huawei WeAutomate consists of Studio (Robot Process Designer), Management Center (Robot Management Centre) and Robot (Robot Executor). The relationship between them can be likened to that of a movie writer, director, and actor: Studio designs and implements RPA automation processes based on requirements (like a screenwriter setting up scenes and dialogue), and Robot is responsible for executing the automation processes designed by Studio (like an actor completing a performance based on a script). The management centre is responsible for scheduling and arranging each automated process (like a director scheduling an actor's performance). In terms of its main features, it embodies four major characteristics: flexible development methods, preconfigured multiple controls, centralized control, and security encryption. In terms of performance, it cannot only support two types of development methods, namely graphical programming and XML files, but also quickly and conveniently invoke automation capabilities such as web pages, Java, Office, databases, system files, Citrix, local applications, control consoles, and OCR through the controls. In addition, Huawei WeAutomate could remotely and centrally manage business process automation distribution of robot versions as well as multi-agent system and tool integration [3]. The comprehensive benefits of Huawei WeAutomate can be categorized into the following four items:

(1) Insist to the core technology full-stack self-research, from the platform capabilities to support service capabilities, intelligent process automation software end-to-end self-research, with independent intellectual property rights, to become complete autonomous and controllable.

(2) With perfect trust and security management system, the company has obtained the national information security level protection level three certification and four global top BSI security certification, namely, BSI information security management system certification, BSI security management system certificate, BSI public cloud personal information security protection management system certification and BSI cloud security management system.

(3) General artificial intelligence functions as a service, such as certificate recognition, document recognition, image analysis, language analysis and understanding, form data analysis and other 60 + artificial intelligence functions, out-of-the-box, shorten the business on-line time.

(4) Support for administrative approval client, automatic reporting services and financial tickets folder, process configuration, rules engine and other scenario-based functions, new customers only need a simple online configuration, people can achieve business.

3. Empowering the Financial Platform with RPA Technology

3.1. RPA Technology Enables Automation and Standardization of Business Processes

Some complex processes in financial business involve the interaction of multiple systems and applications, such as annual account checking, statement generation and report integration. By using RPA technology, these complex processes can be automated and executed according to preset rules and standards, thus ensuring the consistency and standardization of business processes.

3.2. RPA Technology Improves Business Agility and Responsiveness

In financial business, changes in the market and customer needs exist all the time, and business processes need to be adjusted and optimized at any time. By using RPA technology, the execution process of robots can be easily adjusted and optimized, thus responding quickly to changes in business needs and improving business flexibility and responsiveness.

3.3. Take Huawei WeAutomate as an Example to Analyse the Effectiveness of Domestic RPA Technology Application

Huawei WeAutomate, an RPA solution launched by Huawei, brings significant empowerment to the finance middle office.

In finance middle office application scenarios, RPA technology can automate daily tasks such as invoice processing, account reconciliation, and data entry, ensuring data accuracy and timeliness and reducing the risk of human error. With the help of RPA, the finance middle office can achieve more efficient process management and improve overall operational efficiency [4].

In addition, RPA technology can be seamlessly integrated with the financial system to achieve real-time data synchronization and monitoring, providing strong support for financial decision-making. Through its powerful process automation capabilities, Huawei WeAutomate helps the finance middle office achieve intelligent upgrades and further enhance the competitiveness of enterprises.

In short, the empowerment of RPA technology for the finance middle office is not only reflected in improving efficiency and accuracy, but also in promoting the digital transformation of finance work and creating greater value for enterprises. Huawei WeAutomate, as a leading solution in the RPA field, will help more enterprises realize the automation and intelligence of financial processes.

Taking the enterprise intelligent reimbursement system as an example, Huawei WeAutomate achieves the goal of RPA+AI+low-code APP collaboration to help enterprises quickly achieve the automation of reimbursement processes, and at the same time provides intelligent reimbursement robot practice templates, which can be based on templates for customization.

In terms of process, firstly, based on OCR to achieve bill recognition and low-code applet to achieve reimbursement rule matching, RPA automatically extracts and enters the reimbursement information without the need of manual recognition and filling in to enhance the processing efficiency and employee experience.

Fig. 1 illustrates the process is shown below:

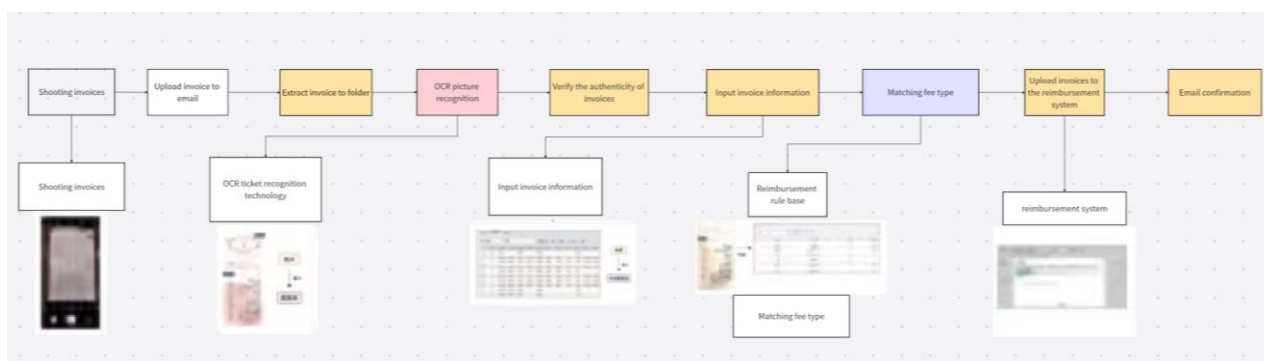


Figure 1. Flowchart of Enterprise Intelligent Reimbursement System
Date from: China RPA+AI Developer Competition Official Website

4. Possible Application Limitations of RPA Technology

Although widely used, RPA has some limitations.

Firstly, RPA is mainly suitable for structured and highly repetitive tasks, and has limited ability to deal with unstructured or complex and changing business processes. This is because RPA relies on preset rules and processes and is difficult to cope with unexpected or irregular situations.

Second, RPA has challenges in cross-system and cross-platform data interaction. Due to the differences in data formats and interface standards of different systems, RPA may encounter difficulties in integrating data from different systems, affecting automation efficiency. In addition, RPA has difficulty with tasks that require deep thinking, creative thinking, and human interaction [5]. For example, tasks in customer service, marketing, and other areas often require dealing with complex

interpersonal relationships, understanding customer needs, and thinking creatively, which are too complex for RPA to automate.

Finally, the application of RPA is also limited by the level of development of the technology itself. Although RPA technology has made significant progress, it is still deficient in some aspects, such as the ability to handle unstructured data and intelligent decision support. These limitations may restrict the scope of application of RPA in certain areas.

Therefore, when applying RPA, it is necessary to fully understand its limitations and evaluate and select it with the actual business needs. At the same time, with the continuous progress and innovation of technology, the limitations of RPA will be gradually overcome, bringing automation and intelligent change to more fields.

5. Prospects for the Application of RPA Technology

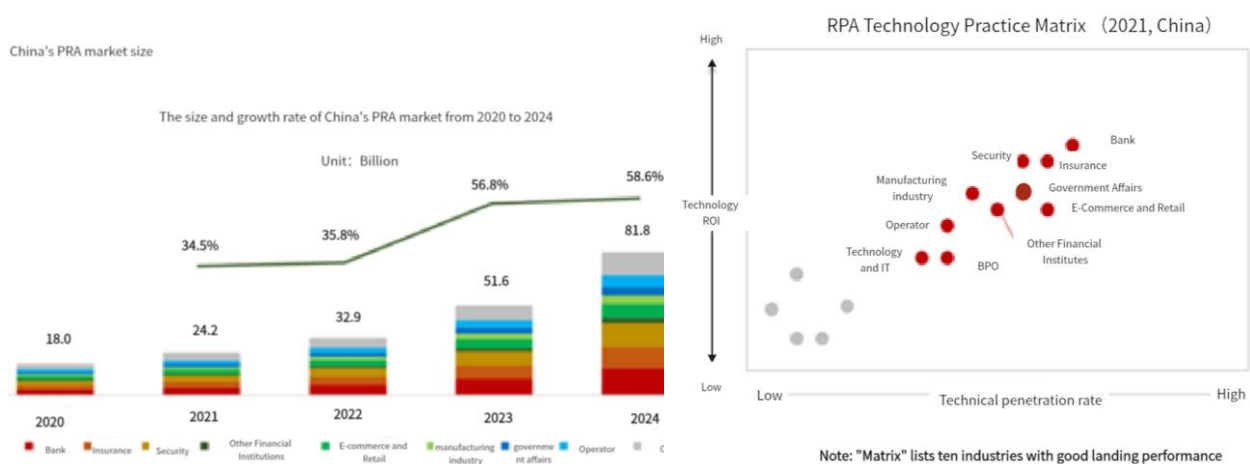


Figure 2. China RPA Market Size, RPA Technology Practising Power Matrix [6]

5.1. RPA Will Become the Entry Point of Digital Practice for More and More Enterprises, Helping Them to Get Through the "Last Mile of Digital Transformation"

RPA will help enterprise organizations that don't know how to digitally transform to start digital transformation practices.

From the point of view of the ability of the enterprise digital transformation, one category is such as banking, insurance, government and other digital transformation in the digital transformation has been mapped out the practice route, and know what kind of digital transformation route should be set. The other category is relatively traditional, do not specify the specific digital practice route of the enterprise.

In the future, more and more enterprise organizations will start digital transformation through RPA and use it as an entry point to explore intelligent application practices [7]. In the future, more and more enterprises will take the first step towards digitization through RPA in enterprises that have not started the practice of digital transformation. Some of the current industry RPA vendors in the technology output capabilities are not limited to process automation transformation, RPA can also better help business organizations to achieve by the "automation" into the "intelligent" towards the digital practice route (see Fig. 2).

5.2. RPA Products that are Domestically Produced and Have the Ability of Full-stack Independent Control Will Have More Development Advantages

5.2.1. Domesticated products will be more favoured by customers in the future market

Analysis of RPA China's "China RPA Market Insight and Excellent Practice Cases" data found that domestic RPA vendors have become the first choice for most enterprise agencies to cooperate with, and government affairs, finance and other industries have a higher degree of preference for

domestic RPA products. Combined with the feedback from technology applicators in the survey, with the encouragement of policies and the gradual enhancement of the comprehensive capabilities of domestic vendors, the degree of preference of enterprise organizations for localized RPA products will increase.

5.2.2. RPA vendors with full-stack autonomy will have a greater advantage in market competition

In technical practice, stable technical capability can provide reliable guarantee for enterprise organizations. Vendors with full-stack autonomous and controllable technology capabilities will be better able to meet the needs of customers in this regard [8]. In addition, vendors with full-stack autonomous and controllable technology capabilities can also better meet the needs of differentiated customer practices. For example, customized solutions for NLP+RPA, customized solutions for process mining+RPA, and so on.

5.3. Rational Expectations of Technical Value Can Help Reduce the RPA Industry Bubble

In the complete life cycle of technology development, it is inevitable to go through the five stages of "technology germination, expectation inflation, the trough of bubbling, steady climb, and the peak of substantive production". From the perspective of the capital market's continued attention to RPA in recent years and the valuation and actual revenue of some RPA companies, the industry needs to build a rational expectation of technology value and avoid capital bubbles to the greatest extent possible.

On the one hand, investment institutions need to understand the actual development of the enterprise and the ability of strategic practice through more detailed due diligence; on the other hand, RPA enterprises should be more invested in product polishing and market expansion, the more theoretical but lack of in-depth practice of RPA enterprises will be as the technology enters the "bubble of the trough" and lose competitiveness or even exit the market. RPA enterprises with strong theory but lack of in-depth practice will lose their competitiveness and even leave the market as the technology enters the "bubble trough".

5.4. Market Competitors Need to Build a Regular, Orderly and Sustainable Market Environment on Their Own

A good market environment and regularized competition mechanism will help the RPA industry to achieve sustainable development. However, in the actual market competition, there is a phenomenon of low-price competition or even "\$0 bid", which will bring great obstacles to the sustainable development of the industry. Low-price competition makes channel agents unable to obtain good returns, which is not conducive to the ecological construction of partners [9]. More importantly, excessive low-priced competition will make RPA vendors with excellent product and technical capabilities lose market competitiveness, resulting in uneven implementation quality and poor customer experience. As a result, technology applicators in business organizations are highly likely to reduce their technical investment in RPA, thus affecting the good development of the RPA industry [10].

Therefore, to let the RPA industry have a healthy, orderly rules and sustainable development of the market environment, market participants should put more energy into the polishing of products and technical capabilities, as well as the construction of professional, systematic service capabilities, to eliminate low price competition and other undesirable phenomena.

6. Conclusion

The integration of RPA and finance middle office will become an important trend in enterprise financial management, promoting enterprises to achieve more efficient and smarter financial management. Although the current RPA is limited by the level of technology, there are problems such as insufficient integration capability and lack of in-depth thinking, in the future, with the development

of technology and market elimination and optimization, RPA will further enhance the automation level of the financial middle office, and the application of it in the financial middle office will be more intelligent, creating more value for the enterprise.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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