

Research on Optimization of Accounts Receivable Management in Financial Sharing Center Based on RPA: A Group as an Example

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Abstract: With the development of big data, RPA technology and other Internet technologies, we have now entered the era of the digital economy, and financial sharing services are rapidly developing in a more intelligent direction. The accounts receivable business is the core business of the Group's financial sharing centre. Although there has been some development in the accounts receivable process management in the financial sharing centre in recent years, there is still a large amount of mechanical and repetitive human work, which leads to lower efficiency and affects the development of the company. By analysing the current situation of accounts receivable management in A Group retail company, we work out the optimization of accounts receivable process management in the financial sharing center from three aspects: invoice management automation, reconciliation management automation, and aging management automation, and provide some practical reference and theoretical reference for group companies that will build or have built financial sharing service centers.

1. Introduction

RPA (Robotic Process Automation) is intelligent software that automates workflow by simulating and enhancing the process of human-computer interaction. The role of the robot is to replace the human at the user interface to complete highly repetitive, standardised, and rule-defined, high-volume daily business operations. The difference between RPA and traditional software or programs is that while traditional programs are passively operated by business people, robots can replace humans to actively operate other software. For example, a financial robot, RPA, is being used to automate the processing of financial transactions in the financial sector. The goal of financial shared services is to simplify the complex, standardise the simple and automate the standard, and robotic process automation technology can help financial shared centres achieve that last critical step.

Typically applicable to businesses with standardised rules and a large number of repetitive processes, RPA has broad application prospects in finance. Common financial scenarios include employee expense reimbursement, procure-to-pay and fund reconciliation. Accounts receivable management is the core business that the financial sharing centre handles on a daily basis, and it is also the core content of the company's capital management. Robotic process automation technology,

represented by Deloitte's "Finance Robot" AIFinBot, provides powerful technical support for the optimisation and improvement of accounts receivable and accounts payable in the financial sharing service model. By embedding robotic process automation technology into the process, it can automate invoice management, reconciliation management and aging management in the accounts receivable process, and its value is reflected in cost reduction, risk mitigation, interaction simplification and efficiency improvement.

This paper elaborates on the optimization of RPA technology for accounts receivable process management in the financial sharing center from three aspects: invoice management automation, reconciliation management automation, and aging management automation, and provides some practical reference and theoretical reference for group companies that will build or have built financial sharing service centers.

2. Review of National and International Literature

In the paper, Cheng Pingping (2018) explains the business process optimization of the company's original financial sharing system after embedding RPA technology, and provides a detailed description and analysis of the optimization of the company's accounting business process [1]. In the article, Qi Tang (2019) elaborates and analyzes the business process optimization of RPA technology externally in the financial sharing center, and gives examples of the processing of RPA technology in the automation of account reconciliation and report approval, which provides a reference basis for companies that need business process automation in the future [2]. In the article, Meiling Liu (2020) suggests that the meaning of intelligent finance is to apply the emerging technologies such as RPA, OCR, electronic signature, and voice interaction to finance work, and then extend and expand the traditional finance work [3]. Zhang Dawei (2021) argues that the development and progress of advanced technologies such as big data technology, cloud computing technology and artificial intelligence technology, RPA intelligent technology has been created and gradually implemented in the construction of corporate financial sharing center, building the RPA financial sharing center structure to ensure the integrity of financial data and complete the interactive exchange of financial information. The authors explore the application of RPA in the field of corporate financial sharing, and specifically propose the form of RPA-based corporate financial sharing center construction and development proposed strategies, with the aim of improving the intelligence of the financial sharing center after the implementation of RPA technology [4]. In the paper, Zeyuan Cheng (2021) explains that the information technology intelligence has promoted the arrival of process automation in the company's financial sharing center, and the introduction of RPA technology helps the company's financial sharing system business to realize process automation, which is a good opportunity for the rapid development of the times to innovate the technology of the original financial system, and puts forward relevant development strategies and proposals [5]. The article takes the company's financial sharing center as an example, analyzes the current situation of fund management in the company's financial system, summarizes the problems in its daily business process processing, and introduces RPA technology for business process optimization in the company's financial sharing center. The design of RPA technology was introduced to optimize business processing in the company's financial sharing center. For example, automatic image extraction and recognition of bills, pre-setting scripts for processing procedures in advance, designing payment priorities and payment order queries, simulating manual judgment of information, and realizing automatic data analysis, etc. [6].

In their article, Aguirre S and Rodriguez A (2017) explain that RPA is a tool that uses emerging technologies to simulate the business processing of finance staff, the use of RPA technology as a virtual staff to unify regular and repetitive operations into virtual operational processing to automate

the company's business processes and improve the efficiency of business processing in the company's finance department efficiency of [7]. Sean Harapko (2017) explains in his article that robots achieve process optimization by means of pre-set program instructions within the financial sharing center to improve the efficiency of the company's finance staff business operations, reduce the company's operating costs and contribute to the company's new strategic goals [8]. According to the Robotic Process Automation Institute (2019), robots work continuously around the clock and can typically handle the work of 2-5 people [9]. Julia et al. (2019) collected and analyzed interview data from RPA adopters and found that RPA is suitable for processes that are structured, repetitive, rule-based, and have digital inputs [10]. Sorin In his article, Anagnoste (2018) explains that RPA has become increasingly mature with the rapid development of the technology and will be developed in the future in conjunction with other emerging technologies to further facilitate the development of business process automation in financial sharing centers [11]. Yu LianQiu, Guo FangXiao (2020) argues that with the development of artificial intelligence science and technology, the widespread citation of RPA is an unstoppable trend. By analyzing the actual situation of Group A, the authors illustrate the problems of the system: cross-system data can not be automatically collected, cost accounting data is not organized in a timely manner, and the cost analysis reporting model is too rigid. Based on RPA, the optimization and improvement of cost management procedures can be done with the help of cross-system data collection, the construction of a cloud-based procurement platform, and comprehensive multi-dimensional cost analysis, which provides a reference for the practical application of RPA in the financial system [12]. Today's enterprises pay more and more attention to the optimization of accounts receivable management, but facing new problems in the new technological environment and centralized accounts receivable management model, most scholars only give suggestions and countermeasures based on the macro level, and few follow the technological development to integrate the advanced information technology with specific case enterprises into the optimization strategy of accounts receivable management.

To summarize, this paper aims to achieve a high degree of automation and decision-making intelligence in the accounts receivable management process of the financial sharing center, to design an automated process for the accounts receivable management business scenario in response to the optimization needs of Group A, and to implement the automation process designed in the paper with the help of RPA to promote the implementation of accounts receivable management optimization in the financial sharing center.

3. Current Situation and Problems of Group A's Accounts Receivable Management

Headquartered in Fujian Province, Group A is the first major private joint-stock company in China to introduce fresh produce into modern retail, and has become a pioneer in the retail industry. Group A has developed nearly 600 supermarket chains in 19 provinces and cities, including Fujian, Henan and Zhejiang, etc. Group A's offline stores adopt a cash on the spot business model, and it is difficult to build up accounts receivable under this settlement method. These receivables are mainly based on orders from various companies in the supply chain and sales on online platforms. The diversified sales channels provide Group A with more opportunities for marketing customers, but also increase the difficulty of accounts receivable management.

In 2012, Group a started to set up a financial shared service center in Fuzhou to centralize the financial work of more than 200 stores of the group, whose online business mainly includes accounts receivable, employee expenses, and fund management. The accounts receivable team is responsible for the main data management module, the accounts receivable module, and the related party module. The team includes the department manager; the data supervisor, who is responsible

for creating and modifying customer and vendor information; the fund accountant, who is mainly responsible for daily downloading and uploading of online banking flow into the system, daily fund transaction report, and processing some urgent payments; The business management staff, who are divided by company, are responsible for the related party business and the accounts receivable business of 13 affiliated companies, including The business management staff, who are divided by company, are responsible for the related party business and the accounts receivable business of 13 affiliated companies, including invoice entry, payment and receipt transactions between related parties, as well as accounts receivable accounting, VAT invoicing for domestic companies and collection clearing, etc.

3.1. The System is not Highly Integrated and the Invoicing Efficiency is Low

Customer invoicing is a very important part of accounts receivable management. Each invoice from Group A's customers needs to be manually modified, extracted, pasted and consolidated by finance staff in the financial sharing center, and then a large amount of business and financial data is transferred from one system to another, thus completing cross-system data transfer. This kind of invoicing process, which is done manually by finance staff, is inefficient and very easy to lose data and cause errors. However, Group A's current system is not highly integrated, and this inefficient invoicing method still exists, so the company needs to further improve it.

3.2. The System is not Highly Automated and Cannot Achieve Automatic Write-off Reconciliation

When customers pay, there is different processing according to different forms of receipts, and the cashier will register the receipts according to the detailed information of the receipts. If customers use electronic receipts generated by ATMs or POS machines, the fund management system will register the receipts automatically; if customers use cash or promissory notes without electronic receipts, the cashier must enter the information manually. The monthly customer reconciliation letter must be manually printed by the credit administrator and then sent to the customer, who confirms the amount and sends it back to the company for archiving. Since everything is done manually, it is easy to make mistakes. As the sales volume increases, the workload increases, and the communication between business and finance in terms of refund and credit has increased dramatically, which greatly increases the workload, and the work efficiency cannot be improved. Collection and write-off is an important part of the accounts receivable process, which is crucial to the risk control of enterprise accounts receivable and customer credit management. In order for companies to accurately control the current accounts receivable risk, they need finance staff to timely match sales invoices with collection records and clear unpaid customers. However, it is not yet common for enterprises in China to include key information such as invoice numbers in payment instructions, coupled with the fact that most enterprises have long been accustomed to consolidating payments, which makes it more difficult for finance staff to collect and write off, and also makes it widely believed that this process cannot be automated and requires a lot of labor costs.

3.3. No Automation and Low Efficiency of Aging Analysis

To encourage sales staff to increase sales, Group A generally links sales to compensation. As a result, the sales department only cared about the number of sales, rashly signed contracts without knowing enough about the creditworthiness of customers, and often used such means as installment payment and credit sales to promote goods. In this way, the goods were sold and the sales increased,

but the accounts receivable increased significantly, and the supermarket did not take effective measures to organize relevant departments and sales personnel to be fully responsible for collecting the payment, which made a large number of the supermarket's accounts receivable deposited and bad debts became possible, which put a heavy burden on the business operation and affected the capital turnover and economic efficiency of the enterprise. The traditional manual analysis by creating an aging analysis table to organize bad debts, preparing an accrual table, and confirming whether the bad debts are bad according to the creditworthiness of customers is less efficient.

4. Optimizing Rpa Technology for Group a Receivables Management

For the optimization of receivables management in the financial sharing center, it is necessary to first standardize and standardize its processes in order to further optimize the process of feasible links using RPA. At present, many group-type enterprises have enabled the financial shared service model to realize unified business processes and optimize corporate financial processing by centralizing the work of financial personnel. Process management refers to a systematic approach that focuses on the standardized construction of end-to-end business processes to continuously improve enterprise performance. Compared with the traditional manual processing model, financial shared services can improve operational efficiency, save financial costs and reduce the number of financial personnel, but as an emerging sharing model, there is still a lot of room for improvement in financial shared services. In the Internet era, artificial intelligence brings many benefits to business development. RPA technology is built on the basis of artificial intelligence, which is mainly based on computer coding and rule-based software that performs a series of regular tasks to achieve manual work automation technology. RPA technology simplifies the transaction process by focusing on repetitive, repeatable and regular tasks to achieve RPA technology simplifies the transaction process by centralizing repetitive, repeatable and regular tasks, enabling a "short and fast" development model. At the same time, RPA technology does not need to change the original technical architecture and financial processes, but only needs to connect the systems of different departments of the company for the purpose of data sharing. In addition, RPA technology has a strong memory function, which can record and track all process steps in detail and in real time. Therefore, RPA technology is proposed as a good solution for Group A. To solve the problems of Group A's accounts receivable management, by embedding RPA technology on the basis of Group A's original financial sharing process, it enables centralized and automatic control of the group's financial operations, and realizes the value enhancement of financial and business services in the group's enterprises.

4.1. Automatic Data Collection across Systems to Achieve Automatic Invoicing

After signing a contract with a customer, the business staff of Group A's sales department must upload an electronic contract to the system. Using RPA technology to automatically read the sales platform data and contract data, the information needed for invoicing is timely transferred to the invoicing module of the financial sharing platform, and then matched with the customer information in the customer file in the system to automatically issue invoices (As shown in Figure 1). At the same time, the issued invoices are emailed directly from the shared service platform to the customer's reserved mailbox by the RPA automatic program, which realizes the whole process of automatic matching, verification, invoicing and sending. Since the source data is entered through RPA technology, the objectivity and authenticity of the sales data and invoice amount are guaranteed, and the risks of false invoicing, duplicate invoicing, and incorrect invoicing are avoided.

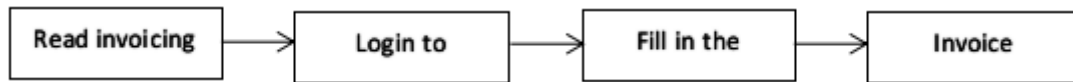


Figure 1: Flow chart of RPA invoice filling robot

Based on UiPath software to realize invoice filling and opening, the process is shown in figure 2 below. The robot first determines whether it is an independent invoice, and if it is true, it initializes, selects the invoice type, reads the company information, and reads the invoice information according to the contract data. If it is false and not an independent invoice, it reads the invoice information directly and adds the details in the same invoice.

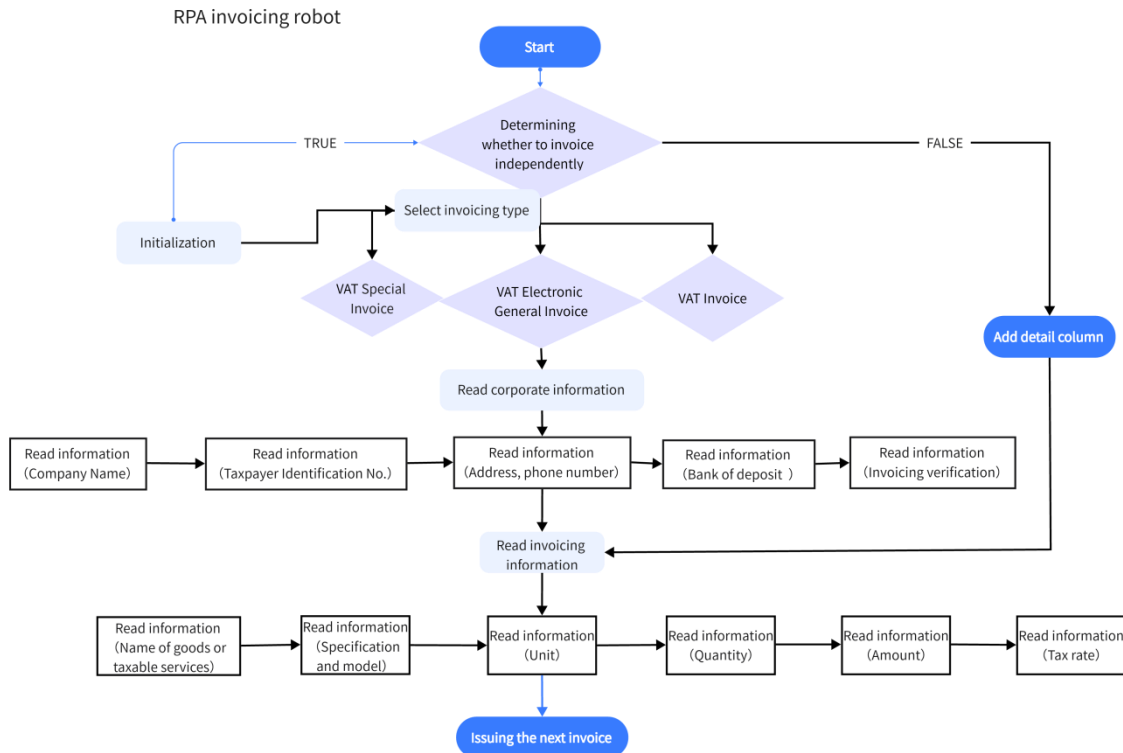


Figure 2: Flow chart of RPA invoice filling robot

4.2. Intelligent Collection and Transmission of Data to Achieve Automatic Underwriting and Reconciliation

After the salesperson of the company's sales department submits the reconciliation application, the RPA process will be triggered automatically, and at the same time, RPA will automatically extract the real-time receivable data in the CRM system and the customer's bank call information in the fund settlement system, combining the two to realize the automatic reconciliation function of the system.

Based on UiPath software, the process of reconciliation of write-offs is as shown in figure 3 below. Firstly, we read the customer information and bank flow for underwriting reconciliation, screen the payment received in the current period to calculate the amount of underwriting, and the system starts to initialize, calculate the amount of underwriting in the current period by reading the balance before underwriting, and get the remaining amount to be underwritten.

RPA underwriting reconciliation robot flow chart

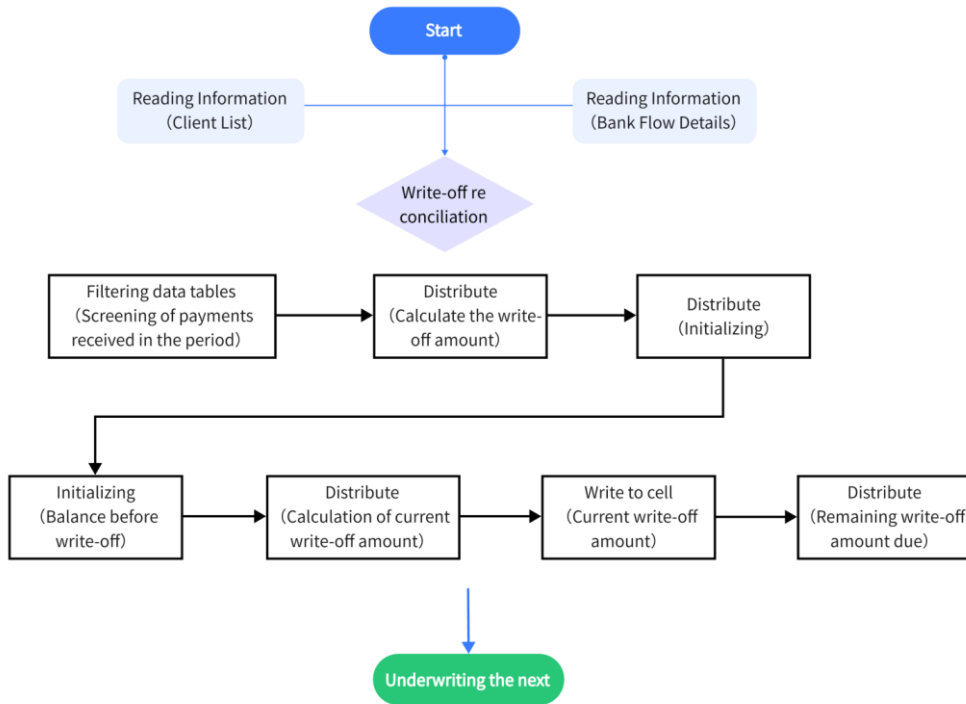


Figure 3: RPA underwriting reconciliation robot flow chart

4.3. Automatic Aging Analysis for Risk Warning

RPA Ageing Analysis Robot Flowchart

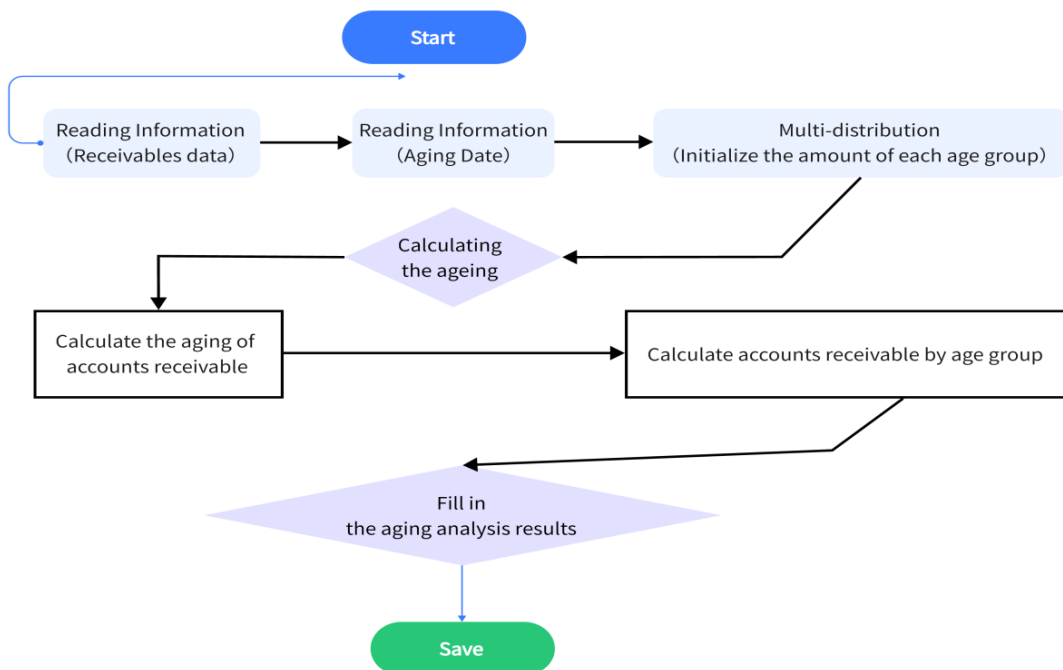


Figure 4: RPA Ageing Analysis Robot Flowchart

When enterprises manage accounts receivable, RPA will automatically extract real-time accounts receivable data in CRM system, calculate the aging of accounts receivable and fill in the aging analysis table. The intervention of RPA will greatly reduce the labor cost, time cost and communication cost, and can output the aging analysis table regularly according to the actual needs of enterprises, strengthen the digital management of enterprise accounts receivable, enhance the collection of enterprises with long aging accounts, and realize the risk warning.

Based on Uipath software to implement the aging analysis, the process is shown in figure 4 below. Firstly, we read the receivable control data, aging date, initialize the aging amount of each group, calculate the aging of receivables, calculate the receivables of each aging group, and fill in the aging analysis result automatically.

5. Conclusions

Taking Group A, a leader in the retail industry, as an example, this paper applies RPA technology to financial sharing to realize the combination of artificial intelligence and finance to optimize accounts receivable management in group companies. The optimization process is carried out while maintaining the existing processes and through automatic cross-system cooperation in the background, thereby improving the enterprise's management efficiency, reducing operating costs, and further maximizing enterprise value. It is hoped that the analysis of this paper can provide theoretical guidance for group enterprises to carry out accounts receivable management under the financial shared service model, and also provide ideas for the combination of artificial intelligence and the financial shared service model.

References

- [1] Cheng Ping, Ji Wei. *Research on optimization of receivable management in financial sharing center based on RPA*. *Friends of Accounting*, 2018 (15): 153-157
- [2] Q. Tang, X. Yao, Y. Guan, Y. Guan. *Exploring the application of RPA in financial sharing center under the background of "big intelligence and cloud"*. *Business Accounting*, 2019 (24): 118-121.
- [3] Liu Meiling, Huang Hu, Tong Chengsheng, Liu Kai. *Research on the basic framework and construction ideas of intelligent finance*. *Accounting Research*, 2020 (03): 179-192.
- [4] Zhang Dawei. *Exploring the construction of RPA-based enterprise intelligent financial sharing center*. *Global Market*, 2021, (2): 11-12
- [6] Cheng Zeyuan. *RPA-based financial sharing center: opportunities, challenges and countermeasures*. *Modern Economic Information*, 2021, (5): 5-6
- [7] Wu WJ, et al. *Exploration of RPA-based financial shared service center fund management in the context of oilfield enterprises' financial integration*. *Friends of Accounting*, 2021, (2).
- [8] Aguirre S, Rodriguez A. *Automation of a business process using robotic process automation (RPA): a case study*. *Applied Computer Sciences in Engineering*, 2017: 65-71.
- [9] Sean Harapko. *Robotic Process Automation: The Next Step in Transformation*. *Supply chain brain*, 2017, 21 (1), 97-98.
- [10] Institute for Robotic Process Automation & Artificial Intelligence. *Benefits of RPA*. <https://irpaai.Com/definition-and-benefits>, 2019-06-30.
- [11] Julia Kokina, Shay Blanchette. *Early evidence of digital labor in accounting: innovation with Robotic Process Automation*. *International Journal of Accounting Information Systems*, Volume35, 2019, 1-12
- [12] Sorin Anagnoste. *Robotic Automation Process-The operation system for the digital enterprise*. *Proceedings of the International Conference on Business Excellence*, 2018, 12 (1), 54-69.