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**RESEARCH ON BIG DATA IN FINANCIAL ACCOUNTING**

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## **GENERAL CHARACTERISTICS OF THE WORK**

Master's thesis on the topic: Research on Big Data in Financial Accounting,: 50 pages, 6 figures, 4 tables, 1 appendice.

With the arrival of the fourth industrial revolution characterized by informatization, intelligence, and data, digital transformation has become the direction pursued by all walks of life. Under the background of this era of big data, corporate financial management has also ushered in further optimization Opportunity.

The development of the globalization trend, in order to better promote the development of enterprises, improve the competitiveness of enterprises, change the traditional accounting model, and the enterprise financial management model, this article mainly focuses on the construction of enterprise financial management information in the era of big data. In-depth discussion and research, and put forward suggestions and suggestions for solving related problems for improving the construction of enterprise financial information through Internet technology.

Keywords: BIGDATA, FINANCIAL ACCOUNTING, TECHNOLOGY

## INTRODUCTION

By 2025, 350 million people will be connected to the gigabit network. Big data, IT industry terminology, refers to a collection of data that cannot be captured, managed, and processed with conventional software tools within a certain time frame. It requires a new processing model to have stronger decision-making power, insight and discovery. Mass, high growth rate and diversified information assets of process optimization capabilities. In the "BigData Era" written by Victor Meyer-Schoenberger and Kenneth Cukje, big data refers to the use of all data for analysis and processing instead of the shortcut of random analysis (sampling survey).

Financial management is an integral part of corporate management. It is an economic management task that organizes corporate financial activities and handles financial relationships in accordance with financial regulations and systems and the principles of financial management. Simply put, financial management is an economic management task for organizing corporate financial activities and handling financial relationships. Financial management is a business management discipline that studies how to manage capital movement through management activities such as planning, decision-making, control, assessment, and supervision to improve capital efficiency. Finance is an "information system" that collects, records, and processes financial data and provides financial information. Information can produce more value through the processing of various links, and the generation, transmission and collection of value become more and more complex, from tangible to intangible. Finance not only needs to protect value, but also to create value and explore the value of information.

The rapid development of big data, cloud computing, and artificial intelligence has made finance more and more intelligent. More and more financial tasks can be replaced by computers. This not only makes financial processing more efficient and standardized, but also urges financial personnel to turn to management accounting in an all-round way to support the strategic development and business activities of the enterprise through decision support.

In the era of big data, how to mine the valuable information behind the data so that the data can speak and provide a scientific basis for business decision-making? How to make good use of big data, reduce operating costs, and reduce operating risks? This is a problem that many companies have to overcome at the moment.

# **CHAPTER 1**

## **THEORETICAL OVERVIEW OF BIG DATA IN FINANCIAL ACCOUNTING**

At present, with the development of a new generation of information technology in enterprises and the improvement of enterprise management, the traditional enterprise IT architecture is facing great challenges due to its inability to adapt to the network connections in the Internet era. Under the traditional information architecture, an enterprise's IT system consists of a series of professionally packaged software systems, such as ERP systems, CRM systems, SRM systems, HR systems and so on. These systems present a chimney-type architecture in terms of application, with each system having a complete set of architecture, including user management, authority management, form management, process management, report management, etc. This not only causes duplication of back-end departmental capabilities, but also results in poor information transfer due to the low level of independence and sharing. A large number of data silos have been formed. The real value of Big Data is not just in the number of data points it contains. After all, Big Data is often measured in terabytes or Zettabytes, which is far beyond the true parsing range of any human organization.

### **1.1 Financial Big Data Overview**

Mayr-Schönberg in his book "The Age of Big Data" published in 2008.[2] Big Data is a concept introduced by Viktor Elaborating on what Big Data is or is not a simple definition, Big data can be conceptualized as a fire station of unstructured and potentially heterogeneous information from different sources with different integrity. Therefore. Rather than what data is, It is also important to note that it is widely accepted that "big" is not the defining characteristic of big data.[3] but there are a few important attributes that are worth repeating. . It is widely accepted that Big Data differs from 'regular' data in terms of the 4Vs", i.e., the volume, velocity, variety, and veracity of data[4]. New regulatory framework is emerging Information-related global laws and regulations are adapting to new technologies and new data uses, requiring a new approach to managing personal information-related risks and ability for data subjects to have increased control over their personal information. it is what data enables or creates. Big data's real value of big data is in generating insights that are not possible with small amounts of data. A second important attribute of Big .Big

data refers to information that is so large in scale that it cannot be processed and organized by conventional means to make it useful in a reasonable amount of time, and is mainly characterized by large, diverse, fast, and valuable data collections. Thus, when it comes to large amounts of data, more is not just more, "more is different", as Wired magazine proclaims [6] Business is in a transformation As information becomes a MORE valuable asset and subject to more rules and controls, the organizational roles that define, manage and address information risk will need to be structured in a more efficient manner. Big data analysis is the process of analyzing the large amount of data collected through quantitative and qualitative methods, combined with appropriate statistical methods and knowledge related to the object of analysis, and is the process of meticulously studying and summarising large amounts of data to extract useful information and form conclusions. The data analysis aims to extract the information hidden behind a series of seemingly disorganized data and to summarise the patterns of the object of study. Therefore, "developments related to big data establish a new and unique context. The developments associated with it establish a new and unique context for the generation and use of data" [8]. Data analysis is at the heart of the Big Data process, and the value of Big Data comes from the process of analysis, i.e. the process of finding valuable information from the huge scale of data. As a major change in financial management, financial Shared services and cloud computing technology of combining the management mode that adapted to the current big data, the development trend of the Internet age, more conducive to enterprise strategic target realization. Data is that it overcomes the limitations of traditional sampling. Often, in Big Data, the entire population is too large to be processed, even using high-powered computers. Computers are also unable to handle it and therefore prefer to use samples [10]

## **1.2 The relationship of big data for financial management**

The primitive society's "knotted notes" and "drawing notes" range from single-entry bookkeeping and double-entry bookkeeping. The traditional use of paper and pen, abacus, paper ledgers, and manual signatures and seals in the process of accounting data flow, accounting The storage of reports, accounting vouchers and accounting data requires a dedicated area. In the 1990s, at the stage of computerized accounting, computer software replaced part of manual accounting work. Financial work entered the information age, and various invoices and settlement documents appeared in electronic form. Diversified enterprise information systems such as ERP, CRM, and SCM provide different solutions for the financial department of the enterprise. In particular, information systems represented by ERP systems have been

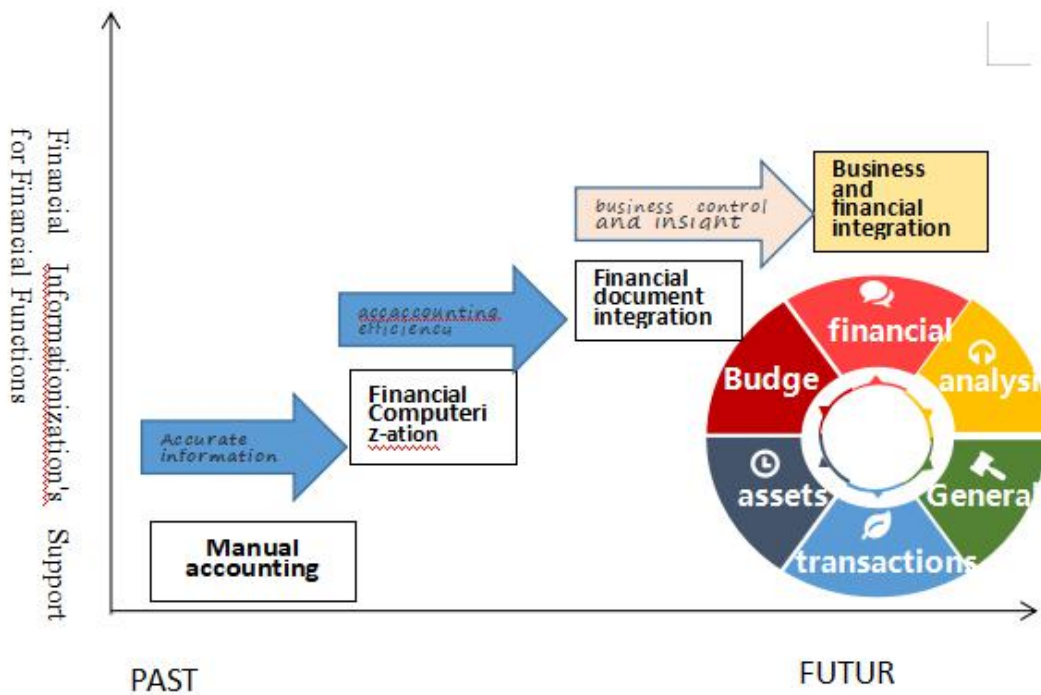
widely popularized in large, medium and small enterprises in various industries, and accounting information has matured rapidly. The financial management system improves the efficiency of financial management by improving the business processes of corporate accounting and financial management, covering all the contents of corporate financial accounting and management accounting. Financial accounting and management accounting achieve integrated financial management through integration. Applications such as RPA and financial cloud have improved the accuracy and breadth of data analysis, helped financial personnel reduce mechanical manual operations, improved the communication efficiency between systems, and accelerated the speed of financial data processing.

With the use of small databases and simple features, the efficiency of financial accounting has improved, but in essence, the financial workflow and basic organizational structure have not been changed at this stage. The overall intelligence of the financial process and the decision-making process, but the automation of part of the processing links is realized by the software, and the work of the financial software and the financial accounting personnel is separated. The form of financial work is constantly changing, and the data recording and processing platform has gone through the three development stages of computerization, informatization and intelligence. Entering the 21st century, emerging digital technologies such as big data, cloud computing, artificial intelligence, and the Internet of Things have emerged. Cloud computing, database technology, big data analysis, mobile commerce, intelligent analysis, intelligent final accounts and other fields have expanded in all directions, and the financial sharing service model has gradually expanded. universal. Enterprise management from the financial department with the help of standardized and process-oriented data foundation, management foundation and organization foundation, the operation and management of various business processes have formed an integrated operation with financial management in the system, and the planning, manufacturing, supply and marketing, inventory, and projects of the financial management system Business subsystems such as management, service, and transportation are highly integrated.[1]

The operation of the business will also update the relevant report data in real time and reflect it in the financial management system in real time, so that the business information can be monitored in real time and an execution plan can be made. After the original data is entered into the system once, the data is automatically included in the financial module to generate accounting vouchers and accounting statements. The original financial data and related information are accurate and unique, and cannot be changed at will. The financial management system must be efficient, mobile, intelligent, interconnected, and safe. And other features.

**Figure 1 Financial management development**

Note - source: <https://www.slidegeeks.com/business/product/financial>



The financial department is highly specialized, and then evolved into a data processing department. Enterprises have gradually increased their investment in the construction of information systems. The development of information technology has made the boundary between business and finance disappear, and ultimately led to the reduction of grassroots financial personnel and high-end professional financial personnel. Generation, industrial upgrading, accelerating the digital transformation of finance, business management demand spurring innovation in management accounting, policy environment driving digital transformation of finance, new technology providing the foundation for corporate financial transformation. The picture[2] below shows the development of finance. With the development of computers, In the "Internet +" era, it provides technical support for the transformation of financial functions.

With the rapid development of information technologies such as big data, mobile Internet, cloud computing, Internet of Things, and artificial intelligence, enterprises are developing into the era of interconnected, shared, and intelligent cloud finance. Mobile Internet has changed the organizational form of enterprises, and a new generation of IT technology has promoted enterprise transformation. And innovation to promote the popularization of financial sharing. In turn, it meets the needs of real-time office financial sharing; driven by new technologies, the inevitable trend of intelligent and data-based financial sharing. Bring unprecedented



opportunities and challenges to the financial department. With the support of the IT department, realize the financial industrialization revolution, establish a digital nervous system, and enable enterprises to achieve digitalization.

### **1.3 The impact of big data on financial management**

The form of financial work is constantly changing, and the data recording and processing platform has gone through the three development stages of computerization, informatization and intelligence. Entering the 21st century, emerging digital technologies such as big data, cloud computing, artificial intelligence, and the Internet of Things have emerged. Cloud computing, database technology, big data analysis, mobile commerce, intelligent analysis, intelligent final accounts and other fields have expanded in all directions, and the financial sharing service model has gradually expanded. universal. Enterprise management from the financial department with the help of standardized and process-oriented data foundation, management foundation and organization foundation, the operation and management of various business processes have formed an integrated operation with financial management in the system, and the planning, manufacturing, supply and marketing, inventory, and projects of the financial management system Business subsystems such as management, service, and transportation are highly integrated.[1]

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accounting, policy environment driving digital transformation of finance, new technology providing the foundation for corporate financial transformation. A report pointed out that the financial shared service industry is growing at a rate of 10%-15% every year, and nearly half of the large-scale enterprises in China have implemented the financial shared service management model. As the future delivery model of the financial function, financial shared services have enabled more and more companies to plan and build their own financial shared service centers to promote the transformation of financial functions and enhance the overall value of the enterprise.

More and more business managers have realized that applying the financial shared service model and relying on process standardization can significantly reduce costs, improve efficiency, and free up more financial personnel to engage in higher value-added work, thereby promoting the transformation of financial functions and improving the overall value of the enterprise. The financial shared service center has the characteristics of clear purpose, standard process, transparent information, fast execution, flexible operation, and easy management. It is a compulsory course for enterprises to explore long-term development. The financial sharing center has the following value characteristics: First, the operating cost is reduced

This can be quantitatively calculated and compared, such as analyzing the average number of vouchers processed by a "shared service center" staff per month, and the processing cost of unit vouchers, etc. The benefits in this regard are mainly achieved by reducing the number of personnel and reducing the middle management level. If the "shared service center" is established in a new location, the cost reduction effect is usually more significant. The reason is that the local salary level will be lower when the new location is usually selected; by establishing a new organizational structure in the "shared service center" and formulating a reasonable incentive system can significantly improve the work efficiency of employees and form a culture of continuous improvement.

# **CHAPTER 2 A CASE STUDY OF SUCCESSFUL FINANCIAL TRANSFORMATION USING BIG DATA IN COMPANY H**

## **2.1 Introduction to Company H**

Company H has gone through different stages of development, from the earliest military industry to the prosperity of colour TV, and then to the diversification and expansion of information electronics.

It has now become a comprehensive enterprise integrating military industry, consumer electronics and core device development and manufacturing. The company insists on being customer-centric and market-oriented, strengthens technological innovation, consolidates internal management, vigorously implements intelligent strategies and continuously improves its comprehensive business. In 2016, the Company's brand value reached RMB 120.9 billion, ranking among the top 100 electronic enterprises in China. The Company's brand value reached RMB120.9 billion in 2016, ranking seventh among China's top 100 electronics enterprises. In 2016, the Company's brand value reached RMB120.9 billion, ranking seventh among China's top 100 electronics enterprises.

The company was ranked 288th in the 2016 World Top 500 Brands ranking released by the World Brand Lab. Company H's breakdown by product, with the proportion of revenue accounted for by each product, is shown in Figure 3-1. Intermediate products accounted for 25%, IT products for 24% and TVs for 24%. IT products accounted for 24%, TVs for 20%, air conditioners and refrigerators for 19% and other businesses for a total of 12%. [9]

## **2.2 Analysis of the motivation for Company H to set up a cloud-based financial shared service centre**

Inevitably, Chinese companies are faced with the above-mentioned problems in the process of group development and growth, and due to the existence of these problems, companies are looking for ways to maximise their financial functions in order to fully realise their strategic objectives. The traditional financial management model resulted in a high degree of fragmentation of funds, inconsistent accounting standards and, at one point, too many layers of reporting. As a result, it was imperative to implement drastic financial reforms within Company H [10]. As a result, the senior management of Company H came to realise that a good strategic plan was essential for the continued development of the company. In order to ensure that the objectives of the financial shared service centre are in line with the company's strategic plan, it is necessary to analyse in depth the motivation for the establishment

of the financial shared service centre. The following is an analysis of Company H's strategic development, organisational structure, information technology development, and the reasons for the establishment of a shared service centre. The following is an in-depth analysis of the motivations for the establishment of a shared service centre in terms of the company's strategic development, organisational structure, IT development, senior management's attitude and choice of location. (1) The need to promote the Group's strategic development

The need to promote the Group's strategic development For a company, a clear and precise strategic goal is crucial to the strategic development of the company. A clear and precise strategic objective is crucial to the strategic development of a company. However, strategic objectives are not static and can be adjusted in response to changes in business conditions and the economic environment in which the company operates. However, strategic objectives are not static. The SWOT approach is used here to analyse the strategic development of Company H, as shown in table2.

Table 1- SWOT Analysis of H Company's Development Strategy

S (Advantage)	W (Disadvantage)
<ol style="list-style-type: none"> <li>1. large size of the enterprise, which enjoys policy care.</li> <li>2. good product image and high visibility.</li> <li>3. having a sales network throughout the market.</li> <li>4. having a certain capital scale and anti-risk capability after years of development.</li> </ol>	<ol style="list-style-type: none"> <li>1. excluding the core business of colour TV, the rest of the business is not yet able to create profit value for the enterprise.</li> <li>2. The internal organisation of the enterprise is large and bloated, with redundant functions and poor communication between the upper and lower levels.poor communication between the upper and lower levels.</li> <li>3. inadequate internal governance structure and lack of effective mechanisms.</li> </ol>
Opportunity	Threat
<ol style="list-style-type: none"> <li>1. After China's accession to the WTO, enterprises can better participate in international competition and develop international markets.</li> <li>2. Gradually get rid of low-level competition and gradually improve the market order of the home appliance industry.The market order of the home</li> </ol>	<ol style="list-style-type: none"> <li>1. after years of price wars, industry profits tend to thin.</li> <li>2. in the key core technology areas, the technology reserve is insufficient to be restricted by</li> </ol> <p>The industry's profits are thinning; 2.</p> <ol style="list-style-type: none"> <li>3. Fierce competition in the domestic</li> </ol>

<p>appliance industry will be improved gradually.</p> <p>3. With the development of China's economy, the rising income level of the people will increase the demand for high-end home appliances.</p>	<p>home appliance industry and rapid renewal of home appliance products.</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------

Based on the above SWOT analysis, Company H insisted on finding new directions of industrial development and new profit growth points and performance triggers in its strategic deployment. The company will continue to develop new industries, new profit growth points and new performance triggering points. On the one hand, Company H continues to follow the direction of innovation in industrial chain, industrial form and business model. On the one hand, we will continue to move forward in the direction of 3C integration, focusing on the research and development of core technologies and key parts. We aim to bridge the boundaries between products, content The company will continue to move towards 3C[11] integration, focusing on core technologies and key areas of research and development. On the other hand, Company H is actively cooperating with seemingly "incompatible" industries, leveraging on the industrialisation of information The company is also actively collaborating with seemingly "incompatible" industries, using the industrialisation of information to plan a multi-industrial layout. With little difference in external competitiveness, Company H relies on internal Improved organisational structure[12].

(2) The need to improve the organisational structure of the company

In 2016, Company H's brand value module alone generated a record of approximately RMB 120.9 billion, continuing to rank seventh in China's electronics industry. In 2016, the brand value module alone of Company H generated a record of approximately RMB 120.9 billion, continuing to rank seventh in China's electronics industry. The growth and expansion of the Group's business is inevitably accompanied by the creation of more and more branch functions. Company H has more than 200 branches in China alone, with a bloated organisational structure. The financial departments of the branches in different regions operate independently of each other, and each is independently responsible for the financial work of the region, resulting in a The financial departments of the branches in different regions operate independently of each other and are each independently responsible for the financial work in their own regions, resulting in poor information communication between superiors and subordinates and between branches. As Company H has been adopting a decentralised approach to financial management, this approach has resulted in the need for Company H to have a decentralised financial management system. This approach has resulted in a large number of duplicate finance departments being set up in Company H, which has led to rising manpower costs and, to a certain extent,

increased the control of the Group. The emerging financial management approach is to take financial sharing services as the core, and to continuously reduce the number of financial positions, so that those involved in the basic andThe new approach to financial management is to use financial sharing services as the core, to continuously reduce the number of financial positions, to detach the personnel engaged in basic and duplicate business from their original positions, and to achieve inter-branch This will help enterprises to escape from the current situation and improve their financial quality and efficiency.[13]

### (3) The need for information technology development

Information technology is a tool and a vehicle for unifying the company's processes. Company H's requirement in information technology is to achieve "unified planning, unified construction, unified operation and unified management". This principle requires a unified approach to management control and the unification of the company's core values. Company H has been working on information technology since 2000. The company has been working on information technology since 2000, and has been adhering to four major principles in the construction of information technology, namely: business-driven value concept, moderate implementation, automated business accounting and documentation. The company has been adhering to four major principles in information technology construction, namely: business-driven value concept, moderate implementation, automatic business bookkeeping and paperless vouchers. Company H's information technology construction has gone through four main stages: before 2003, it was the introduction stage of information technology for Company H; from 2004 onwards, Company H really started to implement information technology. From 2004 onwards, Company H really put the construction of information technology at a strategic level and continuously increased its investment in information technology and integration, merging the information department and the management department. The merger of the Information Department and the Operation Management Department into the Operation Management Department shows that the senior management of Company H attaches great importance to the information technology construction of the company. The period from 2006 to 2008 was the "business-driven stage" of information technology construction in Company H. From 2008 onwards, Company H entered the "IT and business development" stage. From 2008 onwards, Company H entered the "two-way IT and business-driven stage" and invested heavily in IT construction, requiring IT construction to go hand in hand with the development line of the company. In 2008, Company H entered the "IT and business-driven stage" and invested heavily in IT construction.[14]

### (4) Recognition and support from the group's senior management

The Chairman of Company H, when he took office in 2004, strongly advocated the need to focus on finance, and the Executive Vice President of Company H was also promoted from the former Chief Financial Officer, which shows that the senior management of Company H attaches great importance to finance. As IT technologies

such as cloud computing, big data and mobile internet penetrate more and more into people's lives and business operations, the long-developed but immature management model of financial shared services is beginning to be impacted by the experience of new technologies, and it is necessary to build financial shared services in the cloud. The formation of a cloud-based financial shared services centre is a huge innovation, both for the internal organisation of the company and for the way it manages itself. It is a matter of concern to the senior management of Company H as to how to balance the conflict of interest and restructuring behind the overturning of the original management system of the company. In addition, as the formation of a cloud-based financial shared service centre would disrupt the established financial organisational structure, employees would encounter emotional barriers during the transition they were facing. Therefore, the company's senior management should be patient with the staff to make them face the financial transition positively, so that they can carry out the relevant work and ensure the smooth operation of the financial shared service centre. In order to ensure the smooth establishment of the cloud-based financial shared service centre, Company H also adopted two other strategies. On the one hand, it maintains a positive attitude and attracts a large number of outstanding talents to serve the company through campus recruitment. On the other hand, it also provided communication, training and management for the old employees who had served in Company H before, so as to ensure the smooth implementation of the Cloud Computing Shared Service Centre.[15]

#### (5) Selecting the best location

The location of Company H's financial shared service centre was selected based on both internal and external factors. After comprehensive consideration, Company H chose a location in Mianyang. The internal factors were that Mianyang has a high concentration of universities, a large number of finance staff and a rich talent pool. External factors include the fact that Mianyang is the only science and technology city in China, an important production base for the electronics industry, the centre of the Chengdu, Chongqing and Mianyang economic circle, and the second largest city in the province after Chengdu, the provincial capital. In addition, Mianyang has a more complete infrastructure with a variety of means of communication, broadband data network coverage, and convenient transportation, and lower office costs and wages, allowing for better quality staff at lower force capital.

## 2.3 ERP financial management system of H



**Figure2 -erp of H**

One input and multiple use is one of the biggest features of ERP over Excel. Such data can reduce the number of input times, reduce workload, improve work efficiency, and most importantly, reduce data input errors, which guarantees the greatest extent The degree to which the business data is correct. In the flow recording process of ERP, the operation of each key point is counted into the corresponding flow, including the modification of each single sentence, and the inventory loss and surplus of warehouse outbound and inbound are recorded. Every change in the operation will be recorded according to the occurrence of the flow check business. On the other hand, the data management can be strengthened. In this way, the flaws in the warehouse management will not be exposed. All the results or data collection windows are displayed to users in ERP[16]. The origin of the results or complex calculations are obtained. These calculations are carried out inside ERP, which means that the results that users want to see will be displayed without manual design. Formulas, manual calculations, especially complex calculations. Such as Zcompany. Exporting a batch of materials requires design calculations. It is necessary to search for inventory and product composition according to the product process plan. This calculation is not possible in Excel, and the results can be displayed quickly in ERP.

Business data plays an important role in enterprise market competition. If enterprise information is leaked or lost, it will bring great harm to enterprise market competition. ERP[3] is a system and a warehouse of corporate information. In this system, users can set different permissions according to different positions. In this system, the information is both transparent and invisible, which can guarantee the



timely transmission of information. And sharing, maximize the use of information, and can link these information well.

ERP can also process abnormal user data through alarm prompts to find out the cause of the abnormal data, so as to quickly solve the problem and minimize the harm to the enterprise. Relying on ERP[4] system managers can well implement management thinking and management methods into daily business operations. On this platform, information can flow at a high speed through process and high efficiency. Managers should be able to use these platforms to hide some of them. When the problem is exposed, it can realize the reasonable job allocation of the enterprise and enable the enterprise to operate at a high speed. Enterprises can continuously improve their own management thinking methods through the ERP system, and predict the results by tracking the process. ERP can also realize remote control of the enterprise, allowing users to log in to the company's ERP system from anywhere on the Internet, view relevant business data and reports, gain a good understanding of the operation of the enterprise, and promptly discover and solve problems in the operation of the enterprise.



**Figure 3- erp of H**

Note - source: <https://insightsolutionsglobal.com/>[15]

In the past, when the financial management department of an enterprise was at work, it often needed to travel to various departments of the enterprise to collect its

financial information and conduct overall management. But with this ERP system, financial management sharing center managers only need to rely on this system to obtain relevant information of various departments of the enterprise anytime and anywhere, and this information can also be used anytime and anywhere with the help of this system. Check it out.

### **2.3.1 Application in corporate financial budget**

The ERP system based on financial management provides an effective platform for the preparation, control and analysis of corporate budgets. Its application in corporate budget finance is more inclined to financial planning, control, analysis and forecasting, emphasizing pre-planning and forecasting, and in-process Management and control, post-processing and information feedback to support the overall budgeting process of the company's production, sales, procurement, expenses, investment, profit and loss, and asset-liability plans. For example, in terms of cost management, that is, capital management, the ERP system can reflect the enterprise capital flow in a complete and real-time manner, and integrate, compare, analyze and warn the capital information through the budget module and other functional modules in the system. The manager uses the capital management The module can always grasp the lifeblood of the enterprise's survival.

### **2.3.2 Application in cost finance**

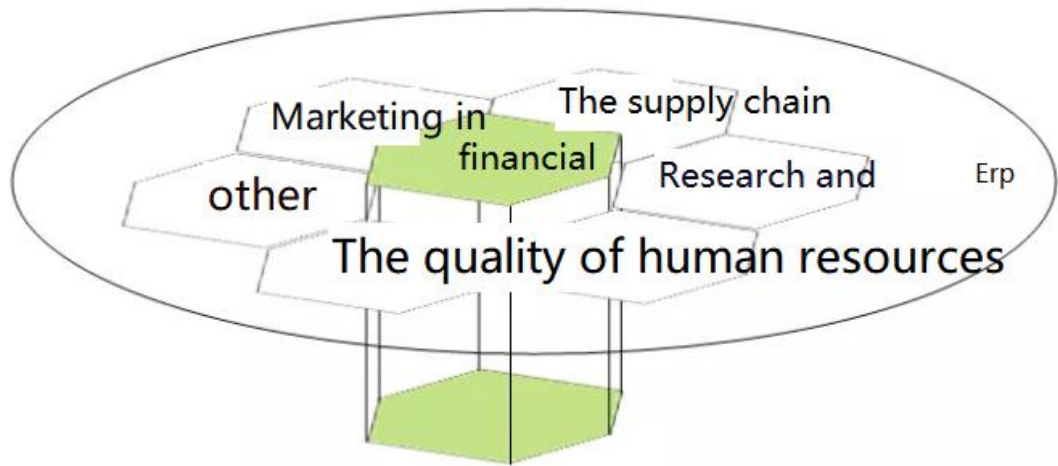
A complete ERP system can monitor the cost components, elements, and operation processes of all functional departments of the enterprise, and automatically generate forecasts for a certain period or a single object. In cost management, the essence of the ERP system lies in the value-based cost simulation estimation. The company can optimize the production and operation process based on the results of the cost simulation; the system contains sales and profit planning procedures, which are conducive to enhancing the decision-making of corporate managers Effectiveness; the cost and income generated in the financial management process are completely integrated into the ERP control system, and their apportionment can be responsibility or product; the product management module, strategic business plan module, sales module, The market module, etc., can analyze and process the first-hand market information in depth according to the company's ability to obtain economic benefits and the company's own characteristics. Through the analysis results, companies can clarify their current position in market competition, and then accurately assess entry The potential of new markets.

### 2.3.3 Application in financial accounting

The role of financial accounting in enterprise financial management is to record, calculate and analyze the changes and results of funds generated in all economic activities of the enterprise. It mainly consists of general ledger, accounts receivable/payment, monetary funds, fixed assets, and inventory.

The financial accounting module in the ERP financial management system includes the above modules. ERP-based financial accounting involves all business links that generate and occur value transfers. Almost all specific business operations of an enterprise involve financial accounting. Managers can understand the business status and capital flow in a timely manner through the financial accounting module in the ERP system. After ERP was launched in corporate financial management, employees' deepest experience is that value-based bookkeeping is integrated into actual business processing, which makes information responsibilities clearer, and corporate performance appraisal is closely related to the responsibility center's finances. The system can decompose the responsibilities into the controllable range according to the overall strategic goals of the enterprise, and formulate the responsibility budget of each responsible financial center, and reflect the implementation of the responsibility budget in a timely and accurate manner. When the financial activities of each responsible financial center deviate from the responsibility budget Or corporate business objectives, responsible finance can give full play to its own control functions, guide and correct various unfavorable activities, and finally analyze and evaluate its financial work to provide a basis for performance appraisal, which is important for improving the efficiency and efficiency of business processing in various departments.

Quality plays an important role, but also helps to strengthen employees' awareness of financial management. The financial department is one of the core departments of an enterprise. The execution effect of the various tasks of the financial department directly affects whether managers can make correct decisions, and also affects the work process of other departments of the enterprise. In order to make the work of the financial department faster and more efficient, the financial department should use a process-based perspective for financial management. Company H[15] is a foreign trade company, Founded in 1996. It is a large-scale group enterprise that introduced ERP technology through a third party in 2019, designed a blueprint for the company, and realized the overall information planning under the group management and control mode, making H company's financial management and ERP tools well Fusion. Informatization construction has boosted the rapid development of H company, and brought very good results for Z's management. Compared with last year, the company achieved 99% of automated financial accounting, less than 1% of manual vouchers, and reduced financial staff by 60. Let's take a look at the actual application of the company on ERP.[16]



**Figure4 -H company structure**

The financial department is one of the core departments of an enterprise. The execution effect of the various tasks of the financial department directly affects whether managers can make correct decisions, and at the same time affects the work process of other departments of the enterprise. In order to make the work of the financial department faster and more efficient, the financial department should use a process-based perspective for financial management.[17]

Company H's cloud-based financial shared service centre departmental job responsibilities.

**Accounting department:** The accounting department is mainly responsible for handling the recurrent and homogeneous accounting operations in the whole system. The accounting department is mainly responsible for handling the regular and homogeneous accounting operations in the whole system, and generating accounting documents on this basis. The main areas of responsibility include service acceptance, accounts receivable, accounts payable and fund accounting.

**Risk Control Department:** In order to eliminate the Group's instability and reduce riskiness, the Risk Control Department mainly does quality supervision, including quality control, reconciliation management and divisional management.

**Advisory Services Department:** Firstly, it is mainly responsible for shared migration management, and secondly, it provides professional third-party accounting outsourcing and access for small, medium and micro enterprises.

**The Advisory Services Department:** Firstly, it focuses on shared migration management, and secondly, it provides professional third-party accounting outsourcing and access for SMEs[18]. including management consulting, process consulting and market development.

**Administration and Personnel Department:** mainly includes general management, financial management and personnel management.

## **2.4 Revenue Effect Analysis of Company H's Financial Shared Service Centre**

For a company, the revenue effect is the value that the product or service can create for the company. This value content is usually compared to the previous services or products, and the difference it can bring to the customer. This value content usually needs to be compared to the previous service or product and what difference it can make to the customer. The following is an analysis of the benefits of the cloud-based financial sharing service for Company H. Reduced operating costs and increased revenue

### **(1) Reducing company operating costs**

In this paper, the size (total assets), number of managers and overhead costs of Company H are compared and analysed. Reducing operating costs by comparing the size (total assets), number of management staff and overhead costs of Company H. This paper analyzes the overall changes in operating costs of Company H before and after the implementation of cloud-based financial sharing services. As shown in Table, Company H has been on a growth trend, and as the size of the business has grown, so has the number of H. With the exception of 2009, the company's overheads have also been increasing. The main reason for the increase in 2009 was the financial crisis in 2008, which led to a loss-making situation and a reduction in the number of employees in the organisation.

### **(2) Increase in the company's operating income**

The implementation of financial sharing services has significantly improved the efficiency of business processing through the standardisation and improvement of processes, creating more profit and value for Company H. The implementation of financial sharing services has significantly improved the efficiency of business processing through the standardization and improvement of processes, creating more profit and value for Company H. With the promotion of this service model, Company H's domestic and international business scale has been expanding.

### **(3) With the advancement of this service model**

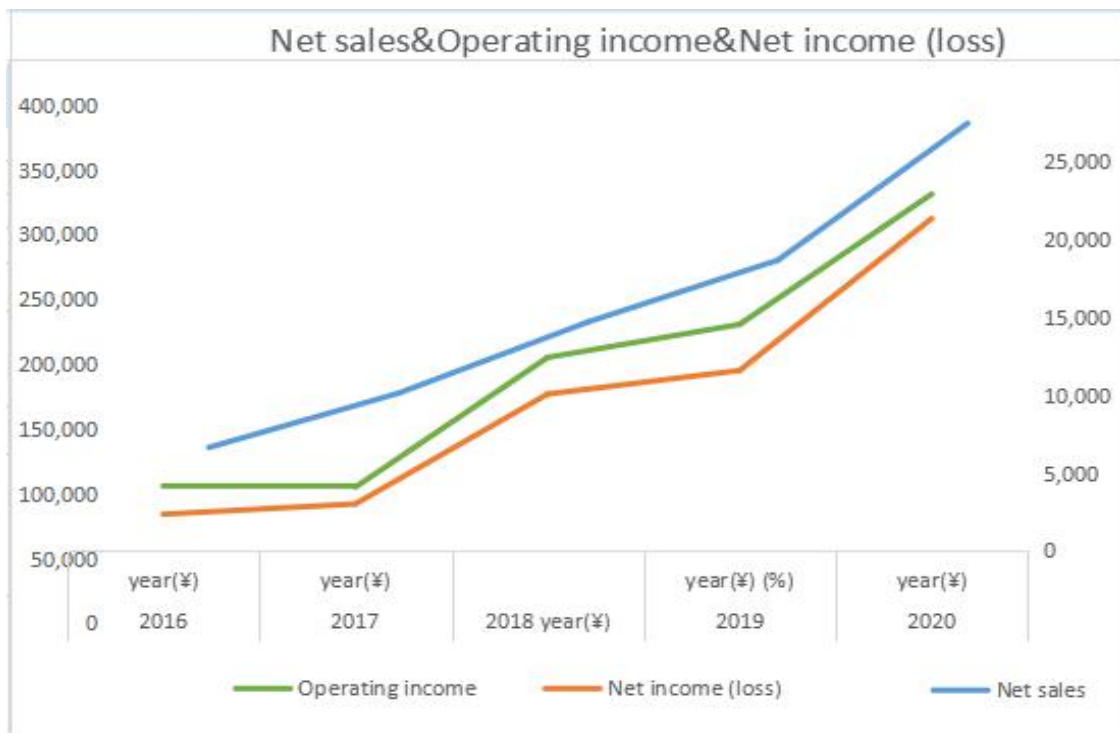
the scale of Company H's domestic and international business has been expanding, and its operating income has increased significantly. In 2007, Company H's main business revenue was RMB 23.06 billion, but after nine years of implementing financial sharing services, it has grown to RMB 6.0 billion. After nine years of implementing financial sharing services, Company H has now reached RMB 68.62 billion, achieving a significant increase in operating revenue, as shown in Figure 5. The implementation of financial shared services has resulted in significant cost savings and to some extent revenue for the company.

From 2008 to 2015

The Financial Shared Services Centre is credited with such a rapid increase in revenue from 2008 to 2015. Table 2- Year Ended Of company H In December 31

Statements of Operations:	2016 year(¥)	2017 year(¥)	2018 year(¥)	2019 year(¥)	2020 year(¥)
Net sales	135,987	177,866	232,887	280,522	386,064
Operating income	4,186	4,106	12,421	14,541	22,899
Net income (loss)	2,371	3,033	10,073	11,588	21,331

By importing basic data, we can generate a trend chart through Excel with one key, so that we can observe the development trend of the data more intuitively, make better comparisons, and be more intuitive than numbers.



**Figure 5 - Year Ended Of company H In December 3**

Note — Source: Excle H Cloud Sharing Main Revenue Changes

## 2.5 The process of establishing financial big data of H

1. The reference SQL statement is as follows[16]:

```
select to_char(a.crdt,'yyyy-mm') as month,
       a.ordertype as order type,
       count(distinct a.orderid) as the number of orders,
       sum(nvl(a.totalprice, 0)) as the total amount,
       round(avg(nvl(a.totalprice, 0)), 2) as the average amount per order,
       max(nvl(a.totalprice, 0)) as the maximum order amount,
       min(nvl(a.totalprice, 0)) as the minimum order amount,
       variance(nvl(a.totalprice, 0)) as variance,
       stddev(nvl(a.totalprice, 0)) as standard deviation,
       rank() over (partition by to_char(a.crdt,'yyyy-mm')
                   order by sum(nvl(a.totalprice, 0)) desc) as ranking
from orders a
where a.crdt >=
add_months(trunc(sysdate,'mm'), -10)
and a.crdt
<trunc(sysdate,'mm')
group by
       to_char(a.crdt,'yyyy-mm'), a.ordertype
       having count(distinct a.orderid)>
       1000
       order by
       to_char(a.crdt,'yyyy-mm'),
       sum(nvl(a.totalprice, 0))
       desc
```

According to changes in actual business requirements, the rank function above can be replaced with dense\_rank or row\_number.

Secondly, let's look at some commonly used string functions.

1. String interception: substr

Example:

```
select substr('abcdef',1,3)
from dual;
```

Result: abc

2. Find the position of the

substring: instr

Example:

```
select instr('abcfdfgdhd','fd')
from dual;
```

Result: 4

3. String connection: concat

Example:

```
select concat('Hello',' world')
```

from dual;  
 Result: Hello world

4. Remove the spaces: ltrim, rtrim,  
 trim

Example:  
 select ltrim(' abc') s1,  
        rtrim('def') s2,  
        trim(' ghi') s3  
 from dual;  
 Result: abc, def, ghi

5. Remove the leading and suffix:  
 trim

Example:  
 select trim(leading 9 from  
 998799) s1,  
        trim(trailing 9 from  
 998799) s2,  
        trim(9 from 998799) s3  
 from dual;  
 Results: 8799, 9987, 87

6. Return the ascii value of the  
 first letter of the string: ascii

Example:  
 select ascii('A')  
 from dual;  
 Results: 65

7. Return the letter  
 corresponding to the ascii value: chr

Example:  
 select chr('65')

from dual;  
 Result: A

8. Calculate the length of the  
 string: length

Example:  
 select length('abcdef')  
 from dual;  
 Results: 6

9. Case conversion: lower, upper,  
 initcap

Example:  
 select lower('AbC') s1,  
        upper('dEf') s2,  
        initcap('gHi') s3  
 from dual;  
 Results: abc, DEF, Ghi

10. Match replacement: replace

Example:  
 select replace('abcd','bc','xyz')  
 from dual;  
 Result: axyzd

11. Absolute matching  
 replacement: translate

Example:  
 select translate('What','th','T-')  
 from dual;  
 Result: W-aT

Note: replace is to replace the  
 consecutive characters specified in the  
 string with other characters, and translate



is to replace each character with the same sequence of characters.

12. Left and right padding: lpad, rpad

Example:

```
select lpad('ab',5,'=') s1,
       rpad('ab',6,'*') s2
from dual;
```

Result: =====ab, ab\*\*\*\*\*

13. Instruction decoding: decode

Example:

```
select decode('a','b','1','c','2','3')
from dual;
```

Result: 3

Finally, we understand some commonly used operators, which are mainly used to handle operations, comparisons, and filtering between data.

1. Arithmetic operators:

+, -, \*, /

2. Comparison operator:

>, >=, =, != or <>, <, <=, like,

between, in, is null

3. Logical operators:

not, and, or

4. Set operator:

intersect, union, union all, minus

5. Concatenation operator:|

Query the highest monthly sales increase of a certain department of H company in a year. Now there is a monthly sales record table sale\_table. This table records the sales of a certain department in 2018 and a certain few months in 2019. Now we want to query this year ( What is the highest monthly sales increase in 2019).table table is as follows[17]:

Table3 - The sale of company H

Time	Month-num	Sales	Year-on-year growth	Net sales.	Operating income
2019	1	2854	0.32%	38606	22899
2019	2	4772	0.27%		
2019	3	3542	0.33%		
2019	4	1336	0.5%		
2019	5	3544	0.13%		
2018	1	2293	0.35%		
2018	2	2559	0.21%		
2018	3	2597	0.23%		
2018	4	25563	2.13%		
2018	5	2363	0.11%		

Table 4 - The sale result of company H

Max sales	Min sales	cha	geowth
4772	1336	3436	2.5719

We want to query the highest monthly sales increase in 2019. First, we need to filter the monthly sales in 2019 through where, and then find the largest and smallest sales in the monthly sales in 2019, and make the difference between the two. The corresponding calculation is the result we want, and the final running result is shown in the following table.[18]

## **CHAPTER 3**

# **THE ESTABLISHMENT OF THE FINANCIAL SHARED DATA CENTER**

The digital age has opened up a shared ecosystem. And financial sharing has also become an important trend in the development of financial informatization and even enterprise informatization in this era. In recent years, the financial sharing center has become the focus of competition among companies because it can help group companies to strengthen management and control and promote corporate financial transformation. However, at the same time, with the help of new-generation information technologies such as artificial intelligence, big data, cloud computing, and mobile internet, the functions, positioning, value, and functions of the financial sharing center have been continuously optimized and upgraded. This makes the financial sharing system in the process of constant iteration and upgrade in the past few years. Looking at the whole year of 2019, as the integration of new technologies and sharing systems has become more and more deep, the development trend of the new generation of financial sharing systems has become increasingly clear.

As companies' enthusiasm for building financial sharing centers continues to rise, their understanding of financial sharing continues to change. More and more companies are abandoning the traditional financial sharing model with centralized accounting processing as the core, extending the scope of sharing from back-end finance to front-end business, seeking to build a financial sharing center that integrates industry, finance and taxation.

As we all know, only when finance is truly integrated with business can it be effective in value creation. However, for a long time, the biggest problem of the corporate financial system has been the disconnection from the business. The integration of industry and finance has been shouting for many years, but it has rarely achieved successful landing in enterprises. This is mainly because: the integration of business and finance requires the organic integration of the three main processes in business operations, namely business processes, accounting processes, and management processes, and establishes a business-driven financial integration information processing process, so that financial data and business Data is integrated to maximize data sharing and real-time control of operating conditions. However, under the traditional corporate management system, business processes, accounting processes and management processes are fighting each other. For a long time, we lack an effective technical means to fully connect them.

The core of the financial sharing center is sharing, and the premise of sharing is "connection." This means: the financial sharing center can become a natural technology platform to promote the integration of industry and finance. By constructing a financial sharing center that integrates industry, finance and taxation, the company has formed a business transaction layer between the back office and the

front desk. A more flexible and powerful business support middle station is able to connect a large number of transaction processing and services between the front desk and the back office. The digitization of a wider range of businesses (from bookkeeping, settlement to reimbursement, procurement, taxation, etc.) greatly improves operational efficiency, quickly responds to customer needs, and achieves in-depth integration of finance, business, and taxation.

At present, the development of mobile internet technology is having a huge impact on enterprise operation models and business models, and promotes the "Internetization" and big data transformation of the entire process of enterprise operations. Companies should not only make front-end sales and logistics online, but also consider matching the back-end financial, procurement, and internal resource allocation with the new front-end business model. In terms of financial work, enterprises must connect internal and external based on Internet thinking, change post-event accounting to pre-transaction and data control, change "control as the core" to "service as the core", and change manual accounting processing to online automatic real-time processing. The new demands of enterprises for these changes will all promote the reform of the financial sharing center. The new generation of shared service platforms, characterized by internetization, mobility, and intelligence, is becoming a bridge that promotes internal and external communication among enterprises.

Based on mobile internet technology, the financial sharing center can incorporate external suppliers, customers, distributors, dealers, industry and commerce, taxation, etc. into this system, covering all employees and processes internally, and the entire value chain externally, connecting suppliers, Business travel, customers, but also docking with banks and taxation, opening up inside and outside, connecting inside and outside, and realizing effective connection of transactions.

Purchasing sharing, business travel sharing and tax sharing are typical applications of the Internet-based financial sharing center. The procurement sharing platform realizes seamless connection with suppliers and customers by connecting external standard e-commerce platforms and private enterprise suppliers, realizing automated order placement, automated settlement, and the use of electronic invoices to connect tax data and transactions. The business travel sharing platform is opened and connected to many business travel platforms and suppliers for automatic price comparison, and the entire process of travel application, budget control, approval, order placement, accounting, and settlement is opened, from online application, online ordering, system automation and budgeting. Related to the completion of procurement and unified settlement, forming a complete closed loop. The tax sharing platform opens up and connects with tax authorities and major tax resource systems, realizes a large concentration of tax data information, fully supports invoice management, tax payment and automatic declaration, and big data tax risk and planning.

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### **3.1 Construction of Financial Data Sharing Center**

If you want to achieve digital transformation, you must subvert and reconstruct the traditional IT architecture, and realize the interconnection and data sharing between systems.

However, for many companies, if all the information systems that have been built for many years are abolished and replaced with a new generation of technical architecture, not only will it take a long time and a high risk, but also a large investment. Therefore, some companies have made the choice: Regarding the sharing platform as a point of interaction with business departments and external ecosystems, integrating it with the back-end ERP, SRM, and CRM of the enterprise, only retaining the most basic functions of the ERP system, such as the financial general ledger Management, and put all the front-end and finance-related functions on the sharing platform, open up financial data sharing, and form an integrated financial management and control model. Through the shared service platform, the back-end traditional technology products are packaged, and the financial system and the enterprise digital system are upgraded and replaced indirectly. This application mode has now become the preferred mode of some domestic enterprises, and it will also have strong adaptability in the future.

Related reports show that 86% of surveyed companies are developing shared service models or business process outsourcing models, and 54% of surveyed companies are establishing multi-function shared service centers. We can see that as companies such as PetroChina, Vanke, and Haier enter the era of multi-function

sharing centers, cross-regional and cross-function sharing operation models are being favored by more and more leading companies. The enterprise shared service center develops from a single function to a multi-function.

The multi-functional financial sharing center is no longer limited to the realization of financial sharing. It will also extend sharing to other functional areas, such as the daily operation and maintenance of the IT department, the recruitment and file management of the human resources department, the procurement management of the procurement department, and the management of the administrative department. Travel services, tax management of taxation departments, etc. These tasks can be incorporated into the business scope of the sharing center to achieve multi-functional coordinated development.

For enterprises, the benefits of the unified construction of a multi-function sharing center are obvious. By building a unified shared platform, companies do not need to integrate different platforms in the future, which will greatly save manpower and financial resources and reduce system risks.

Purchasing sharing, business travel sharing and tax sharing are typical applications of the Internet-based financial sharing center. The procurement sharing platform realizes seamless connection with suppliers and customers by connecting external standard e-commerce platforms and private enterprise suppliers, realizing automated order placement, automated settlement, and the use of electronic invoices to connect tax data and transactions . The business travel sharing platform is opened and connected to many business travel platforms and suppliers for automatic price comparison, and the entire process of travel application, budget control, approval, order placement, accounting, and settlement is opened, from online application, online ordering, system automation and budgeting Related to the completion of procurement and unified settlement, forming a complete closed loop. The tax sharing platform opens up and connects with tax authorities and major tax resource systems, realizes a large concentration of tax data information, fully supports invoice management, tax payment and automatic declaration, and big data tax risk and planning.

### **3.2 How to build a financial data center**

The financial shared service center comes from the long-term planning of corporate strategy and is the transformation of financial management mode. It is a set of systematic projects involving strategic positioning, model selection, corporate business process transformation, system construction, organizational structure setting, personnel recruitment and training , Office location selection, etc. Therefore, the financial sharing center needs to use a global structure for design, construction and operation.

Global architecture is usually used to describe a thing, such as organizational structure, software architecture. For the financial shared service center, long-term

financial shared service operations tend to make man

gers fall into the dilemma of local thinking and too much attention to details, thus ignoring the inspection of the overall structure. In fact, the purpose of building financial shared services is not only to satisfy financial needs, but to form a complete structure system composed of multiple aspects. Therefore, it is of great significance to apply architectural thinking at different levels to carry out the establishment and subsequent operation and management of the financial shared service center. Specifically, the overall structure of the financial shared service center includes strategic positioning, organizational structure, personnel structure, process structure, data structure, information system, operation management, change management and other aspects (as shown in the figure).

### **3.2 Construction of Financial Data Sharing Center**

In the global architecture, we need to pay attention to the characteristics and interrelationships of various components. And further deepen the management for each component. Strategic positioning: covering the strategic objectives, strategic structure and strategic functions of the Financial Sharing Center. Organizational structure: Covers related content such as the operating model, internal organization, management and control relationship of the financial sharing center.

Staff structure: Covers related content such as job responsibilities, job staffing, personnel capability requirements, and personnel calculations. Process architecture: covering process classification, process elements, financial sharing center process service catalog, financial sharing center typical process flow and other related content. Data architecture: covers data definition, data management process, data application scenarios and other related content. Information System: Covers related content such as service application, automated process engine, interaction center, self-service, shared service level agreement analysis, authority management, business and system integration tools, and knowledge management. Operation Management: Covers related content such as service level agreement, operator management, operation process management, and information system operation and maintenance improvement.

#### **1. Strategic Positioning**

The strategic positioning of an enterprise group refers to the company's decision to provide what products and services to which customers through which methods and channels, in order to obtain and maintain business advantages and achieve the company's strategic goals. The purpose of strategic positioning is to achieve the company's development goals. To achieve the development goals, the company must obtain and maintain operating advantages, and operating advantages come from decisions on target customers, products and services, and operating models. Essentially, strategic positioning is to choose activities that are differentiated from competitors, or to complete similar operations in a differentiated way. The strategic positioning framework of the financial sharing center includes three aspects of the

financial sharing center's strategic goals, strategic structure, and strategic functions. The strategic goal is the expected value of the expected goals of business activities; the strategic structure is the positioning and planning of the financial sharing center; the strategic function is the service model Planning, and the division of future strategic finance, shared finance, and business finance functions. The strategic positioning of the Financial Sharing Center is at the top level. Only when the direction of the entire shared service is planned at the strategic level can the business of the Financial Sharing Center always be consistent with the strategic positioning of the Financial Center.

## 2.Organization

The organizational structure of the Financial Shared Service Center undertakes the strategic positioning. The purpose is to establish a complete organizational guarantee system for the business. Focusing on the strategic objectives of the Financial Sharing Center, continuously reduce costs and improve management and control capabilities to ensure the realization of strategic objectives. It includes organizational design, Operation model, internal organization, etc. On the one hand, the organizational structure of the financial sharing center is closely related to the operating mode. Different operating modes determine the layout of the financial sharing center, which in turn determines the internal organizational form of the financial sharing center. On the other hand, the organization structure is the foundation of business processes and the carrier of operation; the information system provides support for the organization structure; operation management undertakes the management responsibilities of the organization personnel, so that the organization personnel can optimize and play more Features.

## 3.Personnel structure

The personnel structure is based on the further subdivision of the organizational structure, which summarizes the work content of each position, including the purpose of the position, basic responsibilities, etc., and describes the standards and norms of the staff, including the behavior standards of the position, and the competent position. The required knowledge, skills, abilities, personality characteristics, and training requirements for personnel, etc. In terms of personnel selection, in order to give full play to the functions and roles of the financial sharing center, relevant job quotas should be allocated reasonably, and scientific calculation methods should be adopted (the methods of personnel calculation include business analysis, benchmarking and data calculation. Method three) approve the staffing of the posts, clarify the work boundaries through detailed post responsibilities, and maximize the effectiveness of the staff in the post and maximize the value of the staff.

## 4.Process architecture

Process management is a process in which various business processes in an enterprise are refined, and inputs and outputs are organically linked and transformed into each other through standardized operation methods. Complete financial sharing process management can summarize the four links of process goal establishment, process reengineering and organizational structure adjustment, process execution, process optimization and maintenance, and these four links are developed around the



overall strategic goals of the enterprise. Process management is the focus of the construction of the financial shared service center, of which process reengineering is the key. On the one hand, companies need to pay attention to the ways and methods of process reengineering, choose reasonable process combining methods, carry out reforms in a gradual and orderly manner, and make effective coordination in personnel matters, so as to provide employees with excellent development channels and cultivation mechanisms, and avoid the need for process reengineering. There are some negative effects in the process. On the other hand, a standardized and standardized process management system allows the financial shared service center to more effectively control operating costs, optimize the quality of information output, improve the enterprise's ability to respond flexibly, comprehensively improve the enterprise's organizational structure and resource allocation, and greatly improve Customer satisfaction, to achieve the qualitative improvement of the company's economic benefits, and to promote the faster implementation of the company's strategic goals.

#### 5. Information system

The information system is a tool for the implementation of shared services. It includes functions such as service application, automated process engine, interaction center, self-service, shared service level agreement analysis, authority management, business and system integration tools, and knowledge management. The shared information system mainly has two modes: heavy-weight shared service application architecture and lightweight shared service application architecture. The characteristic of the heavyweight shared service application architecture is that the shared service system not only includes the operation and management functions of the shared service, but also includes business functions. The feature of the lightweight shared service application architecture is that the shared service system only includes the operation and management functions of the shared service organization's own business, while providing general ledger, receivable, payable, fixed assets and other functions as a service. The two types of information system architectures have their own advantages and disadvantages. Enterprises should choose according to their own circumstances. Generally speaking, large enterprises are more suitable for lightweight shared service application architecture.

#### 6. Operation Management

Operation management is the management of the functional departments responsible for manufacturing products or providing services in the organization. The objects of operation management are the operation process and the operation system. The operation and management of the financial sharing center includes four aspects: service level agreement, personnel management, operation process management, and information system operation and maintenance and improvement. Financial shared operation management establishes connections with serviced units through service level agreements, strengthens personnel management, continuously optimizes performance, quality, service, standardization and system construction, strengthens the operation and maintenance of the information system of the financial shared service center, and enhances the ability to achieve operational management.

optimize.

#### 7.Change management

Change management refers to the necessary adjustment and improvement management of the internal hierarchy, work process and corporate culture of the enterprise to achieve the purpose of smooth transformation. The main content of change management includes five aspects: strategic change, organizational structure change, technological change, process change, and corporate culture change. The financial sharing center is a major change in financial work. It not only involves concepts, concepts, business models, standard process reengineering, institutional mechanisms, organizational personnel, management and control methods, etc., but also has a significant impact on the business. Therefore, design in each link of the overall structure of the financial sharing center In the process, we must consider the impact of the change and take measures to deal with it.

For the financial shared service center, the global architecture is the top-level design. The person in charge of the financial shared service center should have the corresponding global architecture thinking and architecture ability, and examine the operation and development of the financial shared service from a certain ideological level, so as to form a Construction and operation methods of industry characteristics and enterprise characteristics.

### **3.3 Big data promotes the value of financial shared services.**

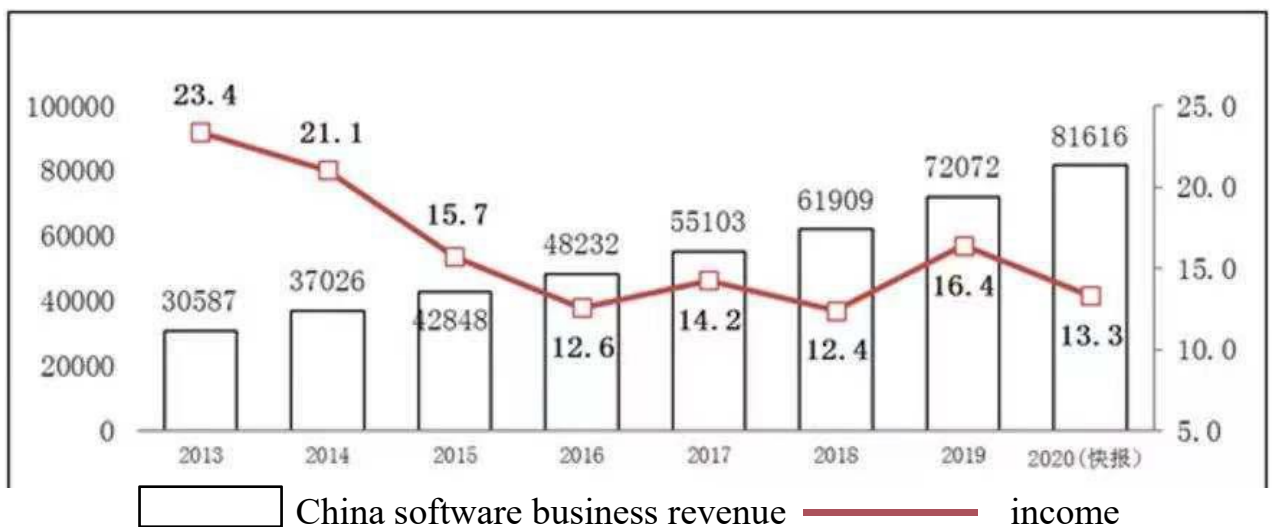
For example, the same standard operating procedures are adopted for all subsidiaries, and redundant steps and processes are abolished; the shared financial service center has all the financial data of related subsidiaries, data aggregation and analysis are no longer time-consuming and laborious, and it is easier to cross-regional , Cross-departmental data integration; professionals in a certain area are relatively concentrated, the company is easier to provide related training, training costs are also greatly reduced, and the recruitment of senior professionals has become affordable. High, provide more professional services. In addition, the "shared service center" model also makes the standardization and update of IT systems (hardware and software) faster, easier to use, and cheaper.

#### Third, support the development strategy of enterprise groups

The company establishes subsidiaries or acquires other companies in new areas, and the financial shared service center can immediately provide services for these newly-built subsidiaries. At the same time, company managers are more focused on the company's core business, and other auxiliary functions are completed through the services provided by the financial shared service center, so that more financial personnel can be freed from accounting and can be used for the operation of the company's business departments. Strategic decisions of management and senior leaders provide high-quality financial decision support and promote the development of core business.

## CHAPTER 4 TECHNOLOGY USED IN THE PROCESS OF DIGITAL FINANCIAL

In recent years, with the emergence of financial robots, the impact of artificial intelligence (AI) on the future accounting profession has aroused many people's worries and concerns[20]. This is a misunderstanding. The accounting positions that can be replaced by AI are all basic accounting positions. From the initial abacus, calculator, computer to the current AI, every tool advancement will greatly improve the efficiency of accounting work, free accounting practitioners from the heavy accounting business, and have more time and energy to do more work. High-level work. Therefore, the development of AI must be a good thing for high-quality accounting talents, not a bad thing. At the same time, as the internationally accepted "business language", accounting is currently the only information system that can systematically reflect the financial status, operating results and cash flow of a micro-subject, behind it is a set of rigorous "professional algorithms." If you don't understand accounting, even if artificial intelligence directly generates a set of financial statements for you, you still cannot understand the information and the business logic behind it, let alone use it effectively. Therefore, the more the economy develops, the more important accounting becomes. The arrival of the era of big data and artificial intelligence will certainly provide a broader growth space for high-quality compound accounting talents.[21]



**Figure6 - China software business revenue**

Note - source: Ban Ban's Service Stack [8]

The era of big data has many positive effects on the financial management of enterprises, which is convenient for enterprises to collect financial information and carry out efficient financial management[22]. Enterprises should analyze market change information in light of their actual operating and development conditions,

establish modern financial management concepts, and better promote the development of corporate financial management. In the context of the era of big data, corporate financial management needs to actively innovate in accordance with the development characteristics of the times and strengthen financial management reforms.[23]

There are more and more voices calling on global business leaders to implement digital strategies. To better understand the impact of digital transformation on the financial function, finance was originally a management discipline, but now its function has been expanded to help organizations improve performance, implement transformation, and achieve organizational strategic goals. The financial department should participate in the new digital strategic plan as soon as possible. This is the key to adequate risk management and compliance management, and it is also a core part of the financial department to strengthen its business leadership. Facts have proved that what financial robots replace is just the least valuable and most tiresome repetitive and cumbersome part of financial work. Big data + financial compound talents [25] who can engage in data analysis will naturally not be eliminated. Enterprises need to be good at analyzing data and mining Information, forward-looking and predictive, financial personnel with both management and service. If the cognition of financial personnel cannot be upgraded, and the traditional financial work mentality is always used to deal with the current big data reforms, they will inevitably be eliminated.

Students can use the business management theories they have learned, combined with business practical experience, to analyze, predict, make decisions, and plan the business activities of various business links in the enterprise, and have the ability to analyze business data and make business management decisions, and cultivate more Senior technical financial talents and strategic financial talent.[26]

With the advancement of technology and the advent of the era of big data, most companies have realized the value of data. The large amounts of data generated by the purchase, production and sales of the enterprise and the functional departments have their value. We are trying to explore whether the application of artificial intelligence technology in enterprises has brought excess profits to enterprises, what data assets the enterprises have, and the ways in which enterprises handle these valuable data assets, and then deepen the understanding of data assets.[27]

The "Shared Service Center" frees corporate managers from the complicated non-core business tasks. Fourth, provide commercial services to the outside world. Financial sharing, companies can also use their own financial capabilities as a service for other companies to use, to provide other companies with professional financial services. At the same time, it also puts forward higher requirements on the quality of corporate personnel, infrastructure construction, and corporate internal communication.[28]

However, shared service centers will also bring changes to enterprises. One of the most direct impacts is financial informatization, accumulating big data, and creating great value, so as to realize the transition from data "mainly storage" to "use-oriented". Change. In this process, the knowledge integration of non-financial

personnel and financial personnel is required. The diversification of the quality of financial personnel has become an essential element.

Regarding the establishment and implementation of the cloud computing financial shared service center of Company H, it is not difficult to find that the company's market strategy does not match the model of financial shared service. Therefore, Company H should actively adjust its market strategy, re-define its strategic objectives and focus on business. Perform a comprehensive analysis on the characteristics, cost issues, and how to improve business efficiency, and then determine the business scope. When determining the business scope, we must also pay attention to the nature of the business, blindly pursuing shared services and unstable demand[29]

It's not advisable to exclude businesses that are under-standard and those that are not standard enough. After careful consideration, the company's senior management redesigned a market strategy that is consistent with the characteristics of the company's financial shared services at this stage. In addition, Company H can fully stimulate the enthusiasm of branches and subordinate units when designing the upper level of the financial shared service center, so that they can participate more in making valuable suggestions, and set a timetable for implementation according to the plan.[24]

The business process of the financial shared service center has a direct relationship with the operating efficiency of the center. Whether the business process reengineering is reasonable and whether the business process is executed in place directly affects the operating efficiency of the financial shared center.[25] This is explained in two aspects: First, as far as the process itself is concerned, because the process designed by H company cannot take into account all aspects, as the company scales rapidly and the business grows rapidly, there will be some business in actual operation. Circumstances that cannot be processed in accordance with the pre-set process. Therefore, in order to solve this problem, it is necessary to sort out and reengineer H company's business process. Moreover, in the process of process implementation, it is necessary to insist on supervision and regular evaluation, focusing on solutions involving cost reduction and efficiency improvement, and continuous optimization, so as to maximize benefits. Second, as far as the personnel are concerned, in the specific business processing process of H company, there will be personal influences that lead to negative results. For example, employees are unfamiliar with the business or negligent at work, etc. How to reduce the human factors Negative effects also need to be considered. In order to better solve this problem, it is recommended that Company H should strengthen the record and control of the key points in the process, keep a record of the implementation of each key point and conduct regular evaluations. In this way, even if there is a human factor problem, It can be found in time and resolved quickly, strengthening the supervision of the actual operation process of the business.[26]

The financial sharing service center of cloud computing needs to be based on big data and relying on information technology to realize financial

realization. Efficient operation of affairs. As we all know, if the financial shared service center built by enterprises wants to run efficiently, it should be the first:

First, the corresponding financial data and information should be stored in the cloud server and sent back and forth between the center and the customer through the Internet.

Therefore, the security of financial information is particularly important. In order to better protect the security of data information, H Company is providing

In financial sharing service, information security should be placed in the first place, and the security of accounting data must be fully guaranteed. One party

In addition, H Company should timely upgrade the security software and update the virus library to prevent virus attacks or malicious attacks. Tampering and other behaviors endangering enterprise information security. On the other hand, Company H can classify and manage different data.

Those involving trade secrets that cannot be shared within a company can be restricted to visitors in an encrypted way, so that users with different identities can be restricted

Operations in the cloud are isolated from each other for security.

## CONCLUSIONS

Financial transformation is mainly completed by real-time accounting and smart finance. Specifically, real-time accounting mainly refers to financial sharing services, from the event library to vouchers, to account books, to financial statements, to data analysis, to reporting, all processes are completed in one go and updated in real time. Smart finance mainly refers to financial robots. Financial robots, financial sharing and financial transformation constitute a "point-line-surface" relationship. Among them, the financial transformation is the "face", which refers to the all-round transformation of the financial strategy, organizational structure, functional positioning, operation process, human resources and information technology of the corporate finance department. Missing components. In order to ensure the organicity and integrity of the noodles, it is necessary to construct first and foremost points.[27]

Due to the widespread application of robotic process automation (RPA), first of all, the organizational structure of the enterprise will undergo major changes. Two new teams will appear in the financial organization, namely the robotic process handling team and the exception handling team. The former is mainly responsible for the daily operation and maintenance of financial robots, including controlling the quality of data sources, scheduling related information, stabilizing the operating environment, and regularly testing internal controls. Since financial robots can only undertake standardized work determined by procedures, some of the more complex exceptions that require human judgment need to be dealt with by the latter. In addition, the exception handling team also needs to qualitatively analyze the report generated by the financial robot, so that the report directly serves the decision-making of the governance layer. Secondly, the composition of the company's personnel will also undergo a major change. Before RPA was widely used, companies needed a large number of accounting financial personnel to perform basic and repetitive tasks such as data collection, voucher filling, document review, and statement entry, and one step went wrong, and one step went wrong. The composition of the entire financial staff is like a pyramid. The basic accounting staff at the bottom are too saturated, and the decision-making staff with an overall view at the top are extremely scarce, which directly makes it difficult for companies to concentrate on developing high-value-added businesses. The emergence of RPA alleviated this embarrassing situation, because financial robots can run according to prepared programs and scripts, and all rule-based standardization tasks can be operated by it. This can not only greatly reduce manual errors and improve work efficiency, but also It can free most financial staff from repetitive and boring work.

In this way, companies can focus on process optimization, risk management, data analysis and other high value-added activities that are conducive to the sustainable development of the company.

Put forward higher requirements on the accounting literacy of financial personnel

Nowadays, the demand for accounting-type financial personnel in enterprises is gradually decreasing, and the demand for business-type financial personnel is increasing day by day, which means that the "pyramid-type" personnel structure will gradually change to the "olive-type".

If the accounting personnel do not want to be eliminated by the times, they must constantly learn new knowledge, understand new policies, and improve their business capabilities, so as to judge and analyze data and make correct decisions by using the profession they have learned.

### 2. Require financial personnel to know information and know technology

With the advent of the era of big data and the widespread application of RPA, companies increasingly favor financial personnel who are good at information technology.

Today, when computers and information systems are so important, once the system goes wrong or goes down, the entire enterprise may fall into chaos. Therefore, enterprises need such talents to ensure the operation, maintenance and continuous updating of information systems.

3. Require financial personnel to have deep insight and excellent strategic foresight. Robots allow some financial personnel to free up time and energy. In order to make this part of personnel transform from value guardians to value creators, the company hopes that such groups can have a holistic view, continue to innovate, and focus on new customers and new customers. Products, new models, new directions and new applications. Such continuous deepening of the value chain can not only create value for the enterprise, but also realize the self-worth of financial personnel.[28]

Reducing the cost of financial accounting For each accounting entity in the group company, the use of shared financial services reduces the cost of separately configuring financial institutions. The accounting entity does not need to purchase financial office facilities separately, which improves the utilization rate of the facilities and reduces the overall fixed cost. The unified procurement of office equipment and software has also improved the bargaining power of enterprises, resulting in economies of scale. Financial personnel serve all accounting entities at the same time, the utilization rate of human resources has been improved, and the number of required personnel has been reduced. Export financial management standards When acquiring or establishing a new accounting entity, the existing



financial management standards can be immediately applied and incorporated into a unified risk management and control system, so that the managers of the new business department do not need to spend too much effort when establishing basic functional institutions , To enhance the mobility and risk control capabilities of corporate restructuring. Improve the quality of financial information. With the help of advanced information technology, the basic financial information of all accounting entities is "produced" in the shared service center through unified and standardized accounting rules. There is no need to correct errors and caliber adjustments during data aggregation, which improves the financial information. Timeliness and reliability. At the same time, through the integrated integration of business and finance, and business-end data integration, non-financial information with management significance is incorporated into the financial management system, effectively improving management capabilities. Promote the transformation of financial functions The financial shared service center frees more financial personnel from trivial basic accounting work, supports the financial function to move out of the background of "after-the-fact accounting", and transform from a transaction processing type to a value creation type.[29]

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**ANNEX 1**  
**"INDIVIDUAL INVESTOR SITUATION SURVEY**  
**FORM QUESTIONNAIRE SURVEY ON THE IMPACT OF BIG**  
**DATA ON CORPORATE FINANCIAL WORK"**

For companies that do not yet use big data methods to manage their company's finances, a questionnaire has been drawn up on the problems that exist in order to investigate, identify and solve problems.

1. Your gender

- A. male
- B. Female

2. Your age

- A. Under 20
- B. 21-30
- C. 31-50
- D. Above 51

3. Is your occupation related to finance?

- A. Yes
- B. no

4. Your position is \_\_\_\_\_

5. How many years have you been in business

- A. Less than 5 years
- B. 5-10 years
- C. More than 10 years

6. The nature of your business is

- A. State-owned
- B. foreign investment
- C. private
- E. Shareholding system
- F. Ownership
- G. joint venture
- H. Sole proprietorship
- I. Limited liability

7. The industry of your company

- A. Agriculture, Forestry, Fishery and Animal Husbandry

- B. Construction industry
- C. Financial Internet
- D. manufacturing
- E. real estate
- F. Transportation industry
- G. Wholesale and retail
- H. Service industry
- I. energy
- J. education
- K. Medical treatment

8. The size of your business

- A. Less than 100 people
- B. 101-500
- C. 500-1000
- D. 1000-3000
- E. Above 3000

9. Do you understand big data

- A. Don't understand
- B. Understand a little
- C. Know very well

10. Has your organization conducted lectures or trainings on big data?

- A. Yes
- B. No

11. Do you think that the current companies that apply big data analysis are mainly

- A. large enterprise
- B. Medium-sized enterprise
- C. small companies
- D. Does your unit's financial shared service center have a performance incentive management system (the unit has not yet built the financial shared service center to fill in the C option)
- E. Have
- F. No
- G. not applicable

6. What do you think is the role of personnel performance management in the sharing center? (The unit has not yet built the D option of the financial shared service center)

- A. Significant motivation for employees
- B. The incentive effect on employees is not significant
- C. No incentive for employees

D. not applicable

7. What do you think of the career development prospects of the Financial Sharing Center:

- A. well
- B. general
- C. No, please briefly explain
- D. not applicable

8. As far as you know, the technologies currently used in the financial work of your company include:

- A. Advanced data analysis and forecasting
- B. Robotic process automation
- C. Cloud computing and software as a service
- D. artificial intelligence
- E. Blockchain
- F. Process remote sensing technology
- G. Visualization technology
- H. Cognitive computing (Note: Cognitive computing is a brand-new computing model that includes a large number of technological innovations in the fields of information analysis, language processing and machine learning, which can help decision makers reveal extraordinary insights from large amounts of unstructured data)

Network computing (i.e. distributed computing)

other

9. What is your understanding of the strategic background, goals and significance of the group company's construction of a financial shared service center?

- A. Don't understand at all
- B. Understand a little
- C. basic understanding
- D. Know very well

10. Do you think the system and process set by the shared service center are sufficiently clear and clear?

- A. The system and process are very clear and clear, and the implementation is in place
- B. The system and procedures are relatively clear and clear, and can basically be implemented in place
- C. The system, process, etc. are not clear enough, and there are some loopholes or ambiguities
- D. The system, process, etc. are unclear and affect work efficiency

11. The status quo of the construction of your corporate financial sharing center

- A. The construction of the financial sharing center is very complete and the results are very good
  - B. The construction of the financial sharing center system has some effects but still needs great improvement
  - C. The construction effect of the financial sharing center is not very good
12. After the establishment of the financial shared service center, how to arrange the Afinancial personnel who originally engaged in accounting positions
- A. Work in the financial shared service center
  - B. Work in other financial positions
  - C. Transferred to non-financial work
  - D. other
13. What do you think is the future orientation and direction of the corporate financial staff after the financial sharing service is implemented?
- A. Do a good job in the preliminary review of financial documents
  - B. Strengthen the analysis of financial data
  - C. Provide more true and reliable financial data for company operation and management
  - D. other
14. As far as you know, in which of the following tasks your company can use existing technology to automate?
- A. Use professional knowledge to make decisions, plan, and innovate activities
  - B. Interact with the company's stakeholders
  - C. data collection
  - D. data processing
  - E. other
15. What are your perceptions of the improvements brought about by the Financial Shared Service Center?
- A. Standardized management is conducive to internal control
  - B. Process optimization is conducive to scientific management and information tracking
  - C. Conducive to electronic management, management and financial data integration
  - D. Able to effectively implement financial policies
  - E. Reduce labor costs
  - F. Reduce financial management costs
  - G. Financial value enhancement
  - H. Optimize the structure of related departments
  - I. Accurate, fast and effective data capture
  - J. Conducive to analysis, business forecasting and role support
  - K. New business profit model
  - L. Efficiency improvement

M. other

16. How do you evaluate the accounting process of the financial shared accounting system?

- A. Very smooth, unified standards, one-time pass
- B. Basically smooth, the standard is basically unified, sometimes it takes 1-2 times to return and resubmit for approval
- C. It is not smooth, the standards are not uniform, and it often takes more than 3 times to return and resubmit for approval
- D. Individual business reimbursement process is very unsmooth, and the standards are seriously inconsistent

17. What do you think are the key influencing factors for the financial shared service center to give full play to its role?

- A. Timeliness of accounting processing
- B. Accounting accuracy
- C. Convenience of communication
- D. Employees' recognition and cooperation with the sharing center
- E. Unified and efficient information system
- F. Management support
- G. High-quality training
- H. Orderly organizational structure
- I. other

18. From a financial point of view, what do you think are the current problems in the internal management of the financial sharing platform?

- A. System stability needs to be improved
- B. There are still inconsistencies in business data standards
- C. The efficiency and accuracy of business processing needs to be improved
- D. Non-uniform and non-standard audit standards
- E. The level of file management needs to be improved
- F. Staff service level and service awareness need to be improved
- G. other

19. After the implementation of the financial shared service center, what do you think are the difficulties faced in the process of financial transformation?

- A. Organization adjustment
- B. Financial staff transformation and transfer
- C. Decrease in the quality of talents (a single work link in the assembly line reduces the difficulty of work)
- D. Resource integration and concentration will bring information security risks
- E. Financial Shared Service Center Team Management
- F. Process Optimization
- G. Information system optimization



- H. Communication mechanism, it is difficult to coordinate individual differences
- I. Performance appraisal
- J. other

20. What are the current financial information systems of your company?

- A. Accounts Receivable Settlement System
- B. Accounts Payable Settlement System
- C. Reimbursement system
- D. Tax declaration system
- E. Input and output invoice management system
- F. Bank-enterprise direct connection, automated transfer system (fund management)
- G. Fixed assets
- H. Cost accounting
- I. OA system including simple financial functions
- J. Other intelligent financial systems:

