Research on the Realization Model of Accounting Information Sharing

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Abstract: Accounting information sharing plays an important role in fully leveraging the resource allocation effect of accounting information and improving economic management. In order to achieve accounting information "counting out one door and sharing resources", this article studies the implementation mode of accounting information sharing. Establish the platform of accounting information, form a vertical connectivity, horizontal interaction, internal integration, national unity, and open and transparent sharing service system of accounting information, and achieve "one platform, five level application" of accounting information. Provide specialized accounting information to government departments through a business integration model. Provide public accounting information to the public through information retrieval mode. Cloud computing is a way of providing users with large-scale and intensive services by treating resources, services, and applications as public facilities. Utilize cloud computing technology to achieve the integration of accounting information resources.

Keywords: Accounting Information Sharing, Accounting Information Sharing Model, Accounting Information Platform, Cloud Computing Technology.

1 INTRODUCTION

Accounting information is important foundational information that reflects economic activities. Accounting information is the guide of resource allocation, a guide of the capital market, and the main carrier of economic information. It plays a significant role in economic management [1]. However, for a long time, there have been many problems in accounting information disclosure and sharing in China. On the one hand, government departments are unable to share accounting information, each acting independently, with different standards, and multiple submissions, making it difficult for regulatory authorities to effectively integrate. On the other hand, the relevance, timeliness, and completeness of publicly disclosed accounting information are poor, which cannot meet the requirements of information users.

In order to change the situation where accounting information cannot be shared, the issue of accounting information sharing has been explored since the 1980s. The Ministry of Finance has proposed the goal of "counting out one door and sharing resources" for accounting information, and has always regarded accounting information sharing as the main goal and overall task of accounting reform and development. In 2016, the Ministry of Finance issued the Outline of the 13th Five Year Plan for Accounting Reform and Development, proposing the establishment of a socialized accounting information public service platform primarily

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focused on disclosing financial report data disclosure [2]. But after nearly forty years of exploration, accounting information sharing is still in its infancy.

The significance of achieving accounting information sharing is significant. Firstly, achieve interconnectivity and information sharing among government departments. Promote a good combination of various regulations and fully suppress accounting information distortion. Secondly, effectively leverage the resource allocation effect of accounting information, improve the macroeconomic regulation system, and make macroeconomic regulation more scientific and effective. Thirdly, as an important component of financial work, promote the integration and construction of financial business systems, promote horizontal integration, vertical centralization, and national systematization, and improve financial governance. Fourthly, provide simple and easy-to-use accounting information to the public and other accounting information users to meet their accounting information needs. Strengthen social management and supervision, and effectively leverage the management role of accounting information. This article studies the implementation mode of accounting information sharing.

2 ACCOUNTING INFORMATION SHARING MECHANISM

2.1 Sharing Method of Accounting Information

According to the goal of "counting out one door and sharing resources" in accounting information, accounting information platforms will be established at all levels of financial departments at the county level to comprehensively collect accounting information from various units within the region. By reviewing, summarizing, and analyzing, and collecting, storing, and reporting information level by level, establishes county-level, city-level, provincial-level, and national accounting information platforms. Establish comprehensive accounting information sharing service system with vertical connectivity, horizontal interaction, internal integration, national unity, and transparency. Implement "one platform, five level application" for accounting information [3] .See Figure 1.

A platform refers to a national accounting information platform. Taking county-level accounting information platforms as nodes gradually integrate accounting information resources and establish a unified national accounting information comprehensive service platform. The fifth level application refers to the use of accounting information platforms to achieve the sharing and application of accounting information among government departments at county, prefecture, city, provincial, and national levels, as well as the public. Through vertical integration, achieve vertical accounting information sharing among government departments at all levels of the country, province, prefecture, and county. Through horizontal interaction, achieve horizontal accounting information sharing among various government departments in the region. Utilize the Internet to provide information services to the public.

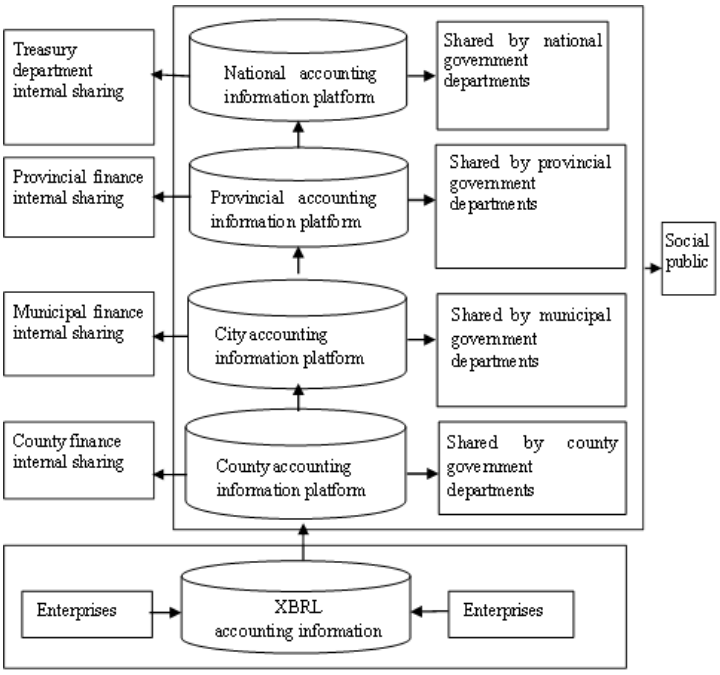

Figure 1. Sharing mode of accounting information

Firstly, through vertical integration, the accounting information of the financial department can be collected and shared step by step. Taking counties as nodes, comprehensively collect accounting information from various units within the region. Review, summarize, and analyze accounting information. Submit the information to the superior financial department to achieve level by level collection and vertical sharing of accounting information. By vertically connecting, establish accounting information databases at all levels of financial departments to address issues such as decentralized management and non-sharing of accounting information. Ensure that accounting information is relevant, reliable, and complete through data review.

Secondly, through horizontal interaction, achieve the interconnection and exchange of accounting information between the financial department and other relevant government departments. The accounting information required by relevant government departments is uniformly provided by the finance department and extracted directly from the accounting information platform. Achieve the goal of "counting out one door and sharing resources" of accounting information within the region, and solve the problems of multiple submission of accounting information, different caliber, decentralized management, and independent governance. Achieve cross departmental regulatory information sharing and promote effective integration of various regulatory measures.

Thirdly, through internal integration, achieve the integration of accounting information and related business within the financial department. The accounting information required for various internal businesses of the financial department is provided uniformly by the accounting information platform, such as budget management, financial supervision, centralized treasury payment, and other information, to achieve the integration of accounting

information and related businesses, and promote the integration and construction of business systems. The problem of internal business separation within the finance department is solved. The internal accounting information of the financial department to be "counting out one door and sharing resources" is realized, to enhance the scientific and effective nature of macroeconomic regulation decisions, and improve the level of financial governance.

Fourthly, through national unification, meet the needs of accounting information users such as the public. Establish a national unified standard system for sharing accounting information, including compilation requirements, data structure, and storage format. Solve issues such as data standards and formats to facilitate the acquisition, exchange, and sharing of accounting information. On the basis of sharing accounting information among government departments, other accounting information users such as the public can search for accounting information through the internet. Meet the needs of accounting information users such as the public, improve the efficiency of social management and public services, and improve the effectiveness of accounting information governance.

Fifth, through openness and transparency, make accounting information easily accessible to the public and other information users. Obtain accounting information through various means such as information retrieval through websites and other channels, and obtain diversified and personalized services. Relevant government departments release accounting information quality inspection announcements and other information to the public through accounting information platforms.

2.2 Service Mode of Accounting Information Sharing

2.2.1 Users of Accounting Information and Their Demands

According to the characteristics of the users of accounting information, the users of accounting information are divided into three categories: financial departments, government departments, and other stakeholders such as the public. Accounting information sharing needs to serve economic management and serve them simultaneously. The finance department is responsible for managing finance and accounting work and is the main user of accounting information. The relevant government departments include tax departments, market supervision and management departments, securities regulatory departments, state-owned asset supervision committees, and statistical departments. They use accounting information according to their respective functions as the basis for macro management and regulation. The public includes investors, creditors, business managers, employees, suppliers, customers, intermediaries, and industry associations. They have the right to understand the business operation status of the business. Government departments such as finance are relatively concentrated, while the public is more dispersed.

According to the requirements of different accounting information users, we divide accounting information into public information, special information and interactive information.

a) Public information. This includes basic information such as accounting statements, as well as public information released by various government departments, for the public and all accounting information users to access.

b) Special information. According to their own management functions, government departments use relevant information for market regulation and macroeconomic regulation,

such as tax payment information from tax authorities, for internal use by relevant government departments. Specialized information includes both original accounting information and analytical information. Analytical information refers to the comprehensive information obtained by summarizing and analyzing enterprise accounting information, mainly providing decision-making support for macro management and financial departments.

c) *Exchange information.* The relevant information disclosed by government departments for other government departments to share such as the quality inspection of accounting information disclosed by financial supervision departments, is directly accessible to securities, auditing and other relevant departments, promoting a good integration of supervision and increasing the effectiveness of macroeconomic regulation.

2.2.2 Service Mode of Accounting Information Sharing

According to the characteristics of the needs and usage permissions of accounting information users, different sharing modes are adopted to meet the needs of accounting information users. Provide specialized accounting information to government departments through a business integration service model. Provide public accounting information to the public through a search mode l [4]. See Figure 2.

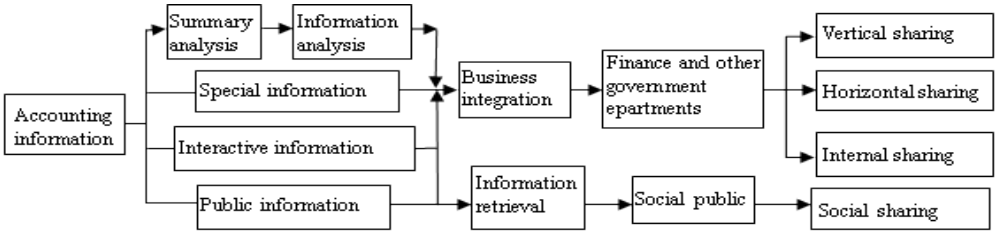

Figure 2. Service mode of accounting information

a) Business integration service pattern. The relevant business systems of government departments such as finance are directly integrated with the accounting information platform to achieve information interconnection and exchange. Share accounting information through the XBRL standard data interface to ensure accurate, timely, and complete information sharing.

b) Information retrieval service pattern. The public, including intermediaries, use information retrieval methods on websites to obtain accounting information.

To facilitate the use of different information users, accounting information sharing is divided into vertical sharing, horizontal sharing, internal sharing, and social sharing. See Figure 2.

Vertical sharing enables government agencies to share accounting information between superiors and subordinates. Vertical sharing is divided into two methods: top-down and bottom-up. The higher-level government departments use the accounting information submitted by the lower level government departments in the region to conduct macro regulation and decision-making. Lower level government departments utilize the comprehensive information released by higher level government departments to understand and grasp the comprehensive situation of the local area within the same level region.

Horizontal sharing enables accounting information to be shared among government departments at the same level. For example, the audit department and the finance department share accounting information with each other. Different government departments have specific work; have their own needs for accounting information. Currently, there are problems with multiple submissions and varying standards of accounting information in China, and there is a lack of information sharing among government departments. The main problem that needs to be solved in information sharing is to achieve horizontal sharing and interconnection of government departments' information, and to enhance the synergy of macroeconomic regulation.

Internal sharing enables the integration of accounting information with relevant business within government departments, and the sharing of relevant business within departments, also known as business integration. Accounting information is an important basis for macro management and regulation by the government departments concerned, and is the fundamental information for internal business operations of the government departments concerned. Within the financial department, budget management, centralized treasury payments, and financial supervision are all directly related to accounting information.

Social sharing enables the public and other information users to easily access accounting information, achieving transparency in accounting information disclosure. On the one hand, improve fiscal transparency and effectively leverage the governance effect of accounting information. On the other hand, build a service-oriented government to serve the construction of a market economy.

3 RESOURCE INTEGRATION OF ACCOUNTING INFORMATION SHARING

Accounting information can only be shared by collecting and integrating it. Compared to listed companies, accounting information platforms have a much larger scope of information disclosure. The integration method of utilizing accounting information resources of listed companies cannot meet the functional requirements of sharing accounting information. This article proposes a method for integrating accounting information resources based on cloud computing.

3.1 Overview of Cloud Computing Technology

3.1.1 Concept and Characteristics of Cloud Computing Technology

In the traditional information technology model, users not only need to purchase hardware, software and other infrastructure, but also need to be equipped with specialized software and hardware maintenance personnel. If a service provider can provide software and hardware rental services, it not only saves the cost of purchasing software and hardware facilities, but also avoids complex hardware and software maintenance.

Cloud computing is a way of providing users with large-scale and intensive services by treating resources, services, and applications as public facilities. As long as users are connected to the internet, they can use hardware, software, data and other resources on the "cloud" end at any time. Narrowly speaking, cloud computing is a network that provides

resource services, allowing users to access resources on the "cloud" end at any time. Just like a power plant, users can use electricity at any time without having to purchase their own generators and other facilities. In a broad sense, cloud computing is an internet-based hardware, software, and information service, and the shared pool of such service resources is called "cloud". Cloud computing integrates many resources for unified management, scheduling, and control, providing services to users [5].

The core idea of cloud computing technology is to integrate hardware, software, and data resources dispersed in different geographical locations through network connections, forming a virtualized computer resource pool for unified management and scheduling, providing services to users, enabling them to use them on demand like public service facilities such as water and electricity [6].

At present, cloud computing has been applied in many fields, such as Baidu Cloud, email, Alibaba Financial Cloud, and so on. The services provided by cloud computing to users are mainly divided into three types, including Infrastructure as a Service IaaS, Platform as a Service PaaS, and Software as a Service SaaS. The main advantages of cloud computing are cost saving, strong scalability, resource sharing, Storage security, and ease of use.

3.1.2 Security of Cloud Computing

To meet users' requirements for information security, cloud computing provides three different deployment solutions, including public, private, and mixed clouds.

a) Public cloud. Public cloud is built by service providers to build infrastructure, integrate cloud virtual resource pools, and provide services to multiple users. Users do not need to purchase complex devices and can use them through the internet. The main characteristic of public cloud is its low user cost, which is suitable for users who unconditionally set up private clouds or have low requirements for software and hardware environments. Users do not need to purchase various complex hardware and software, nor do they need to consider issues such as the security of the operating environment. Through the Internet, they can dynamically, flexibly, and self-service access resources in the public cloud, with high cost-effectiveness. However, public clouds are managed and controlled by service providers, and users cannot directly control cloud resources. Public clouds usually cannot meet many security regulatory compliance requirements, and may not be suitable for users with high requirements for information security and confidentiality.

b) Private cloud. Private clouds are built by service providers or units themselves to provide services specifically for a particular unit. Private clouds can be built by the unit itself, deployed within the unit or in a hosting location, or built by service providers. The resources in the private cloud are only shared within the unit and cannot be accessed by external users. Private clouds can be managed and operated by units themselves or service providers, and users have high control over cloud resources. The security, confidentiality, and service quality of data can be better guaranteed, making them suitable for applications with high data security requirements. However, all software, hardware, and other facilities in private clouds need to be purchased by one, and maintenance personnel need to be equipped, resulting in relatively high construction costs.

c) Mixed cloud. Mixed cloud is a combination of public and private cloud services. In cloud computing technology, users can build their own private cloud and also use the public cloud provided by service providers. The combination of these two service methods constitutes mixed cloud. A mixed cloud combines the advantages of both public and private clouds.

3.2 Basic Ideas of Accounting Information Resource Integration under Cloud Computing Technology

Cloud computing technology integrates software, hardware, and data resources dispersed in different geographical locations through network connections for unified management and scheduling, providing services to users. This service method provides an effective way for the integration of accounting information resources. The basic idea for integrating accounting information resources under cloud computing technology is as follows.

3.2.1 Distributed Storage, Centralized Management

The resources of accounting information sharing come from grass-roots enterprises and are distributed in all counties and regions of the country. Accounting information is widely distributed and has a large amount of information. It is very difficult to collect and integrate it in a certain time.

Cloud computing technology integrates hardware, software, and data resources dispersed in different geographical locations through network connections for unified management and scheduling, providing services to users. This service method provides an effective way to integrate accounting information resources. The basic idea for integrating accounting information resources under cloud computing technology is as follows.

With cloud storage technology, enterprise accounting information can be stored in provincial financial departments without all transmission and storage being centralized. By establishing an accounting information foundation cloud in various provinces, it will be integrated into a national accounting information cloud. On the one hand, it avoids various problems caused by centralized data transmission and storage, and improves information processing efficiency. On the other hand, it is conducive to the horizontal sharing of accounting information within the province. For some developed regions, accounting information can also be stored in prefectures to better improve information processing and sharing efficiency.

3.2.2 Unified scheduling and Resource Sharing

Cloud computing integrates data resources distributed in different geographical locations and devices, manages and schedules them uniformly, adopts unified information security and sharing service strategies, and provides accounting information sharing services for different users. Users don't need to worry about where the data is stored; they can share accounting information from enterprises across the country through the internet. This approach avoids issues such as data inconsistency and information security caused by decentralized data management, and provides guarantees for achieving the goal of "counting out one door and sharing resources".

3.2.3 Centralized Control to Ensure Safety

Cloud computing provides three different deployment solutions: public cloud, private cloud, and hybrid cloud, providing technical support to ensure the security and confidentiality of information.

According to the goal of accounting information sharing, accounting information resource sharing in the cloud computing environment adopts a distributed storage, unified management, centralized control, and decentralized service approach. The accounting information platform adopts a hybrid cloud solution, where private clouds mainly provide services to relevant government departments, while public clouds mainly provide services to other stakeholders such as the public to ensure control of information access permissions and improve information security and confidentiality.

According to the management functions of government departments, private clouds can be further divided into financial department private clouds and government related department private clouds. Among them, the private cloud of the finance department mainly provides services for the finance department, including basic accounting information of enterprises and public institutions, as well as relevant information required by various business systems within the finance department. The private cloud of government departments mainly provides services for government departments, including relevant business information required for their management functions.

3.2.4 Dynamic Expansion to Reduce Investment

Cloud computing can achieve dynamic and scalable scalability, not only adding hardware facilities according to user needs, but also expanding functions and services.

The construction of an accounting information platform is a complex project, and the implementation of information sharing functions needs to be simplified and gradually improved. Therefore, the scalability of cloud computing provides favorable conditions for the overall design and step-by-step implementation of accounting information platform construction.

Cloud computing technology can fully utilize the existing hardware and software infrastructure of the financial department. On the one hand, it can save costs and reduce investment, and on the other hand, it is conducive to improving construction efficiency.

3.3 Implementation Method of Accounting Information Resource Integration under Cloud Computing Technology

For the purpose of "counting out one door and sharing resources" in accounting information, according to the sharing mechanism of accounting information, the construction of accounting information platforms takes the county as the node and the province as base. Cloud computing technology is used to gradually integrate resources of accounting information, and four levels of accounting information platforms are established at the county, city, province, and national levels to provide services for accounting information users [7]. As shown in Figure 3.

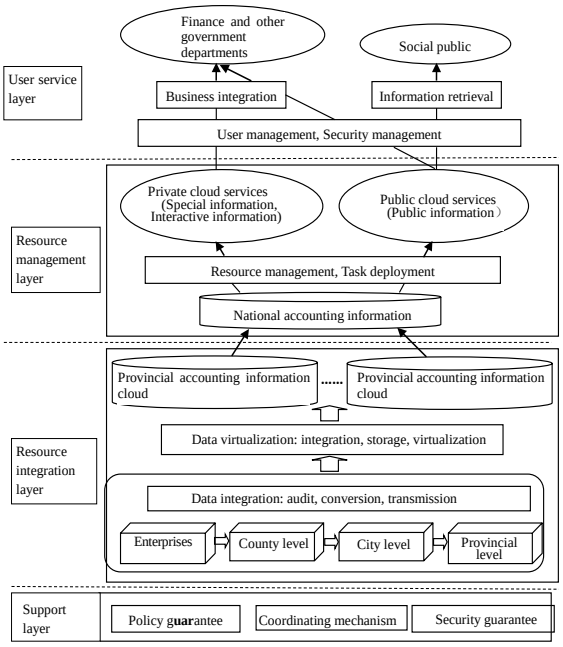

Figure 3. Integration mode of accounting information resources

The accounting information platform in the cloud computing environment is mainly composed of four parts: user service layer, resource management layer, resource integration layer, and security layer.

3.3.1 Support Layer

The security layer mainly provides security, legal, standard, and policy guarantees for accounting information sharing, including policy guarantees, coordination mechanisms, and security guarantees.

a) Policy guarantee. The information shared by accounting information comes from enterprises, with information users including relevant government departments and the social public. The collection and sharing of information cover a wide range. Therefore, it is necessary to formulate sound policies in order to achieve the purpose of accounting information sharing. The main content includes enterprise accounting information reporting mechanism, review mechanism, service mechanism, security guarantee mechanism, and supervision mechanism.

b) Coordination mechanism. Government departments have different requirements and responsibilities for accounting information. Accounting information sharing and sharing have changed the traditional channels and utilization of accounting information. Therefore, it is necessary to establish a coordination mechanism between government departments, including the sharing content and transmission methods of information between departments, in order to achieve the interconnection and exchange of accounting information between government departments and achieve the goal of accounting information sharing.

c) Security guarantee. To ensure the security of accounting information, information security measures are formulated from both institutional and technical aspects, including user permission control, data storage management, information security monitoring system, and emergency response measures.

3.3.2 Resource Integration Layer

The resource integration layer is responsible for the integration of resources of accounting information. Mainly collecting and integrating enterprise financial report information [8]. The accounting information of enterprises is submitted to the county-level finance department, which integrates the accounting information of counties, cities, and provinces step by step, and migrates to a virtualized environment to form a "provincial-level accounting information cloud". The fusion of various provincial-level accounting information clouds forms a "national accounting information cloud".

The resource integration layer is mainly divided into two parts: data integration and data virtualization. Data integration is responsible for reviewing the accounting information submitted by enterprises, converting the format according to the XBRL standard specifications, and then transmitting, integrating, and storing it level by level. Data virtualization aggregates various distributed resources under cloud computing technology and stores them in cloud computing resource pools, preparing for the use of information resources.

3.3.3 Resource Management Layer

The resource management layer mainly includes resource management and task allocation for cloud computing. Resource management is responsible for balancing cloud resource nodes, preparing user services, and determining which information resources enter the public cloud service system and which information resources enter the private cloud service system to ensure the security of accounting information resources.

Task deployment is responsible for scheduling and executing resource use tasks submitted by users, so that resources can efficiently provide services to users.

3.3.4 User Service Layer

The user service layer mainly provides services to users and is responsible for user management and access control. Through identity authentication, determine the type and usage permissions of users, provide corresponding services according to different service modes, and control the content accessed by users through access permissions to ensure the security of information.

a) Financial department. Accounting information is the basic information of the relevant business of the financial department, including budget management, financial supervision, and so on. The platform of accounting information provides services for the financial department through business integration. The accounting information required for the relevant business of the financial department can be obtained directly from the platform of accounting information through data interfaces, achieving the integration of accounting information and related businesses.

b) Relevant government departments. Relevant government departments. The platform of accounting information provides services to government departments through a business integration service model. The accounting information required for government departments' related businesses is directly obtained from the accounting information platform through data interfaces, achieving the interconnection and sharing of accounting information between financial departments and government related departments.

Government departments such as finance can publish relevant business information to private clouds for sharing among other relevant government departments, achieving regulatory information sharing among government departments.

Relevant government departments such as finance can also release public information related to regulation to the public cloud for the public and other information users to access. For example, the Ministry of Finance regularly issues accounting information quality inspection announcements, etc.

c) The public. The platform of accounting information provides services to the public and other accounting information users through the service model of information retrieval. The public can access public information in the public cloud through the internet through devices such as computers and mobile phones.

4 IMPLEMENTATION AND APPLICATION OF ACCOUNTING INFORMATION PLATFORM

The establishment and operation of the platform of accounting information should be led by the Ministry of Finance, with the participation of financial departments at all levels and the cooperation of other government departments. The market can play a supporting role. The construction of the platform of accounting information should be planned as a whole, implemented step by step, based on provinces, piloted first and then promoted, simplified first and then complex, and gradually improved. Develop relevant policies and regulations to ensure the construction and operation of the platform of accounting information. Coordinate the relationship between accounting information platforms and enterprises. Develop corresponding software.

We should deeply tap the value of accounting information resources, improve the utilization of accounting information resources, and better provide accounting information for government departments and the public.

5 CONCLUSION

Accounting information sharing is of great significance for fully leveraging the resource allocation effect of accounting information and improving economic management. This article studies the implementation mode of accounting information sharing to achieve accounting information "counting out one door and sharing resources". Establish an accounting information platform to achieve a "one platform, five level application" of accounting information, forming a vertical connectivity, horizontal interaction, internal integration,

national unity, and open and transparent accounting information sharing service system. Provide specialized accounting information to government departments through a business integration model. Provide public accounting information to the public through information retrieval mode. Utilize cloud computing technology to achieve the integration of accounting information resources.

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