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Electronic management of enterprise accounting files under the condition of informatisation

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Abstract: With the rapid development of computer information technology, the work of accountants has gradually evolved into an electronic trend and the management of accounting files has also undergone great changes. Combining with the current development trend of informatisation, this paper discusses the electronic management mode of enterprise accounting files under the condition of informatisation. Combined with the latest information technology, an enterprise electronic accounting file system is established and the research and development system is compared with the traditional paper accounting file management. The results have shown that the retrieval and query time of traditional paper accounting files is close to 2 hours. After the implementation of the electronic accounting file system, the retrieval and query time of files can be completed in only 2 minutes, and the query efficiency of files has been increased by nearly 60 times.

Keywords: accounting files; system development; financial management; electronic management.

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1 Introduction

With the wide application of new information technologies such as sensing technology, computer and intelligent technology, communication technology, and blockchain technology, coupled with the rise of e-commerce, the development trend of digitalisation has become increasingly prominent. Electronic accounting Internet digitisation is gradually replacing traditional accounting computerisation. The paperless electronic accounting file management method would gradually replace the traditional accounting file management mode such as manual printing of paper materials, sorting and archiving of paper materials. The usage of an electronic accounting file management system

improves data entry, compliance, automation, accuracy, security, remote accessibility, reporting, cost savings and user assistance, all of which contribute to better firm financial management. The implementation of electronic management accounting files in enterprises can not only reduce management costs, save resources, improve the efficiency of financial management, and reduce the workload of financial staff, but also promote the sharing of information resources. However, many enterprises have not yet realised the informatisation of accounting files, and there are many problems. Therefore, this paper has studied the electronic management method of enterprise accounting files from the perspective of informatisation.

The current research on enterprise accounting file management is mainly as follows. Bondarenko (2019) discussed controversial aspects such as railway transport development management strategies and accounting and control systems. The integration of all information flows such as electronic records management, and electronic financial and management reporting is achieved by automation of accounting, control and management processes (Bondarenko, 2019). Muteti et al. (2018) conducted a survey on accounting records management of 250 small businesses in Makueni County, Kenya, using a semi-structured questionnaire. The results have shown that there are serious problems with the management of small business accounting records in Makueni County. In this regard, the introduction of the information management system is proposed to make the management of accounting files of enterprises informatisation. At the same time, the state, county government and other relevant departments should strengthen their support (Muteti et al., 2018). Through an in-depth analysis of the accounting files of early limited liability companies, Edwards (2019) explored the steps that early companies took in dealing with fixed assets to improve understanding of challenging issues such as how early Limited Liability Companies (LLCs) can best do accounting. Floştoiu (2019) already considered that the accounting file information has occupied a very important position in the economic information system architecture and has the highest certainty. Moreover, the possibility has been provided for the accurate representation of economic phenomena and processes, both at the micro-level and at the macro-economic level. That is to say, accounting file information is one of the most important pillars of formulation, argumentation and decision-making. These studies have fully demonstrated the importance of accounting archives management and proposed solutions to the problems existing in archives management. However, there are relatively few studies on the electronic management of enterprise accounting files.

Under the condition of informatisation, many problems existing in traditional accounting file management can be solved easily, and the research on informatisation is mainly as follows. Li et al. (2018) proposed an accounting informatisation evaluation method. First, the evaluation index system is constructed from the aspects of strategic positioning, infrastructure construction, accounting informatisation implementation, informatisation guarantee and application efficiency. Then an entropy and cross-entropy method based on intuitionistic fuzzy sets has been proposed to derive the weights of experts to reduce the error caused by personal bias. In Intuitionistic Fuzzy Sets (IFS), which expand classical fuzzy sets by including hesitation, entropy and cross-entropy approaches are helpful. Entropy in IFS quantifies uncertainty and facilitates data analysis and decision-making. Cross-entropy measures IFS dissimilarity and aids in decision-making and modelling. The indicator weights have been combined with weighted scores to obtain evaluation results. Finally, the feasibility of the method has been demonstrated through a case of accounting information evaluation (Li et al., 2018). Lakhno et al. (2017) proposed an information-based object protection control system architecture. The system has an intelligent support subsystem for making decisions on the operational management of network protection. In particular, the proposed architecture can be used in cases where knowledge about the protection status of informative objects is incomplete. Wang and Yang (2019) expounded on the achievements made in the construction of agricultural informatisation in Jiangsu Province and put forward the problems existing in the construction of agricultural informatisation, to analyse the reasons for the problems. Specific countermeasures to strengthen the construction of agricultural informatisation in Jiangsu have been put forward, which can guide the construction of agricultural informatisation and promote the development of the agricultural economy in Jiangsu (Wang and Yang, 2019). Zhang (2018) thought that the first thing to do to improve classroom efficiency was to reform the traditional English classroom teaching evaluation system. To this end, a new evaluation framework for college English classroom teaching in the context of the new information age is proposed, hoping to contribute to improving the efficiency of college English classroom teaching. Data inaccuracy, redundancy and security threats are problems with traditional accounting file management. Automation, centralised databases, strong access restrictions, encryption, audit features and effective reporting tools are examples of solutions.

The digitisation of accounting information file management is also the development trend of enterprise financial management, and the development of accounting information systems and other network systems is also inseparable from the digitisation of accounting information files. However, the large number of paper files is not compatible with the development of digitalisation and affects the function of the enterprise accounting information system in all aspects. This reduces the speed of electronic offices to a certain extent, greatly reduces the efficiency of corporate finance, and thus increases production costs. Therefore, it is imperative to gradually implement paperless financial information and improve the financial management ability of enterprises.

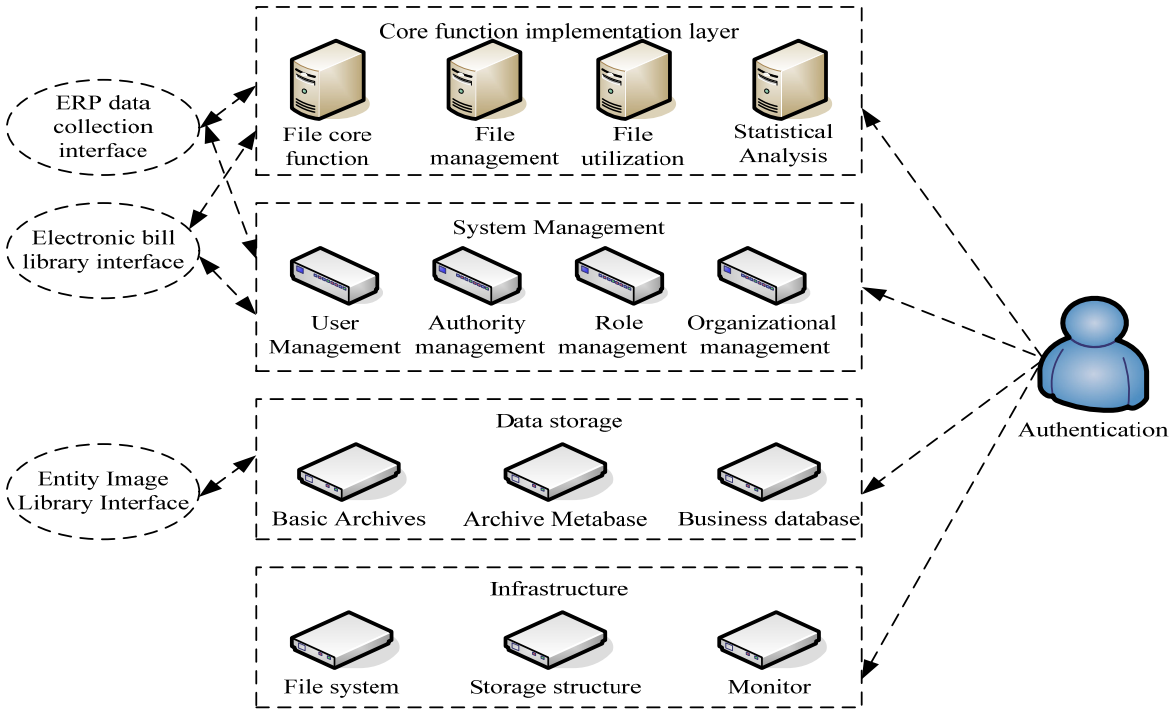
2 Electronic management method of enterprise accounting files

After the in-depth study of the enterprise's financial management, the paper has carried out the design and system development of the electronic management system of the enterprise's accounting files. In the early stage of system development, the enterprise structure of the enterprise head office and branch offices is taken into account. After that, an overall planning of the archives management system and its functions is carried out. Then, the project and system development are implemented according to the layers and steps (Al-Khasawneh, 2022).

From the perspective of the 'full-life cycle' theory of electronic documents, a complete electronic accounting file management system should be established, and its functions should cover all corporate accounting activities. A system should carry out validation tests, purge data, provide error-handling mechanisms, keep audit trails, limit access, apply version control and train staff to guarantee data correctness and integrity. In the early stage of the system, each module is developed separately, and then each module is connected with the corresponding data interface, followed by debugging so that the corresponding service functions can be realised on the premise of meeting the requirements. The development of the electronic accounting file system is carried out in three steps. The first step is the development of system interfaces, which mainly include interfaces such as ERP data collection, electronic bill library and entity image library. ERP data-collecting interfaces increase user experience, real-time entry, technology, standardised forms and data quality, rapidity and effectiveness. These interfaces use standard data calls to facilitate subsequent secondary development and debugging. Common data calls must be used in system interfaces to make later secondary development and debugging easier. It guarantees uniformity, reusability and transparent documentation, making it simpler to find and fix problems during development. Version control and scalability are additional benefits that make expanding and maintaining the system easier. The second step is the identity authentication of the accounting file system and the security management of each part of the interface. The electronic signature technology of hash algorithm and asymmetric encryption is used to ensure that the identity of the visitor can be reasonably authenticated (Sayed, 2019; Anusakumar et al., 2017). A login record analysis mechanism is established in the background. When a user logs in, the system automatically records the logged-in IP, location, number of times and personnel. An organised procedure, encompassing project planning, needs assessment, system selection, evaluations, education, pilot rollout, data migration, change administration, installation, monitoring, assistance, feedback and conformity, is needed for deploying a new system across locations. At the same time, the system has also developed an automatic log analysis function, which can restrict abnormal logins and remind users and mobile clients, in real time, thereby effectively preventing malicious intrusions. Automatic log analysis tools keep track of network activity and system logs in real time, looking for abnormalities, threats and context for security events to improve an organisation's overall security posture. The third step is the core file management function of the system, which includes four levels: the lowest level is the project infrastructure of the file system, storage structure, monitoring, etc. The penultimate layer is the data storage layer, which is connected to the entity image library. The physical image data transfer is archived in the base archive. Archives are kept on the file server, while the metadata database holds the raw data of the archives. In addition, this layer provides database backup functionality. The second layer is the management of the accounting document system, which mainly manages users, permissions, roles and organisational structure. The first layer is the realisation layer of related core functions, including the file management function, file utilisation function and statistical analysis function (Hiebl and Richter, 2018; Louis et al., 2022). As shown in Figure 1, the overall framework function of the electronic accounting file system is shown.

The technical framework of this research and development of an accounting file management system can be divided into the front-end part and the server-side part. The front-end framework and front-end control are used for the front-end of the APP software system, and the server side adopts the hierarchical deployment mode. Screen size, touch interaction, responsive design, navigation, offline capability, performance optimisation, push notifications and hardware integration all have an impact on the User Experience (UX) of the front-end interface of an App software system. Each of them is divided into four levels to complete the role of load balancing, web service, production scheduling service capability and storage system (Niu et al., 2021).

Figure 1 General framework function of electronic accounting file system (see online version for colours)



There are three service modes for load balancing in the network server layer. The solution of the accounting file management system is usually to choose the router entity model to meet the application requirements of the system and realise the reasonable routing of the system requirements. The router entity model distributes incoming network traffic using load balancing computations, health tracking, identity determination, variable expanding, content-based transportation and security features to maximise system performance and dependability. It solves the problem that the system can still effectively provide response data when it meets the parallel requirements. When the program was put into operation, the stress test was started and the data test confirmed that this method can solve the network security management needs of financial information of large, medium, and small companies (Won and Lee, 2021). Access restrictions, encryption, firewalls, vulnerability management, monitoring, backup and other security methods can be implemented to improve server data security and decrease unauthorised access and data breaches.

The web service in the server-side layering adopts the mature technology framework. A solid, well-recognised and established set of technologies and practices with a track record of accomplishments is referred to as a mature technological framework. It delivers interoperability, cost-effectiveness, scalability, security and dependability. It's crucial to describe these characteristics in research to emphasise the framework's benefits and applicability for particular applications. It is convenient for business personnel to quickly develop exclusive Web applications, which realises the automatic expansion of Web applications and distributed session control; for the development of the WEB project server side, the MVC three-tier framework of SSH architecture is used. By dividing applications into Model, View and Controller levels, the MVC three-tier framework in SSH design improves system scalability and maintainability while streamlining maintenance, collaboration, testing and debugging. In this study, the main purpose of using this layered framework is to release the pressure of development, so that the project can quickly realise the technology launch while maintaining security and stability. Control access, encryption, data backup, audit trails, integrity checks, version control, secure file transfer, security training, data categorisation, routine updates, vendor evaluation and incident response plans should all be used by organisations to ensure the security of electronic accounting files. The advantages of this architecture allow the core technology developers of the web front-end to spend more energy on using, summarising and integrating various modules. These modules are updated and enriched according to specific project needs. At the same time, the standardisation of the project development process is also beneficial to the operation and management of the later stage of the project. In addition, taking into account the company's recruitment, employment, system maintenance and other issues, the corresponding technical documents were collected as the basis to make the operation of new employees simple and easy (Levchenko and Sadykova, 2021; Mamedova and Urintsov, 2021).

At the architectural level, the security architecture of the system adopts Apache Shiro. For enterprise application applications, Apache Shiro is a flexible security framework that offers pluggable authentication mechanisms, role-based access control, support for cryptography and connection with business technologies. Its ongoing development, interoperability across platforms, open-source nature and thorough documentation add to its attractiveness. It provides a general security browsing solution for

enterprise APP application software. According to Subject, Security Manager, Realms components, provide identity authentication, authorisation, login password and session manipulation for enterprise development electronic device financial accounting and database management.

For the system cache service, the Redis cache file database system is used. The K.V. time series database system is used. It can store various types of values. While K.V. time series databases are specialised systems optimised for effective storage, querying, and analytics of time-stamped data, Redis is a flexible data store and cache that can handle a variety of data types, including time series data. To ensure the high efficiency of the system, the retrieval information content of the electronic accounting files would also be temporarily stored in the operating memory of the system. Data validation, updates in real-time, caching, cleaning, concurrency control, safety, backup, upkeep, surveillance, automatic validation, user training and overall optimisation are key procedures for preserving correctness in accounting files. According to the customer's access situation, it can quickly respond, thereby enhancing the high availability and response timeliness of the database system, improving the user experience and reducing the consumption time. A Content Delivery Network (CDN) ensures speedy response times and an enhanced user experience for international websites and apps by optimising user access by taking into account variables like location, network circumstances, device type and browser capabilities.

In the persistence layer architecture, Mybatis is introduced into the subject research. This architecture is suitable for custom SQL, stored procedures, high-end projection, etc. It can provide database visitors with the required information through normalised pages, and at the same time solve the problem of routers in the data layer at high speed and high concurrency.

At the document service project level, a distributed file system is used to store a large number of files. A data store has several backups, and several machines and equipment balance the work pressure of reading and writing. The amount of storage is very easy to expand.

At the scheduling level, the system has completed the functions of specification, standard and practical scheduling and can perform tasks normally.

The deployment scheme used by the system is the standard deployment scheme. Consistency, fewer mistakes, quicker deployment, enhanced teamwork, scalability, security, version control, documentation, testing, regulatory adherence, cost-effectiveness and continuous improvement are just a few advantages of standard deployment methods in IT and software development. It must use hardware configuration such as a network firewall, APP website server, data server, document network storage, etc. Figure 2 shows the specific process of the standard deployment scheme.

Figure 2 Standard deployment scenario (see online version for colours)

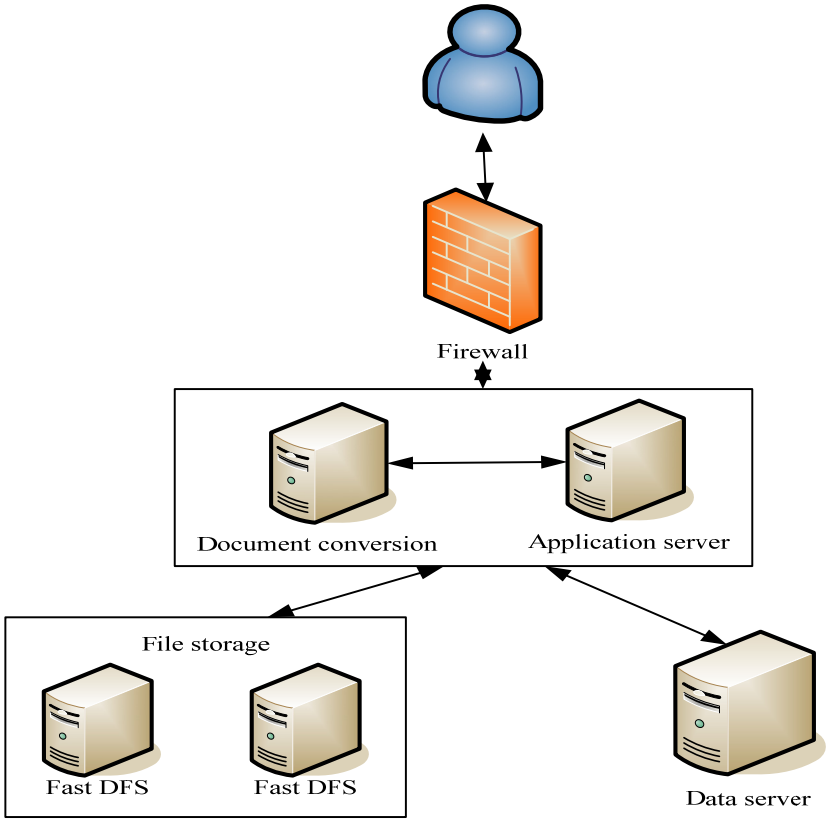


Figure 3 shows the topology of the electronic accounting file system. It can be seen that users can use browsers to access system data. A firewall is set between the user and the system. Implement principles such as default denies rules, whitelisting, port limits, application layer filtering, intrusion detection, VPN, access control policies and routine firmware upgrades to protect an accounting file management system through firewall configuration. Work together with cybersecurity professionals to configure systems effectively. The accounting file management system includes the application service part and the data file storage part. The application service includes three parts: archive management, signature service and batch service. The batch service interfaces with the upstream financial system through the FTP protocol. The IP access rules are set in the application service data file storage room, and only the internal IP can access the database, which further deepens the system access security (Vakurova and Filippova, 2021; Maslennikov, 2020). While the Data File Storage Component securely stores and arranges accounting data, assuring compliance, integrity and scalability, the Application Service Component in an accounting file management system improves data accuracy and efficiency.

The financial accounting system collects the original financial data and archives it after the collection. The archiving link includes the handover, identification, inspection and destruction of the archives. Afterward, catalogues, topics and fuzzy retrievals can be carried out through the relevant interfaces of the front and back offices to achieve subsequent electronic management (Ma, 2020).

The electronic accounting file management system realises the data processing of accounting vouchers, reports and other data through the interface, and forms electronic documents after data processing. The accounting vouchers, account books, statements and other materials to be archived are archived together using electronic attachment collection. Then, the specific file information can be seen through the file query menu, and the external data can be provided through the fixed data calling interface. The statistical query of the fixed data of the accounting file can be realised through the menu port of the statistical display board. Electronic accounting files provide quick processing, historical tracking, customised reporting, data protection and interaction with statistical tools. They also offer simple access, accuracy and consistency. As shown in Figure 4, the business operation process of the system is shown.

Figure 3 Topological structure of electronic accounting file system (see online version for colours)

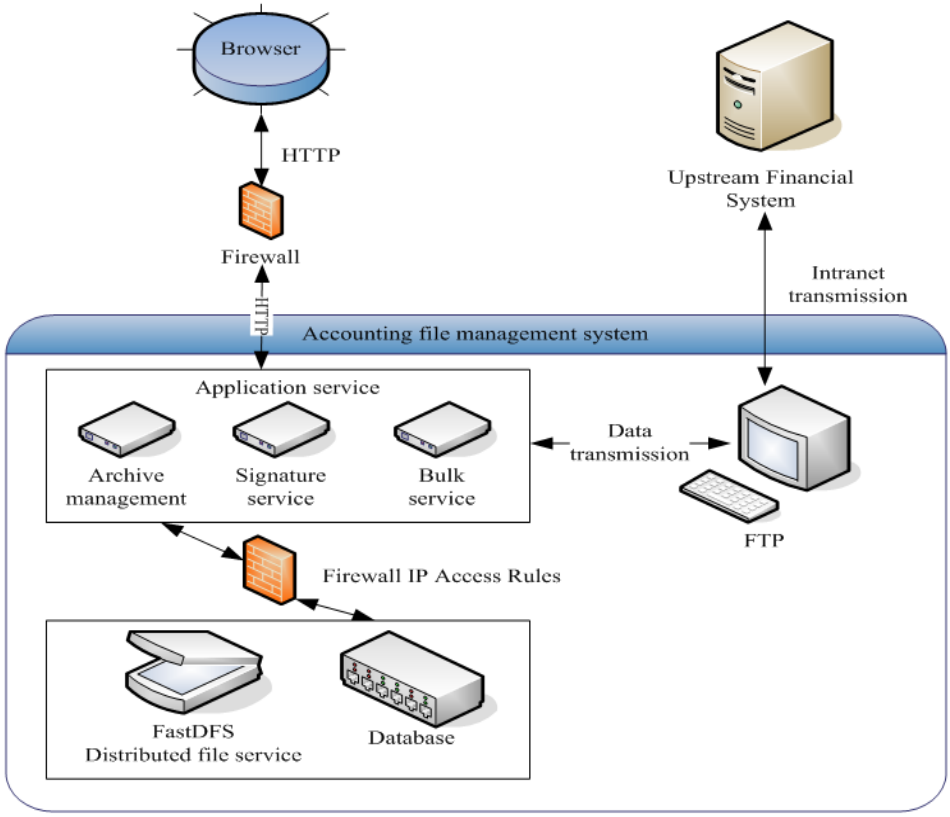
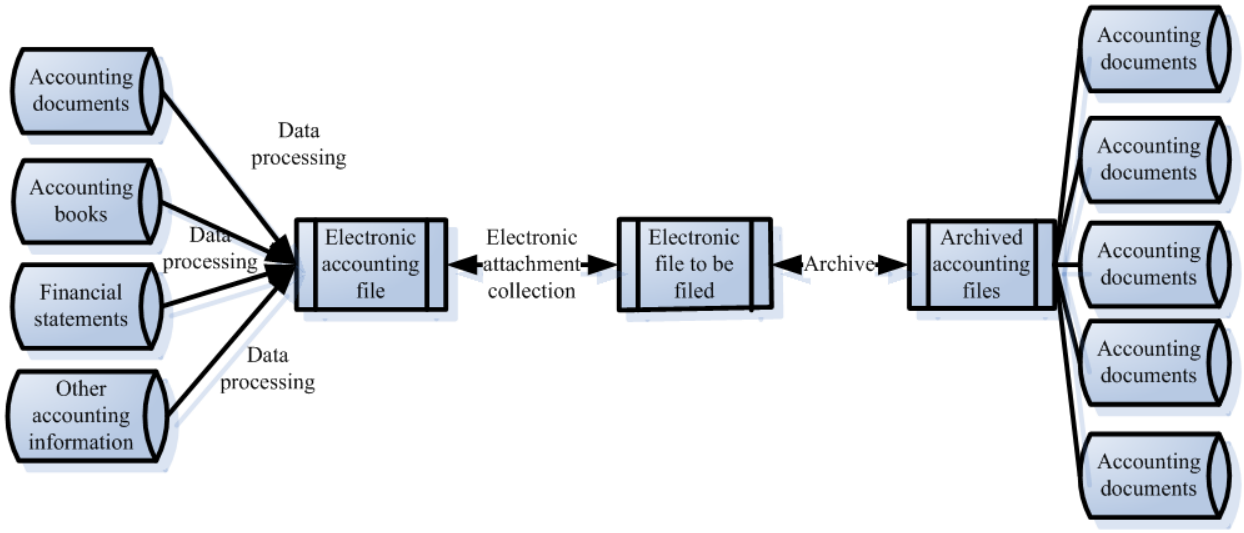


Figure 4 System operation process (see online version for colours)



The information interface of the management system mainly includes: the transmission between the application management system and the financial information system is realised through the FTP protocol, and the files archived by the financial information system are managed by the method of real-time calling between the systems. The data business with the application management system is connected through the Restful format. Efficiency, dependability, security, cost-effectiveness and knowledge transfer are some of the guiding concepts that the Application Management System and Financial Information System is built around. They enable decision-making, promote smooth data flow and assure accurate, consistent and transparent financial data while adhering to organisational objectives and professional standards. The data continuity of the application system should not be less than 99.99999%, and the data continuity is calculated according to the business life cycle. The data privacy of the system needs to be isolated between different customers, different systems and the interface background seen by each department, to ensure that workers in different jobs in the enterprise can only see and operate the data information related to their positions (Korotkova, 2020). While the Financial Information System (FIS) maintains financial data, transactions and reporting for accuracy and stability, the Application Management System (AMS) oversees the lifecycle of software applications, guaranteeing efficiency, dependability and security.

The system has already taken into account the original filing and data integrity issues of the archives in the early stage of the project. Similar to blockchain technology, this system also uses a hash algorithm in encryption technology to ensure the originality and integrity of documents. Important cryptographic instruments for safeguarding information and encrypting it hash algorithms like MD5, SHA-1 and SHA-256 provide fixed-length text strings for data integrity verification, safe password storage, electronic signatures and message validation. If the accounting file is tampered with or deleted by the background or the foreground, the hash value of the document recorded in the system database would no longer match the hash value of the file, and the system would generate an alarm. To safeguard passwords, enable digital signatures, prevent tampering and generate cryptographic keys that make decoding more difficult, hash algorithms are essential for data security and encryption. The originality of system archives has legal significance and cannot be lost. This algorithm is used to run through the entire life cycle of the file to ensure that the system file is authentic effective and not tampered with.

In the system, the technology of electronic signature is used for identity authentication anti-repudiation, and anti-tampering. Since the electronic signature involves an asymmetric encryption algorithm, the degree of encryption is relatively high. After signing with the private key, it has the functions of anti-tampering and anti-denial, so that the entire authentication system tends to be perfect and the system data is more secure. Data confidentiality and integrity are prioritised above anti-tampering and anti-denial functionalities in asymmetric encryption algorithms like RSA or ECC. Digital signatures, key management and public key decryption are used to safeguard data. The availability and integrity of the process are ensured by crucial revocation mechanisms.

To ensure the security of transmission, the encrypted transmission method is adopted for data transmission. Through fixed IF access, access policy, firewall, information filtering and other computer technologies to maximise transmission protection, it is used to prevent bad people from entering the system to steal data. In the storage layer, since the document is generally relatively large, the key metadata of the system is encrypted, so that even if a bad person enters the system, they cannot know the meaning of the system data. For data security, privacy and the safeguarding of sensitive information, encryption technology is crucial. It secures communication, data backup and cloud services in addition to protecting data transfer, storage, passwords, digital signatures and e-commerce transactions. Owing to the application of encryption technology, with current computer technology and the computing power of computers around the world, data

can't be cracked. For the intruder, the obtained data is just a bunch of garbled characters, without any real meaning.

For the preservation of massive information, accounting files can be dynamically expanded and backed up by multiple machines through a distributed storage system. By taking into account aspects including data distribution, flexibility, throughput, delay, cached information, enlargement, load balancing, restore from, evaluation, concurrent management and security, a well-designed distributed storage system can successfully manage to expand accounting files. At the same time, all image files must be transferred to the electronic accounting file system for unified preservation. According to the relevant requirements of the state, the storage period of the original certificate is 30 years. At the same time, the electronic accounting archives system also protects the archived documents through various means in terms of data preservation and security.

Whenever an accounting file is uploaded, the system background would assign the corresponding instance ID to mark and generate the corresponding index number for indexing. The document name, document key fields, file credential information, file size and other contents of the web front-end data would be first reported to the back-end database for data notification and file filing operations. After uploading and filing, the system would feedback on the filing results, such as whether the filing is normal, and whether the fields are missing and need to be re-recorded. If the system prompts that the archive is successful, it can be viewed through the index number when entering the viewing interface (Cheng and Wang, 2021).

The system has been deployed using a distributed file system to support file storage and file synchronisation. After the same file is uploaded to the file system, there would be multiple backups on the servers in the same group. It is supported to add servers in real-time for capacity expansion, backup point increase and other functions.

This paper discusses the management mode of the electronic accounting file system under the informationisation. The relevant formulas involved in the system are as follows:

$$K_S = k(s) \tag{1}$$

K_S is the digital digest of the digital message s to be signed by the accounting staff.

$$A = rG \tag{2}$$

r is deterministic random number (A-point on the curve).

$$s = (K_S + a \times pk) \div r \tag{3}$$

a is the abscissa of a random point A on the curve.

$$u = r + k(P \| A \| s) \times pk \tag{4}$$

P is public key.

$$Sig^{s}_{schnorr} = \langle a, u \rangle \tag{5}$$

$$\begin{aligned}&(u_1 + \cdots + u_{100}) \times G = A_1 + \cdots + A_{100} \\ &+k_1 \times P_1 + \cdots + k_{100} \times P_{100}\end{aligned} \tag{6}$$

$$\text{hash} = \text{VRF\_Hash}(\text{pk} \,||\, \text{message}) \tag{7}$$

The hash value of VRF function is:

$$\text{proof} = \text{VRF\_Proof}(\text{pk} \,||\, \text{message}) \tag{8}$$

The value of the VRF function is:

$$\text{hash} = \text{VRF\_P2H}(\text{Proof}) \tag{9}$$

It is verified that $\langle \text{hash}, \text{proof} \rangle$ matches.

$$\text{True / False} = \text{VRF\_VERIFY}(\text{P} \| \text{Message} \| \text{proof}) \tag{10}$$

True – Signature verification passed. False – signature verification failed.

3 Experiment on electronic management of enterprise accounting files

This study proposes that the electronic accounting file management of enterprises under informationisation greatly promotes the process of enterprise electronic accounting file management from four aspects: the storage method of enterprise files, the storage cost, the requirements of the storage environment and the difference of management mode. It promotes the construction and application of the financial file management system and solves the pain points of the front-line personnel in filing, checking, handing over and querying paper financial accounting. It solves the problems of storing, keeping, destroying and filing paper files in the management of financial files; using the electronic accounting files to facilitate the system's statistical query, the system realises fast and convenient accounting file retrieval, borrowing, consulting and other functions. The entire process of electronic accounting file entry provided by the electronic accounting file management system has greatly improved the level of corporate financial management. Enterprises no longer need to check and select paper files one by one when they check accounting files. Through the fuzzy identification and fuzzy search functions of the system, inspection items can be quickly located. From the perspective of archives management, the work of archives administrators has been upgraded from simple pure manual labour to statistical analysis of accounting archives management, which means that the management level of the entire company has been improved.

Document transfer delays were seen when the system was connected to supplier platforms, asset systems and settlement systems. Through secondary optimisation, the system works extremely well. It also meets the requirements of customers to support the automatic push of multi-system data information, automatic collection and standard billing interface. From the actual effect of cost reduction, the secondary development cost is about one-third of the original APP software development cost. The company does not need a lot of project investment and is closely linked to the system and financial system. Digitising the entire process of making, storing and viewing accounting files helps companies save a lot of

printing paper, IT consumables, warehousing and logistics costs and human capital costs. From the perspective of high efficiency, the storage standard of accounting files of electronic devices has completed convenient viewing and browsing of file information according to needs, which greatly improves the utilisation rate of file information and the management ability of financial files. From the perspective of risk management and control, unified collection and group management can ensure the integrity, authenticity and stability of accounting files and reduce the management error rate of accounting files. Effective risk management in firms depends on reducing management errors in accounting files through unified collection and group administration. It increases data precision, guarantees compliance, boosts operational effectiveness, fosters trust, aids in risk analysis and reduction and promotes overall company resilience. At the same time, several security production technologies are adopted to ensure the security of the database and to effectively avoid forgery and leakage.

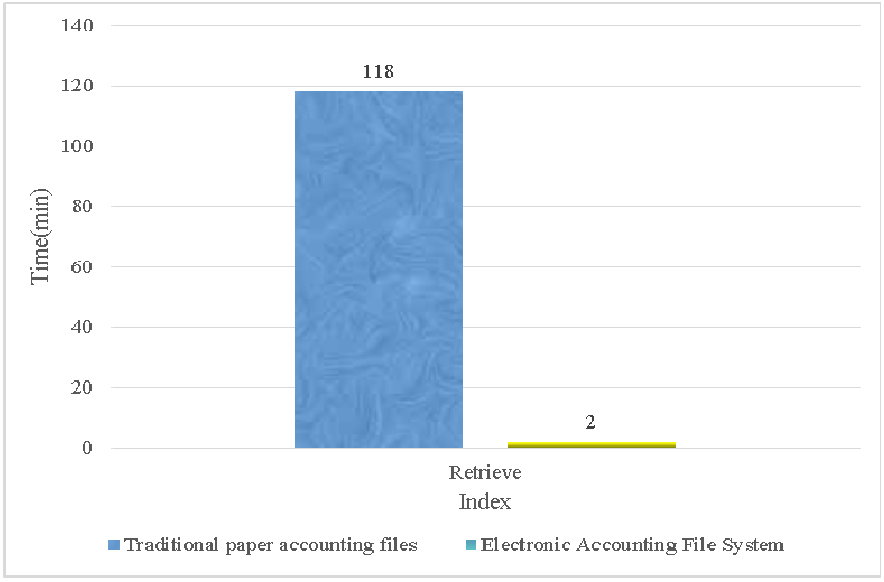
Next, a comparison experiment before and after the implementation of electronic management of accounting files for a Chinese enterprise is carried out. The experimental results are as follows:

As shown in Figure 5, it is a comparison chart of the collection and filing time of the company's implementation of the electronic accounting archives system and the traditional paper accounting archives. It can be seen that the time required for the filing of traditional accounting files from submission to handling to review and review, and finally collection and filing has reached 4 to 8 hours. Based on an eight-hour workday, it takes up to four days to file traditional paper-based accounting files. After the implementation of the electronic accounting file system, ordinary file filing can be controlled within 2 hours in each process and it usually only takes more than 5 hours in total.

The fundamental concept of conventional file management mode is manually identifying and organising files while also organising digital material hierarchically in directories or folders. Permissions are used to limit access, and metadata is restricted. In addition, in the traditional file management mode, when users want to access files, it is difficult to locate and find files, and files are repeatedly opened, read, copied and lent, resulting in a greater risk of damage and loss. Owing the separation of physical archives and business departments, it is difficult to refer to different places, and the lack of file retrieval data also makes it difficult for the archives management department to accurately grasp and respond to the borrowing needs of business departments in real-time. Investment in efficient document management systems is necessary since file retrieval data in corporate departments can result in decreased productivity, missed deadlines, security threats, compliance problems and incorrect decision-making. As shown in Figure 6, the retrieval time of the electronic accounting file system and the traditional paper accounting file is compared. It can be seen from the figure that the retrieval and query time of traditional paper accounting files is close to 2 hours. After the implementation of the electronic accounting file system, the retrieval and query time of files can be completed in only 2 minutes, and the query efficiency of files is increased by nearly 60 times. The query efficiency is greatly improved.

Figure 5 Data collection and filing time before and after electronic file management (see online version for colours)

Figure 6 Electronic accounting file system and traditional paper accounting file retrieval time (see online version for colours)



As shown in Figure 7, it is a comparison of the paper required to print the relevant accounting vouchers, documents and accounts before and after the enterprise implements the electronic management of accounting files. It can be seen that after the enterprise implements the electronic management of accounting files, it would not need to print accounting vouchers and accounting statements, but only the necessary documents and attachments. To a certain extent, this greatly reduces the amount of paper used, saving 3.43 million sheets of paper and saving 500,000 yuan in paper costs, which is also in line with the current practice of low-carbon environmental protection. This is only part of the cost savings for the company. In addition, after the company implements the electronic management of accounting files, it also saves IT consumables, mailing costs, related personnel wages, warehouse costs and paper costs. It saves a total of 1.94 million yuan. Among them, the cost of IT consumables was saved by 890,000 yuan, and the mailing cost was saved by 100,000 yuan. Relevant personnel salaries are saved by 250,000 yuan, and warehouse costs are 200,000 yuan. To a certain extent, this relieves the financial pressure on enterprises and enables more funds to be used for product research and development. Figure 8 shows the specific costs of various types of costs saved by the electronic accounting files of the enterprise.

Figure 7 Comparison of paper usage before and after electronic accounting file management (see online version for colours)

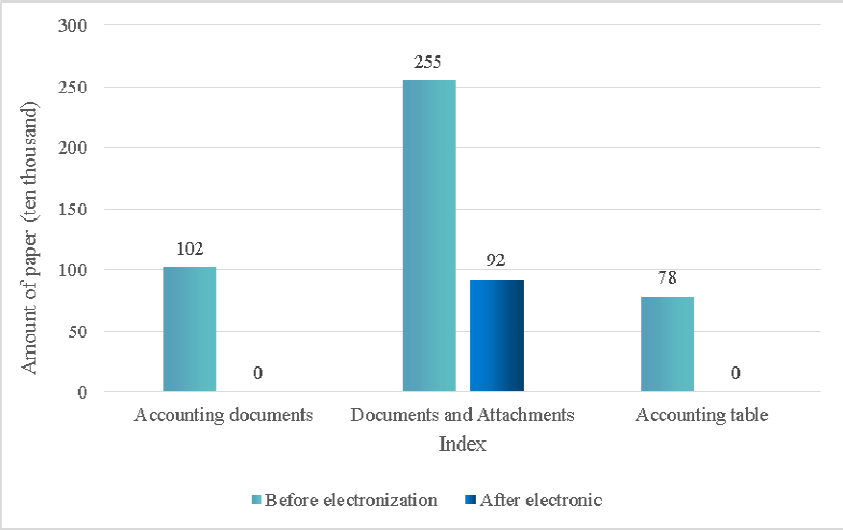
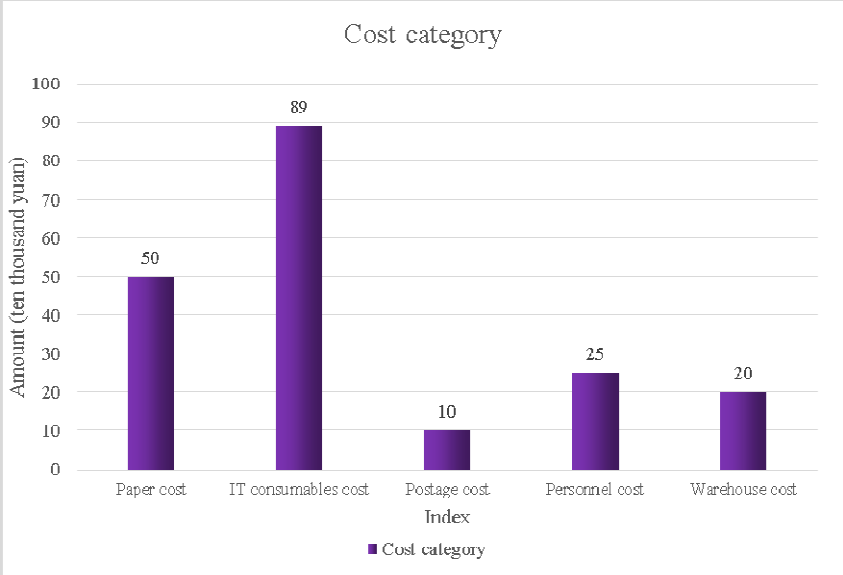


Figure 8 Various types of costs are saved after the electronic accounting files (see online version for colours)



4 Conclusion

Considering the current situation of accounting archives management and the advantages of informatisation, this paper has discussed the electronic management method of enterprise accounting archives under informatisation management, and compared the advantages of traditional accounting archives management. The results have shown that the electronic management of enterprise accounting files can not only reduce management costs, waste of resources and manual labour of accounting personnel but also improve the management level of archives, high efficiency of accounting management and the sharing of information resources. The rapid development of big data and cloud storage has added opportunities and challenges to the management of accounting files in small and medium-sized enterprises. In the future, more experience would come to study such problems, and more people would join in the discussion.

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