Research on the Impact of Internet Evolution on Accounting Information System Based on Data Mining

Gejing Xu a, Lan Yang b
Quanzhou University of Information Engineering, Quanzhou, Fujian, China
a 21004775@qq.com, b 502968883@qq.com

Abstract. The evolution of accounting is influenced by the accounting environment, and the most important one is the Internet environment. At present, the Internet is gradually moving towards the direction of cloud computing. Therefore, the author based on data mining on the evolution of the Internet on the impact of accounting information system to carry out research. The control weakness and risk of accounting information system based on Internet are analyzed. The research results show that the Internet itself has the characteristics of openness, globality, low cost and high efficiency. It will first change the business operation and management activities of the enterprise, which will affect the economic operation of the whole society. Therefore, enterprises must make revolutionary changes in accounting and other aspects to adapt to the requirements of the network era. This study has important practical significance for clarifying the direction of development, optimizing the construction of accounting information systems, and achieving sustained and comprehensive development.

1. Introduction

The accounting information system is a computer-based system that converts accounting data into information [1]. It is not born out of nothing, but gradually evolved in the process of dealing with economic business. It has evolved through manual accounting information systems, computerized accounting information systems, quasi-modern accounting information systems, and modern accounting information systems. It is a product of human evolution [2]. First of all, the original natural language developed into an accounting language, and gradually got rid of the heavy manual processing, introducing a large number of computer processing methods. On the network side, it is gradually developed from the local area network into Internet accounting [3]. After the closed LAN accounting information system was pushed to the open Internet world, it brought unprecedented advantages of integrated accounting and business processing and real-time monitoring. At the same time, it also poses a serious challenge to the security of accounting information systems [4]. E-commerce of large enterprises is developing from basic applications such as online information publishing, purchasing and sales to all-round collaborative directions such as online design, manufacturing, planning and management among downstream enterprises [5]. However, as a company's secrecy department, the financial department is restricted by many factors. It seldom shares resources and uses the internet. Therefore, the development of the Internet in the field of accounting is still very slow. At present, accounting information system is gradually integrated into the new environment of information technology renewal and development and Internet evolution. We should start from this level to scientifically examine accounting information system.

With the help of computer technology, accounting information system transforms huge accounting data into information, which is evolved with the continuous development of economic business. [6]. We
must reconsider and design the control system of accounting information system according to the characteristics of Internet system, instead of relying on public technology such as firewall. [7]. Small and medium-sized enterprises (SMEs) have generally improved their awareness of e-commerce application, and the number of SMEs applying E-commerce has maintained a relatively high growth rate. If enterprises do not know how to use the Internet correctly and efficiently, then they will not be able to survive and develop in the current society [8]. The emergence of the network world brings not only the revolution of information processing and transmission technology, but also the profound significance and influence that it has caused or is causing profound changes in the whole social organization structure and its institutional arrangements [9]. And this change will inevitably lead to a revolution in accounting information systems that are part of the enterprise management information system [10]. If enterprises do not understand how to use the Internet correctly and efficiently, then enterprises will not be able to survive and develop in the current society. Therefore, in the discussion of this article, it is more equivalent to the enterprise intranet, which is not only for the convenience of narrative, but also for the understanding of the Internet accounting information system.

2. Internet development trends and impact on accounting information systems

2.1. Internet development.
For the analysis of various factors, the Internet development trend can be summarized into six levels. First of all, the cloud computing model will be more deeply integrated with the Internet. All kinds of resources in the network are like clouds, which will greatly save storage space and improve resource application efficiency. Google's search engine is essentially a software that provides cloud services, but it's not installed on a personal computer, but on Google's servers. We just use its software services by logging into its website. In addition, the rapid development of the Internet of Things technology system will enable the objective material that was originally lifeless to be effectively connected to the Internet and inductively processed in accordance with relevant protocols. Regarding where the user is, everything in the home can be completely mastered, the curtains are automatically opened, and the refrigerator is automatically shopping. Because of the particularity of the Internet/Intranet structure itself, its internal control is far beyond the scope of previous computer systems, and has extended from the internal control of accounting institutions to the internal control of the whole enterprise. In this way, no matter where the user is, he can have complete control of everything in his home. The enormous terminals of the Internet of Things follow the pattern of people's behavior and organization. They are more socialized to perceive group effects, like collaboration to accomplish something together.

Since the development of the Internet, the amount of data uploaded and downloaded has been increasing. Fig. 1 is the trend of the number of data uploaded and downloaded on the Internet in China in recent years.
2.2. The Impact of Internet on Accounting Information System.

Under the Internet environment, the information transmission of accounting information system will develop from the previous LAN to the Internet level. In mobile internet, with the application of mobile terminals such as mobile phones, people can trade with commodity producers and sellers all over the world, and realize e-commerce shopping and mobile payment wherever they are. In the mobile Internet system, the wide application of mobile terminal makes it possible for people to complete transactions with manufacturers and sellers worldwide, and to complete mobile payment through shopping. Broadly speaking, the related parties of enterprises include customers, suppliers, partners, software suppliers or developers, as well as social departments such as banks, insurance, taxation, auditing and so on. However, as the company's confidentiality department, the finance department is subject to many restrictions, rarely sharing resources, and rarely using it. Therefore, the development of the Internet in the field of accounting is still very slow. Large-scale enterprise e-commerce is developing from the basic aspects of online information release, procurement, sales and other basic applications, such as online design, manufacturing, planning, and management. In a sense, the degree of paperlessness of the financial information processing process represents the degree of automation of data processing. For companies, it is necessary to continuously improve the effectiveness of management and control.

In recent years, the research on the impact of Internet evolution on the accounting information system has been increasing, which represents that this kind of related issues are being paid attention to by many scholars. Figure 2 shows the trend of increasing or decreasing the number of related research in recent years.
3. Control based on Internet accounting information system

Internal control refers to all methods and measures adopted by enterprises to protect the safety of assets, ensure the correctness and reliability of accounting records, improve the efficiency of business management, and ensure the implementation of business management policies. The accounting work under the traditional accounting method is only manual accounting, accounting, and accounting, which makes the accounting workload of large and medium-sized enterprises in general today remain high. If the information systems of the enterprise cannot exchange information effectively, this makes it impossible for any independent information system in the enterprise to provide the complete information required for decision-making in the first time. Internal control can be divided into general control and application control. Moreover, in the process of accounting cycle, there will be errors or errors caused by many factors, such as the time difference of transmission from different places, the errors of artificial accounting, transfer and accounting, which are not conducive to the management of enterprises. That is to say, through the Internet to achieve collaboration among suppliers, sales or agent customers and enterprises. Facing the impact of foreign excellent enterprises, Chinese enterprises must realize management informationization in order not to be eliminated by the market. Regardless of the type of system structure, its system composition is based on the enterprise intranet. Therefore, we need to re-establish the internal control points of the system and establish the corresponding internal control system according to the characteristics of the Internet system and its risk sources.

Accounting information system audit is an audit of the security, reliability, effectiveness and efficiency of the accounting information system of the audited unit. The comparison between accounting information system audit and financial statement audit under IT environment is shown in Table 1.

| Category          | Audit of Financial Statements                                                                 | Audit of Accounting Information System                             |
|-------------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Object of audit   | Financial revenue and expenditure of audited units and related business management activities | Computer Accounting Information System of Audited Units             |
| Audit objectives  | To express audit opinions on the legality, fairness and consistency of the accounting statements of the auditees and the application of accounting treatment methods | Review and evaluate the security, reliability, effectiveness and efficiency of the accounting information system of the auditees and issue audit opinions |
| Auditing standard | China’s CPA Auditing Standards, Internal Auditing Standards, etc.                                | Auditing Standards of Accounting Information System                |
| Audit test        | Compliance testing can be done or not, and substantive testing must be done.                   | Compliance and substantive testing must be done                    |
Frequent pattern mining plays an important role in many data mining tasks, but the number of mining patterns and association rules is often surprising and difficult to understand and apply. To improve the adjustment mechanism of budget management, we must make full use of the adjustment function of market economy. The birth of virtual brain makes it possible for computer simulated human brain to understand accounting standards and deal with economic business. Virtual brain can learn the basic knowledge of accounting standards through pre-established evidence base. It is a revolutionary change for the existing accounting information system to imitate the human brain to identify and record economic business. In addition, the application of information transmission methods has changed, all kinds of paper raw materials vouchers have gradually been replaced by electronic lists. Under network accounting, information processing is faster and more timely, and the disclosed content is more comprehensive and comprehensive, reflecting a strong target. Sex. Although computer technicians are familiar with computer and network technology, they are not familiar with accounting and auditing knowledge, and do not know what to review and how to judge. The system must strictly define the time and content of the information provided, and update the information on the access area in a timely manner through a secure channel.

The usability of ISS-DM algorithm depends on its space occupation and time expenditure. It can be seen from the experiment that the ISS1 growth is flat with the increase of data volume. Even at random, ISS1 will be much smaller than its theoretical value. As shown in Figure 3.

Fig.3 Space experiment

As an integral part of accounting information system, internal control plays an important role in ensuring the normal operation of accounting information system. Accounting information system under the network environment, through online real-time operation, actively acquires and provides relevant accounting information, realizes diversified reports, and can accurately and timely provide accounting information needed for the management and decision-making activities of accounting information users. The data set template file stores user-defined data set template, which is maintained by the data set definition service and used by the data set registration service. It corresponds to the actual data set and is instantiated into a data set instance file. In addition, since our experimental data is randomly generated, the probability of repeating the sequence of the project is small. This definition points out that the internal control of accounting information systems is an effective measure to prevent accounting information distortion and various violations. This algorithm increases with minimum support, which may increase the time. This is because the increased minimum support reduces the likelihood of frequent project sequences, thus reducing the likelihood of ISS element clipping. The transaction log is used to automatically record the transaction time and content of each step of e-commerce. It is an important audit trail for both internal and external enterprises. Enterprises need to also have the obligation to ensure its integrity and reliability.

In the Internet environment, the enterprise intranet is no longer an independent, closed system, has become an integral part of the Internet world. For example, with the help of the Internet to provide online ordering, online procurement, online sales logistics and capital flow information, and instantly transmit
these information to the accounting information system, so as to make online services, online consulting and supply chain coordination more tacit. Traditional accounting information system, which is closed, can not support the application of e-commerce, and can not achieve the close integration of e-commerce and financial system. In order to effectively realize the four objectives of enterprise internal control and ensure the normal operation of enterprise online business activities, it is necessary to extend internal control from the small interior of enterprise network to the large interior of the Internet. In other words, it is also necessary to control the system space outside the enterprise intranet. Accounting staff only need to be able to transmit electronic documents through networking, replacing traditional paper materials. Since the remote real-time processing is generally not connected through the external access area of the system, the security problem of either party is likely to cause harm to the other party. The virtual brain will provide greater possibilities for the computer system to simulate the human brain's clear accounting standards and deal with complex economic operations. For content that needs to be processed online in real time, such as online financial approval, electronic transfer, etc., should be carried out under strict operating procedures to ensure the validity and verifiability of the processing results.

4. Summary
In summary, it is not difficult to find that the impact of the Internet on accounting work is almost ubiquitous. Corporate finance will renew its vitality in the era of connected economies. Only on the basis of understanding the evolution of accounting information systems and the development trend of the Internet, we should clarify the characteristics of the Internet environment and understand the impact of new trends on the formation of accounting systems. Fang can promote the effective integration of the Internet information function of the accounting information system, expand the development space, and truly achieve full sublimation. Since information security technology always lags behind the development of information technology, the realization of security cannot be static. In a word, we can combine granularity computing to analyze the function of each data mining module and build a new data mining module. From the perspective of subject attribution, accounting information system audit is a new stage of audit development. The emergence of accounting information system audit will cause great changes in the auditing discipline, which will separate it from the traditional accounting discipline framework and form an independent theoretical system. The influence of Internet thinking mode on accounting work will be everywhere, and the evolution of Internet will make the function of accounting information system more powerful. In short, the Internet has a profound impact on the accounting information system. Therefore, enterprises should institutionalize system risk assessment and management to ensure that the control scheme and safety policy of the system are constantly improved with the development of the system itself. At the same time, association rules in data mining can be calculated to provide the best information for data analysis and data support for decision-making and control. The above systematically discusses the design and implementation of Internet accounting information system control from the aspects of system risk assessment, vulnerability analysis, control scheme construction and implementation.

References
[1] Mukhopadhyay A, Maulik U, Bandyopadhyay S, et al. Survey of Multiobjective Evolutionary Algorithms for Data Mining: Part II[J]. IEEE Transactions on Evolutionary Computation, 2014, 18(1):20-35.
[2] Buczak A L, Member, IEEE, et al. A Survey of Data Mining and Machine Learning Methods for Cyber Security Intrusion Detection[J]. IEEE Communications Surveys & Tutorials, 2017, 18(2):1153-1176.
[3] Alglave J, Maranget L, Tauntschnig M. Herding cats:modelling, simulation, testing, and data-mining for weak memory[J]. Acm Sigplan Notices, 2014, 49(6):40-40.
[4] Helma C, Cramer T, Kramer S, et al. Data Mining and Machine Learning Techniques for the Identification of Mutagenicity Inducing Substructures and Structure Activity Relationships of
Noncongeneric Compounds[J]. Journal of Chemical Information and Modeling, 2004, 44(4):1402-1411.

[5] Jain A, Bajpai A, Rohila M K. Efficient Clustering Technique for Information Retrieval in Data Mining[J]. Development, 2014, 130(14):3309-18.

[6] Alejandro Peña-Ayala. Review: Educational data mining: A survey and a data mining-based analysis of recent works[J]. Expert Systems with Applications, 2014, 41(4):1432-1462.

[7] Xu L, Jiang C, Wang J, et al. Information Security in Big Data: Privacy and Data Mining[J]. IEEE Access, 2014, 2:1149-1176.

[8] Lu H, Setiono R, Liu H. Effective data mining using neural networks[J]. IEEE Transactions on Knowledge and Data Engineering, 1996, 8(6):957-961.

[9] Zhao J, Lasternas B, Lam K P, et al. Occupant behavior and schedule modeling for building energy simulation through office appliance power consumption data mining[J]. Energy and Buildings, 2014, 82:341-355.

[10] Geng R, Bose I, Chen X. Prediction of financial distress: An empirical study of listed Chinese companies using data mining[J]. European Journal of Operational Research, 2015, 241(1):236-247.