BUILDING A DIGITAL CLOUD PLATFORM FOR TAX COLLECTION AND MANAGEMENT OF ANCHOR REWARD INCOME BASED ON BIG DATA ANALYSIS AND CLOUD COMPUTING

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Abstract: This study uses big data analysis, cloud computing, artificial intelligence and other technologies to build a digital cloud platform for tax collection and management of anchor reward income, and provides full-process intelligent 'cloud' tax services. By analysing the current situation of the development of the network broadcasting industry and the problems of tax collection and management. A detailed design and implementation of the digital cloud platform for tax collection and management of anchor reward income is carried out, including the hybrid cloud module, data sharing module, and cloud service module for tax collection and management policies. It achieves full digital tracking and monitoring of anchor income, real-time collection and integration of data, accurate calculation and analysis, timely warning of abnormal situations, identification of potential tax avoidance, and accurate prevention and control of the risk of tax payment by anchors; it achieves the goals of fairness, compliance, efficiency, intelligence, and digitalisation of tax collection and administration of anchor bounty income, prevents tax source loss, helps coordinate the scheduling of tax policies, resources, information, and data, and provides intelligent decision support for the taxation It provides intelligent decision-making support for the tax department, and realises the standard tax collection and efficient control of anchor reward income.
Keywords: Anchor bounty income; Tax administration cloud platform; Risk warning; Big data analysis

1 INTRODUCTION

In recent years, China's webcasting industry has experienced a blowout development. According to the '2023 China network performance (live) industry development report', as of the end of 2023, China's live broadcasting user scale reached 617 million, the anchor account accumulated more than 130 million, the average daily peak of new anchors for 43,000 people, 2023 industry market scale reached 193.03 billion yuan. Behind this prosperity gradually bounty income expenditure, levy and management problems are increasingly prominent, such as imperfect tax system, taxpayers main body and other issues. Become a key factor restricting the healthy development of the industry. Scholars at home and abroad have carried out some research on the tax collection and management of the Internet economy. Meijer R.(2015) believes that the government should intervene in the regulation of network live broadcasting platforms and should focus on the three aspects of freedom of expression on the platform, the protection of information, and the protection of intellectual property rights. Scholars such as Franziska Zimme(2017) have analysed the necessity of the regulation of network social media such as Periscope, YouNow and other online social media regulation of the need to analyse, that the new social media there are data and user privacy leakage, platform illegal retransmission and other problems, should strengthen the regulation of online social media platforms and the protection of user information security [1]. Wilson (2017) from the point of view of technological regulation believes that based on the distributed network, the regulator can use algorithms to platforms of data to monitor and innovate the regulation [2]. Elise Thorburn (2017) conducts a case study on live webcasting APPs and argues that live webcasting should be researched from a variety of disciplinary fields such as jurisprudence and sociology [3]. Wang Huoliang (2021) believes that the income from webcasting rewards should be taxed, and he believes that the premise of taxation lies in whether it is taxable, which should be judged from the three aspects of the subject of taxation, the object and the tax benefits, and webcasting rewards are fully in line with the three elements of taxation [4]. Xing Lu (2022) believes that China's network live broadcasting industry is still in the primary stage of development, the industry's entry threshold is low, the speed of profit is fast, the quality of practitioners is uneven, and at the same time, due to the temporary absence of relevant tax norms, there are problems in the management of the collection of personal income tax in the network live broadcasting industry that can't be ignored [5]. Sun Meichen (2024) believes that it should be clear that the tax items of the network live streaming reward as a breakthrough, and at the same time clarify the live streaming reward personal income tax withholding obligation, to provide a basis for the live streaming reward personal income tax collection and management, in the way of collection of personal income tax to distinguish between the approved levy and the checking of accounts for levy of the applicable circumstances, and finally in the tax penalties to apply the penalty decision and the range of penalties prudently [6].

Although the above scholars have studied the tax collection and management of the Internet economy, there is insufficient systematic research on the cloud platform for tax management of anchor bounty income tax, and the related

branch research is also insufficient. There is a lack of research on the technical systematisation of the digital platform for tax collection and administration and the real-time and automated monitoring of the tax collection process through digital technology, cloud computing and other emerging technological means to monitor, identify, calculate and collect taxes in real time and accurately. There are no comprehensive and feasible proposals for the improvement of the tax penalty and compliance management system. In summary, this study refines this deficiency by using digital technology to construct a tax collection and management cloud platform to solve the difficult problem of tax collection and management issues in the webcasting industry.

2 MATERIALS AND METHODS

2.1 Logical Architecture of the Anchor Reward Income Tax Collection and Management Cloud Platform

The authentication, the financial personnel will make corrections after clarifying the reasons for the failure, and then carry out the authentication again. The financial personnel make remote tax declaration through the cloud platform for tax administration of anchor reward income, and the system automatically reads the tax declaration data, then transmits it to the tax department to automatically complete the business processing of tax declaration, and finally feeds back to the anchor through the module. The cloud platform for tax collection and management of anchor reward income comprehensively collects invoice detail data and automatically generates tax return forms and other invoices, tax-paid vouchers, and lists of deduction vouchers for submission. The financial personnel make tax payments according to the tax return, and the module sends tax completion certificates to the anchors upon completion. The overall framework of the cloud platform for tax collection and management of anchor reward income is shown in Figure 1 below.

2.2 Logical Architecture of Anchor Reward Income Tax Collection and Management Cloud Platform

The anchor reward income tax collection and management cloud platform built based on digital technology consists of five dimensions, which are the basic resource layer, data storage layer, collection and management application layer, user service layer, and risk identification management layer [7].

2.2.1 Basic resource layer
The basic resource layer mainly covers two parts: software resource layer and hardware resource layer [8]. Among them, the hardware resource layer includes servers, storage devices, and network devices; the software resource layer consists of two parts: the computing resource layer and the storage resource layer. As the foundation of the anchor reward income tax collection and management cloud platform, it can meet the basic needs of the platform at all levels.

2.2.2 Data storage layer
It mainly includes a data sharing platform, a data storage platform, and a data mining platform. Among them, the data storage platform is the foundation of the data storage layer, and the data mining platform is the pillar of the data storage layer. Tax authorities can carry out in-depth mining of a large amount of tax data through the data mining platform. At the same time, tax authorities can realise real-time exchange of internal and external data through the data sharing platform, creating an economic and efficient information exchange environment for the cloud platform.

2.2.3 Levy Management Application Layer
It consists of four parts: tax-related information sharing, tax source management, tax service and tax inspection. With the help of cloud computing technology, the levy management application layer adopts switches to connect with server nodes, and the levy management application layer can install network cards for servers to enable servers to perform their routing and forwarding functions, thus establishing a network structure that can be applied to specific scenarios.

2.2.4 User Service Layer
The cloud platform for tax collection and management of anchor reward income is managed by the tax authorities, while the participants of the cloud platform for tax collection and management of anchor reward income are taxpayers and various government departments. According to the different characteristics or needs of taxpayers, the Host Reward Revenue Tax Administration Cloud Platform provides different tax services for them, and the Host Reward Revenue Tax Administration Cloud Platform also has the advantages of high efficiency and low cost.

2.2.5 Risk identification management module
The risk identification management module carries out in-depth risk analysis on the tax administration data of anchor reward income through the built-in model library, algorithm library, knowledge library and expert library, identifies potential risks and provides countermeasures to help enterprises carry out effective tax administration planning and reduce the probability of risk occurrence. The module also includes a risk assessment system, which allows financial staff to regularly study and take exams to improve their risk-handling ability, and tax authorities to assess the tax collection and management system of enterprises to promote the establishment of a tax collection and management supervision system for enterprises before, during and after the tax collection and management, and to improve their risk-handling ability.
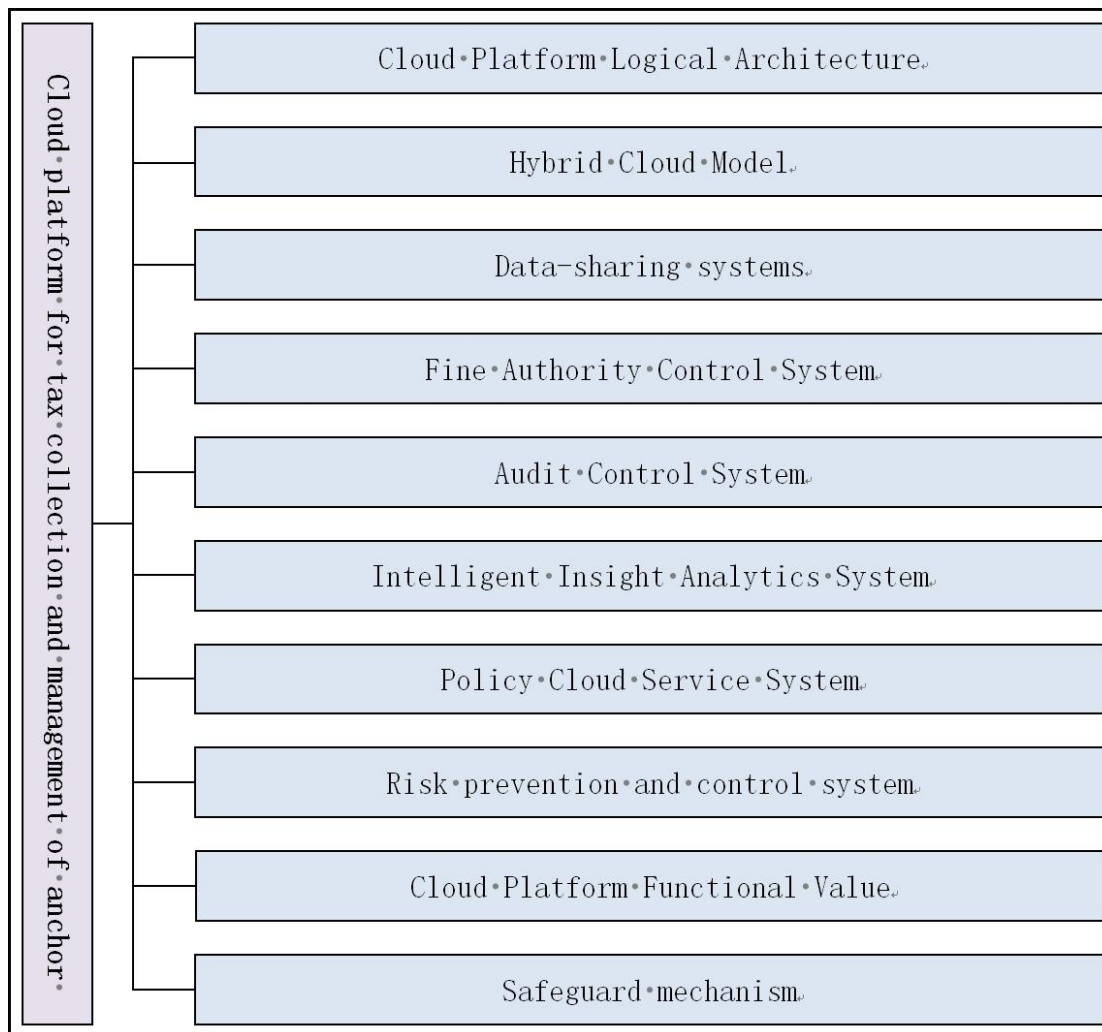
Figure 1 Overall framework of the Cloud Platform for Tax Collection and Management of Anchor Reward Income

2.3 Hybrid Cloud Model for Tax Collection and Management of Anchor Bounty Income

The hybrid cloud model is a cloud computing deployment model that combines private and public clouds to meet the security and flexibility needs of the webcast reward tax system by flexibly deploying and migrating applications and data between private and public clouds. The webcast reward tax management system can store and manage sensitive taxpayer data in the private cloud to ensure data security, while non-sensitive data and computing tasks can be processed using the elastic resources of the public cloud to improve the system's computing power and performance.

3　MODELLING AND SOLVING

3.1 Host Reward Income Tax Collection and Inspection Control System

In view of the characteristics of tax inspection work, the anchor reward income tax collection and management cloud platform integrates artificial intelligence technology in depth to create an intelligent tax inspection office platform in line with the reality of work. It makes full use of artificial intelligence algorithms to develop the tax collection and inspection control system in depth, and upgrades the existing electronic checking software combined with tax big data in an intelligent way; on the basis of summarising the problems of tax collection and management of anchor reward income, it constantly enriches the case data model to simulate manual checking; through the intelligent inspection platform, it automatically obtains all kinds of operational data information of the subject of investigation, automatically analyses and matches the case data model, and automatically judge tax suspicions, and issue a brief report on the analysis of tax-related situations of enterprises with one click; and establish a module for automatically checking the accuracy of the applied legal provisions to assist the adjudicators in the adjudication work, which can also strengthen the supervision of the adjudicators of the audit cases and improve the adjudication mechanism of the audit cases.

3.2 Intelligent Insight Analysis System for Tax Administration of Host Reward Income

Relying on the underlying data centre, the cloud platform for tax collection and management of anchor bounty income is embedded with a multi-dimensional analysis engine, which enables tax analysts to flexibly switch analysis

dimensions and carry out an all-round analysis mode. At the same time, it uses visualisation technology to conduct rapid information exchange with users through multi-terminal data dashboards to enhance the ability of agile strategic decision-making. The anchor reward income tax collection and management cloud platform makes full use of tax-related data, builds business analysis scenarios, applies statistical methods from quantitative analysis to qualitative analysis, quickly locates industry finance and taxation problems, provides a digital foundation for intelligent tax decision-making, and realises the creation of finance and taxation value with data [9].

3.2.1 Statistical analysis portal

Establish tax data cockpit, effectively monitor the tax operation of the anchor, achieve multi-dimensional statistical analysis (including regional tax, tax types, tax concessions, filing progress, etc.), to help users quickly capture the data analysis results that need to be focused on, to assist the anchor to make efficient and accurate tax decisions.

3.2.2 Tax data centre

Integrate all tax data scattered inside and outside the system through the underlying technology to establish a complete tax data set, helping users to grasp the tax payment reality of the whole group in order to support the overall planning of tax work. Using the standard report analysis mode of the full-scenario intelligent tax management platform, it allows users to define their own data sources and statistical dimensions to maximally meet the needs of diverse scenarios. At the same time, the application has a built-in automatic tax liability rate calculation model to help users quickly grasp the tax liability situation.

3.2.3 Multi-dimensional tax insight

Through the in-depth extraction of tax data, multi-dimensional analysis is carried out for two major themes: tax types and management areas, and personalised charts are used to display the results, so as to quickly grasp the dynamics of tax. Real-time refreshing of total tax payment and tax exemption ranking, timely grasp of work performance, and abnormal changes at a glance. All insight results support layer-by-layer penetration and provide traceability paths to help tax staff identify key conflicts and solve problems efficiently.

3.2.4 Declaration progress monitoring

Tax statistical analysis provides comprehensive declaration and payment monitoring, and the progress status meets the dynamic management of key tax nodes, greatly improving the efficiency of supervision and reminding business personnel to complete the relevant declaration and payment work in a timely manner.

3.2.5 Enterprise credit level enquiry

Tax credit level is a key part of the social credit system, which affects the enterprise tax payment environment and preferential tax treatment. The full-scene intelligent tax management platform supports tax credit level enquiry, provides one-click enquiry on downgrading status, visualised Kanban boards and other functions, and assists users in identifying credit crises so as to deploy and avoid relevant tax risks in advance.

3.3 Cloud-based service system for anchor reward income tax collection policy

The complexity of tax calculation for anchor reward income makes it difficult for anchors to file tax returns. For this reason, we design a cloud-based tax administration policy service system to provide accurate tax calculation and policy services. The system is pre-set with rich tax scenarios, declaration forms, professional drafts and algorithms, covering various industries and regions, and setting a large number of risk checking points. Anchors can access preferential policies and compliance requirements in real time to reduce application costs [10].

3.4 Anchor Reward Income Tax Administration Risk Prevention and Control System

In order to control the impact of the risk of tax administration of anchor reward income on the development of anchors, the system actively uses the risk identification management module to carry out tax risk management and control, standardise the tax activities of enterprises, and reduce the chances of the occurrence of enterprise tax risks. The system makes use of the risk identification management module to comprehensively collate enterprise tax data, thoroughly examine the impact of business activities on tax payment, clarify whether the capital expenditure is for public use, whether the expense presentation is in line with the enterprise accounting standards, and whether the division of costs and expenses is standardised, etc., so as to effectively avoid the situation where the shareholders are reimbursed illegally by using the enterprise's costs and expenses; and review whether the payment of employees' salaries is in line with the list of social security, and whether the costs and expenses of the period are tax adjustments are carried out in compliance, whether the period expenses are accrued in accordance with regulations, whether the input tax amount is transferred out in time for processing, etc., so as to avoid the risks related to value-added tax in a timely manner; verify the composition of the anchor income in time, make clear whether the payment of personal income tax is in compliance, and determine whether the enterprise's taxable income is accurate, so as to effectively circumvent the risk of income tax [11].

On the basis of clarifying the time of occurrence of risks, the scope of occurrence, risk triggers, the degree of harm and solution measures, etc., the risk identification management module is designed to generate a risk heat map, which is used to formulate a risk response strategy, carry out tax planning in a reasonable manner, determine the risk matters and allow all parties to make enquiries, so as to achieve the purpose of controlling the probability of the occurrence of risks and reducing the harms of risks, and safeguarding the long-term development of the enterprise.

The anchor reward income tax levy management risk control application scenario helps the anchor to improve the ability to prevent risks beforehand, and helps the anchor to check themselves in advance and prevent and control them in time. Based on the industry finance and tax data, relying on the platform's leading technical architecture advantages, the risk monitoring model set up through the business, intelligent scanning and locking the potential risks that may exist, and timely warning, tax personnel can be prompted to timely carry out risk research and judgement, investigate and deal with; at the same time, the anchor reward income tax collection and management of risk control application scenarios can be the indicators of risk models. At the same time, the anchor reward income tax risk management application scenario can evaluate the usability of the indicator risk model and iteratively improve the indicator library. In addition, the application scenario of risk management and control of tax collection and management of anchor reward income can monitor the changes of tax policies and regulations in real time, update the tax risk assessment of enterprises in a timely manner, and provide corresponding countermeasures.

4 DISCUSSION

4.1 Improve the Efficiency of Tax Collection and Verification of Anchor Reward Income

The banking and tax system opens up the capital chain for sharing, and the tax bureau networks data and information with various ministries, the People's Bank of China, commercial banks and other organisations to give full play to the supportive function of big data technology in information sharing, so as to timely, accurately and in a multi-dimensional manner monitor and verify taxpayers' basic information, tax payment status, personnel information, etc. (e.g., information on the enterprise's registration, information on the enterprise's relevant personnel, etc.), in order to verify the authenticity of taxpayers' declarations It can also realise information sharing and multi-dimensional, all-round and full-process tax co-administration.

4.2 Accurate Monitoring of Tax Liability

This anchor bounty income tax collection and management cloud platform system verifies whether there are any anomalies by supervising the data declared, and it also checks and compares the data of taxpayers' bank accounts and enterprise-related ledgers. This tax control system constantly monitors the enterprise's tax liability rate, whether it is too high or too low there is a risk of being interviewed and audited by the tax bureau. In practice, although an enterprise's tax liability rate may be affected by a number of factors, generally the fluctuation of the tax liability rate of an enterprise within a certain period of time will not be very large. The level of VAT and income tax and changes in the tax burden of each industry under the tax system are recorded in greater detail in the local tax system, which is more sensitive to the percentage of fluctuation in the tax burden rate of enterprises, and the tax authorities will assess the tax payment of enterprises and investigate the reasons for fluctuations in the tax burden rate of some enterprises.

4.3 Centralisation and Easy Access to Tax-Related Information of Anchors

The cloud platform for tax collection and management of anchor reward income concentrates the tax-related information of all anchor reward income in the sharing platform, and it is necessary to require the Internet live broadcasting platform not only to record and share the personal information of the network anchor for registration and authentication, but also to record and update in real time and in the peer-to-peer sharing platform with the tax authorities the legal relationship between the network anchor and the platform and the guilds, the way of settlement of the transaction, the 'reward' share ratio, and the data of the 'reward' actually received by the anchor. The 'reward' share ratio and the actual 'reward' data received by the anchor should be recorded and updated in real time and shared on the peer-to-peer sharing platform with the tax authorities.

5 CONCLUSION

This study has successfully constructed a digital cloud platform for tax collection and management of anchor reward income, describing the logical structure of the cloud platform for tax collection and management of anchor reward income, as well as the related tax collection and management audit control system, tax collection and management intelligent insight and analysis system, tax collection and management policy cloud service system, and income tax collection and management risk prevention and control system, etc. Based on this this paper also proposes to put forward the following relevant recommendations. Increase the penalty for illegal and irregular behaviour such as tax evasion and tax evasion on the reward income of anchors, and also establish integrity files to incorporate their behaviour into the management of the credit system. At the same time, through the establishment of a more stringent access audit mechanism, to ensure that the new anchor has a legitimate identity background and stable economic sources. Live broadcast platform as the anchor income payment and management, should also bear the responsibility of supervision. During the access audit process, the platform should strictly review the tax status of the anchor and assist the tax department to complete the daily tax monitoring work. The tax department should establish a regular assessment mechanism for the tax compliance of the anchor's income, and link it to the anchor's credit rating and the platform's incentive policy.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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