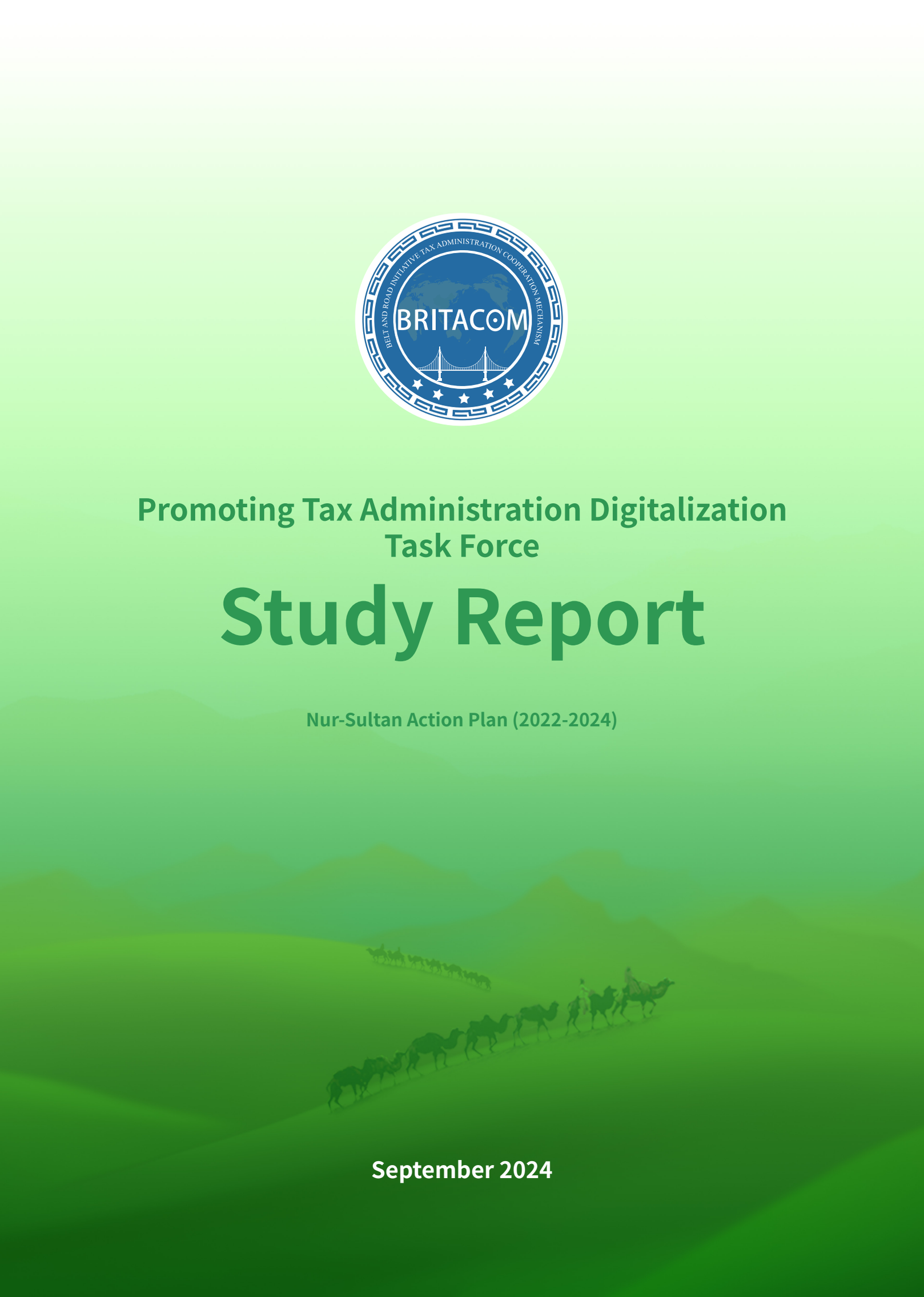
Promoting Tax Administration Digitalization Task Force

Study Report

Nur-Sultan Action Plan (2022-2024)



September 2024

CONTENTS

Chapter 1 Introduction

1.1 Background of the Report

On 7 to 9 September 2021, the 2nd Belt and Road Initiative Tax Administration Cooperation Forum (BRITACOF) was hosted online by the State Revenue Committee of the Ministry of Finance of Kazakhstan.[1]The Forum was attended by heads and representatives of tax authorities from 61 jurisdictions including China, Kazakhstan, Algeria, UAE, Uruguay, Sierra Leone, and Singapore, and heads of 12 international organizations, as well as representatives from the academia and the business.

Since its establishment, the Belt and Road Initiative Tax Administration Cooperation Mechanism (BRITACOM) has been adhering to the principle of planning together, building together, and benefiting together, strengthening exchanges in tax administration, sharing experiences, and cross-border cooperation among Belt and Road Initiative (BRI) jurisdictions.

The 2nd BRITACOF on "Digitalization of Tax Administration", formulated and unanimously adopted the *Nur-Sultan Action Plan (2022-2024),* which deeply summarized the characteristics of the BRITACOM, explored major tasks, effectively innovated implementation paths, actively responded to the demands of BRI jurisdictions, and planned the direction of BRITACOM for the following three years. The content includes 28 actions across 7 areas: raising tax certainty, promoting tax administration digitalization, improving tax environment, raising capacity building of tax administration, establishing a regular exchange mechanism, raising the profile of the BRITACOM and implementation framework.

Among them, the task force of promoting tax administration digitalization mainly includes the following four aspects:

a. We are committed to formulating development plans of tax digitalization fitting the conditions of different jurisdictions.

b. We resolve to develop "non-contact" services to maintain business continuity in the time of the COVID-19 pandemic and the post-pandemic era.

c. We support efforts to strengthen big data of tax administration to improve quality control, analysis, and application of tax-related data.

d. We respect data security, and are committed to establishing mechanisms to avoid potential risks of privacy breaches, and observing confidentiality of data in accordance with the applicable law.

Therefore, this report comprehensively discusses the development and highlights of tax administration digitalization of various jurisdictions through questionnaires and mainly focuses on BRITACOM Member Tax Administrations and Observers' development, challenges confronted and future prospects in tax

1 https://www.britacom.org/xw_7086/jzdt/202109/t20210909_1121173.html

administration digitalization. It collects cases from BRITACOM Member Tax Administrations and Observers, and tax administrations with advanced experiences and discusses a set of specific and practical methods.

This report is drafted based on the meetings participated by BRITACOM Member Tax Administrations and Observers, as well as the *Belt and Road Initiative Tax Journal* and questionnaires. The tasks of "promoting tax administration digitalization" task force in the Action Plan have been positively implemented. The main purpose of this report is to analyze feedback from questionnaires, present relevant cases, demonstrate that BRITACOM relevant parties could have a positive impact on tax administration digitalization through the implementation of the *Nur-Sultan Action Plan (2022-2024)*, and provide suggestions for the development of tax administration digitalization.

1.2 The Importance of Tax Administration Digitalization[2]

a. Strengthening international tax cooperation and information sharing: the rise of the digital economy has made multinational corporations and international trade activities increasingly frequent, which requires more effective information sharing and coordination among tax authorities. The construction of a digitalized tax system, especially a secure information exchange platform based on technologies such as blockchain will promote international tax transparency and cooperation efficiency.

b. Enhancing tax supervision capabilities and combating cross-border tax evasion: in the context of globalization, issues of cross-border tax evasion are becoming increasingly prominent. Tax digitalization through real-time monitoring and analysis of cross-border transactions helps identify and prevent tax evasion behaviors to ensure tax compliance.

c. Optimizing tax services and improving convenience in handling taxes: with the development of the digital economy, taxpayers' demand for convenient and personalized tax services continues to increase. A digitalized tax system can provide round-the-clock online services, intelligent consultations, and customized guidance, significantly improving taxpayer experience and satisfaction.

d. Promoting tax legality and standardizing enforcement: digitalization not only improves the efficiency of tax administration but also supports the construction of a tax legal system. By standardizing enforcement processes through information systems, it ensures strict enforcement of tax regulations while providing transparent records of law enforcement to enhance public trust in tax enforcement.

e. Supporting green taxes and sustainable development policies: the development of global economy and digitalization also brings attention to environmental protection and sustainable development. The process of tax digitalization supports an environment-friendly tax system through measures such as green tax incentives and carbon emission measurement to promote economic sustainability.

f. Strengthening risk management and data security: as the pace of tax digitalization accelerates, protecting taxpayer information and system data security becomes particularly critical. Tax

2 https://link.springer.com/chapter/10.1007/978-3-031-52403-5_11

authorities need to adopt advanced encryption technologies and safety measures to ensure the safe operation of the tax system and confidentiality of taxpayer information.

g. Driving technological innovation and talent training: the rapid development of tax digitalization poses higher requirements for technological innovation and talents training. Tax authorities need to stay up-to-date by continuously introducing new technologies such as artificial intelligence (AI) and big data analysis while strengthening professional talents training to adapt to the constantly changing tax environment.

In summary, tax administration digitalization is not only key to enhancing the modernization of tax administration but also an inevitable choice to address global trends and challenges in tax management. In the future, as information technology continues to advance, tax administration digitalization will continue to deepen, providing strong momentum and support for reforming the tax system and enhancing services.

1.3 Previous Work Conducted

1.3.1 Establishment of The Task Force

To ensure the systematic and continuous advancement of the BRITACOM, in accordance with the arrangement of the *Nur-Sultan Action Plan (2022-2024)*, the BRITACOM Secretariat, considering the difficulties encountered in implementing the *Wuzhen Action Plan (2019-2021)* and based on the summary of experiences and practices, has organized relevant parties to establish the Promoting Tax Administration Digitalization Task Force to ensure that all tasks are effectively implemented.

The chair of the Promoting Tax Administration Digitalization Task Force is the State Revenue Committee of the Ministry of Finance of Kazakhstan (SRC). The task force includes 11 Member Jurisdictions, namely Kazakhstan, Rwanda, Algeria, Cambodia, Angola, Nepal, Georgia, the United Arab Emirates, Bangladesh, Uruguay, and China; 4 Observers including Hungary, Armenia, Iran, and Inter-American Center of Tax Administrations; and 4 Members of the Advisory Board, namely Prof. Jinyan Li, Prof. Jeffrey Owens, Mr. Christopher Sanger, and Mr. David Linke.

1.3.2 Exchange of Experiences in Tax Administration Digitalization

a. On July 15, 2022, initiated by the State Revenue Committee of the Ministry of Finance of Kazakhstan, Chair of Promoting Tax Administration Digitalization Task Force, a virtual seminar on Enhancing Taxpayer Compliance through Mobile Applications was held. Nearly 150 representatives from the BRITACOM Member Tax Administrations, Observers, the Advisory Board, and businesses attended the seminar. During the seminar, participants focused on practices and experiences of using mobile applications to improve taxpayer compliance, and issues of common concern among the BRI jurisdictions, and fully exchanged experiences and opinions. The SRC introduced E-Salyq Azamat, its mobile application for citizens and entrepreneurs to fulfill their tax obligations. This app is designed for individual users to simplify the tax payment process. It can view upcoming payments, check taxes payable, allow tax payments without filling in detailed information, auto-offset taxes, manage overpayments, and submit tax reports for individual businesses among other functions. Italy

presented the AED mobile application, which aims to provide consulting and assistance services for taxpayers to facilitate their tax obligations but cannot directly complete these duties. The application only provides "main services" such as searching tax information, processing status of documents sent, and receiving notifications to monitor various tax obligations. China introduced the individual income tax mobile application, which offers taxpayers round-the-clock, butler-style, and powerful tax services at their fingertips, comprehensively supporting individual income tax business through "self-management service" "reminder service" "consultation service" "interactive service" "warm service", further enhancing the "refinement" level of natural person tax management services.

b. On June 30, 2023, the China-Africa Tax Administration Innovation and Technical Cooperation Seminar was held in Changsha, Hunan. At the seminar, the Chinese side introduced how the Chinese tax authorities continuously drive innovation in tax administration methods and process optimization through digitalization, and promote continuous improvement in the quality and efficiency of tax administration and services. The Egyptian side shared Egyptian tax authorities' practices and achievements in tax administration digital transformation and electronic invoice implementation. During the round-table session, Chinese and African tax officials and fiscal experts deeply discussed topics such as the application of information technology in tax administration capacity building and financial payment innovation technology aiding smart tax construction. Uganda speaker mentioned that Uganda has adopted financial payment innovation technologies, such as mobile payment solutions, online payment portals (eTax), TADAT for data analysis, electronic invoices and receipts (EFRIS), strengthening cooperation with commercial banks and mobile telecommunications providers. Kenya speaker listed key technologies used in taxation, including iTax, Integrated Customs Management System (ICMS), Electronic Tax Invoice Management System (ETIMS), and Expendable Goods Management System (EGMS), to adapt to changing business environment, meet increased domestic resource mobilization needs, reduce compliance costs, promote timely data-driven decision-making, support a sound risk management framework, and sustain efficient tax administration processes.[3]

c. From October 19 to 20, 2023, the High-Level Symposium of the Digitalisation and Digital Transformation of Tax Administration was held in Beijing. Representatives from tax authorities of 20 countries across Asia, Africa, Europe, the Americas, and Oceania and 6 international organizations, and the guests from some academic institutions, multinational corporation engaged in in-depth discussions on topics such as tax administration digital transformation, innovative taxpayer services, and tax business environment improvement, reaching multiple consensuses. At the seminar, Peter Green, Head of the FTA Secretariat, OECD, and Paul Marsh, advisor of FTA Secretariat, OECD, provided an in-depth introduction to the latest progress of the global "Tax Administration 3.0" initiative released by the OECD. Heads of tax authorities and leaders of international organizations such as the United Arab Emirates, Algeria, Malaysia, Hungary, Brazil, Australia, Spain, Japan, Korea, China, and the International Monetary Fund made keynote speeches or moderated panel discussions, sharing their

3 https://www.britacom.org/xw_7086/news/202307/t20230713_1129136.html

practical experiences and research findings in tax administration digital transformation, analyzing difficulties and challenges faced, and discussing subsequent action plans. The seminar passed the *Joint Statement of the High-Level International Seminar on Tax Administration Digitalization*, fully affirming the exploratory practices of all participants in tax administration digital transformation. The next steps will focus on transforming consensus into action, better adapting to the global trend of tax administration digitalization, continuously deepening international tax cooperation, improving the global tax governance system, promoting cross-border investment facilitation, and driving global economic recovery and sustainable development.[4]

d. On December 5, 2023, an online seminar on Experiences of Tax Administration Digitalization was convened, attended by more than 200 representatives from BRITACOM relevant parties from over 20 jurisdictions. Participants discussed the progress of Promoting Tax Administration Digitalization Task Force and tax administration digitalization construction. Polls were launched among the participants during the seminar to understand the basic situations of digitalization construction, new technology applications, and tax data usage. Poll results were used to guide future policy formulation and practice improvements. The seminar' s agenda covered the latest tax administration technologies, including the application of innovative technologies such as AI, big data analysis, and blockchain in the tax field. Participants had in-depth discussions on how to use these technologies to enhance the transparency, efficiency, and responsiveness of the tax system. Beyond the technical aspect, delegates also discussed tax policies and administration, focusing on the impact of tax administration digitalization on improving the quality of taxpayer services, enhancing taxpayer compliance, and supporting economic development. In response to challenges brought by global environmental changes and technological advancements, participants believed that strengthening international cooperation and continuous policy innovation are key to advancing tax modernization in various jurisdictions. It is expected that international cooperation and knowledge exchange would assist to provide paths for implementing effective tax digitalization strategies for all jurisdictions, ensuring the fairness, transparency, and sustainability of the tax system.[5]

4 https://www.chinatax.gov.cn/chinatax/n810219/n810724/c5215450/content.html
5 https://www.britacom.org/xw_7086/jzdt/202312/t20231208_1131557.html

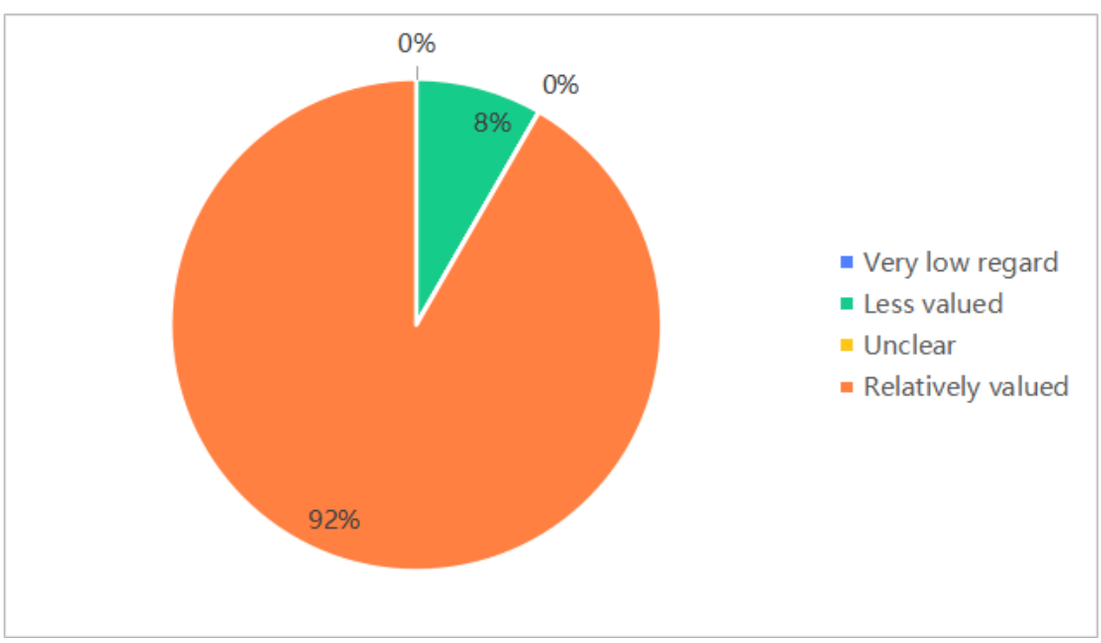
Chapter 2
Questionnaire Analysis

To comprehensively understand the development level and distinctive features of tax administration digitalization in various jurisdictions, the BRITACOM Secretariat designed a questionnaire on tax administration digitalization. This questionnaire was distributed among all BRITACOM Member Tax Administrations, focusing on online tax services, main information systems and applications, issues on digitalization construction, and upgrading needs. The questionnaire consists of three parts: a. Overview of Digitalization Construction; b. Challenges of Tax Administration Digitalization; c. Thoughts and Prospects.

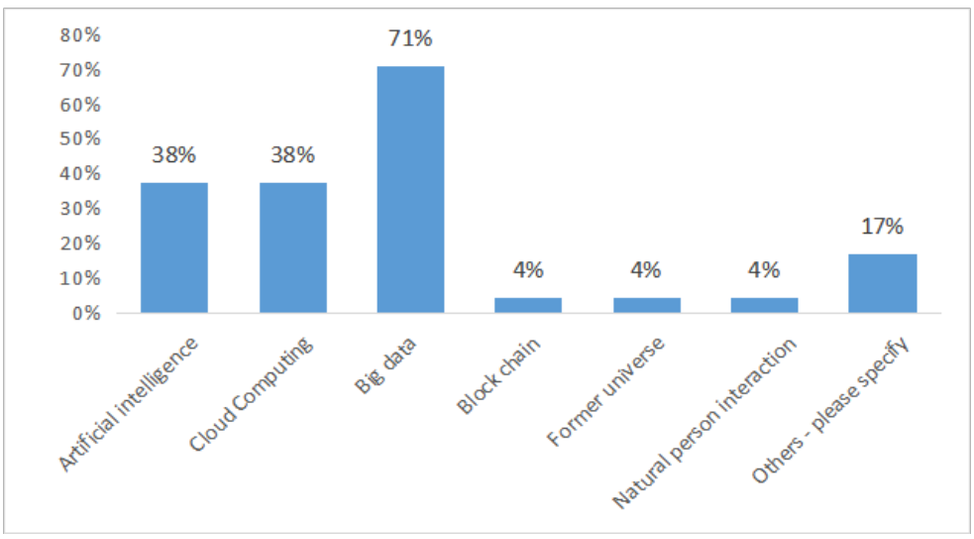
2.1 Overview of Digitalization Construction

2.1.1 How much importance do you attach to the construction of information technology of tax administration in your jurisdiction?

The questionnaire shows that 92% of jurisdictions attach great importance to the digitalization construction of tax administration. Against the backdrop of the digital economy era, the importance of tax administration digitalization is self-evident. It is not only the key to improving the modernization level of the tax system but also an important means to meet international tax challenges, optimize tax services, guarantee tax rule of law, support green development, strengthen risk management, and promote technological innovation. With the continuous acceleration of digitalization, tax administration digitalization will become an indispensable core component of the global tax system, providing strong support for achieving a fairer, more efficient, and sustainable tax environment.



2.1.2 What are the new technologies your jurisdiction is using in the construction of tax administration digitalization? (multiple choice)



The top three new technologies used in tax administration digitalization construction by jurisdiction are: big data, AI, and cloud computing. In addition, other new technologies mainly include blockchain, metaverse, natural person interaction, digital identity, relational data management systems, application programming interfaces (APIs), Internet of Things, etc.

a. Big Data: Questionnaires show that over 71% of the jurisdictions use big data technology and analytical tools for risk management and compliance detection. Tax authorities can perform in-depth analysis and real-time processing of massive amount of data using big data technology and analytical tools, achieving comprehensive monitoring of tax behaviors, and instantly identifying and preventing potential risks and non-compliant behaviors. This not only improves the accuracy of risk management but also enhances the proactivity and initiative of compliance detection. However, this also brings new demands for privacy protection and data security, as well as the need for relevant tax personnel to possess higher technical capabilities. Therefore, strengthening information security and enhancing staff technical training have become essential measures that jurisdictions must pay attention to in the process of promoting tax administration digitalization.

b. AI: The questionnaire shows that more than 38% of the jurisdictions apply AI in tax administration. Compared to this, the number of jurisdictions using big data technology and analytical tools exceeds 71%. The reason for this gap may be related to various factors. AI technology requires higher level of infrastructure and skills, as well as more complex algorithms and system integration. Additionally, the ethical and privacy concerns raised by AI applications are more complex, which might make some jurisdictions more cautious before full deployment. Nevertheless, the potential of AI technology is still widely recognized. Its capability to simulate human intelligence for tasks such as automating tax consultation, predicting tax trends, and discovering potential risks is attracting more and more jurisdictions to explore or plan to introduce this technology. It is expected that the application of AI in the field of tax administration will gradually increase in the coming years.

c. Cloud Computing: More than 38% of the jurisdictions have already started to apply cloud computing in tax administration. Cloud computing provides tax authorities with powerful data storage and processing capabilities, making processes from tax registration to audit, risk management, and decision support more efficient and flexible. By utilizing cloud platforms, tax authorities can achieve instant updates and sharing of data, and support remote work, which significantly enhances the efficiency and response speed of tax management. However, the application of cloud computing has also raised high concerns on data security. Tax authorities must conduct strict security assessments and compliance checks when migrating to cloud platforms.

d. Others: Besides AI, big data, and cloud computing, emerging technologies such as blockchain, metaverse, natural person interaction interfaces, APIs, and the Internet of Things are also finding application scenarios in the field of tax administration. According to our latest questionnaire, an increasing number of jurisdictions are exploring the potential applications of these technologies in tax systems. Blockchain technology, with its decentralized, immutable, and transparent characteristics, is used to enhance the security and execution efficiency of tax systems. For example, it can help tax authorities track cross-border transactions and prevent tax fraud. With the rise of the metaverse concept, tax agencies are considering how to manage taxes in virtual spaces for transactions involving digital goods and services. Natural person interaction technologies, such as voice recognition and virtual assistants, are improving the interaction experience between taxpayers and the tax system, making tax consultation and filing processes more convenient. The use of APIs enables seamless integration of tax systems with other government or commercial systems, improving the degree of automation in data processing. Meanwhile, the introduction of Internet of Things technology optimizes multiple links from asset tracking to electronic invoice systems, providing new channels for data collection and taxation points for tax authorities.[6]

2.1.3 What is the scene of applying new technologies to tax administration digitalization in your jurisdiction?

New technologies applied by jurisdictions in tax administration digitalization mainly include the following scenarios: electronic invoicing, electronic document processing systems, online declaration and payment, intelligent chatbots, automated tax refunds, automated compliance checks, etc., which have promoted the improvement of digital levels and administration capabilities in tax administration across jurisdictions.

a. Electronic Invoicing: In recent years, governments of various jurisdictions have invested substantial resources in developing electronic services and digital solutions. Electronic invoicing, due to its unique advantages in plugging loopholes, improving administration efficiency, and reducing transaction costs, has become a “favorite” in driving the deep digital transformation of tax administration.

b. Pre-filled Returns: One of the significant innovations in return process design is the pre-filled return form. The pre-filling method refers to filling in the taxpayer’ s return form or online account with

6 https://www.ey.com/en_gl/insights/government-public-sector/how-can-harnessing-tax-data-create-value-for-all

information obtained from third parties in advance. Taxpayers can review and confirm the pre-filled return form before submitting it electronically or in paper form. Since individual income tax deductions or credits are relatively few and can be verified through third-party data, pre-filled returns were initially applicable to individual income taxpayers among Member Tax Administrations. With the rapid development of digital economy, information reporting requirements increasingly involve the application of data science technology, coupled with the popularity of electronic invoicing systems, the application scope of pre-filled returns has rapidly expanded to more complex taxes such as VAT and corporate income tax.

c. AI Services: AI enables smart online responses and "cloud-based services", with its business coverage and front-end maturing day by day. Smart services can break through communication barriers between tax authorities and taxpayers, as well as temporal and spatial limitations, providing real-time interaction, quick response, remote control, and data visualization, which facilitates information communication between both parties and improves taxpayer efficiency. Tax consultation intelligent robots, based on machine learning and pattern recognition, interact with taxpayers to provide answers to difficult tax questions, reducing the difficulty of self-taxation and improving tax compliance. Some BRITACOM Member Tax Administrations with a relatively advanced digital level have already started using digital assistants to handle taxpayer consultations, offering 24/7 consultation that not only facilitates taxpayers but also reduces the administrative expenses of tax authorities.[7]

d. Others: Tax authorities of various jurisdictions are gradually introducing automated tax refund and automatic compliance checking mechanisms to improve work efficiency and reduce human error. The automated tax refund system optimizes the tax refund process through algorithms, achieving rapid processing of taxpayers' refund requests. This not only accelerates the efficiency of refunds and increases taxpayer satisfaction but also significantly reduces the administrative cost of implementing refunds. Automatic compliance checking utilizes advanced analytical tools to automatically detect anomalies or potential risks in tax filings, ensuring tax compliance while improving the precision of tax audits. The application of these automated tools significantly enhances the operational efficiency of the tax system, ensuring standardization and consistency in operational processes. However, the successful implementation of automated systems relies on a strong information technology infrastructure and a high-quality technical operation and maintenance team. Moreover, for automatic compliance checking, how to set appropriate parameters to balance regulatory stringency and taxpayer-friendliness remains a major challenge. Automated tax refunds and automatic compliance checking are becoming important components of modern tax administration systems, and continuous technological progress will ensure that these tools play a greater role in the future.

2.1.4 What are the achievements of applying new technologies to tax administration digitalization in your jurisdiction?

The introduction of new technologies has led to significant achievements in tax administration across

7 https://link.springer.com/chapter/10.1007/978-3-030-74811-1_88

jurisdictions, primarily reflected in three core areas: increased tax revenue, improved quality of tax services, and enhanced compliance in tax behavior.

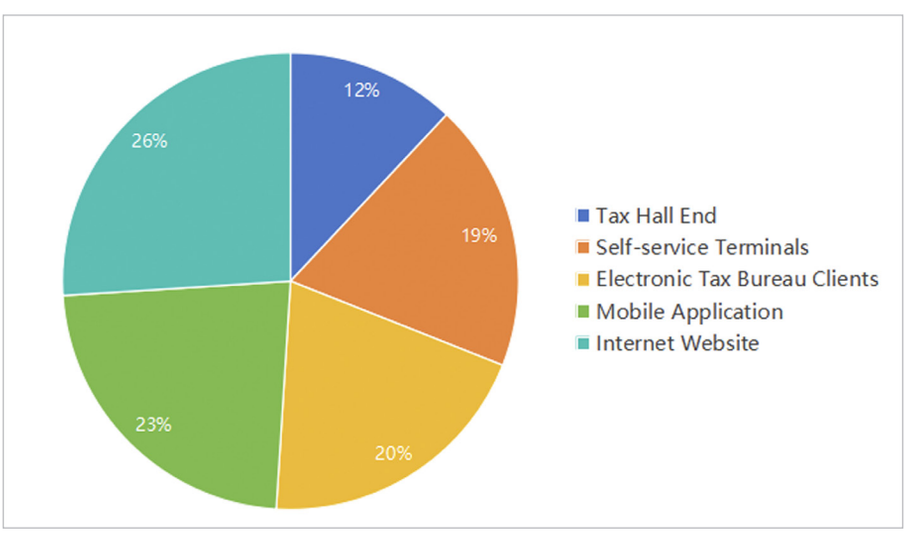
These technologies enable tax authorities to automatically identify and track new sources of taxation, significantly reducing information asymmetry, thereby enhancing the quality and efficiency of tax administration. For example, the application of internet technology has greatly increased the transparency of tax information, helping tax authorities adjust strategies timely in response to market changes. Additionally, the promotion of online tax declaration systems has fully automated the tax declaration process, while the integration of electronic payments has simplified the payment process, offering more convenience to taxpayers.

Building automated data centers and data warehouses has become the infrastructure supporting the implementation of these technologies. They can perform real-time data assessment and risk management, ensuring the accuracy and timeliness of tax decisions. Big data analytical tools make behavioral compliance monitoring more precise, and machine learning algorithms play an important role in improving service efficiency and personalizing taxpayer services.

In summary, the application of new technologies has not only improved the operational efficiency of tax authorities but also enhanced the taxpayer experience and promoted the improvement of the tax system. As these technologies continue to develop, the modernization of tax administration will mature further, contributing greater strength towards achieving a fair, efficient, and intelligent tax system.[8]

2.1.5 What are the tax channels you provide for taxpayers in your jurisdiction?

The tax service channels provided by jurisdictions for taxpayers, from most to least, are as follows: self-service terminals, physical tax service halls, electronic tax bureau clients, mobile applications, internet websites, and other methods including email and SMS services, social media, and instant messaging tools. Questionnaire results show that while offline services still occupy a significant proportion in various jurisdictions, the development of online tax service channels is rapidly advancing.



8 https://www.ey.com/en_gl/insights/government-public-sector/how-can-harnessing-tax-data-create-value-for-all

a. Self-service tax terminals: These terminal devices can be installed in crowded public places or shopping centers, offering simple tax services such as searching tax records and printing tax certificates.

b. Physical tax service halls: These service halls typically provide comprehensive tax guides and professional tax consultation, assisting taxpayers in resolving complex issues.

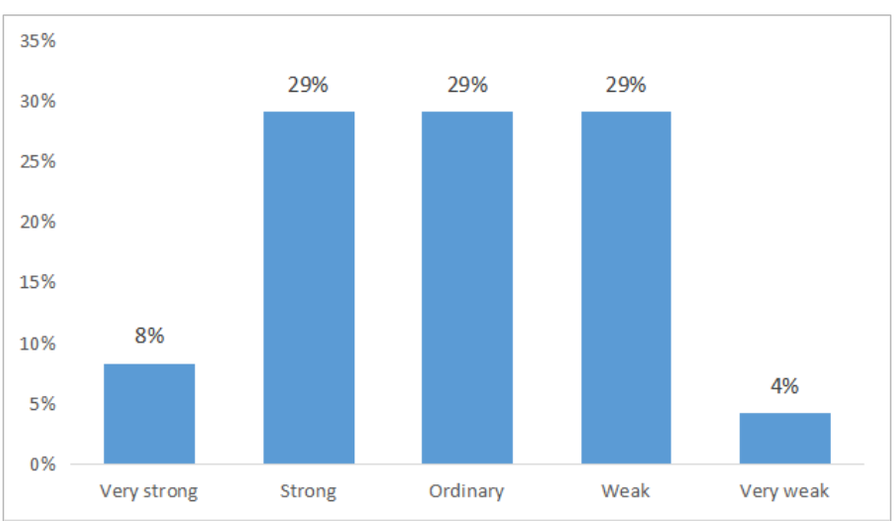
c. Electronic tax bureau clients: The electronic tax bureau is a comprehensive online platform integrating functions like tax registration, declaration and payment, invoice management, and tax incentive applications. Taxpayers can also access personalized services through the electronic tax bureau, such as scheduling tax appointments and viewing previous tax records.

d. Mobile applications: With the popularity of smartphones, tax authorities have also developed mobile applications to facilitate taxpayers in completing tax operations on mobile devices. These apps support basic functions like tax declaration, invoice issuance, and policy consultation, offering user-friendly experiences and more flexible and convenient tax services.

e. Email and SMS services: To enhance information transparency and tax efficiency, tax authorities also send taxpayers reminders for tax payments, policy updates, or other important information via email or SMS. Taxpayers can submit specific tax forms or seek online consultation through email, and receive quick feedback.

f. Social media and instant messaging tools: In some jurisdictions, tax authorities utilize social media platforms and instant messaging tools, such as Facebook, Instagram, Weibo, WeChat, etc., to publish tax policy updates, answer taxpayer questions, and provide online consultation services. This method offers strong interactivity and can respond to taxpayer needs instantly.[9]

2.1.6 What is the application ability of tax administration digitalization to new technologies such as AI, cloud computing, big data, metaverse, and blockchain in your jurisdiction?

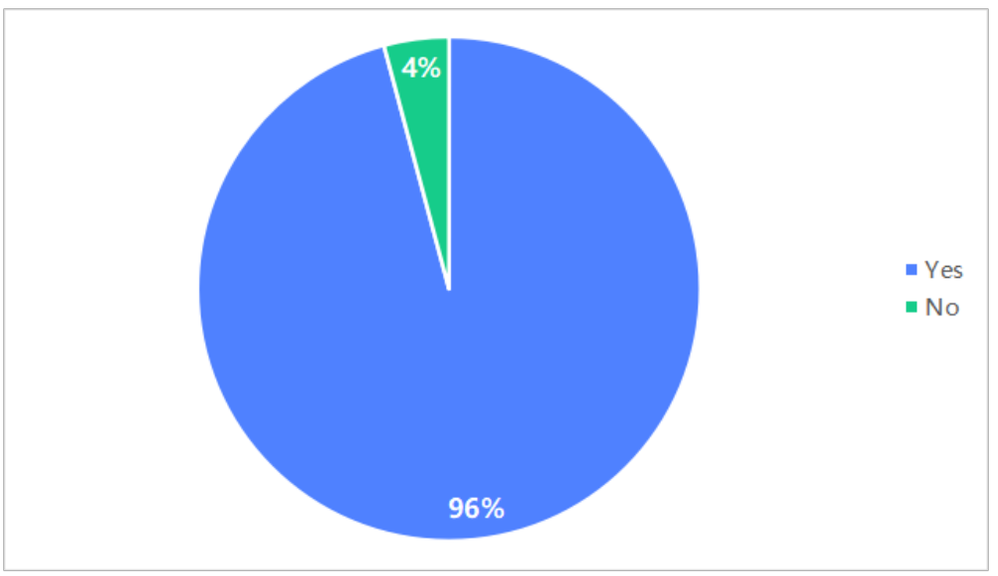


9 https://mag.ctax.org.cn/Article/Detail?id=74900#

Among the jurisdictions surveyed, those with strong, ordinary, and weak capabilities in new technology application each account for 29%, 8% have very strong capabilities and 4% have very weak capabilities. While all jurisdictions have seen development in the digitalization of tax administration, the development is uneven, and most jurisdictions are at a moderate level.

This disparity is specifically reflected in the fact that some jurisdictions have more advanced infrastructure such as high-speed internet, cloud computing platforms, and big data centers, while others are still in the stage of improving basic network construction. Some jurisdictions are capable of providing comprehensive electronic services including online filing, payment, and consultation, whereas others may only offer limited online services. Some jurisdictions have developed relatively complete tax digitalization plans along with relevant laws and regulations, while the systems in other jurisdictions are still imperfect. The distribution of talents with advanced information technology and specialized tax knowledge is uneven across different jurisdictions. Some jurisdictions are capable of independently developing new technologies, while others mainly rely on importing technology and equipment.

2.1.7 Can taxpayers achieve entire-process digitalization of tax declaration and payment of multiple or all tax types in your jurisdiction?

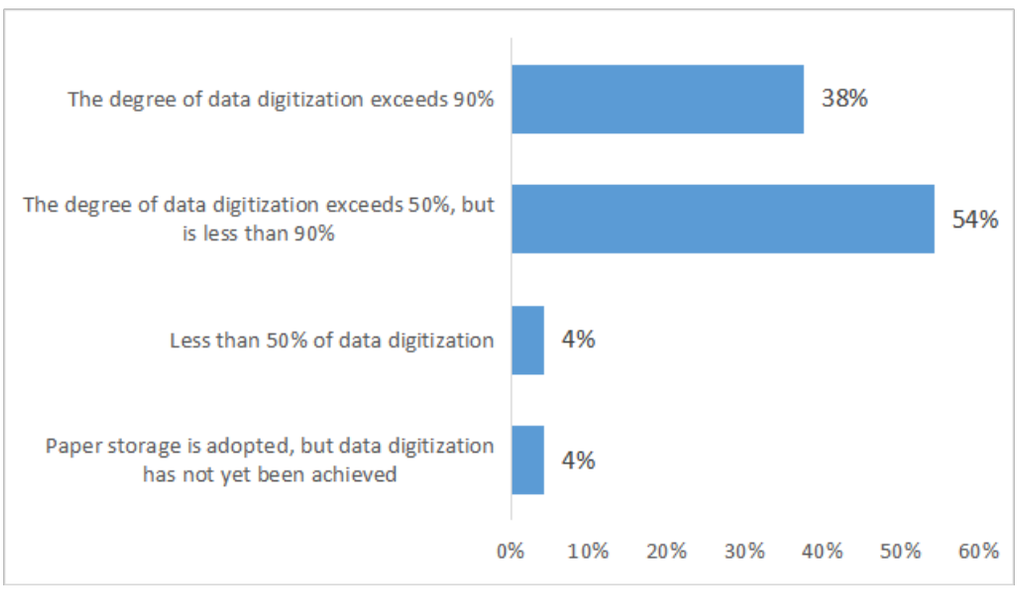


96% of jurisdictions are capable of achieving full-process digitalization for the declaration and payment of all types of taxes. This indicates that the majority of jurisdictions have successfully integrated information technology into their tax systems, providing efficient and convenient tax services for taxpayers. In these jurisdictions, taxpayers can enjoy a completely electronic service experience, with every step from declaration to payment being electronic and automated.

However, there are still some jurisdictions that cannot fully achieve the digitalization of the entire process for tax declaration and payment for all tax types. This may be related to various factors, such as imperfect information technology infrastructure, legal and regulatory restrictions, and constraints in resources and technology. For example, in Macau, China, certain tax matters support online declaration and payment, but to comply with legal requirements, tax notices must be provided offline.

Despite these challenges, efforts to promote the digitalization of tax administration continue globally. Through the application of information technology, tax authorities hope to improve service quality, simplify tax processes, reduce the burden on taxpayers and tax authorities, thereby enhancing overall tax compliance rates and efficiency. In the future, with further technological development and policy support, it is expected that more jurisdictions will achieve entire-process digitalization for all tax types, providing even better services for taxpayers.

2.1.8 What is the degree that tax data digitization has been achieved in your jurisdiction?



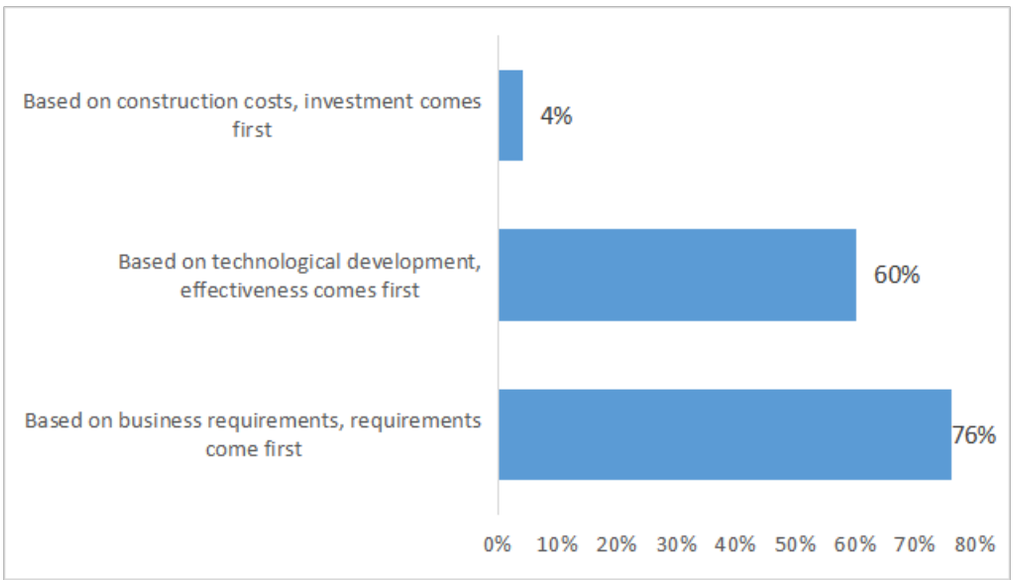
According to our questionnaire results, jurisdictions around the world have made significant progress in the electronic processing of tax data. Specifically, 38% of jurisdictions have achieved more than 90% electronic processing of their tax data, indicating that these jurisdictions have realized a high level of electronic data processing and storage, greatly enhancing the efficiency and response speed of their tax systems. Additionally, 54% of jurisdictions have an electronic processing rate between 50% and 90%, meaning that most tax information has been digitalized, but further improvements are needed to cover a wider range of tax services and processes. Moreover, 4% of jurisdictions have an electronic processing rate of no more than 50%, showing that there is still considerable room for improvement in their journey towards digitalization. A very small minority, that is 4%, still use paper-based storage methods and have not yet implemented electronic data processing.

Despite the various levels of electronic processing, it is evident that aside from a few jurisdictions, most have basically achieved widespread coverage of data digitalization. This not only signifies that global tax authorities have recognized the significant value of data digitalization in enhancing the efficiency, transparency, and convenience of the tax system.

In the future, with technological advancements and the numerous benefits brought by digitalization, it is expected that more jurisdictions will promote the complete digitalization of tax data, gradually eliminating paper-based processes, achieving real-time updates and sharing of tax information, and contributing to the

further modernization of the global tax administration system.[10]

2.1.9 Which of the following options are the basic idea for carrying out the digitalization construction of tax administration at the current stage in your jurisdiction? (multiple choice)



In advancing the digitalization construction of tax administration to a new stage, different jurisdictions have varying starting points and considerations. According to our questionnaire, 76% of jurisdictions believe that this work should be based on business needs, emphasizing “needs first”. These jurisdictions advocate that digitalization construction should closely revolve around the actual needs of tax services, ensuring that every technological update and service improvement can directly address specific issues in tax administration.

At the same time, 60% of jurisdictions believe it should be based on technological development, advocating “efficiency first”. In the view of these jurisdictions, the level of technology directly affects the efficiency and effectiveness of the tax system. Therefore, cutting-edge technologies should be adopted in digitalization construction to ensure the tax system can achieve optimal performance.

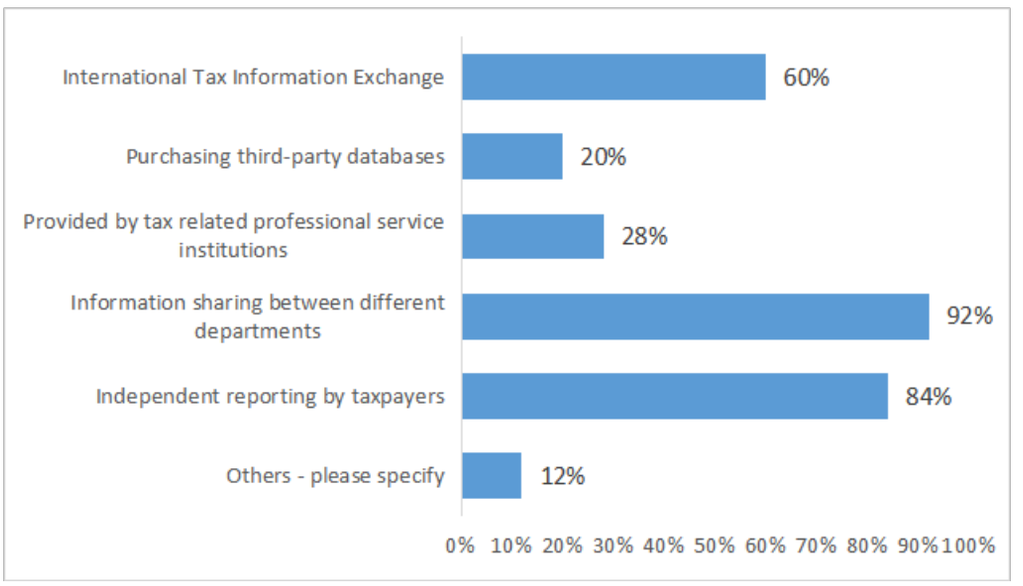
However, 4% of jurisdictions believe that the construction of tax administration digitalization should be based on construction costs, taking “cost” as the primary consideration. These jurisdictions may face budget constraints or cost-benefit considerations, so when promoting digitalization projects, they will pay more attention to cost control and return on investment.

From the above results, it can be seen that different jurisdictions have adopted different strategies and focuses in the process of promoting tax administration digitalization, according to their own economic conditions, technological foundations, and policy orientations. This diversified strategy selection reflects the complexity of the global path to tax administration digitalization, while also indicating the key factors

10 https://www.oecd.org/en/topics/sub-issues/digital-transformation-of-tax-administration.html

that jurisdictions need to consider when pursuing modernization of their tax systems. With continuous technological development and the accumulation of experience, it is expected that more jurisdictions will find a digitalization construction path suitable for their own development in the future.

2.1.10 What are the main ways in your jurisdiction to obtain taxpayer-related tax information? (multiple choice)



To obtain taxpayer-related information jurisdictions have adopted various strategies to ensure the comprehensiveness and accuracy of the information.[11]

According to our latest questionnaire results, 92% of jurisdictions obtain tax-related information through inter-departmental information sharing, which effectively integrates government resources and improves the efficiency and quality of information acquisition.

In addition, 84% of jurisdictions rely on information voluntarily submitted by taxpayers. It requires taxpayers to actively declare their financial status according to regulations, thereby providing basic data for tax authorities.

At the same time, 60% of jurisdictions utilize international tax information exchange mechanisms, which are specifically aimed at cross-border tax management and cooperation, helping to combat transnational tax avoidance and evasion. Another 28% of jurisdictions obtain relevant information from tax-related professional service institutions, including accounting firms and law firms, which can provide professional tax data and opinions due to the nature of their professional services.

About 20% of jurisdictions choose to purchase third-party data, which usually includes financial or market data obtained from commercial data providers, used to assist in tax analysis and decision-making.

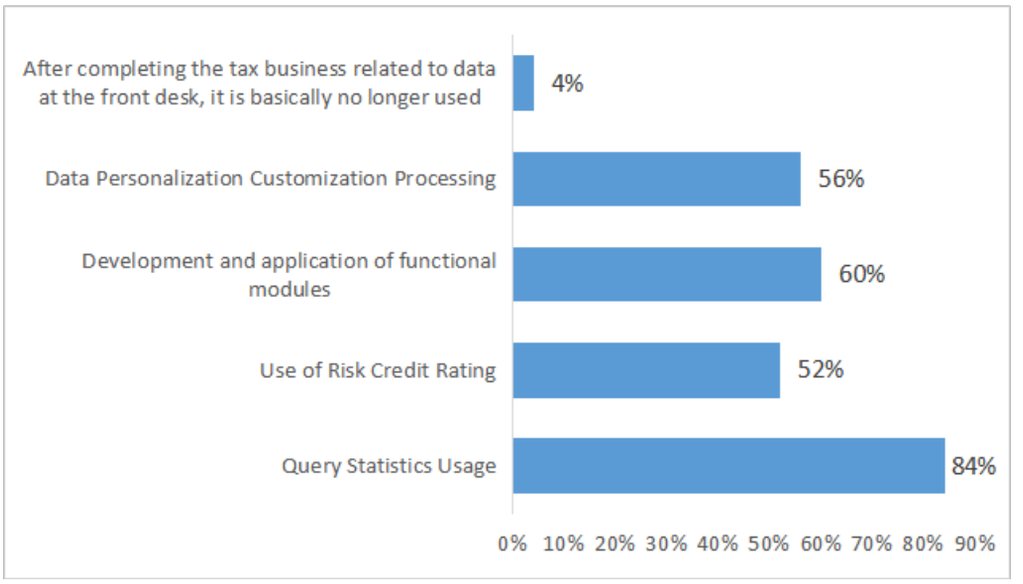
Among other methods, 12% of jurisdictions mentioned retrieving information through memorandums of understanding with shared economy platforms, such as obtaining tax-related information on short-term

11 https://www.ey.com/en_gl/insights/government-public-sector/how-can-harnessing-tax-data-create-value-for-all

rentals from platforms like Airbnb, reflecting innovative measures in tax administration under the new economic model.

Overall, different jurisdictions adopt diversified information acquisition strategies according to their own tax system characteristics and levels of digitalization, to achieve efficient collection and processing of tax information. This not only enhances the quality and efficiency of tax administration but also better meets the needs of tax administration in the era of globalization and digitalization.

2.1.11 What are the purposes for using tax data in your jurisdiction? (multiple choice)



In the aspect of using tax data, various jurisdictions demonstrate diverse application modes, making full use of tax data in supporting decision-making and operation of tax system.[12]

84% of jurisdictions utilize the data to do querying of statistics, which is the most common way of using data. Data analysis could provide reference for decision-making through monitoring tax revenue conditions and trends.

Additionally, 60% of jurisdictions utilize tax data for the development and application of functional modules, indicating that these jurisdictions value the application of data to technological upgrades and functional enhancements of the tax system. By analyzing tax data, new functions that better meet the needs of taxpayers and tax administration requirements can be developed, thereby improving the overall effectiveness of the system.

56% of jurisdictions customize and process tax data to better serve specific tax management and analysis needs. This personalized processing helps tax authorities formulate more accurate tax strategies for specific industries or groups of taxpayers.

Another 52% of jurisdictions use tax data for risk and credit assessment, which is very important for risk management and the prevention of tax evasion. By analyzing the behavior and historical data of taxpayers,

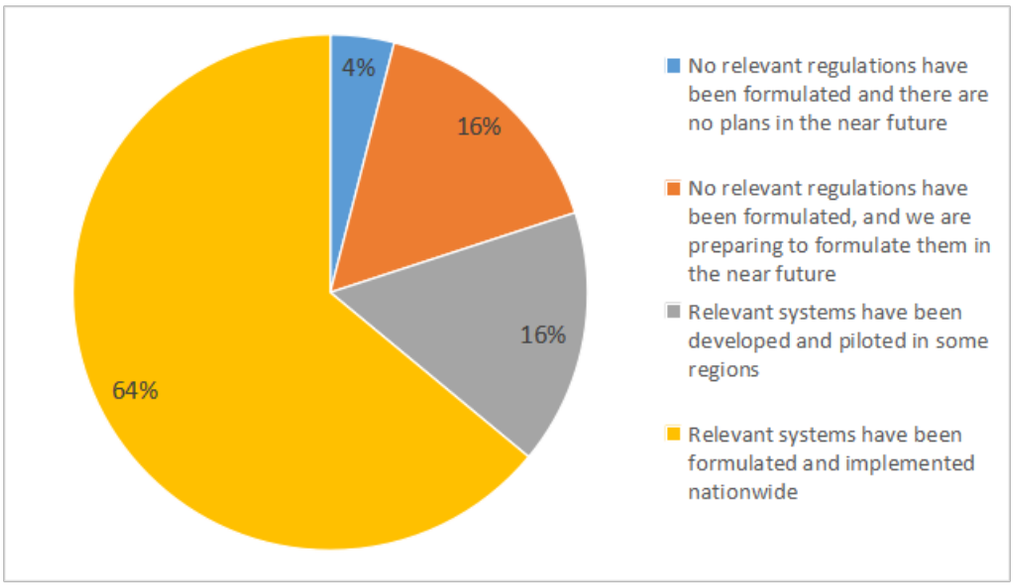
12 https://www.ey.com/en_gl/insights/government-public-sector/how-can-harnessing-tax-data-create-value-for-all

tax authorities can evaluate their credit status and potential risk levels.

However, there are also 4% of jurisdictions that basically no longer use the data after completing data-related tax transactions at the front desk. This may reflect the limitations in data application or a lower demand for in-depth data utilization in these jurisdictions.

Overall, the use of tax data is widespread, involving not only daily tax management but also system functionality development and risk management, demonstrating the modern tax system' s reliance on and utilization of data. With the development of information technology, it is expected that tax data will play an even greater role in more areas in the future.

2.1.12 Have you established relevant systems for managing your tax digitalization project?



In the aspect of managing tax digitalization projects, various jurisdictions have adopted different strategies to ensure the effective management and implementation of these projects.

According to the questionnaire results, 64% of jurisdictions indicate that they have established relevant management systems and implemented them nationwide. This shows that these jurisdictions pay high attention to the standardization and regulation of tax digitalization projects, aiming to achieve comprehensive and consistent digitalization management.

Additionally, 16% of jurisdictions mentioned that they have developed related systems and are piloting them in certain regions. This approach may reflect a strategy of gradual promotion, where the effectiveness of the systems is first tested in selected areas before adjusting and expanding them nationwide based on the pilot results.

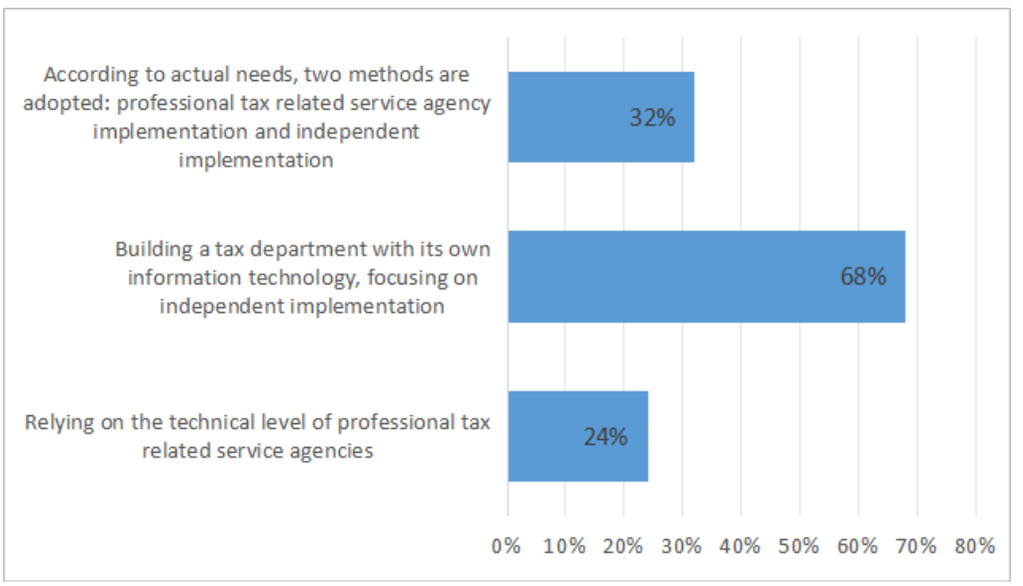
Another 16% of jurisdictions have not yet established such systems but are planning to do so soon, demonstrating an increasing focus on tax digitalization management and plans to continue expanding this trend in the future.

However, there are still 4% of jurisdictions that have not established any systems and have no immediate

plans to do so. This may indicate that these jurisdictions could face some challenges in managing tax digitalization or have other priorities that require attention.

Overall, the majority of jurisdictions recognize the importance of systematizing the management of tax digitalization projects and are taking corresponding measures to ensure effective management and supervision of these projects. This not only helps improve the efficiency and quality of project execution but also ensures that the process of tax digitalization complies with national policies and legal requirements. With the further development and application of information technology, it is expected that more jurisdictions will strengthen the management of tax digitalization projects and promote the modernization of the tax system. [13]

2.1.13 What are the main ways to achieve digitalization of tax administration? (multiple choice)



In the implementation of tax administration digitalization, different jurisdictions have adopted various strategies to optimize their tax management systems.

According to the questionnaire results, 68% of jurisdictions choose to establish their own information technology departments to lead the implementation of tax administration digitalization. This approach allows these jurisdictions to better control the direction and quality of the projects while facilitating rapid adjustments and optimization based on actual situations.

Additionally, 32% of jurisdictions adopt a hybrid model that combines self-implementation with hiring professional tax service agencies to achieve tax administration digitalization. This model allows local tax agencies to retain control over key technologies and decision-making while leveraging external expertise to compensate for technological shortcomings and management deficiencies.

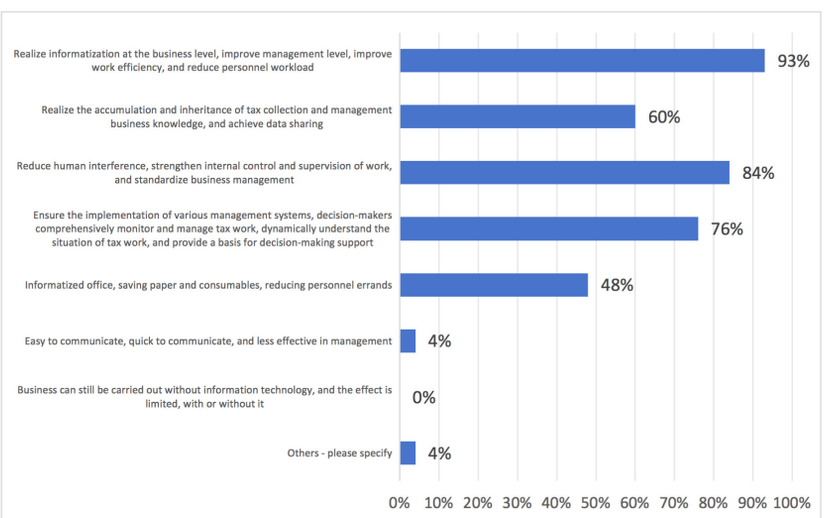
Furthermore, 24% of jurisdictions primarily rely on the professional technology of external tax service

13 https://www.sciencedirect.com/science/article/pii/S1877705811065738

agencies to realize tax administration digitalization. This is often suitable for those jurisdictions that lack sufficient technological accumulation or resources. By outsourcing to professional organizations, a relatively advanced tax information system can be established more quickly.

Overall, different jurisdictions have chosen different paths to implementation according to their national conditions and technological capabilities. Regardless of the method adopted, the goal is consistent—committed to improving the efficiency and response speed of the tax system, achieving transparency and real-time monitoring of tax information, ensuring the effective enforcement of tax laws, and thereby promoting the comprehensive development of the economy and society. In the future, with further technological advancements, jurisdictions may make further adjustments and optimizations to these implementation methods.[14]

2.1.14 What is the main role of tax administration digitalization construction in your jurisdiction? (multiple choice)



The construction of tax administration digitalization is regarded as an important modernization process all over the world. It significantly enhances the efficiency and management level of tax authorities by introducing high-tech means and information systems.

According to the questionnaire results, 93% of jurisdictions believe that digitalization has made significant breakthrough at the business level. Digitalization not only improves management efficiency but also substantially reduces the daily workload of employees.

84% of jurisdictions emphasize the role of digitalization in reducing human interference and strengthening internal monitoring and supervision. Through automated processes and precise analysis tools, digitalization helps tax authorities standardize business management and ensures the standardization and transparency of workflows.

76% of jurisdictions mention the importance of digitalization in ensuring the implementation of

14 https://www.mckinsey.com/industries/public-sector/our-insights/four-innovations-reshaping-tax-administration

management systems. Decision-makers can comprehensively monitor the real-time dynamics of tax work, and the data analysis and reporting tools provided by the digitalization system have become a key basis for their decision support.

Additionally, 60% of jurisdictions believe that digitalization has achieved the accumulation and inheritance of tax administration business knowledge, and achieved the goal of data sharing. This process not only optimizes resource allocation but also enhances collaboration and information flow between departments.

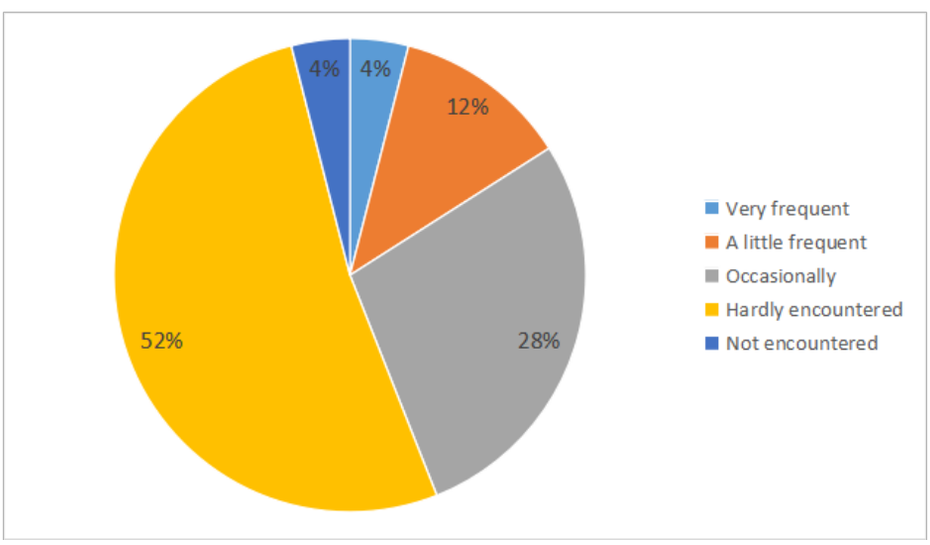
48% of jurisdictions value the direct benefits brought about by digitalization in the office, such as saving paper, reducing consumables use, and reducing staff running around, all of which have played a positive role in reducing operating costs and protecting the environment.

4% of jurisdictions believe that digitalization facilitates communication and exchange. Although these jurisdictions believe that digitalization has little effect on management, it is undeniable that fast communication is very beneficial for daily operations.

In summary, there is widespread consensus among jurisdictions on the main functions of tax administration digitalization. At the same time, according to their specific needs and conditions, different benefits and functions are emphasized. With the continuous progress of technology, it is expected that digitalization will play an increasingly crucial role in tax administration.

2.2 Challenges Faced

2.2.1 Have taxpayers encountered any instability or lag in the online tax system when handling tax-related business in your jurisdiction?



In digital tax management, the stability of online tax systems is a key factor in ensuring that taxpayers can smoothly conduct their business. According to the questionnaire results, the system stability issues encountered by taxpayers in various jurisdictions when using online tax systems vary.

4% of jurisdictions state that they have never experienced any system lag, indicating that the network

infrastructure and technical support in these areas are very reliable and capable of ensuring the smooth operation of the system.

Meanwhile, 52% of jurisdictions report almost no system lag, suggesting that the online tax systems in most jurisdictions can stably meet daily business needs.

However, 28% of jurisdictions mention that they occasionally encounter system lag, which may be related to the system' s load capacity, maintenance updates, or network fluctuations.

Additionally, 12% of jurisdictions experience system lag more frequently, which could affect the efficiency and satisfaction of taxpayers, calling for attention and solutions from relevant departments.

Finally, another 4% of jurisdictions report very frequent system lag, which clearly has impacted the normal tax service process and urgently requires technical intervention and optimization measures.

Overall, despite some sporadic performance issues, the online tax systems in most sporadic are fairly stable. To further improve system performance and user experience, tax authorities in various sporadic should continuously monitor system performance and timely carry out technical upgrades and optimization to ensure the efficiency and reliability of online tax systems.

2.2.2 What obstacles do you face in the digitalization of tax administration?

In the process of advancing tax administration digitalization, various jurisdictions have faced a series of challenges and obstacles. The existence of these challenges may delay the modernization of tax systems and affect overall efficiency. Here is a specific analysis of the obstacles:[15]

a. Technological deficiencies. Many jurisdictions lack the capability to master and apply emerging technologies such as big data, AI, cloud computing, mobile internet, Internet of Things, and blockchain. Additionally, a shortage of digital talents also limits the practical application of these technologies.

b. Data security issues. The openness and interconnectivity of computer networks, along with the uneven distribution of terminals, pose hidden dangers for data security storage and management. The risks of data loss, theft, tampering, and destruction remain major concerns.

c. Funding issues. The construction of tax administration digitalization is a high-investment modern infrastructure project that requires sufficient financial support. Some jurisdictions face funding shortages, affecting the implementation of digitalization projects.

d. Legal and regulatory systems. Existing tax laws and regulations may not be adapted to new technological developments, requiring timely updates or revisions to ensure the smooth progress of digitalization construction.

e. Low public awareness and acceptance. Currently, many taxpayers are still accustomed to using traditional offline tax service methods, and their acceptance and ability to use digital taxation need to be improved.

15 https://link.springer.com/chapter/10.1007/978-3-031-52403-5_11

f. Inconsistent data accuracy and quality. Ensuring the accuracy and quality of digital data is a major challenge, and inconsistencies of standards can significantly impact tax processes.

g. Integration with external systems. Ensuring interoperability and operability between different systems and platforms when collaborating with external agencies is a technical challenge.

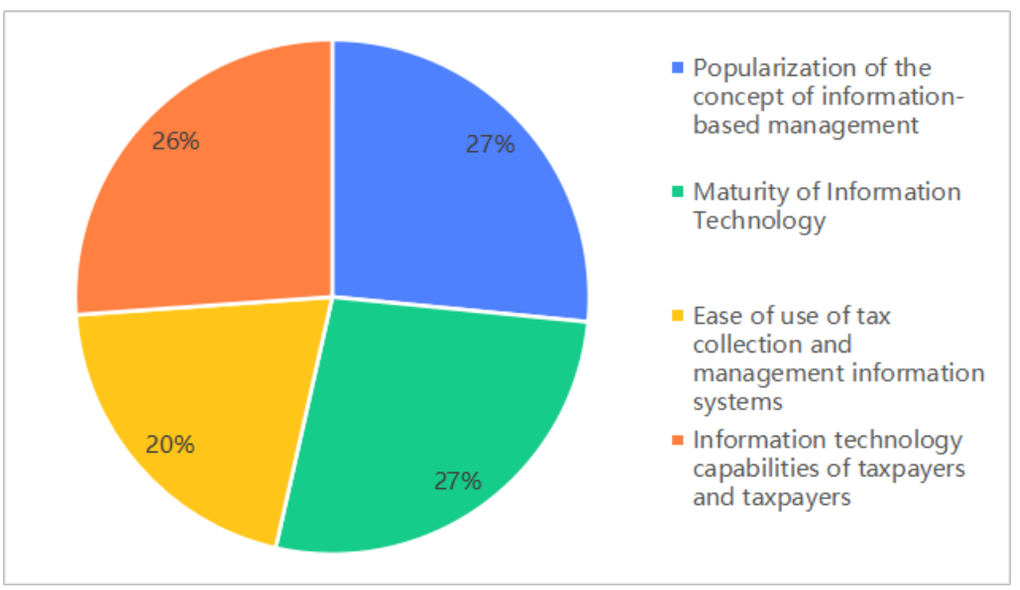
h. Integration with existing processes. Poor integration between new and old systems may lead to operational disruptions, thus seamlessly integrating new digital systems with existing tax processes is crucial.

i. Management transformation issues. Effectively organizing management changes and overcoming possible political and bureaucratic challenges are key to facilitating a smooth transition to digital processes.

These obstacles reflect the complexity and diversity of the tax administration digitalization process. Solving these problems requires the joint efforts of governments, businesses, and all sectors of society in various jurisdictions, through technological innovation, policy adjustments, funding investments, and public education measures, to ensure the successful implementation of tax administration digitalization.

2.3 Thoughts and Prospects

2.3.1 What is the key to applying information technology well in the digitalization of tax administration in your jurisdiction?



The successful implementation of tax administration digitalization relies on the good cooperation of multiple key factors. According to the questionnaire results, jurisdictions have different understandings and emphasis on the key factors that affect the development of information technology in tax administration digitalization.

27% of jurisdictions believe that the popularization of the concept of tax administration digitalization is one of the most critical factors. This means that both tax authorities and the public have a full understanding and

acceptance of the benefits brought by digitalization. The popularization of this concept helps to promote wider and more efficient application of information technology.

Equally, 27% of jurisdictions emphasize the maturity of information technology. This indicates that the advancement, stability, and security of technology are the cornerstones of ensuring the smooth operation of tax digitalization systems. Only mature technology can handle complex tax data, ensuring system reliability and data confidentiality.

26% of jurisdictions consider the most critical factor is personnel—including the information technology capabilities of tax officials and taxpayers. This involves relevant personnel' s understanding, operational ability, and efficiency in using information technology. Enhancing these abilities can effectively improve the efficiency and response speed of the entire tax digitalization system.

Another 20% of jurisdictions mention the usability of the administration digitalization system. A well-designed, user-friendly digitalization system ensures that tax officials and taxpayers can easily perform daily operations, reduce errors, and improve work efficiency.

In summary, the successful application of tax administration digitalization depends on the combined effects of multiple factors. From popularizing the concept of tax administration management, ensuring the maturity of information technology, enhancing tax officials' information technology capabilities, to system usability, each factor is crucial to the smooth implementation of tax administration digitalization. Therefore, jurisdictions should comprehensively consider these factors when promoting tax administration digitalization, develop comprehensive strategies and measures, to achieve the best effect of digital tax management.

2.3.2 How do you think to broaden the channels for taxpayers to obtain tax-related information in your jurisdiction?

In the process of tax administration digitalization, ensuring that taxpayers can conveniently obtain tax-related information is crucial. To this end, various jurisdictions have adopted multiple measures to expand information access channels and enhance the accessibility and efficiency of tax services. The following are methods generally considered effective by jurisdictions:

a. Develop user-friendly mobile applications and online platforms that allow taxpayers to access tax-related information and handle tax affairs anytime and anywhere.

b. Build an information-rich, easy-to-navigate official website that provides downloadable resources and interactive tools to help taxpayers better understand and apply tax laws.

c. Leverage the widespread influence of social media to update tax-related information in a timely manner, increasing interaction and contact with taxpayers.

d. Conduct education and training through various interactive channels, including online seminars, video tutorials, and physical courses, to improve taxpayers' tax knowledge and self-service capabilities.

e. Set up self-service terminals in public places that support multiple languages, ensuring that taxpayers

with different linguistic and cultural backgrounds can obtain the necessary services.

f. Promote cooperation with external departments, such as joint efforts with industry and commerce, customs, and other government departments, to generate a broader impact and provide one-stop services.

g. Combine interactive voice response systems with telephone consulting and host online webinars with video tutorials on network platforms to provide immediate help and opportunities for in-depth learning for taxpayers.

h. Establish regular feedback mechanisms to ensure continuous improvement in the quality and method of information provision, better meeting the needs of taxpayers.

i. Utilize new technologies such as AI and remote assistance to enhance the intelligence and personalization of services, further improving taxpayer experience and service efficiency.

Through these measures, jurisdictions are committed to creating a comprehensive, multi-level, and efficient tax information service system, ensuring that taxpayers can easily obtain tax-related information, improve tax convenience, and reduce information asymmetry in tax administration. This not only helps to enhance taxpayer satisfaction and compliance but also promotes the in-depth development of tax administration digitalization, achieving the modernization of the tax system.

2.3.3 How to do a good job of data sharing with external departments in the context of digitalization in your jurisdiction?

In the context of digitalization, data sharing between tax authorities and external departments is a crucial link in improving administrative efficiency, optimizing service quality, and combating tax crimes. Various jurisdictions have implemented a series of measures to achieve effective data sharing:

a. Using electronic data interchange and APIs to access external data resources, enabling work interaction, ensuring real-time updates, and accuracy of data.

b. Publishing shared data on websites to increase transparency, allowing the public to access and utilize this data, promoting openness and accessibility of information.

c. Establishing clear data exchange protocols, including defining standardized data sharing protocols and processes, such as data formats, security measures, and access control, to ensure secure and orderly data transmission.

d. Building large databases and launching open data initiatives, providing deeper insights and decision support through centralized management and analysis of large amount of data, enhancing the intelligence and predictability of the tax system.

In summary, data sharing between tax authorities and external departments not only improves the efficiency and responsiveness of tax administration but also enhances the overall service capability of the government and the precision of policy formulation. To achieve this goal, jurisdictions need to continuously optimize their technological infrastructure, strengthen cross-departmental cooperation, and ensure the smooth operation of data sharing mechanisms.

2.3.4 What do you think are the management contents of tax digitalization projects using information technology? (multiple choice)

In response to tax digitalization projects, utilizing information technology for project management is key to improving efficiency and ensuring the success of the project. According to the questionnaire results, various jurisdictions generally believe that the following aspects are important in using information technology for the management of tax digitalization projects:

84% of jurisdictions emphasize the importance of "implementation management", which involves monitoring, adjusting, and controlling activities during the project execution process to ensure the project progresses smoothly as planned.

72% of jurisdictions focus on "data management", including the collection, storage, protection, and analysis of data to support decision-making and risk management.

64% of jurisdictions consider "requirements management" crucial, ensuring that the project meets established goals and the needs of taxpayers.

Also, 64% of jurisdictions mention "project approval management", which concerns the evaluation, planning, and approval process of projects, laying the foundation for project success.

60% of jurisdictions value "software management", including software development, testing, deployment, and maintenance, which is vital for ensuring system reliability and performance.

56% of jurisdictions pay attention to "hardware management", involving the selection, configuration, and maintenance of hardware to support software operations and data storage.

Through these management measures, tax authorities can ensure effective control over every step of the digitalization project from approval to implementation, thereby improving project success rates, ensuring stable operation of information systems and data security. Additionally, these management activities help enhance the quality of tax services, increase taxpayer satisfaction, and ultimately achieve the goals of tax system modernization and digital transformation.

2.3.5 What suggestions do you have for the future development of applying new technologies to tax administration digitalization?

Various jurisdictions believe that new technologies can be applied to the digitalization of tax administration in the following aspects:

a. Blockchain technology. By providing a secure and transparent platform for recording and tracking transactions, blockchain technology can be applied in areas such as electronic invoicing, potentially revolutionizing tax administration.

b. Big data analysis. Big data can be used to analyze vast amount of information to identify patterns and trends that help improve tax administration. By utilizing big data analysis, tax authorities can gain insights into taxpayer behavior and identify areas that can further promote compliance.

c. AI. AI can be used to automate processes in tax administration, such as tax registration, filing, and

payment. It can also be used for dynamic risk assessment to accurately identify risk points, promote compliance, and enhance tax administration efficiency.

d. Cloud computing. Cloud computing offers a secure and scalable platform for storing and processing tax-related data, improving the efficiency of tax administration.

e. Digital identity. By matching communication, tax filing, integrating other data sources, and self-service management processes to individual taxpayers through digital identity, more accurate, comprehensive, and authentic data can be provided for tax authorities while significantly reducing the burden on taxpayers and enhancing their experience.

f. APIs. APIs enable near real-time sending, receiving of information, and verification activities without direct system access, facilitating collaboration between the tax system and other government departments, businesses, and international organizations to create a co-governance pattern in taxation.

g. Mobile technology. Mobile technology can provide taxpayers with convenient and secure tax-related information and services, enhancing convenience for taxpayers and reducing the cost of tax administration.

From the overall results of the questionnaire, Member Tax Administrations and Observers of the BRITACOM have improved the efficiency of tax administration, promoted economic development, strengthened international cooperation and exchanges, and driven local digital transformation in the practice of tax digitalization.

However, numerous challenges remain, such as uneven levels of digitalization, the need for enhanced technological application, insufficient data sharing and exchange, and inadequate talents training and education. In the next phase, it will be necessary to further address these issues by strengthening policy communication and coordination among jurisdictions, enhancing digitalization infrastructure, optimizing tax services, strengthening talents training, and learning from the experiences of advanced jurisdictions, to collectively move towards a brighter future in the digitalization of tax administration.[16]

16 https://www.adb.org/sites/default/files/publication/792586/digital-tax-administration-transformation.pdf

Chapter 3
Cases and Practices

3.1 "Strategic Planning of Tax Administration Digitalization" Cases

Tax strategic planning is a holistic and strategic tax plan of a jurisdiction, representing the overall approach and objective setting of national taxation. It is characterized by its long-term nature, stability, and foresightedness. The 2022 report Tax *Administration 2022: Comparative Information on OECD and other Advanced and Emerging Economies reveals that approximately 75% of tax authorities have formulated digital transformation strategies.*

3.1.1 Short-term Tax Administration Digitalization Strategic Planning

In August 2022, the Australian Taxation Office (ATO) released its Digital Strategy for 2023-2025, outlining the key next steps in the ATO' s journey towards digital transformation. The ATO' s vision is to shape trustworthy and effective digital services and ecosystems. The strategy is based on the concept of 'digitalization rather than digitization' and provides the opportunity to reflect on ATO' s progress, seek ways to maximise the investment in existing technologies and identify critical priorities over the next three years. Framed by four pillars and grounded in five principles, the strategy aims to continue advancing the digitalization of processes and services to enhance the experience of customers and employees, drive improvements in tax performance, and reduce administrative costs.[17]

To achieve this goal, the ATO conducted extensive stakeholder consultations (both internal and external) throughout the strategy development process. This includes:

a. Establishing a reference group composed of key senior managers from the ATO to formulate the strategy;

b. Implementing focus group interviews with technology experts, project officers, and other staff to gather insights and feedback;

c. Collaborating with key business divisions, technical teams, and department heads within the ATO to ensure strategic consistency and inclusiveness;

d. Engaging with external forums (such as the Digital Software Supplier Working Group) to test the ATO' s approach and direction. Early in the development process, the ATO actively involved stakeholders, allowing it to balance the setting of short-term, practical goals while laying the foundation for achieving its future vision. This approach not only helps ensure that the needs and expectations of all relevant parties are met but also promotes effective communication and cooperation among all parties, facilitating the smooth progress of the project.

3.1.2 Long-term Tax Administration Digitalization Strategic Planning

17 https://www.ato.gov.au/About-ATO/Managing-the-tax-and-super-system/In-detail/ATO-digital-strategy-2022-25

China has issued the "Opinions on Further Deepening Tax Collection and Administration Reform", which focuses on building a smart tax system centered on serving taxpayers and fee payers, breaking through with electronic invoice reform, and driven by big data on taxes. This system is highly integrated, secure, and efficient. The underlying logic is to provide penetrating services and integrated management for taxpayers, fee payers, tax officials, and all types of taxes and fees. Relying on intelligent algorithms and powerful computing capabilities, it breaks through various boundaries and barriers in reality from the internet and cloud, connecting taxpayers, fee payers, tax bureaus, and related fields and aspects. Through data integration in a "penetrating and comprehensive" manner, it promotes service upgrades, management efficiency, and strives to build an integrated digital tax bureau that penetrates to the bottom, relates to the edges, and connects in place. In other words, China' s smart taxation is a combination of offline physical tax bureaus and cloud-based digital tax bureaus. On this basis, it can meet the needs of various users, fully leverage the advantages of massive tax big data, rely on the strong algorithmic power of tax authorities, and achieve deep integration and efficient linkage of tax services, law enforcement, supervision, and big data intelligent applications, unleashing significant tax administration power.[18]

3.2 "Tax Service Digitalization" Cases

3.2.1 Tax Promotion

3.2.1.1 In Singapore, before 2021, most taxpayers received paper notices and could not choose the mode of receiving their notices. To drive the adoption of digital communication modes, IRAS adopted a Digital-by-Default (DBD) approach – where notices are, by default, deposited on myTax Portal with an SMS and/or email alert sent to taxpayers; no paper notices are issued. Taxpayers are also able to opt-out of this initiative to receive paper notices with a digital copy available on myTax Portal.

IRAS successfully pivoted from largely paper notices and digitalised 97% of tax notices by volume since May 2021. The switch to digital notices has been welcomed by taxpayers for its convenience, offering timely notifications when their tax bills are ready for viewing and 24/7 secure access to notices. Polls have shown that 80% of individual taxpayers and 83% of business and corporate taxpayers are satisfied with the digital communications initiative.

3.2.1.2 In Hungary, the National Tax and Customs Administration (NTCA) utilizes digital channels for tax publicity. In 2022, the NTCA launched "NTCA News", a new source of information featuring one- to two-minute video reports on significant tax-related activities and details of compliance events during that period. These reports are primarily released on social media platforms. The NTCA also uses social media to promote other information and employs various methods, such as simple headlines and humorous flyers. The promotional activities cover topics like Value-added Tax (VAT) filings (VAT refunds, deadlines, useful tips for refund claims, mailing draft refunds, installment payments) or vehicle tax (how to apply for a refund or how to calculate the tax due). All these efforts are supported by the "Clarity Programme", which aims to make taxes easier through clearer communication, with a particular focus on small and medium-sized enterprises

18 https://www.gov.cn/zhengce/2021-03/24/content_5595384.htm

(SMEs). All NTCA' s flyers, brochures, official letters, posters, and content across all online and offline platforms undergo a clarity check to ensure they use plain language. This practice is promoted through training and various tools. To further develop this program, the NTCA established the Clarity Programme Office. So far, the program has revised nearly 25,000 pages of information, making it easier for taxpayers to understand. Transparency is now part of the NTCA' s strategic and institutional work plan. Since February 2023, the NTCA portal has featured a "Tax for All" section, providing comprehensive information on the most common situations of individuals. This information is grouped according to the stage individuals are in and offers step-by-step guidance for taxpayers. The platform was created within the NTCA' s Tax Awareness and Clarity Programme and continues to be expanded. [19]

3.2.2 Demand Response

3.2.2.1 The Georgian Revenue Service' s strategic document for 2021-2024 and its action plan for 2022 commit to providing taxpayers with convenient electronic services, accompanied by a feedback system. Through this system, users will be able to share their opinions and experiences using these services. Since 2021, users have had the opportunity to evaluate the service information obtained through the website, contact centers, electronic chat, email, portal sites, etc. In 2022, an average of 1,644 pieces of feedback were received monthly from taxpayers, indicating active participation in the feedback system. This feedback has been used to drive improvements, such as adding English-speaking staff to the chat function and call center, and changing the topics available for discussion in the chat feature. These enhancements have increased user satisfaction with these features, which rose from 45% in March 2022 to 95% by the end of the year. Due to this success, more departments will be incorporated into the feedback feature.[20]

3.2.2.2 During the design phase of the new website for the Hungarian National Tax and Customs Administration (NTCA), user needs and information-seeking habits were assessed in two steps. In the first phase, interviews with the general public (aged 18-59) were conducted on the nav.gov.hu website using test tasks to map how respondents quickly and accurately found information, calculators, specific tax forms, form completion procedures, or informational booklets. In the second phase, business interviews were carried out to investigate the motivations of individual entrepreneurs, small and medium-sized enterprise managers, and accountants. The ideal portal site should possess five characteristics: it should be understandable, relevant, easy to navigate, searchable, and connectable. Research also found that websites achieve the greatest success when they feature a well-functioning search engine at the center; moreover, the NTCA information booklet series should be placed in a prominent position to offer different information for advisors and taxpayers alike. This was part of a broader research initiative to better understand taxpayer needs. NTCA will regularly use focus groups in the future to ensure its developments in tax-related services and obligations align with taxpayer needs and offer them the simplest solutions possible.[21]

3.2.3 Tax Declaration and Payment

3.2.3.1 Kazakhstan has developed a mobile application (E-Salyq Azamat) for individuals and entrepreneurs

19 https://www.oecd.org/en/publications/communication-and-engagement-with-smes_f183d70a-en.html
20 https://www.oecd.org/en/publications/tax-administration-2023_900b6382-en.html
21 https://www.oecd.org/en/publications/communication-and-engagement-with-smes_f183d70a-en.html

to fulfill their tax obligations. This app is directly integrated with banks and is designed to facilitate convenient tax payments for individuals. It allows users to view upcoming taxes payable, make tax payments without filling in detailed information, perform automatic offsets, manage overpayments, and submit tax reports for individual entrepreneurs. Utilizing E-Salyq Azamat, users can submit declaration forms, perform automatic deductions and withdrawals, and make online cash deposits within 2 minutes without the need to fill in numerous details. Additionally, it enables the review and adjustment of taxation objects, E-Salyq Business is another mobile application created to simplify tax obligations for entrepreneurs, enabling sole proprietors to register online and fulfill their duties, automatically calculate taxes, generate notifications, and issue receipts without the use of cash registers or financial documents. Looking forward, there are plans to further integrate with internet platforms (such as taxi services and deliveries), complete services for pre-filling declarations based on updated data (including bank data), and add more services and training videos.

3.2.3.2 The No-filing Service (NFS) of the Inland Revenue Authority of Singapore (IRAS) makes tax a non-event by removing the need for taxpayers to file an income tax return if their income information has been auto-included and they have no other income to declare or no changes to their deduction claims. Since 2007, the NFS initiative was introduced for taxpayers who receive employment income.

In 2021, the NFS was extended to self-employed taxpayers, including qualifying commission agents and taxi/private hire car drivers. This was made possible by creating data linkups with intermediaries such as private hire operators to obtain income information and implementing the Fixed Expenses Deduction Rate (FEDR) scheme. The FEDR scheme stipulates that a certain proportion of the total income of the self-employed taxpayers is considered as expenses and not subject to taxable income. Introduced in YA 2019 to private hire car/taxi drivers, FEDR was later extended to commission agents in YA 2020, and to delivery workers in YA 2024.

For tax payments, IRAS collaborates with banks to integrate a variety of electronic payment modes with myTax Portal (a secure portal for taxpayers to transact with IRAS) for a seamless experience. For example, IRAS embedded the PayNow QR function which leverages the nationwide PayNow funds transfer service and allows taxpayers to complete the payment transaction as they access myTax Portal to check their tax bill. Taxpayers can also receive tax refunds electronically via PayNow-NRIC/FIN/UEN, without the need to register a bank account with IRAS. IRAS handled close to 22 million payment transactions in 2022, of which 99.6% were digital payments.

3.2.3.3 China is establishing a unified and standardized National Electronic Tax Bureau (the new e-Tax Bureau). The construction of the new e-Tax Bureau follows the principles of “digitization, intelligence, and contextualization”, adhering to a user-centric approach, establishing digital accounts for taxpayers. It automatically identifies taxpayer types, intelligently recognizes and confirms taxpayer needs, conducts user profiling and behavior prediction, and proactively provides tax service items that are “most likely to be used”, aiming to enable taxpayers to complete all necessary transactions in one go, as needed. Taking the declaration process as an example, the system automatically aggregates data resources across different levels, departments, regions, and periods to calculate taxpayers’ dues automatically. Taxpayers only need to click to confirm (or correct) or add a few pieces of data that cannot be auto-generated but are required, thus

significantly reducing the burden of collecting or repeatedly filling out large amount of data for declaration. For instance, with comprehensive associated declarations. In the past, taxpayers had to search through piles of invoices and reports to find data to fill out a declaration form for a specific tax or fee. If multiple tax or fee transactions were involved, they would need to fill out separate forms and pay taxes separately, which was very time-consuming and labor-intensive. Now, for taxpayers automatically identified by the system, a "pre-filled, associated declaration" service is actively provided. The system, leveraging taxpayer behavioral tags, uses invoice data and automatic tax calculation rules to pre-fill data, intelligently match preferential policies, and automatically calculate the amount due for multiple taxes and fees. Taxpayers only need to confirm the data and submit it with one click to complete the declaration and payment for multiple taxes and fees in one go, reducing the declaration time to minutes.[22]

3.2.3.4 In 2021, the National Tax and Customs Administration of Hungary (NTCA) took over the assessment of motor vehicle tax from local governments. To support tax assessment and make payments smoother for taxpayers, NTCA needed to develop new solutions. In the design process, NTCA aimed to provide simple and free payment options, making it easier for taxpayers to fulfill their obligations and ensuring the collection of national revenue. To this end, NTCA created two new payment services so that each taxpayer could find the most suitable solution:

a. Payment link: By sending an electronic letter containing a personalized link, which directs to an online bank card payment interface. This payment service uses customer identity for verification and also requires credit/debit card data.

b. NTCA mobile application: Within the application, there is a separate menu item supporting the viewing and settlement of motor vehicle taxes.

The advantage of these new payment methods is that vehicle taxes can be settled through electronic payment with just a few clicks. As a result, the number of postal check payments has decreased by more than 50%. This transformation not only improved the efficiency of tax administration but also enhanced the taxpayer' s experience, making the payment process more convenient, faster, and secure.[23]

3.3 "Big Data Fundamental Management and Risk Prevention" Cases

3.3.1 Consolidating the Infrastructure of Taxation Big Data

3.3.1.1 Russia has developed a multi-level tax automation office system (Tax-3), whose main function is to facilitate more convenient services for enterprises through big data applications, including receiving, processing, providing data and analyzing information, as well as optimizing management. This system represents the direction of modernization for the Russian federal tax authorities. By analyzing the received data, it can form the information resources and statistical data of the tax authorities, as well as the necessary information to support management decisions within their rights, and provide information to external users. Through the development and application of large-scale information processing systems, it has

22 https://www.gov.cn/xinwen/2021-03/24/content_5595384.htm
23 https://www.oecd.org/en/publications/tax-administration-2023_900b6382-en.html

simplified the interaction procedures between Russian tax authorities and taxpayers, ensured the openness and transparency of the tax administration departments, established a unified information base, linked the internal and external information of the tax authorities, and reduced the current tax management costs. The ultimate goal of the tax automation office system is to establish an integrated information system. On the basis of a unified information base, it will connect all units of the tax system with the information bases of banks, treasuries, customs, registration centers, land departments, etc. in phases, forming a unified administrative management agency information system.[24]

3.3.1.2 The creation of Georgia' s data processing and analysis system was part of a broader data warehouse development project completed in 2021. The ultimate and primary goal of this initiative was to collect and organize data from tax service databases and other third-party sources, using them to enhance the analytical capabilities of the tax services. As part of the creation of the data processing and analysis system, optimizations were made to the infrastructure of the data processing and analysis system. Different types of standard reports were created within the data processing and analysis system and are updated daily. A tax risk module has been implemented and automated, allowing for systematic assessment of tax risks associated with taxpayers and tax returns using specific logic and indicators.[25]

3.3.2 Improve the Ability of Tax Data Quality Control and Risk Prevention

3.3.2.1 Given that VAT is one of the most important sources of tax revenue, the Risk Analysis Center of the Hungarian National Tax and Customs Administration (NTCA) has initiated the development of a taxpayer risk model. The purpose of this model is to predict changes in taxpayer behavior when submitting tax returns and to achieve higher compliance levels through early intervention. Firstly, risk analysts collect relevant behavioral data from tax administration data and information. Based on data such as taxpayer employees, online invoices, cash register operations, demand deposit accounts, and representative data, basic behavioral variables are determined. On this basis, additional variables will continue to be set according to the taxpayer' s tax return habits, serving as indicators to assess whether taxpayers are significantly late in submitting or completely fail to submit VAT returns. Using statistical and data mining methods, the technical team will develop predictive models to "learn" the relevant behavioral characteristics of this group and predict which taxpayers the tax authorities should contact directly to promote timely submission of tax returns. According to preliminary results, these models have significant predictive capabilities in identifying taxpayer behavior.[26]

3.3.2.2 The Internal Revenue Service (IRS) in the United States is applying Intelligent Automation (IA) to enhance data analysis capabilities. There is a continuous need to determine the ongoing suitability of third-party payroll service providers and to conduct extensive financial compliance checks on their related businesses and individuals. Due to time and resource constraints, the IRS can only inspect 20% of the relevant businesses for compliance annually, and when non-compliance is discovered, repeated inspections are required, which places a heavy burden on staff. To alleviate this issue, the IRS has employed IA for

24 Taxation Science Research Institute of the State Taxation Administration(2022),Global Tax admistration status & trends(2022),Accessed December 2022
25 https://www.oecd.org/en/publications/tax-administration-2022_1e797131-en.html
26 https://www.oecd.org/en/publications/tax-administration-2022_1e797131-en.html

automated auditing within mainframe applications and records the audit results in formatted reports for staff verification. This automation application has reduced the initial audit time from 60 minutes to approximately 10-15 minutes and is expected to achieve full audit coverage of all relevant businesses quarterly. Additionally, this automation application can collect and aggregate key data points to inform decisions on suspending payroll administrators. Previously, the IRS used a simple method of ranking by maximum assessed value to determine the priority order of unfiled tax return cases for review. Now, an intelligent software robot (RPA) uses machine learning to analyze over 60,000 historical tax refund business data points and can identify which unfiled tax return cases require further examination based on the attributes of the refunds. Compared to the priority ranking method based on maximum assessed value, this research-based priority ranking method has been proven to increase expected outcomes by 14%. Based on the accuracy and precision rates demonstrated by the model, it is estimated that this priority ranking method will generate an additional annual tax revenue of about $7.5 million, involving approximately 1,400 potential assessments.[27]

3.3.2.3 Italy' s Bottom-Up Tax Gap Estimation initiative Italy is a new methodology for the estimation of the VAT gap based on the use of information from the tax assessment database. The estimates are obtained by combining traditional methods, modern machine learning techniques and 'nearest neighbor' procedures. This 'machine learning assisted methodology produces a final outcome of a set of individual values that can be used to obtain estimates of the VAT gap at different levels of detail. This work will support tax administration by providing clear focus for compliance activity, and data for policy making. It also allows the gap to be examined by different taxpayer behaviours.[28]

3.4 "Data Security Protection" Cases

The digital development of tax administration requires a robust system to ensure information security and address cyber risks. Countries are also clearly recognizing the importance of digital assets, upgrading security technologies, and enhancing the universality and security of data architectures to protect data, systems, and networks from security threats.

3.4.1 In line with digital tax governance, the United States has focused on reforming its IT department, building a professional IT team. It promotes key digitalization projects to meet taxpayer needs, emphasizes network security management, expands the functions of network security management, and encompasses various network security management activities across the entire Internal Revenue Service (IRS). Enhancing management levels supports modernization plans, allowing decision-makers to respond promptly and utilize the latest IT technologies. Gradually implementing digital construction, establishing a Digital and Personalized Solutions Office, formulating personalized solutions, and developing digital strategies. In response to the increasing frequency of unauthorized access to tax information systems, the IRS focuses on identity and permission management, automatic identification of security vulnerabilities, such as collecting

27 https://www.oecd.org/en/publications/tax-administration-2022_1e797131-en.html
28 https://www.oecd-ilibrary.org/sites/1e797131-en/1/3/6/index.html?itemId=/content/publication/1e797131-en&_csp_=38baa8bc2bc68a4be5b070db809f1650&itemIGO=oecd&itemContentType=book

network risk data from internal and external partners, improving the ability to quickly identify and respond to emerging cyber-security threats.[29]

3.4.2 To combat the growing number of cyber-attacks, the Canada Revenue Agency (CRA) introduced multi-factor authentication (MFA) for its 14.6 million online account holders to enhance security. The CRA developed a non-telephonic authentication method called Password Grid (PCG), which is a printable, randomly generated grid of characters. Users are prompted to enter characters from different coordinates of this grid each time they log in. With the application of PCG, the CRA achieves its security goals and mandates MFA for 100% of its users, ensuring network information security while responding to user needs, providing all Canadians with a better user experience.[30]

3.4.3 For the National Tax and Customs Administration (NTCA) of Hungary, the Security Operations Center (SOC) is crucial as it not only offers the opportunity to supervise IT security-oriented systems but also detects and prevents new, previously unknown or unidentified attacks. Through SOC, NTCA can detect incidents as soon as possible and immediately provide solutions, enhancing the government' s defense against cyber threats and conducting important preventive work. The core pillar of this effort is the interconnection of automatic network threat detection, vulnerability detection systems, and traditional border protection systems within NTCA. With these, firewall rules can be modified, clarified, and filtered using threat indicators from vulnerability detection tools without human intervention. Additionally, social engineering techniques and increasingly complex forms of psychological manipulation pose significant threats to NTCA, thus the need for user security awareness training is increasingly important. To this end, NTCA' s IT security department regularly conducts training, security awareness assessments, and evaluations. Assessments also include theoretical and practical tests, which have shown a trend of continuous improvement. In short, SOC is a key component for NTCA, enhancing the administration' s response to cyber threats and emphasizing the importance of staff security awareness training. By integrating various security systems and training measures, NTCA is striving to maintain the security and integrity of its IT infrastructure.[31]

29 Taxation Science Research Institute of the State Taxation Administration(2022),Global Tax admistration status & trends(2022),Accessed December 2022
30 https://www.oecd.org/en/publications/tax-administration-2022_1e797131-en.html
31 https://www.oecd.org/en/publications/tax-administration-2023_900b6382-en.html

Chapter 4 Suggestions for Future Development

4.1 Establish a Holistic and Strategic Tax Administration Digitalization Strategy

Tax authorities should develop a comprehensive digitalization strategy to drive technological upgrades and process reengineering. This requires a thorough review of the existing tax administration system' s technological infrastructure, business processes, and information security, identifying problems and areas for improvement. Based on the assessment results, tax authorities can clarify the direction and steps for technological upgrades, thereby better adapting to economic development needs and effectively addressing complex tax management challenges.[32]

4.2 Accelerate the Construction of Digitalization Infrastructure

Tax authorities need to increase funding, update hardware equipment, expand data centers, and enhance cloud computing and big data processing capabilities. With an efficient digitalization platform in place, tax authorities can quickly process large volumes of tax data, providing precise tax analysis and decision support. Additionally, optimizing administration processes and simplifying taxpayer declaration procedures enable taxpayers to declare, pay, and receive tax refunds online through the promotion of electronic tax bureaus, allowing them to complete tax operations anytime and anywhere, reducing tax-related costs and time.[33]

4.3 Enhance the Tax System' s Ability to Identify and Respond to Risks

Leverage information technology tools to strengthen the tax system' s capacity for recognizing, evaluating, and monitoring tax risks. Through big data analytics, automatically identify abnormal tax filing behaviors and promptly detect potential tax avoidance and evasion activities. Also, employ machine learning and predictive modeling techniques to dynamically analyze tax data and assess future risk trends. These technologies will provide data support for tax experts, helping to understand tax flow changes and predict tax revenue shortfalls.[34]

4.4 Strengthen Cross-departmental and Cross-regional Tax Cooperation

32 https://blogs.worldbank.org/en/developmenttalk/promise-and-limitations-information-technology-tax-mobil-Ization Not Found
33 https://dl.acm.org/doi/10.1145/3564665.3564678
34 https://link.springer.com/chapter/10.1007/978-3-031-32126-9_6

Tax authorities should work more closely with other government departments such as customs, commerce, financial regulation, and judicial agencies to combat tax crimes and ensure strict enforcement of tax laws. In the context of globalization, the tax issues of multinational companies involve multiple countries, making international tax cooperation particularly important. Establishing an information sharing mechanism helps track the financial flows of multinational corporations, preventing tax base erosion and profit shifting. [35]

4.5 Ensure the Security of Tax Data

Tax authorities need to implement a comprehensive security strategy, developing a thorough information security policy covering data creation, storage, transmission, and processing. Use the latest encryption technology to protect data from unauthorized access and leaks. Also, implement multi-factor authentication mechanisms to ensure that only authorized personnel can access sensitive data, and regularly conduct information security training for employees to raise awareness of cyber threats.[36]

35 https://www.rsm.global/insights/finding-opportunity-change/taxation-technology-era-and-what-future-holds
36 https://www.sciencedirect.com/science/article/pii/S0740624X22000909

References

[1] OECD (2020), Tax Administration 3.0: The Digital Transformation of Tax Administration, https://www.oecd-ilibrary.org/taxation/tax-administration-3-0-the-digital-transformation-of-tax-administration_ca274cc5-en

[2] OECD (2020), Tax Administration 3.0: The Digital Transformation of Tax Administration, https://www.oecd-ilibrary.org/taxation/tax-administration-3-0-the-digital-transformation-of-tax-administration_ca274cc5-en

[3] OECD (2022), Tax Administration 3.0 and Electronic Invoicing : Initial Findings, https://www.oecd-ilibrary.org/taxation/tax-administration-3-0-and-electronic-invoicing_2ffc88ed-en

[4] enzarti, Y. (2020), "How Taxing Is Tax Filing? Using Revealed Preferences to Estimate Compliance Costs", American Economic Journal: Economic Policy, Vol. 12/4,http://dx.doi.org/10.1257/pol.20180664

[5] Yun, S. (2021), Electronic invoicing – Will businesses replace paper with electronic invoicing?, https://www.payments.ca/industry-info/our-research/payments-perspectives/electronicinvoicing-%E2%80%93-will-businesses-replace, accessed on 2 August 2022

[6] OECD (2022), Tax Administration 3.0 and the Digital Identification of Taxpayers, https://www.oecd-ilibrary.org/taxation/tax-administration-3-0-and-the-digital-identification-of-taxpayers_3ab1789a-en

[7] Taxation Science Research Institute of the State Taxation Administration (2022), Global Tax admistration status & trends (2022), Accessed December 2022

[8] European Commission (2022), VAT in the digital age: final report. Volume 1, Digital reportingrequirements, https://doi.org/10.2778/541384

[9] Edidiong Bassey, Emer Mulligan, Adegboyega Ojo (2022), A conceptual framework for digital tax administration - A systematic review, https://www.sciencedirect.com/science/article/pii/S0740624X22000909

www.britacom.org