

## NTO WEBINAR

### Emerging technologies for Tax Administrations: Applications, Trends, and Challenges

#### CONCEPT NOTE

### 1. Background

Progress in digital technologies and services constantly reshape the world we live in, including the tax administration landscape. Lacking human resources and access to data, tax systems were traditionally operating with limited quality of risk management, high administrative burden for taxpayers, and limited competency for new challenges of mobilising cash and assets. While the rise of new technologies and in particular digital disruptive technologies, increases capacities of revenue collection and improve cost effective resource allocation, for developing countries the change could be more radical, as it allows to “skip” the introduction of outdated infrastructures, and directly take advantage of the possibilities which disruptive digital technologies offer<sup>1</sup>. **Information and communications technologies (ICT) such as such as Artificial Intelligence (AI), data analytics, and blockchain technologies** offer the possibility to modify tax system performance, and fundamentally alter the relationship between taxpayers and tax administrations, while obtaining significantly better fiscal results. At the same time, these technologies present new challenges and risks for tax administrators, such as data protection, maintaining the rights of taxpayers, and staff adjustments.

Recognising both the possibilities and the challenges which new technologies have to offer, the **Network of Tax Organisations (NTO)** will host a webinar on **26 July 2023**, on the topic of **trending applications of ICT (Information and Communications Technologies), to improve the process and services in a tax administration**. The event will bring together experts and country examples in a webinar that will focus on the risks, benefits, and challenges of ICT, with a specific focus on lessons learned in country case studies. It will feature presentations on salient areas of tax and digital technology including Data Analytics and AI, with a focus on practical implementation for Tax authorities, and lessons learned from recent experiences.

The **Network of Tax Organisations (NTO)** is a network of nine regional and international tax organisations. It supports the capacity of NTO member organisations and their member tax administrations by fostering international collaboration and dialogue on tax issues for effective domestic resource mobilisation (DRM). Founded in 2018 and facilitated by the **International Tax Compact (ITC)**, the NTO Secretariat works to create a vibrant platform which strengthens tax systems across the globe for the well-being of their citizens. The secretariat is facilitated by the

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<sup>1</sup>Inter-American Centre of Tax Administrators, 2020. *ICT as a Strategic Tool to Leapfrog the Efficiency of Tax Administrations*. Chapter 15, New Disruptive Digital Technologies and Services, Opportunities and Challenges, p. 491-523.

International Tax Compact (ITC). The ITC is funded by the German Federal Ministry for Economic Cooperation and Development and co-funded by the European Union.

## 2. Objectives

The peer learning event aims at facilitating exchange among member tax administrations of NTO members on the topic of digital technologies for tax administrators.

The event hopes to provide insight into practical applications of new technologies to improve domestic resource mobilisation, and address in particular the risks and challenges.

## 3. Content

Recent technological advances, such as the expansion of storage and processing capacity on computers, increased availability of internet connectivity, and greater sources of electronic data - underscored by current global production of data at an estimated 2.5 exabytes per day<sup>2</sup> - have intensified the use of advanced analytics and artificial intelligence in business and public administration. This has made possible data analysis using 'Big data' to discover relevant trends and patterns. Preparation of data through programmes such as Hadoop, Spark, MapReduce and Cassandra, can be used by tax administrations for various purposes, such as monitoring and analysis of e-invoices as they arrive, identification of fraudulent operations, sectoral economic analysis, and drafting of VAT returns.

Data analysis also forms the basis of machine learning, or descriptive Artificial Intelligence (AI)<sup>3</sup>, which can identify various points of interest for tax administrators: discrepancies, mistakes (intentional or unintentional), as well as improving the service for most taxpayers in terms of increasing the efficiency of services designed to help them comply.<sup>4</sup> For tax administrators, therefore, the benefits of machine learning and AI include increased productivity, and enhanced enforcement of tax regulations. Data analysis can allow tax administrators to determine candidates more efficiently and accurately for audit, and to work with enormous amounts of data which would be impossible to analyse using traditional methods, making tax evasion and fraud much more challenging; for example, the use of clustering mechanisms, an advanced data analysis technique, has allowed for the identification of cases of fraud through phishing<sup>5</sup>. As such, digital technologies have the potential to positively shape the way tax administrations collect, process, and act on information, greatly improving efficacy and efficiency.

The adoption of these technologies may also have particular benefits for developing countries, who can take advantage of them to modernise without having to go through the costly intermediate phases previously followed

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<sup>2</sup> *ibid.*

<sup>3</sup> Distinct from generative AI, which creates novel content, descriptive AI seeks to solve classification and regression problems.

<sup>4</sup> <https://www.ciat.org/ciatblog-el-uso-de-la-inteligencia-artificial-no-es-un-almuerzo-gratis/?lang=en>

<sup>5</sup> Inter-American Centre of Tax Administrators, 2020. *ICT as a Strategic Tool to Leapfrog the Efficiency of Tax Administrations*. Chapter 15, New Disruptive Digital Technologies and Services, Opportunities and Challenges, p. 491-523.

by developed countries. For example, the installation of mobile technologies allows countries to forego the installation of landline telecommunications infrastructure. In the context of data analysis and AI, tax administrators may no longer need to invest in traditional data cross-referencing techniques. The enhanced adoption of ICT is also in line with the United Nations Sustainable Development Goals, notably Goal 9, which contains targets to upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, and significantly increase access to information and communications technology<sup>6</sup>, making implementation of ICT a part of the sustainable development agenda.

On the other hand, the use of these technologies, for example to identify fraud, can have serious pitfalls<sup>7</sup>. One prominent example is the Dutch *toeslagenaffaire*, in which authorities wrongly accused 26,000 parents between 2005-2019 of making fraudulent child benefit claims, demanding repayments which left many families in severe financial distress. Investigators have described the Tax Authority's actions as discriminatory and wracked with biases which led to these errors and an ongoing political scandal<sup>8</sup>. The possibility of bias and prejudice to be applied to inappropriately collected data is a very real threat to the well-being and privacy of citizens, and the social trust of communities in tax administrations. Further issues involved in managing large and complex data systems are privacy and data ownership, data security, and transparency<sup>9</sup>. A further difficulty is that of cost and resources, for the development, training, implementation, and monitoring of these systems, which requires investment in both technological and human capital. For many tax authorities, especially from developing countries, these costs will be inefficient or impossible to meet, resulting in the further question of when and how to engage with external providers. A special risk for developing countries in that regard is loss of control over their own tax administration when transferring operational responsibility (even temporarily) to external providers. In the future, tax administrators will need not to develop an understanding of systems modelling, but also the skills to work within a highly integrated taxation ecosystem which increasingly relies on both public and private sector partners, and the consequences of the applications of new phenomena<sup>10</sup>.

As such, this webinar will present experiences from national initiatives and ICT providers in the private sector, together with a regional perspective from **CIAT (Inter-American Centre of Tax Administrators)**. In doing so, it aims to contribute collaborate, exchange best practices, and practical application of digital technologies for tax administration. The aim of the webinar is to facilitate peer learning through the exchange of applications of ICT in case studies, identify risks, and offer solutions for tax administrations.

Topics will include discussion of the application of innovative technologies with specific examples, such cases of member countries using artificial intelligence and advanced analytics, with examples including virtual conversational assistants from AEAT Spain and the use of Open-Source Intelligence (OSINT) to tackle tax non-compliance. Secondly, the webinar will address current challenges the tax administrations are facing to implement artificial intelligence, in

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<sup>6</sup> United Nations Sustainable Development Goals. <https://sdgs.un.org/goals>

<sup>7</sup> Public Law Project. How not to be the face of an AI catastrophe.  
<https://publiclawproject.org.uk/blog/how-not-to-be-the-face-of-an-ai-catastrophe/>

<sup>8</sup> Amnesty International, 2021. Xenophobic machines: discrimination through unregulated use of algorithms in the Dutch childcare benefits scandal.

<sup>9</sup> OECD, 2020. Forum On Tax Administration. Tax Administration 3.0: The Digital Transformation Of Tax Administration.

<sup>10</sup> Ibid.

the form of regulations, capacities, ICT infrastructure, ethics, and human resources management. Finally, the relevance of data governance to enable advanced data analytics will be addressed. The focus will be on practical goals and uses of these technologies for the benefit of tax administrations.

## 4. Agenda

The event will take place on Wednesday, 26 July 2023 at 14h00 UTC.

Time (UTC)		Agenda Item	Speakers
14h00	14h15	Opening and welcome:  An overview of new technologies as applied to tax administration	Moderator: Raul Zambrano, Director of Technical Assistance and Technology of the Inter-American Center of Tax Administrations
14h15	14h40	Presentation: Practical cases and lessons learned on the use of artificial intelligence and the new technologies - the AEAT perspective	José Manuel Martín and Ignacio González, Agencia Estatal de Administración Tributaria, AEAT (Spanish Tax Administration Agency)
14h40	15h05	Presentation: Leveraging open-source intelligence to tackle tax non-compliance	Don Fort, Chief Business Officer at IVIX (data analytics provider for tax administrations), and Former head of Criminal Investigations Unit of the IRS
15h05	15h20	Q&A and open discussion	All
15h20	15h30	Closing remarks	Moderator

## 5. Format and logistical Considerations

The event is organised by the Network of Tax Organization (NTO). The NTO Secretariat is facilitated by the International Tax Compact (ITC). The webinar will take place via the video conferencing tool “Hopin” which will also feature an exhibition area with all webinar materials and a networking possibility during the whole event. The meeting will take place in English and Spanish, with simultaneous interpretation into English, French and Spanish. Participation requires online registration and is by invitation only. After registration, participants will receive a link to the platform and a calendar blocker.

## 6. Follow-up processes

The webinar is intended to foster exchange of experiences and peer-to-peer learning on the topic of digital technologies and tax administrations among NTO members and their member tax administrations. A document summarising the main outcomes of the discussion will be prepared by the NTO Secretariat for dissemination through the NTO website and the ITC social media accounts to encourage further dialogue.