Digitalization of Tax Administrations in Asia and the Pacific

The Evolution of Tax Administration

- Paper-based and siloed processes
- Manual, slow and costly
- Disconnected ecosystems
- Retrospective risk treatment

- Referred to as “e-administration”
- Improved efficiency and effectiveness through the use of digital data and technology tools
- Joining-up with some other parts of government and the private sector
- Improved detection of non-compliance

- Fully interconnected taxpayer and tax administration systems
- Interoperable ecosystems
- “Making tax just happen” (e.g., pay-as-you-earn, pre-filling of tax returns)
- Automatic and seamless compliance

Source: OECD (2020)

Digital Transformation External Drivers

- Availability of information
- The quantity, frequency, and velocity of data interchange
- Introduction of automatic exchange requires tax authority to possess the following capabilities:
  - Sending and receiving big data sets
  - Cleaning, filtering, and storing data securely
  - Utilizing the data in the detection and evaluation procedures

Digital Transformation Internal Drivers

- Taxpayer and tax administration relationship:
  - Changed from *adversarial* (the taxpayer must file and pay, and the tax administration verifies it) to *collaborative* (taxpayer data is transferred in real time and assumed to be correct from the start)

- Compliance management shifted from tax returns to continuous data flows (including return data, automatic data flows, and third-party data)
  - Resulting in more efficient tax administration

Waves of Tax Administration Digitization

Three technical waves of tax administration digitization in the Asia Pacific:

Basic – conversion of paper-based processes to digital ones
- Most countries in the Asia Pacific have reached this level
- Example: compulsory e-filing for corporate tax returns in Singapore and Japan

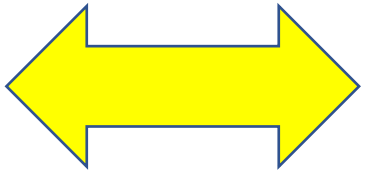
Consolidated – implementing new technologies and moving away from traditional processes
- Enable innovations such as pre-filled tax returns and personalized dashboards
- Example: “No Filing Service” in Singapore

Optimized – implementing advanced technologies to support decision-making
- Control and decision-making power are shifted to technologies (e.g., AI, blockchain)
- Example: real-time blockchain VAT e-invoicing system in China

Source: Asian Development Bank (2022)

Technologies Used in Tax Administration

- **Artificial Intelligence**
- **Big Data**
- **Data Analytics**
- **Blockchain**
- **Cloud Computing**
- **Internet of Things**



- **Computing Capacity**
- **Data**
- **Algorithm**
- **Pattern Recognition**

Artificial Intelligence

Advanced analysis and logic techniques, including machine learning and natural language processing to interpret events, support, automate decisions and actions

Big Data

The 5V concept for dealing with big data

- Volume
- Velocity
- Variety
- Veracity
- Value

Data Analytics

Autonomous examination of data or content using techniques to make forecast or generate recommendations

Blockchain

Public distributed ledger of network nodes maintaining a list of registries or transactions gathered in data blocks.

Key components

- Cryptography of private keys and time stamps
- Peer to Peer distribution network
- Shared Database
- Consensus Mechanism

Cloud Computing

Shared use of storage, computational capacity and application software

Models of cloud computing

- Private Cloud
- Public Cloud
- Hybrid Cloud

Internet of Things

Category of devices (i.e. objects, vehicles and other items) that contain electronic sensors and software with online connectivity

Key capabilities

- Collect and exchange data
- Generate data for real time monitoring and measuring

Source: Christopher Sanger (2020), Ernst & Young Global.

Current Trends in Asia Pacific Digitized Tax Administration

Collection of Digital Data

- Digital data coming in different forms: e-filing, the collection of data file, and collection of digital data from intermediaries and other government entities

Extensive Use of Advanced Analytics

- To identify risky taxpayers/returns through cross-sector and cross-segment comparisons of taxpayer data
- To facilitate tax administration operations and activities, such as tax payment management and taxpayer services

Promoting Online Taxpayers' Service

- Many tax authorities have made efforts to increase taxpayers' use of internet services
- Providing taxpayers with a single platform/application reduces costs and improves the taxpayer experience

Inland Revenue Authority of Singapore (IRAS): Text-Mining of Inbound E-mail

- Using text-mining techniques to analyze unstructured taxpayer e-mail:
  - Identify common patterns pointing to common inquiry topics
  - Detect changes in patterns
  - Identify areas of confusion and gaps in the existing communications suite

China: Blockchain E-Invoicing System

- Using blockchain technology to combat fraudulent invoices:
  - Synchronize transaction information between tax administration's system and electronic payment systems (e.g., WeChat, Alipay)
  - Provide full traceability and tamper-resistance
  - Automatically generate invoices and tax returns with pre-populated fields
  - Provide greater transparency and convenience to taxpayers

The Future Digital Tax Administration Ecosystem

- **Connected tax ecosystems** – Promoting data transfers between government agencies and the private sector can minimize the overall administrative load and provide a business-friendly environment.

- **Embedding tax into natural systems** – It can help streamline the data collection process for taxpayers and tax administrators, as well as improve data quality through real-time data validation.

- **Data-driven tax assessment and tax audits** – With big data, tax administration can become more data-driven and rely less on manual tax audit.

- **Data security** – For future tax authorities, data security, data management, and data governance will become crucial.

Thank You