# How can harnessing tax data create value for all?

The better the question. The better the answer. The better the world works.

The COVID-19 pandemic gave tax administrations a taste of what digital transformation can offer. But it also created challenges that could have been prevented had they transformed before. Now, they have an opportunity to realize far bigger possibilities – from giving taxpayers a more tailored experience to being an integral part of a seamless digital state.

In our second piece on the digital state, we look at the exciting possibilities transformation offers tax administrations globally.

### In brief

- Tax administrations know that digital transformation is necessary. But its potential extends far beyond fighting fires in a pandemic to improving life for citizens.
- Tax administrators can realize big benefits by designing customer-centric services, integrating digital into modernization programs and exchanging data in real time.
- Choosing the right operating model, systems, partners and performance measures will be important steps on the road to transformation success.

Over the last two years, tax administrations globally have assumed new roles with ingenuity and skill. From launching digital platforms to serve struggling businesses to partnering with social services to deliver benefits, they've dramatically upped the pace of digital transformation. They've also recognized that digital will be key to meeting their challenges, including uncertain revenue projections and the growing need to finance budget deficits.

But digital transformation can help tax administrations do much more than fight fires and solve problems. It has the potential to transform them from reactive, passive recipients of tax returns into proactive partners in improving how businesses operate and people live.

Tax administrations won't achieve this by adopting and embedding new digital technologies alone. To truly transform, they need to put taxpayers at the center of their digital journey and integrate their plans into wider digital government programs.

This article, the second in the series on the digital state, suggests five ways they can do this.

Chapter 1

# Challenges, collaboration and a change in mindset

**The pandemic caught tax administrations unprepared, but most pivoted to digital fast.**

The COVID-19 pandemic forced tax administrations to transition quickly to remote working. But it also shifted them from being solely the chief revenue collectors of governments to also becoming their distributors of economic relief and stimulus payments.

This meant not only a change of mindset but also collaborating with other government agencies in new and different ways. The solution, of course, was to turn to digital technologies. But while the pandemic revealed the potential of these technologies for tax administrations, it also brought challenges that transforming five years earlier could have prevented.

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For example, tax administrations suddenly had to provide benefits to households with little or no income, which were not required to file taxes. So they linked up with social services agencies, pension administrations and veteran affairs organizations to identify beneficiaries and quickly cross-check data. New Zealand's Inland Revenue coordinated with the Ministry of Social Development to verify wage subsidy applications and answered more than 350,000 calls from social services staff.

At the same time, anxious taxpayers overwhelmed call centers, forcing tax administrations to digitally transform faster. In Organisation for Economic Co-operation and Development (OECD) countries, slightly less than half pivoted more than 75% of their communications from paper to digital. In Costa Rica, for instance, when in-person visits to regional tax offices were off-limits, the administration launched a new digital portal that reduced emails by 30%.

Other tax administrations were caught by surprise and unprepared. One, in a high-income jurisdiction, was able to answer only 1 in 10 calls for an entire year from March 2020, then urged taxpayers not to call. And when citizens resorted to letter writing, it created a backlog of millions of unprocessed letters.

These examples show that most tax administrations were able to find digital solutions, but under great pressure and with variable results. In the next chapter, we suggest five ways that transforming digitally could make it simpler for taxpayers to comply, giving them a better experience – and even improving the quality of the services they receive across government.

Chapter 2

# Five ways tax administrations can take digital to the next level

**Digital offers exciting possibilities, from seamless services to processing e-invoices in real time.**

## 1. Designing tax services that put the customer first

Traditionally, the burden of filing accurate tax returns has fallen on taxpayers. But too often, individuals struggle to understand, properly document and process their tax liabilities. And many businesses see new legislation and tax reporting requirements as creating unnecessary complexity and compliance costs.

But what if filing tax returns could be as convenient as banking online, rather than an unpleasant interaction with government?

Many tax administrations have already made substantial progress along this path by designing services around the customer. According to the OECD's 2020 International Survey on Revenue Administration, more than 9 in 10 businesses and 8 in 10 individuals now file their taxes online. And a significant number of tax administrations have already achieved a 100% e-filing rate.

### Digital journey: transforming the taxpayer experience

| Digital maturity stage: Accelerating | Enhanced | Connected |
|---|---|---|
| **France** | **Singapore** | **Estonia** |
| As part of the French Government's effort to streamline tax collection for the country's four million small businesses, the Directorate General for Public Finances has set up an online portal to help small business owners, start-ups and the self-employed declare their VAT and social contributions quickly. | The Inland Revenue Authority uses data from Singapore's National Digital Identity Framework to seamlessly interact with other government agencies. This means individual taxpayers can access their automatically pre-filled tax return through the Singpass mobile app, which computes any payments they've already made to "make tax just happen." | By using government and third-party data, Estonia's e-tax system allows 95% of the country's population to pay taxes in just a few minutes. It also empowers taxpayers with transparency and privacy features that give them control of how their personal information is shared. |

But as taxpayers increasingly expect digital solutions that meet private sector standards, tax administrations must also build digital transformation into their modernization strategies.

That means optimizing web content so taxpayers can access it seamlessly across multiple digital devices and in their native language. It also means quickly deploying digital virtual assistants or intelligent chatbots to resolve queries by anticipating what taxpayers need and providing targeted information. When call volume rocketed during the COVID-19 pandemic, the Australian Taxation Office (ATO) resolved more than 94% of 1.4 million conversations by improving its chatbot.

In the future, though, chatbots will need refining to avoid exacerbating the digital divide and excluding digitally challenged taxpayers. The Canada Revenue Agency is getting around the issue by using its virtual chatbot to answer simple queries while diverting questions that potentially require more empathy to live agents.

> What if filing tax returns could be as convenient as banking online, rather than an unpleasant interaction with government?

### Making services seamless and complex changes simple

Tax administrations are also starting to integrate their digital platforms into broader digital government initiatives to offer taxpayers the seamless experience they expect. For example, the Inland Revenue Authority of Singapore has championed the Government's "tell me once" approach, which sees taxpayers fill out a single form with data that gets shared across agencies.

At the same time, tax administrations will need to address taxpayer concerns over the increased compliance costs of a shift to digitalization. In the EY 2022 Tax and Finance Operations Survey, 60% of private sector executives said they expect their workload to increase as a result of complying with emerging digital tax filing requirements. And 83% of all companies expect this to cost their tax and finance function at least US$5m over the next five years.

Tax authorities can alleviate some of these concerns by helping businesses and their own employees to stay up to date on the regulatory and legislative landscape. Decision rules management technology can help by aligning automated tax calculations to meet changes in laws, regulations and internal policies. For instance, the Dutch Tax and Customs Administrations Agile Law Execution Factory uses natural language processing to clarify complex legal and regulatory changes.

## 2. Applying advanced analytics and behavioral incentives to simplify and improve compliance

Many tax authorities are already using advanced data modeling, artificial intelligence (AI) and machine learning to provide a more holistic view of taxpayers. They're also tailoring services to specific taxpayer groups to make it easier to comply (and harder to evade).

Advanced analytics can help tax authorities personalize services further by better segmenting tax cohorts. This allows tax collectors to give more empathetic support to lower-income households and struggling businesses – making sure they get refunds first, giving them more notice of assessments and deferring payment schedules.

### Digital journey: advancing analytics and behavioral insights

| Digital maturity stage: Accelerating | Enhanced | Connected |
|---|---|---|
| **Brazil** | **Sweden** | **Australia** |
| Brazil is using AI and geoprocessing to identify anomalies where individual taxpayers log earnings, assets or expenses that are outliers from the rest of their communities. The system can help identify people who may be avoiding tax. | Sweden's tax administration has used AI and machine learning to improve the tax registration process for non-Swedish people. It identifies different customer segments and pushes e-services based on those segments. | By matching third-party data to deductions claims in real time, the ATO has been able to "nudge" taxpayers to correct mistakes and file accurate returns. |

Tax administrations can also couple advanced analytics with behavioral insights to "nudge" taxpayers to file their returns accurately. Australia's ATO uses AI for "compliance-by-design," to flag deduction claims that are out of the normal range. The system then prompts taxpayers to recheck their figures.

In 2020, a third of taxpayers removed their claims immediately and a third submitted their claims as reported. The final third were flagged for audit when they tried to play the system by inputting "progressively lower numbers" to come under the threshold.

Of course, increasing the use of advanced analytics and behavioral insights experiments also increases the potential for bias and loss of privacy. Tools and frameworks can help mitigate these risks. The Canada Revenue Agency has mandated algorithmic impact assessment (AIA) tools for new AI tax projects that can calculate the risk of bias and provide a list of ethical considerations.

### Case study: verifying digital identity helps reduce errors and fraud

EY teams have worked with several US states to implement technology that helps disseminate CARES Act funding and works through the backlog of cases in the unemployment tax and benefits system. Their work has included helping one state agency to clear unemployment claims using a digital platform that allowed citizens to use their email address to request unemployment benefit on the state website. EY teams also helped to process claims for both citizens and employers and addressed more than 350,000 claim-related issues in 2020.

## 3. Using real-time data exchanges to speed up processes, improve compliance and mobilize revenue

Currently, many leading tax authorities use an application programming interface (API) to exchange tax data between two parties in a secure environment. Under the UK's Making Tax Digital framework, more than one million businesses have used API interfaces to supply business data directly to the Her Majesty's Revenue and Customs (HMRC).

The next evolution will be to upgrade cybersecurity so that adopting cloud technologies becomes cost-effective, scalable and secure. Mexico's Tax Administration Service has used cloud services since 2012, saving 20% in estimated investment costs. It now processes an average of over 180,000 e-invoices in real time per minute.

To realize these benefits, though, governments will need to share the personal information of taxpayers with third parties. And as the EY Connected Citizens survey shows, more than four in 10 citizens are against the sharing of data. That's both within government and with private sector companies, and even if it would lead to improvements in public services or tax cuts.

Tax administrations can address taxpayers' concerns by building privacy features into data exchanges and letting citizens and businesses control access to their own information. For example, Estonia's Tax and Customs Board is part of the country's X-Road federated data exchange. Citizens own their data and get notifications to approve requests for their personal information from a government agency or private business.

### Case study: supporting the ATO's cloud computing transformation

EY teams support the Australian Tax Office's multi-year transition from on-premise IT architecture to cloud architecture. Once complete, the strategy will guide the delivery of multi-cloud platform implementation, data strategy, data engineering, DevOps, change management, application development, cybersecurity and cloud architecture.

### Digital journey: exchanging data

| Digital maturity stage: Accelerating | Enhanced | Connected |
|---|---|---|
| **Netherlands** | **Spain** | **Israel** |
| The Dutch Tax and Customs Administration is using public-private partnerships to build a network of qualified trusted service providers to exchange tax information while mitigating risks of compromise to the IT system. | The Spanish Tax Agency has recently made B2B electronic invoicing mandatory. This will allow the tax administration to easily access, store and view invoices and cross-check them after the transaction. | Smart cash registers connected directly with The Israel Tax Authority allow tourists to receive real-time approval for VAT refunds at the point of sale, eliminating the need to queue for a refund at the airport. |

### Prefilling returns and assessments with the right data

Many tax administrations already prefill individual returns or assessments with personal taxpayer data. But errors in personal data (address, occupation, etc.) are rife because authorities don't make enough use of data from other parts of government or third parties. The World Bank reports that in one high-income jurisdiction, 15% of taxpayer files have errors. And the jurisdiction's tax administration acknowledged that it could accurately prefill 98% of its tax returns with information from financial institutions alone.

To prevent the problem, tax administrations need to speed up the development of secure channels for automatically capturing tax information in near or real time. This information could come from a wide range of sources, including digital devices, social service benefits and the vast amounts of unstructured data on social media.

### Instantly processing e-invoices

Leading tax authorities are also validating e-invoices in real time, rather than submitting them daily or monthly: for example, tourists in Israel are exempt from VAT. When they make a purchase in a shop, smart cash registers communicate with the tax administration in real time, validating the deduction and automatically charging the VAT-free amount.

Reforms such as these have mobilized revenue as well as improving compliance: one study in Peru found that companies' sales, purchases and VAT increased by 5% in the first year after adopting VAT e-invoicing. Some Latin American tax administrations, including Colombia's, have also set up e-invoicing repositories. These give micro, small and medium-sized businesses easier access to credit by allowing them to sell their e-invoices, or use them as collateral, on financial markets (i.e., "factoring").

With different tax administrations at different stages of digital development, though, harmonizing tax across borders can be tricky. Fortunately, common reporting standards and multilateral assurance programs are helping to narrow that divide.

### Case study: helping the Egyptian Tax Authority to implement e-invoicing

Driven by revenue pressures and shrinking headcounts, the Egyptian Tax Authority wanted to modernize its tax administration and implement an electronic invoicing platform. EY teams advised on best-in-class country examples of B2B and B2C e-invoicing designs, strategies to improve compliance, and the legal frameworks and digital requirements for implementing the platform. The Egyptian Tax Authority was the first tax administration in the region to adopt e-invoicing and is set to introduce an e-invoicing mandate for all B2B companies.

### Case study: using blockchain to share data on withholding taxes

Investors and tax authorities have difficulty in properly assessing withholding taxes, such as taxes on income and dividend transactions, across jurisdictions. This is because of increasing financial complexity and reliance on cross-border investments, as well as the many and overlapping international tax treaties and domestic laws.

EY teams have collaborated with, among others, the UK's HMRC and the Norwegian Tax Administration to develop a road map and pilot program for tax administrations and businesses. The pilot uses blockchain technology to transform the withholding tax system for processing taxable events such as dividend payments and interest. It can also synchronize data collection and reporting across a complex network of financial intermediaries and tax administrations. This will allow businesses and tax administrations to properly assess the correct withholding tax rate under a tax treaty, while also increasing overall transparency.

## 4. Enhancing leading-edge technology with the right digital skills and ways of working

The explosion of data, digital technologies and analytical models is only helpful if tax administrations have the skills and working practices to implement them. And the pandemic revealed the particular challenges they face in doing so.

In the US, for example, 65,000 Internal Revenue Service (IRS) employees worked from home – more than 70% of the total. But while these numbers mirrored the private sector, remote tax collectors had far more concerns over privacy and cybersecurity

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to deal with. So, when the IRS closed in-person services in March and April 2020 (at the height of the tax-filing season), its live telephone services had to close too. And when the phone lines reopened in May 2020, the wait times were longer than usual.

## Investing in digital skills and instilling a willingness to learn

The rapid shift to remote work is only one aspect of a broader public sector talent strategy that embraces new knowledge and skills. Tax administrations also need to invest in digitally upskilling their workforce.

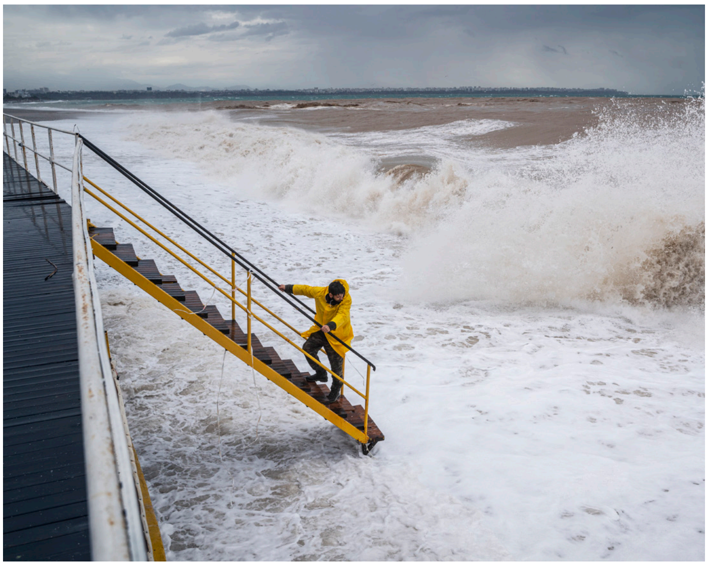
They won't realize the gains overnight. Significant proportions of employees have long tenures: in Austria, Portugal, Slovenia and Spain, more than 70% have been with the authority for over 20 years, and their use of technology is minimal. Tax administrations need to convince employees of the benefits of integrating new technologies, as well as building digital skills and learning on an ongoing basis.

At the same time, tax commissioners need to embrace more comprehensive strategies for recruiting specialists with the requisite technical skills. This means tapping into private sector talent pools and recruiting top digital talent into government service.

Finally, by automating manual tasks, tax administrations can free up time for tasks that require more empathy and complex decision-making: for example, using chatbots to answer process questions allows staff to help taxpayers experiencing hardship to navigate entitlements and obligations. By using advanced digital technologies alongside skilled tax professionals, tax authorities can give taxpayers tailored support, including quicker access to refunds and payment options that meet their circumstances.

## Case study: achieving a rapid shift to remote working in Australia

The Australian Government launched an AU$130b stimulus package to protect jobs and help businesses stay afloat during the pandemic. But the agencies it tasked with administering the aid, Services Australia and the Australian Taxation Office, were overwhelmed with demand while shifting their staff to remote working. EY teams helped Services Australia to transition fast and onboard 12,000 extra staff. Under the new model, information sharing and collaboration have both improved.



## Digital journey: Skills

| Digital maturity stage: Accelerating | Enhanced | Connected |
|---|---|---|
| **Sweden** | **United Kingdom** | **Singapore** |
| The Swedish Tax Agency has integrated its contact center agents with intelligent chatbots in innovative ways. It deploys its agents to train the AI chatbots to use more natural, tax-specific speech. And it frees up agents' time so they can prioritize cases that require more empathetic and difficult decisions. | HMRC has launched a digital skills initiative that aims to "bring the outside in" by forming partnerships with industry leaders to tackle tax problems through hackathons. It's also recruiting talent with leading-edge digital skills from the private sector. | Singapore's Inland Revenue Authority has launched an artificial intelligence-powered skills development and profiling platform. It tailors opportunities to individual jobseekers, and maps the most in-demand skills for the authority against its existing talent pool. |

## 5. Harnessing tax data to improve environmental, economic and social policy

It's clear that digital technologies can revolutionize the taxpayer experience and make it simpler to comply. But as the biggest holders and processors of public data on citizens and businesses, tax administrations can also help their governments improve economic and social policy.

For example, real-time economic insights from tax administration data can help monitor the health of people and economies better. During the pandemic, the ATO gave data from the Australian Business Register, which it manages as a whole-of-government service, to state governments. They then used it to help cross-match the job types, workplaces and businesses at the highest risk of unemployment or financial hardship.

Looking ahead, tax administrations can also share their data with each other and wider government to help achieve ESG objectives – for example:

- Identifying issues such as forced labor in supply chains
- Using blockchain to track and validate the sustainability of goods
- Deploying AI and machine learning tools to identify trends and spot risks from the source to the point of entry

### Digital journey: Exchanging data

| Digital maturity stage: Accelerating | Enhanced | Connected |
|---|---|---|
| **US** | **Australia** | **Estonia** |
| At the start of the pandemic, the IRS quickly made use of its databases to distribute economic impact payments to nearly 85% of US households channel more than US$800b to families in need | During the pandemic, the ATO shared accurate payroll data on 92% of the country's working population with the Australian Bureau of Statistics. This provided critical and near real-time insights into the state of the economy when traditional employment surveys were falling short due to the pandemic's restrictions. | The Estonian Tax and Customs Board has been carrying out a pilot project to create analysis models that will monitor and predict the economy. It will also use big data from businesses, along with modeling techniques, to assess the impact of policies. |

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Chapter 3

# How to achieve and sustain a successful transformation

**Important steps all tax administrations can consider.**

## Integrating the digital strategy and changing the operating model

A tax administration can't transform on its own. To be effective, its digital strategy must link to the broader vision for a digital government, both domestically and internationally. The department also needs to understand the latest advances in technology, and analyze the economic and social changes that may lead revenue forecasts to change. And, of course, it needs to build in significant time for consulting with taxpayers and the private sector.

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## Determining the systems and processes that will get the best results

Like most government agencies, tax administrations must develop flexible IT infrastructure to manage the increasing number of digital services they need. But as legacy systems make up over 90% of their IT infrastructure, tax administrations need to determine what they can rebuild cost-effectively from the ground up, and what they can improve through investments.

For example, commercial off-the-shelf (COTS) digital solutions offer a full suite of services but need to be flexible enough to accommodate an agency's exact requirements. And agencies considering custom IT architecture need to make sure they have the funding, skills and time to benefit from its individualized features.

## Deciding when and how to collaborate, and with whom

The long-term vision for tax administrations is for their systems to interact seamlessly with the systems managing the other transactions that individuals and businesses carry out every day.

This means deciding which systems and processes they can perform more efficiently by working with a third party. It also means deciding what types of data and systems they can (and should) open to businesses and individuals. And it means choosing the right business systems, cloud and third-party technologies to manage that data and keep it safe. Adopting common standards around sharing and managing data, and new technologies to prevent data leakage, will be central to collaborating successfully.

## Rethinking how to measure success

In the past, the important measures of a tax administration's success included the number of audits it conducted or the size of its revenue gap. But when a tax administration transforms to be customer-centric and digital-first, other operational and performance measures start to become more relevant. That means asking questions such as "are we targeting refunds to the people that need them most?" and "how satisfied are taxpayers with our services?"

Tax administrations need to set realistic milestones and timelines for programs and develop tangible measures for both short- and long-term results. Because the better the measures in a transformation program, the more sophisticated that program will become — and the greater the likelihood of realizing tangible returns.

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