



Digital Transformation of Tax Administration

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This paper is a joint production of Microsoft and PricewaterhouseCoopers Belastingadviseurs N.V. the Netherlands and is the first in a series of publications addressing the digital transformation journey that tax administrations will need to embark on to help their countries' overall health and stability, economic growth and attractiveness to investors.



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Contents

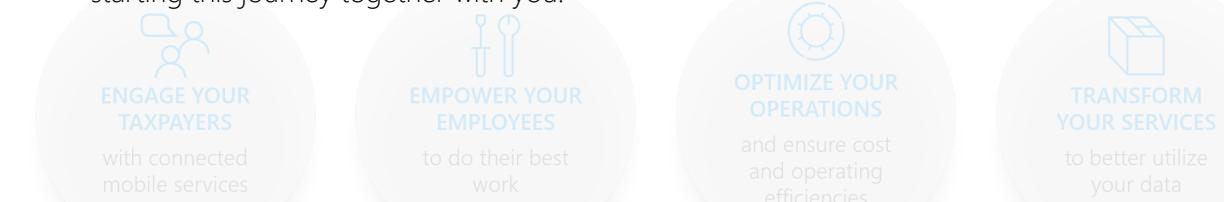
- 4** Executive summary
- 5** Introduction
- 7** Digital transformation of tax administrations
- 14** The digital transformation journey –
How we get there
- 16** Key components of a successful digital
transformation towards modern tax
administrations
- 21** How digital transformation sustains tax
administrations
- 31** Conclusion
- 32** Appendix

Executive summary

The globalization and digitization of business has led to a huge increase in trade transactions around the world. Up until recently, tax administrations had been able to handle this level of growth. However, within the past few years an unprecedented flow of information mixed with an increased use of social media has complicated matters. Furthermore, multiple projects such as the Organisation for Economic Co-operation and Development's (OECD) Base Erosion and Profit Shifting (BEPS), the Automatic Exchange of Information (AEOI), the Common Reporting Standard (CRS), the exchange of tax rulings within the European Union (EU) and taxpayer demand for public tax transparency, have all presented additional challenges. Tax administrations need actionable data insights to handle these issues, improve services and optimize operational excellence.

The Intra-European Organization of Tax Administrations (IOTA) views incorporating the digital world within the taxpayer experience as the highest priority for tax administrations going forward. Connected compliance represents another important standard that will have to be addressed with integrated, automated services and communications between governments and other government administrations (G2G), government and citizens (G2C) and government and business (G2B).

This paper is one in a series of publications addressing the digital transformation journey that tax administrations will need to embark on to help their countries' overall health and stability, economic growth and attractiveness to investors. In this first edition, we establish the overarching vision of digital transformation, how to travel through the roadmap and how technology can accelerate change. In the following editions, we will discuss the power of data and advanced analytics, skilling for better tax services and the role of a sustainable infrastructure for tax in building a sustainable society. Each paper will touch on relevant challenges and objectives within the context of the subject matter. We look forward to starting this journey together with you.



Kindly note that this is not a scientific publication, nor marketing material, but rather a 'thought leadership' paper for the wider community of tax system stakeholders.

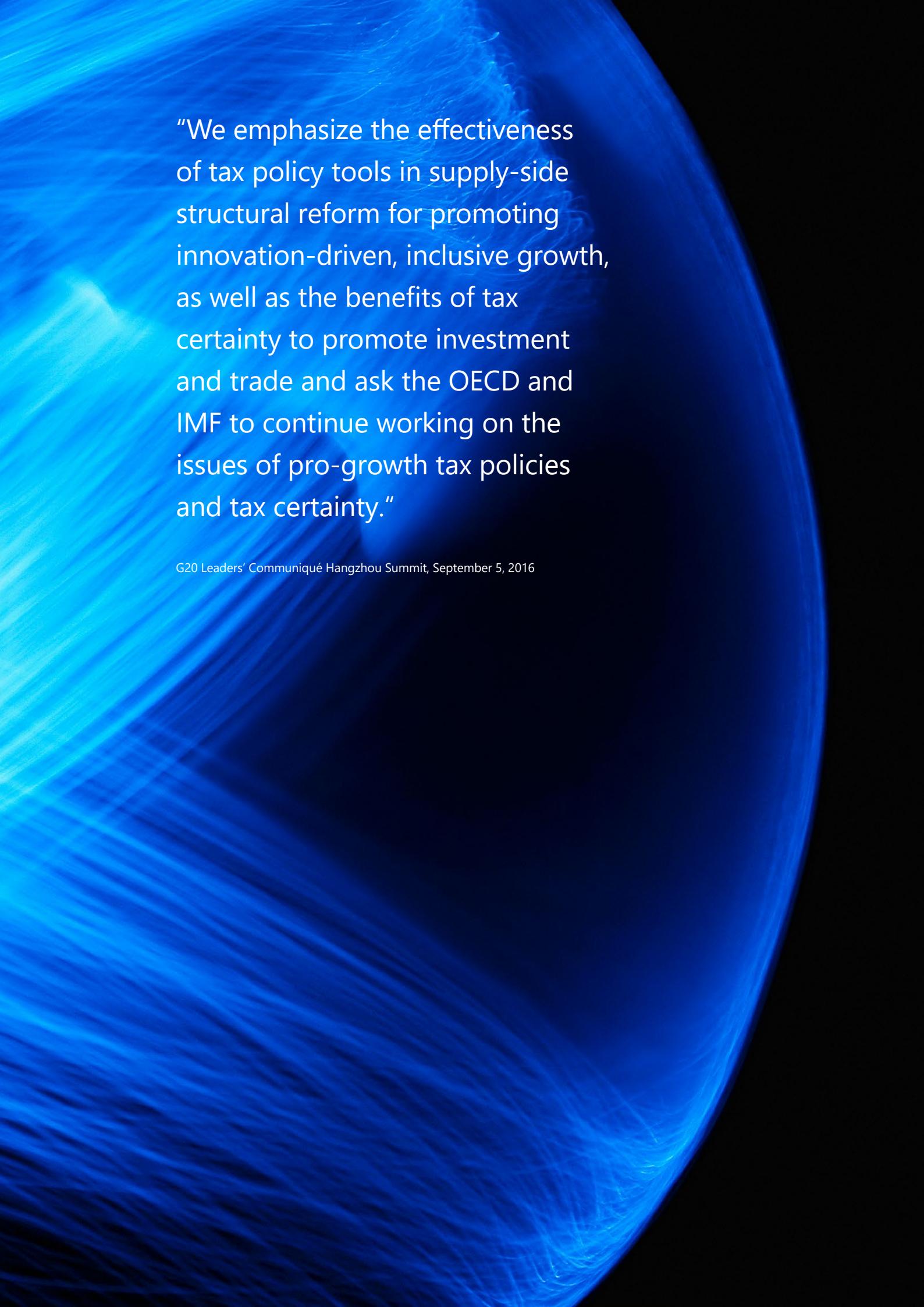
Introduction



Recent economic incidents such as the [2007-2008 financial crisis](#) and the [Luxembourg](#) and [Panama](#) Leaks have created a public and political debate about tax services and their role in society. More and more taxpayers today want government transparency as well as a simplified taxation system. This has driven policymakers worldwide to re-evaluate and adjust their government's tax structure, resulting in a series of new measures such as those enacted by the [OECD](#), the [EU](#), and Group of Twenty ([G20](#)) leaders.

A major by-product of these transparency initiatives has been the availability of increasing volumes of information in the public domain. For tax administrations, this change means having to handle a vast and rapidly expanding amount of data, which can dangerously impact the vital role they play in ensuring the socio-economic cohesion of society. How they deal with this and similar challenges will potentially have the largest influence in the future effectiveness of tax services and the creation of a fair and sustainable tax infrastructure.

Simultaneously, this influx of data, though daunting, also presents an amazing opportunity. If tax administrations can effectively analyze all the information they handle, they can provide better services and become more efficient. This is the promise and potential enabled by digital transformation.



"We emphasize the effectiveness of tax policy tools in supply-side structural reform for promoting innovation-driven, inclusive growth, as well as the benefits of tax certainty to promote investment and trade and ask the OECD and IMF to continue working on the issues of pro-growth tax policies and tax certainty."

G20 Leaders' Communiqué Hangzhou Summit, September 5, 2016

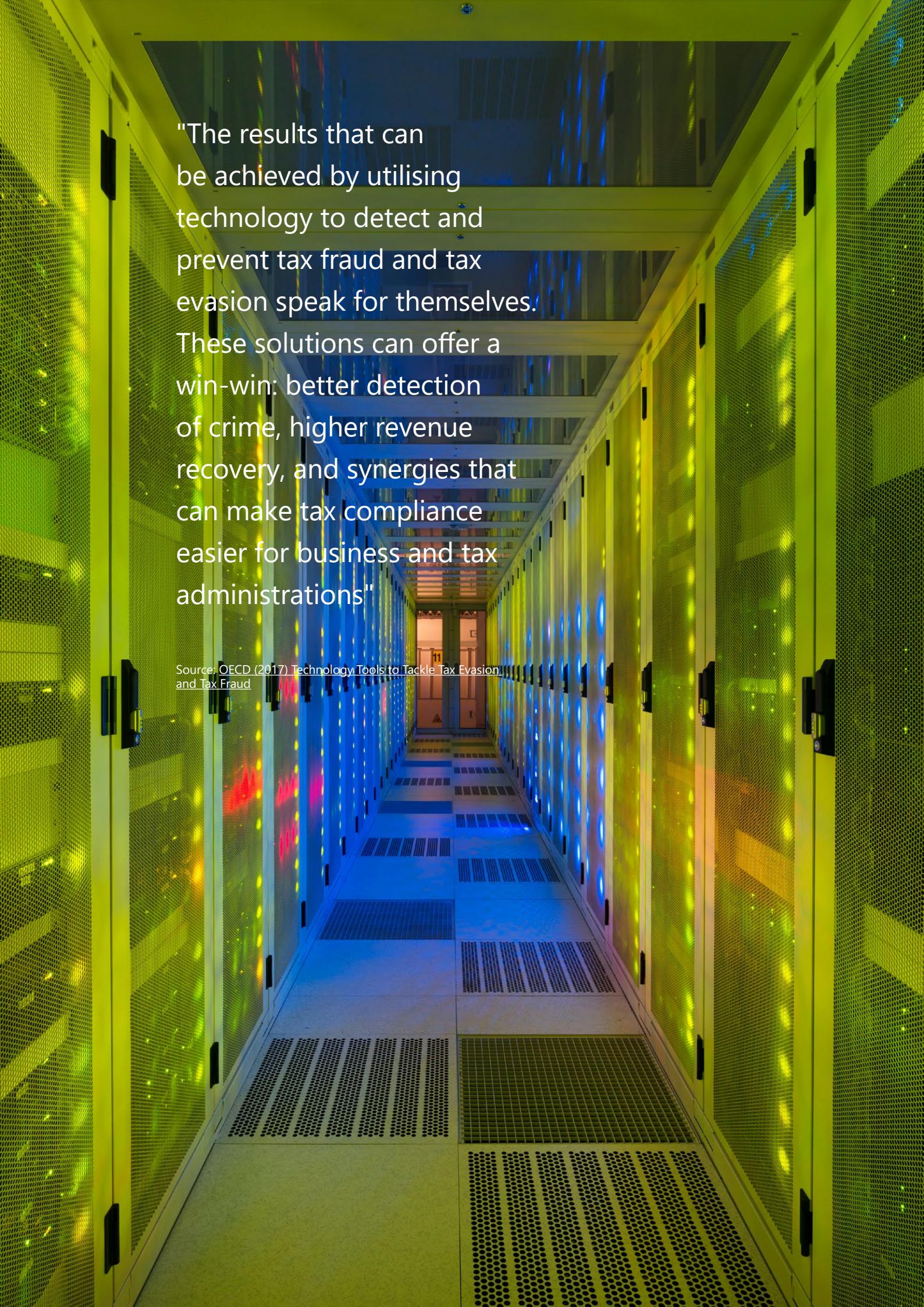
Digital transformation of tax administrations



Tax administrations are driven by a diverse set of inside and outside forces such as political initiatives that drive the new digital economy or use taxes to incentivize businesses to lower their carbon footprint. Technology can help tax administrations address these and many other issues.

Currently, certain technology trends, including Big Data, analytics, artificial intelligence (AI), machine learning, the Internet of Things (IoT), mobility and cloud computing are all having a huge impact on tax administrations. Taken individually or together, these trends have the power to increase taxpayer satisfaction, empower tax agency employees, optimize operations and modernize services. This is where digital transformation comes in.

With cloud computing services and adoption becoming increasingly mature, many different entities of all shapes and sizes are turning to the cloud as a core engine of their infrastructure. For a lot of countries, however, the process within public sector environments tends to be somewhat slow. This is in large part due to historic regulations that require updating plus a lack of digital skills and understanding of the benefits the cloud brings.



"The results that can be achieved by utilising technology to detect and prevent tax fraud and tax evasion speak for themselves.

These solutions can offer a win-win: better detection of crime, higher revenue recovery, and synergies that can make tax compliance easier for business and tax administrations"

Source: OECD (2017) Technology Tools to Tackle Tax Evasion and Tax Fraud



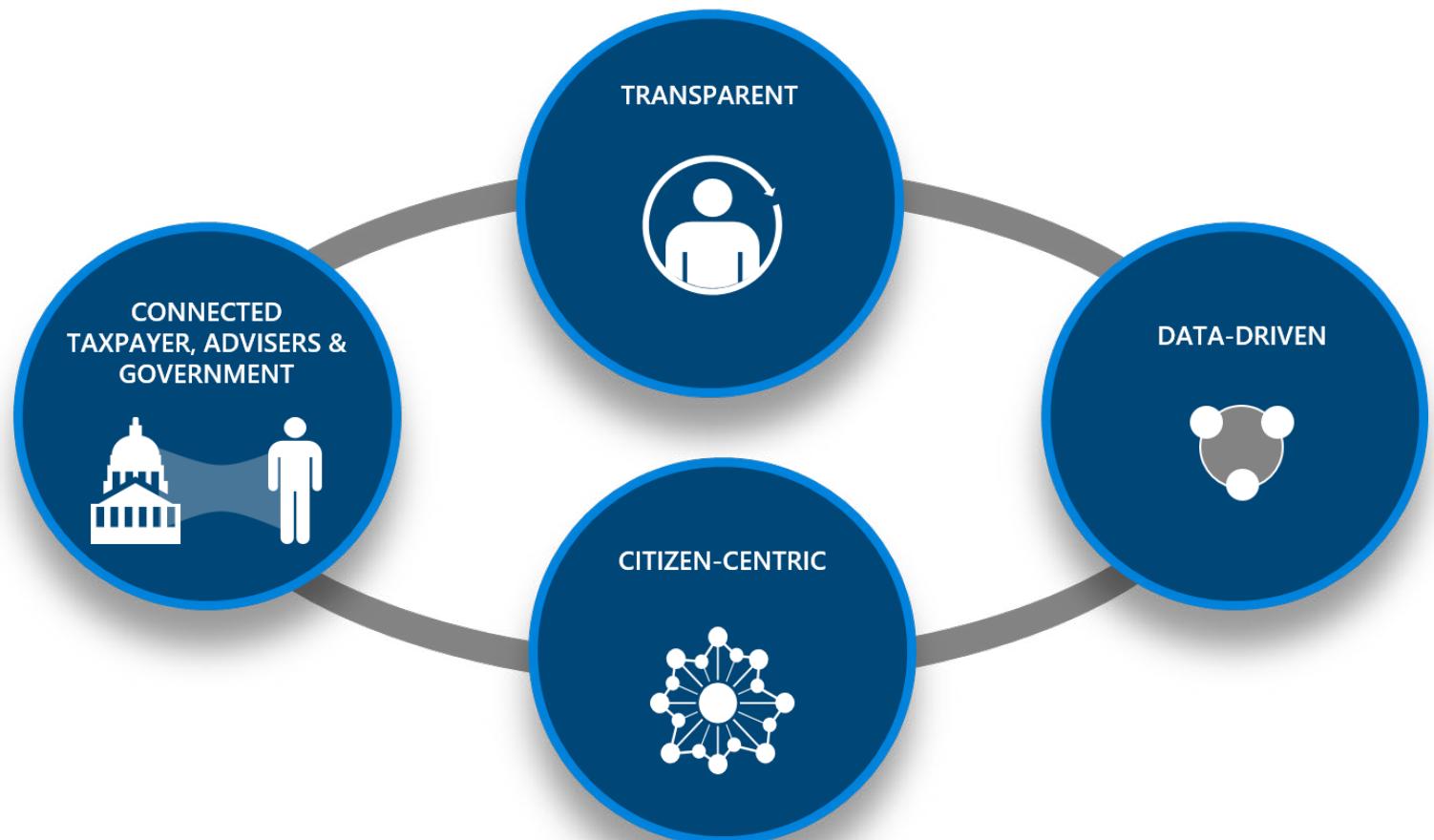
Confidence in cloud computing tends to build gradually but data governance can help develop trust, improving and simplifying the management of growing data volumes and data extraction while maintaining regulatory compliance. There are many aspects to data governance, such as data classification. This enables public sector authorities to assign relative values to the data they maintain and then manage that data based on its value. There are also stewardship models, change-control mechanisms, enhanced encryption, and increased identification, identity and rights management. These factors will improve the level of confidence required to consider moving tax applications and data into the cloud. Hybrid cloud also helps with this transition. In this instance, the data to be processed is in the public cloud while the personal information related to tax data remains in a private cloud. Over time, as the confidence in cloud computing grows, administrations can gradually move content from private to public clouds.

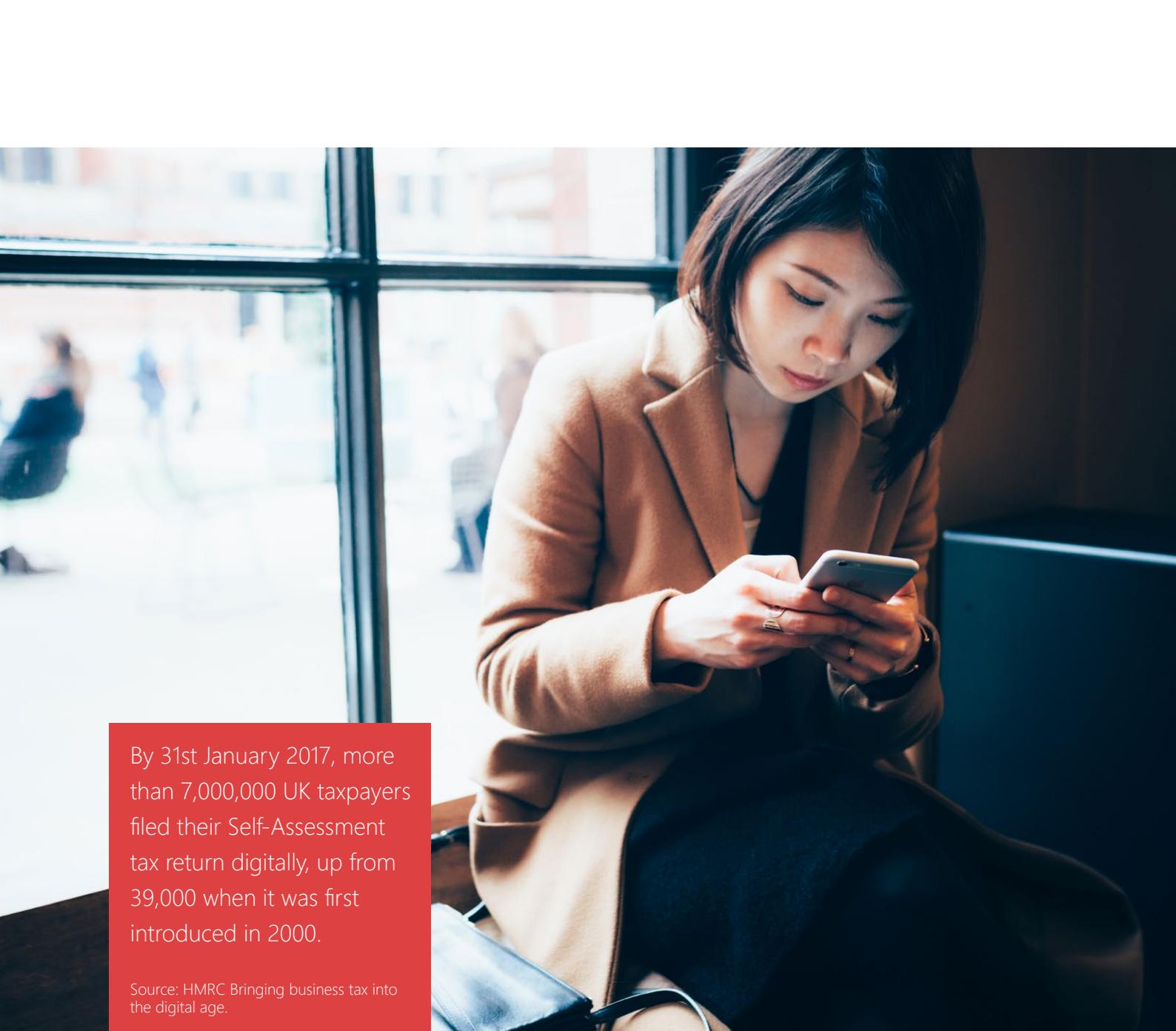
With digital transformation, tax administrations can turn data into a business asset using predictive modelling and the analysis of macroeconomic trends and policy changes that help develop workforce capabilities. This can simplify compliance and help prevent tax errors and fraud. It can help improve taxpayer services by facilitating payment methods, issuing faster refunds and giving easier access to relevant information. For tax administrations, it can reduce operation times, decrease costs, improve risk management techniques and audit efficiency and better incentivize (inter)national priorities. Digital transformation can help tax administrations with the following primary areas:

Transparency

[Research](#) shows that increased transparency of strategy, processes and investments, through extremely structured and/or visually-supported data, can increase taxpayer satisfaction and voluntary compliance. Furthermore, initiatives such as country-by-country reporting and [BEPS](#) enhance the collaboration and exchange of information between tax administrations locally and internationally. This opens the door to enhanced data analytics and governance.

An increased number of countries have adopted cooperative compliance models and soft law instruments such as engaging taxpayers more in revenue management. More than [32 tax administrations](#) worldwide have changed their strategies from a traditional data-oriented audit to a risk-based, cooperative compliance approach that heavily relies on analytics during the assessment process. The OECD states that the [United Kingdom's \(UK\) HM Revenue and Customs \(HMRC\)](#) approach to cooperative compliance is one of the leading examples. Since its introduction in 2006, it has improved risk management, reduced compliance costs (a £7.3B compliance yield over 2014-2015) and substantially increased taxpayer satisfaction.





By 31st January 2017, more than 7,000,000 UK taxpayers filed their Self-Assessment tax return digitally, up from 39,000 when it was first introduced in 2000.

Source: HMRC Bringing business tax into the digital age.

Taxpayer-centric solutions

Tax gaps remain a big problem for many countries. The [NGO, Global Financial Integrity](#), estimates that developing countries lose nearly [\\$1 trillion a year to illicit financial flows](#). The most recent IRS gross tax gap projected a loss of [\\$458 billion](#) in the U.S. in one year. Filling these spaces relies mainly on the state of the economy and the ability of tax administrations to get taxpayers to [voluntary comply](#) with paying their taxes. Taxpayer engagement can be significantly enhanced through a deeper understanding of citizens, what they do and how they engage with government. By making taxpayers' online and offline interactions personalized, simple, consistent, intuitive and delivered in real-time, tax administrations can build a 360° view of taxpayers and their needs, helping them customize e-services and open omni-channel communications.



Connected tax stakeholders

Tax administrations and taxpayers expect the same easy access and real-time sharing of tax information that they get with other data holders such as banks and consumer facing businesses. Such capabilities increase the connection and collaboration amongst tax administrations and taxpayers (businesses and individuals). It also helps tax administrations to securely exchange relevant data with banks, employers, stock exchange committees, chambers of commerce and more. A new trend within the finance industry is tax administrations automatically exchanging taxpayer information across jurisdictions. More than 100 countries and jurisdictions currently collaborate to implement BEPS initiatives. In the United States, individual states exchange tax rulings.

Data-driven decisions and automated processes

Taxpayers want assurances that their personal information receives the right level of privacy, security and protection. At the same time, they expect to receive personalized, real-time, reliable services. To balance both demands, tax administrations look for ways to effectively collect, secure, analyze and manage structured and unstructured data. This helps to maintain compliance, empowers tax policymakers to make decisions that drive growth and improves their public image by enhancing transparency and accountability.

Design a clear vision and strategic focus fit for the future

Invest in change management capabilities

Prepare to do more with less resources



The digital transformation journey - How we get there



To optimize the potential of digital transformation, tax administrations must clearly understand the path they need to follow to get from where they are now to where they want to end up. To this end, there are several actions that tax administrations can take during their journey:

Design a clear vision and strategic focus fit for the future

Most capacity-building efforts focus on tax law, double tax treaties, protecting and broadening the tax base, transfer pricing and other technical tax issues. While these endeavors have helped address individual challenges, they miss the overall big picture: how to design and implement a sustainable tax compliance infrastructure. Because of this oversight, many tax administrations continue to struggle with aligning their resources with their priorities. Designing a clear focus and strategy can help them through this process.

Invest in change management capabilities

Modernizing a workplace can't succeed without employee buy-in. Changing people's behavior however, can prove challenging. Success often hinges on projecting a clear vision of goals and the transfer of knowledge. One of the popular trends for achieving these



tasks comes from establishing co-operative compliance, a supportive attitude in which tax administrators help taxpayers understand their business. This involves employing a professional risk-oriented tax auditor working with real-time compliance data.

Prepare to do more with less resources

Budgetary constraints and a lack of proper resources often pressure tax administrations to do more with less. As administrations continue to accumulate increasing volumes of taxpayer data, they will want to convert that information into actionable insight that helps them increase revenue, retain their country's investment attractiveness and ease their tax compliance burden. In lieu of recent financial leaks, they also need to take actions in relation to money laundering, tax avoidance and tax evasion. In addition, they'll need to invest in technology to properly manage data growth. This includes attracting and recruiting people with the right set of skills in data analytics/data mining, forensic auditing, risk management and tax technology to be able to generate actionable insight.

In developing economies, there's a growing need to include more taxpayers within the formal economy (through registration), reduce tax evasion and counteract money laundering. As the tax administrations' agenda becomes more comprehensive, so too does the need to invest in technology to properly and securely manage the growth of taxpayer data.

Key components of a successful digital transformation

Compliance strategy	Legislative framework	Operational framework	Tax Technology & infrastructure	Change management	Performance measurement
An overarching strategy for compliance management in the various taxpayer segments  1	An enhanced multi-tax legislative framework  2	Design and principles of governance model and guidelines for core processes and procedures  3	Tax Technology strategy, Software platforms and IT infrastructure Toolboxes for data analytics, PM  4	Training and education Behaviour change management  5	Ongoing monitoring and periodic progress reports Communication to stakeholders  6

A modern tax administration relies on its ability to seamlessly incorporate new digital technology into the workplace and services. To help succeed with adoptions, tax administrations should consider establishing the following components:

Compliance strategy

Digital transformation requires compliance management. This includes the development of compliance methodologies and the reorganization of units around key taxpayer segments such as large businesses, subject matter experts (SMEs) and individuals. Management also requires a vision about tax fraud prevention and detection. Any compliance strategy must align with the values and behavior of the employees responsible for tax assessment, auditing, revenue collection and management. Taking such an approach helps tax administrations prioritize oversight activities and approaches and effectively coordinate scarce resources towards them. Properly designed key performance indicators (KPIs) tied to the compliance strategy can be used to monitor the progress, of capacity-building efforts and objectives on an ongoing basis.

The South African Revenue Service (SARS) Strategic Plan 2016/17–2020/21 reveals the SARS' strategic goals for the next five years:

- 1 Increase customs and excise compliance
- 2 Increase tax compliance
- 3 Increase ease and fairness of doing business with SARS
- 4 Increase cost effectiveness and internal efficiencies
- 5 Increase public trust and credibility (with respect to tax compliance this means shifting from a gatekeeper to risk management approach)

Source: [SARS Strategic Plan 2016/17–2020/21](#)

Legislative framework

Digital transformation may require new tax and procedure laws that modernize administrative and procedural provisions across all major taxes. Given the pace of new technologies, it's critical that legal systems align to legislation that addresses the implications of new technologies on the current tax system. This pertains to many aspects including confidentiality, privacy, user terms and conditions, liability on contracts between tax administrations and taxpayers and so on. The challenge here is to replace rigid 'as-is' thinking that tax lawmakers often practice with innovations that can absorb and handle the new global and digital-driven economy.

Operational framework

An operational framework presents a blueprint for a tax administration's core processes and compliance procedures. This includes the design of a governance model, organizational structure, guidelines for operational processes to achieve the compliance strategy, management reporting and roles and responsibilities within the organization. No operational framework fits all tax administrations. Frameworks need to have the agility to consider different country contexts, cultural peculiarities, social, political and economic opportunities, an organization's technological maturity as well as changing global tax environments.

The UK HMRC has introduced Making Tax Digital which is a key of the government's plans to make it easier for individuals and businesses to get their tax rights and keep on top of their affairs – meaning the end of the annual tax return. HMRC's ambition is to become one of the most digitally advanced tax administrations in the world.

Source: HMRC [Policy Paper Overview of Making Tax Digital](#), updated 13 July 2017

Tax technology and infrastructure

To optimize the benefits of tax technologies as well as manage compliance risks and rising future revenues, tax administrations should consider developing a strategy to guide the direction of innovations and provide a clear picture of the end-state design of a tax technology infrastructure. New technology has its own set of requirements, including a suitable physical environment for installation, continuous support in the day-to-day environment, ongoing maintenance and license costs, new security requirements, monitoring and planning for future improvements and so on. Many of these challenges can be resolved through service level agreements with a trusted cloud service provider. The Tax Technology Strategy guides the direction for all innovations and provides a clear picture of the end-state design of a tax technology infrastructure for the tax administration.

After the completion of Golden Tax Project Phase III, the State Administration of Taxation (SAT) of China will ensure its digitalization in the post-phase-III period under the guidance of the "Internet + Tax" Action Plan. The plan strives to further reduce the compliance burden by providing comprehensive eServices as a smarter tax authority by the year of 2020.

Source: [State Administration of Taxation Annual Report 2015](#)

Change management, training and education

Digital transformation brings substantive change. Tax administration staff will need to receive proper training for the growth and extension of individual skills, abilities and competencies concerning the new operational blueprint and tax technologies. It's also important to structure tax administration in such a way that roles and functions are clearly defined and differentiated, lines of communication and accountability untangled, and decision-making procedures transparent and functional. A key component of change management is to make people comfortable with technology so that they can use it as a tool to support them in their daily operations.

The Australian Taxation Office (ATO) continues to foster a flexible and responsive workforce that is able to meet the challenges of the future. The tax administration uses industry norms, practices and standards to guide performance expectations and career development approaches.

Source: [ATO corporate plan 2015-19](#)



Performance measurement

Performance measurement dashboards and reporting present a feasible way to maintain buy-in, ongoing support and strategic guidance from governments and politicians.

They also enhance process transparency and accountability. Effectively measuring performance involves periodically assessing set KPIs, relevance, progress, efficiency and the impact of activities with respect to project objectives. The tangible outcome of monitoring and measuring can be presented in periodic progress reports (e.g. semi-annual or annual) to key stakeholders. Sharing successes (and mistakes) with the organization is an integral part of obtaining buy-in and credibility from that organization. It can also be used to inform key stakeholders and the general public, helping to build trust.

The Inland Revenue in New Zealand successfully incorporated a proactive intelligence-led approach to ensure compliance by the Significant Enterprises customer segment comprised of nearly 600 taxpayer groups. Inland Revenue can now monitor key performance data such as tax payments, operating margins and interest expenditures with expert assistance from full-time, in-house specialists on transfer pricing and financial arrangements.

Source: [Inland Revenue, Multinational Enterprises Compliance Focus, November 2016](#)



"As a geographically spread organization, we sought to enable greater collaboration across HMRC, use technology to transform operations, and change culture while optimizing efficiency. We also wanted to ensure we can serve customers across our regions from a smaller number of regional centers in the future."

Steven Walters, Chief Technology Officer at HM Revenue and Customs

How digital transformation sustains tax administrations



Digital transformation can significantly improve the lives of tax administrators and taxpayers. For administrators, working with new technology increases their motivation, makes them more productive and optimizes operations and spending. For taxpayers, it enhances the number and types of taxpayer services, engaging citizens in new ways and leaving them more satisfied with their overall experience. There are four pillars of digital transformation:

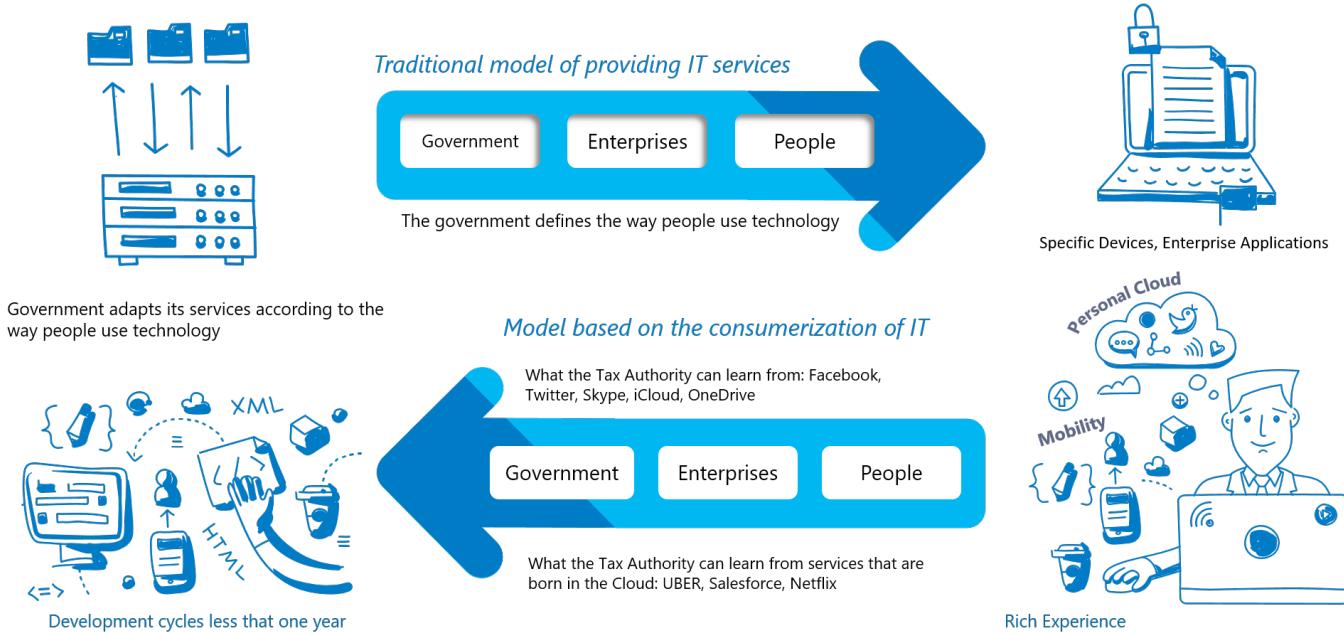
Engage your taxpayers

Taxpayers expect new levels of access and connectivity with tax administrations. Personalized interactions can help build loyal relationships, as can the following requirements:

- **Simplicity.** Simplifying tax services for taxpayers means fewer interactions, simpler forms and processes and faster response times to requests. In addition, administrations gain a better understanding of taxpayers.
- **Transparency.** Taxpayers are more likely to voluntarily comply when tax administrations establish systems regarded as both honest and fair.
- **Data management.** Taxpayers want assurances that their tax administrations handle their information with the right level of privacy, security and protection to build trust.

The taxpayer of the future

To change your mind on how you deploy and use technology to transform your business



Here are a few examples of countries using connected eServices to engage taxpayers:

Australia's Tax Office introduced the 'Alex' virtual assistant, which can help answer general taxation enquiries for citizens and business.

Mexico's tax authority, Servicio de Administración Tributaria (SAT), employs a customized application for cloud-based tax collection that individuals and businesses can use to pay their taxes in a matter of minutes. Citizens simply log onto SAT's portal with their tax ID number, review the earnings and deductions that have been automatically calculated and entered, and then file their return - with tax refunds deposited to their bank account within five days.

"We made it easy and efficient for taxpayers to do business with us and to become compliant with tax legislation. There has also been an improvement in meeting payment deadlines and a reduction in collection overheads." Allen Saruchera, IT Services Manager, Zimbabwe Revenue Authority



Empower your employees

Digital technology can help modern tax administrations by reducing the number of agency interactions and improving checks and controls. It can also automate data sharing, resulting in less manual processing, highly accurate taxpayer data, and more. Features and resources include:

- Anytime, anywhere access to best-in-class tools that provide flexibility and knowledge that increases employee job satisfaction, workplace experience and the administrations' attractiveness.
- Citizen-centric systems that integrate information from multiple sources and enable personalized services. AI (chatbot assistants) takes over lower value repetitive and time-consuming tasks so employees can focus on value-add services.
- Development of new skills based on advanced analytics, machine learning and AI.
- Greater responsiveness and collaboration with teleconferences, knowledge-based

platforms, virtual team workplaces, intelligent portals, internal social media tools and mobile apps.

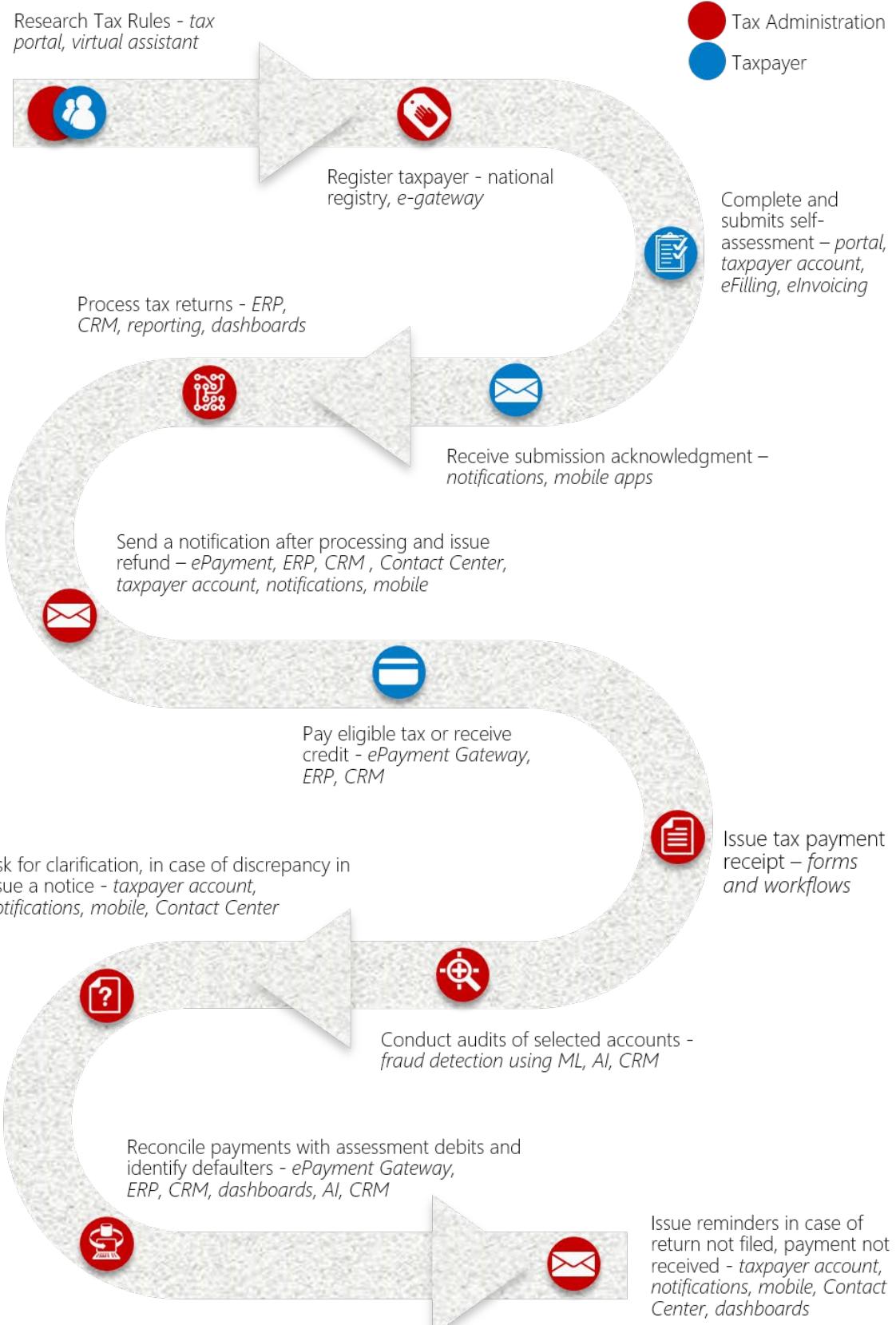
- eLearning tools and experts that can be reached online with communication/collaboration tools.
- Performance management tools that help increase worker motivation and their focus for better quality of service.
- Feedback mechanisms that show the impact of government employees on the satisfaction and trust levels of citizens and the quality of service.

Digital technology benefits everyone working within a tax agency. The most common-based uses relate to an employee's role within the administration:

- Tax auditors, often on the go, require secure, reliable and real-time access to data. Digital technology offers identity management, mobile devices and apps, data syncing, online and offline working, conferencing, performance management and automated workflows.
- Tax agency front-line employees require multi-channel access and mobile search capabilities to manage taxpayer engagements. This can include contact-center, smart portals, emails/scheduling, knowledge-based and enterprise search, case management and virtual assistants powered by AI.
- Tax agency back office personnel can use productivity tools to improve collaboration and offer apps for accounting, refund processing project management, Business Intelligence (BI) dashboards and reporting. Virtual assistants (powered by AI) can simplify search and help with next-action guidance.
- Managers can use BI, mobile apps and eLearning platforms to help with service quality, processing time, backlog, taxpayer satisfaction, budgetary execution, team collaboration and so on.

The Journey Map below details in a visual format the different touchpoints between the tax administration and taxpayers and the influence of technology.

Tax Journey Map



"With the information at the level of detail, auditors completely change their execution. It isn't necessary that they go to the companies. Microsoft Big Data makes audits much more intelligent and specific." - Juan Manuel Galarza, General Administrator of Communications and Information Mexico Tax Authority (SAT)

Going forward, successful tax administrations will require employees who are highly proficient in data analytics, statistics, process improvement and change management. They'll also employ dedicated tax technology, data and project management specialists who can develop and execute tax technology and transformation strategies.

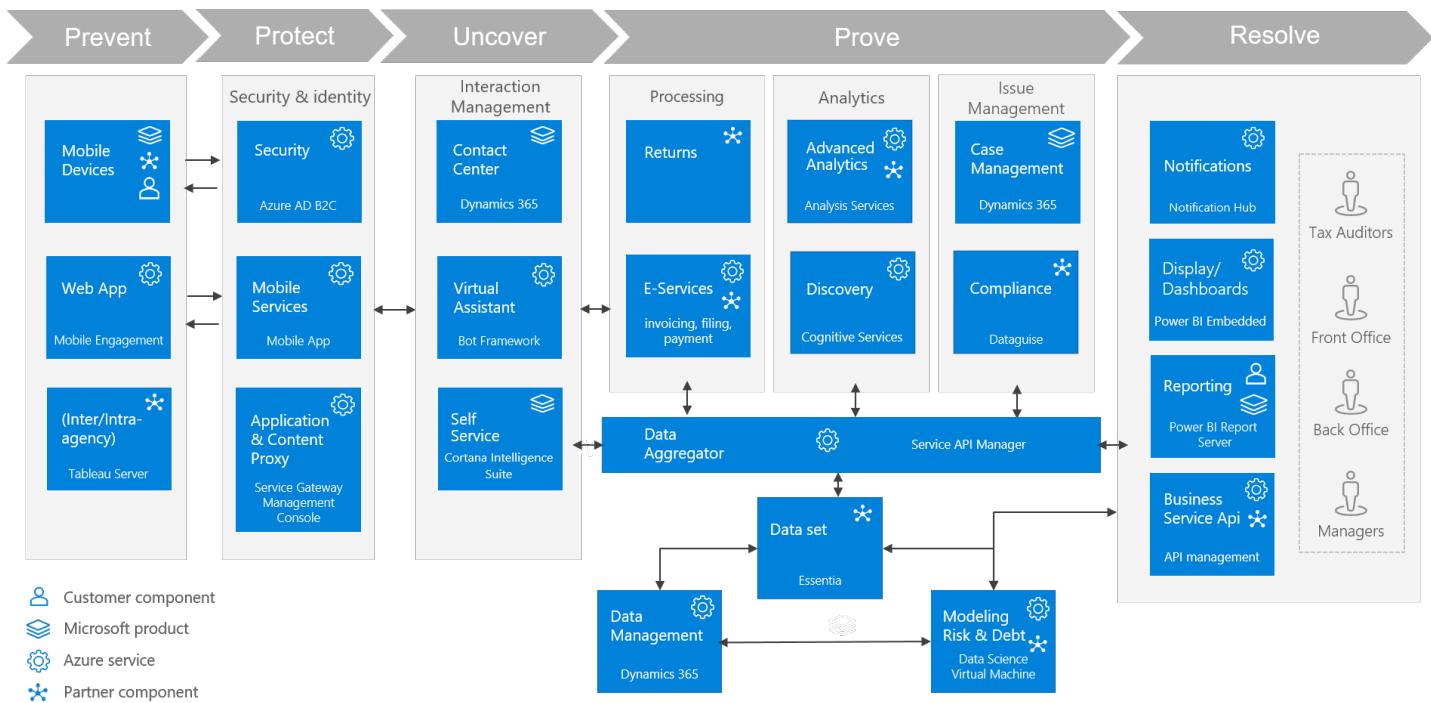
UK HMRC decided to empower and motivate its employees by giving them access to modern apps, social media and more flexible working. Its workforce now uses mobile devices for agile customer support as well as extended webchat hours. Furthermore, up to 200 advisors work from home including evenings and weekends.

With the rise in AI, we also need to consider the reimagined workforce where successful organizations manage employees alongside intelligent machines - ensuring collaboration between the two.



Optimize your operations

Tax administrations want to improve their efficiency, productivity, transparency and service reliability. Self-service, intelligent reporting (report builders, dashboards, eCitizen information), powerful search engines, easy connectivity, improved analysis ability and many more solutions can help them maximize operations. Compliance, with multiple customer touchpoints, also has many areas open to optimization.



Prevent means getting the right access to information to the right user (internal and external).

Protect means identifying and securely connecting users to the platform based on multi-factor authentication.

Uncover means directing the user request to the right destination, expert, portal, knowledge base, virtual assistant and so on.

Prove means processing requests, analytics, monitoring progress and initiating workflows as needed.

Resolve means using visual reporting tools and more.

To further increase optimization, modern tax administrations can stimulate third parties, such as data holders, tax service providers and industry associations, to provide new services by sharing their knowledge and business rules. They can also make appropriate data available as building blocks for third parties to integrate in their broader service offerings to citizens.

or businesses. Integrated solutions may better serve the taxpayer and make compliance easier than standalone services. This could be especially true in a global economy in which cross-border transactions and movement of people are more widespread, calling for further cooperation between tax administrations, for instance via the exchange of information. Third parties also have an important role to play, as they may be best capable of providing integrated solutions that take complexity away from the taxpayer.

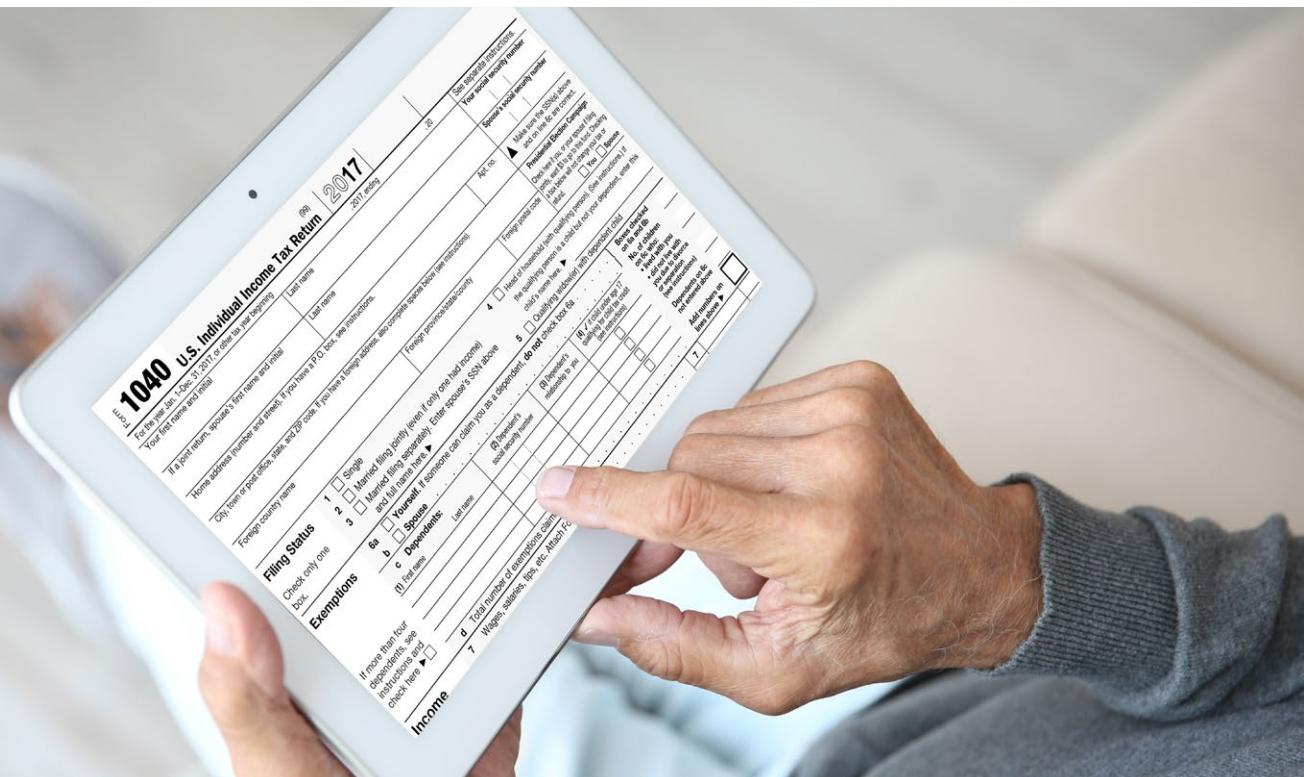
State of Indiana in the USA, sought to improve online services for business owners such as licensing, tax payment, and unemployment benefits. They developed a one-stop portal resource for 100,000 business users to access an expanding array of services, helping improve compliance and cost efficiency. By taking advantage of a cloud-based identity management system, Indiana State expanded and enhanced its citizen services, easily and affordably. This enables them to better serve citizens and improve revenue capability. Information is submitted and processed more quickly and users can return to running their businesses.



Transform your services

Taxpayers today expect personalized, real-time, and reliable services that are accessible online and offline at any time and easy to use. An automated, integrated system can address these expectations by reducing manual inputs and minimizing the risk of errors by checking for discrepancies in real-time and immediately correcting them. To make such a solution work however, tax administrations must have the following:

- A secure, scalable infrastructure
- Capacity to process huge amounts of data and draw insights out of it
- Capacity to automate and personalize services with the use of AI
- Communication and collaboration platforms for G2G, G2C and G2B interactions
- Flexible workplace and multi-channel platforms



Mexico's Tax authority, SAT, uses a data analytics platform to improve tax collection with the implementation of a predictability model based on taxpayer information, including millions of electronic invoices. This enables the identification of taxation deviations that drive tax audits, predetermined tax returns, fiscal intelligence to identify deviations, internal revenue projections and helps identify taxpayer risk behavior.

To address their needs, many tax administrations are investing in a series of technology platforms and services:

Cloud services that help reduce the cost of developing and testing systems as well as scaling. They also provide access to advanced analytics and AI-based solutions that motivate tax administrations to more rapidly adopt cloud architectures.

Secured identity, multi-factor authentication including biometrics to enable access to information and personalized engagements.

Cognitive services and AI, such as chatbot technology, that help improve taxpayer assistance services and machine learning to draw better insights out of data. For example, MIT Computer Science and Artificial Intelligence Laboratory (CSAIL) researchers recently helped develop Simulating Tax Evasion and Law through Heuristics (STEALTH), a system that uses AI to combat corporate tax evasion.

Advanced analytics that build predictive and cognitive modelling for taxpayer segmentation and risk analysis (i.e. social network analysis to detect VAT carousel fraud).

Customer Relationship Management (CRM) platforms that enable secure case and document management from registration of entry to archiving and retention, helping provide a 360° view of the taxpayer. CRM also helps simplify targeted activities, decreasing processing time and offers near real-time eReporting and issue alerts.

IoT (Internet of Things), for a variety of services such as carbon tax, connecting cash registers to tax administrations to help fight against sales tax Fraud, and sensors at gas stations to help fight against fuel theft in the distribution chain.

Blockchains and bitcoins that reduce processing time. For example, Bank of America uses a multi-node private installation of the ethereum blockchain to simplify a standby letter for credit processing from 15 to four steps cutting the time down from 5 days to between five and ten minutes. General scenarios in which Blockchains can enhance tax service quality and collections include the following:

- Compliance reporting
- Anti-money laundering
- Deal origination
- Trading, trade reporting and risk visualizations
- Claim filings, claims processing and admin
- Fraud prediction
- Licensing and identification
- Multi-factor authentication
- Tax filing and collection

Conclusion



Technology is a tool that can enable the vision of the modern tax administration cutting costs, minimizing tax fraud, empowering employees to deliver new higher value services to taxpayers and giving insights on the current status and future evolution of the economy and society. A sustainable tax technology infrastructure benefits tax administrations as well as taxpayers, securing efficient tax compliance, increasing taxpayer satisfaction and voluntary compliance. To achieve this requires a proper holistic vision and strategy with a clear implementation plan and a proper monitoring system in place. Managing technological change is about getting internal and external stakeholders onboard by being transparent on developments, whether they are successful or not.

An important question to ask is how to digitally transform with a sustainable return on investment (ROI). If in the past, time was money, then today data is the new currency. This will be the subject of our next white paper in this series.

Our guidance is to leverage innovation in terms of technological developments to be able to practically build a sustainable tax administration for decades to come. Technology can, for the good of society, help you achieve this objective.

Appendix

Examples of digital transformation initiatives:



Digital Tax Accounts enable taxpayers to view/manage information in one place and see their tax calculation. Taxpayers can give access to authorized agents to their digital accounts. Users can get **help & support tailored** according to their needs.



95% tax returns filed through e-filing.
One click tax return: as data is pre-filled, taxpayers simply verify and submit. Taxpayers receive refunds in 5 days.



Electronic declaration system & tax payer online identification. "My STI": a self-service portal personalized for each taxpayer. **Mobile application:** taxes in your mobile phone. Intelligent Tax Administration System to pre-fill VAT return.



Immediate Supply of Information (ISI) focus on **VAT electronic books, eInvoicing and eFiling, Fraud detection.**



62 tax payers' e-services including e-declarations, e-chancellery, e-registration, e-audit, mobile ID. **Social Incentives** to motivate people to voluntary Tax Compliance. Social network activity in Facebook, YouTube and Twitter



E-invoicing permitted. Supporting documentation can be sent electronically when asked. **Risk engines** used to assess risk & determine compliances (extensive use of data matching algorithms). **Mobile apps** to access tax information, tax reminders.



E-filing including both accounting and tax records/books. Corporate income tax information exchanged electronically among federal tax authorities. Taxpayers selected for **inspection based analytical tools.**



Local Property Tax (LPT): new tax starting 2013 required **development of a national property register.** Development of **support structure** for a self-assessed tax for an audience (property owner) with little tax knowledge. Mandatory **e-filing** for certain categories.



Mobile applications

Embed e-services targeted support when using e-services - **click-to-chat** - to avoid the need for offline channels. To understand this constantly moving landscape, tax administrations increasingly open themselves to new opportunities such as **Hackathons, Gaming etc.**

About the authors



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Kuralay is a core team member of PwC's Tax Strategy & Operations practice. She is focused on design and implementation of sustainable tax compliance strategies for governments, tax administrations, intra-governmental organisations, businesses and other organizations. This also includes support on digital transformation agenda, innovative audit strategies, co-operative compliance modelling, capacity building and performance measurement. Prior to joining PwC, Kuralay specialized in international aspects of corporate taxation of MNEs and conducted several research works in the field of tax policy. She holds an LL.M. Degree in International Tax Law from Vienna University of Economics and Business.



Eelco van der Enden

Eelco leads PwC's Tax Strategy & Operations practice and has nearly 30 years of experience. Before joining PwC in 2007 he worked for various multinationals as head of tax, treasury, risk management and corporate finance. He supports businesses, governments, tax administrations, intra-governmental organisations and NGO's in their endeavours to design and implement sustainable tax compliance strategies. As part of this process, he advises on and implements solid foundations for ameliorating tax compliance infrastructures by building performance measurement systems and innovative audit strategies. He is a lecturer at various European universities, Chairman of the Tax Policy Group of Accountancy Europe. Eelco has published more than 40 articles on tax governance and is chief-editor of Tax Assurance Magazine.



Valentina Ion

Valentina is the Director of Government Industry Solutions at Microsoft, in charge of driving customer digital transformation based on a deep understanding of their industry, its drivers and the critical solutions. She is also responsible for the development of the government industry solutions and business development model, including establishing strategic partnerships with ICT, advisory, academia and international organizations such as OECD and IOTA. Valentina has more than 17 years' experience in ICT, business development and sales and marketing, with an education in business & ITC, finances & marketing, graduating from the National Economics Academy in Romania, Université de Sciences Sociales Toulouse and Université d'Orléans, France.



Dr Harry Tsavdaris

Harry is an electrical and computer engineer with a PhD in Decision Support Systems and currently a Digital Architect within Microsoft's Digital Advisory Services in Central Eastern Europe, focusing on Public Sector engagements. He is also leading the Worldwide Community in Microsoft on Public Finance, Taxation and Fiscal Policy. Prior to Microsoft, he worked as the Secretary General for Information Systems in the Greek Ministry of Finance responsible for the operation, support and implementation of all IT Systems in the Ministry of Finance and most of the core systems of the Greek Government, including the definition of the IT Strategy of the Ministry of Finance and the Greek Government.

About PwC

At PwC, our purpose is to build trust in society and solve important problems. It is this focus which informs the services we provide and the decisions we make. Demonstrating genuine leadership is more important to us than size or short term revenue growth. To achieve our aim to be recognised as 'the leading professional services firm' we must be innovative, responsible and attract outstanding people. Our strategy is therefore built around five priorities:

1. be technology enabled;
2. deliver exceptional value to our clients;
3. empower our people;
4. lead by example;
5. invest in sustainable growth.

Attracting the right talent continues to be paramount and as a progressive employer we will continue to develop a diverse and agile workforce.

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Microsoft is the leading platform and productivity company for the mobile-first, cloud-first world, and its mission is to empower every person and every organization on the planet to achieve more. Our vision for government organizations is to enable them to better serve and protect citizens and build more secure, productive nations by connecting people, systems, and information resulting in more impactful outcomes.

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