

Four innovations reshaping tax administration

New insights from McKinsey research suggest that across the globe, tax authorities diverge in the maturity of their innovation in four areas: digitized interactions, advanced analytics, process automation, and talent management.

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In an age when we can order food, hail a ride, track our fitness, book a flight, and perform multiple banking activities from our smartphones, technology is shifting citizen expectations across the globe. These higher expectations directly translate to higher expectations for government services—but many public-sector institutions lag behind these expectations.

Tax authorities are in the eye of the storm of these global forces; digital payments are growing in scale and significance, and data are becoming the currency of tomorrow. These and other changes are raising security and privacy questions and challenging the conventional role of tax authorities. These agencies, alongside the rest of the public sector as well as private businesses, are also facing structural changes as global growth is shifting east, global trade is coming under increased scrutiny, and employment patterns are being reshaped (Exhibit 1).

Tax authorities diverge in their maturity in four areas:

- 1 Digitizing interactions with taxpayers
- 2 Advanced analytics
- 3 Process automation
- 4 Talent management

In every economy, these forces are requiring organizations to innovate rapidly, and tax authorities have a lot to gain or lose from these changes. Tax authorities make decisions based on their unique situation to provide high-quality citizen services, improve revenue collection, and deliver operational excellence—but all face similar forces.

Exhibit 1

Global forces are reshaping tax authorities across the world



Global growth shifting to the east
In 2010, 17% of Fortune Global 500 companies were in emerging regions. By 2025, this number will reach 46%.



Digital transactions replacing cash
In Kenya, more than 90% of adults transact money through the M-Pesa platform.



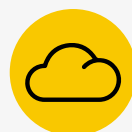
Changing sentiment toward global trade
The number of trade-restrictive measures in various countries is on the rise, potentially clogging world trade.



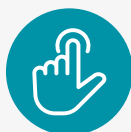
Cyberthreats on the rise
Cyberattacks on US federal agencies alone increased from ~5,500 in 2006 to ~77,000 in 2015.



Emergence of the “gig economy”
According to a survey by the McKinsey Global Institute, if all workers pursued their preferred working style, the total independent workforce in the US and EU-15 could grow from 162 million up to 268 million.



Explosion of data from variety of devices
In the past 2 years, 90% of the data currently in the world has been generated.



Rapidly rising automation
Globally, half of jobs could be automated by 2055—or earlier.



Digital platforms playing growing role in tax administration
Small businesses increasingly use external vendors for payroll management and tax payments, including Intuit’s Payroll, Gusto, Sure Payroll, and OnPay.

SOURCE: World Bank; press search; McKinsey Global Institute

To understand how tax authorities are adapting to operational changes and adhering to best practices—or failing to do so—we gathered a new set of qualitative and quantitative insights. Our research, primarily derived from our Tax Administration Performance Benchmark (see sidebar, “Survey methodology,” for more information), includes data from 21 national and state tax authorities around the world. The research highlights four areas of divergence where the practices of leading tax authorities are significantly more advanced than others: digitizing interactions with taxpayers, advanced analytics, process automation, and talent management. Our research shows that most tax authorities have made some progress in at least one of these areas—however, no institution is leading in all dimensions, and even those in the lead are continuing to innovate and capture significant gains. Much can be learned, therefore, from the different choices made by tax authorities on what to accelerate.

Survey methodology

Our Tax Administration Performance Benchmark, initially developed in partnership with the Organisation for Economic Co-operation and Development (OECD) in 2008, compares authorities based on quantitative analyses of operating results as well as their adoption of leading practices. Our data set includes national and subnational governments representing more than 460 million taxpayers. Our approach involves assessing more than 160 qualitative and quantitative metrics in five areas of operations (general management, submissions, taxpayer service, examination, and collections). In addition to quantitative analyses, we also conduct extensive interviews to test for the presence of leading practices across typical tax authority functions such as service, audit, and collections.

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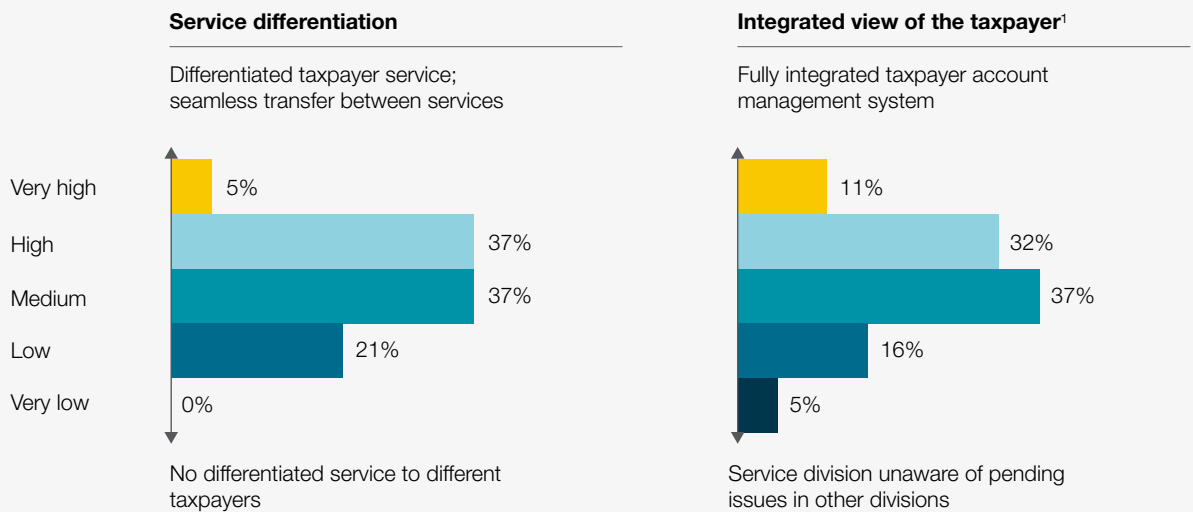
Digitizing interactions with taxpayers

Tax authorities are currently at varying levels of maturity by measure of digitizing interactions to offer more efficient and customized service to taxpayers.

While many tax authorities are making progress in digitizing interactions with taxpayers, few are performing on par with leading public organizations or private-sector businesses. Our research looked at two key indicators to assess the extent to which tax authorities are embracing digital transformations: service differentiation, which is essential to effective digitization of taxpayer service, and an integrated view of the taxpayer, which involves implementing an integrated account-management system required to digitize large volumes of taxpayer interactions (Exhibit 2).

Service differentiation. As taxpayers come to expect that their digital footprint can bring them more customized service, the impact on tax authorities will be significant. In the case of service differentiation, the most sophisticated tax authorities, which represent just 5 percent of our sample, have moved beyond measuring services by channel to mapping taxpayers' service journeys across channels and applying analytics to identify the most frustrating and time-consuming interactions. With this knowledge, the tax authorities devise more customized and differentiated digital channels to address customer wants and needs, including providing easy access to tax services. They quickly identify the root cause of customer dissatisfaction and resolve the issue much more efficiently than previously possible.

Exhibit 2 Tax authorities differ in their use of digital techniques to segment taxpayers and differentiate service



¹ Figures may not sum to 100% because of rounding.

SOURCE: McKinsey Tax Administration Performance Benchmark

Integrated view of the taxpayer. By measure of building an integrated view of the taxpayer, the leading tax authorities, which account for just 11 percent of our sample, have created central, digital workflows across departments involved in taxpayer contact such as processing, audit, and collections. This integration results in a substantially improved taxpayer experience, as representatives can see and resolve multiple issues at once—even ones the taxpayer may not have raised. Integration also provides tax authorities

with significant efficiency gains, as administrative workers who were previously assigned to a single function (for example, customer service) can also resolve other issues (for example, debt payment), either in the same customer interaction or through flexing to manage peaks at different times of the year.

For more examples of cutting-edge digitization efforts, see Box 1, “Example approaches to digitizing interactions with taxpayers.”

Box 1

Example approaches to digitizing interactions with taxpayers

Creating richer digital capabilities through mobile channels in Latin America. One Latin American tax administration’s sophisticated mobile application heralds the future of digital taxpayer service: moving from simple information delivery to much richer interactions. The app offers tax services such as validating invoices through QR codes, viewing and downloading electronic invoicing, scheduling appointments, and viewing locations of nearby inland revenue and customs offices. The application is integrated with social networks and offers consulting services for tax payments and returns, use of electronic signature, a tax compliance indicator displaying a red or green light depending on compliance situation, a fiscal calendar, and tutorials. The app has been downloaded more than 100,000 times and has garnered accolades for several features, especially e-billing.

Easing identification of taxpayers through voice biometrics. An increasing number of tax administrations are providing voice biometrics for faster and safer access to online tax services. Voice biometrics systems, which involve matching a stored voiceprint from a library against the caller’s voice, are user-friendly and add a layer of security when accessing online services from a smartphone or tablet; users simply log in with their voiceprint. Such systems increase taxpayers’ use of self-service over the phone and decrease the time customer service representatives spend authenticating callers. In our experience, these systems can save between 50 and 150 seconds per call.

2

Advanced analytics

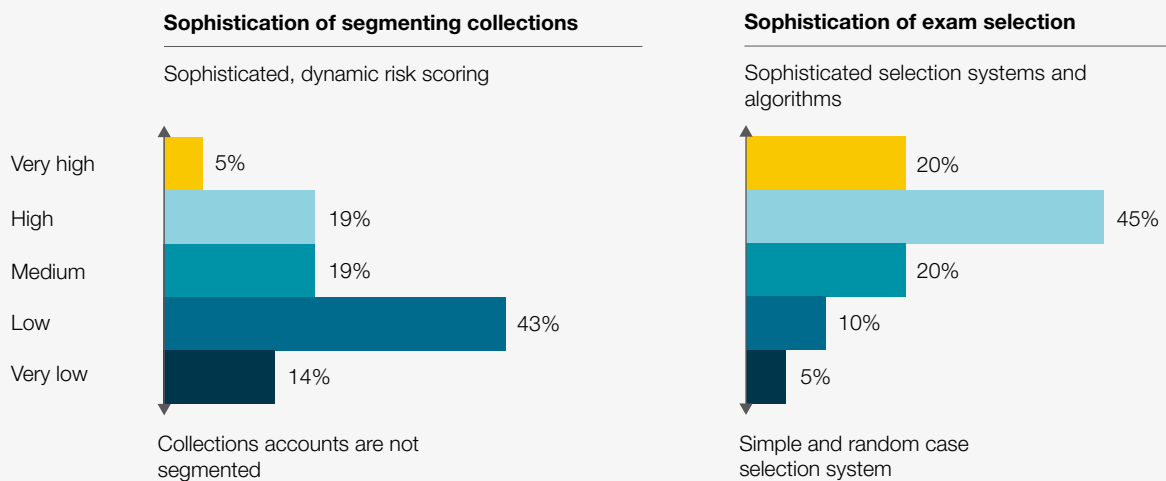
While most authorities have started using advanced analytics, we see a range of sophistication in how research and analytics are used to segment taxpayers, prioritize examinations, and choose the appropriate examination approach, including the use of “light touch” approaches rather than full audits (Exhibit 3). Several tax authorities have embraced analytics to transform how they conduct examinations and debt collections, using analytics to create early warning systems and practice extreme modeling, while others are still working to get beyond the basics.

Early warning systems. Early warning systems can address taxpayer insolvency, a source of major tax revenue losses. By better understanding when taxpayers are at risk of insolvency, tax authorities can take actions to avoid increases in tax debt over time or reduce costs of debt collection efforts by focusing on debt with the best chance of recovery.

A European tax authority that was losing a significant amount to insolvency cases implemented an advanced model using value-added tax (VAT), income tax, payroll, and other data sets to create a 360-degree view of taxpayers. This better understanding of taxpayers enabled the authority to robustly identify taxpayers at high risk of insolvency and proactively address these situations. As a result, the agency is on track to deliver targets of approximately \$8 million in operating cost reductions and \$800 million in reduced tax losses in debt collection.

Extreme modeling. In most countries, less than 5 percent of taxpayers are audited annually, so it is critical to maximize the value of these audits. By using an advanced model for case selection, tax authorities can deliver value by choosing the right cases and avoiding unproductive cases; for one authority, unproductive cases made up more than 50 percent of audits.

Exhibit 3 Most tax authorities have started using advanced analytics, but at different levels



SOURCE: McKinsey Tax Administration Performance Benchmark

Some tax authorities now identify taxpayers for audit using extreme modeling, which involves using machine learning to build a sophisticated algorithm to identify the best predicting factors of a successful audit. One OECD country's tax authority built such an algorithm integrating more than ten databases, using two independent modeling techniques, and automatically scanning more than 1,500 variables. The algorithm looks at changes in different ratios of expenses and revenues over time, opening up new insights compared with "static" features. The improved case selection avoided the more than 50 percent of unproductive audits and meant the cases selected returned up to two times more revenue than the baseline.

For an example of an approach to advanced analytics being taken by one tax authority, see Box 2, "Example approach to advanced analytics."

3

Process automation

Tax authorities have been investing in automation for decades; for example, with e-filing, automatic data checks, automatic reminders, call center interactive voice response, and so forth. However, the combination of new analytics and machine learning with robotic process automation is enabling a whole new wave of capabilities that increase productivity dramatically. While many tax

Box 2

Example approach to advanced analytics

Using open-source tools to fight identity

fraud. One developed nation's tax administration uses a combination of open-source tools to develop algorithms capable of identifying people who intentionally misuse identities, which can result in revealing complex organized-crime rings such as carousel fraud. The innovative algorithms optimize state-of-the-art, machine-learning models that help the tax administration predict linkages between references and identities, compute social network metrics, and traverse

relationships with several degrees of separation. As a result, the tax administration is able to identify networks of unusual behaviors that would not be easy to find using proprietary technologies and tools. They also allow the analytics department to use the knowledge produced and shared by a wider user community; for example, in academic or industrial fields.

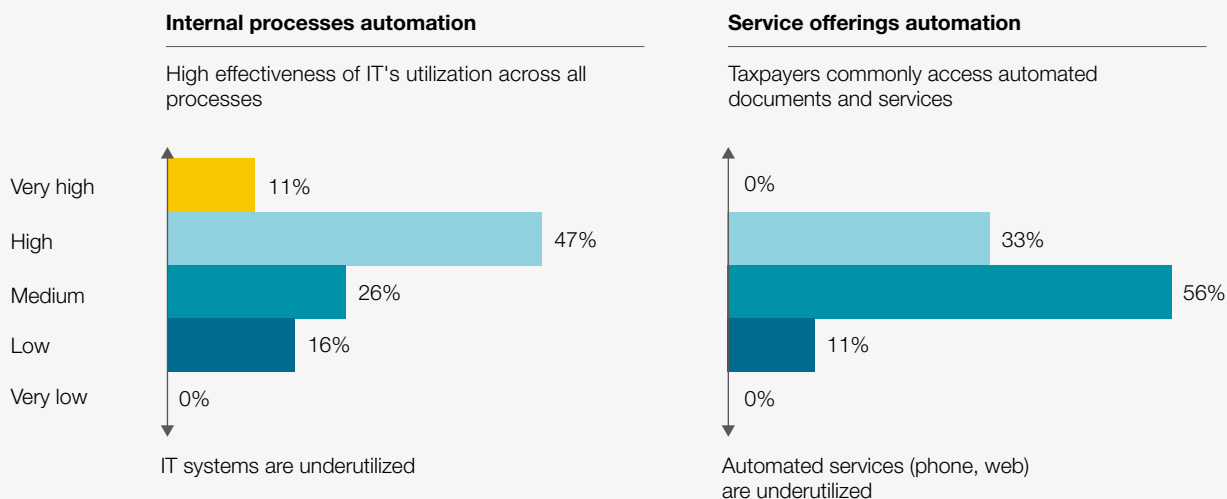
authorities are quick to automate internal processes, they are not moving as quickly with their externally facing service offerings (Exhibit 4). This trend probably reflects a desire to gain familiarity with the tools before rolling out to an external audience.

Some tax authorities stand out from the rest in how they have applied IT and digital technology to automate key stages of their operations, including compliance processes. Those organizations that have invested more heavily have more automated processes, offer prepopulated and self-corrected returns, and integrate taxpayers' accounts across various products and situations.

We have also seen tremendous innovation in the use of automation to mine inbound inquiries from taxpayers—from large OECD tax authorities to

smaller, subnational tax agencies. The inquiries can be captured in the form of emails, web chats, or even notes from customer service representatives. Using automation, inbound service inquiries are automatically processed and tagged by issue. Typically, the algorithms can cleanse and normalize free text into data, which in turn helps analyze trends, prioritize communications efforts, and identify training needed for customer service representatives. These algorithms provide a much higher degree of rigor and consistency in managing and improving the flow of information to and from taxpayers. We think this type of automation will continue to expand in its uses; for example, through automated processing of tips and complaints to make sure that potentially valuable information from the public does not fall through the cracks.

Exhibit 4 Tax authorities are applying automation technology at different rates



SOURCE: McKinsey Tax Administration Performance Benchmark

We expect the current focus on experiments and pilots to increasingly turn to at-scale implementation with a whole new digitally skilled workforce working alongside machines and algorithms. The private sector is already investing heavily in the area; corporate call centers increasingly use interactive robots with machine-learning capabilities to reduce call-center waiting time for customers. Robots are trained to recognize meaning, interact with customers to clarify requests, and apply knowledge to solve problems, and this has proven to be very successful.

The public sector is also increasingly looking into innovative use of automation. An Asian country recently launched its first online court for speedy justice, where a judge presides over two computer panels at a workstation. A voice-identification computer program transcribes the proceedings,

eliminating the need for a court clerk. For more examples of efforts to automate both internal and external processes, see Box 3, “Example approach to process automation.”

4

Talent management

Solid talent-management practices are crucial regardless of the maturity of a tax authority’s digital footprint. The appeal of working for a tax authority partly rests in a sense of purpose and the inherent reward of public service, as professionals are invited to work on high-value challenges on behalf of society. However, as the operations of tax authorities change with the advent of advanced analytics, digital techniques, and process automation, questions of talent management, recruitment, re-skilling, and retention are real issues for many authorities.

Box 3

Example approach to process automation

Using text mining to replace manual tracking of email inquiries. Text mining helps to identify the common queries taxpayers have after a tax policy change, enabling the tax authority to push out appropriate communication campaigns, provide better guidance on its website, and proactively initiate updates, thereby reducing the need for taxpayers to contact the tax administration.

One tax authority in Asia extracts, cleanses, and structures text data from taxpayer correspondence to derive patterns and insights. The automated process has replaced the manual tracking of email

inquiries, which has improved customer satisfaction and saved the staff both time and productivity.

Law firms take this approach to the next level with investment in natural language processing software and tools to handle a wide range of unstructured documents in a variety of formats as evidence in investigations.

Our benchmark found that just 10 percent of tax authorities take extraordinary measures to retain top talent, and only 5 percent offer very high-quality training and link evaluations to personal development (Exhibit 5).

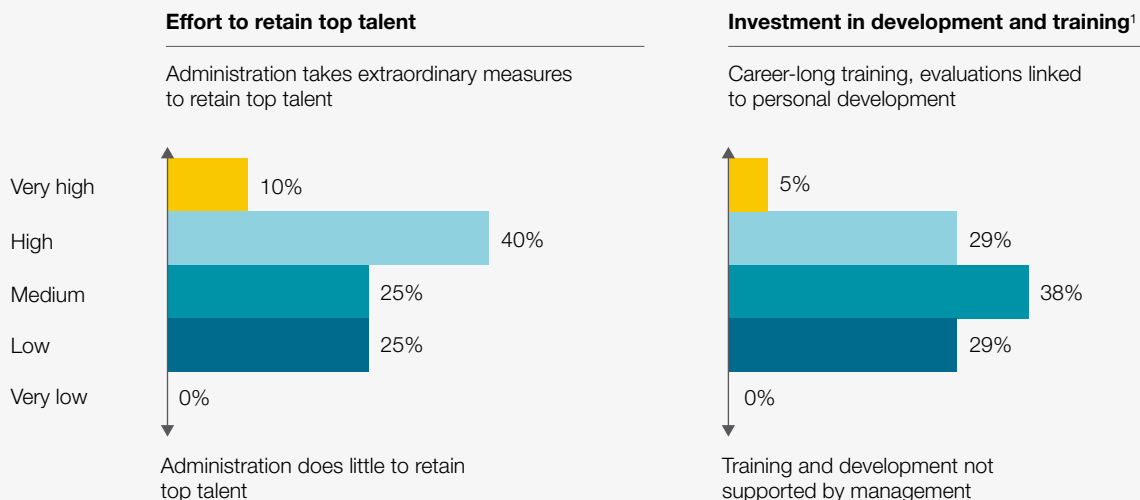
In many leading organizations, we see the human resources function taking a more active role as a strategic business leader, linking talent to service quality and citizen satisfaction. Several developments have led to this trend, including the increasingly competitive talent market, the emergence of people analytics and digital technologies that can unlock better talent decision making, and increasing pressure to deliver productivity and better user experience.

One bank uses regression models on employee performance and other organizational data to

identify the top 15 percent of talent who qualify as high performers as candidates for promotion, training, or transfer. In the public sector, a major state-owned telecom company uses advanced analytics to understand key drivers of employee motivation and tailor the new motivation program accordingly. It identified an opportunity to double employee motivation and improve overall company health. Across the spectrum, agencies expect HR to harness new capabilities and technology to consistently attract, retain, and develop talent as well as increase efficiency of operations.

Many tax authorities still have limited sophistication in their talent strategies, bringing less rigor and discipline to their organizational health than their organizational performance. Less sophisticated agencies prioritize organizational dashboards that capture key performance indicators

Exhibit 5 Tax authorities differ in the emphasis they place on attracting, retaining, and developing talent



¹ Figures may not sum to 100% because of rounding.

SOURCE: McKinsey Tax Administration Performance Benchmark

Example approach to talent management

Using social media to target, inspire, and attract high-potential candidates. One Asian police force takes a targeted digital approach to finding and hiring superior new officers. Aiming to recruit ambitious young men and women who aren't afraid of a challenge, the force determined that the best way to reach this group is through digital media and television. Therefore, it built a robust Facebook page, which has more than half a million "likes." In addition, the force has posted a collection of videos online that show police work and community meetings, as well as four seasons of the television

series on police procedures that it produces with a media company. Through all of this engagement, the force aims to communicate its employee value proposition to potential recruits and show them that joining the force would make them "richer, more mature, and developed." It also works to attract its target applicants by offering scholarships to universities in the city and abroad. The force's scholarship program, for example, covers all costs of earning a degree at leading universities around the world.

around compliance, service, and processing over measures of organizational health such as investments in talent and the approach to retention. For an example of an effort to imbue talent management with technology, see Box 4, "Example approach to talent management."



To make progress in the digital age, tax authorities must examine their current strengths and weaknesses and ask what is holding them back from progress. In our experience, 60 percent of government transformations fail—usually due to a lack of direction, delivery, and/or drive.¹ To overcome the odds in typically large, complex, and cautious organizations, agencies must create a compelling vision for change, build a consistent process that ensures coordination and continued progress, and sustain momentum by building

organizational capabilities, providing clear and influential leadership, and communicating effectively. For tax authorities looking to take advantage of the four innovation trends driving the future of citizen services, candid discussions around four questions can help begin the conversation and build alignment around the way forward:

- Are the administration's digitization efforts matching taxpayer expectations? How can these tools improve customer service and give back time to businesses and workers in the economy?
- How effectively is the administration unlocking value, improving tax revenues, and lowering costs through advanced analytics?
- How mature are tax authorities' automation efforts? What cost savings and productivity can be gained by running a digital workforce alongside a human force?

- How are tax administrations innovating in their approach to attracting and retaining talent and ensuring the right digital and analytical skills mix?

The tax administration of tomorrow will be radically different from that of today; data will be used in a highly relevant manner, allowing systematic filing and payment in a risk- and error-free environment, and back-end operations will be so smooth that taxpayers may not even need to be in contact with tax administrations anymore. To get there, tax authorities must go beyond incremental changes using existing tools and begin revising their approach to a whole host of operational tasks. ■

¹ For more insights into the common challenges that cause government transformation efforts to falter, see “The opportunity in government productivity,” April 2017, on McKinsey.com.

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