

## *Chapter 2*

# **Strategy and vision for leveraging new technologies in tax administrations**

*Disruptive technologies are reshaping the economy by creating new products, services and business models. At the same time the internet, portal solutions, social media, mobile platforms, cloud computing and Big Data technologies are creating new opportunities for citizens, they are challenging the way tax administrations go about their work. Adapting to this new environment requires tax administrations to establish a culture that is more strongly data-driven and intelligence-led.*

*It also requires tax administration to become more agile in responding to both the changing expectations taxpayers have of service provision, and to critically examine and possibly re-design business processes to take advantage of the expanded range of interventions made possible by the new technologies and approaches discussed in this report.*

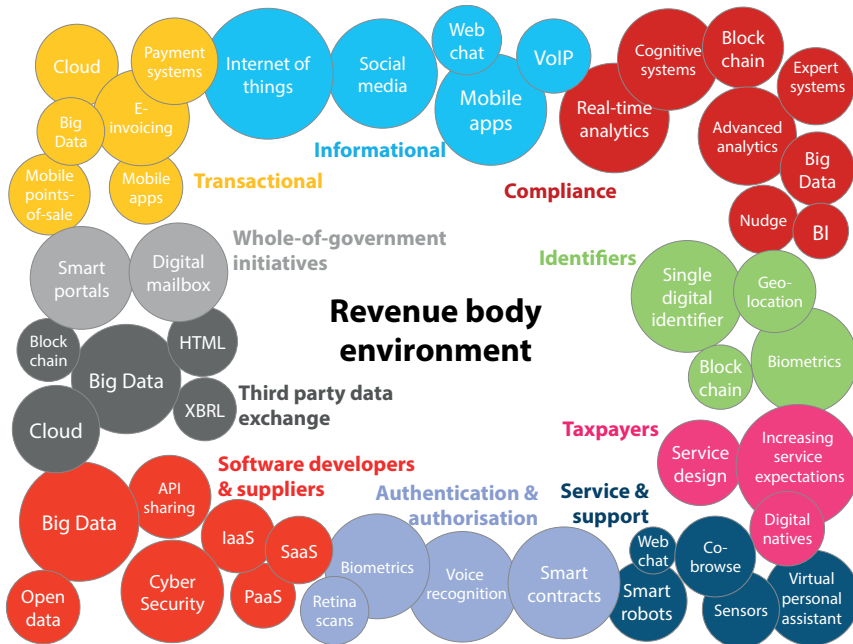
*This chapter provides a strategic context for the challenges that tax administrations face in the delivery of modern electronic and digital services to taxpayers.*

## Digital disruption

Revenue bodies are part of a world that is becoming increasingly digital. They are operating in the environment where new technologies are disrupting the way people and businesses communicate, produce goods and provide services. The consequences of where these developments might lead to are difficult to predict and are often unexpected.

Who would have thought twenty years ago that long distance calls could be made for free or that digital cameras would practically put film manufacturers out of business? A few years ago it was almost impossible to imagine that apps would exist for almost every facet of our lives, from managing our banking, to ordering the delivery of fast food or arranging airline flights. These apps however also have downstream impacts and wider ramifications. While many have seen the emergence of new businesses and business models, they have also seen the closure of others, and considerable disruption to most. For example, the apps that allow us to call a taxi or improve how we move around cities have impacted significantly on the car manufacturing industry by

Figure 2.1. **Disruptive environment surrounding revenue bodies**



Source: Australian Tax Office (ATO), 2016.

creating a choice between ownership of a vehicle and convenience of various transportation services (Diamandis & Kotler, 2015).

Internet, portal solutions, social media, mobile platforms, cloud computing and Big Data technologies are opening up new opportunities. In doing so, they are impacting on the strategies and business models of both private and public sector organisations. These so-called *disruptive technologies* are reshaping our economies and in so doing are raising interesting questions for revenue bodies, not just as tax collectors, but also about the way they go about their business activities.

This shift is also changing how Information Technology (IT) is viewed and how businesses are considering and managing their IT investment. No longer is IT just about running the computer network or managing storage or computing software. Instead it needs to manage multimedia operations, communication networks, connectivity and content. This technology shift, which has been largely driven by mobile technology, the Internet of Things, Big Data and access to lower-cost and larger data storage options, is allowing revenue bodies to consider how they change the way they operate; the way they manage service and compliance risk; and, importantly, how they support the development of environments that can make tax compliance less burdensome and more effective for taxpayers, by:

- streamlining operations,
- improving security,
- enhancing analytics capabilities, and
- further developing compliance approaches where taxpayers can obtain the certainty and convenience they need, while revenue bodies get the transparency they require to ensure effective management of the tax system as a whole (van der Enden & Roytman, 2015).

It is increasingly clear that the successful application of information technology as a key enabler will determine the future success of revenue bodies in effectively and efficiently managing compliance risks and meeting rising service expectations (Gray, 2015; Regan, 2015).

## **Taxpayer expectations of digital services**

The widespread availability of inexpensive devices with extremely powerful computing capabilities is simplifying access to on-the-go services that are increasingly more convenient and easier to use. In their daily lives, taxpayers are utilising technologies that accelerate sharing of views and ideas, and amplify their representation. They are also accessing a range of services electronically which creates a higher level of expectation in respect

of the services and access they want from the public sector including revenue bodies. Heightened service delivery expectations require revenue bodies to examine their investment in people and technology, and to explore how tax services fit with other services taxpayers consume.

With the majority of taxpayers neither interested in the internal operation of government nor generally wanting to invest their time and effort in learning details of how to comply with tax laws and regulations, revenue bodies need to consider how they position their services to assist and guide taxpayers to meet tax obligations or receive the entitlements they might administer. Many administrations are taking a *life event approach* to service provision. Grouping government services around key life events of the taxpayer or their family, including entering a relationship, the birth of a child, registration of a company, commencing school or tertiary study, commencing employment, buying a home, retirement, or the death of a family member to name a few. Such an approach, which involves connecting with other government services and activities, can only be effective if administrations have improved knowledge of taxpayers, the ability to bring together data and services, as well as the option to deliver these new services using digital technologies.

While many individuals and businesses are shifting to working digitally across many of the interactions they have, there are groups with legitimate needs that may never operate digitally (including the elderly and those with limited access to broadband services due to their geographic location for instance). Additionally, there may be industries that have less access to technology, or that resist or feel less confident interacting with the tax administration through digital channels, that will still require support.

Revenue bodies therefore need a comprehensive digital strategy that, among other things, addresses the following expectations of taxpayers (Ravanello, 2015):

- *To make payment of taxes a part of their natural environment:* taxpayers increasingly are looking to revenue bodies to develop e-services and digital capacity in co-operation with vendors and taxpayers. In the vast majority of cases, taxpayers may expect that paying taxes should be no more complicated or burdensome than renting a movie online. Thus, to make tax compliance more seamless and less burdensome, taxpayer services increasingly need to be integrated and aligned with the natural environment of modern taxpayers; this includes accounting and record keeping software solutions, online banking and potentially social media.
- *To provide reliable, trusted and transparent data to complete a tax transaction* (making a payment and/or filing) online and receive

confirmation thereof. Completion of tax payments may also mean that taxpayers will over time entrust revenue bodies with the right to automatically deduct tax amounts out of their accounts.

- *To achieve trust and transparency of data*, taxpayers expect revenue bodies to display their tax information online and in real-time or at least near real-time. In cases where taxpayers might disagree with online data information held about them, they want to be able to immediately provide feedback to the tax office for review and possible corrective actions. Ultimately, this may lead to changes in the way or even the need for individuals to file personal income tax returns.
- *To be able to receive or access information differently*. Use of commercial web search engines and social networks is inseparable from the habits of people who rely on these tools and often depend on information they provide. It is now common for taxpayers to search for solutions to tax issues outside of official government channels. To address specific issues, people often self-organise in social network forums or groups to share their experiences and information on a wide range of matters including taxes. To ensure that information received by taxpayers is accurate and up-to-date, revenue bodies need to monitor these initiatives and consider their presence on sites where taxpayers might be searching for information, as well as popular user forums or groups. This repositioning of revenue bodies as parts of broader ecosystems of services and information has important implications for channel strategies and the ways that information and services are developed and disseminated. The use of tax service providers is also very important in this area.
- *Digitally mature taxpayers increasingly expect to be serviced rather than informed*. Increasingly, taxpayers would rather be offered a service that can, for example, calculate a deduction and feed this information into the tax process for them, than to have to understand the information and processes in order to perform their own calculation which they then feed into the tax process. Digital technologies offer tax administrations the opportunity to *push* a range of new service options to taxpayers, rather than simply providing them with access to forms or calculators.

### ***Addressing the drivers of demand***

The OECD report *Together for Better Outcomes* (OECD, 2013a) discusses that revenue bodies have a long history of involving taxpayers and stakeholders. However, there is a clear trend towards doing so in more systematic ways.

Analysing taxpayer behaviour now plays a vital role in risk management, and this naturally causes revenue bodies to enhance engagement and involvement of taxpayers. With the help of taxpayers' knowledge, expertise and efforts, revenue bodies can strive towards improved compliance, cost reductions, enhanced customer satisfaction, and other benefits. This in turn will benefit economic growth. Moreover, enhanced trust and confidence in the revenue body and the tax system can lead to increased voluntary compliance, forming a so called virtuous circle.

As it is highlighted in the OECD report *Managing Service Demand* (OECD, 2013b), understanding the drivers and root causes of demand is becoming increasingly important. Rather than simply encouraging taxpayers to use the most efficient and effective services provided by revenue bodies, a contemporary digital service delivery and demand management strategy needs to consider how the root causes may be addressed through improvements to the system rather than managing the demand itself. This requires revenue bodies to consider demand as signals on taxpayer needs, system failures and opportunities for improvement. Focus must be placed on understanding and addressing the motives for why taxpayers require service and then considering what and how services are then provided.

To date, most revenue bodies have confined their attention to encouraging taxpayers to utilise on-line services to pay or file. With the new digital paradigm being more about in-channel access, effective end-to-end design and integrated services within the total system, as well as effective channel access and management, are essential if taxpayers are to be drawn towards channels that offer them the most effective support over time.

### ***Adjusting compliance approach to service delivery***

Innovative technologies are pushing tax compliance approaches into the service dimension. This can help to achieve better outcomes for taxpayers and the revenue body. Such approaches provide the opportunity for the revenue body to shield taxpayers from the complexity of the tax system, its tax laws or its administrative processes. In doing this it can provide them with services, or self-service options that are simplified, streamlined or seamless and end-to-end. The opportunities for revenue bodies in this regard have been thoroughly discussed, among others, in OECD reports *Managing Service Demand* (OECD, 2013b) and *Increasing the use of self-service channels* (OECD, 2014).

With many administrations now operating a unified data platform, or having a single view of the customer, it is allowing better integration of aspects of service delivery. This is bringing about advantages to the taxpayer as well as consequential benefits to taxpayer compliance, by assisting customers to meet their obligations easily and fully.

### Box 2.1. Digital vision of revenue bodies

Underpinning the ATO's Digital Strategy is the vision to be a leading tax and superannuation administration, known for contemporary service, expertise and integrity. To achieve this vision, the ATO is transforming its end to end service offering and undertaking the following key actions:

- Improving identity and security solutions
- Delivering contemporary online tools and services
- Building the foundation for a progressive account
- Integration with Natural Systems
- Supporting clients to transition to digital
- Stabilising the technology environment

The ATO intends to deliver this through both retail and wholesale services.

In the United Kingdom (UK) the digital ambition of the revenue agency is based around the idea of becoming a fully accessible digital business capable of providing tax accounts to individuals and businesses, offering both high value and low value transactions, giving personalised user experience and showing exactly what's owed, streamlining how tax works, publishing application programming interfaces (APIs) (the issue is addressed in Chapter 5) and encouraging third party products for those choosing them.

*Source:* Country presentations at FTA workshop – Moscow, 2015.

### ***Increased connectivity***

With people becoming more connected through the use of mobile devices, social media and the Internet, revenue bodies are facing the challenge of developing services and products that taxpayers can access on their mobile devices. These services need to meet taxpayer expectations that services are end-to-end digital, up to date and available seemingly 24/7. Increased connectivity is also allowing individuals to share views on social media in real-time, thereby increasing the impact these comments can have on perceptions of the revenue body.

While the majority of taxpayers do not have a single preferred channel for communication with revenue bodies, and prefer to choose the approach at the time they communicate, they are looking for revenue bodies to respond almost instantly to their enquiry. While revenue bodies need to consider how they deliver consistent services through all channels and support taxpayers

in seamlessly switching between them, it is also essential that they consider how they can make the digital online experience attractive and usable for customers so that over time this option becomes their channel of choice.

### ***Increased digital maturity***

The increasing levels of taxpayer digital maturity are opening the door for new tax services that better support taxpayers in managing their tax affairs. An online mobile environment that allows the use of applications and that can be acquired from conventional sources, or is a feature of other services taxpayers will utilise, changes the game. As such, revenue bodies need to consider how these services are customised to fit a range of different needs of taxpayers.

### ***Customer journeys***

Delivering customised services implies that unnecessary steps in customer journeys have been removed and that the remaining steps have been designed with the best overall customer experience in mind. Customer journeys are made simple where services are delivered automatically where and when they are required, including being integrated into other systems taxpayers use. When designed in this way, tax administrations can make complying with obligations easier for taxpayers.

Over time, the real-time or near real-time accessing of data from across government agencies, together with data acquired from private sources, should enable the delivery of smarter services which can be customised to individuals or business taxpayers. Further, the ability to acquire information about life events of a taxpayer over time will allow revenue bodies to offer more interactive customer services, which can inform and guide taxpayers through events and activities where currently support is required.

### ***New customer segments***

Segmenting the customer base enables a revenue body to better service its customers and provides the basic information taxpayers required. It is important to segment taxpayers not only by type, but to identify similar *behaviour patterns*. These patterns help revenue bodies to develop strategies or models to predict which taxpayers are more likely to use certain types of service options, for example on-line services as opposed to say digital services. Such information can assist revenue bodies to determine how to address barriers, encourage take-up, raise awareness, and to determine what additional support may be required to help support taxpayers to shift channels.



Special attention needs to be given by tax administrations to two particular segments:

- **Younger citizens who are the taxpayers of tomorrow.** Revenue bodies' digital strategies need to consider that future taxpayers will be more used to mobile devices than personal computers, apps than portal solutions, and short and simple user journeys (Ostling, 2015).
- **Tax intermediaries, such as accountants, financial advisors and tax planners.** As the level of digital maturity of these service providers and their clients increase, they will drive demand for more sophisticated services to support new customer models, tools and services these businesses will provide to their clients (van der Enden & Roytman, 2015).

### ***Social Media – changing communication***

Communication patterns are changing. People are becoming increasingly more used to social media and the practices that come with it, including short message services rather than emails or hard copy letters, and messaging instead of phone calls. They have also become more accustomed to information being pushed to them when utilising services or products of third parties. Revenue bodies need to consider how they can make the best use of this new communication environment, recognising, however, that this approach brings with it a larger number of briefer exchanges that often require immediate response and that may occur outside the times when the tax administration may ordinarily have staff working. If this does not occur, there is the risk that taxpayers will abandon contact with the administration, and the revenue body may lose contact with taxpayers, or not be able to support them in ways that most readily support their participation and engagement in the tax system.

Penetration of social media into society has also impacted significantly on attitudes toward privacy and data security. On one hand, revenue bodies require greater measures to protect access at the outset, but then once that has been navigated, citizens are often happy to see large amounts of what some may regard as personal data shared. There are also cultural and age gaps surrounding access and use that revenue bodies need to consider fully before utilising these new channels to support taxpayers.

### ***Data Privacy and protection***

Transparency and openness form the basis for access and use of data by tax administrations. It is important therefore that taxpayers have confidence in how tax administrations use their data.

There are significant privacy issues that must be considered. In considering the use of personal data to inform services for taxpayers, tax administrations need to establish clear and transparent principles for the use of such information. These include transparency of information, access and control of data, protection and security, engagement and importantly the use the information will be put to.

Tax administrations looking to transact via social media will also need to consider their business approach to tax confidentiality and wider data sharing practices with other government agencies and the private sector.

### Box 2.2. Changing communication patterns

In Singapore, short messaging service (SMS) notifications have been used to provide enhanced services to customers by improving dissemination of information as well as providing reminders to file and to pay. The content and timing of the SMS strategy is designed to “nudge” taxpayers to comply. For instance, taxpayers who filed late in the prior year are reminded to file on time to avoid penalties, and property taxpayers are informed by SMS of how much they owe and the payment reference number to complete tax payments without referring to their notice of assessment. In 2015, almost 6 million SMS’s were sent and over 96% of customers surveyed agreed that the SMS service was timely and met their needs.

*Source:* Inland Revenue Authority of Singapore (IRAS).

### *Customer involvement*

With taxpayers increasingly expecting revenue bodies to design services around them rather than around the systems and processes of the revenue body, administrations are more frequently, like their private sector counterparts, engaging with customers to help them design services. In the OECD study *Together for Better Outcomes*. (OECD, 2013a) the concept of “engaging and involving” taxpayers in the design of tax services is explained in detail. The approach outlined is based on the premise that public services work better when designed and delivered in partnership with citizen participation. Further that if knowledge and insights of citizens are not made use of, public services tend to be designed on the basis of assumptions by service providers about what citizens need and want. As such, these services, no matter how well intentioned the service provider may be, are far removed from those required by users (OECD, 2013a).

If not already the case, revenue bodies need to consider engaging and involving taxpayers to improve the design of services.

Further embedding tax e-services into “natural systems” will call for closer collaboration between revenue bodies and private sector developers and vendors of these solutions.

### *Channel of choice*

One of the features taxpayers expect in a tax system that promotes simplicity, is the ability to choose the channel that best suits their requirements, habits or ways of doing business. While some taxpayers may favour portal solutions, others would prefer call centres, mobile platforms or access to e-services through “natural systems” such as financial systems of companies, accounting software, practice management systems of tax intermediaries or personal online banking solutions. Regardless of the preferred channel, revenue bodies need to be in a position to offer end-to-end tools that allow authenticating, informing, interacting and transacting with taxpayers in an online environment.

### *Transparency of services*

With the efficiency of the revenue body very much tied to the quality of their data for transactions, managing compliance and sharing, the growth of data has increased the importance to tax administrations of ensuring its data is accurate and complete. To assist with this process, some tax administrations, like their private sector counterparts, are allowing personal information held by them to be viewed via a personal online account. Taxpayers are invited to view and provide feedback on the accuracy or other aspects of this information. This transparent approach not only helps to improve data quality, avoid errors, and increase operational efficiency and compliance, it has also helped to strengthen the trust relationship between the revenue body and the taxpayer, and to reinforce that data accuracy is a joint responsibility.

#### **Box 2.3. A more transparent tax administration**

The ATO recognises that taxpayers increasingly think of their government obligations in a collective sense and want visibility of their overall “universal” position. Importantly, taxpayers are also indicating a preference to have this visibility on an ongoing basis, with the ability for their tax and other obligations to be reconciled in real-time. *myTax*, the ATO’s streamlined, web-based service for the lodgement of individual income tax returns, is a foundational product that can be built upon in the future to deliver this experience. *myTax* makes better use of data (including third party data) to tailor the service, and prefills a substantial amount of information for taxpayers to review and finalise. The ATO’s *myDeductions* tool complements *myTax* by allowing taxpayers to record

### Box 2.3. A more transparent tax administration *(continued)*

their tax deductible expenses throughout the year. From 1 July 2016, taxpayers will be able to automatically upload this information into *myTax*. For taxpayers with straight forward affairs, the *myDeductions* prefill function within *myTax* completes most of their return, minimising the need to make changes or add in additional information. This provides an initial basis for the ATO to “push” a completed return to these taxpayer. Beyond the concept of a “push” return, the future end state is the real-time collection of data on an ongoing basis. This will enable visibility of a taxpayer’s overall tax position at any point in time and may facilitate real-time reconciliation. For example, a taxpayer’s withholding tax rate could be varied to ensure that their tax obligations are met “as they go” – rather than generating either a debit or credit balance at the end of the financial year. This approach could expand over time to include all taxpayer types and roles, enabling the integration and reconciliation of all obligations.

In India, taxpayers can view online their tax payments and taxes deducted at source as well as certain information reported by third parties. This has helped taxpayers to report missing credits and has improved the accuracy of processing their claims for refunds.

In Russia the online personal account of an individual taxpayer displays information about all personal income sources as well as all movable property and real estate in ownership of the account holder. Taxpayers have access to an online tool for providing feedback of their disagreement about their property positions directly to a local tax office where the property is located and local taxes are paid. A local tax office makes an assessment of validity of such claims. As a result, the tax administration is receiving fewer complaints about the quality of data and taxpayers are more confident in using online payment tools.

*Source:* Country presentations at FTA workshop – Moscow, 2015.

### ***Certainty***

Taxpayers want to know if their return, payment, submission or correspondence has been received, how long the process might take, where the process is at that moment, and if there are deadlines for the revenue body to comply with. Increasingly they also want to understand what information the tax administration has about them and where that information has been sourced.

### ***Greater agility***

From both tax compliance and service delivery perspectives, these developments call for tax administrations to become more agile and responsive, not just to business-driven activity, but to the rapid and unexpected changes that are occurring in the economy as well as to the changing attitudes and expectations of citizens.

As such, traditional approaches to project planning and implementation that have historically well supported the development of systems may no longer be as effective. Accordingly, revenue bodies may need to look to adopt methods that ensure they have sufficient flexibility to respond to a fast paced environment and to profound changes that may involve challenges or opportunities for the way revenue bodies operate. The changing roles, processes and attitudes of revenue bodies have been thoroughly discussed, among others, in OECD reports *Managing Service Demand* (OECD, 2013b) and *Increasing the use of self-service channels* (OECD, 2014).

Project approaches that cover long time frames, with clearly defined outputs, which are strongly internally driven, may not offer revenue bodies the flexibility and agility to respond to the challenges presented in a digitally disrupted environment. Revenue bodies may need to consider giving those developing solutions greater flexibility to experiment and design new e-services and digital responses.

In particular, managers need to accept that working with Big Data is a process of discovery rather than a straightforward administrative practice. As such, attention needs to be given to how a culture that facilitates such outcomes can be established and nurtured in an agile environment inside revenue bodies.

### ***New capabilities***

Revenue bodies need to develop or acquire new capabilities to support new ways of operating. The use of digital technologies to increase reach and engagement and the introduction of sophisticated tools to analyse Big Data to adjust and improve customer experience require specialist skills, especially in the areas of service promotion, data analytics and IT.

For revenue bodies to become digital-by-default, the governance mechanisms they have used to help manage risk and deliver traditional services may need to be reviewed, as in most instances traditional project approaches may not support iterative development or the speed to market that new products and services developed for the digital user require.

While current IT experts are used to working within legacy mainframe environments, agile solutions require new skills and may have impacts on the

wider organisation and operating models as well. Efficient delivery of digital services for taxpayers and internal users requires the change of culture within the organisation. Revenue bodies will have to consider what people, process and technology changes are required to make the new taxpayer experience work.

Efficient use of Big Data within revenue bodies also requires revenue bodies to ensure their culture values using data to improve services for customers.

Revenue bodies that begin the transformation process to becoming digital will benefit from enhancement of relationship with taxpayers and improved compliance. These new engagement approaches and interactions also require new capabilities of administrations.

## **Common technological features of revenue bodies**

For different revenue bodies, their digital transformation journey may have different starting points. While some are building e-services and digital capabilities basically as a green field development, others are looking to re-engineer new service offerings in a legacy environment; while others are utilising or considering commercial off-the-shelf (COTS) solutions to deliver new digital or e-services. Despite these differences, there are common features of revenue bodies' experiences in their digital transformation and consequent delivery of e-services (Hay & Keys, 2015; Owen, 2015; Potter, 2015; Schloss, 2015).

### ***Digital-by-default***

Transition to a fully digital tax administration is often a part of a more general agenda of e-government, delivering public online services to citizens. With interactions between taxpayers and revenue bodies becoming digital across all existing digital channels, including face-to-face service where that remains, taxpayers are being guided towards use of a personalised single access point to all e-services that will, over time, be tailored to their specific requirements.

To achieve this, all information about individual or business taxpayers will, over time, only be accepted in digital form, with information received in hard copy during a transition period being digitised either by revenue bodies themselves or outsourced to vendors who will be given the right of access to private tax data and be able to maintain security of information. All relevant historic data may also be digitised.

### Box 2.4. No Filing Service

In Singapore the “No-Filing Service” (NFS) provides a seamless experience using income tax data from employers and other government bodies which has eliminated the need to file personal income tax returns for many taxpayers. The NFS was piloted in 2007 with 45 000 taxpayers and has grown to 1.39 million in 2015. Taxpayers can preview their Notice of Assessment on the web portal even though they need not file. The use of reliable third party data to automate the tax filing process reduces the risk of non-compliance and the need for contact between the customer and the revenue authority. Based on 2015 Taxpayer Survey Findings, more than 96% of taxpayers were satisfied with the Inland Revenue Authority of Singapore.

*Source:* Inland Revenue Authority of Singapore (IRAS).

The concept of “digital-by-default” approach in providing services to taxpayers was previously observed in the OECD’s *Increasing taxpayers’ use of self-service channels* (OECD, 2014). This report observed that most service delivery strategies developed by revenue agencies either promoted a “digital by default” approach, with the digital channel expected to be the primary channel for all interactions with taxpayers, or the provision of services through a mix of channels that reflect taxpayer preferences. This approach is usually primarily driven by a whole-of-government agenda. The report noted that interaction with taxpayers via digital channels was becoming more and more important and should be recognised as a preferred service mode of delivery. It also identified the main objective of applying a “digital by default” approach, which is a paradigm shift from traditional offline to digital (online) service channels, the drivers for this shift including reduced costs of tax administration and enhanced user experience.

### *User-centric approach with tailored engagement*

Several OECD publications over the last five years have commended revenue bodies for taking a user-centred approach to the design of services, and note that services deliver better outcomes for taxpayers and the tax administration when they are designed and delivered in co-operation with users. Similarly, in developing e-services, administrations are drawing heavily on the needs, preferences, requirements and limitations of a specific individual or business taxpayer. Furthermore, many are looking to design services based on minimising the involvement or effort of the taxpayer. Making it easy for the taxpayer often comes, however, with high levels of complexity for the tax administration; something that is not visible to the taxpayer.

### Box 2.5. Becoming digital

In Australia, the Government has invested in a Digital Transformation Agenda to drive innovation, transform digital interactions, improve the community experience and contribute to the advancement of digital service delivery. The priority is to deliver high volume services (volumes of 50 000 or more per annum) digitally end to end by December 2017. The programme will create a digital end to end infrastructure that will leverage the community's natural systems, support whole-of-government initiatives and establish common platforms that help make all of government more efficient.

In Finland, digitising is the main objective for the whole public sector. It is expected that by 2020 the tax administration will be able to contact, receive information and handle all tax related issues electronically 24/7. This goal will be achieved by:

- building taxpayer's access point (portal) where customers can view and change all their tax information,
- compliance by design for individuals and businesses with online income tax register and real-time VAT data collection,
- efficiency in digitising hard copy documents, and
- developing mobile apps and online payment functions, etc.

In Singapore, under the Government's Digital Service Strategy, public services are to be designed and delivered such that citizens would want to go "Digital by Choice". Key initiatives of the strategy include (i) engagement and research to identify citizen pain points, unmet needs and ways to encourage channel migration, (ii) outcome-based design standards to improve user experience, and (iii) data sharing and "Tell Us Once" principle so that citizens should not be required to provide the Government with data it already has.

*Source:* Country presentations at FTA workshop – Moscow, 2015.

Tailored engagement also involves interacting with taxpayers based on risk profiles. Taxpayers with simpler tax positions and higher levels of transparency require less active attention compared with those taxpayers who need to access information services and tools to meet their particular need(s) or those who will seek additional support from revenue bodies.



### Box 2.6. Combining information from multiple sources

In New Zealand, the intent is to move towards increasing levels of pre-population of data supported through enhanced and improved data sharing (both public and private information) to significantly reduce customer effort and provide customers the ability to easily confirm their tax position through smart, easy to use online digital services. This includes a focus on policy intent, significant technological change and simplified and integrated business processes to support customer outcomes.

In Russia, assessment of property taxes is done on the basis of information which is supplied to the tax administration in an xml file format by property registry which provides descriptions of taxable properties and tax base values. The information on established tax rates is received from local governments. Tax information accompanied by descriptions of taxed properties, regardless of their location in the country, can be accessed by taxpayers online through a personal secure account in the tax administration's web portal.

*Source:* Country presentations at FTA workshop – Moscow, 2015.

### *Single taxpayer file*

The goal here is for revenue bodies to assemble all information about a single taxpayer in a designated single file. A single taxpayer file provides the location where all data collected or received from various sources can be stored to form a comprehensive taxpayer profile. This avoids duplication and discrepancies of data. It also allows data to be better organised for entry, access and sharing, thereby saving memory, computing and human resources as well as enabling tax staff and taxpayers to access and use consistent data sets regardless of their physical location or the platforms used.

### *Leveraging partners in digital ecosystem*

Development of e-services and digital delivery capabilities should also be considered in the context of creating a common digital platform for whole-of-government programmes. Such an approach provides a single digital access point for all interactions with government.

Where sensitive taxpayer information is not involved, data has to be shared across all government agencies. This eliminates the need for taxpayers to provide the same information about events to multiple agencies. Some countries approach this issue by developing the whole-of-government standard business reporting package.

Data sharing across government agencies should make better use of information and facilitate the supply of smart services that are customised to meet the service demands of a particular individual or business taxpayer.

### ***Big Data and data analytics***

For some revenue bodies, all input data either arrives in a digital form or is digitised by the tax agency for further storage analyses and consumption. Processed and analysed data should be made available both to taxpayers and tax officers in real-time or close to real-time. The OECD report *Right from the Start* (OECD, 2012) contains in-depth analysis of revenue bodies' practices in terms of e-invoicing and other similar instances of data use.

Data analytics is an important tool in assisting revenue bodies target specific needs of individual and business taxpayers. Apart from helping perform tax auditing and assessment functions, data analytics should be able to identify and track changes in taxpayer's life cycles in order to assist them in complying and help inform about how their changes of situations might affect their tax positions or entitlement to other government services. Getting the right data for the right customer at the right time to provide the right customer experience is becoming the focus area for revenue bodies.

#### **Box 2.7. Applying Big Data to tax processes**

In Parana State, Brazil, the State Finance Secretariat has implemented electronic invoicing in the VAT transactions that cover wholesale and retail circulation of goods, distribution of energy, interstate transportation as well as telecom services. Sellers of goods or services must issue invoices in the extensible markup language (XML) format, authenticate them with a digital signature and file invoices to the tax authority. The tax authority validates all invoices by crosschecking them with other available information and either authorises, rejects or denies them. The validation process of an invoice on average takes less than 0.1 seconds. After authorisation of an invoice, the seller can proceed with shipment. The buyer is obliged to check if the invoice was authorised. More than 100 crosschecking reports involving invoices and bookkeeping are developed in the form of a business intelligence solution that is used for data discovery (ad hoc queries), reporting and predictive analysis.

Among other things the system reports unregistered invoices, and conducts queries on transactions that are performed by specific taxpayers or with specific goods. It allows visualisation that identifies possible underground economy transactions between companies and isolates problematic nodes for in-depth analysis and targeted auditing action.

*Source:* Country presentations at FTA workshop – Moscow, 2015.

Big Data collected by revenue bodies, when combined with a transparent approach to data, offers tax administrations the opportunity to contribute to improving the lives of citizens and countries' economies.

### Box 2.8. Enhancing financial services with tax data

When taking out a bank loan or a mortgage, time may be of the essence. In Denmark, the tax administration has collaborated with the financial sector to offer to their customers the possibility of sharing relevant data held by the tax administration with the banks in digital form. Customers who consent to this flow of data (by use of a digital signature proving their identity to a range of public and private service providers) will no longer need to access the data in their digital tax folder, print it out and bring the physical copies to the bank for further processing. Instead the data feeds directly into the loan approval process. This dramatically speeds up the process, which may be critical to customers who, for instance, are in the process of buying a new home. At the same time, it reduces costs and risks to banks, which can be certain that the information is accurate and can be relied upon as a basis for granting the loan. The service was used for more than 500 000 loan approval processes in 2015, and the number of transactions is expected to rise to somewhere between 1mn and 1.5mn a year before reaching market saturation.

*Source:* Danish Customs and Tax Administration (SKAT).

### *Smart portal solutions and natural systems*

Use of data by revenue bodies should not be limited to compliance or post filing interventions. Increasingly it should be used to address customer services, which can be extended to taxpayers through portal solutions that provide a single platform for all business operations of a tax administration. Overall, smart portal should access all tax administration data so that with the use of advanced analytics, taxpayers can be provided with services that are both more timely, tailored to meet the specific demands of the taxpayer, and that proactively facilitate compliance.

Natural systems should be leveraging off third party accounting and software solutions, which are developed in close co-operation with revenue bodies. They enable the ability to integrate tax compliance practice into regular daily business activity of taxpayers.

### *Mobile apps*

Mobile devices have deeply penetrated societies globally and have become an integral part of life for many. In a contemporary world, using mobile apps

and devices as means of communicating and interacting has become a critical element of firms and businesses interactions. Apps developed for taxpayers are expected to offer authenticated end-to-end services. To date only a small number of revenue bodies have developed tax apps or have these embedded in third party service offerings.

In many countries it is becoming more common for people to use multiple devices to access services. In designing new e-services, revenue agencies' need to consider the extent to which their web-design and delivery

### Box 2.9. Mobile apps in tax administration

In Australia, the ATO launched its mobile app in July 2013. The initial services accessible via the app targeted individual taxpayers and included checking progress of an individual's return, Frequently Asked Questions and the ability to calculate tax to be withheld. The ATO has continually increased functionality for individuals through iterative release cycles, allowing more individual taxpayers to access the services they need from their preferred device, while "on the go". The July 2015 release of digital services for individuals in business (sole traders) also enabled these taxpayers – for the first time – to manage both personal and business affairs online in the same place. The November release enabled taxpayers to enrol their voice print for identity authentication when transacting with the ATO. The ATO will continue to deliver business services via the ATO app and support third parties developing mobile apps via API's to ensure more services are accessible from all mobile devices, further expanding the holistic experience so that more taxpayers can transact seamlessly via the mobile channel.

In Singapore, e-services available online are now optimised for use on mobile devices including editing tax return data and e-filing. User Experience Design principles have been applied to the responsive web design to ensure optimal usage experiences and high taxpayer satisfaction for e-services are maintained at or above the current level of 97%. Other mobile services include the use of Short Messaging Service (SMS) which is used to send reminders and disseminate information to taxpayers.

In Korea, the tax administration is providing mobile services using Android and iOS operating systems. Mobile apps allow taxpayers to deal with many tax affairs such as receiving information on filing and payment schedules as well as useful tax information. For small-sized entrepreneurs, smart phones allow using and filing of pre-filled tax returns online. Entrepreneurs can view the details of digital tax invoice issuance, information about business partners, etc. Individuals use mobile apps for deduction of expenses for tax settlement at the end of the year.

*Source:* Country presentations at FTA workshop – Moscow, 2015.

approaches should allow seamless navigation and transaction of services on a range of devices, including smartphones, tablets or desktops.

## IT infrastructure

The system architecture that revenue bodies are designing and installing now is likely to be in operation for the next 10 to 15 years. While it is difficult to foresee what particular tools or methods of communications might be in use at that point in the future, revenue bodies need to ensure they retain flexible business architecture, an adaptive technology toolkit, an iterative approach to business processes, and the ability to work with others within the value chain/service chain for customers.

Further implementation of a system that will be able to provide seamless and sustained support of revenue bodies' business processes and meet challenges of customer demand requires installation of robust physical IT infrastructure. Some revenue bodies are building dedicated data centres with the capability to:

- concentrate all Big Data,
- process Big Data with analytic tools,
- enable and leverage automatic back office system, and
- seamlessly deliver proactive and tailored tax services.

### Box 2.10. Building Data Centres

Russia has completed construction and introduced data centres to provide a single platform for all tax administration business.

India has formed a Centralised Processing Centre (CPC) for processing Income Tax Returns. The objectives of the CPC is to manage routine tax administration functions, enable and leverage technology to automate back-office operations, establish a data storage management system, establish robust accounting system as well as to provide taxpayer services.

*Source:* Country presentations at FTA workshop – Moscow, 2015.

The approach revenue bodies take to their digital transformation and consequent delivery of e-services is impacted by certain features of unique environments that each of them has developed in. Accordingly, revenue

bodies can be grouped into three general categories that govern their strategies and tactics in developing e-services and digital delivery:

- **New systems:** Relatively young revenue bodies that built their e-services and digital delivery capabilities basically as a “green field development.” Most of these tax systems were being designed at the start of the digital age, and, as such, administrations benefited from the experience of other revenue bodies, allowing more rapid development and deployment. New legislation was often written with IT solutions in mind. With the right resources and management in place these countries were able to use this unique opportunity and started offering efficient e-services to customers almost from the beginning.
- **Re-engineered systems:** Revenue bodies that are looking into re-engineering their existing e-service capabilities and replacement of their core systems. These revenue bodies have widely introduced their e-services and digital delivery systems over the last two decades. Often these services have been added to existing processes rather than re-designed around digital. While they offer customers a wide range of e-services and cover many of the activities administrations require taxpayers to do, including online return filing and payment of taxes, the offerings are often not seamless and can fall short of customer expectations.

Revenue bodies in these countries realise the need to become more responsive to taxpayer demand, and offer contemporary digital services. They are now looking for ways of increasing the efficiency of provided e-services, often employing COTS architecture, through reengineering of their business processes and the modernisation of IT systems. Part of the system reengineering process agenda is also linked to integrating tax administration e-services and digital delivery into wider e-government or whole-of-government programmes.

- **Legacy Systems:** Revenue bodies focusing on development of e-service capabilities and digital service delivery platforms, which interface with existing core legacy systems. These revenue bodies often face the challenge of how IT systems and processes developed prior to the digital era can be enabled to know and support digital delivery of services to taxpayers.

While each of these environments has its own unique challenges, there are common challenges that tax administrations face if they are to improve their performance on both the compliance and service parts of their organisation. These features include: managing the complexity created by providing APIs to the market to enable third parties to develop or integrate

services; managing the load and demand placed on systems that need to be available 24/7; identifying the legislative changes to support digital delivery; rethinking business processes; and, establishing the up-grade path for existing IT systems.

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