DISRUPTIVE BUSINESS MODELS

CHALLENGES AND OPPORTUNITIES FOR TAX ADMINISTRATIONS

IOTA
Intra-European Organisation of Tax Administrations

WWW.IOTA-TAX.ORG

Published by IOTA, 2017, Budapest
Editorial Board: Miguel Silva Pinto, Neil Sawyer, Ágnes Kővágó
Address: Wesselényi utca 16., H-1077, Budapest, Hungary
Phone: +36 (1) 478-30-30, Email: iota@iota.hu
ISBN 978-615-00-0275-0

IOTA
Intra-European Organisation
of Tax Administrations

WWW.IOTA-TAX.ORG

FOREWORD

Dear Readers,

This publication is founded on the presentations and debates held during the technical session of the 21st IOTA General Assembly, which took place in Kyiv, on 28-30 June 2017. The working programme addressed the changes in the economy driven by technology and multiplication of new and innovative business models. The assembly focused on how this trend is causing both challenges and opportunities for tax administrations to re-invent themselves in order to keep pace with the present and anticipate the future.

The book's structure follows the technical sessions of the assembly and the articles have been prepared by many of the speakers and include not only what they have presented but their further thoughts on the subject as well.

Pekka Ruuhonen, *Giorgi Tabuashvili* and *Gerry Harrahill*, Commissioners from the Finnish, Georgian and Irish Tax Administrations provide their insights on the strategies their organisations are following to ensure the supply of better services to their taxpayers and to tackle the challenges of digital business models.

Chiara Putzolu, *Dirk Dierickx* and *Alan Carter*, from the Italian, Belgian and UK's administrations offer an insight into their country's compliance models and methodologies to address sharing/collaborative businesses. *JB Hillman* from Vertex explains the potential of disruptive technologies to improve the effectiveness of tax administrations. The potential of blockchain technology for public services and namely its importance for the digital transformation of the revenue bodies is analysed by *Maria Teresa Fábregas Fernandez*, from the European Commission, *David Regan* from Accenture, *Gerard Blankestijn* from the Netherlands Tax and Customs Administration and *Eelco van der Enden*, *Kuralay Baisalbayeva* and *Christian Lieverse*, from PwC Netherlands. *Eduard Müller*, the Austrian Commissioner, *Qinfeng Wang*, the Chinese Deputy Commissioner and *Gerli Jogi*, the Estonian Head of Human Resources, reflect upon the impact technological changes and disruptive business models are having on their administrations' human resources and workforce. *Marcio Verdi*, CIAT's Executive Secretary writes about human talent development programmes the CIAT offers to its members' tax officials.

The sound and diverse opinions reflected in this book constitute an excellent demonstration of the lively and thought-provoking discussions held during the last General Assembly. I would like to take this opportunity to thank the writers and also speakers in the technical session of our assembly for their valuable contributions.

I believe the articles in this book give a useful overview of the new tasks required from tax administrations and demonstrates how IOTA successfully assists its members in finding practical solutions to respond to modern challenges.

The important role of IOTA is confirmed in the new IOTA Strategy, which was approved during the General Assembly, establishing the roadmap for the next five years of IOTA's activities.

October, 2017, Budapest

Miguel Silva Pinto
EXECUTIVE SECRETARY OF IOTA

IOTA
Intra-European Organisation
of Tax Administrations

WWW.IOTA-TAX.ORG

CONTENT

TAX ADMINISTRATIONS FACING DISRUPTIVE TRENDS AND NEW BUSINESS MODELS

THE SHARING ECONOMY AND TAX COMPLIANCE

THE IMPACT OF BLOCKCHAIN TECHNOLOGY ON TAX ADMINISTRATIONS

THE CHALLENGES OF A DIGITALISED ECONOMY AND NEW SKILFUL WORKFORCES

TAX ADMINISTRATIONS FACING DISRUPTIVE TRENDS AND NEW BUSINESS MODELS

IOTA
Intra-European Organisation
of Tax Administrations

WWW.IOTA-TAX.ORG

PekkaRuuhonen

Seize the moment, as it might be too late tomorrow - Digital economy offers challenges and opportunities to all tax administrations

Pekka Ruuhonen
is the Director General of the Finnish Tax Administration

Introduction

The evolving digital landscape is rapidly changing the world. The changes we are currently witnessing occur faster than we have perhaps been able to predict. Therefore, tax administrations should pay special attention to their approach to digitalization.

Are we embracing change or holding on to the past?

Back in the 1990s, when the Finnish Tax Administration first opened its website and started to develop opportunities for an electronic tax declaration, we were faced with a question of whether to start collecting and using data or focusing merely on enabling digital tax returns.

We chose the former. It meant a great deal of changes to our everyday working methods and cooperation with third parties, but we managed to create something bigger than a digital tax return. We created the pre-completed tax return, nowadays one of our flagship online products. Approximately 70% of our individual customers only need to check it - we already have all their data correct.

We have come a long way from those days, as have all the other Nordic tax administrations.

However, new developments in today's digital landscape keep us all alert. We have intensified our Nordic cooperation (Nordic Agenda), to better tackle the challenges together.

VERO SKATT

Nordisk Agenda

Some of the topics that have and continue to interest all of us are the sharing economy and e-commerce.

In the Nordic expert seminars, we have reached a general understanding on the tax risks, changes in our work environment and receiving information on the sharing economy segment.

Additionally, Nordic cooperation in recent years has focused on e-commerce, on developing control tools and methodologies as well as on the use of IT tools suitable for internet surfing and pulling data out from the web.

In practice, this has meant, for example, that we have been able to make use of credit card details and other payment information as well as information from different sources on the internet and social media.

First steps taken in 2014

In Finland, we started our first compliance project specialized in e-commerce as recently as 2014.

Even though the project's starting point was in control, i.e. the audit process, we soon discovered that internal collaboration between different processes was very much needed.

The project set out to clarify the possibilities to use different data sources to observe and control risks, but it had a particular goal; to determine and develop working methods and tools as well as to train our personnel. From the very beginning, we also aimed to develop proactive guidance for the digital economy segment.

In hindsight, we succeeded particularly well in finding and utilizing data sources. The time was right, as Finland continues to move towards a no-cash economy.

Extensive use of data delivery results

Nowadays, we utilize comparative data extensively in controlling both the digital and "traditional" economy. These include payment provider data, which we receive from credit card companies, and other data from Finnish payment service providers.

The payment provider data from credit card companies has proven to be particularly useful in risk observation and management in the different processes within the Finnish Tax Administration. We also regularly receive data from multiple digital economy actors such as virtual currency brokers/intermediaries and sharing economy actors.

It is fair to say that through these developments we have moved into the era of big data, which has enabled analytics and operative work to connect on a level that was not necessarily available for us in earlier years. The risk management perspective connects and complements the two.

Managing masses of data naturally requires the right kind of environment, software tools and methodologies.

Recently started projects aim to answer some of the key 'how' questions.

How can we manage and combine all relevant data so that we can get a view of economic phenomena, old or new, and the risks involved? How do we define the fiscal position and economic activity of the phenomena in the quickest, most reliable way and at the lowest cost possible?

We strongly believe that investing in analytics is valuable and benefits the administration immensely. We will, in the near future, invest in big data know-how, big data environment, robotics and utilizing the data available on the internet.

Examples of our successes so far speak for themselves.

Firstly, by analyzing the credit card payment provider data we have been able to tackle the risks of unpaid VAT and excises in distance selling. We have identified, registered and taxed over a hundred distance sellers in 2016. The amount of VAT collected is 20 Meur and the annual potential revenue will be around 5-7 Meur. As the number of distance sellers is on the rise, we will register more of them this year and in the future. The data provided by the credit card companies helps us to get useful information on almost any phenomena.

Secondly, control measures connected to virtual currency are linked to bitcoin. In 2016 we handled over 300 cases together with the personal income taxation process. This year, the number will further increase. We have taxed over 8 Meur of non-declared income, mainly capital income. In the near future, there is a lot of risk potential relating to digital currencies because of strong and rapid growth in exchange rates. We have also increased the analytical know-how concerning bitcoin blockchains by using software tools designed for that purpose. Our main goal is to get an overall picture of the taxpayer's bitcoin purchases. We have been able to discover trade by Finnish bitcoin users in foreign bitcoin markets.

Thirdly, when it comes to sharing economy, we have discovered over a hundred cases where there was a lack of or faulty filing of taxes. The largest sectors where shortcomings were present were crowd-funding, peer-to-peer lending, transportation and accommodation services. However, rather than focus on the incoming tax revenue, we have sent a strong signal to the field about our control measures: effective and on a credible level.

We have also improved our proactive guidance, resulting in improved notifications regarding e.g. paid interest, which we receive annually.

Next steps - asking questions and finding answers

The digital economy challenges everyone; both businesses and tax administrations.

An upcoming change in payment methods is already evident. It is easy to foresee how credit cards and credit card payments will slowly start to disappear due to digitalization. How do we ensure that tax administrations keep up with the developments?

In order to proactively identify and address the opportunities, and also to find answers to emerging challenges of the digital economy, tax administrations need entirely new kinds of expertise. How do we find and attract the 'early birds' of technology adopters to our workforce? Where do we draw the line between tasks managed by robotics and artificial intelligence and those requiring human interaction and how do we translate this to our recruitment practices?

National digital economy actors, both small and large, can turn international very quickly. Both data and activities can be moved anywhere in the world.

National laws will be increasingly difficult to apply, and information based on national laws will not be available in cross-border situations. How do we ensure and further develop the exchange of information?

We need technical solutions to guarantee data flows to tax administrations. The solutions need to be a part of the payment systems in order for us to get information on payments in required form and in real time.

Furthermore, the definition of a permanent establishment in tax treaties does not necessarily work in the digital environment. International tax treaties preventing double taxation are very likely in need of an update in the near future.

There is a definite need for binding international legislation to ensure access to data relevant to taxation in the future. But perhaps international legislation alone is not enough; we also need European Union wide or even more exhaustive common regulation.

Conclusion

Today is better than tomorrow

It is important to learn about the possibilities of future technologies today rather than tomorrow.

For example, blockchain technology with smart contracts and split payment methods would enable a fluent data flow, integrity of the data, small transaction costs as well as real time, efficient and easy collection of taxes and social security payments directly from the transaction.

Different authorities should also consider introducing the use of virtual currencies. This way we could secure the supply of transaction data in the future and create a stable and secure payment environment.

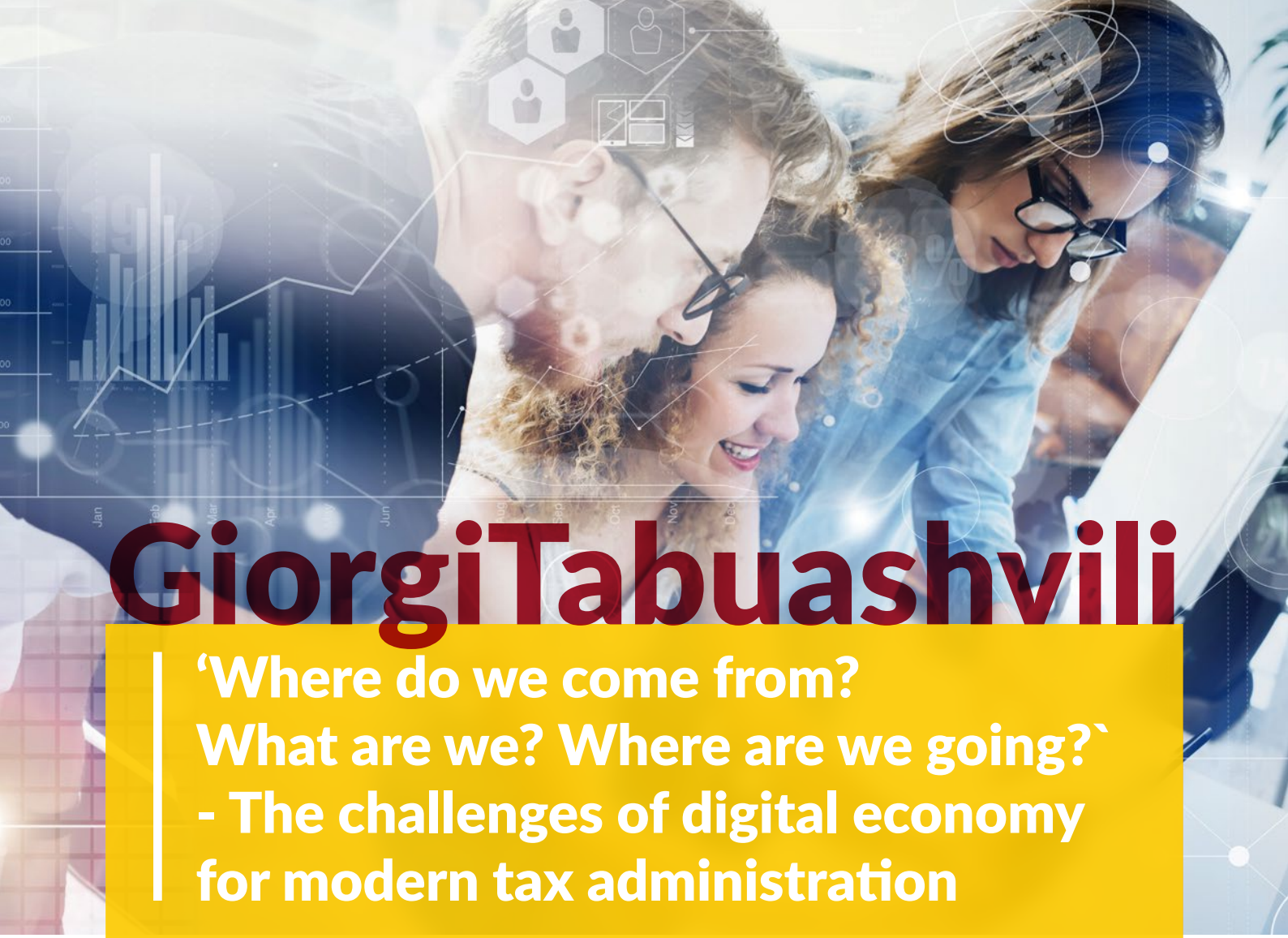
In this world of uncertainty and quickly shifting sands, active international cooperation will grow in importance. Cooperation should be promoted particularly in the areas of exchange of information, control methods development and legislative work.

Tax administrations worldwide are at the forefront of the change that is now sweeping through our societies. Even when the digital economy continues to challenge us, all of us, in surprising ways and quicker than we perhaps were able to predict, we need to embrace the opportunities it offers.

In the recent years in Nordic cooperation, we have paid attention especially to the phenomena in e-commerce, developing control tools and methodologies as well as to the use of IT tools suitable for internet surfing. In practice, this has meant that, for example, we have been able to make use of credit card details and other payment information as well as information from different sources on the internet and social media.

An important aspect of the process is that the Nordic countries strive together to develop the legislation, e.g. concerning cash registers. Whether they are traditional cash registers or any software registering sales, they should be able to secure authentic sales information. On the other hand, when it comes to sharing economy, there have been Nordic expert seminars in which we have reached a general consensus on the tax risks, the change in the work environment and receiving information on the sharing economy segment.

All Nordic Countries have difficulties with receiving information regarding identification of the service providers and sales rendered to them. These problems are connected to international situations where the service platform or payment platform is situated in a different country than the one where service is provided. Not surprisingly, the Nordic countries agree that the solution is that information exchange should be increased.



GiorgiTabuashvili

'Where do we come from? What are we? Where are we going?` - The challenges of digital economy for modern tax administration

Giorgi Tabuashvili
is the Director General of the Revenue Service of Georgia

Introduction

With the developments of the last 20 years business has become truly global with comprehensive supply chain structures. While double tax treaties aimed to resolve such cases with the development of the new models and digital economies, it became clear that business were a step ahead and tax administrations had to react retrospectively to overcome challenges caused by Disruptive Business Models. Sometimes even the scale of the lost revenue is hard to predict because of lack of information and knowledge of the operational systems. At the same time some of the activities became such a usual part of our everyday lives that even tax experts use them, without thinking and realizing their tax consequences.

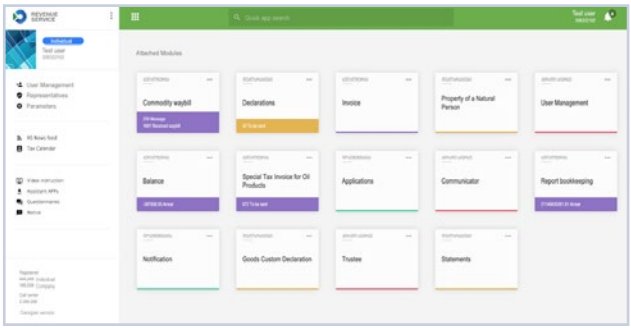
Intensive changes introduced over the past 10-15 years by Georgia and the Revenue Service in particular were very impressive in view of their scale and the limited time available for implementation, but it was an inevitable process towards building modern, flexible and efficient governance. Today we are faced with new problems and challenges triggered by rapid developments. I am really happy that GRS has reached the point when it can devote substantial attention and resources to above challenge, which cannot always be the case due to existing stages of development.

Background

The only way to tackle any challenge in taxation (including ones coming from Disruptive business Models) is to identify existing and possible risks in the field and design clear strategy to address them. It is not possible without proper IT infrastructure and automated systems to support tax administration's performance, as well as without structural approach towards new developments. This year GRS is marking its 10th anniversary and 25th of the first taxation framework as a result of regained

independence. After tackling corruption, which was a high proportion of shadow economy, Georgia Revenue Service continued its transformation process with the strong focus of development on IT and electronic systems as the key milestone for increased performance and further development. It is noteworthy to mention that the extensive use of modern information technology applications in the tax administration processes as well as eagerness to innovate was defined as one of the main strengths of GRS by an internationally recognized TADAT assessment.

Today's Revenue Service provides around 180 different types of electronic applications, including smart applications forms, when responses to certain types of automatic request without additional processing goes directly to the applicant. All these applications allow taxpayers to deal with their tax or customs obligations and issues from their place of business or apartment through their personal account on the Revenue Service's website www.rs.ge.



The most frequently used services are e-filing of tax and customs returns, e-invoice, e-commodity waybill. It is worth mentioning that Georgia was the first not only among countries of the Caucasus region, but also many European countries, who developed and explored an e-invoice system.

- Electronic filing – ensures simple, convenient and cost free method of tax return filing;
- Electronic VAT invoice – can eliminate the existence of non-commodity and fictional transactions as well as the mistakes in the filling process;
- Electronic Commodity Waybill – When delivering goods within the territory of Georgia for entrepreneurial activities a waybill has to be issued and submitted to GRS.
- GPRS module cash-registers, enabling us to receive in automatic mode all information about cash transactions. In order to promote transition to the new cash-register models and enhance cash receipt issuance culture, Revenue Service on the one hand provided small and medium businesses with new model cash-registers free of charge and on the other hand launched a receipt lottery. Mentioned measures had a positive effect on smooth introduction of new cash-registers and tax compliance.

In 2016 the Georgia Revenue Service has introduced a ``single taxpayer code`` to simplify procedures for taxpayers. The introduction of unified treasury code simplifies tax payment system, reduces number of procedures and time, and therefore eases administration process.

It is worth mentioning that the vast majority of computer programs used by the Revenue Service either for internal or external purposes are developed in-house by the Information Technology Center under the Revenue Service.

New Business Models

Solutions to the problems associated with disruptive business models require global, systematic and comprehensive approach, starting from designing legislative framework, usually lacking due to the nature of these models and ending with suitable human and technical resources, to ensuring implementation of rules and methods set by the law.

Georgia Revenue Service constantly faces new challenges in terms of the development of new models, where there is no-one ready to use solutions, guidelines, etc.

Due to complex structures, dealing with the model requires expert knowledge in different systems, which means staff cannot always be afforded by tax administrations, as it is practically impossible to compete with the private sector in a market economy environment.

All the electronic systems described in the background section not only reduce compliance costs for taxpayers but are also of great support to tax administrations in improving risk analysis for detection of comprehensive tax avoidance schemes, as well as in case selection. Having this in mind the GRS put a special focus on further improvement of IT infrastructure, tax databases and automated risk management systems in its strategic plan for 2017-2020. However, there is still much work to be done and exploration to be made in order to incorporate risks connected to new models into the systems.

Conclusion

While the scale of digitalization and shadow markets can differ among economies and can affect resources allocated by tax administrations to solve the problem, the tempo of further development of such models forces tax administrations (notwithstanding given challenges) to be involved and updated on the issue.

Therefore, sharing experience and information on new business models detected in different countries must become a crucial instrument in learning more about their nature and further finding possible solutions to them.

Gerry Harrahill

Managing Tax Compliance Challenges arising with new types of economic players, non-traditional business models and a fast-moving and changing economy – taxpayer engagement and internal capability development

Gerry Harrahill is the Commissioner of the Office of the Revenue Commissioners, Ireland

Introduction

Two shared challenges among most tax administrations are promoting and supporting high levels of voluntary tax compliance and ensuring that non compliance is addressed effectively and that similar types of non compliance behaviour by taxpayers results in a consistent response by the tax administration. These challenges are accentuated when there are changes both in the economy and in the type of economic actors and when a tax administration is faced with significant capability challenges arising from its demographics and loss of experienced staff.

This paper addresses the Irish tax and customs administration experience in the implementation of its customer engagement strategy, and how that experience might inform the response from a service and tax compliance perspective, to changes in the customer base and reflects some perspectives on our HR recruitment and capability development policy in light of future challenges, including those from disruptive trends and new business models.

Engagement Strategy

The Irish tax and customs administration launched a Customer Engagement Strategy (CES) in early 2015. A key focus of the CES was to move taxpayers to digital services supported by an excellent telephone service so that

- contacts to and engagement with the administration come via a channel that delivers a seamless, speedy, comprehensive and efficient service,
- the use of self-service and on-line functionalities is supported and encouraged,
- digital services are available and delivered at the time of choosing by the taxpayer,

- there is a reduction overall in the amount of manual processing for the administration,
- there is a reduced compliance cost for taxpayers,
- administrative costs are reduced for the administration.

In our experience, taxpayers expect the same quality and range of services from public bodies, including tax administrations, as from private service providers. It is critical, therefore, that we provide services in line with those expectations if we want taxpayers to use them and to have a positive experience in that mode or channel of engagement in order for digital channels to be the default option. The wider Irish government Public Service IT Strategy includes a 'Digital First' policy and our strategy was and is very much aligned with this, an important dimension in terms of a whole-of-government approach.

Digital and Online Services – some key features and experiences

Business customers are required to engage with us digitally and we have the legislation to facilitate and support this. Our business online service was first made available in 2000 and we have been extending and improving our services for these customers ever since.

Our online services for non-business customers initially consisted of a range of different standalone or discrete services - with different login names and passwords, for example. Use of these online services is not mandatory for all services. Our non-business customer mainly includes employees who pay tax through the pay-as-you- earn (PAYE) system.

We recently made available a new online portal called myAccount specifically for our non-business taxpayers from where they can access all our online services using one login name and password. Taxpayers registering for myAccount have the opportunity to get an instant password if they can provide information that we can verify immediately. We also have a new process that allows taxpayers to retrieve forgotten passwords immediately. All our online services are now accessible on all smart devices.

The range of services available online has been extended, including the development of a secure online enquiry service and we are gradually withdrawing the standard email enquiry service. We have introduced a new online service for employees to notify us of their new job or pension and this service is specifically aimed at first time employees. This is an important development as the first interaction with the tax administration is a digital transaction, seeking to establish this channel as the norm from the outset.

We have extended and enhanced our range of other online services for employees to allow them manage their tax affairs for both current and previous years at a time that suits them best and on a device of their choice. We made available an App which provides convenient access to our online services. It also includes functionality to allow taxpayers manage their expenses and receipts relating to their tax affairs on the go.

We have launched a new service to make it easier to pay tax. All new tax incentives introduced have a legislative provision to make it an online claim in line with the 'Digital First' policy.

Our new website launched earlier in 2017 reflects our renewed citizen and taxpayer centric focus. We have restructured the website with taxpayer needs to the fore and have made it very easy to navigate.

We have introduced consistent opening hours on our telephone services which mean that services are now predictable and open for longer and we have committed more resources to this channel. An appointments service is available in our public offices and since the end of July 2017 all but one of our public offices provide an appointments service. This is an important initiative and is a real opportunity to change customer behaviour and raise their awareness particularly of our online services.

In our experience to date, only 11% of taxpayers who rang us to make an appointment to meet one of our staff in our offices actually needed to make such an appointment. The remaining taxpayers were helped to do their business through a different channel, mainly using the online or digital services available.

Service and compliance perspective and non-traditional business models

Business models are rapidly changing due to new technologies, digitalisation and changing consumer demands and expectations. The OECD recognises that policy responses to the digital economy must be all-embracing, as the *"the digital economy is increasingly becoming the economy itself."*

A strong voluntary tax compliance culture is enabled when taxpayers are aware of their tax payment and tax filing obligations. When the tax administration facilitates compliance in the easiest and most cost effective way possible, including when the supports to enable voluntary compliance, are fast efficient and impose the least cost on taxpayers, then voluntary compliance is much more likely to be the norm.

Taxpayers need clear and consistent information and direction as regards their tax compliance obligations and how and where and in what form they can source

the necessary information to meet their obligations. Depending on the skill and knowledge level of the taxpayer concerned and the nature of the business they are engaged in, their needs can be relatively simple or quite complex. Their needs will be influenced by whether they have an agent or tax advisor to assist or support them in meeting their tax compliance obligations.

In the task of meeting their tax compliance obligations taxpayers need to know and be aware of their obligations from tax registration to tax return filing and payment. They also need to be able to get clarity and direction where needed on complex tax issues and to be able to experience timely and efficient interaction with the tax administration as regards follow up compliance assurance.

To take a practical example of some of the challenges involved, the gig economy has been described as a labour market characterised by the prevalence of short term contracts or freelance work as opposed to permanent jobs. Common features include work which has a high degree of autonomy, is paid by task, assignment or sales and is short in duration.

It is a concept that is becoming more prevalent in tandem with the growth of online service platforms. Such platforms may claim to be merely acting as an intermediary connecting customers and (self-employed) suppliers. The model is championed as affording individuals enormous flexibility, liberating them from the confines of traditional, rigid, shift based working conditions.

From a tax compliance perspective, and having regard, to the legal tax and social insurance framework that may exist, immediate compliance risks could include:

1. If the individual is not correctly classified as an employee when s/he should be there will be a loss of employers' social insurance contribution.
2. Self-employed individuals may fail to register and account for income tax. A feature of the so-called gig economy is the prevalence of a large volume of relatively low value actors (as well as some significant players). Many of these may have limited awareness of their tax obligations and this increases the challenge for the tax administration to achieve and maintain high voluntary tax compliance levels.
3. Certain employment structures may afford greater opportunities for tax planning that may in turn lead to tax avoidance.

Co-opting platform providers into the compliance value chain, whether through a withholding tax regime or transaction reporting, may offer the best way forward. Jurisdictional issues as regards how to impose obligations on platform providers who operate across jurisdictions would need to be resolved. As the emerging businesses are global in reach this is an obvious area for significant international co-operation and information exchange.

We have observed, inter alia, the phenomenon of pop-up businesses, the drift away from employee status to self-employment status and the ever increasing expansion of the digital economy. These multi-layered issues require a multi-layered response and a critically important tool or element of the tax administration response will hinge on its analytical capability and capacity to evaluate data.

Where a tax administration is fortunate to have available significant third party information which includes bank information, merchant acquirer data, property returns, money laundering reports together with accounting information which is submitted electronically there is significant potential to be exploited through pre-population of tax returns as a means of prompting and supporting voluntary compliance.

Capability Building and Recruitment Policy

Tax administrations are faced with several challenges in relation to their human resources, namely ageing staff, budget restrictions, a more demanding population that requires quality services and competition from the private sector. At the same time tax administrations need to adapt to the new economy and innovative business models. A key challenge for tax administrations therefore is to attract and retain talent and to be competitive with the private sector in hiring and retaining staff.

Irish Revenue has a mature and very experienced workforce. Our average age is 47.5 years and almost half of our staff (49%) are 50 years or older. This is an older profile than many tax administrations. More than half of Irish Revenue staff has 25 years or more public service experience and one third have 35 years or more.

In the next five years we expect over 1,500 people, almost a quarter of our serving staff, to retire. In an organisation of 6,000 people, losing 300 people to retirement per year is a challenge and, to compound it, the retirees will be mainly at more senior levels. We estimate that 37% of our senior managers will retire within 5 years.

We have put a lot of emphasis on Workforce Planning. This planning is crucial if the challenges are to be recognised and solutions identified. Our workforce plan aims to get the right number of people, with the right skills, in the right place, at the right time. As well as being a challenge, it is an opportunity to reshape and reskill the organisation.

Our workforce planning is linked to our strategic business goals. We have developed an inventory of skills and talent, workforce demand forecasting, capacity building and workforce rebalancing. We have also worked at becoming and employer of choice, attracting and recruiting talented people.

At the same time, we have increased our internal focus on building and retaining capacity and expertise by developing our staff and future leaders.

Over the next five years we will have to:

- Build and retain internal capacity, talent and leadership, through comprehensive Continuous Personal and Professional Development, leadership and management training.
- Attract and recruit talented people.
- Build on existing succession planning arrangements, to include medium to long term analysis.
- Enhance internal capacity building, including training, mentoring, apprenticeships and mobility.
- Create additional 'head-room' by restructuring and strategic rationalisation.
- Maximise opportunities for open recruitment of critical skills in areas such as law, accountancy, analytics, ICT.

The economic growth which is forecast over the next few years in Ireland will also add to the competitive pressures in recruitment and retention of talent.

Conclusion

The challenges and opportunities for tax administrations in the years ahead are significant, none more so than through the changes brought on by the changes in the global economy. Tax and customs administrations need to be alert to the disruptive trends brought about by the technologically driven business models and the risks for tax compliance. In delivering the service, supports and certainty needed by taxpayers to be and remain voluntarily compliant and in leveraging the appropriate dividend from non-compliance prevention strategies and non-compliance intervention measures tax administrations will need people with the appropriate mix of capabilities, resilience and specialist skills to keep pace with the evolving environment in which tax administrations need to perform and deliver.

THE SHARING ECONOMY AND TAX COMPLIANCE

IOTA
Intra-European Organisation of Tax Administrations

WWW.IOTA-TAX.ORG

ChiaraPutzolu

Challenges and opportunities in the Sharing economy: the Italian perspective

Chiara Putzolu is the Head of Relations with International Organizations Unit, Central Directorate for Tax Assessment, in the Italian Revenue Agency

Introduction

Sharing today represents a characteristic feature of the globalised society, spreading in all domains and activities and influencing individual behaviour in a digital environment, which is now part of everyday life.

The sharing economy stems from the ideal sharing of costs and experiences between individuals, placing the social relationship at the heart of the cost-effectiveness process.

The phenomenon, that arose almost stealthily in the digital world with the use of specific on-line platforms, APPs and websites, has increased globally, providing undeniable benefits to customers and suppliers.

Furthermore, many of the services provided, besides implying economic advantages, give rise to undoubted benefits, also in terms of environmental resource saving. The sharing economy is a complex phenomenon that involves a vast range of tendencies, issues and different economic fields. For its features, this new business model does not lend itself to one sole definition, but involves different and multifaceted cultural and business environments. The terms 'sharing' and 'gig economy' are often used interchangeably but whilst the first one takes advantage of the sharing network to fully capitalize existing assets, the second makes use of new

technologies and digital platforms to better ensure that the greatest value is attached to labour, by creating more opportunities.

In particular, on one hand, the uncertainty about rights and obligations for the three main actors of the new model – service providers, online platforms, users – can be seen as opportunities, in terms of driver competitiveness, reduced information asymmetries, flexible working and environment benefits.

On the other hand, challenges for tax administrations related to the identification of taxpayers and the need to revise current tax rules can be seen as opportunities in respect of the possibility of establishing a dialogue with online platforms, to enhance cooperation between tax administrations and improve tax services.

The rapid evolution of the sharing economy system led to an improvement of certain services, thus drawing the legislator attention to the need of regulating a phenomenon no longer related to certain categories of the population and, at the same time, to avoid the possible expansion of grey areas, lacking of protection and guarantees.

Key aspects addressed in the European Commission Communication

In this regard, a first step has been made at European level, through the European Commission Communication COM(2016) 356 final, published on 2nd June 2016, defining A European agenda for the collaborative economy.

This document, providing a first definition of collaborative economy, sets up key aspects and guidelines that EU Member State legislators should take into account when drafting domestic legislation.

EU guidelines refer to the following collaborative economy key issues: market access requirements, liability regimes, protection of users, self-employed workers in the collaborative economy and taxation.

Market access requirements can include business authorisations, licensing obligations or minimum quality standard requirements. In order to be established, such requirements need to be necessary, justified and proportionate, taking into account the specific features of the business. Member states should, then, review their current domestic legislations to ensure that market access requirements meet the mentioned requirements, relieving operators from unnecessary burden and to avoid the fragmentation of the Single Market.

The EU Communication also refers to liability regimes, in terms of encouraging the collaborative platforms counteracting illegal content online, thus increasing trust. Another key point is the protection of consumers from unfair commercial practices, while not setting disproportionate administrative burdens on those who occasionally provide services.

Furthermore, ensuring fair working conditions and proper social protection for self-employed workers in the collaborative economy is of utmost importance.

The last key point provided by the Communication concerns taxation where guidelines suggest tax authorities to aim improving tax collection by using the possibilities provided by online collaborative platforms, as these already record economic activity.

The Italian perspective

In Italy, a first attempt to regulate on the sharing economy was made through a law proposal by Parliament (AC 3564 – 27/01/2016) – Regulation of digital platforms to share goods and services and legislative provisions to promote the sharing economy – still under examination at competent Parliamentary Committees.

The purpose of the law proposal is to regulate the collaborative economy phenomenon through a holistic approach. This includes the establishment of an Independent Supervising Authority, the provision of specific market access requirements, the setting up of taxation regime and data protection measures as well as measures to promote economic activities relating to this phenomenon.

Pending the law proposal approval and its entry into force, a specific legislative provision has been introduced in article 4 of Law Decree no. 50 dated 24 April 2017, converted with amendments into Law no. 96 dated 21 June 2017, concerning urgent provisions regarding financial matters, initiatives in favour of local authorities, further measures in favour of areas affected by earthquake and development measures.

More specifically, the Italian legislator intervened on the short-term renting taxation system, providing rules concerning also the renting concluded through intermediaries including "those managing web portals, bringing together people seeking real estate with those persons having real estate to rent[1] ", by introducing an optional taxation regime of rental income (income from short-term rental) by means of a substitute tax in the form of flat rate tax.

A further regulation is expected to fix criteria to determine whether a short-term rental activity is supposed to be carried on as a business activity or not.

This new law is thus addressed to regulate the activity performed by web portal operators related to short-term renting, that have gained a higher profile in Italy over the last years.

In particular, the new law on short-term renting provides:

- On an optional basis, any private individual renting real estate for under 30 days can pay a 21% flat rate on income;
- Obligations for resident intermediaries, Permanent Establishments or tax representatives of non-residents, including online sites, that collect payment from the guest to apply a 21% withholding tax;
- Obligations for the intermediaries to report to the Italian Revenue Agency all rental taking place.

Conclusions

For the purpose of the practical implementation of the short-term renting law, with reference to the application of the new legislation, a forum was set up in September 2017. The forum, chaired by the Deputy Minister of the Economy and Finance, brings together the Italian Revenue Agency top management and representatives of major operators affected by the new law, as Italian Federation of Professional Real Estate Agents (FIAIP), Airbnb, Booking, Homeaway and Property Managers Italia. The scope of the forum is to define, in agreement with all stakeholders, simple implementing rules of the law and to simplify the procedures for the electronic transmission of data to the Revenue Agency.

Besides the Italian initiative, more work is needed at international level to explore options and solutions to foster tax compliance in the area of the sharing economy. An area of interest in working collectively could be using effective data collected by intermediaries in order to simply tax obligations for service providers.

[1] Rental contract concerning residential buildings for a period not exceeding 30 days

DirkDierickx

The Belgian compliance model and the methodology to obtain data from "Sharing Economy" platforms

Dirk Dierickx is an Advisor-General of the Federal Public Service Finances of Belgium

Introduction

The digitalization of the world and the ease for civilians to share real time information concerning available services and goods created new business-models in which intermediates are excluded.

The initial idea to share occasional services and goods has become a grown up business in which traders see opportunities to gain money. They offer an environment to create and exercise this "Sharing economy" or they facilitate services to support this "New economy". Examples are the creation of an environment to trade (platforms) or the creation of new, specific, payment possibilities such as cryptocurrency. Some traders act like a private person to hide their commercial intent.

As a tax administration, it is a challenge to separate the non-commercial from the commercial activities and to levy "equal" taxes on this "sharing economy" in order to avoid unfair competition.

The final aim of every country is to achieve as much "compliance" as possible to be able to focus and concentrate its "audit" capacity on the serious and intentional fraudsters.

The Belgian compliance model for the "Shared economy"

Past experiences with activities that have a less commercial purpose such as 'Bed and Breakfast' showed us that in most cases, the final result was a minimal or even a negative tax result since those taxpayers usually had a lot of deductible costs. For example, the cost of creating rooms for their B&B was in most cases higher than the benefits.

So for the "real" sharing economy, the Belgian government decided that the best taxation-model is a special scheme, in which the "Sharing economy" is taxed at a flat rate of 20%, with a fixed cost-deduction of 10%. The effective tax rate is 10%. (art. 35-43 PW)

To limit this special scheme to the activity for which it is intended for, it is only admissible for services that are delivered by a private person to another private person through the use of a "certified" electronic platform. Furthermore, this platform will collect and pay the taxes for and to the government. Also, the turnover of the private person must be lower than €5.000 before taxes (€ 5.100 = indexed amount for 2017).

There is also an exoneration of VAT in this scheme, so having or obtaining a VAT-number is not required.

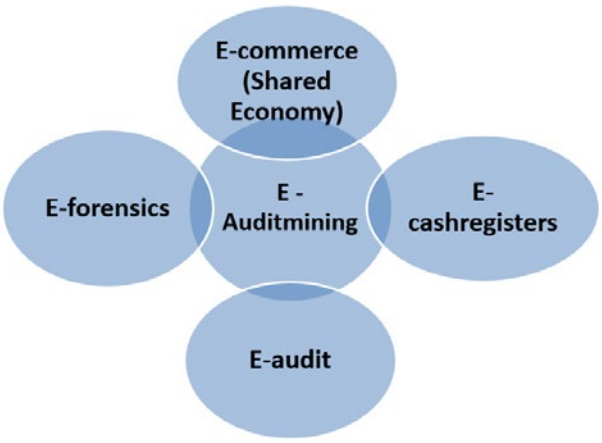
This allows tax and E-auditors to concentrate their audits on those taxpayers in the "Sharing economy" that can't or don't use this special scheme. It narrows the scope!

Methodology to audit "the sharing economy"

It is common knowledge that most people don't like to pay taxes. People are more likely to commit fraud when the chances of being caught are low.

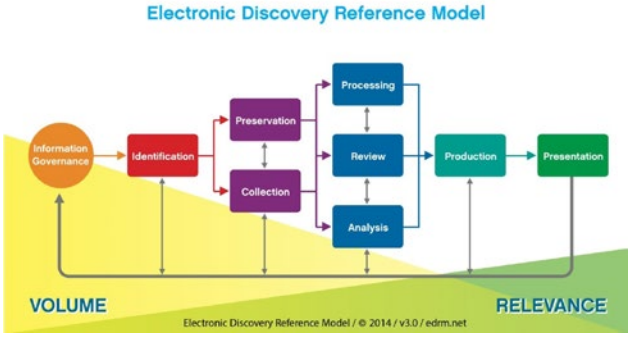
Although we would like to obtain 100% compliance, this may however remain a utopian idea. So we need an efficient audit approach to maintain a high probability for fraudsters to be caught. At the same time, finding and correcting mistakes also has to be a part of this audit strategy and, taxpayers will also need clarifications about certain complicated tax laws.

Based on practical experience, we decided to create an integrated audit-approach in Belgium multi-disciplinary, digital teams spread all over the country in seven locations. These teams have experts in all of our five specializations:



1. E-commerce: to obtain and analyze unstructured data from the web
2. E-audit: to obtain and analyze structured data from digital bookkeeping systems (e.g.: ERP systems), mostly with co-operation of the taxpayer
3. E-forensics: to obtain and analyze non-structured data, mostly without co-operation of the taxpayer and/or in cases of serious fraud
4. E-cashregisters: to obtain and analyze structured data from cash-registers
5. E-auditmining: Analysis: Evaluating ESI (= Electronic Stored Information) for content & context, including key patterns, topics, people & discussion with the use of Predictive analyses and Artificial intelligence.

Our methodology is based on the international recognized EDRM Model.



Obtaining the necessary data

Most of the audits in the "Shared economy" are aimed at finding the unknown taxpayers who have such level of activity that they become unfair competition if they can continue operating without having to pay taxes. We obtain the necessary data to audit "The sharing economy" in two ways:

1) WE ASK FOR DATA FROM THE TAXPAYER OR THE OWNER OF THE PLATFORM ON WHICH THE DATA IS STORED.

Asking for all the data from the "Shared economy platforms" is not a good approach. Their lawyers will consider this as being a "John Doe" or as a so called "Fishing" operation. Therefore, we will only ask for those platform users who exercise a lot of activity, such as:

- Power users
- Users that rent out more than three houses
- Users that have a turnover of more than €25,.000 a year (threshold in Belgium for classifying "small taxpayers" who don't have to fill in VAT-declarations)

Asking for the data from the users of the platform can be useful in test cases to prove that they are in fact commercial traders. However, asking the data from all users is not a good approach either because:

a) It is too time-consuming.
b) They are still considered as civilians until proven otherwise. A forensic approach is therefore quite difficult as they are still protected by privacy.

2) WE "HARVEST" THE DATA OURSELVES, USING A TECHNIQUE CALLED "SCRAPING".

When the platform or the taxpayer refuses to give us the data, we will consider this as being a presumption of fraud and we will use E-forensic techniques to "take" the necessary data. Furthermore, harvesting internet data, even from compliant taxpayers, is not a "privacy" problem since these data are publicly available. These data are so called "OSINT" or Open Source Intelligence Data.

The most used technique is called scraping and this allows us to harvest on a daily basis, all the available data which is on the target-website or platform. There are commercial scraping tools available on the internet, but we prefer to write our own scraping tools in "Python".

Having our "own" dedicated tool allows us to adapt the scraping tool whenever the platform changes thus allowing us to scrape data in a fiscal friendly way, providing screenshots of the offered goods for further audit or as proof in a potential juridical dispute.

Conclusion

New "Business models" such as sharing economy require new approaches and each government is looking for the "best practice".

It is a "cliché" but both international and national co-operation is of the outmost importance in obtaining and keeping compliance in E-commerce activities, especially since this kind of activity has no borders.

Organizations such as IOTA provide a platform to exchange "best practices" and to share knowledge and data concerning these new evolutions. They help us to become or stay "aware" of potential problems and to be able to do our job in a professional way.

AlanCarter

Sharing about Sharing: Tax impacts and administrative options in the "collaborative" economy.

Alan Carter is an Assistant Director, International Coordination and Capacity Building, of UK HMRC

Disclaimer: The views expressed in this chapter are those of the author and do not necessarily represent those of HMRC or UK Government policy. This contribution is intended to elicit comments and to stimulate debate about developments in the sharing economy and responses to these amongst IOTA members.

Introduction

The "sharing" or "collaborative" economy for products and services, and the related emergence of the "gig" economy on the labour market side, has been the subject of much debate in both media and policy circles. This article looks in more detail at the evidence about these new economic models in terms of their economic significance, the challenges they may create for existing tax systems, and recent policy responses to these economic developments in the UK. The nature of the issues that will have to be dealt with will require more collaboration and potentially coordination at international levels. IOTA members will need to share amongst themselves more of their own experiences of dealing with the sharing economy at the national level. This will assist them in dealing with the future growth of this business model in a way which both protects revenues and does not unduly bias the competitive processes that underlie the innovation process in market based economies.

New Paradigms and Economic Change

Many innovative ideas still emerge from entrepreneurs musing over ideas in bars and coffee shops. Creativity involves leaping over the boundaries of conventional thinking in the era in which you happen to live. The idea of the "collaborative economy" or "sharing economy" has spread across different markets. Entrepreneurs can be seen reframing market definitions for consumer needs - e.g. thinking in terms of selling transport solutions rather than cars – based on the social and economic global

interconnectedness that the widespread diffusion of smart phones and IT equipment to the level of individuals and households has created. Somewhat surprising sharing economy activities have also emerged such as that for sharing pets. The "sharing" economy is creating both known unknowns and unknown unknowns for revenue administrations around the world.

PWC reported in 2016 that the UK's sharing economy has grown the fastest in Europe, with total transactions of around £7.4bn in 2015. The platforms supporting these transactions had revenues of around £850m. Going forward, PWC estimated that they expect the UK's sharing economy to expand at over 30% per year over the next decade, generating £18bn of revenue for platforms and facilitating about £140bn worth of transactions per year by 2025. A number of UK government reports have all indicated that they expect the collaborative economy to grow, but a lack of official statistical definitions and data enquiries mean that it is hard to carry out detailed analysis at the present time. Official statistical agencies have only just begun the work needed to map out a definition that is both meaningful and measurable, and that will not date too quickly, thereby rendering comparisons over time of any data collected meaningless. Some categorisation has occurred for the purposes of preliminary search and these working definitions are shown below in Table 1.

Table 1: Categories of sharing economy activities

Category:	Examples of activities:
Property rental and access	Accommodation, parking spaces, storage space, vehicles (without a driver), tools
Peer-to-Peer services	Transportation, delivery, household services, professional services
Collaborative finance	Crowfunding, peer-to-peer lending, investment, money transfer and exchange

Source: Office for National Statistics

The terms collaborative economy/sharing economy/gig economy are often used interchangeably.
This vagueness about definitions is not surprising since variations in platform use may matter as much as the nature of the platform or application (app) itself for the purposes of delineating different types of economic activity in the shared economy space. One approach is to define a broad split between physical assets and labour, although differing combinations of (capital) assets and labour are necessary for different household services. Even at the micro enterprise level providing taxi services is more capital intensive than other activities such as cleaning. The status of an activity in tax and employment law terms (which may be different) may depend whether or not suppliers on the platform get to set their own price or take the price decided by the platform where price setting ability is taken as proxy variable for the degree of agency (control) of individuals who use platforms have.

The status of an activity in statistical and tax terms may also be dependent on whether participants are using the platform as their primary source of income or if it's providing a way of filling spare time and is essentially a hobby rather than a trade. When an activity moves from being a hobby to a business has long been debated in tax circles, e.g. when does collecting classic cars when the buyer buys and sells regularly become a trade? The 'badges of trade' can sometimes be helpful. These were first established in the UK by the Royal Commission for the Taxation of Profits and Income in 1955, using previous case law about what constitutes a trade. HMRC may deny claims for losses where the badges of trade are not present, e.g. losses from owning racehorses where pleasure is derived from ownership and there was no clear business plan (that was likely to generate profits). HMRC provides guidance on its website (https://www.gov.uk/hmrc-internal-manuals/business-income-manual/bim20205) on these badges of trade such as a profit seeking motive and the number of transactions. These 'badges' will not be present in every case and of those that are, some may point one way and some the other. The presence or absence of a particular badge is unlikely, by itself, to provide a conclusive answer to the question of whether or not there is a trade. The weight to be attached to each badge will depend on the precise circumstances. The approach by the courts in tax disputes involving interpretation of the badges of trade has been to decide questions of trade on the basis of the overall impression gained from a review of all the badges. Making badges of trade decisions about potentially tens of millions of individuals and hundreds of millions of transactions related to those who might engage in some sharing economy activities would clearly be administratively problematic, suggesting a need for some safe harbours from the full weight of the tax system in all its complexity for activity judged to be de minimis. Tax authorities will need to provide updated online guidance about how such baskets of indicators work using contemporary sharing economy examples.

The Concepts Shaping "Sharing Economy" Business Models

Nevertheless, whilst there is at this stage no clear consensus on the definition of what "sharing economy" means in terms of the activities covered we can explore the concepts that are shaping these new business models. The core underlying idea is that there are efficiencies – and in some cases potentially very large efficiencies –to be gained from more intensive use of physical assets that can now be "shared" via short term rental, rather than lying idle most of the time, e.g. with vast numbers of private cars lightly used or with unoccupied bedrooms in private housing. Sharing in this sense is very different from the positive moral connotations it carries when parents encourage their children to share things as part of the process of socialisation and where

this behaviour is related to what seem to be at least partly innate human ideas about fairness. We need to avoid the trap of assuming that the sharing economy has positive moral characteristics merely as a consequence of its name, although this was certainly a clever bit of branding by its original promoters.

The functioning of the sharing economy depends on trusting people you don't know not to abuse or damage your asset, when that asset is itself something you are likely to have a personal emotional attachment to such as your home where you normally live or your car. Assets which previously related to personal consumption, rather than being seen as business assets, are the focus of many platforms. This is why mechanisms which create trust directly via ratings of sellers and buyers - who have an incentive to build a positive reputation online since it has a direct or indirect monetary value to them -have been seen as important to growing transaction levels via sharing platforms. This cannot be a complete solution by participants and platform owners however, since biases in ratings and review systems can snowball. An initial negative or positive review is likely to influence subsequent reviewers. You may even have experienced this discrepancy yourself, where a restaurant you frequent and like seems to be entirely different from the one that seems to be portrayed on a portal such as Trip Advisor. People in receipt of this type of information may get a false picture since they are likely to ignore the fact that reviewers will differ in related knowledge and skills and their review may be correlated with how they happened to be feeling at the time rather than an objective assessment of the product of service. Because of these fundamental limitations to relying on creating trust via (other users) feedback it is critical that potential damage to assets shared can be insured against by sharing platform, e.g. to deal with the issues around people holding parties in AirBnB properties and causing extensive damage that have been given prominence in many media stories in recent years.

The sharing economy thus required the development of innovative insurance contracts and risk analysis that allowed the pricing of such insurance in the marketplace. The business models adopted are still in the process of experimentation and evolution. Part of this process of experimentation and evolution has been in relation to tax issues, with different revenue administrations adopting different approaches to ensure the news avoidance and evasion opportunities created do not go unaddressed. Different providers have been exploring how far they can push the boundaries of their activities to reduce tax before public opinion and tax administrations push back and provide them with a clear signal that they have overstepped the mark. This "game" is still in its early stages but we can expect the boundaries to become clearer to both sides over time as different cases are settled by both judicial courts and the court of mainstream public and political opinion.

The sharing economy for the purposes of tax liability assessments involves payments between at least two parties. Tax authorities have no role where a person is gifting something directly to people they don't know (altruism) via a digital platform (e.g. freecycle.org) rather than via more traditional recognised and regulated charitable bodies where tax credits and exemptions often already exist in today's tax codes in relation to charitable giving that is financial in nature. More difficult are barter type transactions where no money changes hands which you could view as gifting at one level, but as a barter transaction at another. If I lend my dog to someone to walk and it improves their health and mental welfare, and not just the dogs', to take it for exercise freeing up my time for another task where I would otherwise have needed to hire someone to look after my dog, then have I done something different in transaction terms from a plumber and a carpenter doing work for each other without payment? Tax systems previously tended to ignore barter transactions because the difficulty of organising them on a large scale is the reason we use money in an economy, and in any case they were private transactions with no third party knowledge or record of their existence. If we wished to bring at least some of these new and growing barter transactions into the tax net we would need to establish a viable and low cost way of determining their taxable value in the absence of a clear price.

It is also important to note that whilst the sharing economy may have impacts on consumption patterns, it is not the same phenomena as a change in pattern of asset ownership. Credit and leasing such as for cars which are used via sharing models may change legal ownership patterns, but not the use of the asset itself other than potentially in relation to intensity of use (e.g. the Autolib electric car sharing service that exist in Paris). The private new car market in the UK and some other countries has seen outright purchase being replaced by personal contract hire (leases). Ultimately such changes have implications for the macro economy via household budgets since saving to purchase consumer durables such as cars has fallen and been replaced by large debt stocks in the financial vehicles set up by manufacturers to promote car sales. This could at the limit result in negative shocks to consumer incomes being transmitted into the balance sheet of enterprises in the financial system, e.g. because of defaults on personal car leasing payments could be coincident with a decline in the value of the asset leased and therefore their value as security against default. Whilst this is not a tax issue per se, it does speak of a need to think about the wider structural impact that a widespread move to renting rather than owning would have for the economy.

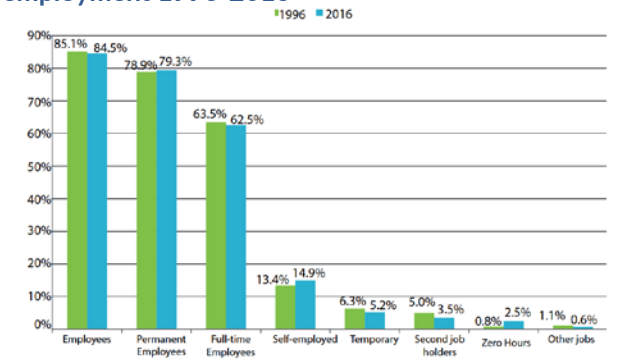
Developments in relation to collaborative finance will need careful regulation by those responsible for financial market. Concerns about potential fraud, money laundering, and investor protection will have to be dealt

with if this sector of the sharing economy is to grow in a socially acceptable way. Whilst revenue authorities will not play a leading role in determining the future governance of this new aspect of the financial system, it will be necessary to try and insure that the incentives created by the tax system are aligned with the objectives of financial regulators.

The Gig Economy

The "gig" economy can be differentiated from the sharing economy as the former is enabled by reductions in transaction costs that allows specific tasks at specific times to be unbundled in cost efficient way and suppliers of labour to be connected with purchasers of labour services into individual smaller transactions than traditional labour contracts allowed for in the formal economy. Whilst there has been extensive media discussion of the gig economy – driven partly by the very visible presence of the gig economy in the form of Uber drivers and Deliveroo bicycle couriers with large green boxes on their back in some key metropolitan areas - the UK data on the structure of employment show over the past twenty years or so show only relatively small changes. The gig economy has yet to arrive in a significant way, but the gig economy may have potentially large impacts in both business to business and business to consumer labour markets if it was to grow exponentially in future.

Chart One: Changes in the structure of UK employment 1996-2016



Notes: All figures UK seasonally adjusted, January-March. Permanent employees are total employees minus temporary employees. Second job holders include self-employed. Other jobs are unpaid family workers and people on government training schemes.

Source: ONS, TWF estimates. This chart is updated each month at http://www.theworkfoundation.com/Myth-busting

Further, to the extent the gig economy activities have already grown, this may reflect the fact that the new models allowed for more regulatory (as well as tax) arbitrage between existing and new service suppliers e.g. in meal supply, taxis, and in accommodation. For this reason, when thinking about innovation impacts and policy responses it is helpful to start at the broadest level. Innovation requires change. Institutional factors around the market for labour and capital will impact on the ability of an economy to initiate innovation processes domestically and respond to structural shocks emerging from overseas markets and economies such as the spread of new business models which are demonstrated to be successful elsewhere. Economies which have inflexible labour markets, poorly functioning capital markets, and penal levels of taxation on any potential innovators, will struggle to offset these obstacles created by wider economic policy choices via more narrowly targeted innovation policies as a tool for driving economic growth. One reason for the potential growth of gig economy business may therefore be that they allowed some new economic participants to sidestep the shortcomings in government approaches to the regulation and taxation of traditional businesses. The question then arises as to whether this is a good or a bad thing. The debates in France around the nature of the reform needed of the (in)famous Code du Travail is perhaps the clearest example of the tensions between old and new labour market structures, with question about how the 3,000 pages of rules originally drafted in another age should apply to enterprises and gig economy workers today. One implication may be that we are going "back to the future", with day labouring (perhaps relabelled in this modern age as freelance consultancy or gigs) and piece work payments, becoming common as they were in Victorian England. But the economic story is much more nuanced than a reversion to a past age. The drivers are different. Modern low cost IT and telecommunications equipment and the internet has transformed the ability of individuals to easily register businesses, carry out basic business functions such as accounting, sales and invoicing, and advertising using low cost software.

Self- Employment in the UK

Quarter 1 (Jan to Mar) 1993 to Quarter 1 (Jan to Mar) 2016

The number of self-employed workers in the UK has been rising since 2000, but despite this and much media discussion about the changed nature of work, the aggregate data suggest that the overall changes in the structure of labour markets has been relatively limited so far, as was shown above. Self-employment has always been prevalent amongst certain tradespeople, and a lot of media discussion involves an elision between traditional modes of self-employment and a narrower version of the "gig" economy where the latter is defined as finding of discrete parcels of work by direct connection between individual providers and customers and clients

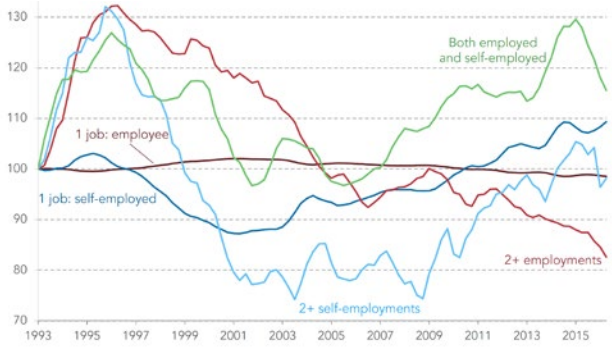
through a digital platform such as Uber. A number of recent court cases in the UK have arisen over whether the contractual basis between the service providers and the platform owner genuinely represents a self-employed relationship, or whether the service providers are in fact of law employees. It is possible that the outcome of these cases via future regulation changes, will be to kill off the spread of such platforms should the service providers/platform owners be forced to adopt a traditional employer and employee relationship. It is important to note that employment law for the purpose of defining employment rights, e.g. to paid holidays, does not map directly to definitions of employment for tax purposes in the UK, and this situation is likely to be repeated in a number of other countries. HMRC's approach is to define only the status of "employee", with self-employment as a residual category that is not itself explicitly defined. It is therefore currently possible to be an employee in relation to employment rights definitions, but be self-employed for the purposes of taxation given HMRC's different approach to defining an employee.

The ONS has observed that long-term labour market changes – such as the growing prevalence of part-time self-employment – are often prompted by gradual demographic changes which have a small, but cumulative impact on labour market aggregates. The UK population has aged considerably over the last 15 years, providing one such likely source of change. The average age of workers increased from 39 years to 41 years between 2001 and 2015, while the number of workers aged over 60 has grown from 1.5 million to 3.0 million over this period. If older workers are more likely to be self-employed, this gradual demographic drift can lead to movements in the headline number of self-employed workers, even in the absence of changes to the likelihood of workers in any given age group being self-employed. While it appears that the ageing population has had an impact on the level of self-employment, a study by Tatomir in 2015, found that other factors are considerably more important.

Whilst the proportion of workers who have multiple employments (without any self-employment) has declined markedly and is now at a record low in the UK , the proportion mixing employment and self-employment has grown over the past decade, as has the number with multiple self-employments. This has tax consequences, and particularly so in relation to social security receipts since the self-employed do not pay employer social security contributions by definition.

The data for the UK shows both self-employment and mixing employment with self-employment have grown in popularity.

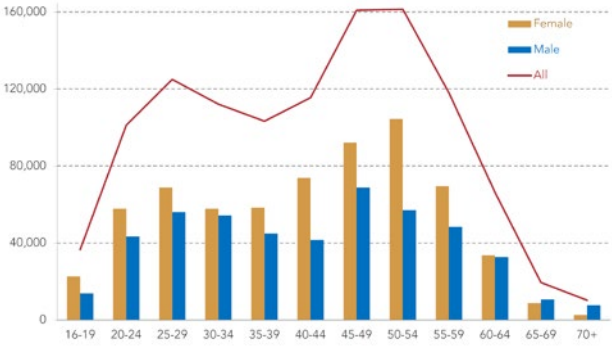
Proportion of workforce in last 12 months, indexed to 1992-93



Source: ONS

There is a gender aspect to these developments with women more likely than men to have multiple jobs when younger, although the difference is reversed in post-retirement cohorts.

Number of workers with multiple jobs



Source: RF analysis of LFS Q3 2015 - Q2 2016

Whilst there has been a rise in self-employment, HMRC data suggests that most of those reporting self-employment income (which may be second as well as primary jobs) earn relatively low salaries. ONS analysis suggests that those moving from employee positions to self-employment tend to have somewhat higher pre-transition hourly earnings than workers moving to new employee positions, trends which are more consistent with workers making a positive choice, rather than being forced into self-employment.

The Revolution Has Only Just Started

Survey data about participation in the collaborative economy by households in terms of usage suggests it is still very limited in UK in most respects. In 2015 less than a third of households had ever sold goods on an online market place such as Ebay, and gig type activities involving earnings from the provision of labour services via a platform were a very much smaller order of magnitude with only 4% of household having done this in the previous six months.

The other aspect of these type of transactions is that the earnings from sharing and gig activities were very small (significantly less than £500 a year) for the vast majority of households covered according to those few surveys that have been undertaken. This contrast with basic tax allowances of £10,600 2015/16 and £11,500 in 2017/18, and a (compulsory) VAT registration threshold set for business activities with a turnover of more than £83,000. Since the amounts of income earned via sharing economy will often be small for many participants it is possible that heavy handed tax reporting requirements on all individuals participating would cause the market to disappear. Transaction taxes reduce liquidity via a reduction in the number of buyers and sellers. Introduction of such taxes at an early stage could prevent the growth of the sharing economy to the point where taxes might not strangle the existence of the market as a real alternative to current transaction patterns. With these dangers in mind, and given this gap between existing thresholds and likely median earnings from the sharing economy the UK introduced additional personal tax allowance to help the sharing economy grow with two tax-free £1,000 allowances; one for selling goods or providing services; and one income from property you own. There is also a £7,500 allowance for renting out a room in your home on a longer term basis, although this is more orientated to helping alleviate housing shortages. One positive is that because participation in the sharing economy takes place through a third party platform, it potentially reduces some of the historical tax compliance issues of what would previously have been unrecorded cash transactions, or the underreporting of income which is prevalent amongst in some trades in the past since it provides a third party record of economic activity. This effectively puts some self-employed workers in a position analogous to that of an employed worker who has tax withheld by their employer for the first time in terms of inability to hide income or activity. Hence the next steps carried out by HMRC and described below are likely to be replicated elsewhere by revenue authorities elsewhere over time.

HMRC still needs to collect tax and people still need to pay tax on collaborative economy activities which take taxpayers above the thresholds and allowances described above. We may need them to register for tax if not already registered, to submit tax returns; and to pay the right tax and at the right time. In order to find the taxpayers who don't do this the UK decided to facilitate compliance activity in relation to this type of economic activity by introducing new information gathering powers. In 2013 (Finance Act 2013 section 228) HMRC obtained new powers to request data from merchant acquirers – businesses that process credit and debit card transactions. This data helps HMRC identify traders that are receiving income but are not registered for tax, as well as those who are registered but under declare their income to HMRC. Further recent changes mean HMRC can now also go directly to the online platforms -in the UK we term these companies "business intermediaries" - who enable or facilitate people to sell their goods or services and get the data needed to help enforce greater compliance. The new legislative clause 13 c states that:

1) A person who—
(a) provides services to enable or facilitate transactions between suppliers and their customers or clients, and
(b) receives information about such transactions in the course of doing so, is a relevant data-holder.

2) In this paragraph "suppliers" means persons supplying goods or services in the course of business.

3) For the purposes of this paragraph, information about transactions includes information that is capable of indicating the likely quantity or value of transactions.

Domestic legislation is not a perfect solution to the problem of getting the information tax authorities' need, since the transactions may take place, and the data be held, in another country or in the cloud. This will necessitate cooperation between revenue administrations in different countries in helping to enforce data provision at home through exchange of information arrangements with other countries. It is likely that this issue will be the subject of further discussion at the international level before all the remaining problems around the cross border nature of some of the sharing economy transactions are further resolved.

Concluding thoughts

The selection process for innovation in the market sector is ultimately competition. In revenue authorities, as in government more widely, it is planning that takes precedence. The real incentive structures that exist within a revenue authority in terms of technological adaptation and evolution are very generally very opaque, and will differ significantly across countries. The lack of an internal resource allocation system driven by a true price mechanism means that learning from the experiments and experience of other revenue authorities in relations to ideas about technology, and how to respond to challenges such as the growth of the sharing economy, becomes crucial. This is why IOTA and other regional tax organisations are crucial players in helping their membership to deal with and plan technical change.

We will in future need to be cautious that tax strategies to avoid revenue losses caused by technological change that drives structural changes of the sort we are observing in the sharing economy sector do not have unintended consequences in biasing the direction of technical change.

Conversely, neither do we want technological choices nor their diffusion in the market sector to be driven by the way in which we have defined the tax bases such as some say we have done on the basis of historic rules to differentiate employment from self-employment. Decision makers in revenue authorities will therefore have to engage in a delicate balancing act both in terms of their technological strategies for the use of, and in interfacing with, new technologies, and in the advice they give on the use of tax policy tools that will shape the evolution of new and deeper collaborative markets across the economy. We in IOTA will need to share more about sharing.

Disruptive technology: Impact on compliance

JB Hillman is the Director, Global Development, of Vertex Inc.

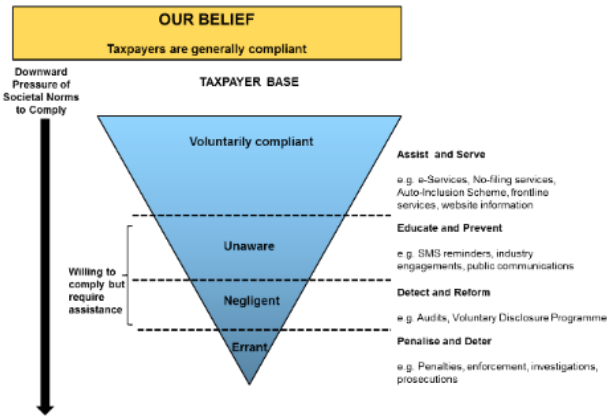
Introduction

Tax administrations are facing unprecedented challenges in a rapidly changing world. The dynamics of accelerating change in technology and globalization has tax administrations of all sizes and in all regions of the world grappling with the need to mature their capabilities - both human and technological. The following list of realities should be familiar to all who are reading this article:

- Ever-increasing pressure to do more with less;
- Intensifying "war on talent" with the private sector;
- Expanding and more demanding global regulations; and
- Heightened expectations around transparency.

Disruptive technologies are both adding to the challenges by creating a need to "keep up" with the capabilities in the private sector, and offering new opportunities, by enabling tax administrations to reduce the cost of compliance and increase effectiveness of their operations. This article will discuss some of the fundamentals that underpin this new paradigm.

Foundational Thinking



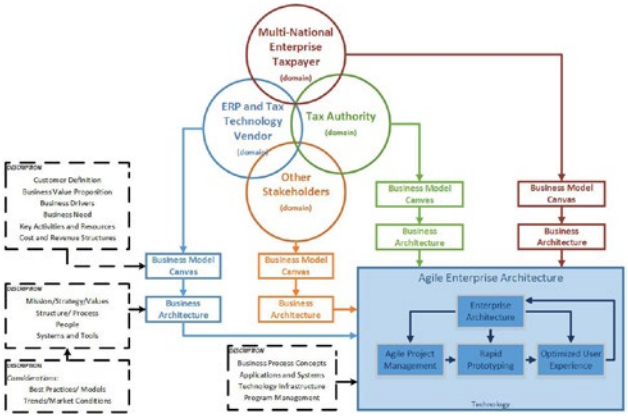
As an underpinning for any new technology, tax administrations must define a Compliance Risk Management approach to manage their relationship with the taxpayer. Today, there are tax administrations across the globe that are employing models that span a continuum from trust-based to mandatory. The illustration here represents the trust-based model of Cooperative Compliance. This model has been seen as a strong opportunity for tax administrations for many years, while the private sector is just beginning to explore its benefits more fully. Though there are a number of approaches to Compliance Risk Management in use today, all are aimed at the same goals of raising revenues through higher level of compliance, and all require strong technology to support their effectiveness.

Figure 1. Levels of digitization*

Level 1	Level 2		Level 3	Level 4		Level 5
"E-file"	"E-accounting"		"E-match"	"E-audit"		"E-assess"
Corporate entities required or have the option to use a standardized electronic form for filing tax returns. Other income data (e.g., payroll, financial) filed electronically and matched annually.	Corporate entities required to submit accounting or other source data to support filings (invoices, trial balances, etc.) in a defined electronic format at a defined frequency. Additions and changes at this level occur frequently.	Paradigm Shift	Corporate entities required to submit additional accounting and source data, government accesses additional data (bank statements). Government begins to match data across tax types, potentially across taxpayers and jurisdictions in real time or near real time.	Corporate entities' Level 2 data is analyzed by government entities and cross-checked to filings in real time or near real time to prevent fraud, unintended errors, and to map the geographic economic ecosystem. Governments send taxpayers electronic audit assessments with a limited window to respond.	Disruptive	Government entities use submitted data from corporate entities to assess tax without the need for tax forms. Taxpayers have a limited window of time to audit government-calculated tax.

"Digitization" is a term that has grown in acceptance regarding the transformation of the tax administration capabilities. In a well-accepted model, EY has identified 5 levels of digitization applicable specifically to tax administrations. The model (shown here) highlights a continuum of maturity for compliance management that can be used as a business roadmap for future technology capabilities. Maturity models, like this one, can be constructive tools to communicate the overall plan to both internal and external constituents, and to guide the overall technology implementation plan for the organization. The use of a "building block" approach to technology- enabled capability maturity is an essential element of transformation success.

While there is a great deal of hype around technology and the possibilities it provides for tax administrations, technology is only a tool, though a very powerful one. In order to exploit technology to its fullest, a tax administration should build a business "architecture"



first. This business model must address how to serve all constituents, as well as, define the workflow requirements. Only when this business architecture is defined and documented, should a technology architecture be created to support the defined business needs. The mistake of buying technology first, thinking it will solve all problems, is one that has been made many times. Again, technology is just a tool and should be used to support a defined business outcome. The graphic shown here is one model that illustrates the way Vertex looks at this business-to-technology linkage. Only when there is a clear understanding of how to serve all constituents, can tax administrations be confident that the application of technology will enable the planned business results.

Before beginning to think about disruptive technologies, there are foundational technology capabilities that need to be in place in order to support the needs of tax administration operations and taxpayers. Though too extensive a topic for this article, technologies should be in place that allow tax administrations to:

- operate/interact in the cloud;
- support both internal and external reporting;
- store and manage big data;
- enable system interoperability across agencies and between tax administrations; and
- ensure system and data security.

These are not minor considerations, and companies like Vertex can assist in ensuring tax administrations are prepared in these areas.

In addition to foundational technology capabilities, tax administrations must also consider new, disruptive business models that will add- to or change the way tax is collected. E-commerce and platform models will dramatically increasing compliance complexity. The sharing economy is already requiring tax administrations to better handle micropayments. This will be see by significantly increasing transaction volume, as well as, driving more complex reporting, analytics and filing requirements. Many of these models are driving to an operation that will need to handle real-time tax calculation and payment. This will be a disruptive model for both the tax administration and the taxpayer.

Disruptive Technologies

The introduction of new of technology has always created opportunities and threats for organizations of all types. When real disruptive technologies emerge, however, these opportunities and threats are magnified as both the pace and magnitude of change increase. Though there is clear historical evidence that most disruptive technologies have had huge impact - cloud

computing and mobile, as examples - it is important not to get caught up in the hype-cycle and fall back into the "technology is the answer" mindset. Most technologies of this type take longer than anticipated to realize the impact envisioned at the start. That said, the opportunity for tax administrations to improve levels of compliance and taxpayer services through the use of emerging technologies is substantial. We will briefly touch on a few of those technologies now.

COGNITIVE COMPUTING

IBM defines cognitive computing as "systems that learn at scale, reason with purpose and interact with humans naturally." Cognitive computing is actually an abundance and variety of technologies orchestrated for a desired solution. These technologies such as reporting, analytics, machine learning, and others, are able to support diverse groups of human users and "learn" from sophisticated training data sets. A key attribute of this technology is that is processing data through the interconnectivity of structured (relational databases) and unstructured (documents, forms) information. Over time, this will allow for automated processes and decision- making, and provide a vastly improved user experience with systems that support the work in a way that is most natural.

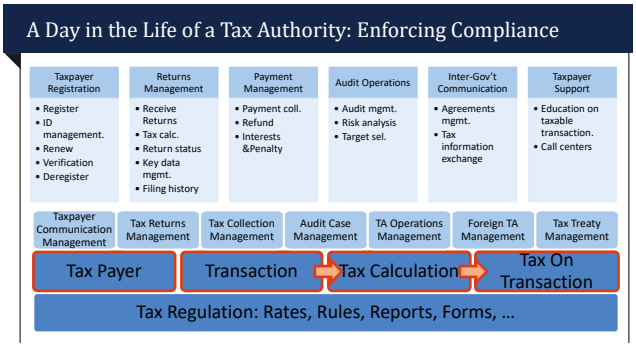
MACHINE LEARNING

Machine Learning is the study and construction of algorithms that can learn from and make predictions on data. This requires that humans develop complex algorithms to train the machine and infer from the results. This takes vast amounts of data, strong subject matter expertise, and patience to ensure that the machine has learned the right information and produces informed results. The dynamic nature of tax will require constant retraining of the machines. The power and benefits of machine learning will be profound, as the technology reduces cost, increases speed, creates the opportunity to redeploy resources to higher value-add work, and ensures greater accuracy (reduces human error).

BLOCKCHAIN

The technology at the highest point in the "hype cycle" is clearly blockchain. I will leave a deeper conversation about blockchain to others from the IOTA conference, though Don Tapscott, a pioneer and thought leader in the blockchain domain, defines blockchain as "an incorruptible digital ledger of economic transactions that can be programmed to record not just financial transactions but virtually everything of value." This technology, which may produce the ultimate vision of compliance by design thinking, will bring about disintermediation opportunities for a number of tax lifecycle participants. Those can include tax preparers, tax advisors, intermediaries, as well as, tax administrations. There will be a need for tax code simplification and semantic interoperability (systems that can talk to each other) among blockchain node owners, with integration into current supply chain and payment workflows. This will be a complex technological solution, but once in place, will result in a transformed level of compliance and real time payment opportunities for all constituents. It will require that tax administrations have the capability to operate in real-time, or at the speed of the blockchain. As we heard in the conference, there are currently several tax-related Proofs of Concept under development throughout the world.

Conclusion



It is clear that disruptive technologies will change the way tax administrations will run their operations and support and interact with their taxpayers. With the ever-accelerating pace of change, the opportunities for technology to relieve some of the pressure to do more with less will increase. It is critical to remember, though, that technology just a tool, and that having a clear business blueprint from which to build appropriate technology capabilities is essential. To start, understanding the functional and process requirements for a tax administration (one example shown here) will give decision- makers a strong starting point and ensure that they have the needed foundational technology capabilities in place before envisioning how new, disruptive technologies can be added. Disruptive technologies such as cognitive computing, machine learning, and blockchain will ultimately provide unlimited opportunities ahead for service improvement and operational efficiencies for all tax administrations, and potentially create the catalyst for tax administrations in developing economies to "leapfrog" capabilities to better interact in the global tax ecosystem.

THE IMPACT OF BLOCKCHAIN TECHNOLOGY ON TAX ADMINISTRATIONS

Intra-European Organisation of Tax Administrations

WWW.IOTA-TAX.ORG

MariaTeresaFabregas

Blockchain technology: why does it matter for tax administrations?

Maria Teresa Fabregas Fernandez is the Director of the Directorate Indirect Taxation and Tax administration, Directorate General Taxation and Customs Union of the European Commission

Introduction

The potentially disruptive nature of this technology makes it that blockchain is the new 'buzzword' of today. What is blockchain? Blockchain technology or distributed ledger technology uses multiple participants to verify the authenticity of a transaction and they are doing so relying on the history embedded in the recorded chain of prior transactions. After these people validate the title, they will confirm this transaction. The main characteristic of the distributive aspect of this technology consists in the enhanced capability of data sharing. Many consider that blockchain technology has the potential to radically change the way we interact when exchanging payments, transactions, assets or information.

Blockchain technology and the tax world

While the public interest in blockchain is increasing, it is still difficult to predict what it will mean for the future of the tax world. Theoretically, there are a multitude of possibilities for blockchain application in taxation. Hypothetically, applications in the areas of One-Stop-Shops, in registration, in supply chains (origin, destination, movement and control systems) and in avoiding double taxation can eventually benefit to some extent from blockchain technology. In the same way, almost any kind of exchange of information that is now implying a centralised database connected via a central communication network could use distributed ledger technology. More precisely, fraud detection (especially VAT), tax compliance, withholding tax, transfer pricing or excise are just some of the areas where blockchain could be beneficial.

The nature of blockchain technology is such that it allows sharing of information, instead of simply exchanging it, allowing immediate validation and non-repudiation of transactions, thereby enabling also immediate charging of taxes. This could be a game-changer, something that could help solve some of the current problems we face notably when fighting fraud in relation with all kinds of taxes, both domestic and cross border.

In the field of taxation, blockchain technology can hence have a big impact on processes that require verification of proof – especially when the use of blockchain technology is combined with (further) automation of processes. For example, it may be used to store digital documents, to obtain the proof of ownership at a specific time and date, to determine the place of supply in complex supply chains or to verify the identity.

Another important gain resides in the certainty that the information could not be falsely altered in any way. This way the administrative or business procedures that include verification of information between taxpayers and tax administrations can efficiently be automated. The VAT field, payroll taxes or refund procedures concerning withholding tax could be just some examples in this sense.

Blockchain might introduce new challenges in the field of taxation and one could expect that this transformation will not take place smoothly.

Blockchain: the long way from Bitcoin to tax administrations

Bitcoin is without doubt the most known application of blockchain technology. Bitcoin was released in the beginning of 2009 in the context of the financial crisis, with the argument that an electronic payment system based on cryptographic proof to create trust rather than relying on third party institutions such as banks to create trust among market participants.[1] And this is what Bitcoin provides for, empowering direct transactions between participants without the need for a trusted third party. Only recently the increasing computational power and network capacity, unleashed the potential of this technology.

In a time where tax administrations around the globe are facing all sorts of constrains and are asked to do 'more with less', the expectations from blockchain technology may be very high and range from decreasing collection costs dramatically to increasing compliance significantly. However, someone looking for an immediate blockchain-based solution for the current problems in the field of taxation may feel disappointed by the availability, scalability and practicality of today possibilities.

Another factor at play is the increasing amount of data available and the need for a very high level of data quality in the (big) data era. Blockchain technology can significantly improve the level of data quality because of the immutable nature of this technology.

Ideally, tax administrations may achieve an ideal level of taxpayers' compliance where people and businesses pay their fair share and more time and resources can be used to combat fraudsters and 'free riders'. What steps are necessary to move in this direction and to improve the current state of affairs?

Blockchain and taxation: practical considerations

1. BLOCKCHAIN AND TAX ISSUES

The application of blockchain technology clearly has a significant potential in financial transactions, especially with the use of "smart contracts", self-executing and/or self-enforcing contracts based on an IT protocol. Because blockchain technology is not only applicable in the field of financial transactions it may be good for tax actors to consider it further. The question is what blockchain can mean for tax administrations and tax issues. One has to keep in mind that the tax environment is more complex and massive than some of the fields where this technology is already used (including bitcoin). In fact, almost every part of life has a fiscal aspect to it, hence the difficulty to apply this technology in taxation.

To describe how blockchain technology can impact the field of taxation, one could imagine a mechanism with three main parts: the actors in the tax field, the tax system and blockchain technology. This might be better understood with the metaphor of a car: the actors are the driver, the tax system is the motor and blockchain is the gas that enables.

The actors establish and create the tax environment. Governments and regulators have to understand the challenges, commercial lawyers have to be able to accommodate deals done in new ways, advisers need to ensure their clients meet the regulatory obligations of this new world, businesses should consider the commercial ramifications of these developments for their future viability – and this is where most attention is now focussed. It is noted that the actors together can be seen as the driver of the car. They have a shared interest in allowing the car to keep going ahead, thus in improving the tax system.

Because almost every part of life has fiscal aspects, developments in and the impact of blockchain technology on what the actors do and how they do things, naturally translates into the second part: the tax system. Since taxation is directly linked with activities of the actors in the tax field, blockchain will thus impact taxation and even the way of dealing with tax issues. But not

only current tax issues will be impacted by blockchain. Blockchain will also raise new tax problems. In the tax world, advisers have to be clear about the identity of the proper taxpayer, their residence and the source of their income. With blockchain technology, having the operators of distributed ledgers examine, validate and record transactions does not change what the core tax questions are, nor does it obviously change the answers.

Then we have the third part: blockchain technology, which can be seen as an enabler – just like gas that enables the motor to get the car forward. Blockchain technology might simplify things but we cannot just expect it to solve many of the current problems. Especially when one would take a short-term perspective, blockchain technology cannot be seen as a panacea. Blockchain technology and especially the application and implementation of this technology would need to be further developed and could thus be seen as an ongoing process.

It is noted that these three layers are naturally in contact, influencing and determining each other and becoming one for any blockchain-based construction for tax purposes.

At the moment there are still many challenges before blockchain technology could reach its full potential, including in taxation. Because many taxes affect so many, there is no room for 'trial and error'. It is also not clear yet how, when and to what extent blockchain technology can or should be combined with other digital or technological innovations. It is important to get a good understanding of new technologies and also (or especially) have adequate knowledge of how to implement this in the real world.

2. BLOCKCHAIN AND TAX RECORDS

What impact might blockchain technology have for tax records? For the tax field as a whole, the disruption potential might be the most impactful on tax records. With the right application of blockchain technology, records can be trustworthy and secure. Blockchain technology could make it possible that all (tax relevant) transactions are immutable, meaning they cannot be altered or deleted. Also, due to decentralized networks, blockchain does not have a central point of failure and is better able to withstand malicious attacks. Blockchain seems to be secure by design and this makes blockchain more durable, reliable, resilient and thus trustworthy. Thus data quality of tax records could increase, which can further improve data analytics.

Blockchain technology could also increase the trustworthiness of tax records, because every node in the network checks the work of the other nodes. Users can trust that transactions will be executed exactly as the protocol commands, removing the need for a trusted third party and increasing process integrity. This could also 'unlock' the 'full' potential for automation, especially of processes that involve verifying information.

Conclusion

Blockchain technology has the potential to have clear benefits for tax administrations and the system of taxation in general. The trustworthiness of tax records could increase efficiency of tax procedures, especially procedures that include verifying information. Also, the immutable character of blockchain technology could have a clear impact on reducing tax errors or even fraud, as well as faster or even immediate payment of taxes, thus improving taxpayers' compliance.

The Commission is currently exploring blockchain. The Directorate General Taxation and Customs Union has created an internal project team on 'blockchain' to collaborate for understanding the challenges and opportunities, for discussing how blockchain could change the world of taxation and customs and for exchanging ideas. This is done in interaction with other Commission Directorates General. In this process the Commission is reaching out to Member States via different cooperation initiatives in the areas of taxation and customs.

Like the Commission, main actors in the tax field (from national tax authorities and tax regulators to taxation experts, consultants and taxpayers) are examining the potential of blockchain and may have different approaches to it. They may either choose to promote the blockchain as the unavoidable future solution, to be actively involved in shaping the process, to explore and better understand the possible applications of this technology or simply to stay aside or try avoiding it. However, it is clear that a future development in this field, no matter the degree of participation, will likely affect everyone.

[1] http://satoshi.nakamotoinstitute.org/quotes/cryptocurrency/

DavidRegan

Tax administration in the age of blockchain

David Regan is the Global Managing Director, Revenue Industry, of Accenture

Introduction

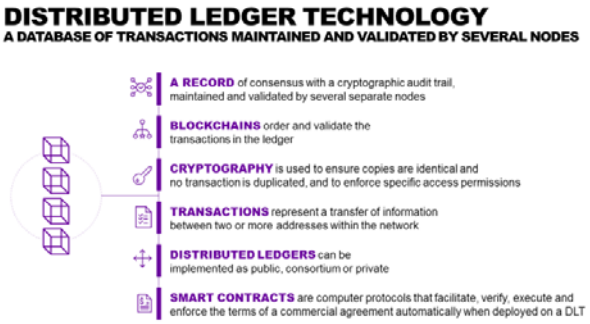
Most revenue agencies have been following blockchain's emergence, from the fringes of the internet to mainstream, enterprise settings. It is important to understand the impact of blockchain as the technology is adopted, not only to harness the opportunities, but also to play the appropriate role in the development of standards and regulations to support the adoption of the technology.

Why decentralized ledgers?

Blockchain, or more broadly described distributed ledger technology, was invented as an alternative to centralized ledgers controlled by a single authority – e.g. a title deed registry, or a central bank. So why was it developed? What is wrong with centralized ledgers? After all, these models are highly effective in many ways. For example, they prevent double-spending or double-ownership, and (most often) serve as a trusted arbiter and administrative record-keeper. But their strengths can also be weaknesses. Centralization means these systems have a single point of failure, making them vulnerable to the effects of accidental shutdowns, corruption, cyber-attacks or in some scenarios political influence. Additionally, in centralized systems every party to a transaction manages their own records, creating a constant need to reconcile and verify records between parties. In a national or global market scenario, millions of reconciliations and verifications are required to keep all parties assured and updated. This is arduous, non-value-adding work, often provided by dedicated intermediaries, driving up both transaction times and costs.

The genius of decentralised ledgers is that they give the benefits of centralization – preventing double-spending, providing trust, maintaining an auditable record – without the weaknesses. Thousands of identical records of all activity are kept and validated by a web of participants, while a network-enforced cryptographic process ensures

an authentic, identical, updated audit trail of activity is available from any participant. Everybody using the system (be it the general public, or a specific group of participants) can see the same picture, the same trail of activity, the same truth.



Blockchain can therefore transform how transactions and trades are recorded and settled, cutting out intermediaries and many of the intensive processes that support clearing and settlement today. Organizations are finding applications in supply chain management, trade finance, notary functions, reinsurance and dozens of other areas. Blockchain could save several industries billions, while adding greater transparency, resilience, trust, security, availability and efficiency.

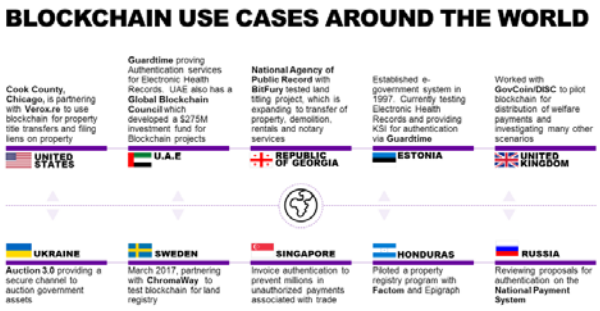
Blockchain is developing rapidly

No wonder then that blockchain continues to gain momentum around the world. In the financial sector, it is driving unprecedented collaborations between competitors, fintechs and academics. While, in a sign of how important blockchain is expected to become, major technology firms have launched enterprise-ready "blockchain-as-a-service" offers that allow their clients to create, deploy and manage blockchains via cloud platforms.[1]

Central banks, such as the Reserve Bank of India, the European Central Bank and the Hong Kong Monetary Authority – the controllers of the incumbent centralized ledger models that manage our currencies – have also been investigating applications for distributed ledger technology. Many are cognizant that blockchain may gradually reinvent the role central banks play in the global economy.

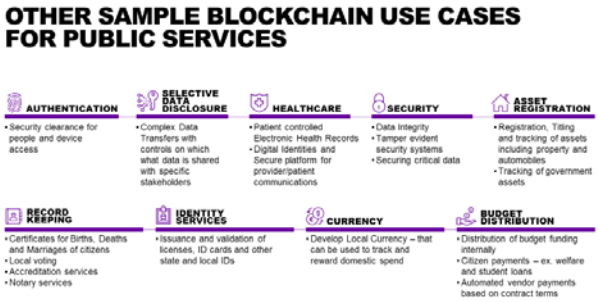
Non-financial applications are gaining ground too. Accenture and Microsoft, for example, are working together on a blockchain-driven digital ID system. This is designed to provide proof of identity for the estimated 1.1 billion people globally who have no official documents, limiting access to funds, healthcare and education.[2]

Public service agencies around the world are also investigating blockchain as a way to improve their services and performance. Countries as diverse as Sweden, Honduras and the Republic of Georgia have been exploring the use of blockchain for land registry purposes. Blockchain has emerged at the same time as many countries seek to launch or refine their electronic health record systems, with both Estonia and the U.A.E. looking to use the technology for health record authentication.



One example that is particularly relevant for revenue agencies is identity. Being able to share accurate, consistent and timely identity information offers potentially significant value to taxpayers, government and industry, enhancing their ability to cooperate securely and transparently. The Chinese city, Foshan, is testing blockchain's usefulness in providing a more efficient way for residents to authenticate their identities and official information without filling out forms each time they need a new government service.[3]

In Japan, the government is testing a blockchain-powered platform for processing government tenders.[4] In the Netherlands, the tax authorities are planning to pilot the use of blockchain for payroll taxes and benefits, creating the possibility of far more efficient and accurate processes for both employers and the revenue agency.

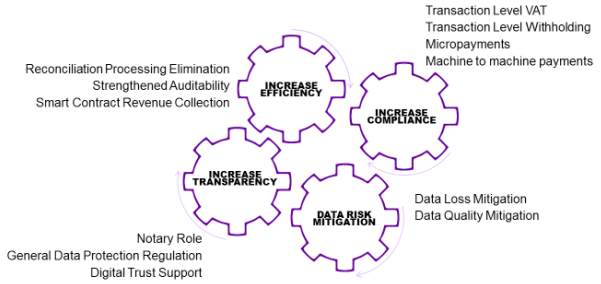


Benefits for revenue agencies

Revenue agencies can use blockchain to decrease reconciliation and audit costs, while increasing compliance accuracy. It provides a new level of data immutability and resilience, as well as a new auditable view of information. This can serve to promote greater trust while supporting better digital services.

However, blockchain needs more time to mature and there are several key challenges agencies need to overcome before it can be adopted at scale. These include establishing standards for interconnecting ledgers, managing voluntary vs. universal participation and privacy issues – not to mention the cost and complexity of implementation.

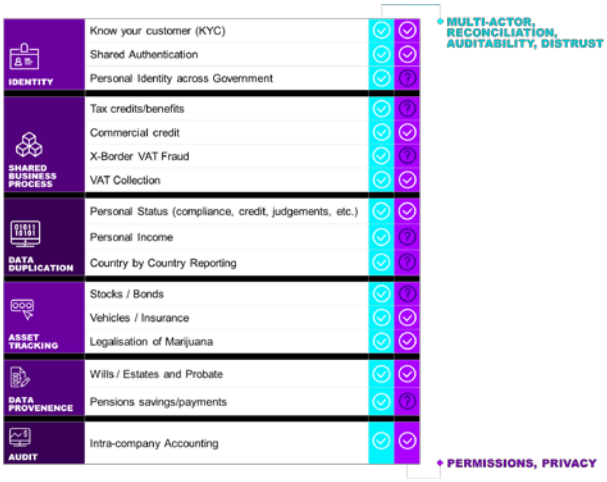
SO WHAT FOR REVENUE AGENCIES?



In the past year, revenue agencies have begun to get a clearer idea of the role they could play as a neutral third party to add credibility and trust to blockchain governance. The adoption of blockchain will involve setting governance structures within the private sector – for example, across financial institutions and banks. But encouraging a range of stakeholders who are often also competitors to participate in the blockchain ecosystem is challenging. Some level of trust is required to ensure that investment in distributed ledger technology will be matched by the other desired participants. Government agencies can be the catalyst around which such trust and understanding can be built.

Revenue agencies, in particular, should seek to be involved in these governance exchanges in order to ensure that the standards being created take agency requirements into account, and make the most of the opportunities offered by revenue data.

BLOCKCHAIN USE CASE CHECKLIST



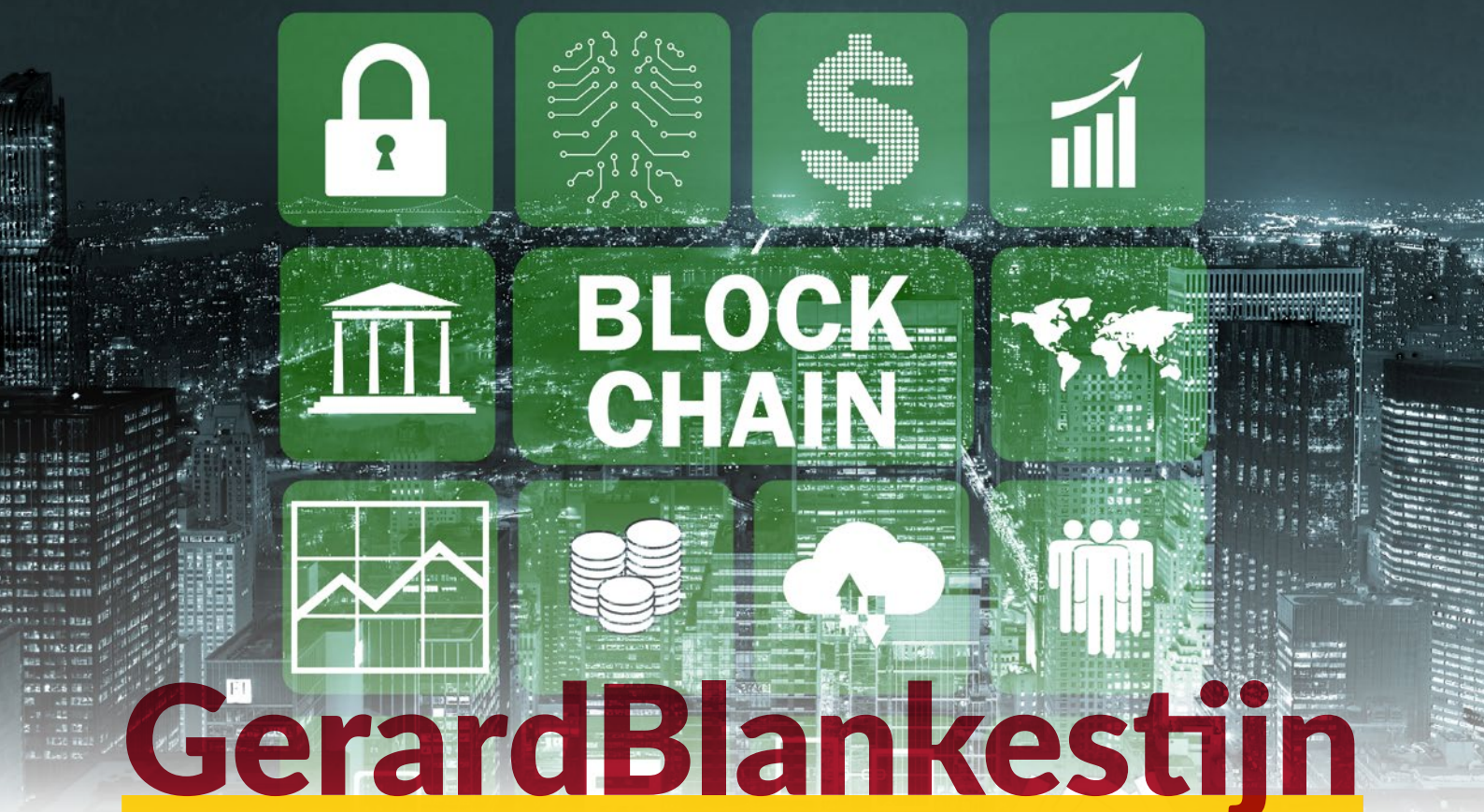
Conclusion

Blockchain has many variants and applications - it is not a one-size-fits-all technology. Successful implementation involves not only overcoming some new challenges, but also successfully tailoring the technology to each application. For most revenue agencies, internal blockchain capabilities need to be strengthened and it needs to become a key part of the innovation agenda.

At the same time, agencies can learn a great deal from engaging with ecosystems, including an understanding of the role they need to play in the co-ordination and governance of significant blockchain systems. The increasing adoption of blockchain is inevitable. It will take time to become pervasive, but the potential benefits are too strong to be ignored.

Now is the time for revenue agencies to increase both experimentation and external collaboration. Through these initiatives, they can keep pace with the private sector, learn what works in practice, and define new operating models for high-performance tax administration in the age of blockchain.

[1] https://azure.microsoft.com/en-au/solutions/blockchain/; https://www.ibm.com/blogs/blockchain/2017/08/your-guide-to-the-ibm-blockchain-platform-announcement/
[2] https://www.reuters.com/article/us-microsoft-accenture-digitalid/accenture-microsoft-team-up-on-blockchain-based-digital-id-network-idUSKBN19A22B
[3] https://dcebrief.com/chinese-city-launches-blockchain-based-public-services-program/
[4] https://www.cryptocoinsnews.com/japan-will-test-government-tenders-blockchain-year/



GerardBlankestijn

Blockchain – new roles and ways of interaction *A proof of concept on payroll tax*

Gerard Blankestijn is the National Director of Benefits Department of the Netherlands Tax and Customs Administration

Introduction

Blockchain has become a 'trending topic' in the field of innovation. It is even heralded by many as the single biggest breakthrough since the arrival of the internet. Blockchain, a 'distributed ledger technology', is a decentralized database and offers ways to deal more efficiently with identification, permission for data exchange and transactions. Fraud is impossible. Every transaction is checked by multiple computers. Blockchain is still in an early stage but the expectations are high. Financial institutions, auditors and notary offices all run pilots using blockchain. The Netherlands Tax and Customs Administration also jumps into this global development that not only brings challenges, but also numerous opportunities in tax administration.

Understanding blockchain

In order to understand the potential of blockchain for tax administrations the first port of call should be to gain an understanding what makes this technology so special. Blockchain is the data structure behind the bitcoin network. It is best to compare the technology with a data ledger. Data ledgers are at the base of many of the networks we trust on a daily basis and are nothing but lists in which all data mutations are kept together. Money, for example, is mainly found in databases these days: data ledgers at banks in which all balances and transactions are kept.

The main and innovative thing about blockchain is that one can do business without a so-called "trusted third party" such as the bank or the notary. One can safeguard authenticity and reliability by using the blockchain as a so called "single source of truth". This allows universities to issue diplomas and certificates by using the blockchain for example.

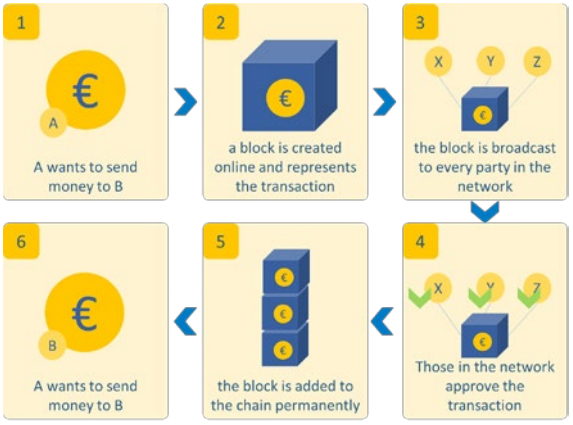
It is expected that blockchain technology will eventually increase the efficiency and security of data exchange in almost all sectors. One can think of direct transactions in e-commerce and financial services, in the energy sector for locally generated electricity registration and distribution or for recording medical data (over which the patient himself gets more control also). Blockchain technology thus facilitates the rise of the sharing economy and the "internet of things". Blockchain is considered to be a disruptive technology. The disruptive character can increase even further if the technology is combined with other new technologies.

It is not necessary that all data involved in a transaction process is recorded in the blockchain. The transaction itself however is. By consulting the blockchain, the recorded data may be utilized or verified by other parties. From this point of view blockchain is often referred to as the "Trust Machine".

Most services and software we use rely on databases that work as data ledgers. Banks, the land registry and notaries are all so-called "trusted third parties" that have a registration function. Blockchain technology allows for direct transactions ("peer-to-peer") without the intervention of these trusted third parties and all this can be done via the internet, without borders.

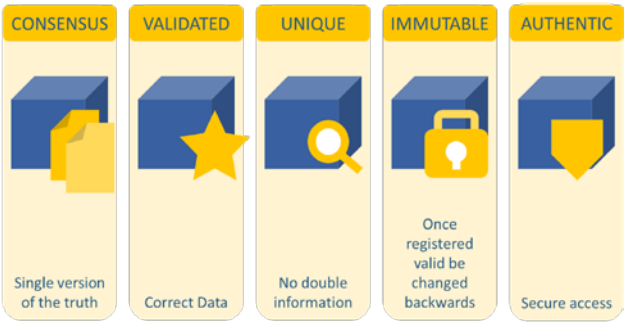
Other registers function in a similar way. Identity data for example is carefully and securely kept in databases. Other examples of data stored in databases are medical records and business data at the chamber of commerce. Every bit of data is in fact a part of a database that is maintained by a designated authority and so able to get a place in the blockchain.

A major breakthrough of blockchain technology is that thanks to "distributed trust" data cannot be copied, but that asset ownership can be transferred digitally in a reliable way. A participant in the network can make copies of all transactions and data in the database all he wants, but in order to be able to use the data he must show that he owns the data and received the data from someone else according to the rules. Blockchain technology makes digital data to become unique and tamper-proof, increasing its value.



Apart from crypto-currency, like Bitcoin, the first industry where the blockchain revolution will break through is the financial sector. All kinds of financial services and products are being investigated whether the blockchain can provide improved efficiency or increased reliability. There are now fully functioning crowd funding systems, digital notaries and solutions for financial products like derivatives. In some systems, the decentralized character of blockchain is completely taken over and there is no owner or company to provide the service itself. In these cases, the service is the result of people cooperating in the network. Currently, almost all institutions and companies in the financial sector are exploring the possibilities of blockchain.

The uses of blockchain technology are endless: it will make it easier for immigrants to send money back to countries where access to financial institutions is limited; financial fraud will be significantly reduced as every transaction will be recorded on a public and distributed ledger which will be accessible by anyone who has an internet connection. A central question is: will governments, financial and legal institutions and – most important for us - tax administrations embrace blockchain?



Relevance to tax administrations

The rise of blockchain technology means that tax administrations will have to find a way to deal with this disruptive development. This raises questions with regard to the capability of tax administrations to collect taxes with legislation that is not (yet) adapted to the full dynamics of blockchain technology. And even when legislation is on our side, how do we file and collect taxes based on this new paradigm? A shift in strategy seems inevitable, from certainty of data and transactions afterwards by control, to certainty of data and transactions upfront and by dynamic monitoring. The lists of blockchain-related questions keeps on growing for tax administrations but instead of waiting for these questions to be answered.

On the other hand, in the context of the issues facing today's tax administrations, the potential advantages of employing blockchain technology are worth exploring. The above mentioned advantages of blockchain technology offer tax administrations the possibility to benefit from

blockchain themselves. Blockchain, offering transparency and confidentiality, could equip tax administrations with the necessary tools to tackle the problems of global tax compliance, as it proved an unbiased tool especially designed for uploading and sharing sensitive information between unrelated and untrusting parties. Blockchain technology might also reduce reliance on the taxpayer user-generated reports by providing information fed from external independent data sources.

NTCA Proof of Concept: Payroll Tax

Inspired by blockchain the Netherlands Tax and Customs Administration created a design for a new payroll tax platform based on a centric role for the employers and employees as the main source of data.

Proof of concept
NOUN
[mass noun]

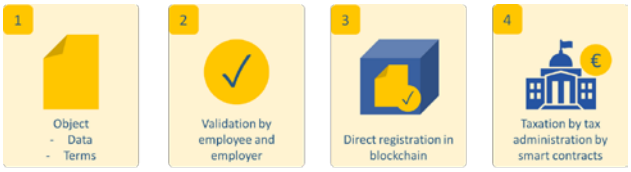
Evidence, typically deriving from an experiment or pilot project, which demonstrates that a design concept, business proposal, etc. is feasible.
'the company was awarded the contract on the strength of evaluation, proof of concept, and budget'

[as modifier] 'proof of concept trials'
[count noun] 'as a proof of concept, he set up the system to monitor Twitter for specific hashtags'

Source: Oxford Dictionary

Like many other countries, payroll systems are fully digitalised, but not centralised in the Netherlands. Multiple regulatory agencies, each collect duplicate data and store it centrally. Separate registrars are maintained, presenting an opportunity for more efficiency for a distributed ledger. In the Dutch Proof of Concept (PoC) of the application of blockchain technology to payroll tax, the employer (acting as a government agent, by withholding taxes from the payments to the employee's earnings) is removed as an intermediary by embedding smart contracts. These smart contracts consist of agreements that execute themselves autonomously without third party.

In the PoC the employer and employee come to an agreement based on data and terms. When both parties validate the agreement, it will be registered in a decentralised blockchain in which the tax administration is present. When the employer makes the gross payment into the system it would be the end of the process for him. Within the system tax data is matched with the payment using smart contract technology to calculate the correct tax and social security due and only the net payment goes to the employee, whilst the government automatically collects the tax. As a result, transaction time and costs are greatly reduced, as well as opportunity for employers to use payroll taxes to ease their cash-flow problems is removed. Because of the use of smart contracts the transactions is also considered to be very reliable.



Conclusion

THE TIME TO MOVE IS NOW!

This article briefly described the potential of blockchain technology for tax administrations. It must be acknowledged that the rise of blockchain is not only causing challenges, but also creates numerous opportunities for tax administrations. Challenges like inadequate legislation can be overcome, so it's time to focus on the advantages blockchain offers tax administrations. Although still in an early stage, the NTCA's Proof of Concept proves blockchain technology offers potential. It will no doubt change the way of doing transactions and data storage and to us, tax administrators, to await that change or to embrace it and embark on a journey towards a future-proof tax administration.

EelcovanderEnden

Digital transformation at tax administrations - Could Blockchain technology transform tax?

Eelco van der Enden, Kuralay Baisalbayeva** and Christian Lieverse*** are from PwC Netherlands*

Introduction

The international community has sharpened its focus on the digital transformation of tax infrastructures. The reason is that tax has received more public and political attention than ever before. Effective tax systems are crucial for ensuring sustainable sources of government revenue and socio-economic cohesion of society. On the other side, there is an emerging need for tax administrations themselves to leverage on the potential of new technologies – Blockchain, Artificial Intelligence, augmented reality, Internet of Things and other – which are transforming many businesses today.

Technology is a big driver in how tax administrations deal with the changing compliance landscape and in improving relationships between tax administrations and taxpayers. Technology could enable efficient, transparent tax systems that build trust in the fairness of the tax system. Trust by civil society (individuals, small and medium enterprises and large business alike) in the tax system leads to more voluntary compliant behaviour. If we look for example at the Blockchain technology, it has the ability to deliver real-time, reliable information to a wide group of people, and create a system where both taxpayers and tax administrations have equal confidence in the veracity of data. Blockchain is not a comprehensive solution in itself, but it can definitely help to build trust in the tax system. However, Blockchain at its present development is still in its infancy and its applicability for tax administrations will have to be tested first.

We should never forget that technology by itself is not a solution. It is an enabler for a solution in a broader context. Digital transformation and technology needs to be supported by a clear strategy, sound tax policy, proper infrastructure and qualified staff. In this paper we focus on the main obstacles to digital transformation at tax administrations, discuss Blockchain and its potential and conclude with the key aspects critical for a successful digital transformation process.

Key obstacles to a successful completion of digital transformation

New technologies will allow tax administrations to keep pace with global megatrends, respond to a changing environment, guarantee essential security, and significantly simplify tax compliance. Technology solutions enable better compliance at lower costs, creating more "plug and play" arrangements, pre-filled tax forms, 'by default' tax payments, and easy-to-use digital services. With all the potential benefits of technology in mind, digital transformation also poses challenges for tax administrations to use their full potential. Below we discuss four challenges that loom especially large in the current tax environment.

DESIGN OF A CLEAR VISION AND STRATEGIC FOCUS

Digital transformation projects require a clear vision, sustained effort and a coherent, actionable strategy. A tax administration's vision yields an understanding of what the organisation intends to achieve and its strategy is a translation of how the organisation intends to realise its vision[1] taking stakeholder interests into account (tax payer centric, staff, society). The lack of a clearly articulated vision and strategy for an inclusive tax compliance strategy for tax administrations may imply that activities are determined on an ad-hoc basis, with resources being misaligned with priorities. The OECD's Forum on Tax Administration (FTA) has suggested that donor tax administrations develop a strategy first before investing significant resources in capacity building activities in developing countries.[2] A number of tax administrations have already unleashed their blueprints with long-term strategic goals what they aim to achieve in five, ten or more years.[3] This helps organisations to stay focused on the current key priorities, monitor projects, communicate effectively on the ongoing progress to a wide group of stakeholders, thus enhancing public trust in the tax system and encouraging accountability.

TAX TECHNOLOGY STRATEGY

For the digital transformation, it is especially important to design a specific tax technology strategy. People tend to forget that technology is a main enabler, a tool to modernise the tax system, but not a 'mean by itself' to remedy deficiencies or problems within the system. To leverage on new technologies to the fullest, the strategy behind needs to be aligned with an overall vision and strategic focus of tax administrations. This includes aligning with the business ecosystem and compliance enforcement strategies for each taxpayer segment. For large taxpayers this could be a co-operative compliance environment with the elements of self-assessment based on a functioning Tax Control Framework and enabled by technology.[4] The small and medium sized enterprise segment (SMEs) for example is quite large and cannot be dealt with on a one-to-one basis. However, they are of great importance for the countries' economies. Therefore tax administrations are endeavouring to ease their compliance burden and improve the operating environment. For that, the concept of 'Tax compliance by design' has been developed by the OECD's FTA.[5] It includes the different elements of technology on which modern commerce relies and helps to design a system that delivers a seamless, secure and real-time flow of accurate tax information and tax payments.

A clearly articulated tax strategy for each taxpayer segment would enable tax administrations to look for the right technological tools and prioritise solutions – starting with short-term fixes and then designing a long-term sustainable solution supporting the overall tax vision and strategy.

CHANGE MANAGEMENT CAPABILITIES

Tax administrations organisation lies at the heart of the digital transformation. The increasing demand for digitalization and the extent to which it draws on scarce resources and skills, compels tax administrations to look for people with new competences. Good tax professionals and legal specialists are not per sé gifted change managers with a holistic view on auditing, compliance enforcement strategies, change management and technological innovation. On the other hand, tax administration staff needs to be trained to maintain and deploy new technologies and the system. Without changing compliance strategies and culture, involving relevant training to people within the organization transformation efforts will not succeed.

PERFORMANCE MEASUREMENT SYSTEM

The importance of sound performance measurement systems to assist and inform decision making is quite important. This includes setting realistic deadlines, defining short-term and long-term objectives, designing key performance indicators for ongoing monitoring and evaluation. An evidence-based approach to project management will help tax administrations focus their resources on investments that are likely to yield the greatest results and effectively communicate the project results to all stakeholders.

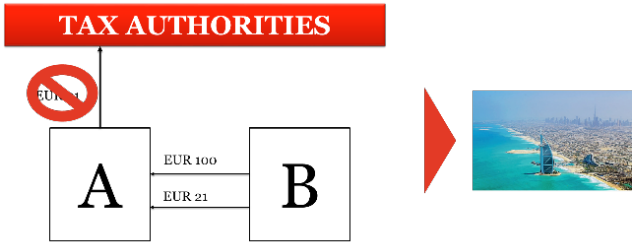
The common challenges outlined above are faced by tax administrations in their digital transformation efforts. Now let's focus on Blockchain as one of the examples of new technologies which is acquiring increased attention from many governments today. A number of them has been experimenting with Blockchain in various fields, however to our knowledge none have implemented the technology for tax yet.[6] Below we discuss some important aspects for consideration in digital transformation involving Blockchain technology.

A closer look at the Blockchain technology

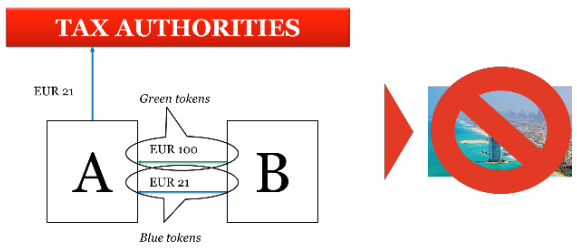
There is a growing excitement around Blockchain and its potential to transform the tax system in particular. It could have a significant impact on tax – the way people pay tax and tax administrations collect revenue. It creates a system where tax payments can be integrated within the business operations and become a by-product of each transaction. For example, Blockchain can significantly modernise the current VAT system. Filing tax returns is a burdensome process, which costs a lot of time and effort for taxpayers. Companies file their VAT returns on a monthly or quarterly basis. It is a manual process, carried out by individuals. These individuals could make mistakes or worse – commit fraud. Applying Blockchain will prevent this from happening as it will cut out the middle man, which is in this case the person filing a tax return and making the tax payment. When companies are performing transactions, the required amount of VAT due can be transferred to the tax authorities immediately by making use of 'smart contracts', meaning that the burden of tax compliance for businesses will be reduced significantly. This also creates a more effective and real-time VAT compliance process, leading to a more efficient collection of VAT for tax administrations.

The loss of EUR 193 billion per year in the EU is caused by a company paying an amount including VAT to its supplier and that supplier abusing the option to retain and not to pay this VAT to the tax authorities.

To solve this, Blockchain system makes money smart by labeling it. Money is converted into so-called tokens with a either blue colour or a green colour. The blue coloured VAT due is effectively held in escrow in the blockchain and cannot be used by the supplier.



Blockchain is a possible enabler and there are exciting possibilities ahead. However, it also brings challenges. Blockchain is currently seen as a true hype. The development of Blockchain is a very important one as it will need to prove its level of maturity. Actual Blockchain implementations in tax are not expected to happen within the next year or two as there are some issues that need to be resolved. Two examples: first security and secondly data protection regulations. So far, no one has been able to hack the Blockchain itself but what has been put on the Blockchain has been 'stolen' multiple times already (e.g. Bitcoins). Information on the Blockchain is encrypted and written in stone, but how do we make sure that this information will not get decrypted by hackers? As per May 2018, the EU general data protection regulation (GDPR) will be implemented, which contains the 'right to be forgotten', the data controller will get the right to erase his/her personal data and cease further dissemination of the data.[7] The big question is: how can this be done when information stored on the Blockchain is written in stone?



It is however important for tax administrations to start exploring this technology and its potential impact on the own organization. We advise administrations to design use cases, develop Proof of Concepts and run pilots to assess the potential impact of the technology. It is currently hard to tell whether or not Blockchain is going to disrupt existing business models, but we are certain that it is going to transform them. To discover the full potential of the Blockchain technology, multi-stakeholder involvement and cooperation of all stakeholders along the journey of exploration, experimentation and adoption will be essential.

General recommendations for a successful digital transformation

The way a transformation project is organised influences the achievement of meaningful outcomes and efficiencies. Digital transformation is not only about implementing new technologies within the tax system. It involves a broader transformation agenda including various important key components.

Key components of a successful digital transformation

Source: PwC
Compliance Strategy

Strategy entails the development of particular compliance methodologies, as well as re-organisation of units around key taxpayers segments. Having a clear vision on a compliance management strategy towards large businesses, SMEs and individuals is fundamental for tax administrations and taxpayers. Strategic compliance management help prioritising oversight activities and approaches over others and effectively coordinating scarce resources in the service of chosen priorities. Properly designed key performance indicators (KPIs) tied to the compliance strategy lay the basis for ongoing monitoring an guidance of the capacity building efforts without losing the main strategic focus.

LEGISLATIVE FRAMEWORK

An appropriate legal framework for the digital transformation may require new tax laws and new tax procedure laws that modernise and harmonise administrative and procedural provisions across all major taxes. Given the pace of new technologies being exploited in tax, it is critical to address the implications of the technologies on the current tax system. The legal system needs to grapple with confidentiality, privacy, user terms and conditions, liability on contracts between tax administrations and taxpayers, burden of proof and many other issues.[8]

OPERATIONAL FRAMEWORK

The operational framework presents a blueprint for the tax administration's core processes and compliance procedures. This includes design of a governance model, organisational structure, guidelines for operational processes aiming to achieve the overall compliance strategy, management reporting, roles and responsibilities within the organisation. There is no universal operational framework fit for all tax administrations. The framework should be designed and implemented in a flexible way to take into account different country contexts, given cultural peculiarities, social, political and economic opportunities, the organisation's technological maturity, as well as changing global tax environment.

TAX TECHNOLOGY AND INFRASTRUCTURE

The successful application of proper technological solutions will determine the future state of tax administrations in managing compliance risks and rising revenues. In order to realise the benefits of tax technologies to the fullest, it is advisable for tax administrations to start with the Tax Technology Strategy which guides the direction for all innovations and provide a clear picture of the end-state design of a tax technology infrastructure at the tax administration. New technology has its own set of requirements, including a suitable physical environment in which to be installed, continuous support to run it in the day-to-day environment, ongoing maintenance and license costs, new security requirements, some sort of IT centre whose job is managing these activities as well as monitoring and planning for future improvements, etc.[9]

CHANGE MANAGEMENT / TRAINING & EDUCATION

The important step in the digital transformation is the growth and extension of individual skills, abilities and competencies. This involves sufficient training of staff on the new operational blueprint and tax technologies and acquiring new skills on how to use them effectively. Without changing the culture, other efforts are likely to be short-sided and ineffectual. The compliance strategy needs to be aligned with the values and behaviour of employees who are responsible for tax assessment, auditing, revenue collections and management. It is also important to structure the 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 are transparent and functional.

PERFORMANCE MEASUREMENT

The pressure to show quantifiable results and achievements over time tends tax administrations to implement monitoring and performance measurement methodologies for the project evaluation. Performance measurement reports present a feasible way of maintaining buy-in, ongoing support and strategic guidance from government and politicians. They also enhance transparency of processes and accountability of the parties responsible for the transformation and capacity building projects towards key stakeholders and general public. Performance measurement involves setting KPIs and periodically assessing of the relevance, progress, efficiency and impact of activities with respect to the project objectives. The tangible outcome of the monitoring and progress measurement activities could be presented in periodic (e.g. semi-annual or annual) progress reports to key stakeholders.

Conclusions

The importance of digital transformation at tax administrations will continue to rise in the next coming years. Tax administrations and businesses need to adopt to the new realities mainly shaped by emerging technologies. Blockchain is one of them. Technology is a key enabler to modernise the current tax system. However, it also poses challenges. In order to effectively leverage on new technology solutions, the overall digital transformation agenda should comprise of at least six key components – compliance strategy, legislative

framework, operational framework, tax technology and infrastructure, change management and performance measurement. Without a balanced and holistic approach considering all the areas, tax administrations will find it difficult to lay the foundation needed to effectively implement and maintain the digital transformation.

* LL.M., and Partner and Tax Administration Consulting Leader Global, PwC Netherlands. The author can be contacted at eelco.van.der.enden@pwc.com.
** LL.M. and Tax Administration Consulting Senior Consultant, PwC Netherlands The author can be contacted at kuralay.baisalbayeva@pwc.com.
*** Manager, Tax Reporting and Strategy, PwC Netherlands The author can be contacted at christian.lieverse@pwc.com.
This article only reflects the personal opinion of the authors based on their research and practical experience and does not necessarily express the views of PwC.

[1] Fowler A. & Ubels J. (2010) The Multi-faceted Nature of Capacity: Two Leading Frameworks, Capacity Development in Practice, Earthscan, 2010, p.14.
[2] OECD (2016) Tax Administrations and Capacity Building. A collective challenge, p.37.
[3] Few examples are The State Administration of Taxation in China Annual Report 2015, South African Revenue Service Strategic Plan 2016/17 – 2020/21, The Inland Revenue of New Zealand report on Multinational Enterprises Compliance Focus 2016 and other.
[4] Enden E. vd E. & Baisalbayeva K. (2016) The relevance and sustainability of co-operative compliance models for tax in African countries. African Tax Research Network (ATRN) working paper 13, May 2016.
[5] OECD (2014) Tax Compliance by Design, Achieving Improved SME Tax Compliance by Adopting a System Perspective, 23 October 2014.
[6] The First Government To Secure Land Titles On The Bitcoin Blockchain Expands Project, Forbes, 7 February 2017 https://www.forbes.com/sites/laurashin/2017/02/07/the-first-government-to-secure-land-titles-on-the-bitcoin-blockchain-expands-project/#2708570a4dcd
China to Start Using Blockchain to Collect Taxes and Send Invoices, https://futurism.com/china-to-start-using-blockchain-to-collect-taxes-and-send-invoices/
[7] The EU General Data Protection Regulation (GDPR) http://www.eugdpr.org/
[8] PwC (2017) Tax Analytics Artificial Intelligence and Machine Learning – Level 5, https://www.pwc.com/us/en/tax-services/assets/artificial-intelligence-and-machine-learning-final1.pdf
[9] IMF (2017) Use of Technology in Tax Administrations 1: Developing an Information Technology Strategic Plan (ITSP), Technical Notes and Manuals, https://www.imf.org/~/media/Files/Publications/TNM/2017/tnm1701.ashx

THE CHALLENGES OF A DIGITALISED ECONOMY AND NEW SKILFUL WORKFORCES

IOTA
Intra-European Organisation
of Tax Administrations

WWW.IOTA-TAX.ORG

Eduard Müller

Digitalisation – Austria's ambitions in developing a skilful workforce in times of digital transformation

Eduard Müller is the Director General of the Austrian Tax and Customs Administration

Introduction

Contemporary tax administrations face several challenges. Some are caused by increasing economic complexity characterised by the globalisation, digitalisation, speed and scientification of tax law. Another challenge is the polarisation of taxpayers' behaviour, with well-organised tax crime on one side and corporate social responsibility on the other. Furthermore, tax administrations must simultaneously deal with analogue and digital society, with regard to customers and employees. A final challenge is managing the dissymmetry in tax collection, whereby increasing tasks must be fulfilled with limited human resources and within the context that the average age of staff is 50 years and not all of them are digital natives.

Developments

During recent decades, the Austrian Tax and Customs Administration has experienced organisational and cultural changes. A part of our staff was initially socialised in a bureaucratic tax administration with strict hierarchical structures and binding regulations: a time of lawyers. As a result of a subsequent large-scale reorganisation, the Austrian Tax and Customs Administration was governed by the principles of new public management by which issues such as service orientation and lean management promised administration at a glance: a time of MBAs. The implementation of new public management approaches was followed by the principle of good public governance with the involvement of civil society as part of an open and cooperative state: a time of political experts. Now, we are preparing for smart government, such as digitally-connected governmental actions: the time of ICT experts.

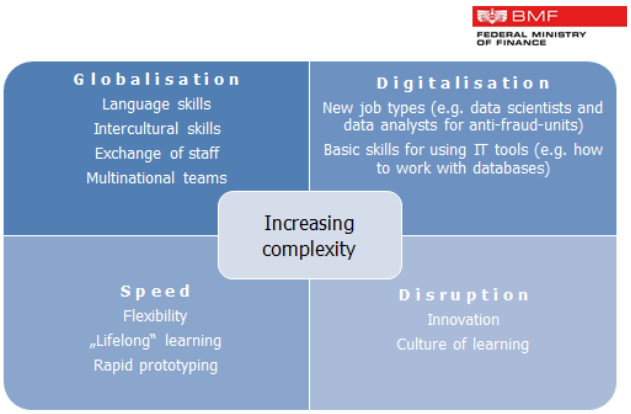
More or less simultaneously, considerable digital changes have taken place. At the beginning was Web 1.0, with mainframe computers and an internet of systems. Then the World Wide Web developed into an internet of people which was highly influenced by social media (Web 2.0). Whereas social media is still important, big and open data have become a key issue that we need to address (Web 3.0). And today, the World Wide Web is developing into an internet of things and services (Web 4.0).

Increasing complexity – globalisation, digitalisation, speed and disruption

How can a tax administration deal with the increasing complexity in today's global environment? Our solution is qualification. Qualification is not only limited to the training of language/intercultural skills but also emphasises training on the job. For this reason, mobility is highly promoted, on a national and an international level, for example within the Fiscalis program.

The rapid developments in digitalisation require new jobs. In the past, we focused on the education of tax auditors. Today, we also look for data scientists, data analysts and others for predictive analytics, risk management, the handling of big data and the support of our anti-fraud units. Digitalisation leads to the need both for IT experts and for improving the general level of IT skills of all tax administration staff.

As our environment is changing quickly, life-long learning is obligatory for all of our employees. In sum, these developments require a special culture within the organisation. Thus, we try to encourage our staff to use new ways even if they sometimes fail since without a trial-and-error culture, we cannot expect the necessary innovation in our organisation.



Polarisation

Although we are confronted with digitalisation in many areas of our daily lives, we must not forget that our society is still analogue and digital at the same time. Consequently, we need an appropriate multi-channel strategy to deal with the whole spectrum of our taxpayers. Moreover, we require qualified employees who are able to deal with taxpayers' demands in different ways – digitally and in analogue. We also must train our employees in supporting "analogue taxpayers" to move towards digital self-services comparable to the support for self-check-in at airports.

A further element of polarisation is the fact that we are dealing with both honest taxpayers (paying their taxes in a fair and transparent way) and fraudsters in organised crime.

The solution of the Austrian Tax and Customs Administration is education and special qualification of financial police as well as tax auditors, compliance managers and consultants. A qualification that allows them to find their way in the digital world.

Scientification of tax law

The increasing complexity of national tax law raises tax administrations' demand for experts with exceptional knowledge of tax law. In Austria, approximately 10% of tax-administration employees hold an academic degree whereas tax advisers and tax lawyers include a considerable number of highly-specialised academics. Thus it is necessary to raise the level of expertise within the administration to tackle the challenges from the complexity of tax law. The Austrian Tax and Customs Administration has intensified its co-operation with universities in this regard.

As a consequence of globalisation, acting with different legal systems has increasingly become part of our daily work. Similarly increasing is the influence of international initiatives such as BEPS and the Automatic Exchange of Information. To address these new tasks, we offer our

staff additional qualifications in language skills, IT skills and special training on the application of international tax law.

For the above reasons, the Austrian Tax and Customs Administration has adjusted all of its job announcements. Our competence management thus includes the following four categories of requirements:

- education and experience
- technical and managerial knowledge
- solution orientation
- personnel requirements

Dissymmetry in tax collection

Dissymmetry in tax collection means that administrations must deal with a permanent increase in tasks while resources remain limited. That is definitely the most challenging development we have to handle.

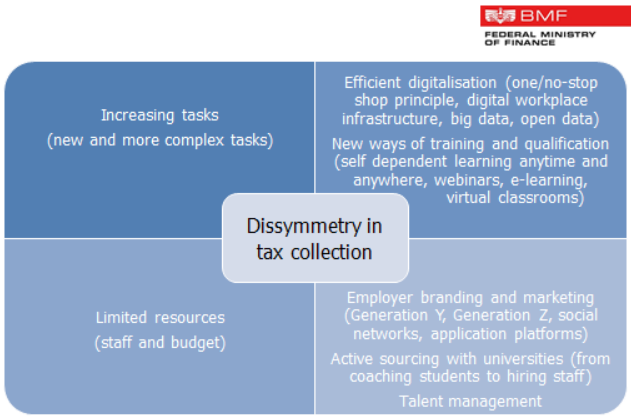
One possible method of dealing with this dissymmetry is via consequent application of digitalisation. Key issues in this area include the extension of one or no-stop -shop solutions, the implementation of digital workplaces, the handling of big data, and the use of business intelligence and predictive analytics.

The second possibility refers to new opportunities of learning and qualification. By our offering tools such as self-dependent learning, webinars or virtual classrooms, a broad range of staff members can be reached in a cost-effective manner. Participants are free to decide when and where they gain new knowledge. They are more flexible in terms of time; furthermore, the new tools help save travelling time and related expenses.

Although these tools might not be suited for all types of knowledge transfer, they contribute considerably to enlarging our learning possibilities.

Another pillar is the recruiting of new employees who are able to deal with both contemporary and future digital challenges. But we must bear in mind that the new, so-called "Generation Y" and "Generation Z" have different expectations towards work than other generations. As a result, we must meet these generations in their familiar environments; preferred social networks and platforms. And to win the competition for hiring new talent, we cooperate with universities via an active sourcing program. In this manner, university academics help us connect with students. In turn, we support universities and their students in coaching them, for example, in Masters theses. Moreover, we offer students jobs as trainees, and if they prove themselves, we suggest they apply for employment in our administration.

Our talent management defines clear career paths: job families with specified competencies and fixed training requirements. In an annual HR conference, which is organised in every tax office, all employees' careers are assessed.



Conclusion

Tax administrations are confronted with rapid and considerable changes in their environments; these developments have economic, technical and social causes. Therefore, we have to question how tax administrations can most effectively react to these developments. As there is no doubt that digitalisation will significantly change processes in many areas influencing the economy and people, we have to take appropriate measures. That begins by providing current staff with new types of skills to facilitate working in a digital and globalised world. Additionally, we must create new job profiles and hire staff with new knowledge. To handle the complexity in taxation, we must increase the expertise of our staff and intensify co-operations with universities. At the same time, we must be aware that future generations have different expectations about their jobs than previous generations. Considering that tax administrations will be in competition with the private sector for talent from Generation Y and Generation Z, we need to prepare our administrations to be attractive employers offering compelling career perspectives.

QinfengWang

Preparing professional workforce for the challenges of digital economy

Qinfeng Wang is the Deputy Commissioner of the State Administration of Taxation of China

Introduction

China is integrating itself into the trend of international tax reform and restructuring its domestic tax policies to cater for its status as the second largest economy in the world.

Apart from addressing the challenges imposed by the digital economy, human resource is indispensable in the process of tax reform and organization restructuring. During these years, the State Administration of Taxation has launched several programs oriented to different levels of tax officials for them to grow. "Elite Figures of Taxation for the 21st Century Program", which is a multi-dimensional and comprehensive training program targeting young tax officials elected from 800,000 ones in China, aimed at enhancing their leadership. The Deputy Commissioner of SAT is willing to share the information of the program and also other experience of China's tax in developing a skillful workforce for 21st Century Tax Administrations.

Solution

At present, the digital economy represented by internet enterprises is surging. It's drastically changing our lifestyle and mode of production and quickly giving rise to the internet IT industry. This new trend serves as a variable, which injects new driving power to the world economy, and also challenges the existing international tax rules formed on the basis of traditional economy. New topics on international taxation cooperation and co-governance come along with the fast development of digital economy.

The State Administration of Taxation of China (SAT) adheres to the strategy of "Taxation empowered by human resources", and attaches great importance to the work force fostering system and training programs. We aim at giving more opportunities to different levels of tax officials, fostering elite figures, making the most of the expertise of both policy making and practical operation officials. Tax officials with different expertise

support and complement with each other, withstand the challenge of digital economy and contribute to the modernization of taxation.

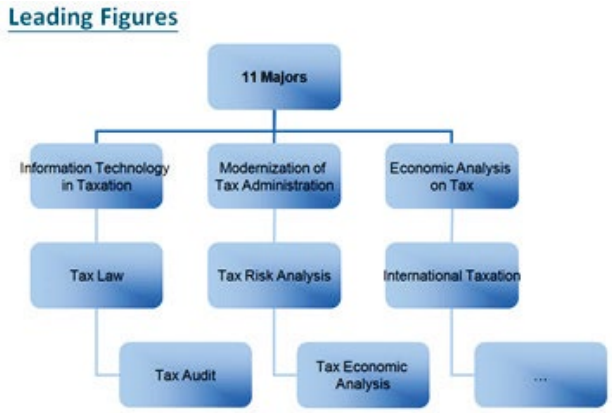
WE HAVE MAINLY DONE OUR WORK IN THE FOLLOWING 4 ASPECTS:

Firstly, we adopted the "taxation empowered by human resources" as the leading strategy. The people-oriented strategy is deeply rooted in the traditional Chinese culture. Dating back 2,500 years, Confucius, one of the greatest ideologists and masterminds in China initiated the "people-oriented administration" and proposed that the governance of a nation relies on a virtuous and competent workforce. 2,100 years ago, China introduced a multi-level recommendation model to select officials for the central government; and the official selection system based on public examination could be traced back to 1,400 years ago.

Four decades of reforming and opening up to the world brought the modern China a large stride forward in every aspect. Competent workforces have become the most important resource in boosting economic and social growth. We are in need of elite figures more than at any time in history. Recently, the Chinese government made a blueprint for fostering China's elite figures. Regarding taxation, SAT is determined to build up an effective, competent and professional workforce.

Secondly, we are driving forward a sound system to provide targeted training to multi-level tax officials. There are nearly 800,000 tax officials in China who widely spread over 5 levels of tax authorities: the Head Quarters of SAT, plus the provincial, municipal, county and sub-county offices of SAT. The blueprint is to build up a "pyramid-shaped work force" by 2020, which is led by 1000 leading figures, 10,000 experts in tax policies, and 50,000 experts in daily operation. Therefore, the system is well structured and catered for the need of the reformed tax system in China.

Training of the 1,000 leading figures is one of the top priorities of SAT, which are upgraded to the HQ. Up to now, we have selected 547 qualified officials from all levels of tax authorities and fitted them into 11 majors, among which "Information Technology in Taxation", "Modernization of Tax Administration" and "Economic Analysis on Tax" are set up to address the challenges of digital economy. The experts in tax policies and daily operation are selected by provincial and municipal offices through rounds of exams. In 2016, over 2,000 officials in tax policies and 10,000 in daily operation were enrolled in the database of experts.



Thirdly, we enlarge the input into the training programs. The Chinese government has never tightened its budget on training of officials. The inputs generate rich outputs in these years. SAT has guaranteed its official training since the design of its organizational structure. A total of 44 training centers are established on different levels of SAT, and over 3,900 lecturers are recruited, both full and part time ones. Thus, the training programs can be carried on different levels and in different areas.

Besides this, we make detailed and targeted training plans for our officials. Different training programs are provided when they are newly employed, re-assigned, and promoted, namely throughout their careers as tax officials.

The curriculums are constantly revised to make sure they are abreast of the times and economic growth, reflecting the importance of internet, data science, and information technology. We invite trainers both in and out of the tax authority, thus helping to extend the knowledge of the trainers while consolidating their basic skills in taxation. In 2016, SAT held 171 training programs, and trained 12,000 officials.

What's more, SAT has established mechanisms of cooperation with IMF, OECD and tax authorities of multiple jurisdictions. For instance, in 2015, SAT and OECD signed the MOU and built up the OECD-SAT multilateral Taxation Center in China. Every year, the experts of OECD visit the MTC to introduce the advanced idea on international taxation, which largely broadened the vision of the trainees.

Fourthly, we put our learning to good use. We combine training with practice by assigning officials to vital and appropriate positions, to the frontline of tax collection and administration, to support the work in underdeveloped areas, and to work with the local governments, large state owned enterprises and international organizations for a period of time. By doing so, the officials are able to get use to different working environment, and harness their skills and comprehensive abilities through communication with people who have different backgrounds.

More opportunities are given to the more capable officials. In recent years, China has launched several pivotal tax reforms, including "Business Tax to VAT Reform", "Golden Tax Project", "Internet + Tax Action" and also hosted major events like "the General Assembly of the Forum on Tax Administration". All these reforms and events are implemented by the selected officials, and their hard work in important tax policy making and promoting international tax cooperation, largely supported the development of the tax administration in China. Those who demonstrate extraordinary talents in their work will be promoted first. The officials who are willing to and capable of fulfilling the tasks will be awarded wider platforms in their career.

Conclusion

A Chinese proverb goes like: It takes one year for the wheat to mature, ten years for a tree to flourish, and a hundred years for a people to learn. It's a noble cause for our generation to foster the people, and benefit the upcoming generations. SAT will confront with the digital economy by forging its workforce, and also inject the power of China into the growth of the world tax administration.

China successfully hosted the Belt and Road Forum for International Cooperation in May. In his opening remarks, China's President Xi Jinping said that the human society is in an era of fast development, dramatic change and extensive readjustment, in which countries are in an ever closer relationship with each other. Interaction, interconnection, cooperation and win-win situations will surely become the themes of our times. SAT is willing to deepen the cooperation with the tax authorities of IOTA members to address the challenges which come along with these opportunities, to share experiences and outputs, and to further promote the friendship between us.

Gerli Jõgi

Digitalisation and organisational changes in Estonian Tax and Customs Board

Gerli Jõgi is the Head of Human Resources Development of the Estonian Tax and Customs Board

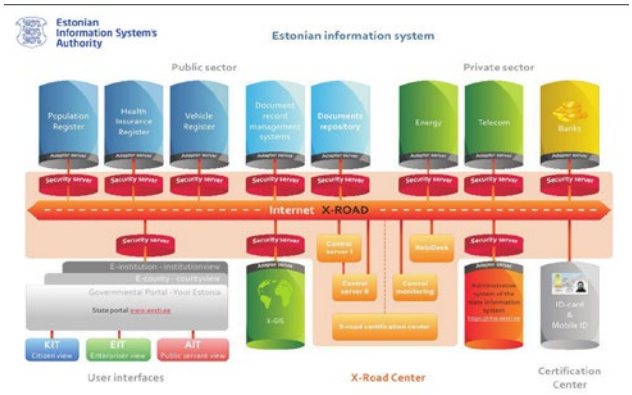
Introduction

Estonia has a digital ecosystem which has offered enormous possibilities for the society and governance of the country. In 2000, a law giving digital signatures equal weight to handwritten ones helped to create an entirely paperless system. Since no one was required to sign with a pen, there was no need for paper documents to pay taxes or open bank accounts.

Estonia as a digital society

Estonia's digital society is built on electronic identity system (e-ID) and a data exchange layer called the X road. Today all residents have ID cards that serve as mandatory identity documents and used for authentication for different digital services and digital signatures.

X road, a form of digital infrastructure is a secure data exchange layer for residents, public institutions, and



private companies. X-Road parties share information to produce services that people can access with their ID card. It is important to note, that X road isn't a single super database, but a technological and organizational environment enabling a secure Internet-based data exchange between information systems.

With the help of e-ID and X road, Estonia offers over 200 e-services to its residents: filing tax returns, establishing a company, submitting a notice of residence, use of land registry, registry of buildings, all business registries and applying for permits, applying for social benefits, e-school, e-prescriptions, e-health, national examination data, employee registration, e-voting, e-banking etc.

Businesses can connect their information systems with X-Road to offer their services, for example e-banking or enable the use ID cards as customer loyalty cards. It also enables citizens and officials to operate via different portals and applications for example ERP systems or document management systems to securely exchange documents with institutions.

Digital processes and e-services at Estonian Tax and Customs Board

ETCB's goal is to support activities and development businesses. Customers are both legal and natural persons. There are 1,400 employees around the country.

Amount of electronically filed tax returns	
VAT Returns	99,3%
Natural Person Income Tax Returns	95,4%
Customs Declarations	99,8%
Corporate Income Tax and Employer Tax Returns	99,0%

Estonian Tax and Customs Board (ETCB) was the first public body that started offering e-services. E-tax and e-customs was set up in 2000. The online system enables 24h/a day use of different tax and customs services for natural as well as legal persons. The system is simple, quick, secure and completely paper free. Almost 100% of tax returns are filed electronically, however filing taxes is just some of the e-services offered.

Due to e-services and of course all processes being digital, ETCB has undergone many changes through the years. Firstly, the number of face-to-face customer contacts have decreased significantly since 2000, hence the number of staff has decreased from 2,450 in 2002 to 1,385 in 2017. From that, administration costs including costs for office space have diminished. As a result, cost of collection ratio has dropped and is now among OECD's best.

Cost of collection ratio

2004	2013
1%	0,4%

Office and service office space

2011	2013
30 000m2	21 000m2

Number of customer contacts in service offices across Estonia

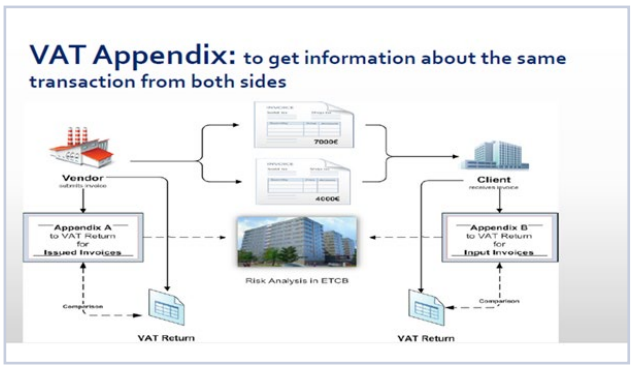
HR statistics

MTA	01.2003	01.2011	01.2012	01.2013	01.2014	01.2015	02.2016	03.2017
Number of employees	2450	1801	1741	1554	1548	1543	1425	1385

Digital processes

In 2016 ETCB introduced a new process called VAT Appendix. All businesses must submit data of all transactions starting from 1000€. This means that ETCB gets data from both parties of a transaction. Data is submitted with the monthly VAT return either through user interface (e-tax IT system) or by machine to machine interface between ETCB IT system and businesses' ERP systems.

Before, a lot of resources went into asking for necessary information from businesses and deliberating on a need to start a tax audit. After the introduction of the VAT Appendix ETCB already has the informational support for risk analysis supplied by the parties of the transaction. Information is already there which makes a decision whether to start an auditing process very quick. This means that ETCB now completes fewer audits and they are conducted much faster. A lot of tax auditors' resources are now dedicated to counselling and consultation for customers to fix their tax returns.



Digital competencies

Over the years, ETCB has developed a clear vision of what kind of competencies are needed to offer e-services. In ETCB, business analysts are the ones who are managing the creation and development of new and existing e-services. For them, knowledge of service design, design thinking and business analysis is vital:

- Envisioning (mind mapping, storytelling, role play, design games etc);
- How to uncover customer needs;
- How do we do it together (people managing the business process, in-house IT and an IT partner);
- How to rethink business processes so that they match customer needs;
- Business analysis and business process modelling;
- Cost-benefit analysis;

- Systems development lifecycle (analysis, design, UX/UI design, implementation, prototyping, testing, installation, evaluation, maintenance);
- Systems development methodology (agile, scrum, waterfall etc);
- Project management;

We have also mapped out specific competencies expected from almost all ETCB staff:

- Knowledge of X-road and movement of data through x road.
- Cyber security and data security
- Basic knowledge of big data and organisational specific data queries, knowledge of analytical possibilities of IT systems.
- How to ask data from customers. It is important to have data in a format that is machine readable as it takes extra time to convert pdfs into machine readable formats.
- Service thinking and e-service thinking. Every person in ETCB offers some kind of service therefore employees need to have a customer-centric point of view and be knowledgeable how customers use e-services.
- Every employee as a process owner is also a partner for in-house business analysts giving the information about the process and service.
- System testing. Whenever a new e-service is created or a current one is developed further, it needs testing and everybody in ETCB is involved in systems testing as everybody needs to give their input for the customers.
- Every employee also needs to act as a change agent to promote e-services to customers. For example promoting the use of machine to machine interface between ETCB IT systems and businesses' ERP systems.

Conclusion

What has changed?

Our aim has been to diminish work that can be done by technology to concentrate on tax morality and growth of future tax base by advising and consulting. Over the years, digitalisation has changed the way we work as many processes have changed or become obsolete. Organisational core competencies are changing. Customer communication and digital competencies have slowly been given priority.

Due to changed processes, organisational structure has become centralised yet very flexible with wide rights for staff to make decisions. Due to obsolete processes, routine jobs have disappeared but new, more complex jobs have been created. Streamlined and digital processes have also enabled to modify pay packages towards market conditions.

MárcioVerdi

Training and development of human talent

Márcio Verdi is the Executive Secretary of the Inter-American Center of Tax Administration (CIAT)

Introduction

This short article introduces the Human Talent Development Programs conducted by the Inter-American Center of Tax Administrations (CIAT) to improve Revenue Administrations (RA) capacities.

The first section presents a brief panorama of the data sources available on RA resources and outcomes (CIAT´s own surveys and the results of our collaboration with IMF, IOTA and the OECD) , followed by an analysis of some of the results, departing from raw basic numbers (full-time employees) and briefly analyzing the ratios built to normalize the metrics of the employees' numbers in respect to total population, Economically Active Population (EAP) or taxpayers registered for the personal income tax.

The second part of the article will focus on CIAT´s Training activities, aimed at improving the levels of professionalization of the tax administration officials, through the design and implementation of training and technical assistance programs in response to the needs and requirements of said administrations.

Gathering and Analyzing the Data: Human Resources

DATA SOURCES:

- State of Tax Administration in Latin America: 2006 -2010 / 2012
- The Revenue Administrations in Latin America and the Caribbean -RA-FIT (2011-2013) / 2016
- International Survey On Revenue Administrations (ISORA): IOTA, IMF, OECD and CIAT /2017

What is an adequate number of well-trained and motivated human resources?

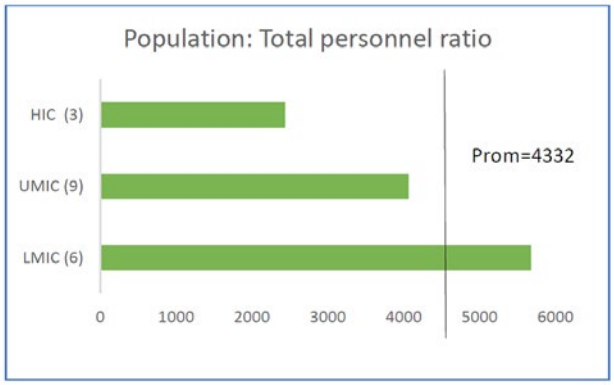
In size, according to their number of employees (Full Time), the RAs in LAC obviously differ significantly:

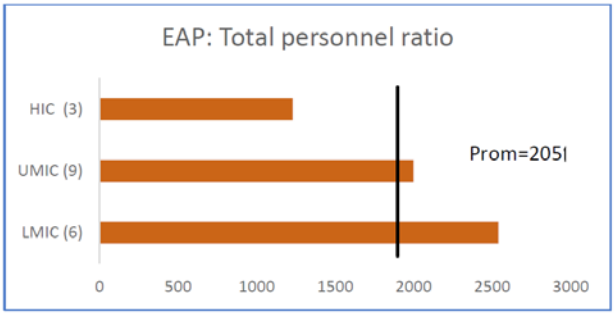
The biggest RAs are Mexico (36,410 employees), Brazil (24,178) and Argentina (22,006), while those of smallest size are Barbados (362 employees), Paraguay (745) and Costa Rica (966).

Three ratios are built that normalize the metrics of the employees' numbers in respect to: total population Economically Active Population (EAP); taxpayers registered for the personal income tax.

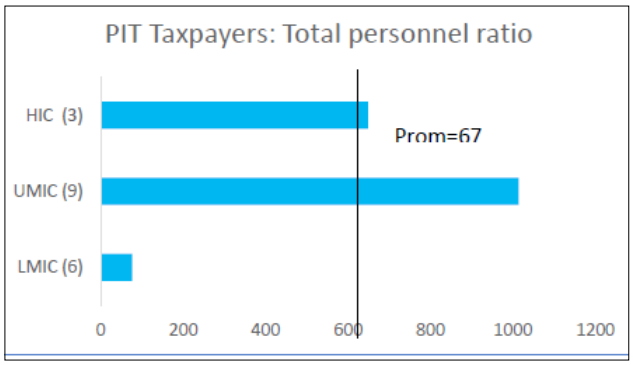
On average, there is an RA employee for every 4,332 citizens, 2051 working age individuals and 636 taxpayers registered in the Personal income tax (PIT).

Population ratio and the EAP, there is an inverse relationship between the countries' per-capita income and the number of (regular) RAs' employees, i.e. a lower per-capita income means a higher population/total staff ratio. This could indicate that countries with lower per-capita income have a "shortage" of personnel.





If we take into account the ratio of registered taxpayers, there is indeed an inverted trade-off for per-capita relation for middle and high-income countries; but this does not happen in countries with very small per-capita income ratio. This ratio would have to be taken with care, due to the low number of individuals registered as taxpayers for PIT in low per-capita income countries.



Training

Our activities are aimed at improving the levels of professionalization of the tax administration officials, through the design and implementation of training and technical assistance programs in response to the needs and requirements of said administrations.

Our human talent training program is aimed at:

- Designing training programs.
- Providing technical assistance in the human talent training area.
- Promoting the exchange of instructors in various areas for carrying out face-to-face and/or training activities.
- Supporting the creation, development and strengthening of training centers.

Training modalities:

FACE-TO-FACE MODALITY

It is implemented through a course at a specific place, date and time. The face-to-face training is focused on meeting the specialized and specific needs of TAs.

VIRTUAL MODALITY

It is implemented through the CIAT virtual campus, https://capacitacion.ciat.org, which requires access to the internet, have the basic knowledge of computer and management of word.

BLENDED MODALITY

It can be defined as a combination of the above and is developed in order to deepen, analyze, clarify specific issues of the tax area.

Training Topics:

- International Taxation
- Transfer Pricing
- Information Exchange
- Foreign Trade
- Tax Law
- Tax Policy and Technique
- Public Finance and Tax Systems
- Administrative Collection
- Tax Estimates
- Electronic Invoicing
- Tax Ethics and Tax Sociology
- Human Resource

Technical assistance

CIAT provides the Tax Administrations technical assistance related to the selection, induction, training, management, evaluation and severance programs, in order to set up competitive working teams that may allow for achieving the objectives and strategies of the administrations. We also provide assistances in organizational development.

IOTA

Intra-European Organisation
of Tax Administrations

IOTA
Intra-European Organisation
of Tax Administrations

WWW.IOTA-TAX.ORG

IOTA
Intra-European Organisation
of Tax Administrations

WWW.IOTA-TAX.ORG