DATA-DRIVEN
Tax Administration

IOTA
Intra-European Organisation of Tax Administrations

Published by IOTA, 2016, Budapest
Editorial Board: Miguel Silva Pinto, Neil Sawyer, Ágnes Kővágó
Address: Wesselényi utca 16., H-1077, Budapest, Hungary
Phone: +36 (1) 478-30-30, Fax: +36 (1) 341-51-77, Email: iota@iota.hu
ISBN 978-963-12-7312-0

CONTENTS

Foreword

I'm delighted as IOTA's new Executive Secretary to welcome you to our latest e-book 'Data-driven tax administration.'

You will find articles from many of our members who took an active role in the 20th IOTA General Assembly in Bucharest in July. It was a very special occasion and also marked our 20th anniversary.

The theme of the General Assembly was "Data driven tax administration" and the presentations, debates and discussions held during the event are well reflected in the articles included in this edition.

Changes taking place throughout the international tax community mean there is a greater call for more tax transparency among both individuals and businesses and the aim is for this to be achieved by large scale data exchanges between tax authorities.

Projects such as BEPS (Base Erosion and Profit Shifting), AEoI (Automatic Exchange of Information) and CRS (Common Reporting Standard) are resulting in partner countries introducing, implementing and adopting new data collection and exchange mechanisms which represent an additional challenge to their already busy agendas. The amount of information they will gather will also mean more responsibility and accountability on their part – both to their governments and to the whole of society.

In this e-book you will find material describing how these mechanisms will be put in place so countries can respond to the challenges of exchanging more information with each other. It also covers issues such as Big Data and co-related issues such as data protection and transparency.

IOTA's member tax administrations explain their practical experiences on automation, data analytics, new anti-fraud and anti-avoidance systems, new solutions concerning FATCA (Foreign Account Tax Compliance Act), AEoI, CRS and models of predictive analysis.

It is clear these changes require the recruitment of a new and highly-skilled labour force and that tax administrations have to change their structures accordingly. The move to the digital world is inevitable and so close cooperation with other stakeholders and service providers is vital if these changes are to work successfully.

I hope you will find this material useful, thought-provoking and I wish you an enjoyable read.

Miguel Silva Pinto

Executive Secretary of IOTA

DATA ANALYTICS IN TAX ADMINISTRATIONS

Advanced Analytics for Tax Administration: New Opportunities, Old Challenges

By Daniel Sinnott, Chief Analytics Officer, Office of the Revenue Commissioners, Ireland

Introduction

Advanced analytics creates major opportunities for tax administrations to extract insight and practical value from their data. In discussions of the topic, the focus tends to be on technical challenges: What database management system should we deploy? What analytics software package should we use? Which machine-learning algorithms should we apply to our data?

Despite the interest that such questions generate among data engineers and analytics experts, they are in many ways secondary issues. Ireland's experience, and that of other administrations in the Advanced Analytics network of the OECD Forum on Tax Administration (FTA), suggests that the key to making analytics work is to concentrate on establishing the organisational fundamentals. Once these are in place, the technical challenges become substantially easier to address.

This article will summarise the findings of a research project carried out by the FTA's Advanced Analytics network in 2015 and early 2016. The findings are based on insight gathered through a survey of 18 FTA-member administrations, and a series of follow-up interviews with analytics managers in different administrations.

Overall, the research of the FTA Advanced Analytics Network indicates that, while analytics may be a technically complex topic, the principal challenges to be addressed are of a practical nature. Administrations will greatly improve their chances of establishing effective advanced analytics functions if they can:

1. Carefully match the right analytical technique to the exact problem and dataset at hand;
2. Build strong working relationships between analytics and operational units;
3. Learn to manage the uncertainty associated with analytics projects;
4. Begin to manage and develop their data as a key resource in its own right;
5. Invest in the change-management efforts needed to bring analytics out of the lab and into the field.

Overview of activities

Advanced analytics is the practice of using statistical techniques to make predictions and draw inferences about cause and effect. From its initial use in the selection of cases for audit, the scope of advanced analytics applications has broadened, to the extent that analytic techniques are now used to optimise debt-management processes, secure filing and

payment compliance, improve taxpayer service, and understand the impact of policy changes.

Table 1 below provides an overview of where survey respondents that are actively using advanced analytics have allocated their efforts.

Table 1 - Summary of activities by country

	Audit Case Selection	Filing and Payment Compliance	Taxpayer Service	Debt Management	Policy
Australia	■	■	■	■	■
Canada	■	■	■	■	■
China		■			■
Finland	■				■
France	■				
Ireland	■	■	■	■	■
Malaysia	■			■	
Mexico	■	■			■
Netherlands	■			■	
New Zealand	■	■	■	■	■
Norway	■	■	■	■	
Singapore	■	■	■	■	■
Sweden	■			■	■
Switzerland	■				
United Kingdom	■	■	■	■	■
United States	■	■	■	■	■

Audit case selection

The responses indicate, perhaps unsurprisingly, that the principal application of advanced analytics techniques is in the selection of cases for audit. Of the 16 administrations that responded to the survey and are actively utilising advanced analytics, 15 indicated that they had deployed analytics to prioritise cases for investigation, audit, or other compliance intervention.

The techniques applied in this area aim mainly to learn from the outcomes of past interventions (ie, to use historic data to identify the characteristics that allow us to distinguish between yielding and non-yielding interventions). This is known as 'supervised learning'.

It is important to note that models built in this way can learn only from cases that have previously been chosen for intervention; they are therefore useful mainly in refining an administration's existing understanding of risk.

More recently, administrations have begun to apply techniques that aim simply to identify anomalous taxpayers or returns; while these models will not always target risk accurately, they are capable of uncovering wholly new insights into non-compliance. These methods generally fall into the category of 'unsupervised learning'.

Filing and payment compliance / debt management

As can be seen from the table above, survey responses showed that advanced analytics techniques are being successfully applied to improve both filing and payment compliance and the settlement of arrears.

The analytical approaches used in this area are quite different from those used in pure case selection. Here, the task is not to predict how a taxpayer will respond *in the absence* of intervention, but how they might behave *in response* to intervention. To tackle this problem administrations are beginning to build models that learn from the outcomes of controlled experiments in order to identify which cases should be subject to intervention, and which specific interventions should be carried out. These are known as 'uplift models'.

Advanced analytics for taxpayer service

The use of pro-active messaging, calling, and other interventions in anticipation of non-compliance has paved the way for administrations to look more closely at how advanced analytics can improve service delivery for taxpayers. Singapore has placed particular emphasis on this area, using text mining techniques to help understand and classify incoming taxpayers communications. Survey responses highlighted that many administrations intend to place greater emphasis on this area in the coming years, with several indicating that they expect to make much wider use of 'unstructured' data (e.g., customer emails, call transcripts, etc) in these efforts.

Advanced analytics for policy evaluation

Although most analytics work is carried out to support operational decision-making, survey responses highlighted that analytics is also being used for decision-making in relation to strategy and policy. The most common analytic applications in this field are tax gap measurement, and assessing or forecasting the impact of changes in tax policy. In general the techniques applied in this area fall into the category of 'explanatory modelling', where the aim is to fit a statistical model not to make a prediction, but to help us understand the

relationships between particular variables (eg, between corporation tax rates and firms' investment decisions).

Overall, it is clear that a key factor in determining the success of an advanced analytics project is the care taken to understand the nature both of the business problem at hand, and of the data available to address that problem. This assessment will determine the right analytical approach to be taken – whether to use supervised or unsupervised learning techniques, uplift modelling approaches, unstructured data, explanatory modelling, or other approaches. Administrations that take proper care over this decision will greatly improve their prospects of developing useful analytical outputs.

Management challenges

A major issue identified by survey respondents was how to fit analytics into the wider organisation in order to develop a technically strong analytics function that also enjoys an effective working relationship with the operational teams it is intended to serve.

Integration and governance

Leaders of analytics functions need to balance the need for centralised management (which supports quality control and staff development) against the need to engage and integrate with the wider business (which facilitates change management and the exchange of expertise).

Survey responses suggest that centralisation may be appropriate in the early phases of development, with functions becoming increasingly de-centralised as they mature.

Analytics governance requires a strong focus on integrating the business, IT, and analytics perspectives. Many survey respondents indicated that they had established integrated governance bodies to prioritise, resource, and oversee analytics projects. Most administrations indicated a desire to consolidate analytics governance in a permanent body, which could then build expertise and experience across multiple projects.

Project management and prioritisation

The exploratory nature of advanced analytics projects (which are essentially an attempt to find a pattern that may or may not exist) creates significant uncertainty in relation to benefits and timelines. In many ways, advanced analytics initiatives are closer to research and development work than to ordinary IT or business projects. For analytics functions to deliver value, administrations must find ways to manage this uncertainty.

Survey responses show that most administrations handle uncertainty by using iterative, 'test-and-learn' approaches in order to gather regular feedback and deliver incremental improvements. Many have taken an exploratory approach to project prioritisation and management, tending to begin work on a wide range of areas, narrowing their focus only as it becomes clear that a particular project is likely to yield results.

Access to the right data for advanced analytics

To realise the full potential of advanced analytics, administrations must do more than just apply the relevant techniques to whatever data happens to be available. Advanced analytics algorithms are constrained to learn only from the data they are applied to; if this data is inaccurate, or incomplete, or subject to selection bias, then the value advanced analytics is will be severely limited.

To address this issue, administrations must re-think their approach to data collection and management. Instead of seeing data as the residue of operational processes, administrations must treat it as an asset to be managed and developed actively. If analytics is to fulfil its promise to help tax administrations make better predictions and draw more robust inferences, it needs a foundation of accurate, representative datasets that capture the full facts of taxpayer characteristics and behaviour. This means putting additional resources into data collection and cleaning, and – where appropriate – using random selection to create unbiased datasets.

Change management

Finally, administrations are deploying a variety of approaches to ensure that advanced analytics models are successfully brought out of the laboratory and into the field. These include direct measures such as training operational staff in understanding analytical principles, and establishing specialist change-management units dedicated to analytics implementation. They also include certain indirect measures: for instance, in Norway an analytical project will proceed if the prospective business 'client' is willing to second a member of staff to act as project manager. This ensures close collaboration between analytical and operational staff, and also imposes a useful check on the project prioritisation process: the only initiatives that will go ahead are those that are truly important to business users.

Conclusion

Advanced analytics is now a core part of the decision-making toolset of mature tax administrations. Advanced analytics techniques can be applied wherever evidence-based predictions are needed and representative datasets are available.

The article above outlines how the discipline has moved beyond its initial focus on case selection, and is now used to address problems in debt management, non-filer programmes, customer service, and policy evaluation. To enable this, the suite of techniques used has expanded to include text mining, unsupervised learning, uplift modelling, and explanatory modelling. The key to successful application of these techniques is to carefully match the analytic approach used to the exact business problem to be addressed.

In addition to solving the relevant analytical problems, organisations must also learn to address the major organisational challenges presented by advanced analytics: how to

achieve effective collaboration between analytics and business experts; how to manage the uncertainty inherent in most analytics projects; how to build datasets that meet analytical requirements; and, finally, how to manage the process of change in order to achieve tangible results from new analytical models. The article above presents a number of examples of how different administrations are tackling these problems. To fully capitalise on the opportunities presented by advanced analytics, administrations should continue to collaborate actively in the years to come.

Data Analytics as a Tool to Tackle Tax Fraud

By František Imrecze, President, Financial Administration, Slovak Republic

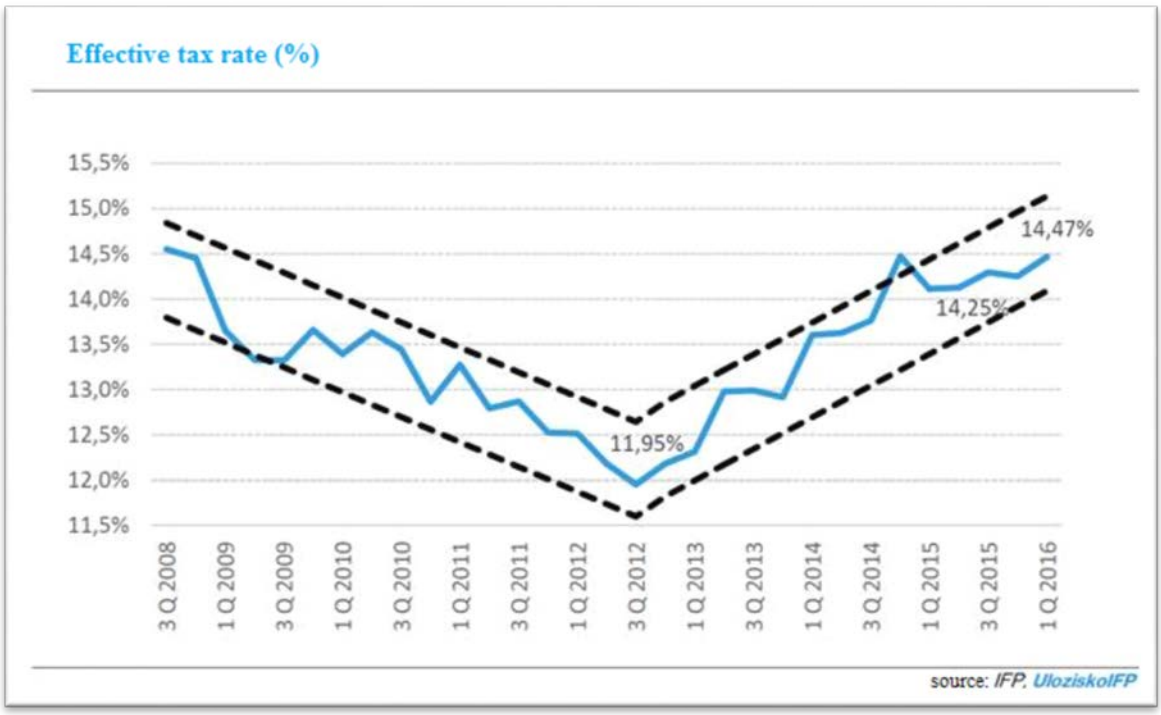
Introduction

There are three main factors determining tax collection and tax fraud that combat process efficiency. Explicit legislation, modern and flexible administration and quality data analytics.

Taking into account enhanced sophisticated methods of tax fraud conducted and the number of taxpayers involved in tax fraud with an international dimension, it requires the quality processing of huge volumes of data and their interconnection, and so it is inevitable to ensure for the effective legal rules implementation, which can only be achieved with well-adjusted software tools. Outputs of analytical systems enable us to focus on suppressing tax crime activities through the individual process operations as well as through the implementation of new measures and rules in the areas of tax administration and criminal proceedings. And this is our aim.

History – challenges

Slovak Financial Administration (SFA), as we know it today, was formed in 2012 by the merger of the Slovak Tax Administration and the Slovak Customs Administration. Until then, the Slovak Republic had the second-worst effective tax rate and inherited a dysfunctional and collapsing IT tax system. These weaknesses urgently called for the implementation of new procedures for the management and analysis of data that had an impact on the detection of tax fraud.



The main goal of the SFA is to provide for the unified collection of taxes, to eliminate tax and customs fraud by implementation of comprehensive measures aimed at fighting economic crime and protecting the economic and security interests of the Slovak Republic and the European Union.

Tax evasion causes major damage. The amount of evasion is just part of the problem. Difficulty in eliminating evasion is even bigger. Success for its detection is based on sound legislation, as well as allocating financial and human resources to deal with the issue as there is significant disproportion in the extent of fraud committed and human resources that can be deployed for their detection.

Selected IT solutions used in data analysis and their impact

Today, the IT technologies represent the most important tool in the fraud detection process. And this is the reason why the SFA, since its establishment, has consolidated the IT analytical systems and its functionality and has implemented new ones.

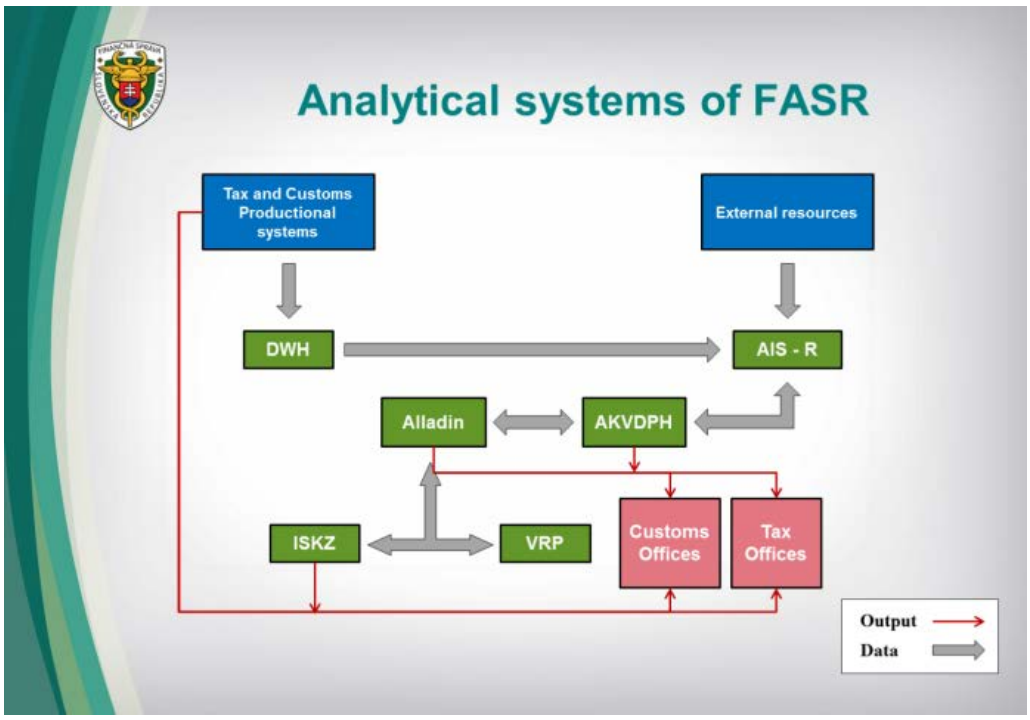
This article describes processes and IT technologies used in detecting tax fraud that not only ensure the basic tax administration activities, like recording of taxes and its processing in defined procedures, but at the same time contribute to the identification and evaluation of risks as well as putting in place measures needed for the elimination of tax fraud through the internal analytical procedures. Quality process procedures with up-to-date IT technologies enable to a great extent elimination and prevention of tax evasion in the area of tax administration and ensure the combat of serious, large scale tax fraud.

Action plan to combat tax fraud

Every responsible government must uphold its basic function of securing the right amount of taxes at the right time. In order to efficiently combat tax fraud and evasion the Slovak government has approved the document „Action Plan to Combat Tax Fraud" that is further elaborated by the Slovak Financial Administration´s particular measures with a fixed responsibility and deadline for each of the 50 + 30 measures included there. Some of those measures focus on implementing efficient IT processes. The common goal of the measures and the IT tools being implemented is to put in place an efficient and compact system able to combat tax fraud.

The introduction of new analytical tools and follow-up measures implemented since 2012 resulted in EUR 600 million of additional taxes collected. The indirect effect of a comprehensive approach to combat fraud in public finance field represents an increase in GDP by 0.9% when comparing 2015 and 2012. The total asset gained since 2012 exceeds EUR 2.1 billion. No bad for a country of five million people.

Taking into account enhanced sophisticated methods of tax fraud conducted and number of taxpayers involved in tax fraud with international dimension, it requires the quality processing of huge volume of data and their interconnection, and so it is inevitable to ensure for the effective legal rules of measures implementation, which can only be achieved with well-adjusted software tools. Outputs of analytical systems enable to focus on the tax crime activities suppression through the individual process operations as well as through the implementation of new measures and rules in the area of tax administration and criminal proceedings. Production system is supposed to ensure communication among tax offices and entities exclusively on electronic basis.



Within the principal ISFS system (information system of financial administration) there is the data warehouse system - **DWH system** as the main data mining tool for the evaluation of taxpayers´ behaviour. This DWH system comprises data obtained from taxpayers, especially from their tax returns, tax reports and tax statements. DWH provides users with the risky taxpayers´ identification as well as the evaluation of a taxpayer. Next system we have managed to implement is the **AIS – R** system, which – except for data obtained from DWH also incorporates data from financial administration very activities and the external environment data e.g. EUROFISC, VIES projects, Police Force information as well as information pursuant to the Act on the Prevention of Legalization of Proceeds of Criminal Activity and Terrorist Financing, and other information. **The AIS- R system** evaluates this information in correlation. Application is able to function in a so called „time section". Enables also selection of set of taxpayers according to different selection criteria and their combinations and is possible to search interconnections between taxpayers based on criteria selected by a user. It serves as a great support in tax fraud combat and risk analysis as well as it is the main source of information on risky taxpayers for the analytical system called **VAT Control Statement system,** which is considered to be the most significant analytical tool of the Slovak Financial Administration. Its outputs provide for the detection of carousel and chain fraud (MTIC), invoice fiddling etc. This system serves to precise location of unfair taxpayers. It allows the tax administrator to ensure his activities (tax audit, on-the-spot inspection, etc.), which specifically verifies irregularities. It is an effective deterrent against unfair acting, a tool for finding and monitoring unfair taxpayers´ activities and as a tool for targeted selection of taxpayers for tax audit. The core of evaluation system is high-powered analytical tool allowing:

- Detection of carousel fraud,
- Detection of issued invoices not recorded in the accounts,
- Detection of accounts tampering,
- Detection of changing invoices in the accounts,
- Detection of non-issued invoices, non-used electronic cash register,
- Detection of non-taxable VAT person issuing invoices including VAT ,
- Detection of taxable person, which apply a VAT deduction twice from the same invoice in two various tax periods.

The benefits of setting VAT Control Statement system is:

- Reducing the number of taxpayers engaged in fraud,
- Movement from fraudulent refund of VAT into the tax liability,
- Deregistration of taxpayers
- Change quarterly VAT taxpayers into monthly VAT taxpayers

VAT Control Statement system offers a number of diverse information intended to help tax offices to verify them. A pilot project **ALLADIN also serve as an aid**. ALLADIN project represents a complex management of tax and customs audits. The result of the pilot solution is the increase of audit activities as well as increase in quality and simplification of auditors work. Up-to-date tools – tablets – are available for auditors. Total number of tablets in operation is 600. Project comprises five modules, which are designated for:

- On-the spot-inspection
- Customs control
- Cash register control
- Duty stamp control
- Tax control
- Planning control activities.

Applications incorporates control procedures as well as their outcomes (minutes, decisions, etc.) according to acts on excise duties, tax procedure code, customs act, act on using electronic cash registers and others.

It also sets up conditions for using **virtual cash registers (VCR)** environment established by the SFA on its web portal which communicates through end device (PC, tablet, mobile, printer)**.** An entrepreneur can only use the virtual cash register when the number of receipts issued in one calendar month is 1,000 or less. This analytical tool is used to:

- Transactions monitoring – on-line information on number and volume of cash financial operations performed by an entrepreneur and on volume and marking of goods sold,
- Administration of entrepreneurs – position of entrepreneurs using VCR
- Fraud management – analysis and evaluation of citizens´ initiatives.

The latest established system is the verification system for duty stamps involving: purchaser, customs office, financial directorate, printing office. It is based on duty stamps unit sequence number generation (12 digit alpha-numeric sign). Duty stamps is being inspected since its production up to its use, or returned to the customs office or expiration. Purchaser through duty stamps system applies for duty stamps informs on duty stamps used, records duty stamps used, notifies data on duty stamps reclaimed, notifies data on duty stamps returned. The system compares number of duty stamps used with tax returns and notifies potentially unpaid tax and through ALLADIN and Super-Stamp Duty analyses outputs from citizens and auditors.

All the implemented analytical tools are liaised with Tax Cobra activities (cooperation of the Financial Administration, Police Force and the Attorney General Office). At the same time they help to eliminate fraud and to simplify the detection work of tax and customs offices as well as the cooperation with the Police Force.

Conclusion – how to tackle fraud

Tax fraud and evasion have inherently negative impact on all areas of social and economic life, distort economic environment, reduce state budget and damage financial interests of the EU. The ambition of the SFA has still been focused on qualified and professional decisions based on the latest trends in the fight against tax evasion on the national and global level. Fraudsters can be very flexible by their actions, so it is necessary to drawn up a long-term approach to combating fraud, which is based on data analysis and based thereon balanced measures that will have an impact on streamlining the performance of financial management and fraud reduction with flexible responsive team.

Data Analytics in the Spanish Tax Agency

By José Borja Tomé, Deputy Director, IT Department, Spanish Tax Agency

Introduction

The advanced analysis of traditional and new sources of information is an opportunity for tax administrations that can leverage it to provide assistance for voluntary compliance and fight against fraud in a more effective way.

One of the challenges is that the more advanced the analysis is, the more complex becomes the analysis itself, and the more difficult it is for the organization to understand it and achieve useful results.

Simple analytic technologies such as reporting tools can be just enough to solve many kinds of problems. For instance they can implement crosschecks, which are very effective in tax auditing, as they provide the necessary objective facts that can be used to quantify taxpayers' misdoings. As an example at AEAT VAT auditing of SMES is carried out aided by automated reports which include dozens of rules that combine data from our systems (from taxpayers declarations and third parties) with the data of the invoice records of the books of the selected SME to highlight areas of risk for tax auditors to consider.

It is therefore necessary for tax administrations to have access to a whole range of tools that allow all their members effectively query the vast amount of available information, and at the same time prepare a specific workforce with the ability to deal with the most advanced analysis and render its results in an effective way.

Simpler technologies for "citizen data scientists"

Many organizations focus their data analytics projects in integration, so that all their users can directly access any information and reach conclusions selecting aggregating and comparing data from different sources which up to that time were isolated and could not be combined interactively but only by specific processes instead.

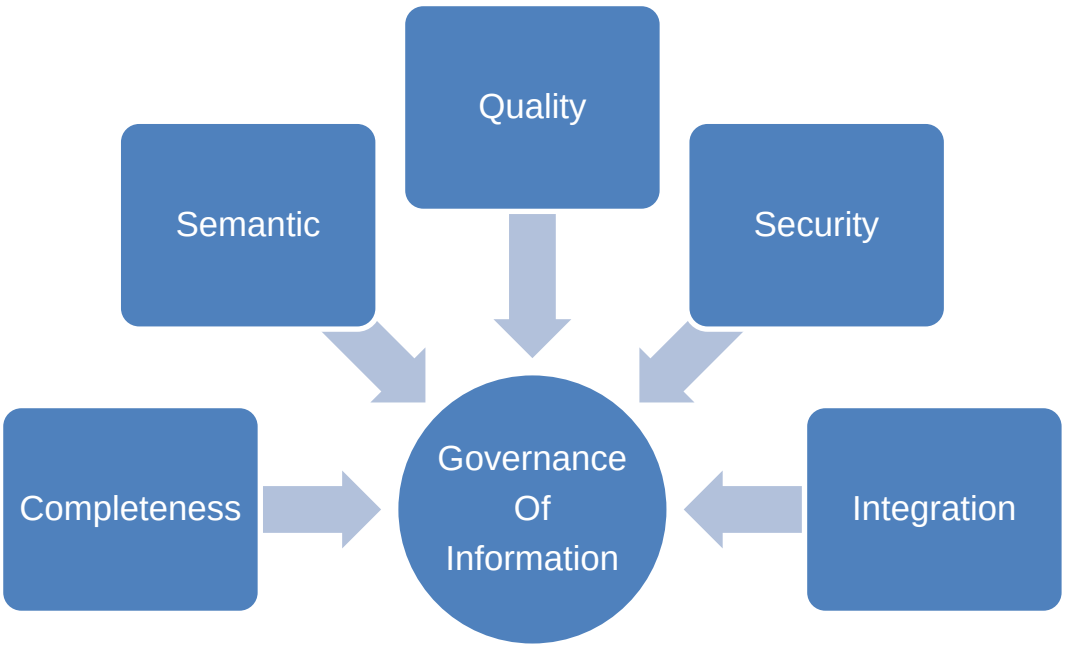
This can be achieved with data warehouse technologies, such as AEAT's corporate data warehouse, called Zújar, which offers online interactive analysis for all the relevant data in the organization and is used by more than 10,000 tax officials for fraud control and increasing voluntary compliance. Zújar has fuelled the concept of "**citizen data scientists**" in the organization, as most of the analytics problems can be solved with simple models and criteria directly by tax officials.

The differential element that has made our data warehouse project succeed and reach such a degree of maturity is **governance of the information** in terms of security, quality, semantic clarity, completeness and integration. Lack of governance is in the origin of common users not understanding the data or unable to find them, or the need of experts to

interface with them. Other common risks are denial of access to users because the information they are empowered to access cannot be determined, or end users distrust because of lack of quality of the information.

AEAT ensures that all the sources of information are integrated into the data warehouse by making that integration part of any operational IT project. Both the manager end users of the transactional system that collected the information and the IT staff who developed or maintain it cooperate in the definition and description of the data, which will be recorded into the dictionary of the analytic system. When information is ready for analysis, they check the quality of data, and in that moment the security policy for that source is defined. At this point it is also possible to implement interfaces with the transactional systems. In this way, governance is kept under control.

From a technical perspective, Zújar has been developed internally, which gives AEAT flexibility in terms of integration with other systems and addressing specific needs such as incorporating the analysis of taxpayer's files, and it leverages, when needed, the potential of big data technologies such as Hadoop.



Cases for advanced analytics

When shifting to more complex analytics the first issue that arises is finding cases that are significant to the business and cannot be solved with more simple analytics. For end users it is difficult to imagine such cases, because when you already have the power to interrogate all of your data in a simple way it is not straightforward to think about more advanced ways

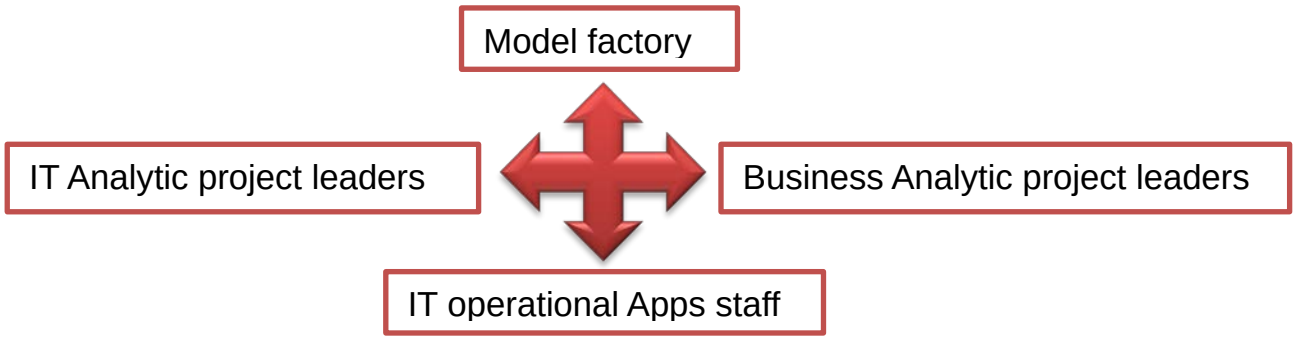
to ask the questions. Furthermore, most of the unanswered questions are usually due not to lack of analytical capabilities, but to the absence of available data.

At AEAT predictive modelling of the decisions of tax auditors has offered an interesting range of opportunities to define advanced analytic models. The idea is to find models which predict the decision of auditors' specific processes, taking into account the available information in our system. The results are used to increase the ratio of automatic decision and offer better information to auditors in the cases where there is still not enough evidence in the system to take an automatic decision. The model is refined with the feedback of the results of the decisions.

An example of this approach at AEAT is the project called MIDAS-IVAN, which combines the use of predictive analytics and unstructured text analysis for risk evaluation and automatic decision of VAT refund claims of non residents. A predictive model evaluates the risk of certain refund, while text analysis of invoices (received in image format) provides additional information for the decision.

The organization of advanced analytic projects

The selection of these cases therefore needs to combine technical, business and analytic capabilities. At AEAT analytic teams are led by **IT analytic project leaders** who propose projects or receive the proposal of end users, and in order to evaluate their feasibility they cooperate with the mangers of business users who are responsible for the related procedure (usually those who define operational applications) and will act as **business analytic project leaders**. They also cooperate with the IT responsible for the transactional (operational) systems to ensure that the results of the models will be integrated into those systems. Although both IT and business analytic project leaders need to have some knowledge of analytics, they are not responsible for actually building the models. After a case is selected, highly skilled data scientists will still be needed in order to perform that task, but this will not be usually the biggest issue. Hence, goals and success criteria are accorded in collaboration between civil servants from the business and technical areas, and passed on to specialized data scientists, who act as a "**model factory**".



For the development of new models and algorithms, data scientists will need access to data and to the best analytic tools. It would be very costly in terms of time and investment if a high level of data governance had to be ensured for each new technology that may be required by a team in the model factory. And if the final results are not positive, the effort may have been in vain. This risk can be avoided with a **bimodal approach** in the adoption of new technologies, which implies allowing relaxed governance for a project while a technology is confined to a small number of users (the typical case for the most advanced models), and starting experiences with small pilots that must show a clear return of investment. If the project succeeds and the technology is adopted, security is reinforced and scalability is guaranteed, and full governance is implemented when there is a decision of extending its use to the whole organization.

The analytic project leaders do not end their task by selecting advanced analytic opportunities, but need to involve themselves in the process of model refinement, evaluating the results proposed by the data scientists, giving explanation to anomalies and proposing new approaches and additional information sources to be integrated in the models.

Integrating the results into normal operations

But no matter how good the results of certain model are, there is still a risk that it may be not adopted by end users, who are used to working in a different way and do not understand the benefits of the proposed solution. Imagine the case of the abovementioned VAT refund risk assessment model. If taking into account the new information provided by the models was a new burdensome task for the tax auditors who take the decision, they would probably reject the results of the models. So these results must be integrated into their ordinary procedures in a way that is convenient to them. What is actually done at AEAT is changing the operational systems they use so that the new information and the new actions to be taken are naturally perceived as part of user's ordinary tasks. Thus by integrating the results of the models into the operational systems we benefit end users of the advantages of analytic models without changing the way they work.

As an example 70,000 applications are annually filed into our systems by companies who apply to be included in a register of intra-communitary operators (ROI) which gives them facilities in trade. But facilitating trade comes alongside with facilitating VAT fraud, so careful risk assessment is performed for each application. Historically basic analysis was enough to process some cases automatically, but 77% still needed manual evaluation. By developing an advanced model the number of manual decisions has been reduced to 45%. But these results would not be probably accepted by users if the new automatic decisions (MIDAS denial and MIDAS approval) had not been incorporated in their transactional application. The user interface is modified so that auditors are informed in their ordinary decision tool about the risk profiles and the facts that should be more relevant for their decision.

Retrieving information from the internet

The analysis of information from the internet is a different approach to find relevant facts from a tax perspective. Interesting results have been reached at AEAT targeting specific areas related with economic activities. For instance, aiming to increase voluntary compliance in income tax returns, rental information has been massively retrieved from the internet. Results are used either to check if taxpayers are declaring income from their real estate property, or to remind them of this obligation when filling in their income tax declaration.

Conclusions

Data analytics offers uncountable opportunities for tax administrations, and poses new challenges in order to leverage efforts and investments. A winning strategy will be to combine simple technologies which can be used by anyone keeping governance of information under control, with deploying advanced analytic projects which will need careful selection and a tailored organization. Integrating the results of the analysis into the operational systems can ease user adoption.

Making Better Use of Data Obtained from the Automatic Exchange of Information

Effective Automatic Exchange of Tax Information (AEOI)

By Jelena Dorohina, Head of CLO of Tax Department, State Revenue Service, Latvia

Introduction

As the world becomes increasingly globalised and cross-border activities rise over the years, enhanced co-operation between tax authorities is crucial in order to ensure taxes are properly calculated and paid by the taxpayers.

The automatic exchange of information (AEOI) is regarded as the best system for ensuring that national tax authorities can assess and collect the taxes they are due on income and capital that their residents have abroad.

Necessary **legal, administrative and IT tools** for verifying compliance of their taxpayers **are key aspects** for ensuring proper administration of taxes.

OECD standards and EU framework for the automatic exchange

The OECD has developed standards for the automatic exchange of the income types set in the OECD Model Tax Convention, as well as common technical solutions used for the exchange of information in the following categories of income:

- Income from immovable property;
- Business profits;
- Dividends;
- Interest;
- Royalties;
- Capital Gains;
- Income from independent personal services;
- Income from dependent personal services;
- Directors' fees;
- Income derived from activities of an artist or sportsman;
- Pensions;
- Income from government services and public pensions;
- Payments to students for education and training;
- Other income.

EU Council Directive 2011/16/EU of 15 February 2011 on administrative cooperation in the field of taxation, and repealing Directive 77/799/EEC, foresees the automatic exchange of available information on five categories of income regarding taxable periods from 1 January 2014.

These are:

- income from employment;
- director's fees;
- life insurance products;
- pensions;
- ownership of and income from immovable property.

It is also foreseen that this directive would be reviewed, with a view to extending it as from 1 January 2017 to cover more categories of income and capital, such as dividends, capital gains and royalties.

The AEOI IT system has been developed in order to ensure electronic transmission of data pursuant to Council Directive 2011/16/EU between the EU member states.

The State Revenue Service of the Republic of Latvia (SRS) performs automatic exchange of data on income of non-residents pursuant to Council Directive 2011/16/EU, conventions for avoidance of double taxation, the OECD Convention on Mutual Administrative Assistance in Tax Matters, as well as bilateral agreements on administrative assistance and exchange of information. Agreements on administrative assistance and exchange of information have been concluded by SRS with the following countries: Armenia, Georgia, Azerbaijan, Uzbekistan, finalising with Byelorussia, in process with Canada and Moldova.

In 2015 automatic exchange of data on income of non-residents was performed with 31 countries and in 2016 with 33 countries.

- ***AEOI data quality is the most important issue for the effective use of the data exchange between the tax administrations.***

For the year 2014 only **18%** of the data received from abroad were automatically recognized and processed by SRS IT system. Manual matching was applied in other cases for which the national threshold was exceeded and unidentified records constitute only 0.94%. However, it should be admitted that manual processing of data is time-consuming and requires allocation of additional personnel resources, thus the issue of the quality of AEOI data exchanged is crucial for the effective use of AEOI data.

According to the Council Regulation (EU) No 904/2010 of 7 October 2010 on administrative cooperation and combating fraud in the field of value added tax and Commission Implementing Regulation (EU) No 79/2012 of 31 January 2012, SRS performs automatic exchange of information in the field of VAT. The following categories of data are being exchanged for VAT purposes:

- supply of new means of transport;
- allocated VAT numbers;
- VAT refunds;

- data on acquisitions within EU. Data are being exchanged with Lithuania, Estonia, Bulgaria, Rumania, Croatia and Hungary according to the agreed procedure.

AEOI data is an important data source and is being used for risk assessment and analysis and further control procedures.

FATCA – highlights

The Foreign Account Tax Compliance Act (FATCA) is a 2010 United States federal law to enforce the requirement for United States (US) persons, including those living outside the US, to file yearly reports on their non-US financial accounts. It requires all non-US (foreign) financial institutions to search their records for information indicating US person-status and to report the assets and identities of such persons to the US Department of the Treasury.

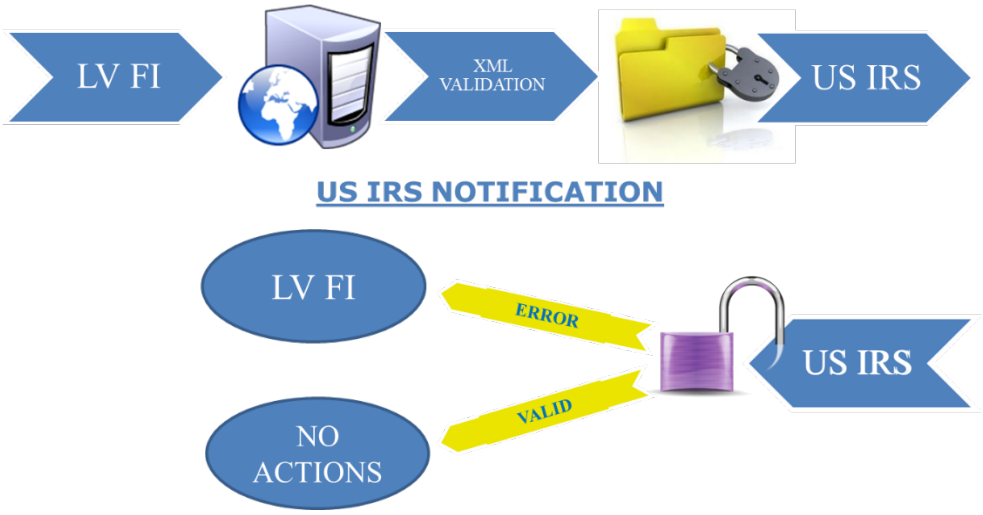
FATCA promotes cross border tax compliance by implementing an international standard for the automatic exchange of information related to US taxpayers and is intended to increase transparency for the US Internal Revenue Service (IRS) with respect to US persons that may be investing and earning income through non-US institutions.

Latvia signed an Inter-Governmental Agreement to Improve International Tax Compliance and to Implement FATCA with the US on 27 June 2014. According to the agreement the first exchange of FATCA information was performed in September 2015. 22 Latvian financial institutions participated in the information exchange in 2015.

SRS as the competent authority is responsible for the exchange of FATCA data and communication with US and Latvian financial institutions, ensuring correct data is being submitted pursuant to the FATCA agreement.

FATCA reports are being submitted by Latvian financial institutions to SRS in the form of XML that are being validated by SRS according to the FATCA XML Schema (v1.1). If case validation is not successful, an error is automatically generated by the SRS IT system and sent to the financial institution. If the submitted XML report has passed the initial validation the data is transmitted by SRS to the US IRS.

FATCA data flow to US



FATCA data flow from US

Information about 16 million dollars paid or credited to the accounts of Latvian residents during the calendar year 2014 was received from the US.

DAC2/CRS – next steps

The Common Reporting Standard (CRS), generally known as the Global FATCA, is a regulation initiated by the OECD, aimed at preventing tax evasion and leading to a global automatic exchange of information between CRS-participating jurisdictions.

Council Directive 2014/107/EU of 9 December 2014 amending Directive 2011/16/EU as regards mandatory automatic exchange of information in the field of taxation, known as "DAC2", has been implemented into Latvian legislation requiring financial institutions to report financial accounts held, directly or indirectly, by account holders that are tax residents in a CRS jurisdiction, and to follow due diligence procedures consistent with the procedures set out in CRS. The relationship with non-EU countries is governed by means of multilateral agreements called "Multilateral Competent Authority Agreement" (MCAA).

As an "early adopter" Latvia has committed to implement the CRS and undertake the first exchanges of information in 2017.

SRS is responsible for the exchange of CRS data and communication with CRS jurisdictions and Latvian financial institutions. The same technical approach as for FATCA data exchange shall be used for the submission and validating of CRS reports.

Conclusion

AEOI data is an important data source and is being used for the risk assessment and analysis and within control procedures. In order to ensure further strengthening of the efficiency and functioning of the automatic exchange of information, jurisdictions should work on solutions aiming to improve the quality of the data exchanged. Efficient data analysis tools and procedures should be elaborated in order to ensure efficient use of AEOI data.

Utilizing Automatic Exchange of Information – AEOI data as third party information in the pre-filed tax return

By Peter Kruckow, Senior Adviser, Danish Customs and Tax Administration

Introduction

Globalization opens a series of new possibilities for individuals as well as enterprises. However, there are also disadvantages. Individuals and enterprises get new opportunities to place assets and profits in jurisdictions with the lowest possible taxation or no taxation at all.

This may mean that countries experience erosion of their tax base and face increasing difficulties executing their taxation rights and tax legislation.

The world community is carrying out ongoing work seeking responses to this major challenge. One response is automatic exchange of information (AEOI).

In the coming years tax administrations of the 45 IOTA countries will face the major challenge of sending and receiving information – and of making use of the received information in order to ensure that correct tax is being paid.

In Denmark, there is a clear political expectation that all information received under international agreements - AEOI - is utilized in the Danish tax system when calculating the taxable income for individuals.

If there is a basis for it, The Danish Customs and Tax Administration (SKAT) wish to exchange all relevant information on our own initiative. Furthermore, we will utilize the international agreements actively, and establish procedures, which secure follow-up on political agreements.

SKATs long-term ambition is that all information received from abroad, will be used like Danish third party reported information when calculating the Danish taxable global income for individuals.

Our ambition

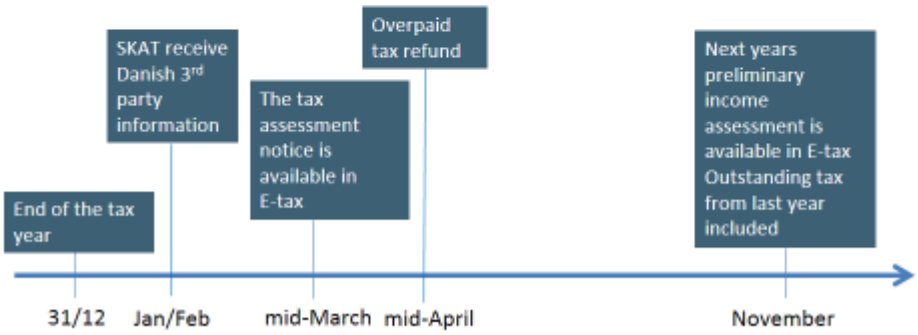
SKAT's long-term ambition is that all information which is received under international agreements, and which it is possible to identify as connected with a specific taxpayer, should be used as third party reported information when calculating the Danish global taxable income

21-06-2016 7

Currently, Denmark has a well-functioning third party reporting system for individuals based on domestic information. Danish tax information – e.g. from employers and banks – forms the Tax Assessment Notice.

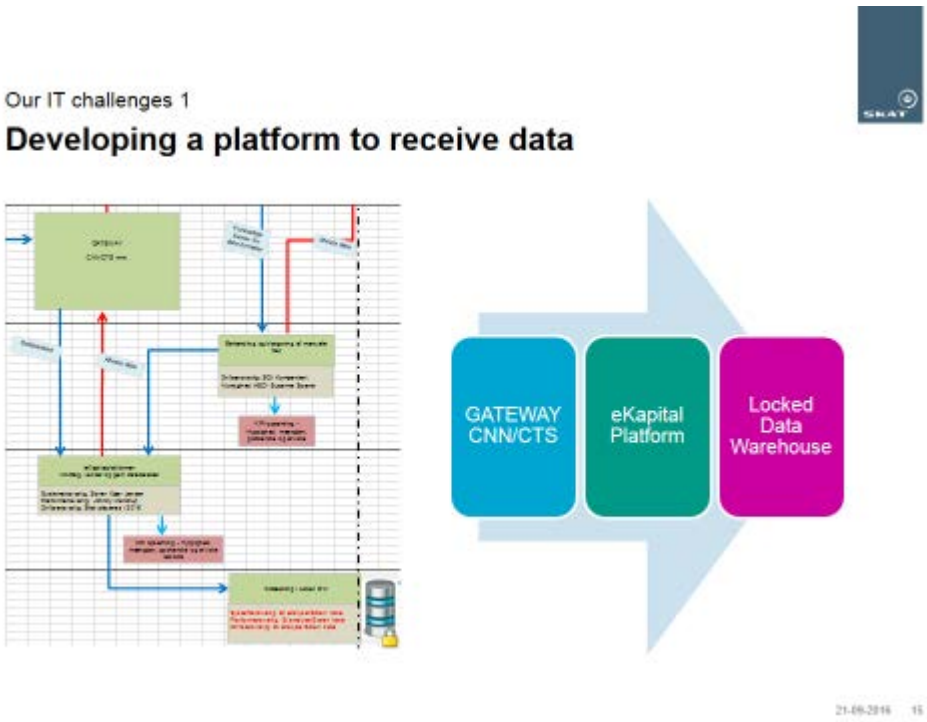
How our E-tax system works

From March in the first year after yearend to July in the second year after yearend our systems automatically generates a new tax assessment notice based on new third party information

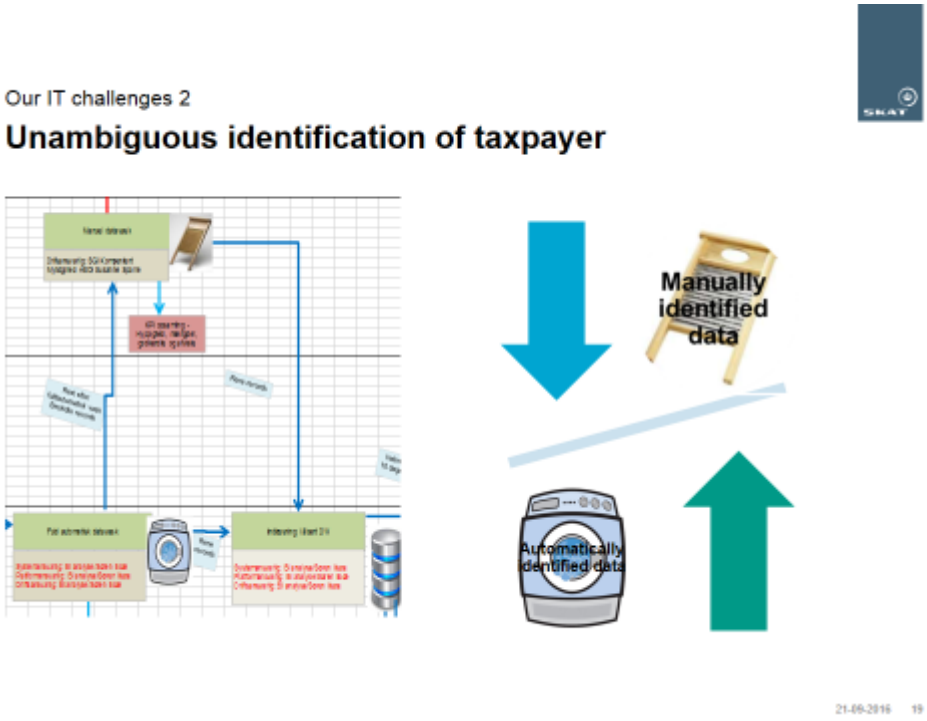


21-06-2016 11

SKAT has already built an electronic platform to receive and send international information - AEOI - and developed a comprehensive process for identification and utilizing of the global information received. We are in the process of realizing this process.



Utilizing AEOI can only happen when the information is unambiguously identified (data wash), which means that we have information on the taxpayer's TIN number, name and address. Denmark is currently conducting a pilot project on a "data washing machine", which aims to secure electronic identification using data mining.



In Denmark all individuals have an electronic tax folder on the internet (E-tax). E-tax is SKAT's online self-service facility to calculate personal tax payments. AEOI will be displayed in E-tax

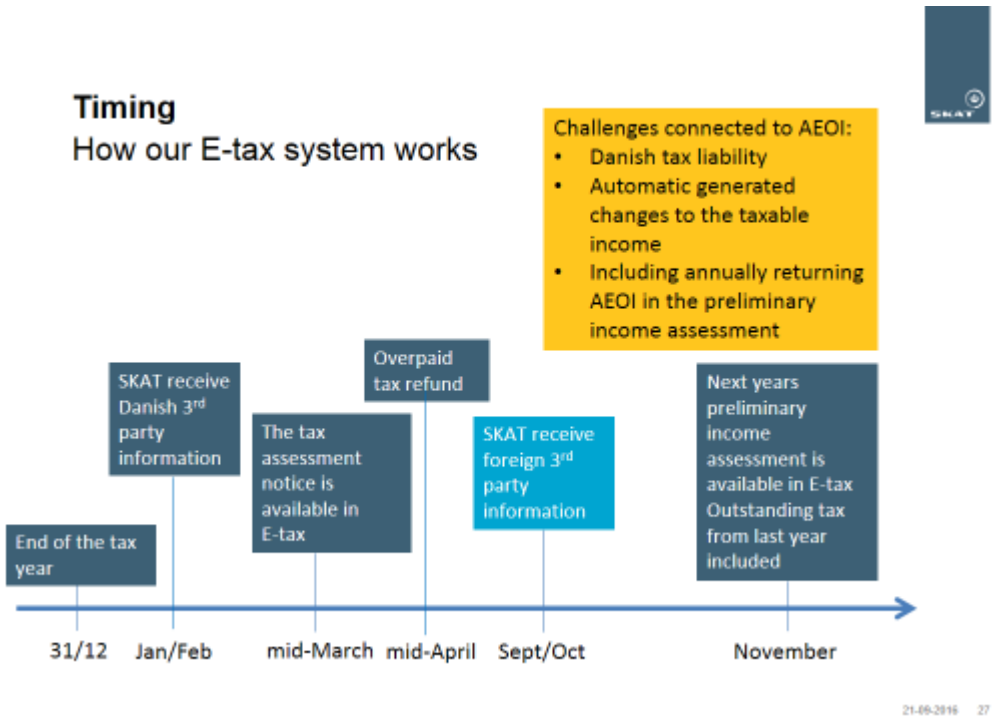
- and the taxpayer can then decide on Danish tax liability and whether the information must be declared.

When entering data for individuals in E-tax SKAT use all identified information.

As mentioned above Denmark is well advanced applying current Danish third party information when calculating the tax assessment notice for individuals. By mid-March, the tax assessment notice is available in E-tax. The tax assessment notice tells the taxpayer whether he or she has paid the correct amount of tax in the year that just ended. Approximately 97% of all tax assessment notices can be calculated directly based on Danish third party information.

There are however special challenges with globally exchanged automatic information. Danish third party information on individuals liable to tax can almost automatically be included in the taxable income. If the information is received from abroad, Danish tax liability has to be clarified. Therefore liability has to be decided on - and necessary steps carried out.

Another challenge is the timing. AEOI information is received only in the fall in the year after the current income year. The information is typically received after the tax assessment notice has been formed which entail a resumption of the taxable income.



Currently SKAT is testing processes in our E-tax system, where annually returning automatic exchanged information are used – in full or partial – in the taxable income. This could be for example, annual interest income or pensions from another country. The intention is to include the information in our preliminary income assessment system automatically.

Conclusion

It is SKATs long-term ambition that all AEOI data will be considered as global third party information and will be used like Danish third party reported information, when calculating the taxable global income for individuals. It is furthermore our ambition to computerize all processes and display data real-time in E-tax.

Collection and Use of Digital Information on Business Activities

Digital Initiatives of the National Tax and Customs Administration of Hungary

By Csilla Tamásné Czinege, Director General for Taxation Issues, Hungarian Tax and Customs Administration

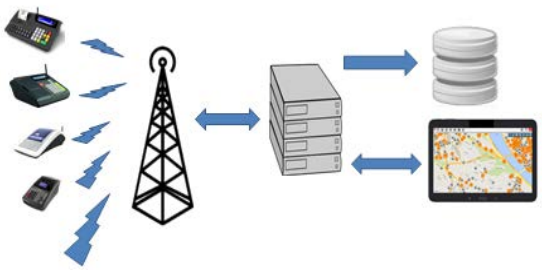
Introduction

This presentation provides a short overview on the tools introduced recently by the National Tax and Customs Administration (hereinafter referred to as NTCA) in order to enhance taxpayers' compliance on the one hand and, on the other, to encumber even more tax revenue losses stemming from concealment of receipts as well as from other kinds of fraudulent taxpayers behaviour. As a result of all of these, the final aim of NTCA is increasing the amount of tax revenues flowing to the state budget.

The information below covers the following issues: application of online cash registers and usage of the information supplied by online cash registers, domestic itemized VAT summary statements and the operation of the Electronic Public Road Trade Control System (hereinafter referred to as EKAER).

Online cash registers

The introduction of online cash registers has opened up enormous possibilities in the areas of tax audit and data mining because more than 200,000 machines have been installed after a ministerial decree on online cash registers was introduced. These cash registers send more than 10 million pieces of data to the tax authority every day. This tremendous amount of data has mostly been used by the tax authority to perform targeted selections for audits. As a result, the following taxpayers and cases could be filtered out:



- Taxpayers having only one cash register, which was under repair for more quarters;
- Entered cross-entries amounting more than two million forints;
- Taxpayers that can be linked up with cash registers used no more than 20 times;
- Taxpayers using cash registers with deleted tax ID number or those are under involuntary de-registration procedure.

At the time being, there are 180,565 cash registers out of 200,000 nationwide, which are continuously sending data to the tax authority.

There is a so-called financial control unit (FCU) operating in each cash register. This unit registers and stores data occurring in the cash register. Technological features of FCU guarantee high level cryptographic defence against the manipulation of registered data. The FCU regularly checks in with the server of the tax authority. The server requires or does not require a report from the cash register, according to its algorithm that can be altered every day. According to our daily practice, the tax authority requires a report from the cash register once a day.

Forwarding data is completed with the usage of ground mobile phone network. This is a special service and it is the operator of the cash register who must subscribe to the service.

Data from online cash registers can be well used in the course of selection for tax audits and the NTCA can carry out tax audits with their help in the cases of unjustified discrepancies, once a further risk analysis has already been completed. For instance, interesting discrepancies could include the following cases:

- Which businesses in the town do not generate as much revenue in one year that may cover the salary of an employee (owner)?
- Which pubs/clubs in the town barely issue receipts after 22 hours?
- What are the shops where the only reported employee works 49 hours a day on the basis of the number of operating cash registers?
- What are the vendors doing on the beaches of Lake Balaton, where turnover on a selected hot day is only a little higher than the average of the whole summer?

On the basis of time series analysis of turnover and technical data, those cash registers can be selected, in connection to which the volume of turnover is either significantly lower or higher than that could be expected based on the former data of the same cash register. Furthermore, those cash registers can also be selected, in connection to which the volume of turnover is either significantly lower or higher than that of a control group created according to some rational sorting aspect. Targeted on-the-spot checks or turnover counts can be expected at the taxpayers operating such cash registers.

Experiences of the usage of online cash registers have been very favourable so far:

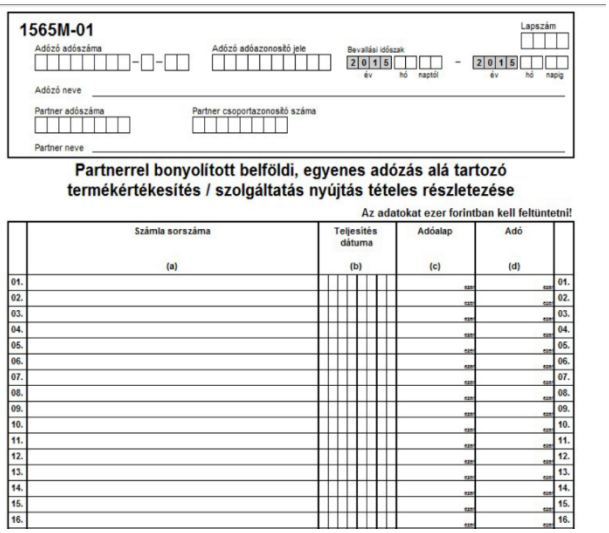
- An increase of 10-23% of VAT revenue in certain retail trade sectors has been experienced (outstanding branches: clothing, shoes, miscellaneous industry goods);
- Retails sales grew by an average of 5.47% in seven consecutive quarters (inflation rate in this period was -0.7% – 0.9%);
- Surplus of 200 billion HUF in VAT came in the state budget over one year;
- Reducing non-compliant behaviour in the economy could undoubtedly be experienced that has come together with more transparent business connections.

Because of the very favourable experiences that we have had so far and referred to above, an additional ministerial decree has been issued. On the basis of this decree as of 30th

September 2016 the scope of taxpayers that are obliged to use cash registers will be extended to taxpayers being involved in repairing and maintaining vehicles, retailing vehicle spare-parts and running discotheques. As of 1st January 2017, the scope of the ministerial decree will cover taxpayers being involved in providing passenger transport services.

Domestic itemized VAT summary statements

The main point of this solution is that, as an enclosure to their VAT returns, taxpayers are obliged to provide the tax authority with and itemized list on their domestic transactions forming supplies of goods or services as well as acquisitions of goods or services, in which the amount of input VAT is at least HUF 1 million. Such data disclosures must contain the fallowing particulars: first eight digits of business partner's tax identification number, serial number of invoice, the date when the transaction took place, amounts of tax base and input VAT.



1565M-01

Lapszám

Adózó adószáma – – Adózó adóazonosító jele

Bevallási időszak: 2015 év hó naptól – 2015 év hó napig

Adózó neve

Partner adószáma

Partner csoportazonosító száma

Partner neve

Partnerrel bonyolított belföldi, egyenes adózás alá tartozó termékértékesítés / szolgáltatás nyújtás tételes részletezése

Az adatokat ezer forintban kell feltüntetni!

	Számla sorszáma (a)	Teljesítés dátuma (b)	Adóalap (c)	Adó (d)	
01.					01.
02.					02.
03.					03.
04.					04.
05.					05.
06.					06.
07.					07.
08.					08.
09.					09.
10.					10.
11.					11.
12.					12.
13.					13.
14.					14.
15.					15.
16.					16.

The main purpose of the regulation is just to tackle VAT frauds and issuance of fictitious invoices as well as to make invoicing chains more traceable and more transparent. In order to make use of data, IT developments have been accomplished at the tax authority. These developments have resulted in

- making crosschecks between data declared by business partners on each other;
- creating differences;
- using data for tax audit and risk management purposes;
- making use of tax audit capacities more effectively.

Data from domestic itemized summary statements greatly contribute to make well-established decisions on putting tax audits aside in the case of selected tax returns or, on the other hand, on carrying out tax audits even in the course of selection for paying out tax refunds or of individual risk analyses. Thus, significant tax audit resources can be saved. Business partners can be revealed by desk audits even before contacting the taxpayer. Invoicing chains with tax avoidance purposes can be quickly and effectively filtered out by carrying out further risk analyses of business partners, furthermore, roles of taxpayers forming these invoicing chains can also be identified. Besides these, data from domestic itemized summary statements help in revealing state of affairs in the course of tax audits related to following taxpayers:

- Those who do not have documents;
- Those who cannot be reached by the tax authority;
- Those who do not co-operate with the tax authority;
- Those who do not submit their tax returns.

The *Panorama* System, which processes also itemised VAT data, displays invoicing chains in graphical form as well.

EKAER system

The EKAER System is nothing more than a complex system controlling movement and origin of goods that includes the following elements:

- With the help of e-toll and other camera networks, tracking the actual route of goods being in connection with IC supplies of goods / IC acquisition of goods and the first domestic taxable supply of goods;
- Tax audits organised according to NTCA's risk analysis system, which operates on the basis of specific road freight transport data registered in electronic and analysable way.

The EKAER System receives a preliminary report on the business transaction from taxpayers, including the following details of road freight transport:

- License plate of the vehicle transporting the goods;
- Places of dispatch and arrival of the freight transport;
- Sort of goods transported;
- Quantity of goods transported.

The vehicle transporting goods is traceable because the domestic network of e-toll cameras monitors and registers moving and itinerary of a given vehicle with a concrete license plate and these data are forwarded to the tax authority.

The quantity of the transported goods is also traceable because the tax authority receives data from fixed and mobile weight measuring stations, besides these data from controlling points can be linked to vehicle's license plate.

The sort of goods can undoubtedly be identified in the course of real time road checks and controls performed at the sites where freights arrive to.

On the basis of the period of time passed since the introducing of EKAER System on the 1st of January 2015, advantages of the system have very well been visible that emphasized: the EKAER means a variety of possibilities for the tax authority to detect and eliminate VAT frauds quickly.

A total of 55,120 users have registered in the EKAER system until the end of June 2016 that have entered a total of 15,791,080 reports on the online reporting webpage. 61 per cent of these reports are in connection with domestic freight transports, while the remaining nearly 40 per cent is the ratio of freight transports carried out to other member states of the

European Union. The amount of guarantee paid onto NTCA's deposit account has been HUF 12,495,953,412 until the end of June 2016; furthermore the concerned taxpayers have made available further HUF 939,100,000 in the form of bank guarantee.

The *KOCKA2* ("risk2") ensures immediate and integrated risk analysis of data arriving from EKAER System reports. This means that, by generating adequate risk profiles, suspicious transports become filterable and traceable immediately after the receipt of reports from the system. For the time being, 23 actual profiles are operating in the system, 3 profiles are under construction and further 17 profile proposals have been elaborated, however, some IT developments are still needed to be completed to put them into practice.

The dispatcher module, on the basis of displayed information from reports, perceptions and risk analyses, assists dispatchers of EKAER standby duty in making decisions related to handling transports classified as risky. Furthermore, this module also ensures initiation of a continuous monitoring related to transports classified as risky. Thanks to this, if the transporter vehicle is on the move the dispatcher receives signals from cameras and weight measuring tools posted on public roads. As a result of this solution, actual movement of risky transports becomes visible.

A two-month test run was introduced after the launch of the system last year. Then the test run ended also officially on 1 March 2015 and the system has gone live regarding taxpayers and the tax authority itself as well.

In 2015 in total 65,251 road controls (of which in 22,555 cases the controlled taxpayer did not have an EKAER report that is why the EKAER number was generated by the tax authority) and 24,748 audits concerning tax liabilities related to EKÁER system were performed. In the course of audits concerning tax liabilities, in total HUF 160 million of default penalty was imposed.

Until the end of June 2016, in total 50,489 road controls (of which in 25,036 cases the controlled taxpayer did not have an EKAER report that is why the EKAER number was generated by the tax authority) and 9,694 audits concerning tax liabilities related to EKÁER system, and almost 2,000 audits on the basis of EKAR data were performed.

There is an increase of more than 40% in the number of audits concerning tax liabilities this year compared to the same period in 2015. During audits concerning tax liabilities in total

HUF 65 million of default penalty was imposed and more than HUF 6.5 billion of net tax difference was identified.

According to the experiences gathered in the course of EKAER audits, there have still happened unreported consignments, which are dispatched in this form by taxpayers in the hope of arrival of goods in total illegality to their destination. Cameras monitoring payment of tolls meant a superb tool against these fraudulent intentions because they indicated unreported vehicles to NTCA's tax officials.

It can be evaluated as a favourable effect of the EKAER System that the number of applications for being registered in the database of taxpayers without public debts (*KOMA*) is continuously increasing. The number of applications was in total 81,924 in 2015 and 16,072 in the first quarter of 2016. The number of applications received by September 2015 showed a three-fold increase compared to the same period of the previous year. Furthermore, representatives of several sectors indicated to NTCA and tax law makers, respectively, that the market of their sector came to be cleaner as a result of the EKAER system. For instance steel industry, meat industry, traders in construction commodities complained of a temporary shortage of goods, what indicated the lack of goods affected by VAT frauds. Representatives of sugar and milk industry reported that their supplier chains had shortened and this is well recognizable even by these representatives. Anyway, this latter effect was clearly formulated as a target when the system had been established.

Besides favourable effects of the system, it is important to be emphasized that several Member States of the European Union (Finland, Romania, Slovakia, United Kingdom) have made inquiries about the daily operation of the Hungarian system and as far as we know, the Slovak Republic has already made a considerable step towards its introduction.

Conclusions

As a summary, it can be stated that the tools applied and introduced by the National Tax and Customs Administration of Hungary in order to whiten further the economy as well as to repel tax frauds have reached their impacts: amounts of tax revenues have increased, more targeted tax audits have become more effective and, because of preventive effects of measures and their effects deterring from further infringements, level of taxpayers' voluntary compliance has risen. On the basis of all these, we are entitled to say that the measures described above have enhanced the professional reputation of Hungary's state tax and customs authority not only in our closer region but also in a wider area: throughout the European Union.

Digital Business Information. Collection and Use for Taxation Purposes

By Nina Schanke Funnemark, Deputy Director General, The Norwegian Directorate of Taxes, Norway

Introduction

This presentation focuses on two main topics, followed by a practical example:

1. How digitalization makes it easier for businesses to comply and communicate with our tax administration
2. How digitalization improves the efficiency of our tax administration

Over the past few decades digitalization has improved and simplified tax procedures for personal tax payers in many countries, including Norway. A prefilled tax return for personal taxpayers is produced based on information collected from third parties, combined with information the tax administration is already in possession of.

Personal tax payers receive a prefilled tax return, 80 % receive a digital version and 20 % a paper version. In 2015 as many as 83% of the total number of employees and pensioners endorsed their prefilled tax return without making a single change! This is a clear indication that digitalization has resulted in major simplification of the tax return process for taxpayers, as well as for the tax administration. Compliance has increased and costs have been reduced.

Digital reporting required from all businesses

One of the main focuses in the Norwegian Tax Administration's (NTA) "Strategies for the Future" is to simplify processes and reduce administrative burdens for businesses. Some changes have already been implemented:

- Over the last few years, it has been possible for businesses to carry out the majority of their reporting to the tax administration digitally, directly from their own accounting and payroll systems.
- All Norwegian businesses are now required by law to report digitally to the tax administration, for income tax as well as VAT and payroll tax.
- A simplified tax return for income for small businesses will be implemented from income year 2016.

The Norwegian Parliament has recently approved new legislation on taxation processes, effective as of 2017. This legislation will provide a general legal framework for all types of taxes, based on a general principle of "self assessment" by the taxpayer. This new legislation provides a good basis for increased use of digitalization and automation in managing individual tax accounts.

Businesses perform the most complex parts of taxation

Correct taxation for business is heavily reliant on the quality of internal business processes. Facts needed for taxation are provided by the business itself. Digitalization is transforming the way in which business is carried out, as well as having an impact on administrative processes within the businesses. Business processes are increasingly automated across company boundaries, with heightened efficiency, reliability and quality.

In the ongoing development of improving tax process efficiency and increasing business compliance, we need to strengthen the digital connection between business and taxation processes. Bearing this in mind, three main areas of business processes are absolutely crucial in order to enable the correct taxation:

1. Identification processes
2. Documentation, self assessment and reporting processes
3. Payment processes.

In all three areas, digitalization can help make processes much more efficient and improve the quality to the benefit of businesses, as well as taxation.

Identification processes

It is our opinion that reliable identification is the very backbone of reliable information exchange. It is important that businesses can identify themselves to the tax administration, as well as to their business partners – on all levels, in a simple and reliable manner. Businesses are obliged to know the identity of their own business partners and their employees. Identity theft, identity fraud and organised use of "identities for hire" are increasing in volume. Missing and false identities are involved in the majority of fraud cases, fraud that often targets banks and businesses as well as taxation.

An important measure in improving identification processes is to promote widespread use of public registers for private individuals as well as companies, and to improve the quality of these registers. More widespread use of registers increases the importance of correctness of the information used in the registers, which will in turn lead to increased information quality.

The NTA is responsible for the General Population Register, and we are presently involved in a major development project with the aim of improving quality and access to this register.

Norway has a Central Register for Legal Entities which creates a common identifier used by companies for company registration, as well as for tax, VAT and social security. The NTA is working actively with the administrator of the Central Register for Legal Entities to improve the quality and content of this register.

One of the major issues regarding both of these registers is how to improve cross border interconnection with foreign registers. Digitalization creates possibilities for our countries to operate closer in this area in the future!

Documentation, assessment and reporting

Businesses are required to carry out bookkeeping and accounting for a number of reasons, not only for taxation, however demands made by tax authorities contribute significantly to the total cost for the business.

We have received a very clear message from small businesses: accounting is the main challenge in reporting correct tax. Accounting processes may never be simple, but they can be simplified and facilitated, and the tax administration has an important role in making this happen.

Payment processes

Timely and correct payment is the final link in the tax collection chain and given the size of these payments, predictability of tax claims is a major issue for the tax payer. Access to digital information during the income year may increase our ability to provide timely information to the tax payer.

The payment process for tax payers and the tax administration is facilitated by digital payment systems and electronic invoices. Digitalization offers interesting new possibilities for the automatic collection of payments. For example, the NTA are looking into the development of a so-called "split payment": allowing collection of taxes simultaneously on making a taxed transaction.

New possibilities for the tax administration

Digitalization offers new possibilities for the collection and use of information. Deciding what to collect and how to use it effectively, is of course the big challenge. Collection of digital information can supplement and strengthen our ability to obtain more knowledge on taxation, for individual tax payers, for sectors of the economy, or relating to specific processes or tax rules. It can also be used to improve our understanding of the effects of our actions in the short term, as well as the long term. These are issues that will most certainly be discussed in tax administrations around the world.

New possibilities for quantitative analysis and prediction

The new quantitative analysis and prediction tools are great additions to our traditional methods for providing knowledge. Analysis is a cross functional activity, and our ambition is to use analysis systematically so that we are able to use “all we know” in “everything we do”. System weakness, noncompliance and risk of error and fraud are closely related to all types of taxes.

- Managing individual tax payer accounts through individual contact with tax payers and by auditing, is traditionally one of the tax administration's main activities. Analysis has the potential of improving our knowledge on accounts that need the most attention, and thus increase our efficiency.

- Analysis may be helpful in identifying, understanding and documenting general weaknesses and needs for improvement in the taxation processes and the tax rules. Process improvement and rule changes may often be the most efficient way to increase compliance and to reduce compliance costs. Fact-based documentation is vital in making this a reality.
- Analysis may be helpful in providing more precise knowledge on the effects of our actions and campaigns, and thus a better basis for our priorities.

Contribution to good analysis will be an important consideration when the tax administration considers which information should be collected.

Digital communication with businesses - expectations and possibilities

Digitalization has changed society's expectations regarding communication. Businesses expect public services to communicate digitally and regard it as unnecessary bureaucracy to have to report the same facts over and over again to different public services. They also expect reporting to be adapted to processes where the required information is produced and not as a "stand alone" activity to the administration.

Businesses expect their own system for accounting and payroll to be their main user interface for tax reporting, and this has changed the way the tax administration works with these interfaces: design through cooperation with system providers, rather than "stand alone" solutions.

Partnership and cooperation

A business is always a part of a wider network of suppliers, customers, banks, public authorities, including the tax authority, and service providers. We believe that an efficient use of this network is a key factor in increasing compliance and reducing compliance costs.

From a business's point of view, what matters is how costly or how profitable, how simple or how complicated, how risky or safe it is to run a business. The sum of all demands from all stakeholders in their business network is the deciding factor. Through partnership and cooperation with various members of these business networks, the tax administration aims to contribute to a reduction in the sum of demands on the business, and at the same time increase business tax rule compliance.

Employers dialogue – old concept

The following example from work carried out by NTA illustrates and explains our approach.

A new dialogue for reporting salary and other employer information from 220,000 employers to three Norwegian public agencies was introduced in January 2015.

Formerly each employer needed to report employment information through five separate forms, partly paper-based with different deadlines, different reporting frequency and to

different agencies. All five agencies had different central reporting definitions, e.g. what should be included in the term "revenue", and a significant amount of information was required to be reported repeatedly to different receivers.

Employers' dialogue – new concept

A brand new concept "Employers' Dialogue" is the result of a long-term collaboration between Statistics Norway, the Norwegian Labour and Welfare Administration and the Norwegian Tax Administration

Reporting takes place through a single digital channel integrated with the different payroll and personnel systems used by employers. Reporting is carried out directly from the payroll system.

Following a year of operation we can see that 99.8% of the total reported information volume is produced by the payroll system. Many inconsistencies and former reporting errors have been prevented in the payroll system, prior to reporting. Employers are provided with automated guidance to avoid reporting inconsistencies and with immediate feedback. The same information is used as a basis for taxation as well as for welfare. Wider use of this information improves quality and allows for better decision making.

We regard the new Employer's' Dialogue as a success.

Levels of integration across public sectors

Coordination across different sectors of government usually stops short at technological integration and process harmonization, but this does not cut it. The most important and the most challenging detail is that harmonisation of definitions, common concepts and regulations are adapted to new reporting. In the case of the Employer's Dialogue it was crucial to integrate five sources of reporting together in one digital channel.

Conclusion

Digitalization provides us with opportunities, and new expectations from businesses that expect us to collect and use information more efficiently. Digitalization on its own is not enough. We need to focus on the quality of information and our ability to use this information with the aim of increasing compliance, we need to focus on legal framework that requires and facilitates collection and use of digital information.

Data-driven Tax Administration from the point of view of International Organisations and the Business Sector

Big Data Serving Tax Compliance

By Caroline Edery, Head of Unit, European Commission, Directorate-General for Taxation and Customs Union

Introduction

Nowadays big data is everywhere and influences the lives of citizens and businesses. Also tax administrations are affected by big data. It is a massive hype, because the explosive growth of available data promises more accurate analysis, operational efficiencies, cost reductions and reduced risks. Every business and tax administration seems to want as much data as they can get.

A data-driven economy

Today's new business models are driven by digital data, computation and automation. Human activities, industrial processes and research all lead to data collection and processing on an unprecedented scale, spurring new products and services as well as new business processes and scientific methodologies. The resulting datasets are so large and complex that it becomes difficult to process such big data with the traditional data management tools and methods. At the same time, technological advances allow for new ways to cope with these challenges.

To keep pace with the developments the Commission presented a European strategy on big data in a communication called "Towards a thriving data driven economy".[1] This communication sketches the features of a data driven economy and sets out some operational conclusions to support and accelerate the transition towards this type of economy. It also sets out current and future activities in the field of cloud computing. The data-driven economy will stimulate research and innovation on data while leading to more business opportunities and an increased availability of knowledge and capital, in particular for SMEs, across Europe.

In short, the strategy aims at creating a data community for cooperation and exchange of good practices, monitoring the European data market, funding research in big and open data, designing a European network of centres of competence, promoting e-government and a European cloud initiative for the storage and use of big data.

Impact on tax administration

An environment so deeply impacted by information technology and globalisation challenges tax administrations, in particular when it comes to ensuring tax collection and compliance.

[1] COM (2014) 422 final, 2 July 2014

With the support of business tools, a growing number of tax administrations implemented mechanisms that allow for gathering more and more information (big data) that is used for analysis of potential risks. Examples of such mechanisms are electronic and third party invoicing, electronic cash registers, recapitulative statements of sales and purchases, VAT lotteries, online accounting and banking.

At EU level the Commission facilitated this gathering of information via legislation and sharing good practices. In the field of direct taxation specific EU legislation permits or imposes the transmission of information automatically or on request. It removed banking secrecy and allows for automatic exchange of non-financial categories and financial account information. In the framework of Transparency and Base Erosion and Profit Shifting (BEPS) an automatic exchange of advance cross-border rulings and advance pricing arrangements is implemented and country-by-country reporting on certain financial information is expected in 2017. In view of preventing multinationals from using tax planning strategies that result in low taxation of their profits these taxpayers have to disclose more targeted information about their tax planning strategies. Such information could be used to give the tax administration a global picture of a taxpayer's operations and to verify data in a tax return.

As for Value Added Tax (VAT) the Commission put at Member States' disposal the VAT Information Exchange System (VIES), which records all intra-community transactions liable to VAT and provided for a legal framework for the exchange of information. A network of Member State risk analysts exchange information so as to enable tax administrations to quickly respond to potential cross-border risks and VAT fraud. However, exchanging information between tax administrations is not sufficient to ensure the proper collection of taxes.

Use of big data

With the increased use of data analytics tax administrations are moving towards a more risk based tax compliance strategy. Data analytics allow for developing sophisticated risk profiles, analysing trends, flagging potential audit issues and identifying higher-risk cases for deeper investigation and cutting off avenues for fraud before they even occur.

However, more data is not always better. In reality, most tax administrations need only a small portion of data that is available. Too much data implies greater complexity and can turn into information overload that may paralyse the functioning of the tax administration. In the world of taxes finding the right data is critical to compliance and avoiding unnecessary tax penalties and costly audits. It is all about quality: data must be both accurate and complete.

For this reason the Commission is looking at the potential offered by digital information on supplies and sales for VAT purposes and is exploring a change of paradigm, from exchanging to sharing information. Also, it reflects on having EU Member States jointly analysing data and reporting on follow up actions taken. A dialogue with e-commerce intermediaries like

internet platforms and payment service providers is envisaged as to see what information they could provide to tax administrations to facilitate the management of VAT by both businesses and tax administrations.

When using big data, tax administrations need to pay due attention to the protection of personal data and commercial confidentiality. Also, tax administrations have to keep in mind that data mining and cross-checking should not be used exclusively. Results need to be carefully analysed and double checked before being used for raising assessments or applying penalties. Combining the results with other techniques, like audit, indirect methods for estimating turnover and income to assess the amount of taxes due, will help the tax administration to assess and collect the taxes due. A sound penalty law and a reasonable use of penalties are also essential for tax compliance management.

Conclusion

Big data is an important source of information for tax administrations that will help them in detecting and evidencing mistakes and tax evasion and in carrying out their compliance approach. However, at the end of the day, data analytics should not replace strategies for voluntary compliance, which are based on a delicate balance between service and control. Tax administrations should give priority to improvement of future compliance as opposed to catching up with the past.

BEPS, AEOI and the Data Wave Ahead: Challenges and Opportunities

By Thomas Brandt, Head of the Tax Administration Unit in OECD Centre for Tax Policy and Administration

The theme for IOTA's 20th General Assembly, *Data-Driven Tax Administration*, was very appropriate as this meeting took place at a very important time. An unparalleled set of changes have been agreed involving the international tax agenda, changes that aim to achieve greater transparency in the financial and tax dealings of individuals and businesses throughout the world, as well as strong measures to curtail opportunities for tax evasion or tax avoidance. These developments include provisions that are expected to result in the delivery of new and extensive amounts of data; data that tax administrations will need to put to use in order for the provisions to work and have the intended impact.

A major body of work of the OECD in the past couple of years and continuing today are the projects on Base Erosion and Profit Shifting (BEPS) and the Automatic Exchange of Information (AEOI) or Common Reporting Standard (CRS). They remain a top priority of the OECD.

Last year's agreement on the BEPS package was a historic moment for the global tax system. All 44 OECD and G20 countries, and more than a dozen developing countries, jointly developed a comprehensive approach to tackling the loopholes that have undermined the integrity of our corporate tax systems. Additionally, in 2014 the G20 Leaders endorsed the new international Standard for Automatic Exchange of Financial Account Information in Tax Matters. Through implementation of the AEOI Standard, which includes CRS, jurisdictions will obtain information from their financial institutions and automatically exchange data pertaining to non-residents with other jurisdictions with which the requisite provisions are in place.

While there were sceptics who said the OECD would be unable to get countries to agree to the common reporting standard or to any meaningful reforms on BEPS, the agreements that were reached have demonstrated that consensus can be reached where common interests and shared outcomes coincide. As a result, countries are working together to promote a fairer tax system, one in which tax is based on where the economic activity takes place and where all taxpayers fulfil their tax obligations.

But realising those aims does involve challenges. With 15 BEPS actions, and with the extensive steps required for CRS implementation, there is a lot that tax administrations need to accomplish in a relatively compressed amount of time, which will draw on resources and expertise that are already stretched thin in some areas.

Furthermore, globalisation and the greater interconnectedness of tax and financial systems require all tax authorities to carefully think through the impact, dependencies, and likely outcomes of their actions from a global viewpoint. Successful implementation of BEPS and AEOI requires a comprehensive set of domestic actions, but those actions must be taken in consideration of their global impact.

To help countries meet these implementation challenges, there are a number of mechanisms, methods and resources available as described in Table 1.

Table 1: BEPS and AEOI Implementation Tools and Resources

- The Multilateral Competent Authority agreement for the automatic exchange of Country-by-Country reports (the "CbC MCAA") will enable consistent implementation of new Country-by-Country reporting developed under Action 13 of the BEPS Action Plan and will ensure that tax administrations obtain a more complete understanding of the way MNEs structure their operations, while also ensuring that the confidentiality and the appropriate use of such information is safeguarded.
- Under the Standard for Automatic Exchange of Financial Information in Tax Matters, jurisdictions will begin to exchange CRS information in 2017 or 2018, and by so doing, will begin a fundamental change to the international tax landscape by increasing tax transparency on financial accounts across the globe.
- Earlier this year, the OECD announced the new inclusive framework to support global BEPS implementation. Monitoring BEPS and fixing the standards as needed, is now open to all interested countries and jurisdictions. This will now be the largest, most inclusive forum where international taxation will be discussed and decided. With this new Forum, developing countries will be able to promote their own views and all participants will benefit from levelling the playing field.
- The OECD website also includes numerous toolkits, implementation guides, and other resources to assist tax administrations with BEPS and AEOI implementation.
- Lastly, the provision of capacity building assistance to developing countries is a priority of the OECD, the G20, International and Regional organisations, and tax administrations.

While the developments of BEPS and AEOI/CRS are welcome changes to the tax landscape, they do pose challenges that tax administrations need to understand, assess, and equip themselves to address. In particular, for tax administrators charged with implementing these important provisions, one of the most critical components that underlie these agreements and that will factor into whether or not they are successfully implemented and executed is data.

As but one example, data that will be made available from country-by-country reports can be a critical risk assessment tool. By facilitating the exchange of information between tax administrations, these reports are intended to provide a timely, single, global picture on the key indicators – profits, tax and economic activities – of multinational businesses. Equipped with this information, it is expected that tax administrations will be better placed to assess transfer pricing and other BEPS risks, and to deploy audit resources where they will be most effective.

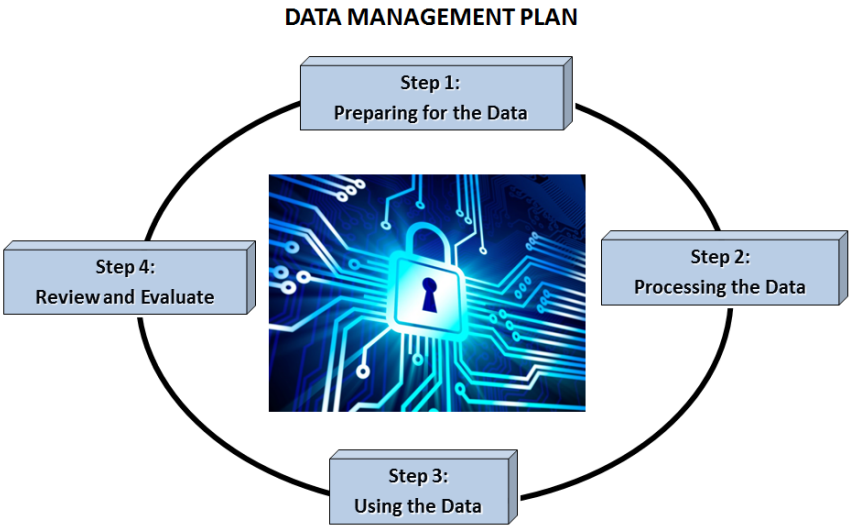
Data like this presents opportunities to enhance tax administration by improving risk assessment, more readily identifying potential non-compliance, and better targeting the use of scarce resources. But there are also challenges, including obtaining the technology and systems to process and store the data, to securing and safely managing it, and to ensuring its effective and appropriate use.

On that point, let's consider what is meant by effective and appropriate use. We've heard stakeholders voice some concerns about the effective and appropriate use of the data – but what does that mean? Effective use means the organisation is successful in using data to produce the intended or desired results. In the case of BEPS and AEOI data, that means it is used to improve risk assessment, reduce tax avoidance, improve reporting compliance, and limit base erosion and profit shifting – with results that are achieved in an efficient manner. Appropriate use means the organisation uses the data only for the intended and allowable purposes – such as in accordance with exchange and treaty provisions and for uses stipulated in the BEPS package. It will be essential to ensure that these requirements are being met.

It is also necessary to acknowledge that data is not a free good. Financial institutions, businesses, and individual taxpayers are incurring substantial costs, in both time and resources, to meet these new reporting requirements, and it can be expected that questions will arise as to how this data is being used. It is therefore incumbent upon tax administrations to thoroughly plan for and prepare to use this new information.

I would offer that the development of a data management plan is a critical first step to enabling the effective and appropriate use of data, and I'd like to share some thoughts on a high-level approach tax administrations could consider in preparing for the coming data wave (Figure 1). While focused primarily on planning and preparing for use of the BEPS and AEOI data, the approach taken with this data would optimally be a subset of a tax administration's overall data management plan and strategy – whereby the tax administration has a comprehensive and integrated view of all of its data, not just as an input or output of operational activities, but as a strategic asset of the tax agency. Truly valuing and treating data as a strategic asset requires the development of comprehensive data strategies to support better data management across the operations.

Figure 1



As a first step, tax administrations will need to prepare for the data – including ensuring the legal framework and exchange mechanisms are in place and conducting a comprehensive assessment of the technology and systems needs required for the data.

To help with the technology solution for supporting the exchange of data, the OECD's Forum on Tax Administration (FTA) designed and agreed to a Common Transmission System (CTS) that will create the first global bilateral exchange system connecting tax administrations and enabling CRS, CbC and other exchanges. The cornerstone of the CTS is data security, with leading industry standards of encryption applied to each transmission.

FTA tax administrations have pooled resources and expertise to fund and develop this system for the benefit of all countries, in particular developing countries. The Global Forum on Transparency and Exchange of Information for Tax Purposes, which has more than 130 members and brings together the largest group of potential users, will oversee the operation of the CTS which is expected to be operational in time for the first exchanges of CRS data in September 2017.

A second step involves processing the data – from receipt and validation to storage and retention. Numerous practices and approaches to data processing have been shared by tax administrations in BEPS workshops and forums, and the FTA's Offshore Compliance Programme recently developed a toolkit that delves into more detail about these steps for AEOI.

We do know from experience with other AEOI, that some of the data that is exchanged may be harder to use – it may not have taxpayer identification numbers or other readily identifiable information – and while there may be a temptation to push this data aside, it is possible that this is the data where the highest indicators of non-compliance may actually reside, so tax administrations should be sure to take that into consideration when determining processing procedures.

Additionally, when setting up methods and mechanisms for processing the data, tax administrations should also give consideration to what information and data points will be needed to track the quality, accuracy and results of these processes – data that can later be used to review, evaluate and measure the overall process. It is far easier to build those elements in at the front end vs. trying to reconfigure additions at the back end.

A third step entails using the data. This is, of course, vital and gets to the heart of why the new data reporting requirements were put into place, and is where the primary outcome of impact of the new data should be realised. We know from research performed by various tax administrations and academics that just the act of reporting information to the tax authority has an impact on compliance – at least initially – even without any further intervention by the tax authority. For example, work done by the U.S. Internal Revenue Service in estimating the tax gap shows that reporting is a significant motivator for proper reporting of tax liabilities. Without reporting, compliance levels plummet. IRS's research showed that only 1% of income that is subject to substantial information reporting and withholding is mis-reported to the IRS. Conversely, 63% of the income subject to little or no reporting is mis-reported.[1]

One can reasonably conclude from research like this that just the implementation of CRS and CbC reporting and exchange of information should change behaviour – primarily we hope in good ways, others in ways we perhaps have not yet anticipated, and that we should be on the look-out for, including any inadvertent loopholes. But taxpayers (and advisers) do pay attention to what the tax authority does (or more importantly, does not do) with information. If it becomes apparent that the tax authority is not using data, the risk of non-compliance can again begin to grow. So it is imperative, if the full and long-term benefits of what BEPS and AOEI were intended to deliver are to be realised, to have plans in place for the effective use of this data.

While tax administrations are (or should be) well on their way to preparing for CbC and CRS data, they may also want to step back and look at what is being done with AEOI data they already receive to find out if it is being used. If not, time should be set aside to understand why not and to implement corrective steps to avoid a similar outcome with CbC and CRS data.

As a fourth step, and in consideration of the investments that will be made by tax administrations, business, and taxpayers, it will be necessary to have mechanisms for review and evaluation. In addition to peer review activities planned that will cover implementation of the CRS, CbC, and Automatic Exchange of Rulings minimum standards and conducted by the OECD working parties and/or global forums, consideration should also be given to procedures that will be carried out within the tax administration. Given how much is new, and how much is being implemented in a relatively short amount of time, there are bound to be aspects that can be improved, done differently, or reconsidered.

---

[1] https://www.irs.gov/pub/irs-soi/p1415.pdf

There are also other factors to consider in the development of a data management plan, including staffing requirements – covering the skills, level, number and placement of staffing to support the plan. Procedural documents and internal controls will need to be developed and written to guide proper execution of the plan. There are likely to be training implications associated with each step of the data management plan, as well as value that can be gained from engaging with stakeholders. Communications, both inside and outside the tax administration, will be needed to educate, inform and raise awareness and understanding about all aspects of the tax administration's BEPS and AEOI implementation efforts. From a timing perspective, the requirement for automatic exchange of information on rulings is already activated, and data from CbC and CRS will start coming into play in 2017 and 2018. While there is some time remaining to get ready, planning and preparation efforts should be well-underway.

Conclusion

In closing, tax administrations have an unprecedented opportunity through BEPS and AEOI to level the playing field, to make tax more fair to all, and if done well, to help reinforce or in some cases improve trust and confidence in government. There is a window of opportunity, and a period of time, when tax administrations will have the chance to demonstrate that they are using the data by pre-filling returns, selecting cases for audit, following up on non-filing or non-reporting, etc. So tax administrators should be sure to take full advantage of this opportunity, making sure that they are positioned to make the best use of the data that is now coming their way.

Revenue Redesigned: Understanding the Full Impact of Data, Digital and Intelligent Machines

By David Regan, Global Managing Director, Revenue Industry, Accenture

Introduction

There can scarcely have been a more fascinating time to work in public revenue administration. Analytics, computing power, network connectivity and artificial intelligence are all finally powerful enough to deliver long-promised capabilities – from real-time services to predictive interventions and personalised relationships with taxpayers.

The significance of this is hard to understate. For decades, digitisation has increased the speed and volume of *existing* manual processes – helping us do more of *the same things*, faster. Letters became emails, filing cabinets became databases, cash and cheques became digital transactions.

But recent advances are different. The new generation of technology and data-driven innovations are sparking a reinvention of the very fundamentals of revenue agencies – recasting compliance strategy, organisational structures, service delivery and relationships with taxpayers.

Computer programming becomes dynamic learning

The most important developments have been in advanced data analytics, interconnected platform ecosystems and artificial intelligence. The latter, and intelligent automation in particular, has a long way still to go, but will become ubiquitous.

Of course, revenue agencies have been using automation tools successfully for some time: Accenture's most recent Technology Vision survey found 80% of public service leaders reporting extensive or moderate use of automation for IT tasks.[1]

The key difference with artificial intelligence-supported automation, compared with traditional approaches, is that systems do not require exacting and prescriptive programming – they "learn" and can continually adapt to change without the need for new software code to be written, tested and installed.

We are already seeing examples of intelligent automation – largely in voice biometrics and virtual digital assistants. In the UK, one million customers use HMRC's virtual assistant to get answers to basic questions.[2] Meanwhile, the Australian Taxation Office uses voice authentication (which allows taxpayers to automatically identify themselves while speaking

[1] Accenture. Technology Vision 2016.
[2] HMRC digital blog. So how do the 'numbers' stack up so far? 10 March 2016

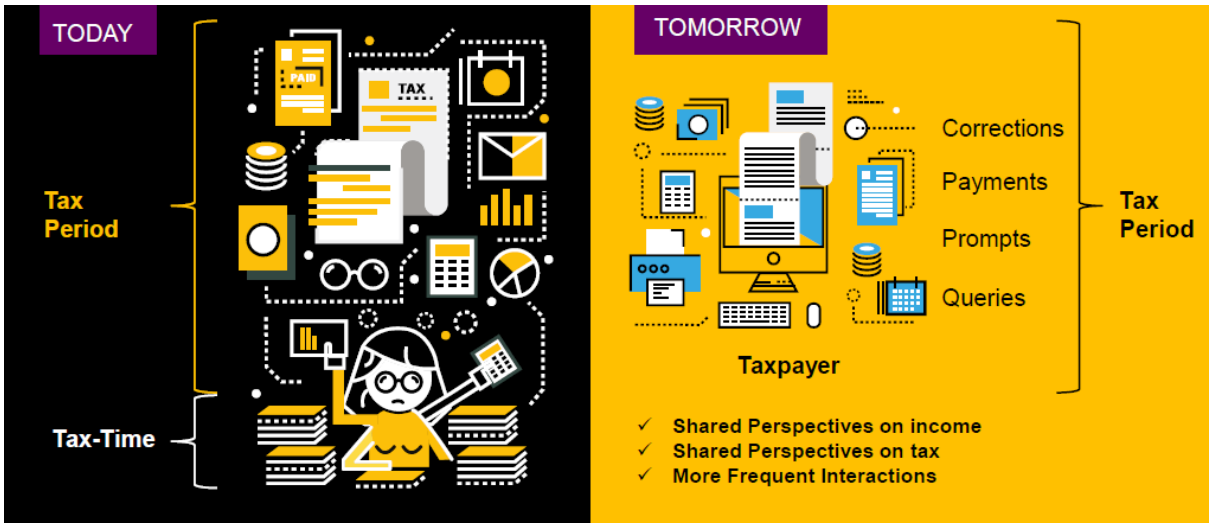
on the phone) to reduce the 75,000 annual workforce hours spent identifying callers.[3] These advances add convenience for taxpayers and free the workforce to focus on high-quality interactions.

Intelligent automation will reinvent tax compliance

But some of the biggest advances will come in tax compliance operations. Several agencies are moving towards "natural systems" – models that integrate tax compliance into natural business processes, real-time transactions and taxpayer behaviours. Intelligent automation will be key to making natural systems more advanced, reliable and efficient. Automatic, artificial intelligence-supported integration between accounting software and tax agency systems will ultimately remove the need for separate monthly, quarterly and annual reporting obligations (see Figure 1).

This would represent a new paradigm – not only radically different from the past, but also a significantly more efficient and effective approach to compliance, with dramatic reductions in the complexity and effort required by taxpayers.

Figure 1: The end of 'tax-time' and tax returns



At the same time, the shift increases the scope and availability of real-time data – unlocking new opportunities, particularly in predictive analytics. The more automated processes and transactions become, the more revenue agencies can focus on these opportunities, as well as other insight-driven strategies, personalised interactions and complex cases.

---

[3] BusinessWire. Australian Taxation Office Deploys Nuance Voice Biometrics in its Call Center to Drive Efficiency, Better Experience. 14 July 2015

It is no wonder, then, that 64% of public services leaders expect artificial intelligence to significantly change or transform public services over the next three years.[4]

High volume conquered, control becomes key

As the historically overwhelming volume of processes and transactions is tamed, agencies will focus greater resources on control and accuracy.

After all, how can tax agencies manage the external, private sector ecosystems they participate in? How do they govern quality, security and privacy while integrating with external platforms and leveraging new data sources? These issues are complex, but great progress has been made. And the agencies and market participants we speak to are confident about gradually overcoming the challenges.

But the fact that control is now so important makes the significance of transformation hit home. Revenue agencies are shifting from being resource-constrained and focused on exceptions and remediation, to being control-constrained and focused on accuracy and prevention.

The primacy of control also goes far beyond data curation and participation the platform economy. Every year will throw up another Uber or blockchain – developments that require a rethink of traditional approaches. Revenue agencies have to plan based on the likelihood that disruptive new companies, platforms and technologies will continue to have a significant impact on administration, regulation and architecture in the future.

Digital trust is paramount

Technology is only part of the story, and is often dwarfed in significance by more human challenges. One of these is digital trust. No progress can be made if taxpayers perceive a lack of transparency or a risk to their privacy and security. As agencies acquire and share more data across their ecosystems, it will be vital that taxpayers trust that their data is not being misused or exposed.

Public sector leaders are well aware of this: 75% agree that trust is the cornerstone of the digital economy. Tools supporting data capture, processing and dissemination will need to address vastly increased volumes of data – but also offer functions that ensure appropriate data is shared only with trusted partners, identify whether the agency is actually using the data acquired, and enable the retirement or destruction of data when it is no longer required.

Without such functionality, revenue agencies will struggle to establish the digital trust that is essential for taxpayers to agree to sharing more of their data.

---

[4] Accenture. Technology Vision 2016.

Workforce augmentation

Another non-technological challenge is developing and implementing a new workforce model and organisational culture that suits a reinvented tax agency. This demands open minds and a significant departure from long-held habits.

Tax administrations will need to drive change across several aspects simultaneously. This includes shifting from being output-led to insight-led and from fixed organisational structures to evolving cross-silo teams (see Figure 2).

Source: Accenture

It is a major change, but Accenture research has found most revenue agencies expect the impact of intelligent technologies on their workforce to be positive, with 79% of respondents believing that intelligent technologies will boost the job satisfaction of current employees.[5]

The idea is that implementing intelligent technologies requires an evolution of human roles. Current technology is decades from being a replacement for human intelligence; instead, it is designed to augment the capabilities of the human workers and help relieve the burden of mundane and repetitive jobs.

Multi-skilled, cross-silo teams

Another positive change will see people with different business, technology and management skills working in teams that support particular projects rather than fixed functions. These "liquid workforces" will help to ensure that the organisation remains agile

[5] Accenture Public Service Intelligent Technologies Survey.

enough to respond to changing environments; 75% of public sector workers believe this shift will also improve innovation.

What is clear, though, is that developing new processes and models is relatively easy compared with changing the habits and preferences of tens of thousands of workers. This was also a finding from Accenture's intelligent technologies research: while 80% of revenue agencies have significantly changed their day-to-day processes and 67% have adapted their business models in order to accommodate intelligent technologies (primarily advanced analytics and predictive), just 41% have made structural changes to their workforces.

Changing the way change happens

Part of this is because many agencies need to change the way they change. This is something many recognise. The Dutch tax administration (Belastingdienst), for example, has a dedicated change management team, staffed mainly by psychologists and behavioural scientists, within the data and analytics function. The team communicates the reasons for the changes and helps workers – many of whom have been doing the same work, the same way, for many years – to make a positive adjustment to the new approaches.[6]

Revenue agencies are also under pressure to speed up delivery: they must respond more quickly to changing legislation and offer new service models for taxpayers. Today, even revenue agencies must aim to deliver software in weeks rather than years.

Design-driven innovation and agile delivery models need to become the norm right across revenue agencies – even pioneers in these areas still have these capabilities limited to specific applications, rather than organisation-wide.

Where does it all lead?

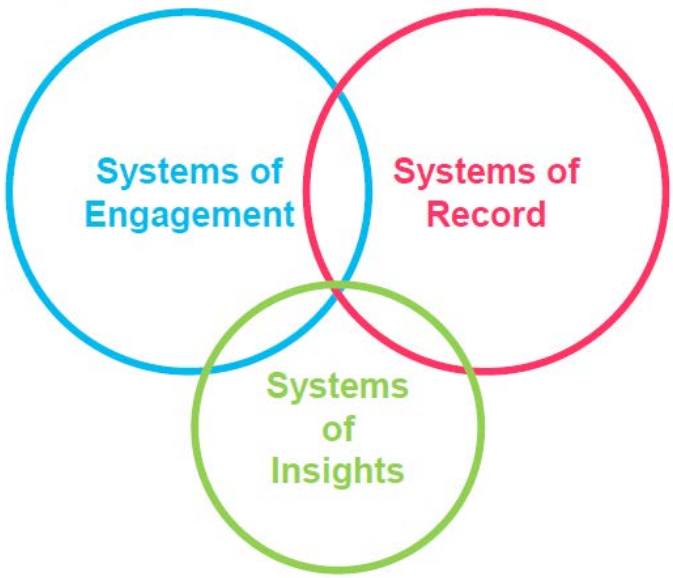
The transformation of revenue agencies is about people, trust and collaboration. New technologies support all of these in ways we could only imagine a decade ago. We are heading for a revenue agency that is connected directly to taxpayers and the economy, driven by ever-deeper insight, continually adjusting to change, and orchestrating – not operating – a highly automated, personalised tax system.

This changes, of course, the way agencies are structured. Early digitisation focused on building systems to keep a robust record of tax status and process. But as automation, platform integration and analytics have become more advanced, systems have developed to support two other core functions. We now have systems of:

- **Engagement**, which manage data exchange and taxpayer interactions (including access to tax history, useful content, continuous clarification and behavioural "nudges")

[6] OECD. Advanced Analytics for Better Tax Administration: Putting Data to Work. OECD Publishing. 2016

- **Insights**, where descriptive, prescriptive and, increasingly, predictive analytics drive tax agency strategy and operations
- **Record**, which continue to hold taxpayer accounts and returns, but in ways that optimise interactions with the other two systems (see Figure 3).



Source: Accenture

Conclusion

As compelling as this vision is, it is tempered by immediate challenges and practical barriers to change.

OECD research spanning 56 countries found that 40% of tax administrations are being asked to do more, including managing additional activities and amalgamating with other services. At the same time, 60 percent are coping with less staff – with significant reductions in Australia, the UK and the US[7]

Many tax agencies remain stuck in a catch-22: overwhelmed by operational processes and constrained by budget cuts, they have neither the capacity nor the funds to implement systems that would increase efficiency and save costs.

But in our research, and our work with tax administrations around the world, we see significant and accelerating progress in automation, artificial intelligence, data analytics, workforce transformation, agile delivery, private sector collaboration and taxpayer engagement – all the fundamentals of the revenue agency of the future.

The fiscal, economic and cultural challenges tax agencies have faced in recent years – and continue to face – makes this progress all the more impressive. The reinvention of tax administration is clearly in full-swing and that makes this a most fascinating time to be involved.

[7] OECD. Tax Administration 2015: Comparative Information on OECD and Other Advanced and Emerging Economies. OECD Publishing. Paris

IOTA

Intra-European Organisation of Tax Administrations