

UTILISING TECHNOLOGY TO IMPROVE COMPLIANCE: THE JAMAICA EXPERIENCE

Hank Williams¹

Abstract

Tax Administration Jamaica (TAJ) successfully completed the implementation of the three phases of its Revenue Administration Information System (RAiS) project in December 2016. The implementation of the RAiS resulted in the modernisation and re-engineering of processes and operations in order to positively influence taxpayers' behaviour and voluntary compliance levels. Central to this was the attention focussed on the creation of an effective tax system built upon the principles of simplicity, transparency, maintenance of revenue adequacy, and the broadening of the tax base.

Such guiding principles enabled the tax authority to take advantage of changes to key pieces of legislation, policies, business rules, and standard operating practices. Particular emphasis was also placed on strengthening human resource capacities in order to make optimal use of the RAiS's features. TAJ also engaged with key stakeholders throughout the implementation process.

The RAiS has not only impacted customer service delivery, but has also greatly improved compliance in respect of registration, filing, payment, and accurate reporting. The analytical models used in the RAiS have underpinned the development and design of targeted strategies to achieve increased compliance in those areas. Hence, the tax authority is now in a better position to aggressively pursue tax avoiders and evaders through intelligence and enforcement actions.

It is obvious that the tax authority has made significant strides when it comes to providing cutting-edge systems to improve voluntary compliance and public confidence in tax administration. Finally, the author trusts that the lessons emerging from TAJ's practical experience will prove to be valuable for other countries' tax administration systems in the future.

Keywords: Revenue Administration Information System, Voluntary Compliance, Tax Administration.

1. BACKGROUND

Globally, the evolution of technology has significantly changed the future for tax administrations. Tax administrations have been forced to pay significant attention to the rapid and continuous state of evolution in digital technology (Organisation for Economic Co-operation and Development [OECD], 2014). Interestingly, countries have been forced to amend their tax agendas to include technological advancements and rapid evolutions in order to address international tax matters (The Association of Chartered Accountants, 2018, & OECD, 2018). This has significantly disrupted and transformed the traditional mode of

¹ Deputy Commissioner-General, Strategic Services, Tax Administration Jamaica.

operation so as to maximise taxpayer risk compliance activities. There is presently a greater demand for the usage of modern technologies in order to bolster tax administrations' capacities to take a risk-based approach to compliance management.

The OECD states that the revenue bodies could improve their performance in future, both in terms of compliance risk management and meeting service expectations, through the successful use of technology (OECD, 2009; United Nations, 2019). This would allow tax authorities to focus their attention on improving the allocation of their scarce resources so as to achieve optimal tax compliance. Therefore, it would result in the introduction of an array of interventions that would help revenue authorities to meet what the OECD (2004) defines as its "primary goal": to "collect the taxes and duties payable in accordance with the law and to do this in such manner that will sustain confidence in the tax system and its overall administration" (p. 7).

Jamaica has also adopted a risk-based approach to compliance-related activities that involves the use of a modern information technology system. This has resulted in TAJ changing the way that it does business and, most importantly, taking a new approach to risk management in respect of taxpayer compliance. The aims of this paper are to outline the role that technology plays in taxpayer compliance risk management and to address the major tax issues that arise within the Jamaican taxpayer population.

2. INVESTMENT IN TECHNOLOGY TO IMPROVE TAX COMPLIANCE

TAJ successfully implemented the third and final phase of its new RAiS in September 2016. It made a substantial investment in this customised Internet-based solution, which was built using sophisticated risk models in keeping with international best practices. In order to do this, TAJ reengineered its workflow management procedures and changed its core business processes.

It was crucial that the new system had a comprehensive range of predictive modelling and risk assessment capabilities. This was very timely, as the organisation was grappling with a large volume of data obtained from various sources. The new system can collate and use that data in order to better understand compliance risks, something that was previously virtually impossible to do. The implementation of the RAiS has provided TAJ with a foundation for a structured and direct path to gaining the insights needed to improve its decisions.

Tax administrations also urgently need to find creative ways by which to address the rapid developments in the digital economy (United Nations, 2019). This comes at a time when many countries across the Caribbean are faced with the need to improve their tax administrations (Collosa, 2020; Reyes-Tagle & Ospina, 2021). Tax administrations throughout the Caribbean continue to struggle with numerous difficulties and obstacles beyond their information technology (IT) infrastructures. As a result, many countries have invested in automation through upgraded IT systems and have taken other crucial steps to improve their service offerings. For example, the Barbados Revenue Authority (BRA) implemented an integrated tax system that was more flexible and accurate in order to keep pace with complex compliance demands and the expectations of taxpayers (BRA, 2018). Interestingly, TAJ has benefited from implementing its RAiS in the same way and this allowed it to turn its attention to implementing solutions in response to the global COVID-19 pandemic.

Henry (2020) estimated that government revenue would decline by 18% as a result of the slowing down of economic activities due to the pandemic. This, the most significant economic challenge in Jamaica's history, has not only impacted the tax administration but has significantly affected its ability to respond as the major revenue collection agency. COVID-19 has brought unique challenges to tax administrations due to the high levels of uncertainty that they face while trying to ensure the continuity of all essential services with due consideration to the health and safety of all (The Inter-American Center of Tax Administration, the Intra-European Organisation of Tax Administrations, & the OECD, 2020). The need for the modalities of operations undertaken to maximise tax compliance activities to be significantly transformed is inescapable. There is presently a higher demand for the use of modern technologies in order to prevent tax administration from coming to a standstill.

Jamaica's RAiS is also designed to build partnerships and foster voluntary compliance, and enables taxpayers to connect with the tax authority in a more personal and interactive manner. Therefore, it is prudent to ensure that no unauthorised party can access sensitive taxpayer information. Strict measures are in place to ensure the security of taxpayers and to counteract threats that may undermine the integrity of the database system.

TAJ is now in a position to utilise a structured and systematic process in order to identify high priority risks that require urgent attention and allocate its finite resources accordingly. This process contains a series of iterative steps to systematically identify, assess, rank, and treat tax compliance risks, and to monitor and evaluate taxpayer activities in order to support evidence-based decision making. It is important that TAJ's taxpayer compliance risk management process is consistent with international best practices (OECD, 2004).

To that end, the process resulted in significant improvements being made to the administration of taxes and taxpayers were provided with access to a wider range of online services. These improvements were all geared towards improving the taxpayer experience as well as the efficiency and effectiveness of customer service delivery.

3. DATA SOURCES

TAJ's taxpayer compliance risk management process utilises the following:

- ✓ Economic and financial data;
- ✓ Data supplied by taxpayers on their tax returns;
- ✓ Data supplied by third parties;
- ✓ Information available on the Internet and from other relevant sources.

Of particular interest is the fact that TAJ currently receives data from 245 third-party entities annually. These third-party entities are required to submit information about all payments made to independent contractors providing goods and services, purchases registered by corresponding entities, payments to private medical practitioners for medical services, and payments made by non-resident customers for various services.

TAJ has organised the treatment of risks into the following broad categories:

- Bauxite and mining
- Customs
- Betting and gaming
- Public bodies
- Tourism
- Medical and pharmaceutical
- Petroleum
- Utilities.

4. TAX COMPLIANCE RISK MANAGEMENT ENVIRONMENT

Overview

TAJ's RAiS was designed to optimise the leverage of knowledge and experience of users in the areas of data analytics and predictive modelling. The system entails an iterative sequence of steps: data cleaning, data integration, data selection, data transformation, data mining, pattern evaluation, and knowledge presentation. Most importantly, the RAiS facilitates the effective and efficient transformation of raw data from various sources into information that can guide the development of various programmes to improve voluntary compliance.

Data Cleaning and Integration

Data cleaning involves the process of addressing any anomalies contained in the data received, such as errors or missing values, and the removal of all outdated or incorrect information. TAJ adopts a process in which data from all sources is either updated or removed. This includes information that is deemed to be incomplete, incorrect, improperly formatted, duplicated, or irrelevant, thus improving the quality of information and enabling TAJ to make more accurate decisions. Focus is placed on ensuring that data gathered contains the important attribute of a unique identifier commonly referred to as a taxpayer registration number (TRN).

Interestingly the RAiS, through its data warehouse, integrates data from all data sources to build an entity profile that contains a comprehensive representation of all known information about each taxpayer. This forms a repository of multiple heterogeneous data sources organised under a unified schema in a single location in order to facilitate further analysis and risk mitigation efforts.

For example, a taxpayer's basic attributes include information such as the location, segmentation, and age of their business, and details of the sectors with which their business is associated. They also include information about the taxpayer's estimated or real income, filing and payment history, and other factors that could suggest or predict how the taxpayer will behave in the future. It should also be noted that entities are able to upload and submit third-party data at their convenience and according to the requirements of TAJ.

Data Mining

Han, Kamber and Pei (2012) define data mining as "the process of discovering interesting patterns from massive amounts of data" (p. 33). TAJ's RAiS enables the use of analytical techniques through various functionalities such as summarisation, consolidation, and

aggregation, as well as the ability to view information from different angles. It can turn a large collection of data into knowledge that meets the organisation's needs.

This enables TAJ to identify major tax risks within the overall taxpayer population based on tax obligations. This has facilitated a review of the risks contained in the tax system. More specifically, tax compliance risk factors have emerged from legislative context, government policies, public opinion/surveys, international agreements, and economic conditions. The process used by TAJ takes taxpayer segmentation into consideration according to the most recent Jamaica Industrial Classification (Statistical Institute of Jamaica, 2016). The behaviour of taxpayers within each segment is examined using customised rules and calculations to find, filter, augment, or matching data from the system's main database and/or the data warehouse. The RAiS identifies anomalies and creates leads that suggest corrective measures that could be taken in response to the compliance risks. It is extremely important to note that the RAiS can identify possible treatment options according to the tenets of compliance: registration, filing, payment, and correct reporting.

Data Analytics

The RAiS has been developed utilising analytical models that enable TAJ to evaluate risk at taxpayer level. These analytical models are able to rank and prioritise risk factors using appropriate macroeconomic and statistical analyses according to the tenets of compliance. They are used to assign overall scores to taxpayers based on their profiles, tax histories, tax revenues at risk, and other relevant information.

In the context of revenue administration, data analytics is the process of compiling, organising, and using data so as to learn from past and current experiences in order to: better use resources; understand and predict patterns of non-compliance; reduce costs; and increase revenue collections (Ernst & Young Global Ltd., 2019). Analytics models have also been used within TAJ to improve the compliance rate and the efficiency of the way in which TAJ operates as a semi-autonomous revenue authority. Moreover, the system utilises risk scoring in order to produce a probability distribution for non-compliance, with a view to maximising revenue collection, minimising revenue shortfalls, and predicting changes in taxpayers' behaviour.

For example, in an effort to better exploit data from various sources, boost efficiency and increase revenue collection, TAJ has used the RAiS's analytics score model in order to robustly determine the collection cases to be worked on based on the likelihood of generating J\$6,000 per day. Scores are automatically calculated by the system and range from a percentile of 0 to 100, with 100 being the greatest likelihood of collection.

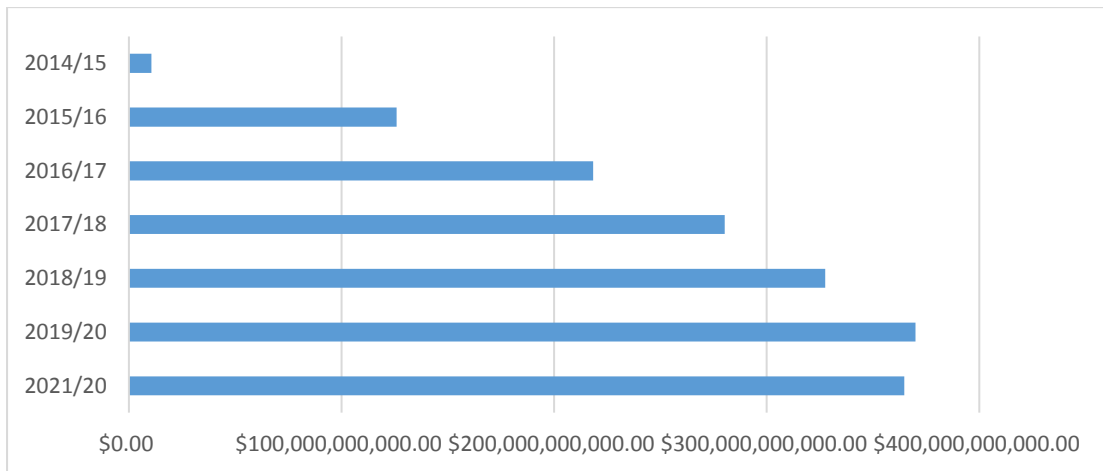
5. IMPACT OF TAJ'S RAIS ON COMPLIANCE

The implementation of the RAiS has had a major impact on TAJ's strategy. Not only has it had a positive impact on customer service standards, it has greatly improved compliance rates in respect of registrations, filing, payments, and accurate reporting. The analytical models incorporated within the RAiS have underpinned the development and design of targeted strategies to promote voluntary compliance. Furthermore, such models have placed TAJ in a position to aggressively pursue tax avoiders and evaders through intelligence and enforcement actions.

Since the RAiS was implemented, the amount of time that taxpayers take to comply with their tax obligations has been significantly reduced. The use of the system makes it easier to do business and to pay taxes, as evidenced by growing numbers of positive taxpayer testimonials and increased use of the electronic services platform.

Figure 2 illustrates that 1,007,286 payments were processed electronically in FY2020/21, with a total value of J\$364.74M. This represents a 3.353% increase in electronic payments and an 819% increase in transaction amounts when compared to FY2014/15 (prior to the implementation of the RAiS).

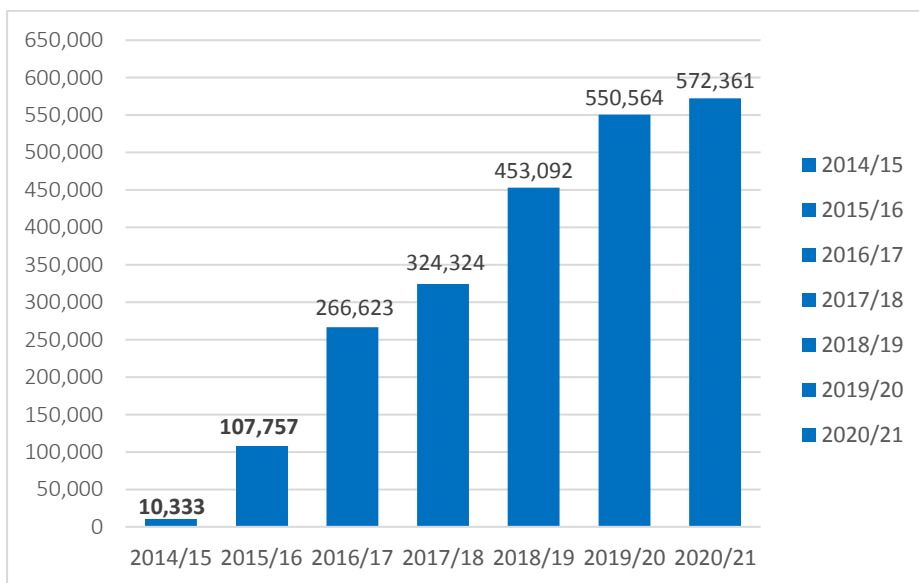
Figure 2: Number of ePayment Transactions



Data Source: TAJ

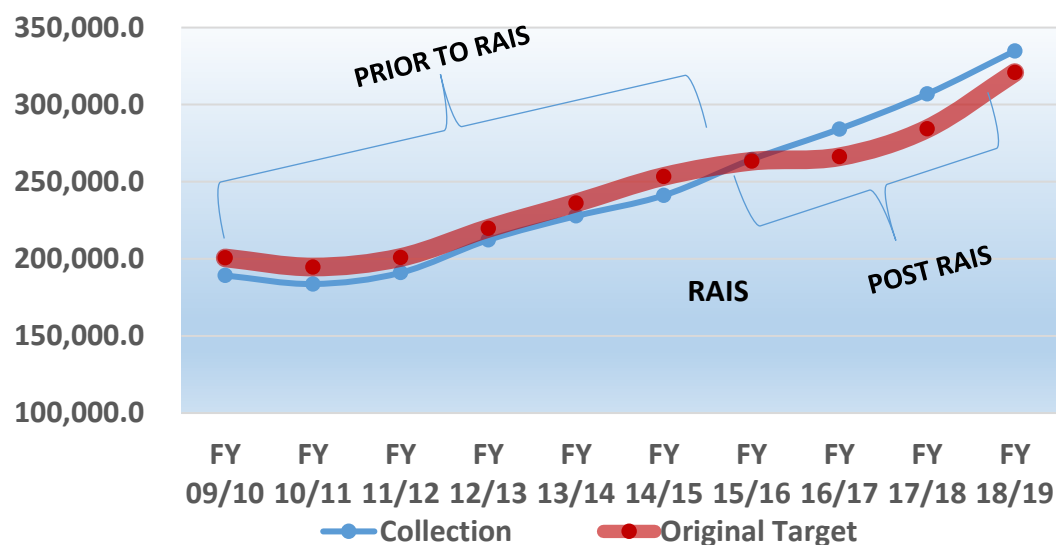
Additionally, as illustrated in Figure 3, electronic filing transactions in FY2020/21 stood at 573,361, an increase of 5.439% when compared to those received in FY 2014/15 (10,333).

Figure 3: Distribution of Electronic Services in Jamaica



Data Source: TAJ

Figure 4: Distribution of Domestic Revenue Collection vs. Original Target



Data Source: TAJ

Since the RAiS was implemented, TAJ has begun to exceed its original collections targets. This is reflected in Figure 4, which reveals a positive trend. These positive annual outcomes have resulted in the continuation of focused compliance strategies that are guided by the application of this new technology.

Interestingly, use of the RAiS has definitely enhanced TAJ's ability to anticipate customer expectations through the modification of business processes. This has, ultimately, resulted in the organisation becoming more efficient. Benefits for taxpayers and TAJ have been identified, as set out below:

Benefits of the RAiS for Taxpayers

- Reduced processing time for individual and business transactions.
- Access to online services for the major tax types.
- Real-time access to their accounts.
- Reduction in operating expenses.
- Greater level of transparency.
- More convenient transactions.

Benefits of the RAiS for TAJ

- Work can be assigned to team members efficiently.
- Work assigned to team members can be monitored in real time.
- Information can be accessed quickly.
- Timely reporting.
- Reduced processing time.
- Reduced operational costs.
- Increased revenue collection and meeting of revenue targets.
- Improvement in enforcement and other compliance actions.

6. CONCLUSION

The implementation of the RAiS has signalled not only a change in the way that TAJ does business but, most importantly, a transformation of the organisation so that it can sustain confidence in the system and its overall administration. TAJ has placed much attention on ensuring that its limited resources are strategically aligned in order to maximise its compliance activities in an efficient and timely manner.

This technological evolution has sought to broaden the holistic profile of taxpayer risk in order to improve taxpayer service and enforcement approaches. This, coupled with a renewed thrust to register new taxpayers, encourage “online and on time” filing, improve payments, and ensure correct reporting, has significantly contributed to TAJ’s achievements.

It is important to note that, along with making technological advances, TAJ underwent a change management programme that resulted in a shift in its service delivery model. The shift in TAJ’s service delivery methodologies brought about a corresponding shift in taxpayers’ perceptions of, and attitudes towards, the payment of taxes and compliance.

BIBLIOGRAPHY

The Association of Chartered Accountants. (2018). *Technology tools and the future of tax administration*. London, England: ACCA.

Barbados Revenue Authority (2018, February 22). *BRA launches phase 1 of new tax system* [Press release]. <https://bra.gov.bb/News/Press-Releases/BRA-Launches-Phase-1-of-New-Tax-Sy.aspx>

Collosa, A (2020, December 9). Digital economy in Latin America and the Caribbean: What can tax administrations do? *Afronomicslaw*. <https://www.afronomicslaw.org/2020/12/09/digital-economy-in-latin-america-and-the-caribbean-what-can-tax-administrations-do>

Ernst & Young Global Ltd. (2019, May 27). *How data analytics is transforming tax administration*. <https://taxinsights.ey.com/archive/archive-articles/data-analytics-is-transforming-tax-administration.aspx>

Han, J., Kamber, M., & Pei, J. (2012). *Data mining: Concepts and techniques*. Waltham, MA: Elsevier Inc.

Henry, B. (2020, May 14). Double Blow. *Jamaica Observer*. <https://www.pressreader.com/jamaica/daily-observer-jamaica/20200514>

The Inter-American Center of Tax Administration, the Intra-European Organisation of Tax Administrations, & the Organisation for Economic Co-operation and Development (2020). *Tax administration responses to COVID-19: Business continuity considerations*. Paris, France: OECD Publishing.

Organisation for Economic Co-operation and Development. (2004). *Guidance note: Compliance risk management: Managing and improving tax compliance*. Paris, France: OECD Publishing.

Organisation for Economic Co-operation and Development. (2009, March). *Information note: Managing and improving compliance: Recent developments in compliance risk treatment*. Paris, France: OECD Publishing.

- Organisation for Economic Co-operation and Development. (2014). *Addressing the tax challenges of the digital economy* (OECD/G20 Base Erosion and Profit Shifting Project). Paris, France: OECD Publishing. <https://doi.org/10.1787/9789264218789-en>
- Organisation for Economic Co-operation and Development. (2018). *Brief on the tax challenges arising from digitalisation: Interim report 2018*. Paris, France: OECD Publishing.
- Reyes-Tagle, G., & Ospina, L. (2021, March 9). Winds of change: An opportunity to reform tax administration in the Caribbean. *Recaudando Bienestar*. <https://blogs.iadb.org/gestion-fiscal/en/wind-of-change-an-opportunity-to-reform-tax-administration-in-the-caribbean/>
- Statistical Institute of Jamaica. (2016, December 12). *Jamaica industrial classification (2016)*. <https://jic.statinja.gov.jm/>
- United Nations. (2019, April 5). *Tax issues related to the digitalization of the economy: Report*. New York, NY: United Nations.