Best Practices in Technology Adoption and Acquisition Strategies for Tax Administration

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Policy and Practices Brief:

Best Practices in Technology Adoption and Acquisition Strategies for Tax Administration [1]

Tables of contents

1. Introduction

Today, African tax administrations have reached varying stages of digital transformation with some countries having made significant progress whilst others are at the beginning of the journey. Despite these different levels of digitalisation, administrations agree on the clear efficiency gains from the implementation of information and communications technology (ICT) solutions, including:

i.   The ability to use large sets of data. Tax administrations have an increased documentary burden due to the rise in the volume and sources of data. ICT solutions provide the opportunity for tax administrations to refine and structure the data for use in their revenue collection role.

ii.   Increase in the effectiveness of tax processes, being powered by new technology. African tax administrations can build more accurate taxpayer profiles, enhance processes such as risk assessment and audit selection and increase the accuracy of tax assessments.

iii.   Strengthening of taxpayers' services. The digitalisation of tax administrations continues to improve the provision of services to taxpayers including through the use of interactive chatbots on the platforms and e-filing portals.

iv.   New solutions such as blockchain can be used to provide security to the supply chain and automate tax calculation[2], especially in customs administration[3].

Table 1:   **End-To-End Tax Administration Cycle – The Potential Role of Technology**

REGISTRATION	ASSESSMENT	AUDIT	ENFORCEMENT	OBJECTIONS
Smart portals	e-Filing	e-Audit	Predictive modelling	Appeals workflow
Mobile apps	Online Payment	Data Matching	Automated enforcement	Single Taxpayer File
Data identity/ integration	e-Accounting	Case Management	Cross-border collection	Multi-channel communication
Taxpayer services				
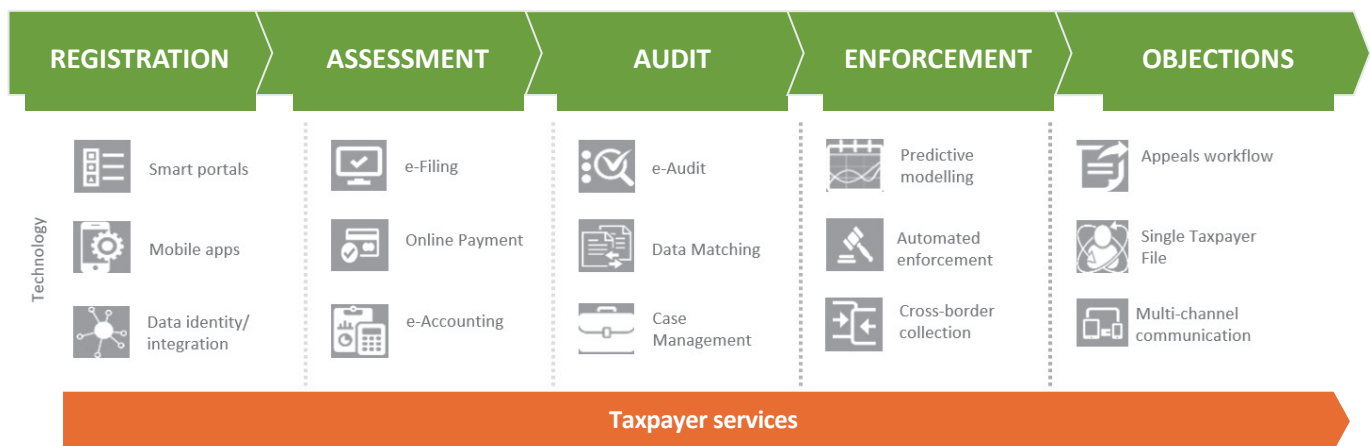
Source: Christopher Sanger. 2020. Tax Authority Approaches to Digital Tax Administration. EY Global Presentation.

African tax administrations face several challenges in digitalising their processes: [4] lack of alignment of ICT solutions with social and cultural norms; weak ICT infrastructure and limited

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[2] See discussion in Jeffrey Owens & Sabina Hodžić, Policy Note: Blockchain Technology: Potential for Digital Tax Administration, Intertax 50 (11), (2022). p. 813-823,
[3] See Table 1 for the role of technology in the end-to-end tax administration cycle.
[4] See the discussion in ATAF Efficient Acquisition, Implementation, and Maintenance of Integrated Revenue Administration ICT Systems in Africa: ATAF Guidebook (2021) p 22-27

internet coverage; lack of clear ICT acquisition and integration strategies; lack of business-ICT alignment; legal constraints; poor data quality; and lack of skilled staff and political will.

Investment in ICT capabilities now forms a significant part of the budgets and reform strategies of tax administrations, and this requires strict governance and assessment frameworks to draw the most value. The decision to implement an ICT solution is not simple, multiple solutions with significant functional differences exist and this can influence cost, time-to-market, and usability.[5] Determining whether to procure a system or develop in-house should be a strategic business decision that should conform with the broader strategic objectives of the tax administration to guarantee usability, institutional capacity, and cost-efficiency.[6]

This policy and practices brief is based upon presentations and discussions held during the joint African Tax Administration Forum (ATAF) and the WU Global Tax Policy Centre at the Institute for Austrian and International Tax Law, Vienna University of Economics and Business (WU GTPC) virtual workshop on "Best practices in technology assessment and acquisition strategies for tax authorities" held on Wednesday, 27th March 2024. It highlights two key steps in the digitalisation process, the role of a digital transformation roadmap for African tax administrations and the importance of including a comprehensive assessment and acquisition strategy for tax administrations highlighting best practices from case studies presented during the joint ATAF and WU GTPC virtual workshop.

2. Key Considerations to Guide the Selection of an ICT Solution

Tax authorities must keenly take into consideration the policies, procedures, and tools employed to assess, acquire, and make use of a system. A comprehensive assessment and acquisition process should involve the following essential steps:

▶ Identification and validation of the strategic business need – innovation should not be driven by novelty but a clear business need. This is important because the implementation of an IT solution holds significant financial implications and requires a range of reforms to the organization, processes, staffing roles and skills.

▶ Develop the requirements for the solution – these requirements set the foundation for design, development or purchase, and implementation. This should be a collaborative process to capture the specific needs, constrains and expectations. In addition, this process should outline the features, capabilities and characteristics that should exist to meet the business needs.

▶ Assess the existing system – the aim is to try to understand if the IT requirements can be accommodated under the current infrastructure and identify the gaps between current systems and future system needs.[7]

▶ Evaluate the environment within which any solution is expected to operate – this will help determine how sophisticated the solution can be as this will impact the cost (either of development or purchase). In particular, understanding the IT skills and infrastructure of taxpayers and broader government will play an important role. This will also support in establishing the preferred timing and sequencing of delivery of the solution.

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[5] Guillermo Jimenez, Niall Mac an tSionnaigh & Anton Kamenov, Information Technology for Tax Administration, USAID & LPFM, Feb. 2013.
[6] See above
[7] Jimenez et al. (2013), n.2

► Market research to identify system options – identify solutions that can satisfy the established requirements, costs should be evaluated (see cost benefit analysis below), and timelines established to full operation. This should also include a review of the experiences of other revenue authorities and government institutions that have made use of the identified solutions.

► Carry out a cost benefit analysis – the costs include hardware, software, procurement, implementation, integration, operation, training, and replacement expenses. Additional indirect costs to be considered are staff time, testing, general downtime while deploying the solution.

The above should be underpinned by a solid governance framework which ensures the following:

- Alignment with the ICT strategy of the organization.
- that all business application development/adoption projects comply with the same governance structure.
- The existence of a comprehensively defined project lifecycle highlighting the governance gateways, the required documentation and monitoring procedures. This is essential to informing the timing for release of funds and establishing auditable processes.
- The existence of a structured change management framework to support technology adoption and integration and ensure all stakeholders are prepared.
- The identification and mitigation of risk.

The main aim is to establish and maintain a consistent approach to the adoption of IT solutions. Tax authorities must implement a measure of standardization in order to properly set and evaluate targets and document the process to remain reportable and as part of a future-proofing strategy.

Overall, to adequately prepare for, implement, and make use of IT solutions, tax authorities must, in the process of designing or identifying the appropriate system, understand the inherent constraints arising from existing administrative and policy processes that may prevent the technology from operating as intended; and ascertain the institutional, political, cultural, financial, and human capacity-related factors that could be enablers or inhibitors.

It is important to acknowledge that an effective solution is highly dependent on it being adapted to the capabilities and strategic objectives of the tax administrations. To adequately prepare for this, it is essential that tax administrations are guided by a comprehensive digital transformation roadmap. Having a digital transformation roadmap provides a reference point of what the administrations want to achieve by introducing new ICT tools or improving the existing ones. [8]

A roadmap can support the identification of the most efficient ICT solution to adopt at the appropriate time, with the necessary skills and policies already in place. [9]

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[8] Gerardo Reyes-Tagle, Christina Dimitropoulou and Christian Camilo Rodríguez Peńa Digitalization of Tax Administration in Latin America and the Caribbean Best-Practice Framework for Improving E-Services to Taxpayers (IADB) 2023 p 65
[9] do Reyes-Tagle, Christina Dimitropoulou and Christian Camilo Rodríguez Peńa Digitalization of Tax Administration in Latin America and the Caribbean Best-Practice Framework for Improving E-Services to Taxpayers IADB (2023) p 65

Virtual Workshop Overview:
Key Discussion Points and Questions:

- How far into the future a digital transformation strategy should prepare for – tax administrations should have key milestones they want to achieve as the transformation journey never actually ends as they continue to respond to a changing business environment.

- How often should a tax administration review and redesign their digital transformation roadmap – continuous periodical reviews are essential, this can vary depending on the needs, goals and pace of technological change. A common approach is to carry out annual or biannual reviews to enable tax administrations to stay up to date with evolving technology trends and advancements and assess the effectiveness of what has been implemented.

- Consultation is a cornerstone of stakeholder management and can make or break the successful implementation of a tool. Effectively meeting the needs of taxpayers should be a priority and continues to be a shared problem across tax administrations.

- The continuous building of capacity of tax administration officials as part of a change management strategy is key.

- When assessing the effectiveness of the digital solutions adopted, there should be an awareness and strategy for the potential that a solution is not working and that it may need to be phased out.

- When is the right time to transfer skills and competencies from a vendor to the tax administration officials in the lifetime of the project. Skills transfer should, ideally, begin with the project to ensure an ongoing stream of information and technical skills sharing – that will influence the model of working with a vendor.

- Tax administrations need to be aware of the risks of vendor dependency, although it is inevitable, it is important to ensure agility, scalability, and technology and skills transfer.

- Skills transfer is also essential as part of validating the tool and ensuring that the requested functionalities are provided.

- As tax administrations accelerate their investment in IT spending finances with a strong strategic purpose will be critical.

- Risk management in the procurement process is essential, this is why a diverse project management team is important.

- Consider performance management of systems to report on whether there has been a return on investment.

3. Preparing a Digital Transformation Roadmap for African Tax Administrations

a) Overview of a Digital Transformation Roadmap

Digital transformation is a journey that incorporates changes to the technology applied, legislative framework, and human resources. These changes require the tax administration to have clear change management processes in place to ensure smooth transition and the efficient implementation of ICT solutions. Consideration must go beyond the technology and consider the new processes and procedures required, collection and storage of data, legislative framework required to facilitate data usage, internal capacity building, and careful planning.

The first step in setting a detailed digitalisation plan is the development of a digital strategy that requires an understanding of the tax administration's strategic vision and how this fits into the broader organisational strategy as well as its interaction with the jurisdiction's political, cultural, and economic realities.

Upon establishing a strategic vision, tax administrations will need to consider the current baseline, that is, the current state of its administration processes and identify gaps that could be filled through digitalisation. This ensures that ICT solutions are adopted based on a business need. As part of the baseline assessment, tax administrations could rely on existing digital maturity models to determine where they fall within the scale and identify a desired end point.[10] Digital maturity models establish analytical frameworks for assessing digital transformation progress based on specific set criteria.[11]

The third step considers the necessary resources and resource management, which includes assessing internal and external capacities. The fourth step is a cost and benefit analysis of the ICT solution and preparation of a business case for the transformation. In doing this, administrations can establish the changes that need to be made, the sources of the data, prepare and clean the data and identify the stakeholders that can contribute to the process. The final step in this transformation is the preparation of a detailed digital transformation roadmap. The digital transformation roadmap can be defined as:

"a step-by-step plan containing basic principles to be followed by the administration having in mind the long-term goals of the tax administration and the government as a whole."[12]

The roadmap is a tool that provides organisation, coordination and structured planning for digital transformation ensuring the coordination of workstreams moving at different speeds.[13] A transformation roadmap goes beyond the selection of the ICT tools to be adopted by the administration and considers additional key factors including the people, procedures, process, and the content.[14] It also provides key milestones that act as reference points for tax administrations throughout the digitalisation journey. Therefore, the digitalisation roadmap ensures that tax administrations implement the ICT infrastructure, the necessary systems and the governance structure in a sustainable manner.[15] Moreover, a roadmap safeguards against the implementation of technology in silos.[16] At present, some processes within administrations are conducted in silos which hinders continuity and does not demonstrate how functions such as taxpayer registration and tax audits, to name a few, feed into each other as they are conducted in isolation.[17]

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[10] Several international and regional organizations have developed models to determine the digital maturity of tax administrations. This includes, the OECD, Inter-American Center of Tax Administrations (CIAT) and the Inter-America Development Bank.

[11] Reyes-Tagle, G., et al. The Digital Transformation of Latin American Tax Administrations: The Case of Chile. IADB (December 2021). P. 3.

[12] J. Owens, N. Oliveira Costa, L. Mendes, A. Piakarskaya, Developing a Roadmap to Digitalization, in UN Guide to Digitalization of Revenue Authorities p 3.

[13] Asian Development Bank, Launching A Digital Tax Administration Transformation: What You Need to Know May 2022, p 35

[14] id, p 35

[15] Raúl Félix Junquera-Varela et al, Digital Transformation of Tax and Customs Administration, (2022) The World Bank Group. p 48.

[16] Asian Development Bank (2022), n 9, p 36

Within the current context, "tax administration processes are increasingly built into the natural systems used by taxpayers in their daily lives and businesses."[18] This allows for "the automation and "upstreaming" of many aspects of tax administration, making tax administration more seamless and frictionless over time and bringing potentially significant reductions in administrative burdens."[19] To achieve this, tax administrations will need to adopt a long-term digital strategy, that not only provides long-term financing options, but also requires the involvement of both internal and external stakeholders.[20]

b)   The Design of a Digital Transformation Roadmap

As discussed in section (a) above, digital transformation is not solely about technology but involves various steps, including internal system changes, human resource skill upgrades, legislative reform, and technological advancements. Therefore, a comprehensive approach to digital tax administration transformation integrates technology, human resources, and internal systems. Procuring technology solutions alone is not the end but a point or reference; instead, a holistic approach involving people, legal frameworks, data management, and process redesign is essential. A digital road map will therefore be necessary to put in place and operate the solutions adopted.

The time frame for a transformation roadmap depends on the objectives of the country and the tax administration. In many countries, digital transformation cannot happen all at once. Tax administration can therefore focus on digitalizing one specific project at a time (for example, e-invoicing). Additionally, the strategy taken will also depend on the resources available to the tax administrations. Notably, a mosaic approach to digitalization might be more complex especially if the different functions do not interact seamlessly. This necessitates a comprehensive plan that shows how each function fits into each other.

Bearing these complexities in mind, sequencing of the digital transformation roadmap is necessary to allow effective implementation of the digital solutions. This involves dividing the roadmap into smaller and manageable sequences. Sequencing allows an administration to set out clear and measurable goals. In addition, it increases the buy-in from stakeholders by providing evidence of the impact of digitalisation.[21] This also provides for scalability, presenting milestones for tax administrations to review their progress and consider any necessary adjustments to the roadmap.[22] Through sequencing, tax administrations are able to prioritize the strategically important areas, reduce the costs involved by focusing on smaller projects and, focus their resources and investment into specific areas, which avoids spreading resources thin.[23]

With regards to the frequency of reviewing and redesigning the transformation roadmap, countries may draw lessons from Korea's National Tax Service digital transformation process which has happened over 25 years: they are currently on the sixth or seventh round of digitalization. This experience demonstrates that the optimal period for countries to conduct

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[17] ATAF (2021), n 3, p.54
[18] OECD, Tax Administration 3.0: The Digital Transformation of Tax Administration, (2020) OECD, Paris p. 3
[19] Id p. 3
[20] Id p.14
[21] Keith Sayewitz, Creating a digital transformation roadmap that drives success, (2023), Auxis. Accessed 18 May 2024 at https://www.auxis.com/digital-transformation-roadmap/
[22] Id.
[23] Keith Sayewitz, (2013) n 17

a review and redesign of the digital transformation map is every two to three years ensuring the involvement of all the stakeholders throughout the process.

Designing and following a digital roadmap, as well as adopting appropriate technologies, are important steps in the digital journey, but monitoring and evaluating the progress in automation is imperative to provide authorities with visibility into the value created by their strategy; and it should be made an integral part of any automation initiative. In summary, a digital roadmap includes the following elements: vision setting, mapping, and benchmarking, prioritization, building an enabling environment, cooperation and trust for future proofing, and monitoring and evaluation (see table 2 and figure 1).

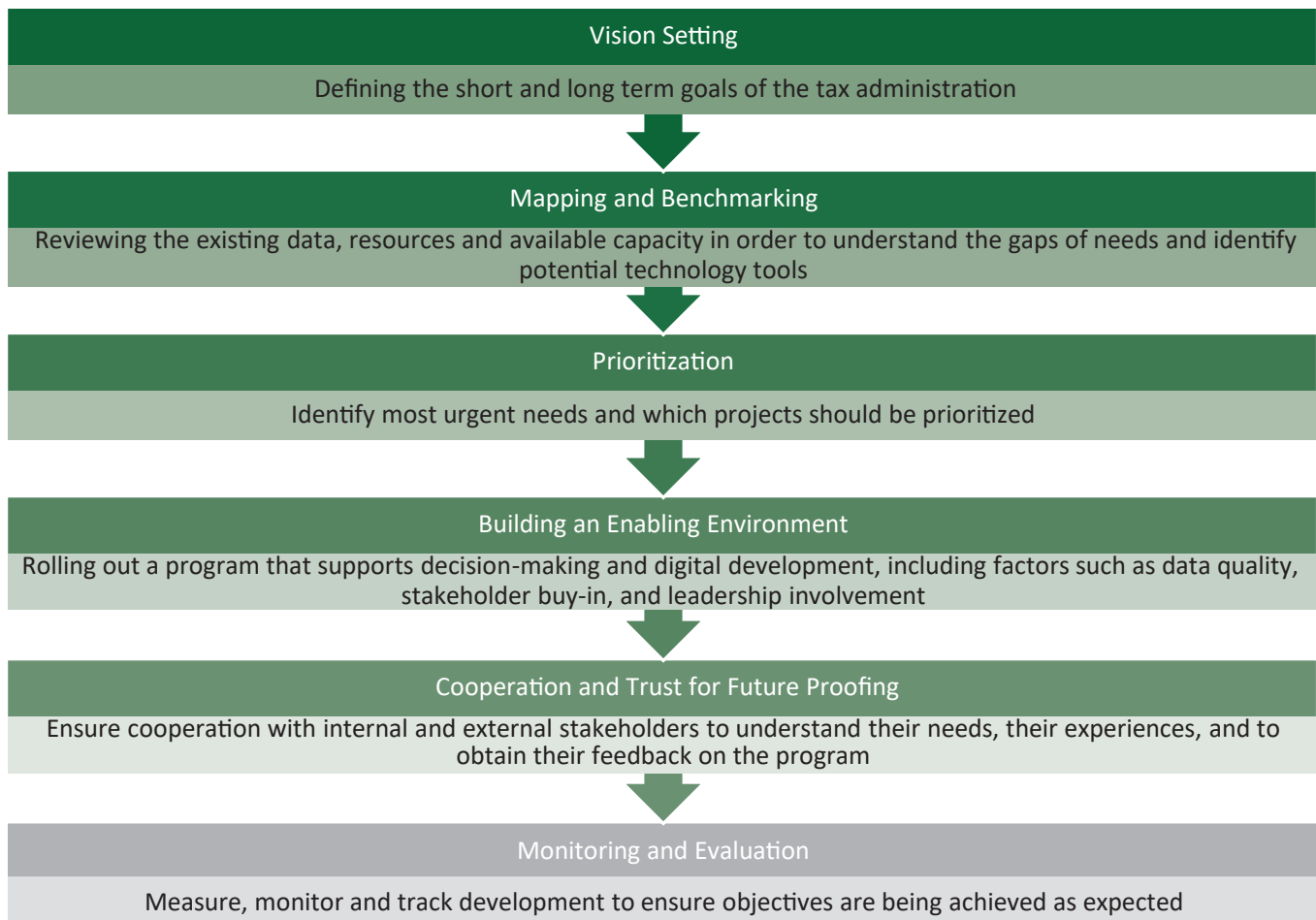**Table 2:**   **Key Steps of a Digital Transformation Roadmap**

Vision Setting
Defining the short and long term goals of the tax administration

Mapping and Benchmarking
Reviewing the existing data, resources and available capacity in order to understand the gaps of needs and identify potential technology tools

Prioritization
Identify most urgent needs and which projects should be prioritized

Building an Enabling Environment
Rolling out a program that supports decision-making and digital development, including factors such as data quality, stakeholder buy-in, and leadership involvement

Cooperation and Trust for Future Proofing
Ensure cooperation with internal and external stakeholders to understand their needs, their experiences, and to obtain their feedback on the program

Monitoring and Evaluation
Measure, monitor and track development to ensure objectives are being achieved as expected

Figure 1:   Draft Digital Roadmap

Area	Task Description	Change of Functionality	Endpoint	Time to Complete	Priority
Legal framework	Change laws and implementation regulations, issue guidance on data sharing	Laws surrounding data protection, data sharing, and data requirements changed to allow data streaming from taxpayers, protected data sharing	Specify a complete set of laws which allow for data streaming and sharing across relevant tax administration departments	12 months (includes legal drafting, Parliamentary approval, stakeholder meetings)	High
Procedural framework	Redesigned tax filing process to allow for automatic data streaming (return data), reasonableness checks, and risk assessment	Tax administration does not physically check individual taxpayers unless flagged by reasonableness test and/or risk filter	Streamlined taxpayer data process which enhances speed and accuracy of taxpayer data supervision	Process design: 6 months Process implementation (1 year including testing new technology)	Medium
Data	Data matching and adjudication	GST data is inputted directly at the time of transaction and input/output data matched	Matches GST data in real time, reducing time for refunds, limiting and focusing audits	18 months: 2 months design, 6 months implementation, 6 months testing, 6 months taxpayer rollout	Medium
Technology	Implementation of a data fabric solution to handle single taxpayer data from multiple sources in multiple formats	Data intake and storage systems changed from manual taxpayer portfolio building to automatic portfolio management using primary and third-party data	Automatic taxpayer portfolio creation, using multi sourced and formatted data	2 years from design to testing to rollout	High
Human Capital/Skills development	Skills mapping to determine new capacity building program	Mapping tax administrators' skills according to new requirements in the digitally transformed system	Clear capacity building plan based on understanding existing skill sets and aiming to train for new skill requirements	Mapping: 2 months New training program: 2 months, Course rollout: 1 year	High
Processes: procurement rules	Development of procurement rules based on national program, donor requirements, or other criteria	Unification, clarification, and codification of procurement rules	Procurement rules aligned with national and international standards	12 months: Drafting 2 months, Adoption: 3 months rollout and training 7 months.	High

Source: Presentation by Richard Stern at the joint WU GTPC and ATAF workshop on 27 March 2024

c)   Towards a Continental Wide ATAF Driven Digital Transformation Roadmap

International and regional organisations such as the Organisation for Economic Co-operation and Development, the Inter-American Development Bank, the Asian Development Bank, and the United Nations have developed transformation roadmaps to assist tax administrations. However, they all note that digital transformation is not a linear process and there is no "one size fits all" approach given that each administration operates within different economic, political, and cultural contexts.

Within the African context, ATAF can play a critical role in this digitalization journey by providing a regional roadmap towards digitalization. In addition, it can facilitate dialogue among tax officials and, through its research, identify opportunities to improve tax administration ICT systems. ATAF has already published an ICT handbook and is conducting a feasibility study on an IT tax administration system for Africa tax administrations that involves collecting case studies for best practices and highlighting the technical support that it can offer.

4. ICT Acquisition Strategies

a) Overview

It is essential that tax administrations hold a comprehensive understanding of their ICT environment: assessing the ICT structure; understanding the capacity of the tax administration's staff and stakeholders; establishing the baseline; identifying challenges and gaps; and using that information to inform a strategy. This section considers specifically, the process of acquiring or building an ICT solution.

ATAF identified seven key pillars that tax administration should consider in their digitalisation journey (see figure 1). The governance and policy management pillar is considered to be the foundation of all other pillars, followed by the cost and contract management pillar, which considers the financial and procurement issues that underpin the implementation of the ICT solutions. This highlights the important role the procurement process plays in implementation of ICT solutions. Indeed, selection, implementation, and maintenance of ICT solutions is often a long and expensive investment for tax administrations, which requires specific focus on the costs involved and the return on investment.[24]

Figure 2:   **ICT Tax System Implementation and Maintenance Framework**
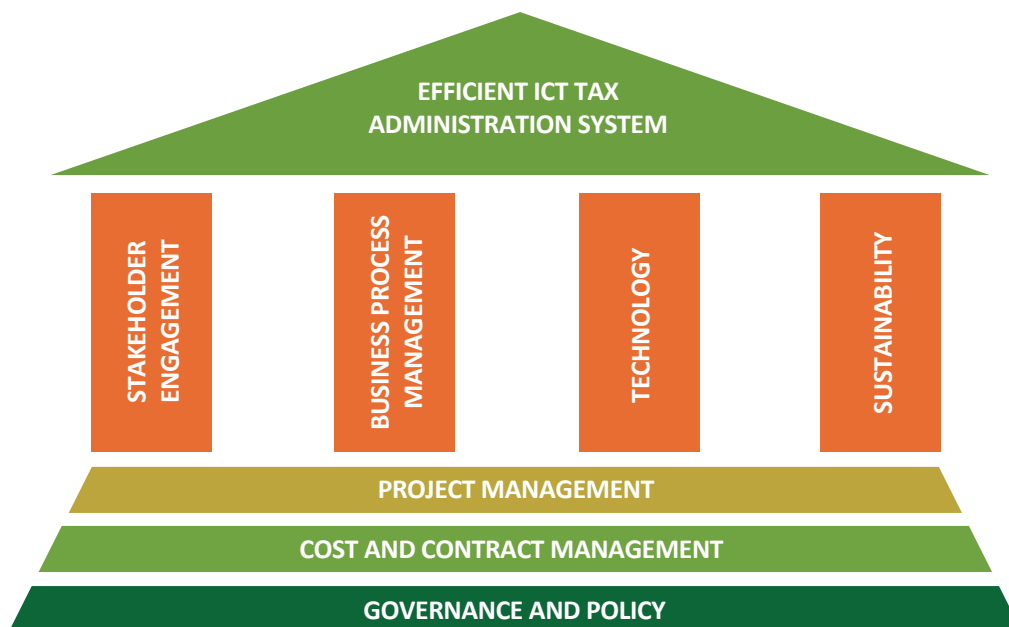
Source: ATAF (2021), p. 70

The cost and contract management pillar focuses on how tax administrations "budget and negotiate ICT contracts to manage costs, build internal capacity, and optimize asset acquisition processes to acquire the highest value"[25] ICT solution available. Several challenges are faced in the procurement of an ICT solution including the following:

a)   The choice between insourcing and outsourcing – tax administrations have to determine which arrangement not only meets the strategic objectives but it is also cost efficient and in line with the economic, political, and cultural context. Countries may often find themselves with an option that is inflexible and changing the solution is an expensive and long process.

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[24] ATAF (2021), n 3
[25] Id

b) Securing budget for initial purchase – the initial ICT investment cost is high and requires tax administrations to identify a suitable source of this budget. In addition, some funding arrangements may impose unfavourable conditions on the administration.

c) Maintenance costs – tax administrations may purchase a system but fail to account/predict the system maintenance costs. These often include costs related to having consultants back on board to help with scaling up the system or fixing any system bugs.

d) Limited staffing capacity – this may be a result of an unwillingness to use the system by the staff or where vendors fail to build up capacity.

e) Limited buy-in from stakeholders – failure to involve stakeholders in the digitalisation process from the onset may result in limited buy-in and underutilization of the ICT solution.

f) Limitations on scalability and flexibility – if countries fail to carry out a proper evaluation of the system, the systems may only be viable for a limited amount time and lack the flexibility to respond to future needs and new policy initiatives.

g) Lack of compatibility with existing systems within the administrations - the lack of integration increases inefficiencies within the administration and may result in duplication/repetition of a system or solution that already exists in another department.

h) Incompatibility with existing standards, which include procurement standards and the overall organizational strategy around this. Therefore, key to not only include the IT department but also have the businesses that understand the recommendations and requirements set.

In the following section, this policy brief builds on existing work done by ATAF and considers the key assessment that should be undertaken by tax administrations under the pillar on cost and contract management.

b)   Assessment Criteria for an ICT Solution

In determining the solution to be procured, a tax administration must first have in place a clear business need to ensure that it identifies the most appropriate ICT solution and that it is easy to review its success in meeting the identified needs. The tool should also be compatible with the existing infrastructure. The solution should be easy to use by the relevant stakeholders – both tax administration staff members and the external stakeholders. In addition, technology experts should be allocated to the procurement team from the onset to provide insight on the suitability of specific solutions.[26] In carrying out these steps, tax administrations should rely on the following assessment criteria:

Step 1: Identifying and validating the business need for a specific ICT solution.
Tax administrations should identify a clear business need by identifying the baseline and endpoints of their digitalisation journey and carrying out a gap analysis to highlight how technology can help meet their end objectives. This need should not already be met by existing infrastructure. Both internal and external stakeholders should be involved in this step to ensure that the business need is consider from both aspects and that it is a concern for all relevant stakeholders.

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[26] ATAF (2021), n 3, p. 48

Step 2: Developing business requirements.

Tax administrations should identify the key business requirements and involve both internal and external stakeholders in the process. This will include highlighting the key functional needed from the perspective of the taxpayers, for instance simplification of filing returns, the legislative framework within which the solution would work and the potential uses of the solution by the tax administration, for instance review of multiple sources and formats of data for auditing. These requirements should be in line with the overall strategic objectives of the administration. The ICT solution selected should meet these business requirements.

CASE STUDY 1:
Kenya Revenue Authority – Business Needs and Requirements

The Kenya Revenue Authority (KRA) technology acquisition governance structure is pegged to the project governance structure and guided by the project management office. Its ICT strategy is derived from the KRA corporate plan which is informed by the overall government strategy. The ICT Strategy is a 3-year plan and goes through the following key steps:

- Prior to any purchase an evaluation of the previous ICT strategy is performed considering the key performance indicators (KPIs) and lessons learnt.

- A strategic analysis of the technology environment shall also take place. Specifically, i) PESTEL analysis (Political, economic, social, technological, and legal environments); a SWOT analysis and iii) the verification of the alignment with the corporate plans.

- Following the strategic analysis, the team defines the strategic objectives and deliverables within the 3-year period, mainly the key initiatives required to achieve the defined objectives and the expected outcomes.

- Finally, the strategic implementation takes place through i) the implementation plan; ii) the budget alignment and how to source for funding where required; iii) the risk management framework; and iv) monitoring and evaluation.

Once the administration has a strategy in place, the decision on whether to acquire an ICT solution is made based on the following steps:

- Step 1- identification of the strategic business need through a business case aligned to the goals identified in its 3-year ICT strategy plan.

- Step 2 - gap analysis on how current solutions are tackling the business need identified (benchmarking and seeing industry's best practices).

- Step 3 - business requirements documentation (Functional/non-functional) – stakeholder management is a key element in the acquisition process and KRA involves both external and internal stakeholders to ensure that the need is a key concern for all concerned stakeholders and to identify their specific requirements. At this stage, KRA also carries out process reengineering/redesigning.

- Step 4 - a cost benefit and risk analysis is carried out. This will consider the solutions available and the business requirements. The administration will also consider the cost of either buying or internally building the solution to determine the most cost-efficient option. The risks are then identified, and mitigation measures identified.

- Step 1- 4 form the basis of step 1 as they help in supporting the business need identified. Once go ahead is given then the administration moves to step 5 which is the implementation of the solution selected.

- Step 5 - Implementation of the identified and approved solution. Future use and limitations and clauses that tie the KRA to the service provider are taken into consideration. The tax administration aims to have a system that will be flexible to future needs, offers opportunities for adjustments during the development phase, and does not tie KRA to a suboptimal solution with high maintenance and update costs.

The KRA requires co-creation of solutions and therefore engages stakeholders from the inception of the project. This is done through extensive engagement with stakeholders, highlighting the need for change, building capacity through continuous trainings and tests, providing up to date communication on the digitalisation process, providing a platform for feedback, and updating of the solutions based on the feedback received.

Source: Presentation by the Kenya Revenue Authority during the 27 March 2024 Virtual Workshop on Best Practices in Technology Assessment and Acquisition Strategies.

Step 3: Assessing existing infrastructure.
Administrations should consider the existing infrastructure and whether this is capable of meeting the business needs and requirements identified. This can take the form of an enterprise architecture study that analyses the taxation processes and the existing software solutions available to the administration.[27] The intention is to identify the most efficient infrastructure to meet the business needs and requirements and ensure that any solutions adopted are compatible with existing solutions for better integration and cooperation between various departments. This analysis must therefore identify all the taxation processes and their relation to each other.

Step 4: Evaluating the environment the new solution is to operate in.
Understanding the environment within which the tax administration operates will be useful in determining the best solution to adopt.[28] For instance, the business environment may not be prepared for numerous electronic interfaces such as e-filing, data sharing and data matching, which means that the solution adopted should be less sophisticated though this should be flexible enough to allow for adoption of these interfaces when the environment is ready. This also allows the administration to put in place the correct sequencing of its ICT strategy.[29] Broadly this involves answering questions such as: what is the level of automation of both the business community and government agencies? Is there political will for digitalisation? What is the digital divide within the jurisdiction and what mitigating steps can be taken to avoid disadvantaging taxpayers without access to the internet? What is the legislative framework and does this support the digitalisation of tax processes?

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[27] OECD (2019), Introducing a Commercial off-the-Shelf Software Solution, OECD, Paris.
[28] Margaret Cotton and Gregory Dark, Use of Technology in Tax Administration 1: Developing an Information Technology Strategic Plan (ITSP), IMF, Technical Notes and Manuals (2017)
[29] Id

Step 5: Conducting market research.

Tax administrations should consider the existing ICT market to identify the most suitable solutions available and how these fit into the business needs and requirements and the environment within which the tax administration operates. It is also important to use this opportunity to consider any new developments in the market. In addition, key risks and mitigating strategies should be identified for the shortlisted solutions at this stage. The market research should also be accompanied by an internal review of existing solutions to determine whether there are more suitable options available internally.

CASE STUDY 2:
The Finnish Tax Administration (Verohallinto) – Market Research

In 2010 the Finnish Tax Administration (FTA) was struggling with lack of funds and their joint venture with IT-shop Tietokarhu was ending. The ICT solution faced several challenges: (i) the costs became too high; (ii) the technology was outdated, and base technologies needed renewal due to technology continuity risks; and (iii) the Finnish tax administration had 156 different applications some of them more than 20 years old.

There was a need for the restructuring of the applications and increased flexibility as the application structure was mostly tax driven, not process driven nor service oriented. Maintaining the application portfolio was not seen as viable, and the development speed was too slow and time consuming. New tasks for the tax administration and tax changes were in the government agenda, straining more the tax administration resources.

The decision to start with an off the shelf solution was based on strong research and on cost effectiveness considerations. This also involved an enterprise architecture study to understand its taxation processes and functionality within the existing system.

Taxation Commercial of the Shelf Solution (COTS) Market Research started in 2004 and the implementation of the COTS begun in 2014. The main reasons to develop a comprehensive COTS solution were:

- Ease of transition from the existing ICT model which would result in minor legacy issues – the tax administration would have no relevant changes nor improvement from a cost effectiveness perspective.

- Using separate components in a Best of Breed solution gave rise to the necessity to combine separate components which may be hard to integrate and would take longer as compared to COTS.

- A comprehensive COTS solution is ready for internal integration, can be purchased as one unit and is the quickest way to produce results. In addition, this was the most cost effective in the long term, with a good return on investment.

The tax administration hired a procurement consultant to supplement in-house expertise and to assist in the preparation of procurement principles. The Finish tax administration wanted one major and experienced supplier to take responsibility of implementation of the COTS system, migration, and integration to current systems, and steering of third parties. They therefore needed an experienced supplier that had previous experience in implementation of similar systems. To avoid hidden additional costs, the procurement process included maintenance and further development of the system costs so that the on-going cost would be understood from the onset.

The FTA required a fully functioning and integrated COTS taxation product that allowed them to share product maintenance and development costs with other users as well as to benefit from improvements made by others. Therefore, to avoid limiting other options available to meet this objective, the procurement documentation mentioned the elements of the taxation systems that were in scope rather than the functionalities. Based on this experience, the following were highlighted as best practices:

- Tax administrations should prepare for procurement – consideration should be given to tax administrations that have similar solutions and build on their successes and experiences in order to identify the best supplier.

- Do not give detailed requirements of the IT solutions and instead focus on the broad functions to have the scope as open as possible.

- Bear in mind the maintenance and further development, focus on the results, not the methods. The goal is not to get the best possible technology, but the best possible taxation system. COTS programme is not, or at least should not be, only an IT project, but a major business reform that should be led by business need.

- To prepare for the program it is necessary to determine its objectives and the reasons to change, identify and engage the stakeholders, getting the people ready, getting the programme process in place in terms of governance, prepare the implementation through rules, letter, metrics, etc, and start the cleaning of the data activities as soon as possible.

- There is the need to prepare business activities such as procurement documentation and process descriptions, and reengineer business processes, the areas to maintain, the processes to change, etc. Change and projects only bring value if people approve of it and are ready to adopt it. The more change management is integrated into any development, the higher the probability for overall success.

Source: Presentation by the Finnish Tax Administration (Verohallinto) during the 27 March 2024 Virtual Workshop on Best Practices in Technology Assessment and Acquisition Strategies.

Step 6: Conducting peer reviews of other ATAF member countries to pick up lessons and challenges faced.
Tax administrations should conduct a best practices analysis of the solutions identified to understand the benefits, challenges and lessons learned from tax administrations of other ATAF member countries that have previously implemented similar infrastructure. This will also inform the mitigation measures that can be employed.

Step 7: A cost benefit analysis.
As mentioned in section 3 (a), costs, both initial and maintenance, are often a significant challenge for tax administration. A clear cost-benefit analysis is therefore necessary, which considers both the initial and maintenance costs of the ICT solution, as well costs required to build internal and external capacity. These costs are compared to the overall efficiency gains from digitalization.

At this stage, administrations should consider the source of funding for the ICT solution. This may be from the internal budget or external sources such as: [30]

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[30] OECD, Supporting the Digitalization of Developing Country Tax Administrations, Forum on Tax Administration, (2021) OECD, Paris

- Funding from the ministry of finance – a business case may be made by partnering with government agencies that will benefit from the tax administration digitalisation.

- Public-private partnerships (PPPs) – PPPs between administrations and private sector can be used "to provide new skills or other skills more readily available in the private sector." [31] However, a more common use of these partnerships is the partial or complete funding of digitalisation initiatives. In these funding arrangements, tax administrations should ensure that they retain ownership of taxpayer data as there have been instances where external vendors claimed ownership of data held outside the organisation. [32]

- International and regional organisations capacity building programmes – consideration should be given to the requirements and conditions for funding in the digital strategy.

Tax administrations should also ensure an ability to monitor and evaluate the efficiency gains arising from the adoption of a technology solution. This will require establishing the status quo prior to the introduction of a solution and monitoring its use over time. Several factors should be considered, including:

- Ease of use – develop a clear understanding of user pain points and how they are addressed or resolved.
- Integration of the solution into user roles and with other systems – define the roles and the function of the solution.
- User satisfaction – consider all stakeholders that may interact with the system.
- Time to task completion.
- Ability of the tool to meet user needs and requirements.
- Removal of any redundant or repetitive tasks.
- Amount of freed up human or other resource capacity.

Tax administrations may at this stage consider the potential sequencing of the ICT implementation. This may provide opportunities to reduce the cost and allow administrations to implement functionalities that are key strategic areas.

Step 8: Selection of ICT solution – insourcing versus outsourcing
Tax administrations will need to use information collected under steps 1-7 to determine whether to outsource or insource ICT development. Where administrations rank low in digital maturity and have limited skilled staff and resources to establish an ICT department within the organisations, they may need to outsource ICT development and maintenance.[33] Further, these administrations will still require an internal unit to evaluate the outsourcing process. More advanced administrations are able to focus on robust sourcing strategies and may then consider whether to internally build or purchase an integrated system.[34] Therefore, this analysis should keep in mind the digital maturity of the administration, business need and requirements, the environment the organisation operates in and the costs and benefits of outsourcing versus insourcing.

In addition to reviewing the internal capacities of the administration, it is necessary to consider the experiences of other tax administrations that have implemented similar solutions. Within the African context, there have been challenges with regard to the suitability of outsourced solutions due to inflexibility of the solutions, high maintenance costs, and vendor lock-in. [35] A peer review will enable the administration to understand the challenges and risks of the solutions and consider mitigating measures.

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[31] Id. p.52
[32] OECD (2021), 28, p. 52
[33] Margaret Cotton (2017), n 26, p. 7
[34] Id
[35] ATAF (2021), n 3

Step 9: Vendor-management and lock-in

Several tax administrations find themselves in contracts with a vendor lock-in effect, which refers to instances where the administration cannot easily change a provider after procuring a product or service, because not all essential information about the system is available for efficient takeover by another provider or internally. [36] In addition, this includes situations where ICT solutions are inflexible to adapt to new policy options. To avoid this, tax administrations may opt to use ICT systems based on standards as opposed to proprietary ICT systems,[37] the approach recommended within the European Union.[38] In addition, administrations should consider the terms of the contract and include provisions that require functionalities that allow for data transfer to third parties who may be awarded subsequent contracts in future.[39]

In any case, where the tax administration acquisition assessment determines that a proprietary ICT solution will be the most efficient, a pros and cons analysis will need to be carried out to determine whether the administration is willing to be locked in and the mitigating measures, such as inclusion of data transfer clauses, that may be added to the said contract.

Engaging a consultant with extensive knowledge and expertise in the terms and conditions of software licenses at the onset of the assessment will be necessary to avoid any unintended contractual pitfalls.

Step 10: Monitoring and evaluation.

The assessment criteria must be linked to the overall strategy and governance framework. A key component with regards to the governance framework is that the authorities should be able to report against it, creating an auditable process that can be relied on to look back at the successes of the solution. Monitoring and evaluation of the ICT solutions should take place at the different milestones set up within the digital transformation roadmap. These assessments consider the extent to which effect and impact indicators have been achieved, draws lessons from them and proposes corrective measures where necessary. Stakeholders, both internal and external, should be involved in providing feedback to ensure that the strategic objectives set have been met by the ICT solution procured.

CASE STUDY 3:
Office Togolaise des Recettes (OTR) – Monitoring and Evaluation

Digitalisation of the OTR is informed by the government roadmap, which runs for 4 to 6 years, and the overall strategic plan of the OTR, which run for 3 to 5 years. Digitalisation of the revenue authority is one of the key strategic plans. The pluriannual plan for IT technologies 2024-2027 aims at optimizing and digitizing the processes, modernize the tools and services made available to the stakeholders, the security of the infrastructure, services and data, and improvement of the IT governance.

With regard to the evaluation of ICT solutions and systems, the OTR takes into special consideration the quality, the support, the training, the maintenance, and the security of the services to guarantee the customers' experience. The acquisition of technology follows domestic law and Union Economique et Monétaire Ouest Africaine's directives. The acquisition policy is implemented by the internal public procurement body (PRMP), this body expresses the needs in terms of reference (ToR), benchmarks solutions on the market, advises technological and strategic partners, and proceeds with contracting.

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[36] European Commission, Guidelines on Procuring IT Solutions (2015)

[37] Standard based ICT solutions allow for interoperability, streamlined development processes, as well as opportunities for peer-reviews. On the other hand, proprietary ICT solutions are developed and controlled by one company. See Paul Zubrinich et al, Proprietary v Open Standards, (2018), 4iP Council.

[38] European Commission, Communication from the commission to the European parliament, the council, the European economic and social committee, and the committee of the regions: Against lock-in: building open ICT systems by making better use of standards in public procurement, COM (2013) 455

[39] European Commission (2015), n 23

The acquisition of technology is transparent and open tendering process to guarantee quality/price. In addition, authority ensures efficient contract management by meeting contractual requirements, offering support for acquired solutions through training, and implementing change management processes.

The measurement of the IT metrics is done according to SMART goals: Specific, Measurable, Attainable, Relevant, and Time Based. Mid-term and end-of-period evaluations are carried out to assess the extent to which effect and impact indicators have been achieved, to draw lessons from them and to propose corrective measures where necessary.

The measurement tools used are evaluation of operational plans, performance reports, surveys (satisfaction, site visits, etc.), Compliance Risk Management (CRM) audits, and orientation seminars, performed by the direction committee (Comité de Direction (CODIR)), Department of Studies and Strategic Planning (Direction des études et de la planification stratégique (DEPS)), Internal Audit and Quality Assurance Department (Direction de l'audit interne et de l'assurance qualité (DAIAQ)) Joint Ad'Hoc teams (Equipes mixte Ad'Hoc) and the Be Ready Programme. These tools ensure that the revenue authority is aware of the level of satisfaction with the adopted ICT solutions and the effectiveness in meeting the set objectives. Continuous monitoring allows tax administrations to adapt to the current business needs and environment within which they offer services to taxpayers.

Source: Presentation by the Office Togolais des Recettes during the 27 March 2024 Virtual Workshop on Best Practices in Technology Assessment and Acquisition Strategies.

5. Conclusion

A clear digital strategy and digital roadmap are key elements in the success of the tax administration digitisation process. This requires tax administrations to consider key factors including the people, procedures, process, and the content of the digitalisation. Once a roadmap has been prepared, administrations must then consider the ICT procurement process which involves a detailed assessment criterion, most importantly identifying the business need for the specific solution. A review of the existing IT infrastructure, environment and a cost and benefit analysis are also fundamental in identifying the most suitable IT solutions for each tax administration.