# Chapter 3
# Improving Domestic Revenue Mobilisation in African Countries Using ICT: A Literature Review Analysis

**Emmanuel Eilu**

**Abstract** Many countries in Africa do not have adequate capacity to mobilize domestic fiscal resources for economic growth and development. This has led to an extremely low tax-to-GDP ratio in many African countries. Countries in the Sub-Sahara Africa region continue to fall below 7% growth rate. For economic development and growth to happen, a country should have an effective and efficient tax system to mobilize domestic fiscal resources to finance the provision of essential public goods and services. For domestic taxation is a panacea for development. Currently, there are extensive calls for reforms in the tax systems. One of the reforms that can greatly change the face of many tax bodies in Africa and has a great potential to improve domestic revenue collection is the integration of ICT into the tax systems. A number of African countries have started an array of initiatives to exploit ICT with a view of improving domestic tax revenues. Indeed, in this modern age, it is quite difficult to conceive of a tax administration system that can perform to its expectation without making considerable use of ICT. However, high expectations on the use of multi-million dollar ICT resources to improve the tax systems in Africa has either not materialized or has proven to be a much more time-consuming and costly than originally envisaged. There is a need to investigate the current use of ICT in Tax Administrations and the extent to which ICT addresses significant challenges in Tax Administration. The lessons outlined in this chapter may be important in informing governments in Africa on how to successfully improve Tax Administration using ICTs.

**Keywords** E-Tax Systems • African Countries • Economic Growth • Economic Development

E. Eilu (✉)
School of Computing and Informatics Technology, Makerere University Kampala, Kampala, Uganda
e-mail: eiluemma@yahoo.co.uk



S. Saeed et al. (eds.), *User Centric E-Government*, Integrated Series in Information Systems 39, DOI 10.1007/978-3-319-59442-2_3

## 1 Introduction

Taxation is one of the most important ways in which developing countries can mobilize their own resources for sustainable development. It supports the basic functions of an effective state, enabling it to raise the resources needed to deliver essential services, and creates the context for economic growth [1, 2]. For economic development and growth to happen, a country should have adequate capacity to mobilize fiscal resources to finance the provision of essential public goods, a capacity that many developing countries lack [3–5]. Governments with a bare minimum of tax administration infrastructure, as is typically the case in developing countries, find it costly to monitor earnings and enforce tax compliance [6]. Many developing country have for long been grappling with huge challenges in tax administration and taxation. For example, in 2006, the average GDP share of government revenue in low-income countries was 12.1%. However, for high-income OECD countries, the figure stood at 25.2%, twice as high for low-income countries [6]. A report from the African Development Bank Group [7] indicates that domestic revenue collection through taxation is still below its potential in many African Countries. For example, between 2006 and 2008, tax-to-GDP ratios in the East African Community sub-region ranged between 12.3 to 22.1%, compared to an average of 35.6% and 25.4% for the Organisation for Economic Cooperation and Development (OECD) countries and South Africa respectively. The bank also reports that other measures such as revenue productivity and Value Added Tax (VAT) efficiency are also still low. Bird [8] explains that, for developing countries to benefit from the opportunities presented by this contemporary era such as globalization—or even to recover from the global negative economic waves, they must be able to mobilize adequate fiscal revenues. The most reliable way to effectively mobilize fiscal revenue is to revamp the tax administration systems.

Although there have been various tax administration reforms in the many African countries such as, establishment of autonomous revenue authorities, simplifying tax systems and reducing tax evasion/avoidance, much of the significant reforms have generally been centered on the use of Information and Communication Technology (ICT) as a tool to improve the efficiency and effectiveness of the tax bodies [7, 9]. ICT has broadly been utilized to accumulate and handle tax payer's data, undertake specific checking in view of risk analysis, automatically exchange data between government agencies, provide convenient data to bolster decision making by leaders and inform tax policy formulation [10]. Indeed, in this modern age, it is quite difficult to conceive of a tax administration that can perform its tasks effectively and efficiently without making substantial use of ICT. However, much of the expectation of greater effectiveness as a result of adopting ICT has either not materialized, or has proven to be a much more time-consuming and a very costly process than originally envisaged [9]. Bird [8] observes that the success of an ICT aided tax system requires not just "automating" existing structures and methods, but instead reconsidering, updating and streamlining tax systems, frameworks and strategies. This chapter sets out to establish how to increase the tax-to-GDP ratio in many African countries by improving tax administration using ICT.

## 2 The Purpose of This Chapter

This chapter, therefore, examines the state of Tax administration in Africa. It also establishes current reforms being implemented in Tax administration particularly using ICT, and the extent to which ICT addresses significant challenges in Tax administration. This chapter further identifies challenges of Implementing ICTs in tax administration, and remedies to those challenges. The lessons outlined in this chapter may be important in informing governments in developing countries, especially in Africa, on how to successfully improve tax administration using ICTs, for an effective tax administration may thus play a critical role not only in shaping economic development but in developing an effective state.

Three major research questions are asked in this chapter

1. What is the state of tax administration in Africa?
2. To what extent do ICTs address major challenges in week tax administration systems in Africa?
3. What are the likely challenges of Implementing ICTs in tax administration, and remedies to those challenges?

## 3 Methodology

A systematic review was the main method used in this chapter. In the last 30 years or so, narrative-style literature reviews have been criticized for being biased and inadequate in terms of the rigor of research performed [11]. This has led to the emergence and widespread use of systematic review method of research. A systematic review is a 'rigorous method used to map the evidence base on an unbiased way as possible and to assess the quality of the evidence and synthesize it' [12]. Systematic review method follows a formal process for appraising literature and minimizing bias [13]. According to Zanker and Mallett [14], a systematic review is considered by some to offer 'the most reliable and comprehensive statement about what works and how it worked. It has been generally utilized for a long time as a part of various field studies, for example, in medical research, and in natural sciences. A systematic review has many times been employed in evidence-informed policymaking within the arena of international development. It is much preferred by international agencies as such the UK's Department for International Development (DFID) and the Australian Agency for International Development (AusAID). These agencies have funded a series of systematic reviews over the past few years, with the express aim of finding out 'what works and how it worked' in generating development outcomes [14]. In 1984 Cooper [15] proposed a five stage systematic review process that was followed in this chapter'

- Problem formulation—statement of objective.
- Data collection—an unbiased literature search.

- Data evaluation—assessing the studies for inclusion in the review.
- Analysis and interpretation—qualitative or quantitative aggregation of individual research studies.
- Public presentation—discussion and context of findings.

According to Kowalczyk and Truluck [13], a systematic review is considered original research as it follows a standard scientific protocol.

## 4 The State of Tax Administration in Africa

Despite the recent economic gains made in the last decade by a number of African countries in terms of export revenue, it is important to note that the growth rate in Sub-Sahara Africa as a region continues to fall short of the 7–8% necessary to achieve the Millennium Development Goals (MDGs) target of halving poverty [16]. To raise the development rate and manage it at the level that will permit African nations to halve poverty requires a critical increment in the volume of foreign and local resources earmarked for economic development of the country, and particularly improve the standard of living of the citizens. Accomplishing the Millennium Development Goals, for example, may require some low-wage countries to raise their duty Gross Domestic Product (GDP) proportions by around 4 percentage points [17]. However, increasing the GDP by 4 percentage points has proven to be a daunting task for many African countries. This is because the domestic revenue collection in many African countries is still low. For example, the Mozambique Revenue Authority has registered about 2,600,000 taxpayers, both citizens and companies. However, only less than 10% of these tax payers really document or pay tax charges [18]. As already said before, the mean tax-to-GDP proportions in Uganda, Kenya, Tanzania, Burundi, and Rwanda from 2006 and 2008 was between 12.3 and 22.1%, far much underneath their OECD partners whose normal tax to-GDP proportion was 35.6 and 25.4% [6]. About 32 African countries collect less than USD 1 of tax per person per day. Those with the lowest tax-to-GDP ratios also tend to be those with the lowest effort [19].

Although Foreign Direct Investment (FDI) flows to Africa have increased over years from USD 27.4 Bn in 2003 to USD 47.8 Bn in 2010, contributing to over 37% of net aid disbursements to all developing countries, it is important to note that this funding is still too limited in geographical coverage, and it is mainly directed towards extractive industries [20]. Because of this deficit, effectively harnessing domestic financial resources could help raise additional financing to narrow Africa's resource gap. Increased domestic revenue would also help to accelerate the process of economic development and poverty reduction in many of these countries [16]. Adequate domestic revenue would further reduce dependence on donor funds and its associated conditions. Fjeldstad [1] observes that the importance of strengthening domestic revenue mobilization was emphasized by the G20-leaders at their summit in November 2010. Both the European Commission [21] and the

OECD Development Assistance Committee [2] have firmly underscored domestic tax collection as a panacea for development. A successful tax system is viewed as key to sustainable development because it can stimulate the household income base as a key driver for economic development in many African countries. This would enable these countries to escape from international aid dependency, or single natural resource reliance [1]. Therefore, there is a need to build adequate capacity to mobilize fiscal resources to finance the provision of essential public goods [3, 4, 22]. From the beginning of the twenty-first century, there has been an overwhelming desire to fill Africa's development resource gap and various continuous efforts have been made to attain this [23]. In today's world, advances in Information and Communication Technology (ICT) offers a great potential to improve revenue collection by automating taxation processes, better servicing taxpayers, increasing compliance and a cheaper possibility for gathering and analysing a large amount of data on taxpayers [6, 18, 24–26]. The use of ICT in an attempt to improve fiscal capacity and to better taxation processes has caught the attention of tax authorities throughout developing countries [6]. In the next section, this paper discusses attempts by African countries to improve the efficiency and effectiveness of their tax administrations through the use of ICT.

## 5 Electronic Tax Systems in Africa

Over the last 40 years, Bird and Zolt [9] observe that reform efforts in tax administration in developing countries has been generally centered on ICT. Allover Africa, there are a number of on going efforts to exploit the benefits of ICT in enhancing efficiency and effectiveness in tax administration [1]. For instance, the use of e-Filing systems for domestic revenue, computerized registration systems for motor vehicles and drivers registration, electronic cash registers for VAT, the use of electronic communication systems for information dissemination and much more [1, 27]. Historically, the most prevalent use of ICT systems in tax administrations is in core tax activities such as, processing returns and payments, and collecting relevant information [27]. IT systems generally enable tax administrations to move away from the overwhelming manual handling to direct its resources to facilitate monitoring and enforcing compliance. ICT also facilitates voluntary compliance by opening multiple interactive and electronic channels with taxpayers [27].

The figure below illustrated a basic electronic tax system used in a typical Revenue Authority (Fig. 3.1).

There are majorly two types of electronic tax systems deployed in African countries today, namely; the custom-built or sometimes called "build it in-house" and "Commercial Off-The-Shelf" (COTS) electronic tax systems [18, 27]. Making a decision to purchase either custom built or COTS is normally referred to as the Make-or-Buy decision [18]. According to Jimenez et al. [27] and Blume and Bott [18], custom built electronic tax systems take a longer time than purchasing a COTS solution, as it has to be built from scratch by the in-house team. The custom built

| |
|---|
| • TIN/VAT Registrations |
| • Integration with Automated System for Customs Data (ASYCUDA)<br>• VAT Returns Processing<br>• VAT Payment<br>• VAT Taxpayer Accounting<br>• VAT Revenue Accounting<br>• VAT Refunds |
| • VAT Refunds<br>• RMS Common Cashiering<br>• Taxpayer Accounting<br>• Revenue Accounting<br>• Taxpayer Enquiries |
| • Taxpayer Enquiries<br>• VAT Audit/Investigation Tools<br>• VAT E-Tax<br>• Income Tax Pay As You Earn (PAYE) processing/Provisional Taxes |
| • Income Tax/PAYE returning processing<br>• Advanced Auditing<br>• Income Tax/PAYE returning processing |
| • Debt Management<br>• Objections<br>• Withholding Taxes<br>• TIN |

**Fig. 3.1** IT support to tax administration functions with the core tax system [18]

system accommodates specific and usually current business processes of the tax authority. They tend to have lower initial costs, leverage internal experience, and systems. Custom-built solutions, however, depend on internal expertise, which can be difficult to acquire or retain. With custom-built solutions, it inherently involves a higher risk, as it may be difficult for tax administrations to keep pace with technological innovations. Countries that have custom built electronic tax system include among others, Swaziland but later changed to COTS, and Senegal which maintains both custom built and COTS. On the other hand, COTS systems are ready, vendor-made, and transferrable solutions designed to accommodate leading practice in business processes. COTS systems are normally tested and proven to align with best practices. COTS is used by a number of Revenue Authorities across the African continent, such as, the US$ 5 million Integrated Revenue Administration System (IRAS) used by Swaziland Revenue Authority, approximately US$8 million Integrated Tax Administration System used by the Tanzania Revenue Authority was a COTS system-though it was later modified in-house, much of the US$15 million electronic tax system used at the Uganda Revenue Authority is COTS, the US$1.5 million electronic tax system used by the Zambia Revenue Authority is a COTS system-to mention but a few. Blume and Bott (2015) strongly advice that, whenever possible, software should be bought off the shelf rather than developed internally, both for cost reasons, and to accommodate subsequent technological developments.

The table below illustrates the recent electronic tax systems implemented in different African countries.

The Table 3.1 shows a number of ICT-based revenue collection initiatives implemented, or are being implemented in a number of African countries. Other ICT tax systems that have not been reflected in the above table include; The FreeBalance Accountability Suite used by Rwanda Revenue Authority. iTAX used by Tanzanian Revenue Authority (TRA) in 2001, then later the Tanzania Local Government Authorities (LGA). Tax and Revenue Management (TRM) used by Maldives and Zimbabwe [18]. It worth noting that these countries are implementing different types of electronic tax systems, and each implementation is at a different stage. So far, enormous benefits have been realized from the implementation of the above initiatives. Some of the visible benefits of electronic tax systems in Africa are discussed in next section.

## 6 Importance of Electronic Tax Systems in Africa

A couple of years back, more than 24 developing countries instituted changes that made it less demanding, or less exorbitant for firms to document tax returns and pay charges. The most widely recognized component of tax returns changes was in the upgrading of the manual filing system in to an electronic filing system. Such changes were executed in 18 countries in the Sub-Saharan region including, Mozambique, Zambia, Uganda, Kenya among others [28]. Tax payers in these countries now record tax returns electronically, in this manner investing less energy and time on compliance. These electronic tax systems also increase transparency and limit the opportunity for corruption and bribery [18, 28]. In Uganda, for example, since the introduction of the tax online interface in 2012/13, there were 2.3 million visits to the Uganda Revenue Authority web-based tax filing interface, up from 1.3 m the previous year. There were 4,417,245 tax related electronic exchanges recorded and UgShs 6 trillion (about US$1.8 billion) was collected. This represented 75% of the tax collected by Uganda Revenue Authority [29]. In Tanzania, the electronic tax collection through banks has enabled the Tanzania Revenue Authority reduce operational costs by a high margin, and at the same time improve efficiency in the payment system [22]. The system has minimized settlement risks and eliminated floats between Commercial Banks and the Central Bank. Since the introduction of the system of payment through banks, 97% of total revenue collection is settled under interbank arrangements [22]. Wamathu [30] examined the impact of electronic taxation on the financial performance of audit firms in Kenya and found that, there was an improvement in timely filing of returns since the introduction of I-Tax, and there has been a reduction in audit period due to the introduction of I-Tax, and that the I-Tax system was cost effective. In Zambia, with the launch of Tax Online, it is no longer necessary to physically go to the Zambia Revenue Authority offices to register for taxes, file tax returns or make tax payments. Following the introduction of the web based tax filing and payment system, the time taken to

**Table 3.1** Electronic tax systems projects in Africa [18]

| Country | Project | Description |
|---|---|---|
| Ethiopia | 2007–2012 Support Facility for the Public Sector Capacity Building | Support to the Public Sector Capacity Building Programme. Technical assistance included supporting the purchase, installation and configuration of a COTS solution for the tax administration |
| Uganda | 2000–2011 Support to the Uganda Revenue Authority (URA) | Support to the implementation of the eTax system from TATA consulting |
| Sierra Leone and Liberia | 2005–2012 Support for National Revenue Authority | Support to the National Revenue Authority (NRA) Procurement of a VAT processing systems (this is actually provided by Crown Agents and is an older version of the TRIPs system) |
| Uganda | 2012–2015 Oil Taxation Capacity Building Programme | Support to the implementation of a new eTax module for oil and gas |
| Mozambique | Since 2009 Co-financing of tax administration reform basket fund | Among others Automation/ICT-based tax administration reform |
| Kenya | 2008–2012 Public Financial Management Reform | Working with the Kenyan government to develop a budget framework consistent with government priorities and policies; improving the quality of government records and procurement practices; strengthening revenue and tax systems and Improving the effectiveness of audits |
| Liberia | Since 2011 Economic Governance & Institutional Reform-Additional Financing | The project assists with strengthening public financial management through improving revenue administration by covering the cost overrun of the installation of an integrated tax administration system. Support to the installation of an integrated tax administration system (ITAS) in the BIR by providing equipment hardware, software, technical assistance and training |

comply with tax obligations dropped by 3% in 2013, and by a further 11% in 2014, and reduced the payments sub-indicator by 11 payments between 2013 and 2014. This is because the majority of taxpayers now file and pay their VAT online. Taxpayers can also now file their tax returns within 2 hours instead of the previous 15 working days needed to manually capture all tax payers' data into the system. As by 2014, 57% of all registered taxpayers filed their tax returns online [31, 32]. In Sierra Leone, with support from international donors, there has been a massive drive to modernise the National Revenue Authority (NRA) using locally developed ICT solutions. According to the World Bank report of 2012, Sierra Leone jumped from 159th to 76th country in paying tax elements, and NRA exceeded its 2012 target by 28% to an impressive US$417m.

Undeniably, as stated earlier in this chapter, it is difficult to imagine of a modern tax administration that can perform its tasks efficiently and efficiently without making considerable use of ICT [33]. However, just like any other computerized system, deploying and utilising an ICT aided tax system also includes some tough challenges in conceiving, deployment and sustenance [18]. In the next section, this paper discusses some of the challenges always encountered during the implementation of ICT aided Tax systems in many African countries, and their probable solutions.

## 7 Challenges and Remedies of Electronic Tax Systems in Africa

In this section, this chapter highlights the main challenges along with recommendations for electronic tax systems in Africa.

### *7.1 ICT Infrastructure*

One of the major problems faced by African countries in the implementation of electronic tax systems is the inadequate ICT support infrastructure. In many developing countries, taxpayers have limited internet resources that can facilitate the use of electronic tax filing system. There is limited internet access, low network speeds, power shortages and system failures, and the electronic system can be quite slow and unreliable. In Kenya, for example, the online filing system introduced in 2009 took 3 years for the system to gain acceptance with taxpayers, this was as a result of the slow processing speed of the filing website [28]. In Zambia, there are 200,000 registered taxpayers in the Zambian Revenue Authority (ZRA) database, and three-quarters of these are Small and Medium scale Enterprises (SMEs). Ordinarily, an SME tax payer in Zambia needs at least a minimum of a computer with internet connection in order to do e-business with ZRA. However,

studies show that a high number of SMEs have no PCs and those who own PCs have no connection to internet facilities. Others are not well versed in PC and web use. Due to these difficulties, it is exceptionally troublesome for SMEs to do business with ZRA [34]. In Senegal, sporadic power supply has in some cases hampered the effective rollout of the electronic tax systems throughout the country. In certain cases, the buildings in which the tax offices are accommodated need to be renovated, as serious issues like leaking roofs are hampering IT deployment [18]. Ezomike [28] observes that, although ensuring that taxpayers and tax officials are properly educated on the use of the system can be a herculean task, an adequate sensitisation plan should be drafted, and the system must be designed to be user-friendly for ease of acquaintance by the users. Government and donor agencies need to provide the necessary infrastructure needed for a successful deployment and usage of electronic tax systems.

## *7.2 Administrative Capacity*

Many conclusions have been made that the tax administration systems in developing countries are simply insufficient and lacks "administrative capacity", usually defined in terms of skilled human capital for the tax administration to function properly [33]. Blume and Bott [18] observe that, each stage of the modernisation procedure, including ICT integration into the tax system, will require sufficient capacity and capabilities within the tax administration. Depending on the stage of the project, these shortages will become visible in the area of IT, business analysts, tax officers and managers alike in the respective areas of expertise. One of the biggest technical challenges encountered in Mozambique Revenue Authority (MRA) reform projects was the Oracle System which ran on Java. It required IT personnel to undergo extensive training before they are able to undertake any changes in the system. As a consequence of the tight schedules and a difficult relation with Oracle vendor, the MRA was forced to employ a team of approximately four Oracle consultants to carry out the required alterations on the ground [18]. With donor support, Ghana computerized its tax processes, however, the human resource was not adequately trained and the recruitment of staff was not to the recommended numbers, therefore leading to the ineffective implementation of the ICT reforms [38]. IMF et al. [35] observe that many tax bodies continue to be staffed by poorly trained and low paid officials, have structures which do not encourage an integrated approach to different taxes, and are marked by imbalanced service and enforcement functions. There is a need to build capacity before, during and after the implementation of ICT in the tax systems. One of the tax Authorities that managed to address the issue of unskilled personnel is Zambia Revenue Authority (ZRA). In conjunction with training programs for tax officers, ZRA has been successful in improving the collection and processing of taxpayer data through consistent training, and the project has built up technical expertise within the ZRA to effectively use ICT [20]. There is also a need to build a competitive salary structure throughout the Authority. Competitive salaries are needed to attract and retain suitably qualified

staff, such as skilled professional managers, and to reduce incentives for corruption [36]. In Uganda, for example, salaries for staff working at the Uganda Revenue Authority was increased by an average of 250%, which aided in the recruitment and maintenance of highly skilled staff [20].

## *7.3 Conflicting Interest (Donor-Government)*

As expressed before, despite the fact that the general pattern of aid towards the different tax bodies in developing countries has essentially increased from USD 21.3 Bn in 2002 to USD 47.8 Bn in 2010, donors continue to have mixed reactions and approaches towards supporting the improvement of tax administration capability on a sustainable basis [20]. Clashing interests and uncoordinated activities have been registered between the donor agencies and the tax bodies or governments. When several donors are involved in a given modernisation program at the same time, and they are pursuing parallel tax projects, it has maximum potential to fragment, foster inconsistency and elevated transactions costs of the project [18]. There were situations where a number of donors were undermining coherent reform effort in Tanzania Revenue Authority (TRA), where the introduction of information technology project and Taxpayer Identification Number (TIN) project were not coordinated. There were also incidents where the reforms processes were managed offshore in the donor country, leaving the recipient country (Tanzania) inexperienced [20]. Furthermore, for a long time, the donor community sent mixed signals and inhibited strengthening the TRA as a single integrated authority. Therefore, from the onset, donors should pursue a proactive systematic approach of coordinated technical support to tax administration reform in African countries. The basket funding approach has been successful in Uganda's modernization of tax processes. Basket funding arrangement plays a major role in the successful coordination of donor supported reform. With support from various donor agencies like Netherlands, the UK, DFID, World Bank, IMF, Japan, China, CIDA and Denmark, the government of Uganda successfully implemented the modernization of the tax processes supported through an integrated technical co-operation and basket funding framework for an approximated amount of USD 15 million [20].

## *7.4 Inadequate Planning*

Blume and Bott [18] observe that some countries do not put in enough energy and time to fully examine and understand the business processes of the Authority before planning and tendering for a new system. Without this prior examination, unnecessary delays and unwanted budget overruns will likely be the consequence. The impact of this action will be realized when funding for remedial measures over shoots, and the total cost of the project inflates. For example, in Mozambique, the

tax body began to venture into e-taxation without simplifying and redesigning its processes in a proper way, and this led to numerous setbacks during implementation, which led to unnecessary delays. Likewise, the interaction between the authority and Oracle which was contracted to supply the e-tax system was far from optimal, so the desired results could not be achieved. Consequently, the tax authority was pushed to hired external consultants on the business side, to mediate with the supplier (Oracle) and to introduce best practices on a business process level [18]. Blume and Bott [18] make an observation that, carefully planning the structure and procedures during the full implementation process is no guarantees for success, however, without it, the chance of success will be reduced to almost zero. Blume and Bott [18] recommend best practices in the area of project management, like Prince2 or PMI, will help to structure the project and the internal processes and procedures. A carefully thought-out detailed plan must be in place prior to system implementation, and more importantly, lessons should be drawn and learned from other countries.

## *7.5 Corruption*

Bird and Zolt [9] acknowledge that, since silver linings seldom arrive without clouds, there is a possibility that technology itself may equally increase corruption. Technology its self, may foster corruption by increasing the opportunities for more sophisticated collaboration between taxpayers and corrupt officials. One of the biggest impediments to reforms in tax administration in the African Revenue Authorities has been the resurgence of considerable corruption. The South African Revenue Service (SARS) at one time reported a plot between corrupt officers employed by tax paying companies, and the intellectual property registration office of SARS to swindle SARS off VAT income. In response to this kind of corrupt tendencies, some revenue entities such as the Uganda Revenue Authority through donor advice, sought after a more radical (but effective) approach. When the tax body was changed into an Authority, all previous tax officers were laid off and were advised to re-apply for positions in the new Authority following an extremely strict vetting process. In South Africa, when the new Authority was instituted, more than 33% of the previous staff were rejected due to prior misconducts [20]. Kagina [20] recommends donors to provide expertise on how to detect corruption within tax administrations, internal investigative units should be explicitly supported, and hiring expatriate personnel for these units, potentially from other African countries should be looked into.

## *7.6 In Adequate Legislation*

Throughout the literature, local government revenue systems in many African countries lack strong and consistent domestic tax legislation [37]. This has affected the

implementation of electronic tax systems. Kagina [20] observes that administrative positive reforms can work best if they are empowered by enabling legislative enactments. For instance, a tax reform that mandates taxpayers to file returns using the web platform, requires an enactment permitting electronic returns in the tax laws. There is a need to either tailor the electronic tax system to comply with the country's tax legislation or the legislation can be tailored to empower the electronic tax system. For example in Zambia, there were a few situations where Legislation had to be amended to accommodate recognition of e-reports in official courtroom in case there was a dispute. While in Burundi, new and improved legislation was drafted prior to the creation of the Burundais des Recettes (OBR), a semi-independent revenue authority to professionalize tax administration in Burundi, and also as part of a wider strategy addressing the needs for Burundi to harmonize its laws and procedures with all other state members of the East Africa Community (EAC) [18].

## 8 Conclusion

Indeed, it is true that for economic growth and development to be achieved, a country should have and effective and efficient capacity to mobilize fiscal resources to finance the provision of essential public goods. However, many countries in Africa do not have an efficient and effective capacity to mobilize domestic resource in form of taxes, and hence low levels of economic growth and development have been registered in many countries. There is a need to reform the tax sector in many of the African countries. One of the reforms that can greatly change the face of many tax bodies in Africa, and has a great potential to improve domestic revenue collection is the integration of ICT into the tax systems. However, successful reforms in the tax systems in Africa require not simply 'computerising' existing forms and procedures, but rather rethinking, redesigning and streamlining processes and procedures in the entire tax system. The successful introduction and use of ICT thus requires fundamental reorganization in both processes and procedures, ICT strategic planning, legislation changes, recruitment, training, incentives and use of COTS.

## References

1. Fjeldstad OH (2013) Taxation and development: a review of donor support to strengthen tax systems in developing countries. ISBN 978-92-9230-587-1 WIDER working paper no. 2013/010
2. OECD (2011) Revenue statistics, 1965–2010: 2011 edition [Online]
3. Bird RM (1980) The administrative dimension of tax reform in developing countries. In: Gillis M (ed) Lessons from tax reform in developing countries. Duke University Press, Durham, pp 315–346

4. Braütigam D, Fjeldstad OH, Moore M (2008) Taxation and state-building in developing countries: capacity and consent. Cambridge University Press, Cambridge
5. Vito T, Zee HH (2000) Tax policy for emerging markets: developing countries. Natl Tax J 53(2):299–322
6. Ali M, Shifa A, Shimeles A, Woldeyes FB (2015) Information technology and fiscal capacity in a developing country: evidence from Ethiopia. ICTD working paper 31. Available at SSRN: https://ssrn.com/abstract=2587857. Accessed 12 May 2016
7. African Development Bank Group (2011) Domestic resource mobilisation for poverty reduction in East Africa: lessons for tax policy and administration
8. Bird RM (2015) Improving tax administration in developing countries. J Tax Adm 1(1)
9. Bird RM, Zolt EM (2008) Technology and taxation in developing countries: from hand to mouse. http://www2.law.columbia.edu/taxcolloquium. Accessed 12 May 2016
10. Nakabayashi S (2016) Capacity building for tax administration to mobilize domestic resources for development. In: 12th tax administration conference, Sydney, 31 Mar 2016
11. Hemingway P, Brereton N (2009) What is a systematic review? Hayward Group Web site. http://www.whatisseries.co.uk/whatis/pdfs/What_is_syst_rev.pdf. Accessed 8 Jan 2016. Published April 2009
12. DFID (Department for International Development) (2013) Systematic reviews in international development. https://www.gov.uk/government/publications/systematic-reviews-in-international-development/systematic-reviews-in-international-development. Accessed 10 Mar 2016
13. Kowalczyk N, Truluck C (2013) Literature reviews and systematic reviews: what is the difference? Radiol Technol 85(2):219–222
14. Zanker JH, Mallett R (2013) How to do a rigorous, evidence focused literature review in international development. A guidance note. https://www.odi.org/sites/odi.org.uk/files/odiassets/publications-opinion-files/8572.pdf. Accessed 10 Mar 2016
15. Cooper HM (1984) The integrative research review: a systematic approach. Applied social research methods series, vol 2. Sage, Beverly Hills. In: Randolph JJ (2009) A guide to writing the dissertation literature review. Pract Assess Res Eval 14(13):1–13. http://pareonline.net/pdf/v14n13.pdf. Accessed 12 May 2016
16. UN (2007) Economic development in Africa: reclaiming policy space: domestic resource mobilization and developmental states. In: United Nations conference on trade and development
17. United Nations (2005) Investing in development. United Nations, New York
18. Blume J, Bott M (2015) Information technology in tax administration in developing countries. KfW Development Bank Report
19. De Paepe G, Dickinson B (2014) Tax revenues as a motor for sustainable development. http://www.oecdilibrary.org/docserver/download/4314031ec011.pdf?expires=1463478676&id=id&accname=guest&checksum=5F7BF9FF3D4FF08D927A35EE84D6494F. Accessed 15 June 2016
20. Kagina A (2012) Aid as a catalyst to increase domestic revenue mobilisation in Sub-Saharan Africa. Office for ECOSOC Support and Coordination
21. European Commission (EC) (2010) Tax and development: cooperating with developing countries on promoting good governance in tax matters. Communication from the Commission to the European Parliament, COM(2010)163 final (21 April). The Council and the European Economic and Social Committee, European Commission, Brussels
22. Kitillya HM (2016) We're boosting revenue collection. http://derlimited.com/index.php?option=com_content&view=article&id=234&%E2%88%93Itemid=236. Accessed 10 Mar 2016
23. United Nations (UN) (2009) Enhancing the role of domestic financial resources in Africa's development. A policy handbook. A report written for the United Nations conference on trade and development in Geneva
24. Saeed S, Reddick C (2013) Human-centered system design for electronic governance. IGI Global, Hershey

25. Saeed S, Bamarouf YA, Ramayah T, Iqbal SZ (2017) Design solutions for user-centric information systems. IGI Global, Hershey
26. Saeed S, Bajwa IS, Mahmood Z (2015) Human factors in software development and design. IGI Global, Hershey
27. Jimenez G, Sionnaigh NM, Kamenov A (2013) USAID'S leadership in public financial management: information technology for tax administration
28. Ezomike C (2016) The case of an integrated tax administration system. http://www.thisdaylive.com/index.php/2016/04/27/the-case-of-an-integrated-tax-administration-system/. Accessed 8 Jan 2016
29. Banage SB (2013) URA's E-tax system has contributed to increased revenue. http://www.monitor.co.ug/OpEd/Letters/URA-s-E-tax-system-has-contributed-to-increasedrevenue/-/806314/1925336/-/eagv8oz/-/index.html. Accessed 12 May 2016
30. Wamathu WE (2014) Effects of electronic taxation on financial performance of audit firms in Kenya. Masters Dissertation. http://chss.uonbi.ac.ke/sites/default/files/chss/MSC-Finace%20Esbon%20wandugo%20D63-61264-2013.pdf. Accessed 10 Mar 2016
31. ICF—Investment Climate Facility for Africa (2014) Zambians now can pay their taxes online. http://www.icfafrica.org/news/zambians-now-can-pay-their-taxes-online. Accessed 8 Jan 2016
32. PricewaterhouseCoupers (PwC) (2016) Paying taxes 2016 Zambia. http://www.pwc.com/zm/en/assets/pdf/zambia-article.pdf. Accessed 10 Mar 2016
33. Bird RM, Zolt EM (2008) National Tax Journal Vol. LXI (4), Part 2 Dec 2008
34. Konge W (2014) Tax online's running effects. http://www.times.co.zm/?p=14971
35. IMF, OECD, UN, World Bank (2011) Supporting the development of more effective tax systems. A report to the G-20 development working group by the IMF, OECD, UN and World Bank; Department of Economic and Social Affairs United Nations
36. Besley T, Persson T (2013) Taxation and development. Final Drat JEL: H11, H20, O17, O43. http://econ.lse.ac.uk/staff/tbesley/papers/TaxationAndDevelopment.pdf. Accessed 12 May 2016
37. Fjeldstad OH, Chambas G, Brun J (2014) Local government taxation in Sub-Saharan Africa: a review and an agenda for research (CMI Working Paper WP 2014:2). Chr. Michelsen Institute (CMI), Bergen. http://www.cmi.no/publications/file/5098-local-government-taxation-in-sub-saharan-africa.pdf. Accessed 12 May 2016
38. Tettey WJ (1997) Transforming tax administration in Ghana: the tension between computers and human agency. Dev Policy Rev 15:339–356