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Automation in Tax Administrations

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Towards sustainable ICT systems in tax administrations

- Elizabeth Kariuki

Information demand - a key driver of technological change

Information is at the heart of an organisation's management system. In particular, information is one of the most vital resources an institution has as it aids: internal operations; service delivery; and the dissemination of results etc. Against this backdrop, tax administrations around the world have accorded import to enhancing their information systems through initiatives such as: re-engineering of work processes; re-designing systems and reporting formats; and automation with the aid of Information, Communication and Technology (ICT). In other words, "developing and sustaining systems that produce, store, transmit and process information is a priority function in public administration and for national development" (Kariuki and Kiragu, 2011).

ICT applications have evolved from tools to increase policy effectiveness, cut costs and realise efficiencies, to being more interactive and stakeholder focussed (Snellen, 2005). Specifically, in the early 1990s, with the emergence of the internet, email and intranet combined with "the growth of customer relationship management", and increased public demands for 'service quality' and new work methods, the scope of modernisation of the public sector through the application of ICT expanded electronic provision of government services and activities (Bovaird, 2003).

The remainder of this note seeks to give the reader an appreciation of the practical application of electronic government (e-government) in tax administrations. Thereafter, the paper presents some of the key obstacles to ICT system sustainability, and associated measures needed to mitigate them.

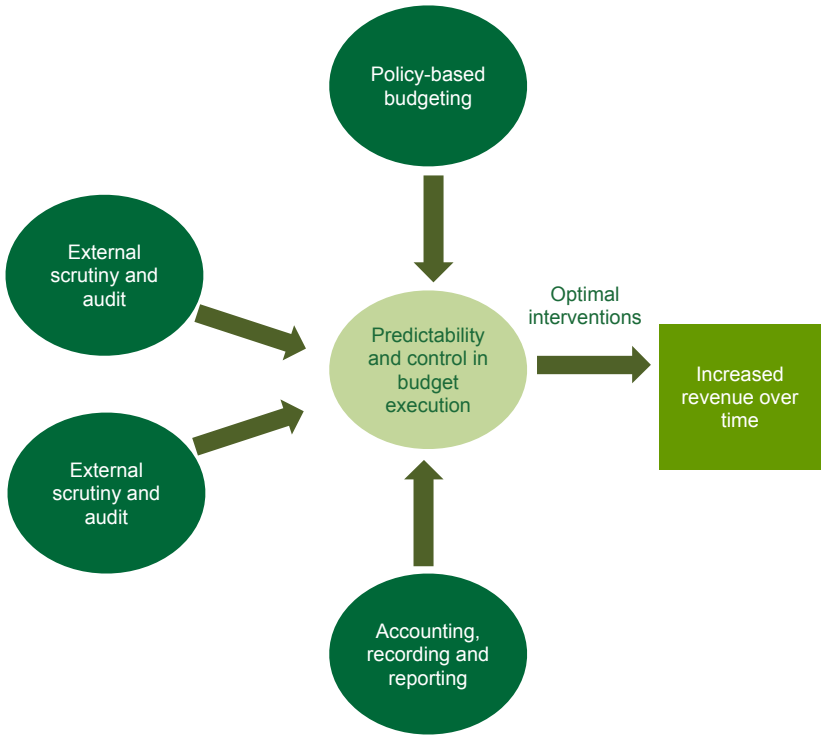
Utility of ICT to a tax administration's core operations

ICT is used to enhance performance in revenue administrations, for example, by: (1) providing readily accessible historical data; (2) reducing errors, processing times and costs; (3) improving client service and promoting voluntary compliance and hence increasing revenue collections – largely by making it more user friendly and convenient to file tax returns and pay any amounts due; (4) minimising rent seeking opportunities by decreasing the level interaction between taxpayers and revenue administration staff; ; and (5) aiding better

decision-making ((Smith, 1969); (Edwards-Dowe, 2008); (Chatama, 2013)).

Intelligence tools and processes in decision-making are probably the most sophisticated ICT enabled applications. They are increasingly used to raise revenues by capturing incidences of non-compliance with minimal manual effort. As illustrated in **Figure 1**, intelligence tools and processes rely upon automated data matching, precedent databases, campaign management and sophisticated rules based systems. Automated data-matching uses information from several records (including third party information) to verify the accuracy of information provided by taxpayers. A precedent database informs the formulation of tax rulings. Campaign management evolves around making broadcasts to targeted taxpayer groups which aim to promote compliance. Lastly, sophisticated rules based systems: "are used to define what actions should be taken (for example, send letter A to taxpayer X, while letter B should be sent to taxpayer Y). Business rules provide the tactical detail about how strategy translates into actions"(Inland Revenue Department of New Zealand, 2009).

Figure 1: Intelligence tools and processes – illustrated



Source: Inland Revenue of New Zealand

Common ICT applications in tax administration

As indicated above automation is pivotal to the provision of services. In the area of customs, trade facilitation is a principal service. Trade facilitation "involves the simplification, standardisation and harmonisation of procedures and associated information flows" involved

in the movement of goods (Dias, 2009). To these ends, countries across Africa have made substantial investments in ICT systems in the area of trade facilitation. The widespread implementation across the continent (in over forty countries) of the Automated System for Customs Data (ASYCUDA) to manage foreign trade transactions (e.g. manifests, customs declarations, transit and suspense procedures etc) is remarkable. A later version of ASYCUDA used in countries such as Benin, Botswana, Cameroon, Tanzania and Zambia allows for direct trader input so that importers can lodge declarations from their bases, and to minimise the build up of documents.

In the case of the East African Community, ASYCUDA and other customs systems are interfaced with an electronic cargo tracking system, the Revenue Authority Digital Data Exchange (RADDEX). RADDEX seeks to reduce the time and cost of cargo clearance between EAC countries by providing a secure information bridge that can be readily accessed by authorised users (USAID, 2012). "Data communicated through RADDEX… consist of exports, re-exports and transit declarations that have been cleared by customs in the country of departure and reconciliation data from goods accepted in the country of entry".

Specially tailored web-enabled Integrated Tax Management Systems are also a common feature in the area of domestic tax. For example, Rwanda, Mali, and Senegal operate the Standard Integrated Government Tax Administration System (SITGAS) (Fossat and Bua, 2013). SITGAS runs a range of functions including: taxpayer registration; account management; electronic filing (eFiling); electronic payments and refunds; case tracking for audit purposes; reporting and so forth.

Kenya Revenue Authority (KRA) no longer manually generates Taxpayer Identification Number (TIN) certificates. Rather through its iTax system, electronic registration (e-Registration) module, taxpayers are able register to obtain TINs online. KRA recently announced that it would further enhance iTax to enable the electronic collection of taxes. In this regard, KRA has partnered with a financial service provider UBA Kenya Bank to pilot the enhanced features for the year ended 30th June 2013. As part of an effort to enhance domestic revenue collections:

' Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Cote d´Ivoire, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Seychelles, Sierra Leone, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia and Zimbabwe.

[2] See http://www.asycuda.org/.

[3] http://www.ictcorridor.com/wp-content/uploads/2008/01/usermanualagent.pdf [Accessed 11 April 2010].

"Taxpayers will be able to electronically file returns, make payments and enquire about their tax status online, while monitoring their accounts in real-time" (Amuyunzu, 2013).

It is also noteworthy that South African Revenue Service (SARS) has relative to many tax administrations across the continent made substantial investments in ICT. Initial focus was on migrating from legacy systems to a more modern platform which empowers and enables the institution's frontline functions to mine data and carry out business intelligence activities. SARS has also taken advantage of ICT to realise efficiencies and improve service offerings, and thereby encourage voluntary compliance (see **Box 1**).

Box 1: Electronic filing in South Africa

SARS first introduced eFiling in July 2001 for Value Added Tax and provisional income tax returns and payments which were submitted via a third party provider at a cost. The initial uptake in 2001/02 of 10,500 returns was not as high expected due to the associated third party provider costs (SARS, 2002). The use of a third party provider was abandoned, and instead taxpayers could file returns directly to SARS. Since then eFiling has been extended to cover Pay As You Earn, Skills Development Levy, Unemployment Insurance Fund, Standard Tax on Companies, transfer duty, Advance Tax Rulings and Provisional Tax. With respect to PAYE, SARS launched 'e@syfile for employers'. This platform enables SARS to receive over 90% of PAYE submissions electronically.

Furthermore, SARS has since directed significant resources to pre-populating PIT records with information available from third parties (e.g. employers and individuals), thereby enhancing the accuracy of records. In addition, SARS restructured the tax return form from 11 to 2 pages; and "the need to provide paper schedules with the tax returns was done away with" (SARS, 2008). Also, SARS invested resources in educating taxpayers on new arrangements – especially eFiling. Taxpayers have every incentive to file their returns electronically, especially since they have a longer submission deadline than those who submit manual returns. Furthermore, SARS is able to provide eFilers with a 24 hour service, seven days a week as well as a short messaging service (SMS) to remind taxpayers when returns are due. SARS estimates that there are currently 2 million eFilers. Moreover, this technology has: enabled SARS staff to improve its workflow management – it takes 48 hours to complete a tax assessment as opposed to 58 days under the manual filing system; and empowered and enabled frontline staff by providing them with business Intelligence and data mining facilities.

Source: African Development Bank Group, 2010

Factors that undermine the sustainability of ICT systems

There is recognition as far back as 45 years ago that investments in ICT require substantial expenditure outlays. In this regard, Smith (1969) quite aptly comments that "while we have fairly well-defined ideas about what the system ought to be able to do, we still must reconcile our wants with the enormous costs involved". What is more, according to the Organisation for Economic Cooperation and Development (OECD), in a public sector setting, a significant proportion of ICT projects experience problems and/or fail. Specifically, the governance arrangements are frequently weak and as a result "budgets are exceeded, deadlines are over-run and often the quality of the new system is far below the standard agreed when the project was undertaken" (OECD, 2001). According to Leydesdorff and Wijsman (2008) budget overruns result from a combination of organisational, political and technical complexities – in particular:

> *"There is an inherent mismatch in flexibility between ICT systems and political and organisational processes. While political and organisational processes are dynamic and flexible by nature, once a decision has been taken to develop a particular ICT system and the project is underway, it is difficult to change the project. Such changes are not impossible, but have their price in terms of time and budget overruns."*

In addition to the above, an ICT intervention: (1) can create problems in the absence of consensus; and/or (2) may be constrained by existing structures and processes; and/or (3) might face resistance from a revenue administration's employees; and/or (4) may be restricted by the prevailing legislative framework. Specifically, the process could be derailed when: top management do not sufficiently understand the utility of ICT; and/or technical specialists are ignorant of a public sector organisation's operations and information requirements; and/or stakeholders, especially frontline staff, are threatened by the initiative (Heeks and Davis, 2001). What is more, technology is not culturally neutral (Frissen, 1989). In this latter perspective institutions affect "the way information is used just as much as informatization shapes the way organizations work – typically by reinforcing the existing management culture" (Hood, 1998).

It is also significant that political and social dynamics also have a part to play in promoting or undermining innovations in ICT, especially issues to do with user (particularly taxpayer) access and relevance. A lack of access may stall egovernment projects. Moreover, users "worry about privacy and security" (West, 2005), and there may be anxiety that "information will be used to increase state regulation of citizens' lives" (Barrett, 1992).

Essential measures to promote continued effective ICT systems

As African revenue administrations proceed with the implementation of various ICT initiatives, there is need to consider and put in place measures to ensure that investments contribute to sustainable and effective change. In this regard, revenue administration managements could draw on experiences from elsewhere. Specifically, a policy brief by the OECD (2001) suggests that at least six factors are critical to getting ICT projects to succeed.

First, it is important that *adequate governance arrangements* are in place. On this point, it is generally accepted good practice for ICT projects to be overseen by a Steering Committee. Such a committee typically guides the development of the ICT strategy, agrees project management arrangements, provides the project team with guidance on issues as they arise, assists in containing the project scope, monitors implementation progress and signs off on key deliverables. Dias (2009) offers a helpful example of the value of sound governance arrangements (see **Box 2**)

Box 2: Dias on governance of ICT projects

> Commitment from senior management is the most important: even the best software and most dynamic project team will not achieve the goals of the automation project if senior management is not willing to accept the changes. Moreover, the commitment and support of senior management are required not only during the project implementation period but also during the entire life cycle of the system. There are a series of decisions to be taken when introducing an automated system. Management is required to take drastic action and must have the courage to make changes. Otherwise, the automated system could be lumbered with the remnants of the old manual system. The most common example of this is where manual records and a computerised system exist side-by-side. A comparison of the processes of countries that use the same version of ASYCUDA software reveals that some have almost attained a paperless environment whereas others still require several copies of cargo declarations.

Source: Dias, 2009

Second, the tax environment is complex and therefore change must be *gradual*. The OECD policy brief urges public sector institutions to be cautious in defining project scope by investing in smaller projects and/or adopting a modular/phased approach. For instance, many tax administrations gradually introduce e-filing and payments on a taxpayer segment basis (Edwards-Dowe, 2008). Some of the benefits of a phased approach are that it: (1) enables a revenue administration to gradually build capacity; (2) makes it possible for potential risks to be minimised; (3) ensures that a project is more manageable and as a result planned timetables can be adhered to; (4) allows the revenue administration to manage implementation within an approved resource envelope; and (5) gives management an opportunity to make adjustments/ adapt the project in light of experience.

Third, it is imperative for a tax administration to *manage project risks*. Risks are defined as "the uncertainties that pose threats, limitations and obstacles to the achievement of project goals and objectives"(United Nations, 2010). Some major risks for tax administrations include but are not limited to the following:

- People – retaining critical ICT skills which generally tend to be in short supply is a challenge, and puts the sustainability of ICT systems at risk. This suggests the need for tax administrations to continue to benchmark their human resource practices with other organisations, and where necessary adjust policies to ensure that ICT personnel are motivated and retained;

- Security – phishing is a particular concern for tax administrations. The Internal Revenue Service (IRS) in the United States of America (USA) defines phishing as "the fraudulent use of [its] name or logo by scamsters trying to gain access to consumers' financial information in order to steal their identity and assets"[4];

- Fraud risks – with the advent of e-filing, fraudsters are able to illegally claim refunds by stealing other taxpayers' identities through phishing and other means. According to Starkman (2013) in the USA "identity-theft cases rocketed to 1.1 million in 2011 from 51,700 in 2008. [What is more], the IRS has a backlog of 650,000" alleged fraud cases to resolve. Therefore tax administrations need to advise taxpayers on effectively managing their security online. In addition, tax administrations' ICT systems increasingly offer features such as automatic log-out of user after a certain period of inactivity, and firewalls to prevent unauthorised entry.[5]

Fourth, tax administrations should *exercise caution in the choice of technology*. The OECD policy brief cautions against public institutions adopting the latest technology fads, and especially, developing customised as opposed to procuring off-the-shelf technology. It is also equally important to ensure that technology matches both current and future business needs. So for example, it is probably essential that a particular customs system is able to communicate with the systems of other countries within a common market.

Fifth, it is important to *ensure management accountability*. The OECD is categorical that because ICT projects are geared to support business needs they "must be led by top management and not by IT experts". Moreover, project management responsibilities should be clearly delineated, and performance measures and targets set. It is suggested that for each ICT project management should be accountable for: (1)

[4] http://www.irs.gov/uac/Suspicious-e-Mails-and-Identity-Theft [Accessed 20 June 2013].
[5] www.hmrc.gov.uk/security/safe-online.htm [Accessed 20 June 2013].

scope; (2) timing; (3) cost; (4) human resources; (5) risk; (6) quality; (7) procurement; (8) communication; (9) integration; (10) issues and acceptance; and (11) change (United Nations, 2010).

Sixth, *promote end user participation* by planning their involvement in both development and implementation at the outset of the project. In addition to soliciting end-user inputs during planning, tax administrations should encourage learning by doing through the use of pilots, modular implementation, self paced learning and so forth. The UK's National Audit Office (2002) also recommends that public institutions should offer users financial incentives to use digital services, in addition to, sensitising them on how to use new facilities; provide internet access to the disadvantaged (via public and private internet cafes/kiosks); and make government websites more user friendly. Also the institutionalisation of data protection and security policies and standards may ameliorate citizen concerns around protecting their privacy (Lau, 2003).

Concluding remarks

This summary note demonstrates the ways in which information generated from ICT systems is a vital resource, as it enables revenue administrations to meet both internal and external demands. In fact the literature indicates that significant efforts in the area of modernisation of work tools and processes hinge on adopting technology to enhance the way in which information is handled so as to support operations and enhance service delivery both efficiently and effectively. However, ICT projects have a significant failure rate on account of problems such as: budget overruns due to organisational, political and technical complexities; conflicts and resistance within the tax administration; project capture by ICT technocrats; and low uptake due to security concerns. Lessons of experience suggest that ICT initiatives can be sustained by: putting in place adequate governance arrangements; instituting gradual change; adequately managing project risks; exercising caution in the choice of technology; ensuring management accountability; and promoting end user participation.

About the author

Dr. Elizabeth Kariuki is a director at Africa Policy Research Institute (APRIL) and former PwC partner. She has worked in over 15 African countries on initiatives related to tax reform, public finance, public service reform and performance management. In 2011, she co-authored four chapters of a book entitled Public Administration in Africa. She recently completed her doctoral research on performance measurement and tax administration at the University of Bradford's School of Management in the UK.

References

African Development Bank Group (2010) *Domestic Resource Mobilization for Poverty Reduction in East Africa: South Africa Case Study.* Tunis: African Development Bank Group, Regional Department East A (OREA).

Amuyunzu, O. (2013) Kenya: KRA to Electronically Collect Tax. *CIO East Africa* Nairobi, CIO East Africa.

Barrett, S. M. (1992) Information Technology and Organizational Culture: *Implementing Change International Review of Administrative Sciences* 58 (3), 363-374.

Bovaird, T. (2003) E-Government and e-Governance: Organisational Implications, Options and Dilemmas. *Public Policy and Administration*, 18 (2), 37-56.

Chatama, Y. J. (2013) The impact of ICT on Taxation: the case of Large Taxpayer Department of Tanzania Revenue Authority. *Developing Country Studies*, 3 (2), 91:100.

Dias, A. (2009) Management Team Commitment is Key for Successful Automation in Customs Administration. *World Customs Journal*, 3 (1), 69-72.

Edwards-Dowe, D. (2008) *E-Filing and E-Payments - The Way Forward*. Belize City: Caribbean Regional Technical Assistance Centre.

Fossat, P. and Bua, M. (2013) *Tax Administration Reform in the Francophone Countries of Sub-Saharan Africa*. Washington D.C.: International Monetary Fund.

Frissen, P. H. A. (1989) The Cultural Impact of Informatization in Public Administration *International Review of Administrative Sciences* 55 (4), 569-586.

Heeks, R. and Davis, A. (2001) Different Approaches to Information Age Reform. In: R. Heeks (Ed.) *Reinventing Government in the Information Age* London: Routledge, pp. 22-48.

Hood, C. (1998) *The Art of the State* Oxford: Oxford University Press. Inland Revenue Department of New Zealand (2009) Tax Administration Changes to Raise Additional Revenue Over Time. Wellington: Inland Revenue Department of New Zealand,.

Kariuki, E. and Kiragu, K. (2011) Modernising Public Administration through Electronic Government. In: Ladipo Adamolekun (Ed.) *Public Administration in Africa*. 2nd ed. Ibadan: Evans Brothers, pp. 172 -191.

Lau, E. (2003) Challenges for e-Government Development. *5th Global Forum on Reinventing Government* Mexico City, Mexico.

Leydesdorff, E. and Wijsman, T. (2008) *Why Government ICT Projects Run into Problems*. Den Haag, The International Organization of Supreme Audit Institutions.

National Audit Office (2002) *Better Public Services Through e-Government: Academic Article in Support of Better Public Services through e-Government*. London: National Audit Office.

OECD (2001) *The Hidden Threat to E-Government: Avoiding large government IT failures.* Paris: PUMA.

SARS (2008) Annual Report 2007/08. Pretoria: South African Revenue Service.

Smith, W. H. (1969) Automation in Tax Administration. *Law and Contemporary Problems*, 34 (4), 751-768.

Snellen, I. (2005) E-government: A Challenge for Public Management. In: C. E. Ferlie L.E. Lynn jr and C. Politt (Ed.) *The Oxford Handbook of Public Management* New York: Oxford University Press, pp. 398-421.

Starkman, J. (2013) E-Filing and the Explosion in Tax-Return Fraud. *Wall Street Journal.* New York.

United Nations (2010) *ICT Project Management in Theory and Practice.* Incheon City: United Nations Asian and Pacific Training Centre for Information and Communication Technology for Development (UN-APCICT).

USAID (2012) Revenue Authorities Digital Data Exchange (RADDEx 2.0). In: United States Agency for International Development (Ed.).

West, D. M. (2005) *Digital Government: Technology and Public Sector Performance* Princeton: Princeton University Press.

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