

Fostering Tax compliance in RDC: Lesson from Korean Case Study

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Abstract:- In the Democratic Republic of the Congo (DRC) as in most developing countries, tax revenue is the primary source of funding of government expenditure. Consequently, tax administration must be the most prestigious, efficient, proactive, organized sector ever. The questions at the center of economic policies are: what is the suitable tax system like? And how can it be designed to “optimally” raise revenue to finance public expenditures and promote economic development? Many developed countries have tried hard and achieved efficient tax management system using available solutions in hand including United States, Canada and Asian countries including China, South Korea, to name just a few. According to some official intentional organization reports, African countries are poorly ranked as far as tax management is concerned. The method of tax collection coupled with structural-functional complexity challenge, lack of tax culture and more importantly the ignorance that information technology has the potential to modernize tax system hinder from raising sufficient tax and make the most of it. This paper strongly supports developing countries not to invent the wheel, rather make the most of developed countries achievements and best practices and customize them to their local context. It analyzes the existing tax management of the DRC particularly, provides a critical review of Korea’s tax system and summarizes its key IT takeaways over developing countries in general, particularly the DRC. The case study of Korea is insightful and shows possible solutions for modernization of tax system. A critical assessment on the functional, organizational and structural challenges was conducted using analytical and descriptive methodologies. Thus, the discussion, conclusion, and recommendations are intended to Congolese government and policy makers to serve as responsive option on the possibility of solving tax management system challenges in the sector. In a word, tax system design found in Korea reflects its unique

structure, function and policy objectives irrespective of what found in other countries throughout the globe. It has closely evolved along with its economic development policies, deemed miraculous, thereby their tax policies should be considered with caution. The author cautiously propose a customized tax framework for the DRC, that can be extended to other developing countries. The case study also illustrates how long the e-tax administration modernization journey can be.

Keywords:- ICT, tax compliance, e-government, e-invoice.

I. INTRODUCTION

While in this fourth industrial revolution and digital economy era businesses and governments in developed countries, Latin America and Asia have acknowledged ICT as an enabler of economic development, many developing countries in Africa seem not ready to adopt them. In the Democratic Republic of the Congo (DRC), despite some major advances in ICT sector, tax-related tasks are handled manually, resulting in inefficient public tax service. DRC is still a cash-based society, the majority of government services is not computerized and payment including tax is paid on cash. Manual tax-filing system result in inefficiency, errors, lack of transparency, prone to fraud and corruption as result of face-to-face contact between tax officials and taxpayers, higher compliance costs given cash-only transactions leave paper trails, making tax management across the country challenging [26]. E-taxation also referred to as “electronic tax system” can improve capabilities of tax management by:

- mapping and lowering the shadow economy;
- improving tax collection and compliance through quality service delivery;
- improving taxpayers convenience by enabling self-service options as well as simplified filing and reporting processes. Tax payers can access tax services from anywhere at anytime;

- Reducing face-to face contact between taxpayers tax officials in person;
- Improving tax revenue;
- improving transparency;
- reducing operating costs.

The ability for government to make decisions as well as collect taxes lies on the extent of the repository of available information of individuals, assets and businesses[13]. However, it is challenging for governments to exactly identify the incomes of businesses trading in cash economy or informal sector. Cash economy is detrimental to the economic development since cash transactions are not taxable since evidence is hard to track.

Consequently, This paper aims at studying Korea’s tax journey from the adoption of ICT to the country’s first integrated tax management solution (TIS, tax integrated system), its development and the underlying policies (legal, intuitional) . In addition, it examines the country’s achievements and key success factors in terms of increased tax revenue through ICT.

II. RESEARCH METHODOLOGY

The study uses the analytical and descriptive methodology to analyze the tax system in DRC. The primary data used in this study was interview with government officials in the tax sector specially iOKn tax agencies including DGI, DGDA, DGRAD whereas the secondary data was collected from relevant institutions, previous survey, articles, statistics, and publications.

III. LITERATURE REVIEW

A. Tax System in DRC and Challenges

The National Agency for the Promotion of Investment rolled out in 2005 the “guichet unique”— The one-stop shop aiming at simplifying the process of registration of companies and integrating under one roof tax services.[22].

Tax is under the leadership of the Ministry of Finance (MoF). Principal organs and agencies under the Ministry include the General Directorate of Customs and Excise (DGDDA), Generate Directorate of administrative income (DGRAD), the Customs and Excise Office (OFIDA) and the Directorate General of Taxes (DGI) including, 10 province-based tax assessment units 26 revenue agencies, 58 national tax assessment units involved in calculating, auditing and collecting taxes[26].DRC counts several tax agencies, signatures are often difficult to obtain coupled with complex regulations, and a multiplicity of overlapping administrative agencies[19]. The tax system and policies tax seen in DRC are puzzling on many dimensions with many business avoiding taxes entirely by operating through cash in the informal economy, duplicating bookkeeping records one with true records another with false records that serve for Tax audit.

According to the African Union et al.(2022), DRC poorly performs as far as the tax-to-GDP ratio concerns. In 2020, the country’s tax-to-GDP ratio lost 0.4 % points decreasing from 7.7% in 2019 to 7.3%. Over the same period it decreased of 0.2 % out of 31 countries within the publication and was 16.0% in 2020. The average for these 31 African countries improved from 14.4% in 2010 to 16.0% in 2020 while the tax-to-GDP ratio in the DRC has decreased from 8.6% to 7.3% over the same period. The DRC reached the highest tax-to-GDP ratio in 2012 with 10.8%, with the lowest being 1.1% in 2000.

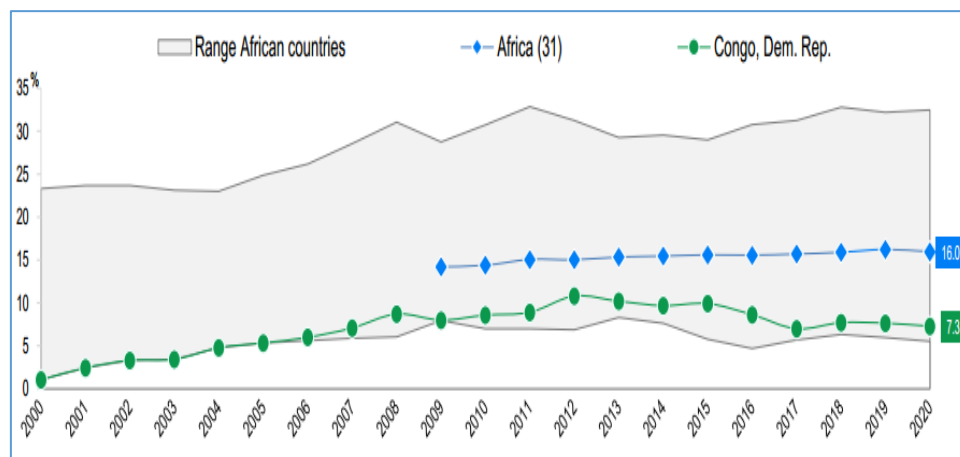


Fig. 1: DRC Tax-to-GDP ratio over time[2]

The highest share of tax revenues in the DRC in 2020 was largely contributed by value added taxes (VAT) (32%). The second-highest share of tax revenues in 2020 was derived from taxes on goods & services other than VAT (19%). Manual processes largely contribute to significant vulnerabilities making revenue administration agencies vulnerable and prone to corruption, tax fraud and evasion. The comprehensive legal framework, rules and procedures

are not always guaranteed leading to arbitrary decisions. Despite improvements at the customs administration, officials implementing the revenue administration processes and procedures misunderstand the use of electronic procedures and remain largely manual [25]. This incentivizes corruption and power abuse, making the business environment unfriendly[26].

Structurally, each level of government including decentralized territorial entities or ETDs, provinces and central government collects revenue. In addition, there are over 137 types of taxes/charges including 38 in cities, 34 in communes and 38 in chieftaincies [25]. The multitude of administrations and taxes and the complexity of means of processing (manually) raises the risks of collusion between

users and staff members resulting in inefficient management of tax revenues, and the weakness of control mechanisms leading to systematic waste of revenue and make for an unfavorable business environment. The figure2 depicts that it takes at least 22 days to prepare the documents needed for goods to clear customs.

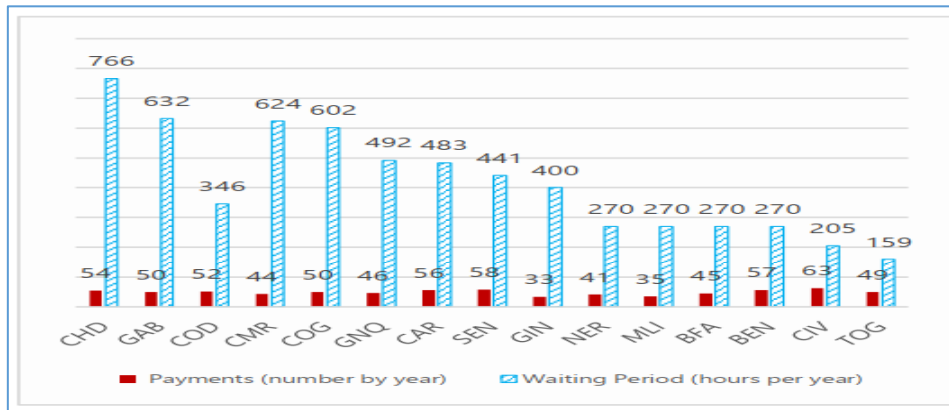


Fig. 2: Illustration of vulnerabilities in the DGI and DGDA-payment of taxes in sub-saharianAfrica(SSA) [25]

This is, on the other hand, aggravated, by the lack of coordination between government tax agencies as well as a coherent and robust anti-corruption strategy. Another challenge lies on poor financial inclusion. The World Bank Survey(2020), reported about 43 percent of Congolese did not have savings orchecking account in 2013, which is lower then the SSA average score at 13 percent. The population generally prefers cash and merchants are not

enthusiastic to adopt electronic payments using POS terminal as they deem it an additional expense. The low level of financial inclusion is exacerbated by poor financial literacy. According to the Global Findexdatabase(2019) as shown in table 1,despite increase of mobile money penetration from 9 percent to 16 percent, cash payment remains dominant in the DRC.

Table 1: key indicators of digital financial services(source :Global Findex database)

Indicator	DRC	SSA
% of adults with an account at a financial institution	26	32.8
% of adults using a mobile phone to access their accounts	4	20.8
% of adults making of receiving a digital payment in the past 12 months	22	34.4
% of adults owing a debit cards	6	17.7
% of mobile money accounts	16	21

B. Tax fraud in DRC

The annual tax evasion in DRRC is estimated to \$1.3 billion in revenue. [26].In Congolese law, legislator has not expressly defined tax fraud. Article 101 of Law No. 004/2003 of March 13, 2003 reforming tax procedures only speaks of fraudulent intent [21]. This article states that fraudulent intent consists of taking actions with a view to evading oneself or a third party from establishing or paying the total or partial tax due. According to article 102 of Law No. 004 /2003 of March 13, 2003 reforming tax procedures, tax fraud (or fraudulent intent) comes in the form of voluntary omission of declaration, voluntary concealments of sums subject to tax or Making fictitious or inaccurate entries in the accounting books; Issuing false invoices, the increase in the purchase price abroad, the reduction in export sales prices, the transfer of profits by increasing on decreasing turnover or expenses, this allows the reduction of Remuneration for fictitious services, etc.[22]

C. ICT initiatives in Tax System in DRC

The Government of DRC has undertaken multiple digitalization initiatives to improve public financial management and fiscal revenue generation and support a whole-of-government approach and the development of a large-scale e-commerce industry. In 2020, the DGDDA has rolled out the Automated System for Customs Data (ASYCUDA) World with the aim to connect its offices throughout the country and operating its own data centers[26]. DGDA established its own virtual private network using infrastructure available through domestic MNOs. However, all custom functionalities are not operational including the electronic filing and payments as well as custom declarations. The DGI launched its main backend application GESIMPOT to collect and file taxes in decentralized mode, installed on servers (around thirty sites) stored in as many databases as there are installations. In 2018,the central bank rolled out the ISYS-Regies, however, the taxpayer interface is not active yet though “e-Filing” for the VAT have recently been piloted[19]. In addition, the system is often inaccessible as a result of slow internet bandwidth and ease of use. The government lacks key

enablers to support the adoption of a holistic e-tax approach such as the coordination of tax agencies, digital ID and data governance[26].

D. ICT readiness

Overall, DRCE-Government Development Index(EGDI) score in 2018 stands at 26 out of 100 which lower compared to the 32.9 average in SSA. The Online Services Index(OSI) stands at 21 out of 100 against 35.4 for the SSA Region average [26]. some key challenges include, poor service delivery exacerbated by poor ICT infrastructure, lack of interoperability among tax institutions and lack of key enablers such as a digital ID system. In addition, the country has not yet implemented a comprehensive policy on data privacy and data integrity. [1]. The immaturity of public digital platforms is detrimental to the uptake of digital financial services in the country.

IV. REPUBLIC OF KOREA CASE STUDY

Korea's tax administration maturity in the 1990s is liken to those of most developing countries today[11].

Korea's economic development achievement in 5 five decades is impressive— coming a long way with gross domestic product (GDP) per capita at US\$120 in 1962 (World Bank Data) similar to many African countries and Asia, to a trillion dollar economy by the mid-2000s[17]. One of the reason behind this success lies on the strong emphasis on technology development across all sector of the economy including, tax administration[11].

A. Korea e-tax journey

According to Hyung. L. et al. (2016), Korea's e-tax journey can be divided into five stages: Preparation (1966 to 1970), process-oriented computation (1971 to 1982), expansion of distributed processing (1983 to 1993), administration automation (1994 to 1997), and e-tax administration with tax integrated system (1997 to 2000).

➤ *Preparation for the introduction of computing system (1966–1970)*

During this period was the Establishment of the National Tax Service (NTS) in 1966. Short after the creation of NTS, in 1968, the government of Korea set up a special team for digitizing tax administration[9]. In 1970, computers and data entry devices were installed for the first time soon after the creation IT Center[5].

➤ *Taxation data processing-oriented computation (1971–1982)*

In 1971 was the Initiation of tax information computerization some tax offices, the global income tax computerization was implemented in 1976[11]. The year 1977 marked the rollout of VAT computerization, the NTS adopted the computerized invoice system to cross-check business transactions in order to find discrepancies between purchases and sales to track deleted sales and excessive VAT claims input [14].

➤ *Expansion of business areas of computing system (1983–1993)*

In early 1983, the NTS rolled out two rounds of five-year tax digitalization plans spanning from 1983 to 1992 that was carried in two main phases: between 1983 and 1988, the focus shifted from data processing to the digitization n tax management using computers. The development of a national tax database enabled installation of computer terminals across regional tax offices. By 1990, all information about tax assessment, arrears including VAT filing etc. was digitalized. As a result, staff in tax offices were able to audit, evaluate tax payment and compliance[3].

➤ *Foundation for e-tax administration (1994–2000)*

In 1994, the Tax Integrated System (TIS) was initiated and launched in 1997 in response against centralized data processing challenges, [14]. The year 1997 marks the beginning of Full-fledged digitalization of tax management that comprised management of (1) registration of tax, (2) tax filing, (3) tax collection, and (4) tax information, as well as (5) administrative services for taxpayers[18]. Hence, all tax information was integrated. Two important tax policies were enacted: “mandatory use of real names for bank account” (1993) and “global income taxation on aggregate financial incomes” (1996). In 1995, the Framework Act on Informatization Promotion and announced the national ICT strategy was enacted. In 1999, after introducing TIS, NTS eliminated face-to-face contact between taxpayers and tax officials through the launch of an e-portal. During the same year, tax incentives for electronically traceable payments (TIETP) was launched to enable credit and debit card payment method[10].

➤ *Leapfrogging of e-tax administration*

In 2002, NTS turn developed and launched HomeTax Service (HTS), an integrated web portal, e-return, e-notices, e-payments, e-civil service, and other features.

In 2003, NTS launched the Tax Information Management System (TIMS) that processes massive tax information accumulated in the TIS and stored data in a single repository[20]. The legislation of tax credits for e-filing was enacted in 2004. Electronic Tax Invoice (ETI) system for claiming VAT input tax credits was made mandatory [20]. Korea first introduced ETI in 1997 and was recognized as legally effective instruments.

In 2005, the NTS Rolled out the Electronically Traceable Cash Receipts System(ETCR) to track cash transactions after TIETP were rolled out in 1999[12].

In 2006, the NTS launched the Simplified Year-end Tax Settlement System(SYTSS) to help reduce the time and cost for the wage earners. In 2010, The NTS Rolled out the e-Invoice Issuance System (e-sero) to support e-invoicing and enhance transparency of business transactions [14].

In January 2012, NTS launched an ETI early-warning system (EWS) to combat VAT fraud and identify input tax credit fraud.

In 2015, the TIS, Home Tax System, and the TIMS were revamped as the Next-Generation Tax Integrated

System (NTIS) as shown in figure 3[10].

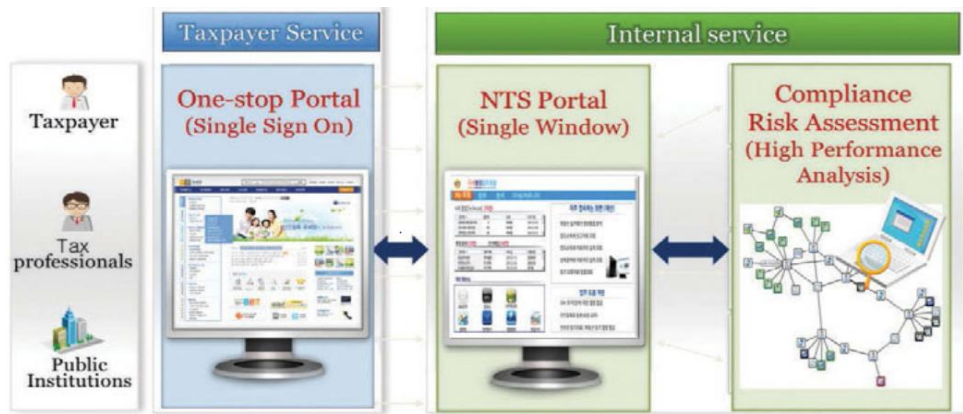


Fig. 3: NTIS Service architecture[10]

In 2016, a provision of “fully filled service” for small and micro businesses was achieved. NTS enabled income tax filing forms to SMEs. They can confirm and submit e-tax return. The figure 4 summarizes the Korean e-tax journey

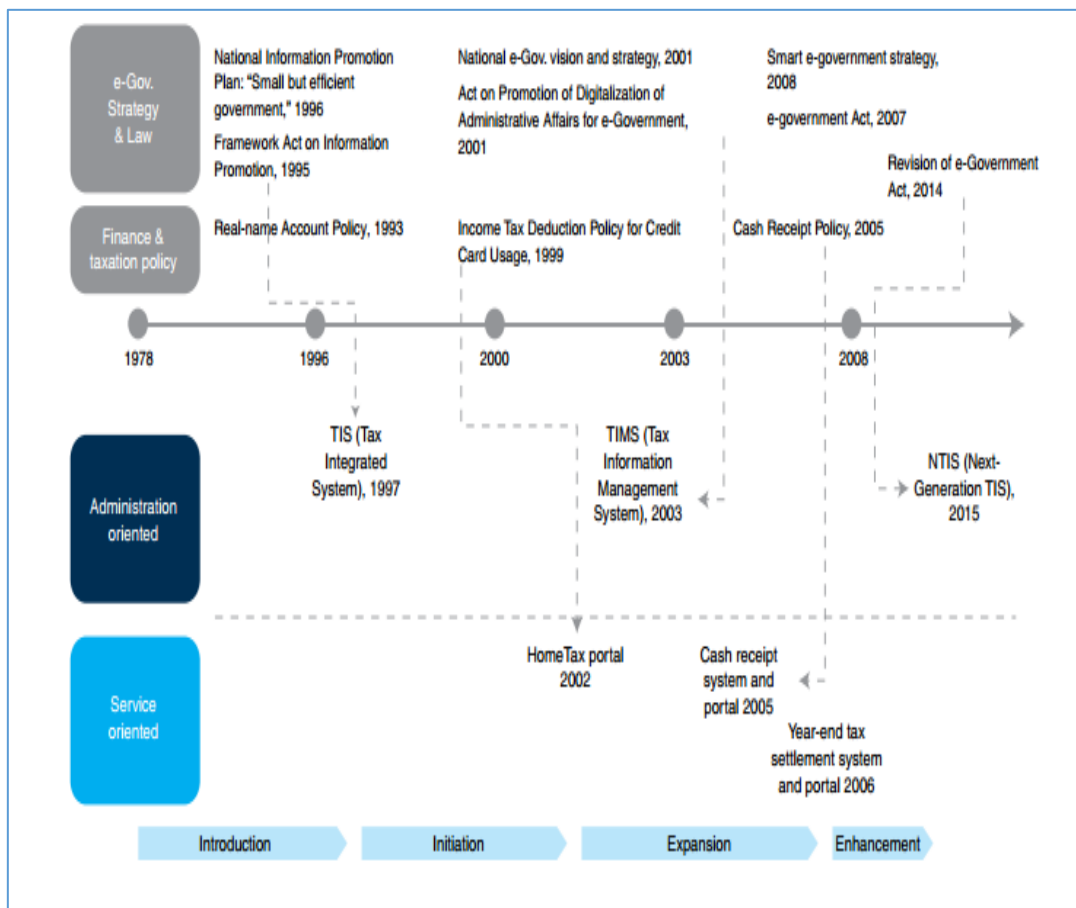


Fig. 4: Development history of e-Tax Administration and National strategy and policy[10]

B. Result of case study and key drivers

The journey to achieve a full implementation and reap the benefits of an e-tax administration, as learned from Korea case study, is neither short nor simple. Lessons drawn from Korean case study highlights that ICT solutions to achieve and sustain compliance is not restricted to ICT infrastructure and solutions; political will, a mature tax compliance culture and strong institutions in tax administration are equally or more important for

implementation and sustainability. The successful story behind Korea’s e-tax administration is intricately intertwined with advances in Korea’s ICT and e-government recurrent plans and policies but also their strong belief of the potential of ICT as determinant tool for modernization of public service. The process has been long sprinkled with challenges but Korean dream was greater than any of them.

➤ *Legal Framework*

It is observed that each stage of the journey was bound within a legal framework[11] [10] [20]. Each initiative and strategy rolled out were supported with a legal foundation as shown in **fig**.for example, to ensure lawfulness, the Framework Act on National Taxes (FANT) was enacted to provide the regulations and legal grounds for electronic notices [10].In February 2008, the HTS achieved ISO/IEC20000 certification as a result of efforts to improve the quality of services for taxpayers. In addition, the Korean law requires the transmission of ETI information be done electronically to NTS[12].

➤ *Cooperation among Various Organizations*

To integrate tax information via the TIS or the HTS, the NTS first had to gain the synergy of the relevant institutions and organizations. To this purpose, many organizations have been involved in implementing the HomeTax service under the lead of National Information Society Agency[10].

➤ *Technical Problems*

Since the TIS was established in 1999, the tax administration information system has expanded to include various kinds of e-tax systems, such as the HTS, TIMS, e-sero, EWS and NTIS[10].

- E-payment system and interlinkage with other institutions

In the beginning connecting HTS with financial institutions for electronic tax payments while ensuring information confidentiality and cost reduction was challenging[3]. These two obstacles wereleapfrogged throughlegal consensus between the KFTC and NTS especially on online payments of taxes and protection user information transmitted over the Internet[10]. Cooperation on data exchanges among institutions and expanded system coverage helped alleviate this issue.

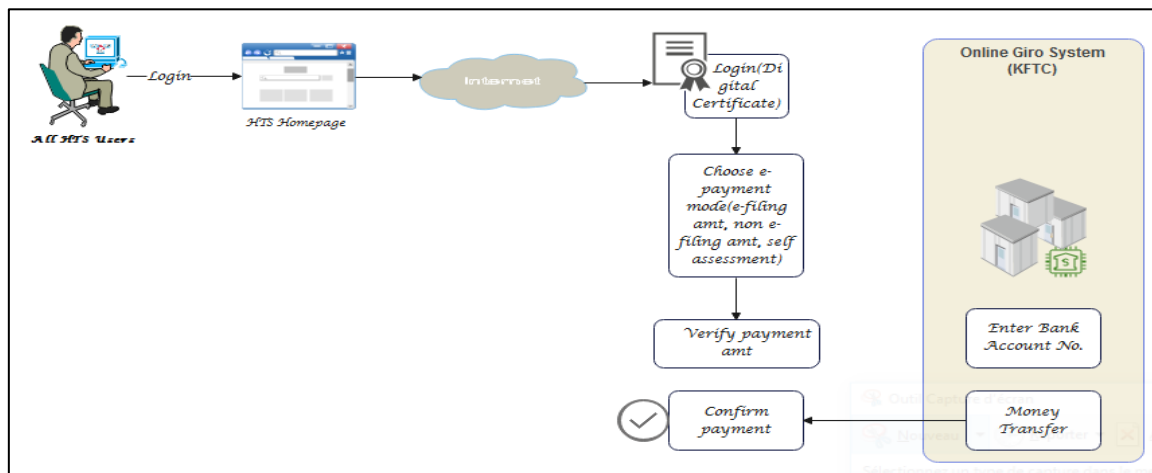


Fig. 5: Illustration of E-Payment[10]

• **Linkage of integrated national tax system and HomeTax**

To operates, HTS often aggregates with to TIS data, which inevitably raised the issue of protecting personal information transmitted over the Internet.to address this, the NTS devised disk-based data transmission to back up data among systems, enabling real-time basis data transmission to the HTS [10]. An interactive portal enabled the system to embed more than 30 distributed basic individual systems into one [12]. NTIS is a modularized JAVA program, enabling e-services run jointly. This overcame challenges raised with system compatibility, commercial software, use of different servers and DB[10].

• **Security Issues**

It is critical for online system to deal with identification issues without compromising personal information protection. This security gap was addressed by enabling HomeTax users to join the HomeTax homepage on the Internet through certified authentication system despite its inconvenience[14]. In Korea, NTS often outsources major ITMS project implementation such as HTS and NTIS.

Korean case study implies that NTS managed all these challenges well, mostly using its capable internal ICT service provider and significant human resource capacity[10].Korea’s electronic tax invoice (ETI) and ETI-backed early-warning system (EWS) offers new technology-enhanced approaches to VAT enforcement and compliance[11].

• **Introduction of ETI**

The introduction ETI in Korean tax administration has been a markedly breakthrough in the way of collecting taxes and improve compliance among taxpayers[3]. Figures 17 and 18 explain the sequence of e-invoicing either through ERP, ASP, or the e-sero. Taxpayers must keep all purchase and sales invoices and submit them to the NTS when filing VAT returns. The paper-based invoices or transaction information is converted into electronic data. The reported purchase and sales are cross-checked and scrutinized using big data analytics to detect whether fraud patterns[11].

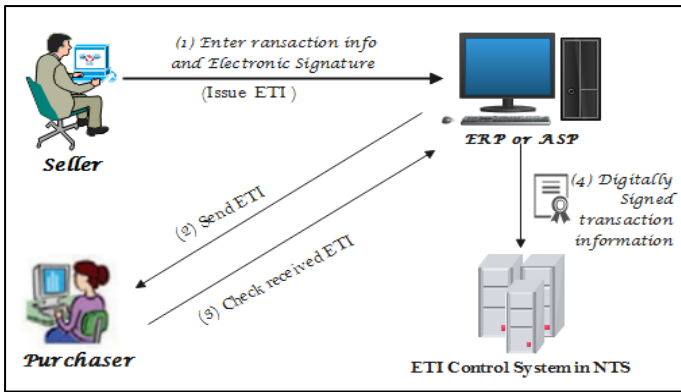


Fig. 6: Illustration of process of issuing ETI through ERP or ASP[11]

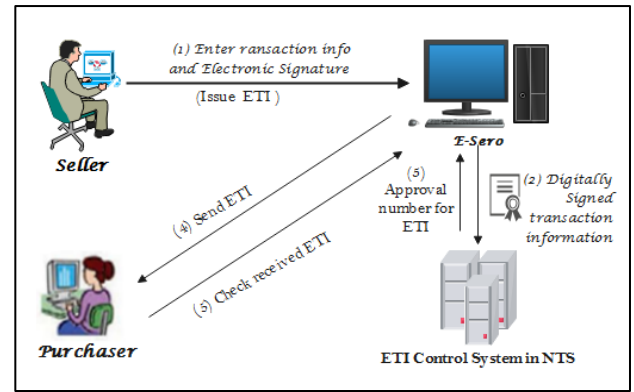


Fig. 7: Illustration process of issuing ETI through e-sero[11]

• **Standardization of e-Invoice**

Bringing into conformity e-invoices issued by different IT systems takes on critical importance. Korea achieved ETI standardization through consensus among private and public sector stakeholders while certification by the Korea Institute for Electronic Commerce (KIEC), a public institution [11]. Hundreds of e-invoice formats were concurrently identified prior to onset standardization rendering the process merely cumbersome. Korea’s insightful experience suggests ETI standardization prior to ETIs rollout not the way around[10].

• **Combating Tax Evasion and Fraud**

In 2012, the NTS launched ETI early-warning system (EWS) to track invoiceseller fraud. EWS clusters suspicious transactions in real time and sounds an alarm when invoice seller fraud is identified. It uses data from diverse ETIs sources including corporate income tax filings,

tax delinquency records, and other sources. In addition, it conductrisk assessment and verifies VAT refund claims. As depicted in Figure 8, first, EWS monitors taxpayers’ transactions in real time and triggers a warning in cases when: (i) a business issues a large number of invoices for substantial amounts and closes within a year of starting; (ii) an imbalance is identified between purchases and sales with a small percentage of ETI issuing; (iii) a business issues a large number of invoices with substantial amounts in a short period of time without filing tax returns; and (iv) sales far exceed purchases and a tax delinquency exists [10]. Depending on cases, the regional tax officer may requests a tax audit to reassess the business’s tax liability or refer the matter to the government prosecution authority, and register the noncompliant taxpayer in the record system. The ETI EWS has triggered a total of 6,822 early warnings and early verifications for tax evasion and fraud [20].

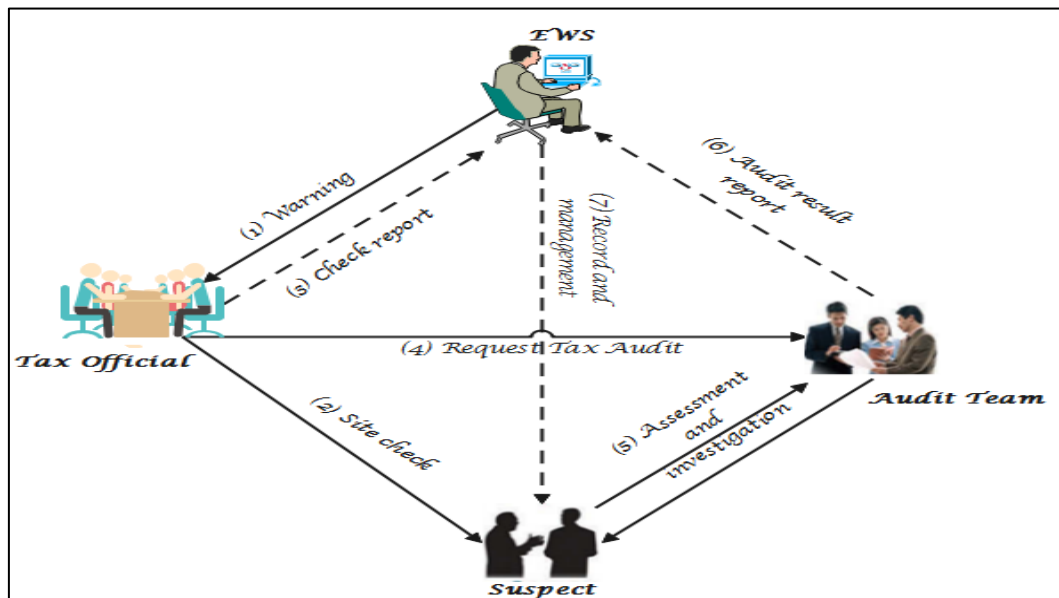


Fig. 8: Illustration of EWS[10]

• **Electronically Traceable Cash Receipts System**

In 2005, the NTS Rolled out the Electronically Traceable Cash Receipts System to track cash transactions after TIETP were introduced in 1999[20]. Sellers use payment terminals to issue cash receipts to consumers. The

cash transaction information is transferred in real time to the NTS. As of 2015, the number of cash receipt transactions reached 50 trillion. Today, the majority of private consumption in Korea is paid through ETPs, bringing the country to a cashless society[10].

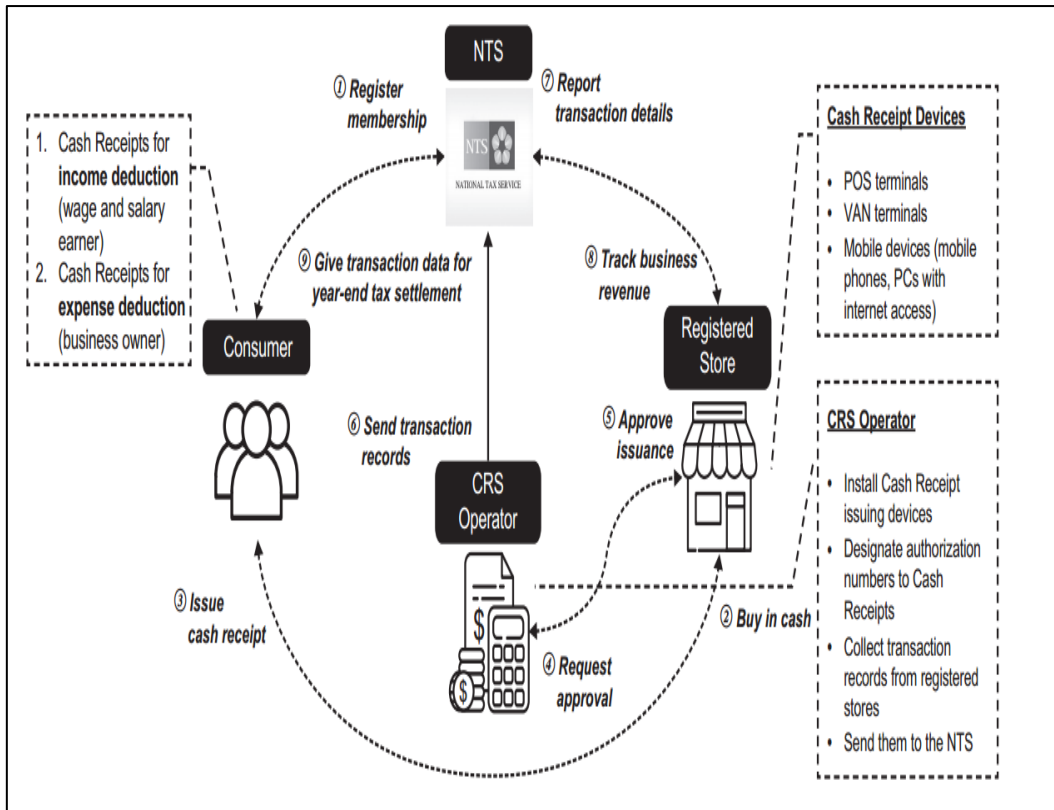


Fig. 9: Illustration of ETCRS[14]

• **Credit cards incentives**

The credit cards incentives aim at creating audit trail of retail transactions. Most Korean banks provide preferred rate loans to those customers with high levels of credit card usage. In the 1990s, Korea was a huge cash economy and B2C were not taxed due to the lack of transaction records[18]. The Income Deduction for Amount Spent on Credit Cards, etc. policy provided a tax incentive to use debit and credit cards to conclude transactions. All businesses are required a point-of-sale terminals that issued card receipts[10]. Wage and salary earners are able to claim tax deductions up to 10 percent of their labor income on purchases made through electronic transactions [18].

• **Enhanced Taxpayer Convenience**

Digitalization can foster taxpayers convenience and significantly improve satisfaction, thereby increasing tax compliance. For example the Simplified Year-End Tax Settlement System (SYTSS) no longer requires employees to visit or call relevant institutions to collect evidence to claim deductions or credits on their income tax returns [14]. In addition, the pre-filed service (PFS) and the fully filed service (FFS), which automatically fill out fields on tax returns based on information available in the NTS database, improve taxpayer convenience. The Next-Generation Hometax (NGH) provides a user-friendly interface to improve taxpayer convenience by displaying all services or modules on one webpage, allowing customization of taxpayers interfaces [3].

• **State Owned Banks**

State-owned banks will allow the government easier access to information about firms. They also predict tariff protection and directed credits for the taxed sector as well as other instruments hindering activity in the untaxed sector. Korean banks were either state-owned or under strict control of government before financial crisis[10].

V. PROPOSED FRAMEWORK AND KEY LESSONS

Developing countries face significant challenges to reap the benefit ICT in tax administration. The experience of the Korean NTS can provide with insightful lessons.

Tax system design found in Korea reflects its unique structure, function and policy objectives irrespective of what found in other countries throughout the globe. The table 2 shows the difference between the two countries.

Table 2: Key difference between DRC and Korea e-tax

Description / Country	DRC	ROK
General	Tax Administration	Tax Administration
The agency can undertake structural reforms by itself (as opposed to needing approval from central government).	No	No
The agency is depending on central government to hire personnel.	Yes	No
The pay scale is independent from that from the central government.	Yes	N/A
Organisation of tax agency (taxpayer segmentation, functional, by tax type)	By taxpayer size (LTO, MTO); then Alongfunctional lines	By tax type, and then along functionallines Symmetric
Specific to the ITAS Modernisation		
Type of ITAS Implementation (through an e-Government initiative, a specific project, etc.)	Specific Project	Specific Project
Type of Reform Engaged (Gradual, Reengineering)	Reengineering	Gradual
Investment Costs	N/A	Included in recurrent budget
Maintenance Cost (projected)	N/A	N/A
ITAS Provider	ASYCUDA/SIDONIA	In house
COTS system	Yes	No
Information management	Asymmetric Centralized	Symmetric Functional
Policy development	Less taxaton policy and poor ICT policy	More for taxation Policy than ICT policy
System interoperability	legacy	integrated

Notably, it has closely evolved along with its economic development polices, deemed miraculous, thereby their tax polices should be considered with caution.

The author cautiously proposes a customized tax framework for the DRC, that can be extended to other developing countries as shown in figure x.

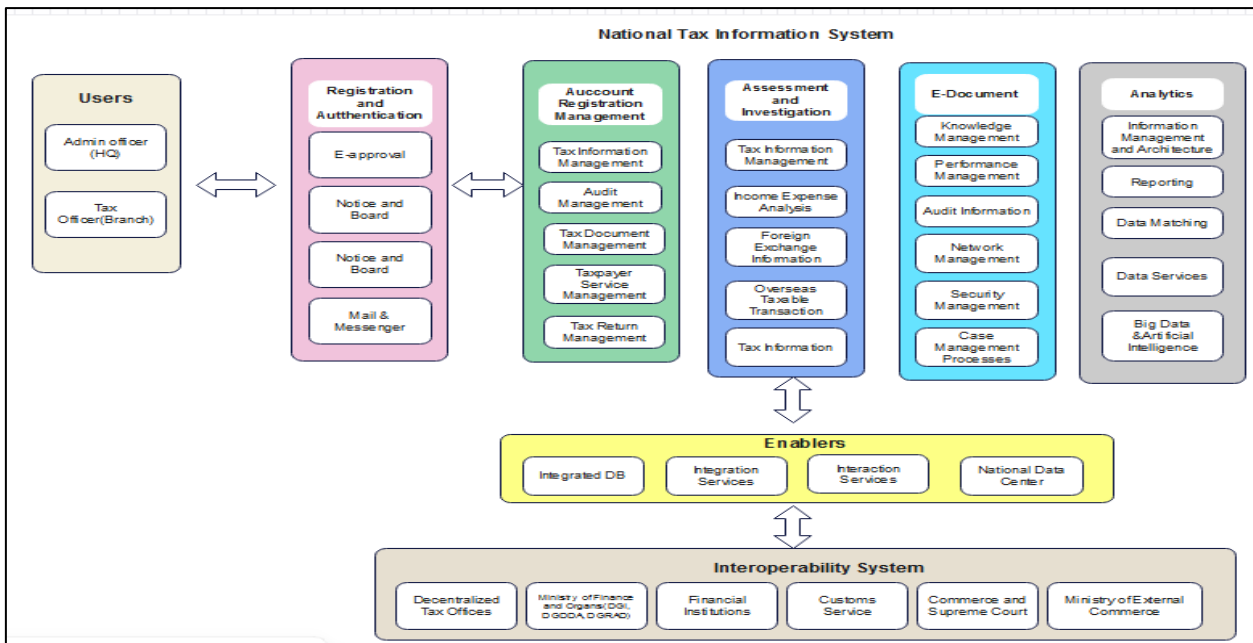


Fig. 10: Proposed Comprehensive e-tax framework(source: adapted from [10])

The following are some key takeaways drawn from Korean long journey e-Tas system government need to consider as part of their economic polices.

A. Intero perabilitybetween organizations

Shifting from asymmetric to symmetric e-tax to achievean integrated architecture enabling provision of serviceswith the aim to ease data transactions and coordination between organizations involved in tax management system. The figure x depicts the data interoperability framework.

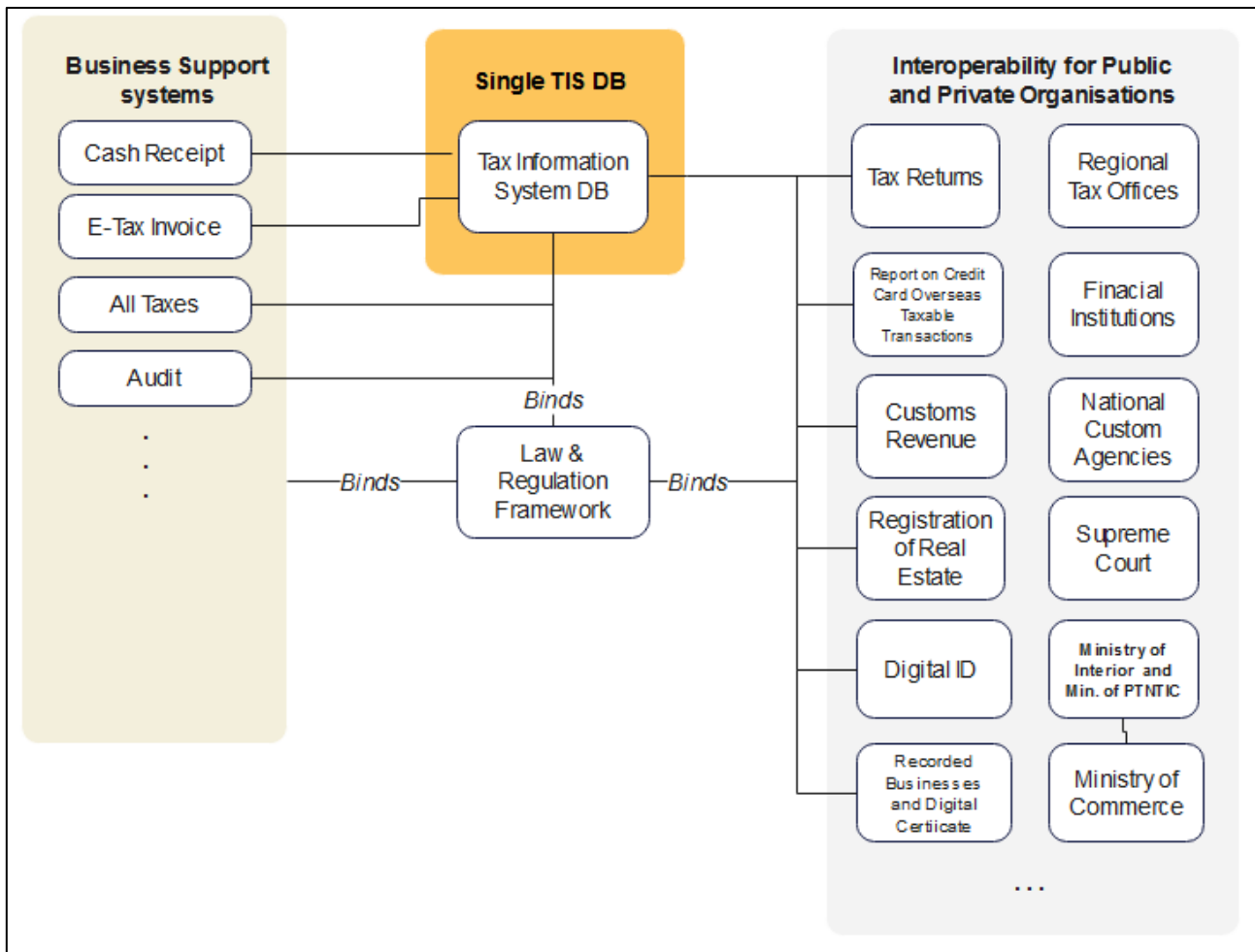


Fig. 11: Proposed data interoperability framework

B. Maturing business community

In most developing countries, tax accounting practices are immature[7]. There is a need for educating taxpayer in a proactive manner through compliance programs supported by collaboration with the accounting services community in order to improve the record keeping resulting in bringing the shadow economy into the realm of proper books and records[11].

C. Raising computer literacy and fostering use of tax accounting software and e-filing

The government should make it compulsory for all businesses to use certified software to electronically record all B2B or B2C transactions in ways accessible to the tax authority[5]. In the case of Korea, technology readiness was already mature as tax agency adopted ICT earlier. However, many developing countries are lagging behind till date, with poor ranking in OSI[23]. Improving ICT capabilities in both public and private sector is critical.

D. Promoting electronic payment and ETI methods

Many developing countries are characterized by strong cash traditions making financial transactions audit trail a delusion. The tax authorities need to implement incentive policies for all taxpayers including individuals and business to use electronic payment methods and install credit card payment terminals(POS, Van terminals etc.) to accept credit cards or NFC in order to keep track of financial

record. Government in financial institutions can encourage the use of electronic payment by driving down credit card or debit cards fees or delivering free of charge to individuals and grant reduction when they purchase or proposing better rate of loans etc. in addition, instituting TIETP for credit/debit cards like in Korea, may be challenging. In this case, implementing ETCR can serve as an alternative to leapfrog this issue as it does not require credit cards or bank accounts. Consumers without credit cards or bank access can pay with cash, which is made electronically traceable by using ETCR card registered to the tax authorities[20]. Additional incentive can also be taken to encourage consumers to receive e-invoice in B2C transactions with incentives such as an e-invoice lottery giving e-invoice receivers a chance to win prizes every month[13].

E. Aligning legal framework and e-practices

Alignment of the legal framework with modern practices is essential. E-practices require proper legal backing including new legislation or change of legal framework[13]. For example, electronic filing requires that the electronic return is recognized as a legal document, with the force of law with a non-repudiation mechanism[10]. Hence, there is a need for broader e-governance legislative and policy frameworks. The close synergy between tax authorities and elected officials in implementing sustainable policies and legislative changes is critical. The tax administration initiates e-practices and

support business process change, while the parliamentarian enacts inherent legislative policies agenda that will be imposed among businesses, tax practitioners, and citizen overtime despite the change of political regimes or government reshuffle.

F. Institutional Capacity and staff skills

The implementation of an e-tax can have a time span of several years [10]. It requires the mobilization of significant materials and human resources. The availability of an infrastructure and network broadband is necessary. The cost can have a substantial impact on the budget. Governments can implement the e-tax system throughout the regions instead of in one central location. A decentralized deployment requires the availability of a regional network as well as the acquisition of hardware for regional offices and staff [14]. On the other hand, e-tax administration involves skilled staff with ICT and business analysis competence capable of designing new ICT solutions to engineer business process efforts. The kind of skillset required is the one with strong mathematics, statistics, background capable of using algorithms or tools (data mining and data analytics) to find patterns in large dataset made available through e-tax dataset [10]. Officials in developing countries should carry out internship in developed countries to experience and gain insight of best

practices or develop mutual understanding programs. Though the legislation and context can differ from one country to another, there are common practices and principles.

G. Homemade or a commercial off-the-shelf (COTS)

Developing countries no longer need decades to achieve efficient e-tax administration given the available technology at the time and successful stories from other countries. Regardless of decision of the tax administration to either build an e-tax itself or to acquire a COTS, it is important in all situations to start the project with a comprehensive analysis of the business processes and the analyses of the Total Cost of Ownership (TCO) [13]. The former analysis consists in drafting the requirements for an e-tax implementation based a business process redesign. As a result, the discussion on developing a homemade solution or buying a COTS can start. Another important input for this TCO which aims at determining the most profitable from an overall perspective taking into account all the recurrent costs such as maintenance, required hardware, the expenditures related to the technological platform and the requirements for any new staff. Developing countries may be able to use cloud technology (IaaS and PaaS) rather than buying it. It is critical that local ICT service provider manage all these challenges [10].

Table 3: In-house solutions vs Commercial Off-the-shell (COTS) [13]

Custom-built	COTS
<ul style="list-style-type: none"> • More common in large countries with a large number of registrants and high transaction volumes • Allow for intense customization to optimize high volume transaction processing or customer service delivery quality, time, and cost (meeting taxpayers and tax administrators' high expectations for level of service) • Requires fully detailed 'to-be' state functional specifications, usually including BPR, which implies organizational capability to complete this activity • Takes longer to define, build, and deliver • More prone to significantly exceeding costs and time to delivery due to greater complexity • Requires greater management capacity and expertise • Requires more significant investment in testing • Requires signification in-house or long-term IT service provider expertise to build and sustain 	<ul style="list-style-type: none"> • Generally, come with 60 percent of necessary functionality out of the box, bases on common features and good practices of tax administrations, thus reducing testing requirements. • Intense customisation can significantly add to risk and cost • Can be implemented with less investment in 'to-be' functional state or BPR as vendor can configure from current BP definition through fit-gap analysis, followed by configuration and necessary customisation • Administration benefit from good practices embedded in COTS solutions without full BPR process (important where capacity is weak for analyzing functional requirement and BPR) • Faster implementation time (provided products are not customized to the point they are custom-built solutions) • Easier to manage and less prone to significant cost and time overruns • Contract can include ongoing vendor maintenance transition requirements to local IT service provider

H. Business process redesign(BPR) and requirements

The lack of a business process redesign exercise prior to the implementation of an e-tax system is one of the most cited reasons behind failure of many e-tax [13]. Best practice requires business processes to lead e-tax system implementation rather the other way around. Therefore, BPR should starts before setting the requirements. In addition it is important to have a clear and holistic understanding of the strategy, vision and the way forward of the organization, objectives for each functional area of the tax administration, but also what the interaction with taxpayers should look like.

I. Synergy with stakeholders

The implementation of an e-tax system not only requires the significant materials and human resources but also involves a variety of , internal and external stakeholders [13]. As a result, the tax administration should build a team empowered to carry out its mandate and report directly to the tax authority.Consultation with internal and external stakeholders is one of the building blocks of successful policy implementation. Stakeholders include sectorial ministries—the ministry of finance, DGDDA, DGRAD, DGI, the ministry of digital, Autorité de Régulation de Poste et de Télécommunication (ARPT), ministry of finance, and ministry of planning as well as business managers, civil society, academics and other bureaus at the center of government that have special roles to play in ICT policy implementations. They shall be distinctly identified, gathered and clearly and mutually understand their attributions and roles so that policies are implemented based on common consensus [5]. On the other hand, there are IT industries including Telecommunication services vendors, Cloud services vendors, Software-as-service providers, e-Service providers, Cloud services vendors, standardization organizations to name just a few. Financial institutions such as Banks, Insurance Company, Credit Card Company, Savings Bank, etc.

J. Availability of recurrent budget

Congolese authorities deem ICT projects counterproductive, as a result implementation of many ICT projects appears to be strongly donor driven. The dependence on donor funding has resulted in poor leadership and coordination that impedes the development of large scale e-initiatives as it provides scant support in terms of improving harmonization amongst different stakeholders (OECD, 2006) [13].Recurrent and consequent budget is critical throughout the e-tax system life-cycle [10]. Hence, the involvement of donors at all stages with adequate resources, funding and cash flow arrangements is a key ingredient for a successful implementation of e-tax system.

K. State owned banks

State-owned banks will allow the government easier access to information about firms. They also predict tariff protection and directed credits for the taxed sector as well as other instruments hindering activity in the untaxed sector[10].

L. Biometric ID

Develop and implement a unique biometric financial identification systemcan provide improved security, authentication, privacy or data discretion, authorization or access control, data veracity, and non-repudiation. Businesses must first register and obtain an electronic signature and a certificate of digital stamp from the system[25].

M. Align with international best practices

Build the supervisory capacity of the regulator and adopt regulations in line with international best practices. The regulation of payment systems is new in the DRC and there is a need to map the risks related to different payment types and from there proceed and also adopt regulations in line with international best practices[25].

VI. CONCLUSION

The study hasanalyzed the structural and functional system of the DRC tax administration and the ROK long, interesting journey and its National Tax Service (NTS) from initial adoption of ICT as the foundation and enabler of tax administration and compliance to the country's first integrated tax management solution (TIS, tax integrated system)[11].

The study highlights that the complexity of tax administration coupled with a multiplicity of overlapping administrative agencies, complex regulations, a frequent lack of professionalism, and poor ICT infrastructure are reason behind the country's poor performance at collecting taxes. The tax system and policies tax seen in DRC are puzzling on many dimensions with many business avoiding taxes entirely by operating through cash in the informal economy, duplicating bookkeeping records one with true records another with false records that serve for Tax audit.

The successful story ofkorea's tax administrationhasprovided insight and way out to help DRC leapfrog challenges in collecting tax. The study proposed an electronic tax framework based on Korean model. However, the study highlights that tax system design found in Korea reflects its unique structure, function and policy objectives irrespective of what found in other countries throughout the globe. It has closely evolved along with its economic development polices, deemed miraculous, thereby this study considers these policies with caution. The author cautiously propose a customized tax framework for the DRC, that can be extended to other developing countries.

Among policies suggested, the key policy is that DRC's tax administration perform poorly and requires urgent political attention and determination in order to revamp and make the most of tax sector by fosteringcompliance and eradicate tax fraud and evasion.

In addition, the study advocates legal backing for all ICT initiatives, strategies but also aligning with the national e-government agenda to come up with a responsive, efficient and resilient tax system.The journey to fully implementing and harvesting the benefits of an e-tax

administration, as seen in the Korea case study, is neither short nor simple. All developed economies experienced a similar 25-plus-year ICT and business capability development curve, beginning in the late 1970s. The Korean example stands out, however, for the scale of its adaptive challenges and the degree of innovation, effort, and incentive used to minimize the influence of cash in tax avoidance and evasion. However, developing countries no longer need decades to achieve efficient e-tax administration given the available technology at the time and successful stories from other countries. Regardless of decision of the tax administration to either build an e-tax itself or to acquire a COTS, it is important in all situations to start the project with a comprehensive analysis of the business processes and the analyses of the Total Cost of Ownership (TCO) [13].

Finally, the study concludes that modernisation of a tax administration is not about technology, but about behaviour, staff with adequate knowledge, fair legislation, integrity, interaction with taxpayers, making use of generic governmental investments and finally, effective and efficient processes.

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