Re-introduction of VAT on ICT Equipment in Kenya Special focus on Mobile Phones

TECHNICAL REPORT · APRIL 2014

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Re-introduction of VAT on ICT Equipment in Kenya

Special focus on Mobile Phones

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March 2014

About the author

Dr. Tonny K. Omwansa lectures at the School of Computing and Informatics, University of Nairobi in Kenya. He is the co-author of "Money, Real Quick: Kenya's Disruptive Mobile Money Innovation". He holds a PhD in Information Systems in which he researched on the adoption of mobile financial services at the base of the economic pyramid in Kenya. He is the coordinator of the C4DLab, a research and development arm of the School of Computing and Informatics, focusing on technology prototyping and startup incubation, research and capacity building based at the University of Nairobi. He is also member of ISACA and IEEE and serves as the Vice Chair of the IEEE Kenya Chapter.

Besides consultancy services in technology and innovation issues, he has conducted extensive research in financial inclusion and mobile transactions in Africa resulting in numerous publications including designing appropriate and innovative technologies, adoption and impact of technology, use of airtime transfers, mobile banking, virtual currencies among others.

His research interests are in the design, adoption and impact of innovative low-cost appropriate and innovative technologies in developing countries. His various research assignments have been commissioned by organizations like the Bill and Melinda Gates foundation, Rockefeller Foundation and Economic Commission of Africa among other global organizations. He is a recipient of the prestigious Bellagio Fellowship from the Rockefeller Foundation where he wrote the book on mobile money, published in 2012.

Acknowledgement

Special thanks to the ICT community for providing financial support for this project. To Moses Sitati who helped with initiating critical meetings in the course of the study as well as providing access to critical industry data sets. Samuel Bonnke, Ann Atambo and Kyla Higgs who assisted in data collection and proof reading of this work. Finally to Pauline Wanjiku and Anthony Nandaa who were instrumental in data collection and online tool preparation respectively.

Contents

Executive Summary

Mobile phones have the potential to transform peoples' lives. Their penetration growth in Kenya has been very encouraging in recent years. Governments play a key role in supporting mobile communications and wireless data growth and developments through creation of a favorable environment for penetration growth and backing the emergence of a local content and service industry. Taxation policies implemented by governments significantly impact speed of adoption and usage of the telecommunication services, particularly at lower income segments of the society. While seeking to raise revenue for government programs, revenue authorities have to consider the implications of tax structures from the viewpoint of broader national development, beyond the short term tax collection.

For example, handsets and smartphones represent the predominant access to wireless broadband in Kenya, such that handset taxes may also lead to under-consumption of Internet services. As devices become more expensive, it is likely that consumers will opt for less feature-rich options, thus reducing the potential impact of ICTs and making the attainment of Kenya's national broadband strategy to become a knowledge-based society and economy, among other target objectives, harder to achieve.

In 2009, the Government of Kenya zero-rated ICTs among other basic goods and services in order to make them more affordable and in particular for mobile technology, expand the subscriber penetration. In 2013, the government reversed this decision. Many stakeholders felt that in as much as reasons provided by government for re-introducing VAT on ICTs were justified, the decision was seen as being based on partly false data and assumptions and provide only a short-term fix, thus impacting negatively the growth of the sector and on Kenya's role as the leading digital economy in Sub-Saharan Africa. In addition, there were a number of concerns, particularly around the possibility of slowing down the pace of economic growth associated with the penetration growth of mobile devices and the use of associated services, the risk that this could reverse some of the gains made during the tax break, the realistic possibility of generating more revenue in the longer term if zero-rating remained in effect and the need to explore other strategic means of generating revenue other than taxing mobile devices.

It's against this backdrop that this study was done to explore the potential effects of this policy change and make further recommendations based on the findings.

The study aimed to address the concerns of key stakeholders around the changes in the ICT industry, particularly on mobile devices sub-sector, that could occur as a result of the re-introduction of VAT on ICT equipment. Further the study explored various related aspects and attempted to quantify the short term as well as anticipated consequences of the re-introduction of VAT on the sub-sector.

The study relied on a number of sources generating a rich combination of qualitative and quantitative data sets. An extensive desk research and literature review of published reports in the area of taxation of mobile phones in the region was done. A total of 14 face-to-face informant interviews with key stakeholders, including regulators, academia and policy makers were done. An additional 13 questionnaire responses from mobile operators, wholesalers, distributors and software developers were received. A random sample of youths responded to key questions regarding mobile phone ownership and usage.

A synthesis of the data generated numerous findings that are expounded in the report. Below is a summary of the recommendations from the study.

Supporting the ICT sector

There is need for the government to support the growth of the ICT industry. CT is the fastest growing sector in Kenya. The liberalization of the telecommunications sector and affordability of mobile phones injected competition and innovation into the market to propel growth.

Taxation policies do have a direct and significant impact on the value that people derive from mobile telecommunication services. This study, similar to other related studies, established that higher taxes on ICTs and the services they provide run counter to government's commitment to improving access to communications. To foster the maturity and rooted establishment of this sector in Kenya as a regional power, the removal of the tax holiday on mobile and computing devices is viewed as premature and is discussed further in this paper.

Dialogue between industry stakeholders

The ICT sector's cooperation and dialogue is very crucial, not only for taxation but on several other policy concerns. There is need for establishment of consultative forums with diverse participation to regularly and transparently discuss key policy topics. The study established that there are cases of conflicting views on some issues among stakeholders, even within government entities. The study recommends that consolidation and sharing of knowledge needs to be enhanced. The government is best placed to provide leadership in creating stimulating environments for open dialogue. There are case studies from other countries which give evidence of how collaboration between stakeholders can work to enable the collection of close to 100% of duties.

Moderate and balanced approach to taxation

Although the penetration of mobile phones appears impressive, research shows that the actual numbers of unique owners and users is lower, implying that many citizens remain unconnected. The total cost of ownership of mobile phones is still high, particularly for the less fortunate in society. Developing and implementing a balanced taxation profile for ICTs would lead to higher incentives for mobile consumption and purchase choices. It is the desire of stakeholders to have consumers move up the value chain from basic mobile consumption to more advanced services driven by the potential of wireless data and internet through mobile devices.

"The government, acting as a gardener, supports the innovators by providing appropriate financial and other measures("watering the plant"); by removing regulatory, institutional, or competitive obstacles to innovation ("removing the weeds and pests"); and by strengthening the knowledge base through investment in education and research ("fertilizing the soil")." - *The World Bank*.

Regular review of the effectiveness of policies

The nature of tax policies is that they understandably take time to undergo review. However, given the dynamic nature of the industry and the cascaded effect that fine-tuned policies would have, it makes it worth considering regular review. The growth rate of the sector, the demand for services, the facilitating role that the sector plays, the overlapping effect to other sectors,

and the potential to create numerous opportunities, all point to the fact that careful monitoring and review of policies in this sector would be worthwhile.

Policy reviews need to be guided by empirical data and be informed by stakeholder feedback. Appropriate matrices need to be established to help quantify the effectiveness of existing policies, an input that would then assist when conducting reviews and introducing changes.

Sealing of loopholes

One of the reasons why the revenue authority supports the re-introduction of VAT is because of the complexity of processing tax refunds and the fact that a number of players exploit loopholes in the system to unfairly benefit or compete. The percentage of counterfeits in the country is still high and the telecommunications regulator faces huge challenges policing and controlling potential criminal activities as a result of counterfeit phones. Switching off such phones happens further down the supply chain when unsuspecting customers have already bought mobile devices. Suppliers and mobile operators face challenges regarding interpretation of the existing tax regime. While others have been frustrated trying to interpret, others have exploited the unclear aspects.

The introduction of taxation into a system that is not watertight, where the collection and enforcement infrastructure is not strong enough undermines formal growth of the sector by enabling tax evaders to exploit loopholes to compete unfairly.

Introduction

There is elaborate evidence that mobile phones have the potential to transform peoples' lives. The penetration growth of mobile communication, particularly in developing countries, has been very encouraging in recent years. Governments play a key role in supporting mobile communications and wireless data growth and developments through creation of a favorable environment for penetration growth and backing the emergence of a local content and service industry. Taxation policies implemented by governments significantly impact speed of adoption and usage of the telecommunication services, particularly at lower income segments of the society. While seeking to raise revenue for government programs, revenue authorities have to consider the implications of tax structures from the viewpoint of broader national development, beyond the short term tax collection.

Higher taxes on Information and Communications Technologies (ICTs) such as mobile devices, personal computers and mobile services run counter to a government's commitment to improving access to communication services. For example, handsets and smart phones represent the predominant access to wireless broadband in the developing world, such that handset taxes may also lead to under-consumption of Internet services. As devices become more expensive, it is likely that consumers will opt for less feature-rich options, thus reducing the potential impact of ICTs and making the attainment of Kenya's national broadband strategy to become a knowledge-based society and economy, among other target objectives, harder to achieve.

Background

In the year 2009, the Government of Kenya zero-rated ICTs among other basic goods and services in order to make them more affordable and in particular for mobile technology, expand the subscriber penetration. In addition, the tax break was meant to stimulate the development of the ICT industry, a policy-action that has had a significant effect in the economy. Later in 2013, the Government reversed this decision, giving a number of reasons: first, the Kenya Revenue Authority (KRA) argued that the process of processing tax refunds was burdensome; secondly, some players in the industry were exploiting loopholes in the tax refund process to

unfairly gain; and thirdly, the new government needed additional revenue to fund additional ambitious programs. Further, KRA argued that in the past, the Kenya tax code was 'wrought with ambiguities, vagueness and sometimes conflicting interpretation' as such, a new bill was necessary that would simplify the country's tax code and make compliance easier. Interviews with key decision makers also revealed that the penetration of ICTs, particularly mobile phones, had reached a critical mass. Thus the government hopes that by re-introducing the taxes, it will help improve efficiency in revenue collection and at the same time increase the volumes generated.

Many stakeholders felt that in as much as these reasons were justified, the decision was seen as being based on partly false data and assumptions, and provide only a short-term fix, thus impacting negatively on the growth of the sector and on Kenya's role as the leading digital economy in Sub-Saharan Africa. In addition, there were a number of concerns, particularly around the possibility of slowing down the pace of economic growth associated with the penetration growth of mobile devices and the use of associated services, the risk that the re-introduced VAT could reverse some of the gains made during the tax break, the realistic possibility of generating more revenue in the longer term if zero-rating remained in effect and the need to explore other strategic means of generating revenue other than taxing mobile devices.

It's against this backdrop that a study was proposed to explore the potential effects of this policy change and make further recommendations based on these findings.

Objectives

The study aimed to address the concerns of key stakeholders around the changes in the ICT industry that could occur as a result of the re-introduction of VAT on ICT equipment. The aim of the study was to explore and as far as possible, begin to quantify the short term as well as anticipated consequences of the re-introduction of VAT on the sub-sector.

The following were the specific research objectives that guided the study:

1. To explore the impact of an increase in mobile and broadband penetration on GDP growth.

2. To establish the actual subscriber penetration figures in Kenya and the effect of the VAT increase on this number in future.
3. To establish the relationship between the shift in cost of technology and youth employment, job creation, as well as dynamism of the micro entrepreneurship sector.
4. To analyze the multiplier effect of the VAT Bill via ICTs to other key sectors of the economy (agriculture, finance, tourism, etc.) required for realization of Vision 2030 and the targeted 10% GDP growth.
5. To analyze the potential counterfeit and underground economy arising from the changes in policy.
6. To analyze the perceived impact on innovation activity/technology startups & businesses/mobile application developers as well as the effect on Kenya as an emerging regional leader in mobile technology innovations.

Methodology

The objective of the study was to provide a thorough and fact based exploration of the immediate and potential effect of the re-introduced VAT on ICTs, particularly mobile phones, in Kenya. To meet this objective, the study relied on a number of sources generating a rich combination of qualitative and quantitative data sets:

- Extensive desk research and literature review of published reports in the area of taxation of mobile phones in the region.
- 14 face-to-face informant interviews with stakeholders, including regulators, academia and policy makers.
- 13 questionnaire responses from mobile operators, wholesalers, distributors and software developers.
- A random sample of 48 youths responding to key questions regarding mobile phone ownership and usage.

Findings and Discussions

Subscription vs. Subscribers

The study revealed some fundamental confusion as to how people interpret subscription to mobile services. There are various terms that are interchangeably used, when indeed they mean different things.

The International Telecommunication Union (ITU) views subscription as the number of active SIM cards there are in a given market in relation to the population. The Communication Commission of Kenya (CCK) also adopts this definition as a measure of mobile subscriber penetration.

This definition has some limitation since there is a large number of multiple SIM-card owners and people using multiple devices which have SIM cards.

The GSM Association (GSMA) compares the number of individual mobile subscribers (i.e. unique users subscribing to mobile services) to the number of mobile connections (subscriptions or number of SIM cards on mobile networks) worldwide. Studies conducted in 2009, 2011 and 2012 across 39 countries revealed a major difference between the subscribers and mobile connections. The mobile connections suggest that global mobile penetration has reached the 100 percent mark but the total number of unique subscribers stood at only 3.2 billion, representing 45 percent of the world's population. The studies further showed that 10% of the total connections are considered inactive and consumers use on average 1.85 SIM cards each. The studies established that there was an even split between developed and developing economies.

This ratio, diagrammatically illustrated below, implies that Kenya's about 30 million mobile connections (in this case, subscription) translate to about 17 million (13.4M according to GSMA report[1]) unique mobile subscribers, which is about 57% of the subscriptions. The unique

[1]http://www.gsmamobileeconomyafrica.com/Sub-Saharan%20Africa_ME_Report_English_2013.pdf

subscriber penetration rate in Sub-Saharan Africa (SSA) stood at close to 31% at the end of the second quarter of 2013[2], which is almost the same for Kenya.

Mobile phone penetration and economic growth

The subject of ICTs penetration and more particularly mobile phones and their effect on the economy has been studied by several institutions and researchers. Several macroeconomic studies have demonstrated a strong correlation between mobile phones and economic growth. The following summary (Table 1) provides a snapshot of what different research outputs have uncovered. It's also been established that the positive impact of increasing telecommunications penetration on GDP is significantly higher for developing countries than for OECD countries. Thus increasing mobile phone and broadband penetration should be at the core of the government's economic policies.

Table 1: Research on the impact of telecommunications penetration on GDP

Finding	Study title	Sponsor
A doubling of mobile data use leads to an increase in GDP per capita growth by0.5 percentage points	What is the impact of mobile telephony on economic growth?[1]	GSMA(2012)
A 10% increase in mobile penetration increases Total Factor Productivity in the long run by 4.2 percentage points.		GSMA(2012)
For a given level of total mobile penetration, a 10 % substitution from 2G to 3G penetration increases GDP per capita growth by 0.15 percentage points.		GSMA(2012)
Extra 10 mobile phones per 100 people in a typical developing country added 0.6 percentage points of growth in GDP per capita, and this impact is about twice as large in developing countries as in developed ones.	The Impact of Telecoms on Economic Growth in Developing Countries.	Vodafone (2005)

[2]http://www.gsmamobileeconomyafrica.com/Sub-Saharan%20Africa_ME_Report_English_2013.pdf

For every 10 percentage point increase in the penetration of mobile phones, there is an increase in economic growth of 0.81 percentage points in developing countries, versus 0.60 percentage points in developed countries	Telecommunications and Economic Growth	World Bank (2009)
The economic growth in a developing country could be boosted by as much as one per cent with a cell phone penetration of just 27%.	Africa: The Impact of Mobile Phones	Vodafone (2005)
"The contribution of the mobile sector to the Kenyan economy represents over 5.6% of GDP, and up to a further 1.9% from intangibles"	Mobile telephony and taxation in Kenya 2011	GSMA (2011)

Several issues discussed below demonstrate that the growth rate of mobile phones or access to broadband in Kenya is likely to slow down and particularly disfavor poorer segments of the society or people living in rural areas as a result of the re-introduced VAT. Within few months of the re-introduction, there has been evidence of this effect. With ICT being the fastest growing sector of the economy, its key contribution to the country's GDP will be affected. Given that ICT is a pillar and an enabler of other sectors like agriculture, education, healthcare and transport, (See snapshot 1 & 2) there is no doubt that there will be a negative impact on the economy. This will therefore potentially slow down Kenya's momentum towards the attainment of the Vision 2030.

Snapshot 1: Grundfos Lifelink is a global market leader in designing and selling water systems. Their competencies are in water pumps, water dispensers and solar systems for water pumping. The company's market segment has always been top end customers. A business unit 'Lifelink' was established to design and distribute systems for developing markets, particularly for poor and rural communities.

Upon realizing that rural community water projects are not sustainable because of poor accounting systems, Grundfos Lifelink conceptualized a pay-to-use model that means the community water management team no longer accesses the cash from the water sales directly. In this way, transparency is increased, cases of corruption or over charging are eliminated; NGOs are able to establish systems for proper funds management and funds are preserved for maintenance.

Every community water project (there are 40 so far in Kenya) has a unique M-Pesa pay bill account provided by the mobile network operator - Safaricom. This becomes the 'store' for funds from the customers of that community water project.

Every customer in that community has a unique key, which has a code on it. The key is given free of charge, and acts as the customer account number. Using the pay bill number provided, a customer loads mobile money into their key. The water credit in the key can be transferred to another key through the dispenser. When customers want to buy water, they tap the key onto the dispensing machine.

Grundfos Lifelink demonstrates how simple mobile phones are being used to facilitate access to water in rural areas.

Snapshot 2: KickStart International, a non-profit social enterprise, sells pedal-powered water pumps that provide rural farmers with a means of irrigation. KickStart sells a cumulative 25,000 pumps per year in all its markets, with 8,000 sales a year in Kenya.

Kickstart's mobile layaway program is called *Tone Kwa Tone* (TKT) *Pata Pump* ("Drop by Drop" Get the Pump). Using mobile money, from any mobile phone, buyers make a deposit and send the remainder of the purchase price at any time, in any amount as long as it's within three months.

In October 2011, KickStart launched TKT across Kenya (though not all areas in the country are covered) and by January 2013, a total of 270 customers had bought a water pump through the mobile layaway program. The use of SMS reminders and mobile money transfers has reduced the duration a farmer takes to purchase a water pump down from one year to about 3 months.

This example illustrates, in a very simple way, how mobile phones become transformative by interfacing with the lives of poor rural farmers.

Penetration of Mobile Phones in Kenya

The growth of mobile phone penetration in Kenya has been equally impressive over the recent years. Despite the impressive figures reported, conflicting perspectives exist in the interpretation of what the penetration means and how it is defined.

The current reported statistics demonstrate this discrepancy quite clearly. According to the CCK, in the 4th quarter of the financial year 2012/2013 there were 30.5 million mobile subscriptions. This was up from 29.8 million subscriptions recorded during the 3rd quarter [2]. This figure is consistent with what GSMA as well as ITU report (30.7M), as the number of total connections [3]. However, industry players and the CCK itself agree that these numbers are significantly higher than the subscribers who actually use the services. The difference results from inactive SIM cards, multiple-SIM cards per individual and SIM cards registered to other devices such as modems. As discussed earlier in this chapter, the GSMA reported in 2012 that though mobile subscription in Africa had reached 68%, there were only about 33% unique users owing to the over counting of SIM cards. In Kenya, the actual penetration is estimated to range between 30 and 35 percent as per internal tracking data from device manufacturers throughout the population. Across the adult population penetration, figures are a little higher. It is also important to recognize the rural/urban divide, where rural penetration numbers are significantly lower than the figures from cities.

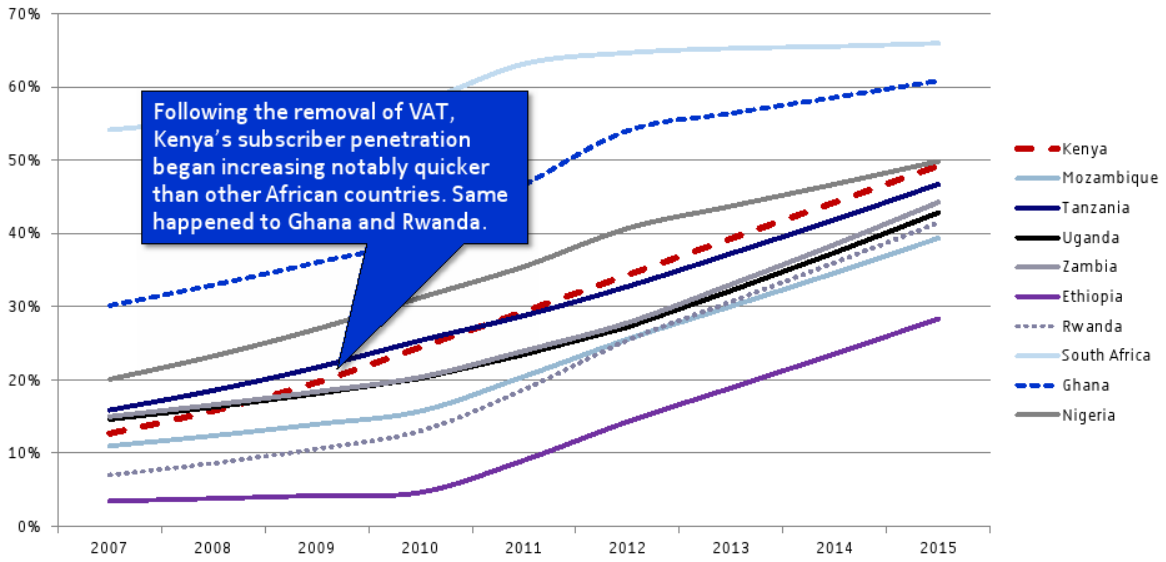
Effect of the removal of VAT in 2009

The Kenya Economic Update of December 2010published by the World Bank focused on the momentum of economic growth as a result of ICT revolution and mobile money. The report demonstrates that the development of Kenya as a regional IT enabled services and innovations hub was due to cost advantages, enabling infrastructure including fiber optic cables, and a well-educated and urbanized labor force [4].

As a result of the policy intervention in 2009, the subscriber penetration rate in Kenya began to outpace other countries in the region. Soon after the VAT removal, the growth rate increased at a notably faster rate than other countries in Africa as shown in Figure 1. A similar pattern has been observed in Ghana and Rwanda. Cutting taxes on mobile handsets attracted new users

and encouraged multiple forms of usage. The growth of mobile phones in the country came with several benefits. Most importantly is the growth of the economy. Research, as shown above, has proved that additional mobile penetration directly translates into economic growth, which results in greater revenue opportunities for governments in the long term.

Figure 1: Regional trends on mobile phone subscribers



Source: Nokia subscriber data and forecast

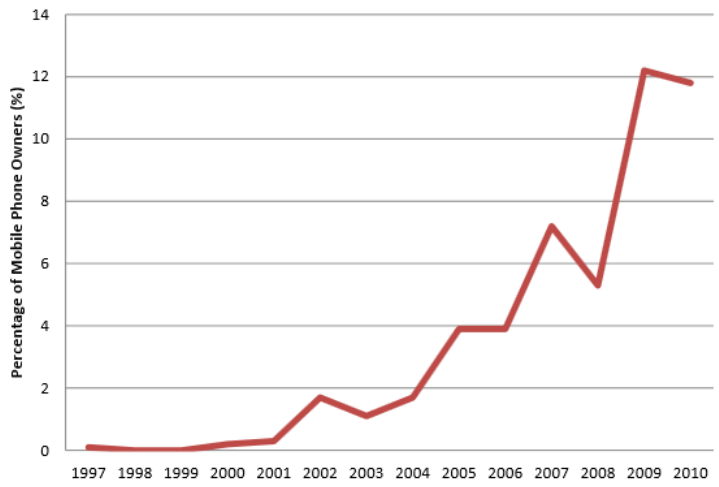
Penetration at the Base of the Pyramid

The $2.5 per day income criteria is used in literature and adopted by the World Bank Group as the income for those at the Base of the Pyramid (BoP). By average, the implication is that the poor survive with no income in some days and have spikes of slightly higher income in other days. Assuming a 20 day working month, this translates to approximately KES. 4,250 income per person per month. The Kenya National Bureau of Statistics Survey of 2011 divides the population into three major categories (bottom, middle, and upper classes). The Economic Survey of 2011 found that 72% of the Kenyan population was in the lower class.

The poor appreciate the value of ICTs and make sacrifices to purchase and operate mobile phones. Considering their income level, it implies that the poor could be spending upwards of half of their monthly income to acquire a feature mobile phone. This implies that for this poorer population, one of the 'barriers of entry' remains the device purchase price. Beyond the

purchase price, these consumers must spend to operate the devices. In an environment where you do not have credit mechanisms and appropriate financial tools, spending up to an amount equivalent to monthly salary acts as a significant barrier. A study funded by the InfoDev on the use of mobile phones at the BoP [6] showed that the year 2009 recorded the highest percentage acquisition of mobile phones among the poor in Kenya. Figure 2 demonstrates what could be attributed to the effect of the lower cost of purchase of mobile phones as from 2009. This finding is consistent with other similar studies.

Figure 2: Year of mobile phone acquisition by BoP in Kenya



Source: InfoDev

Despite the removal of VAT in 2009, the total cost of ownership still remained high. Total Cost of Ownership (TCO), is a calculation designed to help people make more objective financial decisions. Beyond the purchase price, TCO looks at the complete cost from purchase to disposal, factoring in other costs such as service, repair, taxes and insurance [7]. This ownership represents the average annual spending on mobile services by a user. This clearly implies that the poorer individuals in society spend a substantial portion of their monthly income on mobile phones and services. According to Research ICT Africa (RIA) 2009 data, users spend upwards of 27% of their monthly income in Kenya on mobile services [5][i].

A report published by Deloitte [7], on behalf of the GSMA reported that "when compared to the Kenyan income per capita, mobile telephony costs, including Kenya's airtime tax, still represent a significant proportion (7.5%) of income, and may not be affordable to the poorer sectors of the population". The tax on airtime levied at 10% is in addition to VAT that

consumers pay, making it amongst the highest in Africa, contributing to raising the consumertax as a proportion of the total cost of mobile ownership in Kenya to 21%. This was well above the African and the global average. In 2013, the government re-introduced VAT on mobile phones purchased, further extending the burden to the consumer.

Mobile phones deliver universal access, create job opportunities, accelerate trade, generate wealth and enhance people's social welfare. As such, the World Bank holds the position that governments should aim to achieve access at affordable prices, particularly to the broadest BoP population as an essential element to driving economic growth and alleviating poverty. The re-introduction of VAT translates to a slower penetration growth of mobile devices. Distributors and retailers who participated in the study indicated an immediate drop of approximately30% in their sales. This may be a short term development but gives signs of a substantial effect in the market.

Use of mobile phones and the effect

The use of mobile financial services over the last seven years is a clear indication of the popularity and necessity of appropriate financial services for the masses. Financial Sector Deepening (FSD) Kenya reports, as well as the book 'Money, Real Quick: Kenya's Disruptive Mobile Money Innovation', have demonstrated that consumers are using mobile financial services not only for domestic transfers, but also for savings, insurance, pensions, paying for various bills among numerous other forms of usage. An estimated 24.8 million subscribers were using mobile money services in Kenya served by over 88,000 active agents as of Q3 of 2013. However, going by the discussion on subscription terminologies earlier, the number of unique subscribers are certainly lower, possibly a little over 13 million. Mobile money has been a key contributor to employment opportunities, particularly for the youth. The CCK, for example, reports that the mobile money sub-sector alone created an additional 11,916 direct jobs in the third quarter of the financial year 2012/13.

The CCK reports that as of June 2013, over 12 million subscriptions for Internet had been done via mobile phones [2]. This number, as shown earlier, refers to active SIM cards and not unique subscribers, a number that is certainly lower. This accounts for 99% of all internet

subscriptions[3] in Kenya and about 63% of the internet users in the country [2]. The uptake of mobile based internet users has rapidly grown as mobile operators have focused on diversifying their revenue streams by creating demand, and users buying more advanced mobile phones. The data and internet sector had 6,671 direct employees by June 2013 according to the CCK operator returns. There is no doubt that growth in smart phone usage will translate to greater use of data.

There are several other overlaps between mobile industry and other sectors, thanks to the creation of mobile applications.

Mobile phone sales in Kenya from 2008

There has been a growth of mobile devices as well as laptops and notebooks sold in Kenya over the last six years. From January 2008 to December 2009, the numbers were hardly noticeable, below 2,000 phones per month. In December 2009, the numbers rose to over 3,000, almost doubling the number seen the previous month. Three valuable observations can be made from this data. First, is that the number of smart phones has more than doubled every year since 2009, as shown in Figure 4. Secondly, the rapid uptake can be linked to the zero-rating of mobile phones in 2009, and thirdly, there was a market reaction after the re-introduction of VAT later in 2013 (See Figure 3). An eLeader system tracked Nokia phone sales in 1,260 outlets and established that for one year from the 2nd quarter of 2009, handset sales adjusted upward by 31.4%. This was attributed to the VAT exemption. Figure 5provides a closer look at the year 2009 and beyond, with a focus on the effect of the exemption and projecting what the penetration would have been if the exemption was not implemented.

[3]The CCK indicates that Internet users is estimated by multiplying by 1 the number of mobile data/Internet subscriptions, by 10 terrestrial wireless subscriptions and by 100 fixed DSL, fiber optic and satellite subscriptions. There is no scientific method of estimating Internet users; for the purpose of this report the methodology adopted is borrowed from the Internet Market Study 2006. The multiplier of 2 for mobile data/Internet users has been adjusted to1 as per the ITU recommendations.

Figure 3: Mobile devices, laptops and notebooks sales drop

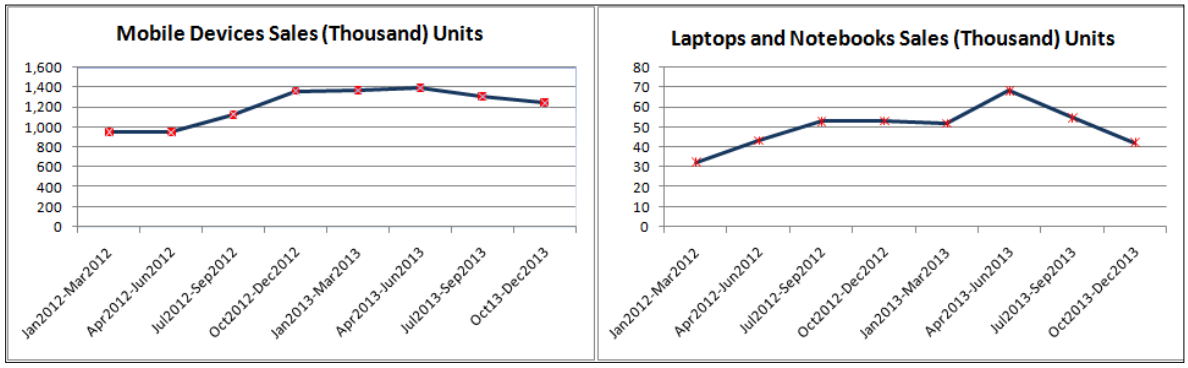


Figure 4: Number of smart phones has more than doubled yearly from 2009

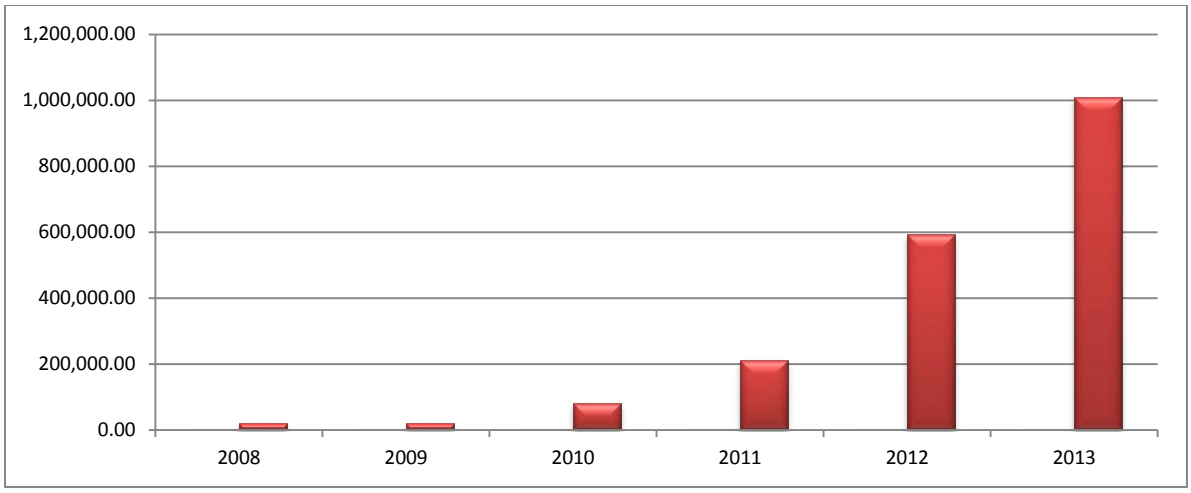
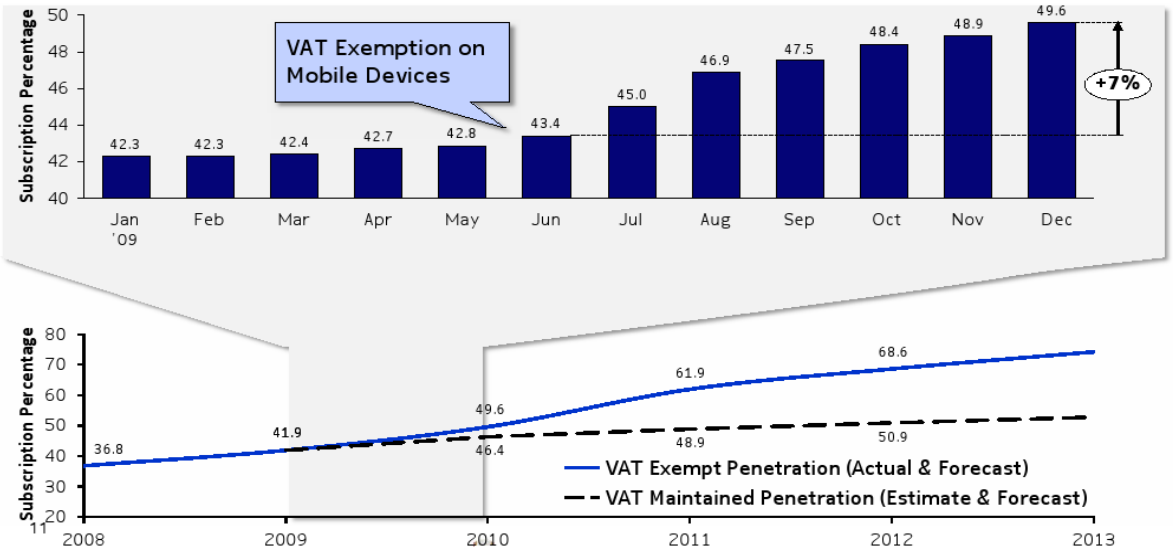


Figure 5: Effect of VAT exemption on subscription

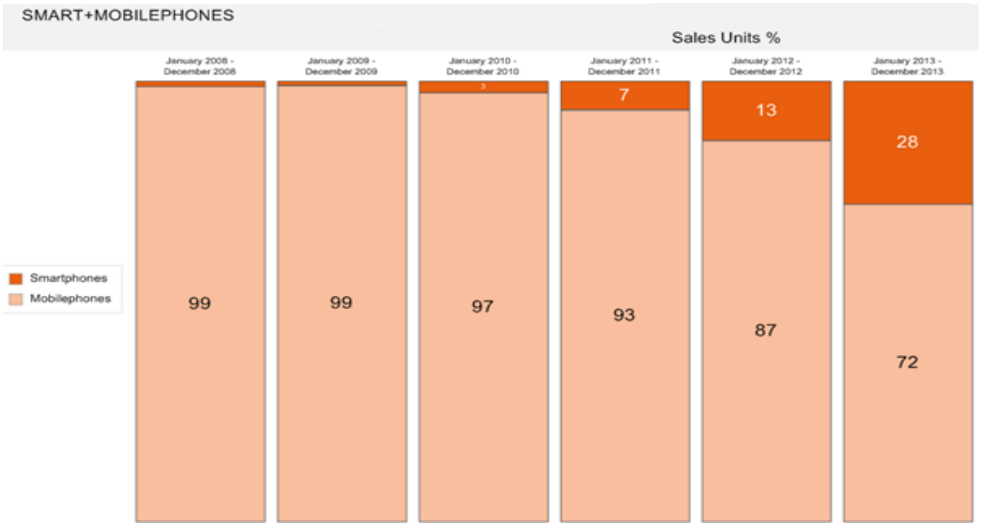


Source: ICT industry position presentation August 2013

There are three general categories of mobile phones in the market; smart phones, feature phones and basic phones. Smart phones, at the higher end of the spectrum, provide access to the internet and have operating systems (such as Android or Windows Phones) that allow them to run productivity applications. These applications facilitate advanced functions such as creation and editing of documents or management of finances. All mobile phones are able to send and receive text messages, but smart phones are further able to send and receive e-mail [8].

Basic phones are the lower end, sometimes called dumb phones. They are primarily used for text messages and calls. Like all phones, they have utility features like calculators and phone book. Feature phones are basically low-end mobile phones with more computing abilities than basic phones. They are less feature-packed than smart phones, lack an operating system and often run apps based on Java ME and BREW. With less advanced programming APIs, feature phones cannot run native applications specific to smart phone platforms [9]. Comparing smart phones with basic and feature phones, the ratio of smart phones relative to all phones sold, has continued to grow and now stands at 2:1.Figure 6 demonstrates that the demand for smart phones has continued to grow.

Figure 6: Ratio of smart phones to basic and feature phones in Kenya



Source: GFK[1] Data

Development of related sub-sectors

The mobile industry is greatly inter-connected with other sectors in the economy. The mobile phone has become a powerful means of serving and streamlining other areas of social and

economic lives of Kenyans. The list of innovations ranging from pilots to full scale businesses is very long. Start-ups, local enterprises, international organizations, government entities and NGOs alike have reported innovative services riding off the back of mobile phones. The InfoDev study identified over 80 mobile applications that have been developed to target the poorest users of mobile phones. Since 2009, over 20 innovation centres/hubs/labs have been established in the country, in and out of universities, most of which are focused on mobile applications. Relative to other countries in Africa, Kenya shows leadership both in the growth of labs and in mobile applications. Table 2 summarizes those applications targeting the poor, which are tailored to the country's unique challenges and demands. As shown, most applications focus on healthcare, water or education[4].

The Association for Competitive Technology (ACT), the world's leading association for mobile app developers, released a study[5] showing that the app economy, including apps running on smart phones and tablets, has contributed nearly 800,000 jobs to the EU economy in just five years (as of September 2013). The report argues that there are a number of areas where the European Governments (can apply to Kenya Government) can make a difference and support the App Economy. These include:

- Facilitating access to government data for developers, e.g. mapping, meteorological and real time public transport data as well as information on community level services.
- Enhancing connectivity by making more spectrums available for wireless services.
- Advancing the European single market in intellectual property and communications.
- Embracing app-driven innovation across all sectors, e.g. health, education, enterprise, lifestyle.
- Ensuring a flexible and supportive business environment for start-ups and entrepreneurs.

[4] For details of what the actual applications are, visit the InfoDev report at https://blogs.worldbank.org/ic4d/files/ic4d/mobile_phone_usage_kenyan_base_pyramid.pdf

[5]The European App Economy: Creating Jobs and Driving Growth. http://actonline.org/wp-content/uploads/2013/07/The-European-App-Economy.pdf

In order to develop the overall ICT ecosystem, the government needs to ensure that the key pillars that the ecosystem depends on are firmly established and sustained. First, as has been implied in this report, people should be able to affordably access data enabled devices such as handsets, tablets and personal computers. These devices are currently not affordable to those at the BoP and an increase in their prices makes it even harder for the lower segment of society to access them. Secondly, availability and consumption of local services that add value to people's lives. There are several value added services that can ride on the mobile network ranging from insurance, banking, commerce, education, energy, early warning systems and such like that consumers need. Thirdly, an existence of local applications and content ecosystem capable of developing and massively deploying the relevant solutions. Availability of these services requires that a critical mass of developers and organizations be motivated and equipped enough to develop them. To understand the challenges that start-ups face, a paper has been published with a specific focus on Kenya [8]. The paper demonstrates that besides M-Pesa, no other start-up has managed to gain much traction. Several reasons are provided including lack of resources in the market, lack of skills to understand the market and the use of basic/feature phones by most of the consumers.

Table 2: Crown-sourced list of mobile phone applications in Kenya (only those targeting the poor)

Category	**Number of applications**
Accounting	2
Education	11
Documents	1
Sports	1
Government	4
Natural Disasters	1
Service Delivery	2
Health	32
Agriculture	6
Employment	2
Financial	7
Water	13

Transport	4
Maps	1
Entertainment	1
News	1

If conditions are not optimal for ICT enabled/driven development, the progress towards reaching the overall developmental goals of the nation will be affected negatively. The effect of this would be far greatly felt among the underprivileged population (e.g. rural consumers).

The innovation hubs in Kenya point to a great opportunity for 'techpreneurship' as a means of increasing economic activity among the youth. All these initiatives need to be tapped and encouraged, as they not only increase penetration and use of mobile phones, but also have a direct effect on the economy. The startup ecosystem is likely to suffer in a number of ways as mobile phones become more expensive. First, the limit to handset ownership translates to lower or limited consumption of telecommunication and internet services. This implies a restricted scaling opportunity for mobile applications as well as limited market and growth potential for local technology startups. Secondly, the price implication promotes further and continued use of basic phones which limits developers who could leverage technological advancements and rich features of smart phones for solution delivery for the masses. Thirdly, there is diminished innovation quantity/quality around dynamic mobile solutions. Finally, a higher likelihood of counterfeit phones would result in: an inability to maximize the benefits of locally tailored content created by local developers [9]; an inability to leverage the combined ecosystem benefits offered by an Operating System platform, sub-par user experiences for customers; and curtailed developer support by in-country device manufacturers.

Counterfeit phones

Most (90%) of youths who participated in the structured questionnaire indicated that when the cost of mobile phones increases, the temptations to opt for counterfeits/sub-standard devices increases. Further, 54% indicated that their relatives and friends are likely to purchase a counterfeit mobile phone as a result of the increased cost.

Counterfeit or fake phones have been a concern for the government and the ICT sector in general. The devices are usually not tested and certified for safety, not made from standardized

components and are manufactured by establishments that are not genuine brand owners. The International Mobile Equipment Identifier (IMEI) that uniquely identifies the device is either duplicated or does not conform to the recognized GSMA structure.

These devices are poor quality, affect the quality of service provided by the Mobile Network Operators, deprive the government of much needed revenue and further frustrate the government when trying to enforce law and order. The CCK has attempted to solve this issue before by switching off counterfeit phones [10]. According to the CCK the deadline of September 30th 2013 resulted in over 1 million counterfeit phones/devices being switched off. Newspaper articles reported a figure close to 1.5 Million [11]. The process of disconnecting devices is an ongoing activity. To organize this campaign, the CCK mobilized all the stakeholders led by the Office of the President, Kenya Anti-Counterfeit Agency, Kenya Revenue Authority, Kenya Bureau of Standards, Kenya Police and the National Environmental Management Authority.

CCK observed that this activity is indeed challenging to execute and sustain. The first phase of the campaign was extremely involving and taxing. The total cost of the phase was approximately KES. 50Million. In addition, mobile operators did not have incentives to disconnect users who were actually generating revenue, making it difficult to ensure compliance to the campaign. There were many instances where illegal reprogramming of the blocked phones was taking place resulting in an endless loop of tracking the counterfeit devices. In instances where counterfeit phones had been programmed with IMEI numbers of genuine phones, it became complicated to disconnect the phones because both the genuine and fake would be disconnected.

According to the CCK, one of the best solutions to this problem is to ensure that mobile devices, particularly smart phones, were affordable to the masses. This would require a response from both device manufacturers (influence on purchase prices) and the revenue authority (influence on taxes).

The telecommunication regulator estimates that 10% of phones in Kenya are counterfeit [12]. The exact number cannot be known, but could range between 2 [13] and 3 [14] Million devices.

Though not absolutely verified, the Kenya Association of Manufacturers (KAM) estimates that the country loses US $38.5 million annually through tax evasion on sale of fake handsets.

Tracking counterfeit phones is a fairly complex process and it's difficult to find reliable records. According to GfK, between January 2009 and October 2013, over half a million fake handsets found their way into the market and were being used within the mobile networks in the country. This estimate did not include numbers from imports, wholesalers or distributors. Industry estimates show that the increased affordability of devices as a result of the zero-rating, drove counterfeit device volumes down by 5.6%.

The effects of counterfeits have been studied and documented. This ranges from economic to social and political. Table 3 summarizes the effects as identified by the Kenya Anti-Counterfeit Agency (ACA) [15].

Table 3: Effects of counterfeit devices as per Kenya's Anti-Counterfeit Agency

Social	Economic	Political
- Unfair Competition - Loss of Brand Reputation - Loss of Market Share - Loss of fair bargain - Increased costs to the company - Loss of Jobs and reduced investments - Collapse and /or relocation of legitimate companies - Loss of Government Revenue - Diversion of resource	- Consumer Health Risks leading to ailments or deaths e.g. medicine, foods, juices - Insecurity e.g. Fake locks - Loss of Creativity and Innovation - Accidents e.g. House fires, fake spare parts - Collaboration with other crimes e.g. Money Laundering, Drug Trafficking and Terrorism	- Reduced Direct Foreign Investments - Frustration of long term Government Policies e.g. food security - Dirty money available for illicit political agenda - International Relations (trade wars)

Nokia Middle East and Africa Anti-counterfeiting department has more specifically articulated the impact of substandard devices on citizens, society and the economy as follows:

Impact of sub-standard devices on citizen and society

a. **National Security**: Majority of sub-standard devices do not carry IMEI codes and cannot be tracked by the network operators. They are therefore widely used in terrorist activities. Counterfeit business also supports existence of other types of criminal activity.
b. **No Warranty**: Sub-standard devices are not covered by warranty, resulting in poor consumer satisfaction, impacting particularly low-income consumers.
c. **No Access to Value Added Services & Solutions:** Emerging world countries are about to unleash power of Internet for ordinary people – sub-standard devices slow down access to mobile Internet, content and services.
d. **Consumer Safety:** Sub-standard devices are manufactured from sub-standard components containing dangerous chemicals (lead and mercury) and do not follow safety standards e.g. regarding radio emissions – fake devices are danger to consumer safety.
e. **Privacy:** Sub-standard devices are unsafe from end-user data security point of view. Proliferation of critical services such as m-Banking, m-Insurance, etc. may become threatened by high prevalence of fake handsets.

Impact of sub-standard devices on economy

1. **Tax Losses:** Sub-standard devices are typically imported without import duties or VAT paid, creating a tax loss for government.

2. **Limited ICT Innovations:** Emerging economies with poor protection of Intellectual Property makes establishment and running of ICT companies conducting research and development very risky.

3. **No Foreign Direct Investment in ICT Sector:** International companies direct their investments elsewhere to countries which can protect their Intellectual Property - diversification of economy becomes complicated.

4. **Lower Operator Profit:** High penetration of sub-standard devices impacts performance of operator networks – which lowers operator profits and government tax income.

5. **Financial Inclusion & Access:** Mobile devices are used to access financial services – substandard devices prevent proliferation of financial services and inclusion, which impacts national economic growth.

6. **Environment**: Counterfeit devices create environmental challenges due to non-type approved materials (mercury, lead, etc.)

Impact on distributors, retailers and application developers

Feedback from distributors and retailers indicated that sales have dropped since the re-introduction of the VAT. Responses varied from one respondent to another, with a typical drop of around 20% in sales. Though not all this drop can be attributed to the increase in cost of mobile phones, it was also argued that most of the drop was due to the increased price of handset devices. This observation was consistent with the responses from the youth sample. The youth were asked how the re-introduced VAT would affect them, 58% said they have postponed buying a new or better phone as a result. Similarly they indicated that 60% of their friends or family members who did not have a mobile phone will substantially be affected by the re-introduced VAT.

The business of selling mobile phones is extremely competitive and employs a number of young people. There are currently no incentives for encouraging businesses to open up in rural areas where most inhabitants lack phones. An increase in cost of phones will certainly imply lower demand in rural areas. A number of respondents, involved in the sale and distribution of phones, indicated that they are concerned about whether sales would sustain them in the near future. The level of anxiety was high primarily because of the lower demand. Some of the employees in these shops appeared concerned about the future of their jobs.

Recommendations and Conclusions

Supporting the ICT sector

The ICT sector is the fastest growing sector and has out-performed all other sectors for over a decade. The World Bank reported in 2010 that without ICT, Kenya would have been growing at a rate of only 2.8% since 2000, barely exceeding population growth. Specific factors identified as having contributed to the growth include the liberalization of the telecommunications sector and affordability of mobile phones. Liberalization injected competition and innovation, which were pre-requisites for considerable investment and job creation.

Consistently throughout this study, respondents, as well as findings from the review of published reports, indicate the need for the government to support the growth of the ICT industry. Research shows that the government taxation policies do have a direct and significant impact on the value that people will derive from mobile telecommunication services. Governments should design policies that support mobile communications and wireless data developments, hence increasing economic development, as opposed to adopting policies which could become barriers to more people owning and using ICTs.

The government has initiated numerous commendable programs that are aimed at growing the ICT sector in the country. This study, similar to other related studies, established that higher taxes on ICTs and the services they provide run counter to government's commitment to improving access to communications and should therefore be carefully considered within long-term perspectives.

To foster the maturity and rooted establishment of this sector in Kenya as a regional power, the removal of the tax holiday on mobile and computing devices is viewed as premature given the foregoing discussion in this paper. Nurturing the innovation ecosystem to a point of critical mass by allowing sufficient time for the growth of local content and technology start-ups as well their markets, via the adoption of ICT devices and services, is imperative for the success of the sector. Previous gains made stand to be reversed and lost to those neighbouring economies with more enabling environments.

Dialogue between industry stakeholders

Dialogue around finding appropriate solutions needs to be enhanced for the benefit of the entire industry. The ICT Sector cooperation is very crucial, not only for taxation but on several other policy concerns. As an important sector in the development of the economy, its wholesome development would be ideal. There seems to be a need for establishment of consultative forums to discuss key policy topics before they are approved. Participants in these forums should include policy makers, infrastructure providers, academia, device manufacturers, distributors and start-up community. In these forums, stakeholders, who have interests and concerns; need to be transparent and systematic. Unless the interactions are transparent and regular, then appropriate solutions to challenges are will not obtained in good time.

There are numerous valuable datasets held by different stakeholders. Sometimes these data sets are analyzed using different variables and for different objectives resulting in different interpretations and predictions. Apparently, some stakeholders have a different appreciation of the status and development of the industry. Substantial gaps result in some crucial efforts taking a different direction. Separate government entities that serve the same market easily have different and sometimes conflicting views on particular issues. The study recommends that sharing and consolidation of knowledge needs to be enhanced.

In a sector reporting incredible progress, a number of different stakeholders are experiencing different kinds of challenges and at times frustrations. Some of the concerns are never quite communicated for various reasons, partly due to lack of appropriate channels. The government is best placed to provide leadership in creating stimulating environments for open communication and dialogue.

Case studies from other countries give evidence of how collaboration between stakeholders can work to enable the collection of close to 100% of duties/VAT e.g. The Ministry of Telecommunications of Lebanon's decision to initiate an IMEI-registration and locking program where all IMEI's entering the country must be registered with the Customs Department. Only phones with International Mobile Equipment Identity numbers registered at the Customs department are allowed to access the network [23]. In Turkey, mobile phones need to be registered for use with SIM cards bought in the country. In order to use a mobile phone with a

SIM card bought in Turkey from a Turkish network operator, the mobile phone number assigned to the SIM card needs to be correlated with the IMEI number of the mobile phone. The handset can only be registered with one line. Phones not registered in this way will be blocked and unable to receive or make calls [24].

Moderate and balanced approach to taxation

Although the penetration of mobile phones appears impressive, the actual numbers of users is likely much lower than these predictions, leaving still many citizens unconnected. The total cost of ownership of mobile phones is still indeed high, particularly for the less fortunate in society. Despite the government's pressure to generate revenue, an appropriate balance should be sought to ensure proportionate economic gains while ensuring that a longer term view to national development is taken into account. ICT is now the most promising contributor to GDP and as such, the government should make the promotion of its growth a priority as a means of nurturing the industry. Developing and imposing a balanced taxation profile for mobile devices and services would lead to higher incentives for mobile consumption and purchase choices. It is the desire of stakeholders to have consumers move up the value chain from basic mobile consumption to more advanced services driven by the potential of wireless data and internet through mobile devices.

The World Bank report[22] on Innovation Policy summarizes this well: "The government, acting as a gardener, supports the innovators by providing appropriate financial and other measures("watering the plant"); by removing regulatory, institutional, or competitive obstacles to innovation ("removing the weeds and pests"); and by strengthening the knowledge base through investment in education and research ("fertilizing the soil")."

In the taxation regime, policy considerations can be given to allow citizens at the Base of the Economic Pyramid easier access to the benefits of ICTs for their socio-economic empowerment while protecting them from sub-standard products.

Regular review of the effectiveness of policies

Implemented policies need frequent review. The nature of tax policies is that they take time to undergo review. This is understandable in light of the implication of changes to such policies.

However, given the dynamic nature of the industry, how many factors interconnect with the ICT sector and the cascaded effect that fine-tuned policies would have, it makes it worth considering regular review. The growth rate of the sector, the demand for services, the facilitating role that the sector plays, and the overlapping effect to other sectors, the potential to create numerous opportunities, all point to the fact that careful monitoring and review of policies in this sector would be worthwhile. By reviewing regularly, the government and stakeholders will be well placed to make timely interventions that ensure a good balance of incentives and rewards that facilitate the desired growth.

Policy reviews need to be guided by empirical data and be informed by valuable stakeholder feedback. Appropriate matrices need to be established to help quantify the effectiveness of existing policies, an input that would then assist when conducting reviews and introducing changes.

Sealing of loopholes

Throughout the interviews conducted during this study, a number of loopholes were mentioned by stakeholders. The revenue authority, the telecommunication regulator, device manufactures, mobile operators, distributors and retailers all identified specific weaknesses in the system that had been or are being exploited. One of the reasons why the revenue authority supports the re-introduction of VAT is because of the complexity of processing tax refunds and the fact that multiple players were exploiting loopholes in the system to unfairly benefit or compete. Loopholes result in frustration and loss of resources.

Re-introducing VAT so that the revenue authority does not have to process claims is not necessarily the best way to overcome these challenges, especially when considering other implications that may result from re-introducing VAT. It takes bold, candid and consultative engagements to objectively resolve this issue directly.

The regulator faces huge challenges policing and controlling potential criminal activities as a result of counterfeit phones. Switching off is one mechanism, but only happens further down the supply chain when un-suspecting customers have already bought the phones.

Suppliers and mobile operators face challenges regarding interpretation of the existing tax regime. A study commissioned by the Kenya ICT board to understand the ICT trends in Kenya, revealed that taxation on consumable products was in some cases confusing, while the taxation framework to define various ICT imports was unclear. Some vendors became confused and frustrated, while others exploited the unclear aspects.

The campaign against counterfeits has yielded some good results, but the percentage of counterfeits is still high. Therefore the potential risks and their negative impact have not been eliminated. The government needs to consider more strict measures like tighter controls at the borders and introduction of stiff penalties for those involved in selling counterfeits at retail and wholesale. This may also apply or the grey market.

The introduction of taxation into a system that is not watertight where the collection and enforcement infrastructure is not strong enough undermines formal growth of the sector by enabling tax evaders to exploit loopholes to compete unfairly. Systems and ways of working should then be sought that ensure a level playing field that works for all stakeholders.

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