

Exploiting Job Creation Potential for Youth in the Information and Communication Technologies Sector in Kenya

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Introduction

Information Communication Technology (ICT) is a promising emerging sector in transforming the global economy. Digital technologies are opening new possibilities for developing countries to grow and transform to digital economies. Further, the expansion of internet is a fundamental pillar and catalyst for enhanced global connectivity and economic transformation. ICT transformation in Sub-Saharan Africa is significantly boosting entrepreneurship and creating jobs for the youth. It has also increased annual per capita GDP growth by about 1.5 percentage points and lowered poverty head count by 0.7 percentage points per year.¹

Kenya has a rapidly expanding ICT sector. This is attributed to high mobile phone and internet penetration and a youthful and relatively educated population that make Kenya an attractive destination for technological investments. These, together with infrastructure development and strategic positioning within the East African market, has in recent years made Kenya an attractive hub for multinational tech firms including Google's Sub-Saharan African office and IBM's first African Research Lab. In 2018, Microsoft launched in Kenya its first software testing in Africa, with a further indication of plans to connect the country to its global cloud network and establish a local data centre.

In 2019, the ICT sector had an overall growth contribution of 6.9% to Gross Domestic Product. It also contributed over 4% of wage employment, signalling its importance in job creation. Furthermore, globally, the sector is experiencing high growth and is expected to

drive transformation of traditional economies to digital economies in the medium- to long-term. ICT serves as an 'enabler', given its significant backward and forward linkages with nearly all the other sectors of the economy. Specifically, digital technologies are indispensable in keeping costs of doing business low and enhancing the growth of global value chains. This notwithstanding, there are emerging issues/challenges that need to be addressed to fully exploit the potential of the sector.

This policy brief is based on a Kenya case study, "Industries without smokestacks in Africa: A case study of Kenya" (2021), which used a mixed methods approach to assess the scope for ICT to generate large-scale formal employment opportunities for the youth. The main approaches encompassed a review of sectoral performance with respect to growth and wage employment; assessment of current and projected levels of employment and productivity using the Job Structure Tool developed by World Bank; and application of value chain approach to examine job creation potential and the key constraints. This was complemented by targeted key informant interviews with industry group representatives. The main data sources included the Kenya's Social Accounting Matrix (SAM) (2015), the World Bank Jobs Group Database, Occupational Network Data (O-NET), and various survey data sets, including the Kenya Integrated Household Budget Survey (KIHBS) 2015/16 and the Kenya Enterprise Survey 2018 (World Bank, 2018). Further, KIPPRA administered skills survey questionnaire to key informant actors in the ICT sector in December 2020 to supplement existing data from secondary data sources.

Employment Creation Potential in the ICT Sector

The ICT sector has significant backward and forward linkages with nearly all the other sectors, including agriculture and financial services. Some of the key contributions of the sector to the economy include use of ICT to promote agricultural productivity through access to extension services, access to farm inputs and markets for produce and data analytics and intelligence.

The World Bank Enterprise Survey for Kenya 2018 finds ICT firms less likely to report an increase in employment, but more likely to report an increase (61.4%) in turnover in the medium-term. For example, nearly 2 of every 5 firms in ICT (39%) reported a decline in employment. Despite this, the sector is considered to have a high potential for job creation. As firms continue to embrace digital transformation, it is expected this will drive more innovations and increase demand for ICT services, which ultimately expand the potential for job creation.

There is a huge potential to generate jobs at the last mile level when more ICT services are integrated with commercial activities. For instance, the Business Process Outsourcing (BPO) sector has a potential to support thousands of jobs in form of customer service work, data entry, transcription, digitization, financial accounting, auditing and other higher value-knowledge processing such as content development, animation, legal services, engineering design and data analytics. Further, with full implementation of the Konza Technopolis project, the sector will expand capacity to create many jobs.

From the surveyed firms in this study, about 194 occupations are expected to be created in Kenya in the next five years. Of these, 25 will require post-secondary qualification, 123 would require a degree while 46 would require a postgraduate degree. These numbers are indicative of a high growth outlook, which is supported by the strong performance in both output and employment of the ICT sector over the last two decades.

The ICT sector has the potential to absorb majority of the high-skilled labour force. Evidently, therefore, education and/or skills development is important for the country to tap into gainful job growth for the youth in the ICT sector. The youth will not benefit much from increasing jobs

in ICT if their education and skills levels remain at secondary or lower levels. The key skills needed in ICT sector include: basic skills, social skills and problem solving skills. Social skills are important but relatively less highly rated for some occupations such as ICT technicians and software developers and for whom technical skills would be key.

Job creation in the sector, therefore, should be in tandem with the existing skills and ability to fill identifiable skills gaps. Although skills deficit of employees in the ICT firms was found to be low or moderate, new occupations require much higher skills levels than the current occupations available to the youth in the sector. Further, moderate skill gaps in a number of soft skills will need to be addressed before the true potential of the ICT sector as an engine for tackling youth unemployment in Kenya can be realized.

Key Constraints to Growth and Employment Creation Potential of the ICT Sector

The potential for growth of the ICT sector is inhibited by several emerging and prevailing constraints, including in infrastructure and policy environment. In the analysis of sector-specific constraints, a value chain mapping complemented by targeted interviews with industry group representatives was used in addition to data gathered from the World Bank Enterprise Survey for Kenya 2018.

About 89% of ICT firms in the Enterprise Survey reported electricity outages (averaging in a typical month at about 3.5 episodes) as a major constraint. Such outages can be costly and have adverse impact on competitiveness as some of the firms do not have power backup generators. Poor transport infrastructure was identified as an obstacle to operations by about 20% of the ICT firms. More than 50% of the ICT firms did not see transport as an obstacle, which could reflect their location within large urban areas.

The main policy and regulatory environment constraints reported by ICT firms included: business licensing and permits, bureaucracy and transparency (corruption), tax rates and tax administration, and crime and theft. The country has since 2018 enacted several laws, including Kenya Information and Communication Act (Amendment) Act, 2019; Computer Misuse and Cyber Crimes Act, 2018; Data Protection Act, 2019; and policies, including National ICT Policy (2019), Digital Economy Blueprint of

2019, Data Protection Policy (2018) and National Broadband Strategy (2018-2023). Further, Digital Service Tax (DST) was introduced through the Finance Act, 2020 and which came into force on 1st January 2021, subjecting e-commerce firms (digital service providers or digital marketplace providers) including start-ups to more taxes that may slow the growth of the digital economy. DST is charged at a rate of 1.5% of the gross transaction value. That said, the sector does not have a clear framework to promote infrastructure sharing among market players.

In the telecommunications sub-sector, there is a weak regulatory framework for pro-competitive spectrum allocation, which affects entry and level playing field for all potential providers of broadband services. There are few telecommunication firms that have dominated cellular and mobile money services, which reduces investment opportunities. According to the Communications Authority's third quarterly report for 2019-2020, Safaricom commands over 64% of total market while Airtel has over 26% of total market. The growth of the sector is also hampered by lack of a comprehensive policy and legal framework covering the e-commerce ecosystem, digital divide between the rich and the poor and urban and rural areas, skill gaps and cyber security threats.

A relatively huge population in the country has limited access to affordable and high-speed internet services. Access to fixed broadband internet services at office and at home is a serious challenge due to limited coverage by service providers and high cost of the services. Further, a huge number of subscribers use second generation-based devices and are therefore not able to enjoy the high-speed internet which is critical in supporting e-commerce activities. Also, satellite communication has limited capacity for internet services and remains quite expensive to be used in remote areas. Similarly, access to satellite data services to support development of real time spatial solutions is a challenge because of high cost.

The implementation of key projects such as the National Address System of Kenya (NASK) and Konza Technocity have been slow due to various reasons. For instance, NASK project started in 2014 but the regulatory framework has not been finalized. Similarly, the Technocity has not made significant progress in terms of vertical development due to financial-related challenges.

Policy Recommendations

Skills gaps in the sector pose a challenge to growth of the sector, particularly for the start-ups. It is important to deepen private sector investment in education for skills enhancement especially at tertiary level and in high technology skills development for adequate supply for high level ICT skills and soft skills (e.g. software development, animation skills and good interpersonal skills). Retooling of the workforce is necessary to ensure the workforce is apt to the emerging technologies. Additionally, establishing talent and entrepreneurship programmes will attract local and diaspora skills such as skilled programmers.

The potential for job creation for the ICT sector is yet to be fully exploited. The entire ICT value chain presents huge potential to generate jobs at the last mile level. By expanding access to ICT services through last mile programmes, the sector can create avenues in other innovative sectors such as agriculture to increase the number of digital jobs.

Access to ICT infrastructure services and high connectivity cost creates disparities between rural and urban residents. Service providers shy away from investing in infrastructure in rural and remote areas because of low rate of return on their investment. As such, there is need to put in place a policy and regulatory framework that enhances competitive markets to improve affordability/access to services by the last mile users. Having a regulatory framework that promotes infrastructure sharing among market players will support growth of a competitive sector. Further, effective use of Universal Service Fund programmes will ensure service availability in the unserved and underserved areas.

Quality of power supply remains a challenge to ICT firms. High frequency of power outages disrupts the provision of service by the firms. There is need to provide incentives for these firms to own power generators and adopt renewable energy sources such as solar to ensure uninterrupted power supply.

The weak supportive framework to identify, fund and nurture ICT innovations poses a challenge to growth of the sector. Creating an enabling ecosystem supported by policy framework to identify, nurture and support innovations in e-commerce, e-health and e-learning will strengthen the uptake of innovations in Kenya

and generate jobs at the last mile user level. A robust innovation ecosystem will support the establishment of innovation hubs and accelerator programmes across the country.

It is important to accelerate implementation and operationalization of Key digital projects such as the National Public Key Infrastructure and Konza Technopolis to spur growth of the ICT sector as well as expand the capacity to create jobs. Also necessary is the development of a policy framework to guide the adopting of the emerging technologies such as AI, Block chain, Fourth Industrial Revolution (4IR), 5G and IoT to accelerate the growth of the gig economy, creative economy and digital economy.

Finally, there is need to develop and implement a more comprehensive E-commerce policy and legal framework through a multi-sectoral approach to promote the growth and development of e-commerce, support registration of digital businesses, guide the taxation of digital businesses, and support consumer protection.

Endnotes

1. World Bank (2019). Kenya Economic Update: Securing Future Growth - Policies to Support Kenya's Digital Transformation, October 2019, Edition No. 20. Washington DC: World Bank.

About KIPPRA Policy Briefs

KIPPRA Policy Briefs are aimed at a wide dissemination of the Institute's policy research findings. The findings are expected to stimulate discussion and also build capacity in the public policy making process in Kenya.

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