

Investments in Technology: A Growth model for the economic transformation of Cameroon

Introduction & Retrospective Outlook

Humanity's progress, history informs us, is replete with and has always been triggered by revolutions of one kind or another. At its best, there is *the Renaissance period*. A period between the 14th and 16th centuries that witnessed the emergence of a new style of architecture and arts and championed by art masters such as da Vinci, Michelangelo and Rafael. Their masterpieces are still a sensation today. Also during this period, there was the scientific questioning of ancient-held beliefs about the earth, mostly propagated by Italian astronomer, Galileo Galilei. Next was the *Agricultural Revolution* of the 1500s, which was characterized by the gradual replacement of an essentially organic agriculture with a farming system that depended on energy-intensive inputs (Overton, 2011). And then, came the *Industrial Revolution* that immediately followed the agricultural revolution from the 1700s right up to the second decade of the 20th century. During this period, humanity (mostly the western world) witnessed the transformation of an agricultural economy to an industrial one (Leite, Alfonso, & Silva, 2015).



Although these diverse and aforementioned revolutions contributed tremendously to man's overall development, none was more revolutionary nor achieved so much within a very short period of time than the current revolution; *the Technological Revolution*. This era, mostly dominated by *Information & Communication Technology*, has completely upended certain world paradigms. Concepts such as economic growth, politics, security and sustainability are no longer viewed in isolation as they are heavily interconnected. Technology has compressed the world into one complex eco-system comprised of business, governmental and societal dimensions (Schwab, 2015); for any reasonably successful change or improvements to be made in one sector, the whole system needs to change to keep pace. Rapid technological changes and accelerating globalization are constantly changing the context for economic development as well as underscoring the need for international competitiveness (UNCTAD, 2003). Due to technology, the traditional determinants of economic growth (labor and capital)

have become more mobile, thereby facilitating foreign direct investments (FDI) and creating a need for more and continual research, development and improvements in current technologies.

The Situation of ICT in Sub-Saharan Africa

Given the broad nature of technology as a whole, the focus here is *Information and Communication Technology (ICT)*.

ICT has proven to be a major determinant with positive effects on GDP growth from developing countries such as India and the Philippines to developed nations like the United States and Great Britain. It has contributed to the advancement of peoples' skills and positioned nations as places where global firms can do business more efficiently (Ewing, Chevrolier, Leenderste, Quigless, & Verghese, 2012): For every 10 percentage points of increased penetration, annual GDP growth increased between 0.7 and 1.4% for fixed, internet and broadband from 1980 to 2006 (Ewing, Chevrolier, Leenderste, Quigless, & Verghese, 2012). This is to say that, in order to attain their long-term economic objectives, African nations - especially those of sub-Saharan Africa - similar to their counterparts in Asia, have to accept the fact that the ICT sector is socially and economically relevant. ICT investments can improve on administrative processes, facilitate the process of production, increase access to healthcare and health-related data and increase the overall efficiency of the traditional factors of production.

Africa, especially sub-Saharan Africa, has the lowest technological penetration rates; internet penetration is just 7% and broadband is 1% compared to northern Africa where internet penetration is 40.4% (Innovation and ICT in Africa, 2009). The situation is even worse in resource-poor and landlocked African nations south of the Sahara; neither of which have the financial and infrastructural capital for ICT investments nor the relevant human capital to attract investments in this sector.

Despite the fact that African leaders and policy makers are knowledgeable – at least to an extent - when it comes to the benefits of investments in ICT, few have gone a step further to design policies to promote the sector and even fewer have taken action in accordance to the policies developed, to provide resources and an enabling environment for this sector to thrive. A case study of this could be a comparative analysis of the ICT sector between *Cameroon and Rwanda*.

ICT sectoral analysis: Rwanda Vs Cameroon

While the East African nation of Rwanda has prioritized the sector both in terms of policy and actions, Cameroon lags behind in terms of policy governing the ICT sector, ICT infrastructure and penetration. For example, Cameroon's *National Agency for Information and Communication Technologies (NAICT)*, in 2007, drafted the *National Policy for the Development of Information and Communication Technology*. However, the share of ICT goods as a percentage of the total trade of the country remains at 1.48% (UNCTAD, 2014) and witnessed a meagre average growth of less than 1% between the year 2000 and 2014. In this document, there is a critique of the laws governing the telecommunications (Law No. 98/14 of 14th July 1998) sector and a clarion call for these regulations to take into account mobile telephone services and internet access. Additionally, there is no legal framework governing the use of ICTs for business. A business environment governed by appropriate laws and regulations should aim at creating competition through adequate incentives for investment and innovation in ICTs in a bid to improve access to services and improve service quality. The absence of legislation on e-trade or electronic data is a major handicap to the development and full use of ICT in Cameroon (NAICT, 2007).

Contrasting the ICT situation in Cameroon, Rwanda ranks #1 in Africa and 19th in the world, ahead of France,

the US and South Korea – in a world Economic Forum index for political and regulatory environment helping ICT development and penetration (Mungai, 2015). Under the Ministry of Youth and ICT at the Office of the President, Rwanda developed a national ICT strategy and plan. In this plan the Government of Rwanda (GoR) restates its belief that information and communication technologies will and must play an important part in achieving Rwanda’s vision 2020; to transform Rwanda into a middle-income country and transition its agrarian economy into an information-rich and knowledge-based one. Rwanda’s government, therefore, has integrated ICTs as a key driver for socio-economic development, and consistently strives to align the country’s development agenda to global trends in order to be competitive (NICI, 2015).

Since the year 2000, the GoR has continuously strived to leverage the ICT sector within the different stages of the NICI (National Information Communication infrastructure) ICT plan. It has institutions and a legal framework to create an enabling environment for ICT development. The country has deployed a world-class infrastructure and is in continuous pursuit to develop the necessary human capital to keep up with changing trends in the industry (NICI, 2015). Today, Rwanda could be referred to as an ICT hub. Within the time period from 2000 to 2010 the country has achieved the following in the ICT industry;

- Enacted laws governing ICT, liberalized the telecom industry and, currently, has seven internet providers within the country, and
- Enacted laws governing intellectual property rights.

In agriculture, there is the Agricultural Management Information Systems (AMIS); an online exchange platform and “e-seko”, a mobile market information solution that allows producers and consumers to access market information on different agricultural products (NICI, 2015).



In the educational sector, the government has enforced the “One laptop per child” (OLPC) program, aimed at distributing - in primary schools - laptops and electronic tablets. By December 2012, 115,000 laptops had been distributed in different primary schools across the country (Ben-Ari, 2014). Science and technology scholarships are also on the rise.

In health, the OpenMRS – an open, medical records system facilitates nationwide patient data tracking – has delivered results beyond expectation. E-Health is a mobile system used by community health workers to collect data for OpenMRS.

Numerous, additional initiatives are also in place to improve governance and all of these achievements are preceded by a sad period in that country’s history – The Genocide of 1994. This is to show that despite the obstacles faced, the nation of Rwanda has not relented efforts to achieve its development goals and ICT has been earmarked not only in theory but concrete action as a driver of economic development which must be catered for. **Insert Picture 4**



e-governance Solution Framework: Done by Author

Conversely, Cameroon, in its Growth and Employment strategy Paper (GESP) which is the framework for development between 2010 and 2020, mentions ICT only 22 times. The reference is general, and there is no separate paper stating the government’s plan regarding developments in the sector. The GESP merely states objective of the government concerning the tech sector, but fails to present concrete plans to be implemented in order to achieve the various objectives. Some of these objectives include:

- Reducing, by 50% the population that doesn’t have access to ICT by 2020. To develop the use of ICT,

- science and technology parks in an effort to enable Cameroon to become a “net exporter of services. This is in a bid to increase the services to GDP ratio.
- To increase the percentage coverage of landlines to 45% and mobile lines to 65%.
 - To provide 40,000 villages with modern areas of telecom, and the public with access of up to 2mb in all towns and cities where there is a digital station.

With all of these objectives, any right-thinking and knowledgeable person would ask how Cameroon intends to achieve these goals, given the fact that there is no strategic government plan in place targeting developments in the ICT sector.

Looking at the progress Rwanda has made in the development and effective use of its ever-growing ICT industry given its relatively limited resources compared to Cameroon, it is obvious that Cameroon is lagging behind. Rwanda, it must be noted, is landlocked and no match in terms of the natural resources Cameroon possesses. In terms of access to the global community, Cameroon has a huge coastal line and shipping ports both operational and under construction that could facilitate the importation of necessary IT equipment. Being landlocked, Rwanda faces a major challenge, implying that the importation of some heavy equipment is done through neighboring countries.

In terms of human and landed capital, Cameroon has a population more than twice that of Rwanda, and a total surface area more than 18 times that of Rwanda. The country can leverage these capital assets in the development of ICT.

While there exists many investment opportunities in the ICT sector in Cameroon such as:

- Computer software development-cloud computing, mobile applications, E-government, ICT education/training, ICT business financing,
- Human Resource related services-payroll, recruitment and staffing,
- ICT related services-systems integration, web management, data processing

The country will only be able to attract investors if it adopts policies which are conducive and relevant to foreign direct investments. Such policies – which are directly related to ICT - include but are not limited to the following:

Policy Proposals

Regulation of existing laws and Establishing new laws governing the ICT sector: The government of Cameroon can begin by simplifying and regulating the laws governing the sector. As stated in the National Policy for the Development of Information and Communication Technology, the laws related to telecoms in Cameroon are so many with a passive mention of the ICT sector. This definitely is a deterrent to potential investors who might be interested in investments in Cameroon. A government document consisting of simplified laws governing ICT-related investments within the country will be the basis by which international investors can justify any ICT investment plans in Cameroon.

Prioritizing ICT in Education: The overall economic situation of a given country is a direct reflection of the educational system. The incorporation of ICT in the educational sector – beginning from basic education - should be a top priority of government. The government can begin by implementing the Rwanda-style strategy of “One Laptop per child” so as to build ICT skills and awareness from childhood. By doing this, the country

can be sure of a subsequent and continuous supply of qualified ICT professionals to maintain its infrastructure and attract FDI in the sector.

Scholarships can also be allocated to students who demonstrate an ability in ICT. Such scholarships can take the form of sponsorship to study in universities within Cameroon or abroad, a cash handout to help the student gain access to certain ICT-related materials or funding to help develop and realize ICT-related ideas or product prototypes. This will foster research and development, as well as spur innovation.

Additionally, secondary schools and universities should be equipped with up-to-date equipment and ICT courses should be compulsory, regardless of study major.

Prioritize ICT in State Budget: By prioritizing ICT in state budget, it will be easier for the government to measure the effectiveness of its ICT policies, to highlight those areas falling behind and to take the necessary action to address them.

An entirely separate ministry of ICT could be created to ensure best practices and to ensure the incorporation of information technology in all sectors of the economy. Priority sectors should be agriculture, infrastructural development, education, financial services, governance and the global fight against climate change.

By taking action on these and other recommendations that come as a result of concrete data driven scientific research and cross-country comparisons, Cameroon will be on the path to achieving its development and growth objectives, fighting the cancer of corruption which is rampant, providing venues for employment and investment opportunities for its growing young population, becoming internationally competitive and insulating itself from the frequent economic shocks that result from the cyclical nature of the prices of basic commodities in the international commodity market.

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