

South - South Integration and the SDGs: Enhancing Structural Transformation in Key Partner Countries of the Belt and Road Initiative

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Ethiopia's drive to advance digital transformation

Abstract

This policy brief examines Ethiopia's digital drive and the policies that the country is currently implementing to advance digital transformation. It argues that Ethiopia's aspiration to develop a digital economy and become a leading manufacturing and trading hub in Africa by 2025 is inspired by China's successful experience in advancing digital transformation. More specifically, the paper identifies two policy directions from China's experience as appropriate pathways for Ethiopia, namely, 1) application of digital technology to promote both domestic and international trade through e-commerce platforms. 2) use of technology park to attract and facilitate investment in IT-related activities. The paper argues that the first one may enable Ethiopia to strengthen domestic supply chains and implement an export-led industrialization strategy. And the second, regarding ICT park, may facilitate the kick-start of digital transformation in the country. The paper has also identified the potential and challenges in developing digital capabilities in Ethiopia in the abovementioned areas. The paper was written in 2019 before the covid pandemic shock to the world economy.

Key words: Ethiopia, E-commerce, ICT park, digital capabilities



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1. Introduction

This policy brief examines Ethiopia's digital drive and the policies that the country is currently implementing to advance digital transformation. It argues that Ethiopia's aspiration to develop a digital economy and become a leading manufacturing and trading hub in Africa by 2025 is inspired by China's successful digital transformation and the critical role played by digital technology in transforming China into one of the leading e-commerce market in the world. Ethiopia wishes to replicate the Chinese experience, particularly the role played by digital technologies in integrating small rural enterprises into the national marketplace through e-commerce platform. However, this policy brief argues that the lessons drawn by Ethiopian policymakers are based on a poor understanding of the policy and regulatory measures, scale of investment and systemic development path taken by China to adopt, assimilate, develop and apply digital technologies.

Further in-depth research is required on how China was able to accelerate the adoption and development of digital technologies, how the new technologies affected business operations, how the integration of internet with the real economy was achieved, the skill base and infrastructure required to advance the digital transformation, and so on. This will enable developing countries such as Ethiopia to benefit from the Chinese experience through peer-learning and learning-by-example. They will also be able to draw lessons based on well informed assessments rather than the current hype and perception that digital technologies will 'lift all boats' and transform developing countries overnight. In this respect, the project on *"Enhancing Structural Transformation in Key Partner Countries of the Belt and Road Initiative"* that UNCTAD has launched recently to encourage peer-learning from the Chinese policy experience by other developing countries comes at an opportune time. The findings of this research project will assist countries such as Ethiopia to draw the right lessons and identify policies and practices that are 'best matches' for them and their starting positions.

2. The hype and the reality of digital technology

China, indeed, is an interesting case of a latecomer developing country that has successfully adopted the new digital technology to develop one of the fastest growing e-commerce markets in the world. Digital technology has become a major driver of China's economic growth and an effective policy instrument for integrating less developed regions into the formal economy. However, whether China is assimilating the new technologies without disruptions to existing practices - often associated with technological revolutions - or not, only time will tell.

Throughout history, technological change has been a primary driver of social and economic transformations and productivity growth. The transfer of new technologies from more advanced countries, where they are usually generated, to less developed economies has also been an important channel of knowledge dissemination between enterprises and across countries. Once again, the world is at the dawn of another technological revolution driven by digitalization and

with transformational implications for production and the way societies communicate and trade. The new digital technologies are expected to create opportunities for entrepreneurs, consumers and governments, bring societies closer and contribute to the UN 2030 Agenda for Sustainable Development and Sustainable Development Goals (SDGs), in particular the goal of leaving no one behind.

There is hype and great expectations about the digital economy and what can be achieved through the application of digital technologies (Graham, 2019). Even low-income, agrarian-based and technologically less developed Sub-Saharan African countries are giving priority to digital transformation in their national development strategy. Ethiopia is one of them (FDRE, 2009). The hype is partly driven by two important features of the new technology: The first is the low cost of access to the new technology, particularly mobile telephony, which makes it easily accessible and affordable even to individuals and countries with lower income. The second important feature is the lower skill requirements for applying the technology.

These two critical features have profound implications for the rate of penetration of digital technologies. Admittedly, the global digital divide, especially in high-speed internet connectivity, is still wide and not affordable for some users in low-income countries.¹ However, the speed of penetration of some digital technologies, such as mobile telephony, has been much faster and relatively less costly than any previous technological revolutions. For example, in 2017, the number of subscriptions for fixed-line telephones in developing countries was only 7.5 per 100 people, down from 12.7 in 2005 (ITU, 2018). In 2000, only 4 per cent of people living in low- and middle-income countries had access to mobile phones. In less than two decades, that number rose to 97 per cent. This was true even in sub-Saharan Africa, where in 2018, there were on average 76 mobile cellular subscriptions for every 100 people, while only 68 per cent of the region's population had access to clean water and sanitation facilities.

In the Least Developed Countries (LDCs), penetration surged from 5 mobile subscriptions per 100 people in 2005 to 72 in 2018 (UNCTAD, 2019). In Ethiopia, mobile subscription increased from 15 per 100 people in 2011 to 60 in 2017 – still lower than Kenya (80 per 100 people) but high enough for a country where 70 per cent of the population lives and works in rural areas. In effect, these trends suggest that the level of development of a country is no longer a key determining factor for the speed of penetration of the new technologies and how quickly applications based on digital technologies develop once they are adopted (World Bank, 2016).

Furthermore, modern mobile telephone devices are no longer simply tools used for voice-based communication only, but also sophisticated data processing instruments and facilitators of IT-enabled services. This technology has enabled some developing countries to catch up with more developed economies, especially in financial and economic transactions. China is a good example of a developing country that is moving at an astonishing rate from a cash-based economy into mobile-based e-payment systems. In 2011, mobile payments in China and the United States were

¹ For example, internet and mobile data costs in Ethiopia have been among the highest in the African region and the world as a whole. When calculated in PPP terms, 1 GB of monthly data costs US\$51 compared to US\$25 in Rwanda, US\$18 in Ghana and Nigeria, and US\$8 in Kenya.

US\$15 billion and US\$8.3 billion respectively. By 2017, the value of China's mobile payments had grown to US\$22 trillion, more than 100 times that of the United States (Euromonitor, 2018).

Similarly, simple mobile phones are enabling many African households to access information, conduct commerce, obtain finance and utilize mobile devices for creative applications, including for health care and educational services. It was largely these transaction-driven applications of digital technologies and the ease of access to mobile devices that fuelled the hype and unrealistic expectation about what can be achieved through digital technology and the potential for leapfrogging by developing countries. It is assumed that with an unregulated and free market system, the fast rate of penetration will enable developing countries to achieve inclusive growth, transform their economies and catch up with emerging or even more advanced economies.

In reality, however, the jury is still out on whether the impact of the new digital technology on productivity, trade and inclusive growth is as positive as widely assumed. The uncertainty is more relevant for the low-income and technologically less developed economies. While, no doubt, digital-driven technologies are different from previous technological revolutions, it is erroneous to assume that their impact on economic and social development will be always positive regardless of the level of development or the level of readiness of countries and their enterprises to adopt and develop the new technologies. In the past, views have differed sharply - even among well-informed scholars and researchers - about the impact of new technologies. Some viewed major technological revolutions as signs of progress and believed that they will eventually "lift all boats" if only markets are allowed to operate free of government "interference". This conviction is based on the neo-liberal assumption that technology diffusion takes place in a linear pattern and that the only condition required is a free market environment so that knowledge flows and spreads freely across society.

Other scholars have taken a more cautious approach to technological change and its impact on society, particularly in the initial stages of development. They see new technologies presenting difficult challenges for individuals, companies and governments, leaving in their path what Schumpeter called a "gale of creative destruction," where technological changes "incessantly revolutionizes the economic structure from within" while destroying "the old one" (Schumpeter, 1942). In other words, new technologies have both destructive and constructive features and the policy challenge is how to manage the speed and scope of transformation from destructive into one where the gains from technological advancement benefits everyone. This policy brief will argue that the latter perspective is highly relevant to today's digital revolution. The adaptation and assimilation of the digital technology in low-income economies will require caution and significant policy interventions in order to ensure that digitalization creates opportunities for all while providing safety nets for those who are unable or slow to catch up.

Indeed, there are already signs that rushing to adopt digital technology before developing the basic infrastructure and the regulatory capacity necessary to turn the new technologies into effective tools for economic transformation could lead to negative consequences. For example, Kenya was among the first Sub-Saharan African countries to push the digital transformation agenda and develop an innovative financial tool called M-PESA, a Mobile-to-Mobile money transfer platform, which was launched in 2007 with aid granted by the UK's Department for

International Development (DFID). The initiative was hailed as the symbol of Africa’s leapfrogging into the new digital era and concrete evidence of the positive impact of digital financial technology (Fintech) on Africa’s economic and social transformation (UNCTAD, 2012). The M-PESA mobile payment system allows users to pay for everyday goods and services, take out and repay loans, and send remittances to family in remote locations.

In less than seven years, M-PESA spread to ten countries in Africa and Eastern Europe processing more than US\$6 billion transactions a year for a customer base of 30 million people. However, a research on the impact of the mobile payment platform in Kenya conducted recently shows that the combination of ease of access to credit through mobile app and unregulated lending have increased household debt in Kenya to a level unprecedented in the country’s recent history.²

With mobile based financial technology, access to loans has become relatively easier even for individuals who do not have bank accounts or formal employment or the regular income necessary to be able to pay back their debt. Many of the individuals who have accumulated short-term debt in Kenya earn minimum wage or slightly above minimum wage and most depend on informal sector activities to supplement their income.³ As noted by one of the individuals interviewed for the Kenya study, “the apps are enslaving people—from the working poor to the salaried classes—by making claims on their future labour”⁴ Thus, the impact of the new digital technology may not always be as positive as claimed by those who advocate for market-driven diffusion of the new technology.

Interestingly, Ethiopia’s aspiration is to catch up with Kenya by 2025. Kenya – and to some extent Rwanda – are regarded as the shining examples of rapid digital transformation in East Africa mainly due to the rapid growth of fintech as a means of e-payment to facilitate internal trade and as a source of financial inclusiveness. Paradoxically, while Ethiopia’s immediate objective is to catch up with Kenya, the model that the government of Ethiopia wishes to follow is based on China’s recent experiences in digital transformation. More specifically, two policy directions followed by China are identified as appropriate pathways for Ethiopia’s efforts to promote digital transformation. They are:

² See, <http://bostonreview.net/class-inequality-global-justice/kevin-p-donovan-emma-park-perpetual-debt-silicon-savannah>

³Ibid

⁴Ibid

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- a) China's application of digital technology to promote both domestic and international trade as represented by the rapid growth of Alibaba's e-commerce platform. Ethiopia's current national development strategy is based on export-led industrialization, anchored in the manufacturing sector and based on linkages with agriculture. It is anticipated that China's e-commerce model will enable Ethiopia to strengthen its domestic supply chain and successfully implement an export-led industrialization strategy.
 - b) The second lesson from China is the use of a technology park specifically built to attract and facilitate investment in IT-related activities and kick-start the process of digital transformation in Ethiopia.

The rest of this brief will discuss the rationale for pursuing these two policy goals and the challenges currently facing Ethiopia in implementing the digital transformation agenda.

3. The potential and challenges of developing e-commerce capability in Ethiopia

As noted above, the main challenge that latecomer countries face in adopting new technologies is how to minimize the potential pitfalls and disruptions to the existing production system while enhancing the gains that can be generated from the new technologies. An essential requirement for balancing the benefits and costs of the new digital technologies is to ensure that policies towards digital transformation are aligned with the country's national development vision, policy objectives and priorities. This is one of the critical lessons that Ethiopia and other African countries can learn from China.

In Ethiopia, this would entail aligning the process of digital transformation with the country's five-year Growth and Transformation Plan (GTP) and the new ten-year (2020-2030) perspective plan that the Government introduced in November 2019. The ten-year plan builds on the export-led industrialization strategy that the country has been following during the last two consecutive five-year Plans - GTP I (2010-2015) & GTP II (2015-2020). It also articulates the Government's middle-to long-term vision and the specific development goals to be achieved and the policy directions to be followed in the next five-year plan (2020-2025) and the rest of the decade.

In short, the main elements of Ethiopia's national development vision and specific goals for the coming five to ten years include the following:

- I. Implementing an export-led industrialization strategy, anchored in the manufacturing sector and by sourcing inputs from agriculture where the country has revealed a comparative advantage. Thus, building a domestic supply chain between agriculture and industry is considered critical;
 - II. Attaining middle-income status by 2025. This will require doubling the country's per capita income which in turn will require doubling the country's GDP;
 - III. Becoming a leading manufacturing and trading hub in Africa by 2025;
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- IV. Increasing the share of the manufacturing sector in GDP from its current level of 5 per cent to 17 per cent;
 - V. Doubling, if possible tripling, the country's total export capacity; Ensuring that the manufacturing sector contributes to 40 per cent of exports;
 - VI. Creating 14 million formal sector jobs, preferably in export-oriented sectors, by 2025; and Achieving a double-digit growth rate and sustaining it beyond 2025. ^[L]_[SEP]

In line with these objectives, the policy approach towards digital transformation has been oriented towards trade promotion, particularly the need to build strong domestic supply chains and promote exports of manufacturing products. Thus, ultimately, the impact of digital transformation in Ethiopia will be measured by the degree to which digitalization enables the country to develop a successful e-commerce business and advance the export-led industrialization agenda.

A. The viability of e-commerce as a digital transformation strategy for Ethiopia

The appeal of e-commerce to policymakers in Ethiopia is based on a number of factors:

First, although currently e-commerce in Ethiopia is non-existent, the government believes that the opportunity for growth is significant (FDRE, 2016). The positive assessment is based on the size of the domestic market as the second most populous country in Africa; the country's recent economic performance which has been one of the fastest growing economies in the developing world; the emergence of a large middle-class; and the country's position as a major transport hub in Africa. Furthermore, Ethiopian products such as coffee, textiles, and leather goods enjoy a favourable reputation internationally, and it is expected that e-commerce will open new markets for local SMEs.

Second, it is expected that e-commerce will generate opportunities for job-creation – both direct and indirect. In fact, the government estimates that capturing just 0.5 per cent of the domestic online retail trade could create close to 100,000 jobs (JCC, 2019).

Third, it is anticipated that the African Continental Free Trade Area (AfCFTA) agreement will open new market opportunities for cross-border e-commerce transactions in the African region. Estimates show that the African e-commerce market will grow from US\$6 billion in 2017 to US\$75 billion by 2025 and the number of online shoppers in Africa will increase by 18 per cent annually.

Fourth, the Chinese experience in digital transformation is often taken as evidence of what can be achieved by leapfrogging into digital technology to promote trade and inclusive growth. Admittedly, China's achievement has been impressive, given particularly its low level of technological development when it began opening up less than four decades ago. In the early 2000, the contribution of digital economy to China's GDP was insignificant. In 2016, the digital economy accounted for nearly 60 per cent of China's GDP growth and was a major driver of China's economic growth. In less than 10 years, China's e-commerce market has grown into one of the largest in the world, accounting for 23 per cent of the country's total retail sales in 2017

(Wei Wang and et al, 2017). A particularly interesting development that countries such as Ethiopia find appealing is the emergence of online trade through the so-called “Taobao” villages. A ‘Taobao’ village is an administrative locality in rural China that supplies local products to customers and other businesses through an online marketplace. To participate in the national online retailing marketplace, the “Taobao” villages need to satisfy several conditions (Jiaqui et al, 2019). These include the presence in an administrative village of a cluster of small businesses where at least 100 online traders exist or at least 10 per cent of the population in the village is engaged in trading roughly US\$1.6 million worth of goods online. Originally, this initiative emerged as a spontaneous response by small rural businesses taking the opportunity for online trade.

However, as online retail trade through “Taobao” villages began to expand, including through the Alibaba network – the largest e-commerce platform in China – this emerging trading network has been actively promoted by the government. It is now regarded as an important policy tool for integrating less developed regions into the national trading system and encouraging entrepreneurship among rural youth, women and disadvantaged persons (Jiaqui et al, 2019). Currently, the “Taobao” marketplace provides services to over 600 million active users and the variety of products available through the “Taobao” villages has reached 6700.

In less than five years, the number of ‘Taobao’ villages has grown from 20 in 2013 to over 3200 in 2018. Their sales now account for over half of the Chinese online transactions, involving more than 490,000 active online shops across 18 provinces and municipalities. A recent survey of the ‘Taobao’ villages revealed that about half of the online entrepreneurs are women and a total of 1.3 million direct jobs have been created through businesses initiated by the ‘Taobao’ villages (Wei et al, 2019). The survey also reveals that most of those engaged in the ‘Taobao’ village e-commerce platform tends to be the young and better educated and that they have a relatively higher income than the average in rural China. This has had the impact of encouraging young people to stay nearer to home rather than migrate to urban areas in search of better paying jobs.

For policymakers in Ethiopia, the “Taobao” village model presents as an ideal e-commerce platform that the country needs for implementing the national development goals outlined above. The rate of penetration of Internet connectivity in Ethiopia is still low (18 per cent) and well below the Sub-Saharan average. However, the government plans to invest further on high-speed networks and widen coverage and accessibility in rural areas where over 70 per cent of the population lives. When this investment project is complete, the government assumes that it would be feasible to replicate the “Taobao” village model and experience in Ethiopia with positive implications for agriculture-industry linkages, rural non-farm job creation, the emergence of rural entrepreneurship, capability-building in e-commerce trade, including cross-border online trade, financial inclusiveness, etc.

B. The challenges to developing an e-commerce platform in Ethiopia

Learning from other countries, including by imitating, has historically been an important channel for transferring technology and acquiring knowledge. However, African countries must realize that there is no short-cut to success or a “one-size-fits-all” approach to digital transformation. Each country in the African continent must identify its own needs and requirements and design its own digital transformation strategy accordingly. But, as already noted, making digital technology an integral part of the national strategy will undoubtedly be one of the keys requirements to success. The most important factor behind China’s success in adopting and penetrating of digital technology is its ability to make the development of new technologies a priority and an integral part of the nation’s developmental process (Wei Wang et.al. 2017).

Another important factor for China’s success was the massive public investment in digital infrastructure, implemented through a series of five-year plans and aimed at nation-wide coverage and the deep integration of Internet with the real economy. Investment in digital technology was accompanied by the introduction of supporting policies, including for the establishment of an e-commerce platform and regulatory and data protection measures necessary to create a strong foundation for digital transformation. These are important lessons that Ethiopia and other African countries can learn from the Chinese experience in digital transformation.

Ethiopia is yet to develop the infrastructure, skills and the policy, legal and regulatory frameworks required to kick-start the process of digital transformation. At present, many of the basic requirements to launch a big push in network development, sector-specific digital transformation and to stimulate private sector investment in digital technologies are missing: Key among these are:

- The financial sector is still underdeveloped and there is no regulatory framework for the application of financial technology tools. Ethiopians have far less access to modern financial services – such as Fintec - than peers in other African countries. This hampers the development of digital payments which is critical if Ethiopia is to upscale e-commerce services and operate efficient e-commerce platforms. In addition, regulatory restrictions limit interoperability between different banks and digital wallets, resulting in increased design and operational costs for e-commerce.
 - Ethiopia also lacks the logistics infrastructure capable of supporting e-commerce operations at scale (i.e. warehouse technology, road networks, etc). In fact, at present, poor development of trade logistics is a major obstacle to export growth. Customs procedures and processes such as unclear duty structures and large clearance times need also to improve significantly to minimize the costs for e-commerce operators. Ethiopia does not yet have a functional national addressing system yet which poses significant transactional costs in service delivery.
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- A comprehensive policy and legal framework to support e-commerce does not exist. The lack of a clear policy on e-commerce and regulations (for example, for e-receipts and product returns) and weak institutions creates an uncertain operating environment.
 - Internet network coverage continues to be poor and limited in Ethiopia. Even though 2G and 3G network currently covers 85.5 per cent of Ethiopia's population and 4G access is available in certain pockets of Addis Ababa, the subscriber capacity of the network is limited. Over half of the internet users in Ethiopia are supported by 2G network and the number of users who have access to 4G network is about 400,000. Furthermore, there are sporadic internet blackouts across the country which affects the reliability of connectivity to sustain e-commerce business.
 - Lack of access to power is another major constraint that will slow down the pace of expansion of e-commerce. There is an urban bias in accessibility to electricity where up to 96 per cent households have access compared with only 31 per cent households in rural areas. The last available national statistics show that around 33 per cent of Ethiopians benefit from an on-grid electricity access, while 11 per cent access electricity through some form of off-grid systems such as generators, SHS and mini-grids.

4. ICT Park as a driver of digital transformation

The United States and select countries in Europe were the first to set up dedicated science and technology parks during the sixties to support Research and Development (R&D) activities and to cater to knowledge or technology-intensive sectors like engineering, chemicals, and electronics. In Asia, the phenomena of setting up dedicated parks to enable knowledge sharing started in the early seventies in several countries. Japan and Korea took the lead, focusing on basic research and development activities conducted by government research and development institutes and universities.

In the late nineties, developing countries such as Malaysia, China and Singapore increasingly started to establish similar parks as a preferred tool for promoting their information and communication technology (ICT) industry. China, in particular, made effective use of ICT parks to entice investment and build the foundation for the emergence of IT equipment manufacturers and providers of IT-enabled services. At the time, China, like other developing countries, was constrained by severe infrastructure limitations. It was easier and more effective, therefore, to provide state-of-the-art physical, communication, logistical, regulatory and social infrastructure within a designated area to enable IT enterprises to operate.

Pursuing the same development path, in 2011, the Government of Ethiopia established an ICT (Information and Communication Technology) Park in Addis Ababa. As envisaged at the time, the main objectives of the park were to: attract Foreign Direct Investment (FDI); boost exports of IT-related products and services; create nearly 300,000 jobs over a period of five years; provide an innovative business environment for start-ups; and enable the development of digital economy. The Government allocated 172 hectares of land in the outskirts of Addis Ababa – land previously used for farming purposes - and spent nearly \$35 million to build infrastructure, mainly roads and buildings to serve as an incubator and administrative offices. Proximity to the city of Addis Ababa

and Bole international airport and the two industrial parks near the airport (Lome I and Lome II) were factors that influenced the decision on the location of the ICT Park.

Nearly ten years on, the ICT park has very little to show to justify the substantial resources devoted to the project and to justify the opportunity cost of acquiring land that could have been used for farming or other productive activities. With the exception of a single investment by a Chinese company assembling mobile phones and employing about 1200 workers, the other investment activities in the park are small and inconsequential. A review of the decision-making process that led to the establishment of the ICT park indicates that there was limited understanding of the complex, multi-dimensional and fast changing nature of the new digital technologies among policymakers. At the time of its establishment, the park lacked a strategy, a fully-fledged business plan and the management and governance structure necessary to function as a typical ICT park. Essential infrastructure such as high-speed internet connection and a reliable power supply that an ICT park requires to attract 'anchor' investors and create a clustering of IT-related businesses were also missing.

Fortunately, there is now greater awareness among policymakers in Ethiopia that it takes much more than allocation of land and generous investment incentives to turn an ICT park into a major driver of digital transformation. The government is currently reviewing the role of the ICT park with a view to formulating a strategy that will turn the park into a major player in the development of the country's digital economy. In doing so, however, it is important to learn from past mistakes as well as from the experiences of other more successful countries. Ideally, Ethiopia should adopt a two-pronged strategy for the development of the ICT park. In addition to continuing with attracting FDI, particularly 'anchor' investors, it is advisable that the potential role of the growing domestic demand for IT-related services should also be considered as an important building block for revitalization of the ICT park and building digital economy.

5. Conclusion

Today's developing countries, especially latecomers to export-led industrialization such as Ethiopia, are experiencing multiple technological revolutions all at once: not just digital, but also industrial, transportation, and electrical revolutions that have taken decades and centuries to build in advanced economies. They are still catching-up with the old technologies and their main challenge is how to keep-up with the new digital revolution - which no doubt will help accelerate their process of development - while at the same time not losing the benefits that can be gained from existing technologies and minimizing the potential pitfalls often associated with leapfrogging before learning to walk.

As noted in this short policy brief, there is currently a hype and expectation that the digital revolution will 'lift all boats' and will enable less developed countries such as Ethiopia to achieve inclusive growth. Part of this expectation is inspired by China's successful digital transformation at a speed and depth unprecedented in recent history. Obviously, drawing from China's recent experience in digital transformation will be highly beneficial for low-income countries like Ethiopia.

However, this will require a better understanding of how digital technologies have spread in China, what policies and regulations were used to kick-start the digital economy, the basic infrastructures developed and how they were financed, how the digital revolution is affecting business operations and how they have been made to serve small businesses, including in rural areas, and so on. Currently, Ethiopia wishes to replicate the Chinese digital transformation model without the benefit of having a clear understanding of the policy measures and development path taken by China to achieve rapid assimilation, development and application of digital technologies. In this respect, the lessons to be drawn from a recent project launched by UNCTAD to encourage peer-learning from the Chinese experience by other developing countries will be highly beneficial. Hopefully, the research project will also shed some light on the implementation of policies and regulations, and the “intensity” with which China executed the digital transformation agenda. There are important lessons for other developing countries. Often, developing countries fail to realize that formulating policies or strategies are only the beginning of the technological development processes. Successful implementation of policies and strategies depend on “intensity of efforts” meaning the amount of resources and energy expended by governments, public institutions and relevant stakeholders including the private sector, in developing domestic absorptive capacity and encouraging small enterprises and citizens to apply new technologies. It also depends on the sense of urgency attached by firms and governments to speeding up technological learning and creating an ideal environment for innovation. Such heightened efforts often intensify ‘learning’ as an important precondition for the successful implementation of policies towards new technologies and accelerate the process of technological and innovation capability-building and catch-up.

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