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Specialized Technical Committee on Finance, Monetary Affairs, Economic Planning and Integration
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CONCEPT NOTE

Theme: "Leveraging the 4th Industrial Revolution to address Youth Unemployment in Africa"

I. Introduction

Africa has experienced sustained growth since 2000. According to the Africa's Development Dynamics Report (AUC/OECD, 2019), between 2000 and 2018, Africa achieved a 4.6% growth rate, better than in Latin America and the Caribbean (2.6%), but lower than Asian developing countries average (7.4%). This remains insufficient to meet the expected annual growth rate of 7% to achieve Agenda 2063, Africa's blueprint for socio-economic transformation during the next five decades. More importantly, despite Africa's recent impressive growth performance, a number of challenges remain, specifically in the areas of job creation and social service delivery. As a result, growth has not generated sufficient job opportunities for Africa's youthful and rapidly growing population, because it continues to be driven by exports of primary commodities, which are produced in economic enclaves with limited value-addition or linkages to the rest of the economy. In addition, the continent has not been able to take advantage of the opportunities of the past three industrial revolutions to achieve economic growth and overall development.

Today, the 4th Industrial Revolution (4IR) is bringing the hope of a new era for Africa's transformation and prosperity, as it is changing the way we live, think and work, through rapid advancements in digital technology, new materials, especially when it comes to advanced robotics, artificial intelligence and machine learning. It focuses on the transition to new systems, built on the infrastructure of the digital evolution and has the potential of fast-tracking the integration of the continent into the global value chain, through industrial development. The 4IR will enable companies and organizations to benefit from the efficiencies at the work place. It is estimated that, faster adoption of digital technology will enable companies and organizations to work smarter and faster, resulting in the creation of value gains for customers and users.

However, although the 4IR offers enormous opportunities for governments, producers and manufacturers, and indeed customers, it also comes with uncertainties and challenges arising from major potential disruptions to the traditional labor markets. This renders current educational systems and skills obsolete, with significant implications for millions of low-skilled workers across the globe. The risks of automation and re-shoring also pose serious concerns over the potential for Africa's to attract investments in job-intensive manufacturing sector, a traditional path that fueled the growth of the East Asian countries in the late 20th century (AUC/OECD, 2018). Therefore, finding solutions to the challenges and exploiting opportunities of the 4IR is extremely important, for policy makers and regulators, to ensure that these disruptions have no deleterious impact on the African youth, who are the future of the continent.

More specifically, African policy makers need to ensure that the 4IR, take advantage of the opportunities associated with a young population, and the expected demographic dividend. Therefore, tying these opportunities together in a region that is urbanizing faster than any other should be a strategic imperative. It is estimated that by 2050 Africa will have 830 million youth. Therefore, successfully harnessing their potential will support broad-based innovations increased productivity, and lead to inclusive and sustainable economic growth across the region (Youth Policy report, 2018).

It is in this challenging context that the 2020 African Union Specialized Technical Committee (STC) on Finance, Monetary Affairs, Economic Planning and Integration will be held from 9 to 14 March 2020 under the theme, "***Leveraging the 4th Industrial Revolution to Address Youth Unemployment in Africa***." The 2020 STC aims at exploring the impact of the 4IR on Africa and African youth participation in the future of job market, given the changing dynamics. It will deliberate on how African leaders and policy-makers can harness the impact of the 4IR to create a future-driven inclusive society aiming at reducing unemployment amongst African youths. This will include assessing the continent's readiness to absorb the shocks of the '4th Wave,' in order to harness the opportunities of the digital era. It will also identify the drivers of change and their likely consequences over the next half century, and propose policy choices that will enable Africa to fulfil its potential in the years ahead. The STC will also add to the scant knowledge base on this topic for Africa and reflect the latest evidence from leading reports such as the *Africa's Development Dynamics*, whose 2020 edition would focus on policy response needed for a better "Future of Work" in Africa given the process of technological change, demographic, urban and green transition.

II. Overview of the 4th Industrial Revolution

Over the past centuries, there have been major advancements that have revolutionized industrial production processes. During the previous revolutions, natural resources were the engine of change in the production system, from an agrarian and handicraft economy, to an industrial and mechanical economy. The end of the last century begun with the expansion of information and knowledge economy, with the automation of production, electronic, computerization and internet all over the world. The 4IR is expected to take information and knowledge economy to an extraordinary new level, with the introduction of major technological advancements that present enormous opportunities for new business models, value-production, integrated production structure and IT infrastructure.

Today, these emergent technologies are now being used in all sectors including education, health, agriculture, trade and financial services, city planning, government services delivery, social connectivity, communication speeds, automation and transportation, just to mention a few. Suffice to state that they are helping to transform every aspect of modern life, including the introduction to artificial intelligence, advanced robotics, block-chain, drones, internet of things, wearable technologies, cloud computing technologies, 3D printing, Big Data, machine learning and software-enabled industrial platforms.

Considering that the future of production lies in the heart of the 4IR, which has the potential and capacity to lead to unprecedented gains in productivity, efficiency and high-quality goods and services, advancement in technology for instance, has helped *increase economic value*. Through a vast range of breakthroughs in technology and supply chain, production systems are impacted as technology opens new opportunities to create value across societies, firms, industries and the economy at large.

Additionally, the effects of the internet and digital networking on communication, have made it possible for organizations to use the *open innovation* process to crowdsource for ideas, designs and solutions, regardless of their size and geographical location. As

a result, companies can post their needs and challenges in the virtual space, and crowdsource from the growing number of contributors from all over the world.

Furthermore, advanced manufacturing technology has made it easier for *distribution manufacturing* to take place. This concept was developed on the principles of advanced 4IR technologies such as additive manufacturing, the internet and cloud computing. The idea is to locate production closer to the end user, to integrate the customer more effectively, thus reducing lead-time and cost. For example, in an effort to cut down production cost and time, producers and manufacturers use a decentralized network of 3D printers that are interconnected with the producers' systems, using cloud computing. This helps them to achieve greater quality using less production time and at reduced production cost.

Lastly, digitalization is further pushing the reality of complexity, as company boundaries are becoming less important in their quest to push for improved efficiency and resilience of the supply chains. For this reason, companies are willing to collaborate both vertically with their suppliers and customers, as well as horizontally across industrial sectors, to capture more opportunities.

However, though the digital era thrives on technological breakthroughs, new business models tends to affect the attractiveness of investing in manufacturing locations. This is because the unpredictable nature of digital manufacturing, makes it economically unwise to invest in multiple locations, only to have it changed once new trends and technology emerge within a short period of time. As a result, there is high concentration of manufacturing activities to a small set of companies and countries, thus providing them some level of monopoly power.

Likewise, the 4IR can be hugely disruptive and uncertain, as sectors to be affected are unknown. As such, industries and sectors need to constantly be on standby, to respond to the next big technological revolution. With this rapid and constant change, industries and production systems will need to make some tough decisions on the sectors and value chain within production to be affected, by assessing their comparative advantage, national interest and economic strategy.

III. Africa's Readiness for the 4th Industrial Revolution

The African continent can only harness the full benefits of the 4IR era, if the necessary parameters, instruments and regulations are put in place, on the national, regional and continental level. This will allow the continent as a whole, to:

i. Capitalize on the opportunities offered by the future production of the digital era;
ii. Develop tools to mitigate future anticipated challenges; and
iii. Be swift to respond to disruptive, unexpected and unknown shocks.

According to a readiness assessment analysis conducted by the World Economic Forum, in collaboration with A.T. Kearney in 2018, countries that have a large and more complex structure of production are considered readier for the future. This is because they already have a structured production base on which they can build upon, which include: *Technology and Innovation; Human Capital; Global Trade and*

Investment; Institutional Framework; Sustainable Resource; and Demand Environment. For the 'six enablers' identified, countries that perform well across the identified drivers of production are also considered 'readier,' in that, the mix of enablers allows for the adoption and infusion of technology to accelerate the transformation of production systems.

Unfortunately, during this assessment, African countries fell in the category of *Nascent* countries, meaning that they lack the production capacity, as well as the key enablers of the production component required to increase their readiness for the 4IR.

In this regard, it is important that African leaders, policy-makers and business leaders identify specific production structures and indicators lacking in their respective countries. This will help identify the areas of major concern, as well as provide a clearer indication of where they stand in terms of readiness, so as to develop strategic mitigating tools to address them.

IV. Sub-themes

The Conference will look specifically at the following four (4) sub-themes namely: (i) the skills of the future of work in the age of automation and discuss the importance of investing in skill development; (ii) the regulatory and governance frameworks needed to facilitate the digital era for rapid growth; (iii) Future of Productivity: Harnessing 4IR to Achieve Agenda 2063; and (iv) financial technology (FinTech) and financial Inclusion.

IV.1. Designing the Work Skills of the Future

The emergence of the 4IR keeps changing the way we live our lives, and most particularly, the way we learn and the type of knowledge we acquire. Future employers now seek out for individuals who have accomplishments in start-up pitching, code projects and creative innovative designs.

Following the introduction of the 4IR, there have been growing concerns amongst workers regarding their role in the digital era. However, Rotman (2013) and Manyika et al. (2017) argues that, though the introduction of new technology has led to short-term displacement of some jobs, it will create new ones and new roles, thus offsetting the ones made obsolete. Additionally, Kuhn, Milasi and Yoon (2018) stated that the downward decline of demand for full-time employment over the last decade is likely to continue. As a result, people will prefer to split their time between several jobs, in both the formal and informal sectors.

Looking at this from the African perspective, alongside the rapid growth of the youth population in Africa, is the fact that it is increasingly becoming better educated. It is estimated that by 2030, the number of youths aged between 20-24 years with secondary education will peak to about 59%, compared to the current figure of 46% (Youth Policy report, 2018). Additionally, statistics indicates that in Africa, while only about 3.1 million jobs are created each year, 10 to 12 million young people are in search of employment, leaving a significant amount of youth unemployed (AfDB, 2018). Skills-mismatch is also another reason for youth unemployment, as young people lack the skills required for them to be employed.

As a result, organizations and higher education institutions need to adopt new approaches to learning, due to the evolution of future skills becoming more interdisciplinary, with critical soft skills being the essential factor. Some researchers further suggest that in future, up to 47% of jobs may be automated while others are suggesting a figure of only 9% (Saadia Zahidi, 2018). Thus, considering that human capital and skills are complementary to other factors of the production process, the government needs to prepare the youth for a future work integration, based on skills of the future.

It is therefore imperative that African governments, in partnership with the private sector, create opportunities for the youth by developing the necessary skills required to survive in the digital era. In particular, addressing the skills requirements of the 4IR will require commitment by African governments to review their individual and collective employment and manpower planning and education policies. It is fair to conclude that, though the digital revolution era will have a positive impact on productivity and effective service delivery, these gains can only be achieved with highly skilled human labour force. This also requires acquisition of skills for the future through the adoption of appropriate education systems and constant capacity building for workers.

IV.2. Government and Regulatory Frameworks for the 4IR

Establishing appropriate regulatory framework in respect to 4IR is essential as it sets the tone, define parameters as well as establish the rules governing every sector, economy or industry, towards achieving technological development and advanced manufacturing. These regulatory and governance frameworks can either facilitate the digital era to grow rapidly, or slow down the successful adaptation of emerging technologies in production. Therefore, considering that there is a direct correlation between regulatory framework and responsiveness to change in business environment and the productions process, both the private and public sectors can take advantage to lay the rules for the entire industry. Hence, in order to allow for an easy transition from one revolution into another, government leaders and institutions must lead the process to provide the right digital infrastructure, and policy reforms needed to change the business climate.

There is need for strengthening a joint Public-Private Partnership (PPP), to understand the evolution of technology and the opportunities it creates, and its implications on how industries and markets operate. Through a collaborative innovative event, both sectors can identify challenges and conceptualize ideas, through regulatory frameworks to solve them. Furthermore, in an effort to develop critical-thinking solutions to problems, both sectors need to engage with higher education institutions**.** These institutions will lead the way by establishing purpose-driven collaborative partnership opportunities with industries and markets, through which they can co-create solutions to world problems and challenges.

In addition, public and private partnerships should help in the development of soft and hard digital infrastructure, that will facilitate the development, usage and sharing of digital systems (products and services). These include telecommunications networks (fixed and wireless broadband networks), terrestrial optic fiber networks and fiber over

power lines, submarine cables, satellite communication, mobile communication, IXPs, Postal infrastructure and Digital Terrestrial Broadcasting. However, these partners must bear in mind that affordable, accessible and reliable infrastructure is the foundation to achieve an inclusive digital transformation society.

Today, in the digital world, countries are becoming more and more interconnected and vulnerable to cyber-attacks. According to Africa Cybersecurity Report 2018, cybercrimes cost African economies $3.5 billion in 2017. In 2018, annual losses to cybercrimes were estimated for Nigeria at $649 million, Kenya at $210 million and South Africa at $157 million. However, it is estimated that Africa will have a shortage of 100,000 cybersecurity personnel by 2020. It becomes critical to reinforce our human and institutional capacity to secure cyberspace by building trust and confidence in the use of cyber technologies. As more and more economic and social activities shift into connected information spaces and volumes of trans-border data flows. Specifically, personal data are increasing, thus making data protection regulations critical. It is in this context that the Executive Council in January 2018, endorsed the Declaration on Internet Governance and development of a digital economy. The Assembly of the Union then adopted the Convention on Cyber Security and Personal Data Protection, to seek for a common approach at continental level on the security of the cyberspace. This will include setting up minimum standards and procedures to define a credible digital environment, for developing the electronic communications and guarantee the respect of privacy online.

It is therefore imperative that African Union Member States develop and adopt national cybersecurity strategies, including legal and regulatory framework for data protection/privacy; cybersecurity standards on governance and cybercrime; and national cyber-security governance under multi-stakeholder structure.

IV.3. Future of Productivity: Harnessing 4IR to Achieve Agenda 2063

Productivity, as defined by Syverson (2010), is the efficiency with which inputs are turned into outputs. As highlighted by Leurent, De Boer and Diaz (2019), the arrival of the 4IR is expected to create up to 3.7 trillion in value to manufacturing firms across the globe, after a prolonged period of the manufacturing sector experiencing productivity stagnation. The digitalization of manufacturing will lead to a wide range of changes to the manufacturing processes, outcomes and business models, leading to significant benefits for users. As a result, production processes can be decentralized in real time, doing away with centralization (Fraunhofer, 2014). Furthermore, technology holds incredible potential to transform sectors rapidly, to increase the productivity of systems while lowering emissions and waste. This allows sectors, the opportunity to monitor and manage the Earth's surface and resources at a speed and scale, hitherto could not have dreamt of. Additionally, technology enables sectors to collect and harness vast amounts of data, and make breakthrough advances in areas like healthcare, agriculture, energy, education and mobility.

The emergence of the 4IR is transforming the world of production in every industry, from research and development to design, consumers' behaviour and end-of-use cycles, enabling efficient process and creating new value for industry, society and the environment. This is changing business models, including the interlinked systems

through which businesses create value for their customers, while capturing value for itself.

For instance, Artificial Intelligence (AI) augmented computing can help doctors reduce medical mistakes, help farmers improve their yields, assist teachers customize and spread education, and also enable researchers develop advanced material generation for clean fuels. Nonetheless, African governments and businesses need to work together to ensure that technology is actively managed to align with the continent's strategy on structural transformation to achieving Agenda 2063 and the SDGs. In a recent study by Microsoft and PwC UK (2019), using existing AI applications across agriculture, energy, transport and water could conservatively boost global GDP by 4% by 2030, while at the same time reducing global greenhouse gas emissions by 4%, thus helping advance the SDGs.

In the agriculture sector, artificial intelligence, robotics and synthetic biology are demonstrating great promise for improving crop productivity and resilience to optimize food distribution. Companies such as NRgene is using machine learning and genetic sequencing to identify and sequence optimal gene profiles based on crop performance, while Phytech is optimizing crop production with its "Plant Internet of Things" application, to send insights and warnings to farmers' smartphones.

Likewise, for the health sector, advances in technology, including block-chain and biotechnology can advance human medicine along with healthcare information and access to medical care. Strides have been made in AI systems for earlier and higher-performance diagnostics for disease detection, with AI-enabled wearable devices detecting early signs of diseases.

For the energy sector, nearly 800 million people are without access to reliable and affordable electricity. However, advanced materials for solar panels and battery technology (specifically lithium-ion batteries), will pave the way for renewable energy mini-grids to become the cheapest solution to connect 290 million people to power (Microsoft and PwC UK, 2019), considering emerging technologies have huge potential to accelerate electrification, particularly in areas with fewer centralized network power grids, including Africa.

Additionally, the use of digital technology can transform government performance and boosts efficiency, transparency, responsiveness and service delivery. Though Africa is still lagging as compared to other countries with developed economies, there have been some progress in the digitalization of government to improve government effectiveness. Through the introduction of the UN e-government system, development index increased from 0.47 in 2014 to 0.54 in 2018, countries such as Seychelles, Kenya, Ethiopia, Morocco, Ghana, Rwanda, Mauritius, Tunisia and South Africa scored above the world average of 0.56% for online services. The uptake of these technologies by more African countries, would be a good step in the right direction.

With regards to resource mobilization, weak government capacity affects revenue mobilization and fiscal space, leading to inefficient public services delivery to citizens. Unlike the period of the MDGs, during which there was a major focus in ODA, sustainable and predictable financing is critical to the success of the implementation of Agenda 2063 and Agenda 2030. Domestic Revenue Mobilization is expected to

contribute at least 75-90% to the financing of Agenda 2063. It is therefore imperative to have an efficient, reliable and fair way to collect tax and revenue. The technological innovation can play an important role in tax and revenue collection and administration and improve tax transparency and exchange of information for tax purpose.

IV. Digital Financial Inclusion

The past decade has seen the emergence of digital platforms across Africa. Mobile financial services (MFS) has become a very popular trend across the African continent with the emergence of mobile phones to access financial services and execute financial transactions such as M-Banking, M-payments and M-money. In addition, the emergence and development of electronic financial solutions has been improving the online payment systems in countries, where consumers do not necessarily have debit/credit cards or bank accounts. However, better access to all segments of the African population including rural users, farmers and women and youth, is required to make an impact on the continent's socio-economic growth and development. Financial Technology (Fintech) companies are providing digital solutions to financial services sector, with block-chains allowing digital transactions between two parties without verification of a third party, and facilitating transfer of crypto-currencies such as bitcoins. The greater use of social media platforms to promote products across regions, has been improving and promoting the use of online payment systems. All these Digital financial Services solutions help facilitate cross border transactions.

Deeper regional and continental integration is expected to enhance synergies among African governments and private sector, as well as engineer collaborative mechanisms to fast track the uptake of the technologies associated with the 4IR. Digital financial inclusion will be a basic enabler to ensure that Africa truly becomes the single digital market we want.

For today's African youthful entrepreneurs, affordability and accessibility to internet services is essential, as this will allow them benefit from products and services offered by Digital Financial Services (DFS). However, considering DFS products rely on internet connectivity to be operational, financial institutions need to partner with the public sector to develop the necessary regulatory framework that will make internet services accessible to all.

With regards to digital currency, cryptocurrency became popular in 2017, as great hype for it led to an increase in demand. However, digital currencies are very volatile as its worth can change by the hour. In addition to that, there are challenges when it comes to source taxation. All these, coupled with other concerns led to a sharp decline in confidence for digital currencies just a year after, which scared investors away. Nonetheless, it turned many amateur traders into seasoned ones.

Though this technology is still at its early stages, it brought a new and unique dynamism to the world economy, as well as giving a glimpse of what future trading in digital currency would look like. It is for this reason that Facebook decided to get ahead of the game by introducing the Libra Coin. This is a cryptocurrency developed on the foundation of block-chain technology to allow people to send, receive, spend and secure their money on a daily basis.

However, global leaders and financial institutions have expressed their concerns about Libra becoming a sovereign currency, as well as a substitute for traditional currencies. According to Danyal Bayaz (2017), a 'Green' financial politician from Germany, the introduction of Libra has increased pressure on the European Union to develop its own cashless monetary system, as its introduction in his view, is an attack on the monopoly of politics. Therefore, the question remains as to "who will have the privilege to create money in the future", thus, will it be the State, which has the power to exercise exclusive legal control over its currency, Banks or digital companies like Facebook?

In conclusion, the 4IR has introduced a new chapter in human development, which has changed the world we live in, and consequently impacted the operations of businesses, economies and industries as a whole. Most importantly, the digital era needs to be understood as being more than just about technological change, but as an opportunity for policy-makers, leaders and nations, to use converging technologies to create a more inclusive human-centered future for all.

V. Expected Outcomes

The 4th Specialized Technical Committee on Finance, Monetary Affairs, Economic Planning and Integration is expected to deliberate on items on the agenda and propose recommendations for approval by the Assembly of Heads of State and Government of the Union. The Senior Officials will make proposals for consideration and deliberation by the Ministerial segment. The STC is expected to provide concrete policy actions and measures required, in order to leverage the 4IR to address youth unemployment on the continent.

The following specific outcomes are expected:

(i) Opportunities, risks and challenges of the 4IR from the view point of policy makers are recognized;
(ii) Framework of Future job opportunities for Africa is available;
(iii) Available frontier technologies that can be leveraged to create job opportunities for Africa's youth are identified;
(iv) Policy and regulatory frameworks and infrastructure requirements essential to drive the growth of the 4IR in the context of our continent's development needs are identified; and
(v) Roles of the private sector in driving the 4IR in the continent is highlighted.

VI. Format of the conference

The meeting will be divided into three (3) sections: (1) Expects' Meeting; (2) Side events, and (3) Ministers' Meeting.

a) Participation

Participants to the Conference will be from the Ministries of Finance, Economic Planning, and Integration and Central Banks of AU Member States. Other participants will include experts and senior officials from the African Union Organs and Specialized Institutions and Agencies, Regional Economic Communities, African Capacity Building Foundation, African Development Bank, United Nations Economic Commission for Africa, OECD Development Centre, UN Agencies, International Monetary Fund, World

Bank, other international and Regionals Institutions, other partners, Civil Society Organizations and Non-Governmental Organizations.

b) Working languages

The working languages of the meeting will be Arabic, English, French and Portuguese.

c) Documentation

The Commission will send the documents (draft agenda, draft programme of work, relevant background documents) to participants by electronic mail, as soon as the latter have confirmed their participation. Documents will also be made available on the AU website. A separate information note for participants shall be sent to all confirmed participants.

d) Contact Information

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