



Afreximbank Research— Trade and Market Update

Digitalisation and Challenges to Industrialisation in Africa

Digitalisation is increasing at a rapid pace, bringing with it a higher level of automation and inter-connectivity across different stages of production. As a result, new tools, technologies, and machines are being deployed across a range of activities, including for product development and planning, smart machines in coordinating manufacturing, smart service robots collaborating with workers on assembly lines, smart transport systems for delivery, and new fintech applications for payments.

This digitalisation is creating new opportunities to achieve higher productivity, a more diversified and sophisticated production base, increased market access, and global integration. Notwithstanding these opportunities, a digital divide threatens to further widen the gap between developed and developing countries as the latter works to close the infrastructure deficit in the physical and digital space, a precondition for them to fully reap the benefits of the digital revolution. But digitalisation which is expanding growth opportunities is also raising a number of challenges, weakening comparative advantage associated with low labour costs, either leading to slowdown in offshoring or an increase in reshoring of manufacturing which may have significant implications for industrialisation ambitions in countries at early stages of economic transformation.

With the cost of robotics and 3D printers declining by 5-6 percent annually in developed countries and wages in developing countries rising, a persistent digital divide between developed and developing countries is likely to increase re-shoring of manufacturing from developing to developed countries and limit future offshoring, adversely impacting trade and employment in developing economies. For instance, a World Bank study of furniture manufacturing—a low-skilled, labour-intensive tradable sector with relatively high robot intensity—finds that robot costs in the United States will become cheaper than Kenyan formal labour by 2033, suggesting that as technology advances, companies in the United States might find it more cost-efficient to re-shore production back to US factories.

There is also the related risk of more limited offshoring in the future. Digitally advanced production is likely to require greater integration and connection between different stages of manufacturing, based on the use of data and analytics. This can slow down offshoring and lead to loss of 'could-have-been' jobs. This digital revolution is leading corporations in both developed and developing economies to reconsider their growth strategies. This includes China, a country that was expected to offshore more than 85 million jobs in the coming years, but which could retain some of these jobs as a result of digitalisation and technological upgrading. A survey of over 600 light manufacturing Chinese firms finds that while 28 percent of Chinese firms rank rising wages as a primary obstacle to firm operations, 31 percent prefer technology upgrading solutions rather than offshoring to locations with cheaper labour.

Overall, increasing digitalisation, re-shoring, and limited offshoring may have an adverse impact on both jobs and economic growth and development in African countries. As has been done in other developing regions, African countries are using manufacturing to engineer economic transformation and job creation. However, growing digitalisation and servicification of the economy, increasing re-shoring, limited offshoring, and changing knowledge flows in the digital economy are likely to slow down global trade in manufacturing. While developing countries, including African countries, are formulating strategies to move into higher value-added manufacturing, the rise of the service sector in the digital age is also increasingly shifting the distribution of output towards intangibles, such as Research & Development (R&D), intellectual property, design, software, branding, use of data, and others.

To prepare Africa's growing youth population for productive employment and for changes along shifting global value and supply chains, African governments need to invest in both physical and digital infrastructure. At the same time the digital revolution calls for a new set of skills—mainly engineering and digital. Governments should update their education strategies and policies for the 21st century digital age and the private sector should raise investments into research and targeted skills development in the digital field. In addition to skills, increasing the absorptive capacity of African economies and firms through structural transformation will be essential if countries are to fully leverage the benefits of digitalisation.

Effectively enhancing the digital economy and drawing on the digital revolution to accelerate industrialisation in Africa will therefore call for a more integrated approach, including upgrading the whole system of infrastructure that is needed for firms to acquire and absorb technological knowledge in the digital age. These would include the ability to access and acquire foreign knowledge by importing capital goods, licensing, reverse engineering, and others; and improvements in the quality of basic

infrastructure, digital infrastructure, and regulatory reforms, including appropriate intellectual property rights to support Africa's digital ambitions.

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