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UNITED NATIONS
New York and Geneva, 2018

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United Nations publication issued by the United Nations Conference on Trade and Development.

UNCTAD/GDS/ECIDC/2018/1

NOTE

This report was prepared by Unit on Economic Cooperation and Integration among Developing Countries, Division on Globalization and Development Strategies, UNCTAD. The report was authored by Rashmi Banga and Richard Kozul-Wright with helpful comments from Joerg Mayer and Pierguiseppe Fortunato.

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All references to dollars ($) are to United States dollars, unless otherwise stated.

ACKNOWLEDGEMENTS

The author would like to thank M.J. Kisiri (Head, ACP Geneva Office), Jörg Mayer (Senior Economic Affairs Officer, UNCTAD) Elizabeth Jane Kelsey (Professor of law, University of Auckland) and Parminder Singh (Executive Director, IT for Change).

SOUTH-SOUTH DIGITAL COOPERATION FOR INDUSTRIALIZATION: *A REGIONAL INTEGRATION AGENDA*

ABSTRACT

This paper discusses the various components of digital infrastructure to de-mystify digital economy and examines the reasons for growth of big-tech firms and the source of their rent-seeking powers. The extent of digitization of manufacturing is estimated for identified developed and developing countries using world input-output database. The estimated value-added by digital services to manufacturing exports show wide variation between developed and developing countries, indicating the growing digital divide in manufacturing exports. The paper proposes a ten-point South-South digital cooperation agenda which can help the developing countries to build their digital capacities and digital skills. The importance of ownership of data by the national governments is highlighted along with developing regional digital strategies for supporting national digitalization efforts of the developing countries.

1. INTRODUCTION:

The pace of digitization has picked up with the onset of Industry 4.0 or the fourth industrial revolution and with the growing use of digital technologies in traditional manufacturing and service activities. Decisions along the entire value chain of production and distribution have been affected as well as impacting consumer behavior and factor markets, i.e., what to produce, how to produce, where to sell and who to reward. Digital linkages are intensifying as digital services add a competitive edge to manufactured products by being bundled into their production as well as being increasingly used in their distribution. Corporations are transforming their business models: companies are becoming global leaders in providing car services without owning a single car (UBER); accommodation services without owning a single hotel (AirBnB); and retail services without holding any stocks (Alibaba). Disruptions in the existing patterns of production, consumption and investments are invariably affecting international trade and foreign direct investment (FDI) patterns and governments are under increasing pressure to act in order to sustain economic growth, preserve jobs and ensure their firms retain shares in global production, investments and trade.

Like previous technological revolutions, digitization has the potential to tear at the economic and social fabric through destructive and disruptive adjustments (Rotman, 2013; Galbraith, 2014). It also provides new opportunities for wealth creation to countries at all levels of development. But, the benefits of digitization will not be automatic, especially for the developing and least developed countries (LDCs). Technological catch-up has, of course, been a longstanding development policy challenge with the threat of widening gaps from first-mover advantages and the protectionist instincts of technological leaders weighed against the cost and learning advantages to latecomers from being able to import frontier technologies. Still, and whether or not on balance digital technologies pose greater or lesser challenges than in the past, the principle lesson that developing countries, and particularly LDCs, should draw from previous technological revolutions is that it will not be easy to absorb the new technologies in a manner consistent, with, and in support of, wider development goals, let alone to leapfrog in to a digital future (Abramovitz, 1986; Cimoli, et al, 2009). Digital asymmetries and divisions will need to be addressed; significant investment in digital capabilities will be needed to use and develop the new technologies which will in turn require a sound and extensive digital infrastructure. As a result, economic policies in general, and industrial policies in particular, will require a digital dimension to make them more conducive to the changing environment and, as in the past, a more integrated policy framework will be needed to respond effectively to shocks and ensure the gains are widely shared (UNCTAD, chapter VI, 2016). To meet the challenge, developing countries will need support and cooperation not only from traditional development partners but also from regional neighbours. South-South digital cooperation for industrialization can boost the ability of the South to digitally industrialize and successfully gain from the new opportunities and avenues that digitization offers. It can also help countries mitigate the downside risks. There is therefore a need to add a digital cooperation agenda to the on-going regional integration initiatives in the South, especially in Africa.

This study aims to take a first step in this direction by de-mystifying the digital economy and examining step by step the various layers of digital infrastructure on

which it will build; assessing the extent of digitization that has taken place in different countries/sectors by estimating the contribution of digital services to manufacturing output and exports of developing and developed countries; and highlighting the importance of giving the 'ownership' of data to national governments in order to enable them to decide with which countries/regions they want to share this data. The study further provides a possible 10-point agenda on south-south digital cooperation for industrialization which can be initiated at the regional level in order to build digital capacities of the countries and promote regional integration. This agenda will also help the developing countries to prepare for the upcoming challenges which may arise due to digitization.

Section 2 begins by demystifying the digital economy and examining different components of digital infrastructure on which the digital economy is based; section 3 provides estimates of the total size of the existing digital economy; section 4 reports results of the estimations of use of digital services to manufacturing output and their contribution to manufacturing exports in 43 developing and developed countries, using World Input-Output database and national input-output tables; section 5 puts forward a progressive 10-point agenda for south-south digital cooperation, which needs to be initiated at the regional level in order to enhance digital industrialization in developing countries and promote regional integration in the South. Section 6 concludes.

2. DE-MYSTIFYING THE DIGITAL ECONOMY

For many developing countries, understanding the digital economy and its potential impact on development prospects is a daunting challenge, in particular, "the impact that the lack of digital and technological capabilities would have in cementing and widening the technology divide" (WTO, 2017). The communication technologies (ICTs) makes up the digital revolution which is already "transforming our economies and societies by changing the ways people interact, businesses function and innovate, and governments design and implement policies" (OECD, 2017, p. 25).

This emerging digital economy is built on digital infrastructure (DI), comprising three closely interrelated components: ***communication networks***; ***software packages and related capabilities***; and ***data platforms***. Countries have, over the past two decades, been steadily building their digital ***communications network*** around the institutions, skills and practices of the internet as the principle tool for collecting and transmitting information flows. While much of the initial work behind the internet was undertaken with public funding and through various forms of collaboration between public and private institutions, subsequent internet access and connectivity has been dominated by private internet service providers. One of the key technological innovations which has emerged is the interconnection of devices and objects embedded with sensors and software and network connectivity, which enables them to communicate with each other. This interconnection of devises is called 'Internet of Things (IoT)". IoT enables the connecting of data and therefore greatly improves the efficiency of products and services, generating additional value attached to its use.

The second component is the development and use software across a full range of economic activities with increasing emphasis on access through a cloud computing infrastructure. This is a soft infrastructure, which can remotely provide computing services as a general utility to all internet users, including mass market 'internet software' (e.g., operating systems, office suites, etc) and 'internet applications' (e.g., search engines and social media). Cloud computing infrastructure can provide firms with computer-related services like storage, networks, computing,

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