
**Making the
most of the
digital trade era –
inclusiveness,
gender and
development**

A photograph of two women in profile, looking towards the right. They are wearing wide-brimmed hats; the one in the foreground is white with a colorful floral pattern, and the one behind is light-colored with a red and white zigzag pattern. They are standing in a field of tall grass, with a warm, golden sunset in the background.

Chapter 13

**Are digital advances
and inclusive growth
compatible goals?
Implications for trade policy
in developing countries**

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Abstract

Recent years have seen policymakers give increasing attention to two significant, widespread phenomena: rising inequality (the result of uneven access to productive employment) and the quickening pace of the Fourth Industrial Revolution (4IR) or “digital era”. This chapter explores the concept of inequality and why it is important to promote more inclusive growth, especially in developing countries. It also offers insights into how digital advances can serve to accelerate inclusive growth, provided countries have well-informed policies, regulations and institutions to drive the necessary changes. It is evident from a cross-section of the literature and the initial results from a study on the effects of digital advances on inclusive growth in Africa that digitalization and inclusive growth are ideologically compatible. The areas requiring special attention by policymakers in developing countries include: (i) the problem of data inadequacy; (ii) uneven and costly digital connectivity; and (iii) education systems that are not preparing entrepreneurs for in-demand jobs or for the workplace of the future. Two of the prerequisites for leveraging digital technologies in order to drive more inclusive growth are an effective regulatory framework and a commercial environment that is both trade- and investment-friendly.

** The contents of this chapter are the sole responsibility of the authors and are not meant to represent the position or opinions of the WTO or its members.*

Inequality in the digital age

In recent decades, the technological changes sweeping the world have merged into what many people today call the Fourth Industrial Revolution (4IR) – a “digital era” in which data have become an extremely valuable commodity and a source of competitive advantage to countries, industry sectors and businesses alike.

In a highly interconnected world, ongoing digital advances and their numerous applications are changing the way people work, learn and socialize. Many would agree that the digital era has the potential to unlock economic opportunities, particularly in developing countries whose industrialization efforts have often been hampered by resource (including financial) constraints and a difficult business environment. In many countries, digitalization – which facilitates e-commerce, mobile money and other online services – is proving to be the catalyst for new forms of commercial and trade advantage. It is also helping to bring more informal workers into the economic mainstream.

While the 4IR gains momentum, another phenomenon is arguably receiving just as much attention: growing inequality in the world. The problem of inequality, which is mainly associated with employment and social status and mobility, is not new, but in recent years it appears to have become more acute. Some people prefer to talk about a lack of inclusiveness rather than inequality, as a country can simultaneously display a lack of inclusiveness (most people are excluded from the economic mainstream) and a low level of

inequality (most people are equally poor) (Draper, Dorffel and Freytag, 2019). Generally, though, these terms are used interchangeably.

This chapter examines the inequality phenomenon against the backdrop of advancing digital technologies and what developing-country policymakers should be doing to promote a more inclusive approach to their growth and development efforts.

The inequality phenomenon

According to the World Bank, the number of people living in extreme poverty has been declining. However, the rate of this decline has slowed in recent years, which does not auger well for the eradication of poverty and the closing of the inequality gap in many parts of the world (World Bank, 2018). Countries in which income inequality decreased noticeably (measured in terms of the Gini coefficient¹) in the period 2000–2015 include Ethiopia, Indonesia and Lithuania, while countries in which it has increased noticeably during that period include Ecuador, Kenya and Ukraine (Brookings, 2019). As in Brazil and the Middle East, income inequality in Sub-Saharan Africa has remained relatively stable, but it is still at extremely high levels compared to the rest of the world (Alvaredo et al., 2018).

The growing evidence of and preoccupation with inequality are not limited to developing countries. Some developed countries, facing changing demographics and stagnating labour markets, are seeing a growing number of people experiencing economic hardship. A spike in international migration has added another layer of complexity to the situation. In some

countries, growing unhappiness with the status quo has triggered populist uprisings and calls for governments to introduce measures to level the economic playing fields between the so-called “haves” and the “have nots”.

What has led to high levels of inequality in many countries is the subject of much debate. One contributing factor is that people – for historical, political or cultural reasons – do not enjoy equal opportunities to develop their human capital because of varying educational backgrounds, experience and general mobility in the labour market. Human capital suggests more than knowledge and expertise; it also embodies new knowledge, which should be paired with strong institutions as well as sound economic planning and reforms that prioritize modernization and industrialization.

In the developing world (particularly in least-developed countries (LDCs)), various factors have conspired to create a socioeconomic climate in which large numbers of people are denied the employment opportunities more readily available to those with a sound educational background, in-demand skills, access to business tools (including the internet) and the finance to turn fledgling ideas into businesses with commercial merit. In this regard, the most marginalized individuals as far as work is concerned are women, youth and those living in

rural areas. Poverty is one of the inevitable consequences of economic marginalization.

Because youth constitute the bulk of the population in developing countries, they should be heavily represented in the labour market. However, their inexperience and other constraints (including poor education and the lack of strong support systems at home) often dim their prospects of finding work.

The marginalization of many women in developing countries can be attributed to several factors. For example, women are often sidelined in the

workplace because they have additional responsibilities in the home that demand their attention and render them “less reliable” than men. In the absence of domestic help that could free them up to concentrate on paid work and professional development, their economic contribution and remuneration often remain limited. Cultural norms or entrenched bias might also deprive women of the opportunity to obtain a good education, which could put them on a sustainable career path

and afford them easier access to finance, land or other resources to engage in entrepreneurial ventures.

In Sub-Saharan Africa, a key factor contributing to inequality is the unequal distribution of natural resources, which in turn has impacted the quantity and

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quality of available jobs (Odusola et al., 2017). Education is crucial for social mobility. However, it cannot on its own prepare people for the multitude of jobs needed to absorb the high numbers of people, particularly young people, looking for work on the continent. What is also needed is a foundation of sound institutions and economic reforms that prioritize agricultural modernization and industrialization, supported by national and regional value chains (Odusola et al., 2017).

Rising inequality in the world has also been attributed to international trade and technological advances. Trade is widely acknowledged, both in the literature and in policy circles, to be an important driver of economic growth and development. Yet it is sometimes viewed as an obstacle to local economic development if foreign competition is not effectively managed. Similar sentiments have been expressed about technology. The basis of these views is that where people lack skills and capacity, they will fall behind on the income scale because their ability to engage in market-driven, value-added activity is limited. However, the counterargument is that attempting to slow the pace of innovation or to curtail imports would slow economic performance in general, particularly as technology and trade are strongly linked to investment.

Internet connectivity: a divided world

When it comes to digital technologies, the internet is at the heart of it all. Internet connectivity is widely regarded as a critical lever for development. It has the power to connect people globally, fuel new ideas and elevate

economic activities to a whole new level – but it must be accessible and affordable. According to the United Nations Conference on Trade and Development (UNCTAD, 2019a) and the International Telecommunication Union (ITU, 2018), the proportion of the world's population using the internet rose above 50 per cent for the first time in 2018. In developed countries, about 80 per cent of the population are currently connected to the internet, a proportion that is unlikely to change very much in the foreseeable future. Almost all the future growth in online connectivity will be in developing countries. Internet users in developing countries make up roughly 40 per cent of the population – signalling much room for growth (ITU, 2018).

Given the speed of internet adoption in recent years, helped by the fact that the mobile phone is fast becoming an indispensable accessory for daily living, it is predicted that much of the second half of the world's population will all go online – but probably at a more moderate pace than that which has been witnessed to date. As the next few billion people get connected, the dynamics in internet usage will change. For example, video is surging ahead as the most popular internet-driven medium today, particularly among young people who are growing up in a very visual world and who, at least in the poor countries, may lack the linguistic skills to navigate passages of text. This has implications for strategic planning in both government and business circles (ITU, 2018).

Despite these positive predictions, the fact that billions of people remain disconnected from the online world

greatly complicates the affected countries' economic and trade policies and performance. An area of concern for policymakers is how to plan and work towards a digitally powered future, together with regional and global trade and investment partners, while also tackling fundamental economic shortcomings at home.

Many developing countries find it difficult to deliver reliable and affordable internet access because of inadequate infrastructure, high-cost information and communications technology (ICT) services and skills deficiencies, among other factors. Another developmental shortcoming is the lack of adequate data (especially at a disaggregated level), which means that businesses and policymakers are largely out of touch with local demand patterns. Adding to the problem of inadequate data is the fact that many small businesses operate informally, without a legal identity, and therefore escape attention because they remain "under the radar". Not only do challenges such as these create a digital divide between developed and many developing countries, but they also exacerbate divisions within countries, which can have serious economic and social consequences.

Internet access, though, is only part of the story. Countries need to adopt a holistic digital economy mind-set if they wish to see their growth and development efforts deliver sustainable results, which are in harmony with 21st century realities. In the developing world, governments have a vital role to play in creating the type of environment that allows countries to both catch up and keep up in terms of digital adoption and development.

Trade in the digital age

Besides the internet serving as the hub for e-commerce and myriad other online exchanges and transactions, the acquisition and development of digital technologies has important implications for trade. In recent years, global exports of ICT and digitally transmitted services have grown more rapidly than services exports overall. Interestingly, from 2005 to 2018, the growth in digitally delivered services was higher in developing countries (including Sub-Saharan Africa) than in the rest of the world. Digitally delivered services exports had an estimated value of US\$ 2.9 trillion in 2018, which equated to 50 per cent of global services exports that year (UNCTAD, 2019b). Digitally delivered services exports from LDCs constituted 16 per cent of global services exports in 2018, which signalled a substantial increase compared to previous periods (UNCTAD, 2019b; WTO, 2018).

Interestingly, ICT goods exports were valued at US\$ 1.9 trillion in 2017, which was higher than ICT services exports that year (valued at US\$ 536 billion). Today, the leading exporters of ICT goods are largely found in East and South-East Asian countries (UN, 2019).

1. Digital advances and inclusive growth: exploring the relationship

In the face of growing inequality, many people are talking about the need for "inclusive growth". Can a country achieve its goal of closing the inequality gap and creating a more inclusive society, while at the same time systematically embracing digital technologies? The answer lies in an analysis of the synergies and possible tensions between inclusive growth,

on the one hand, and digital advances, on the other.

What is inclusive growth?

The term “inclusive growth” has grown in popularity in recent years, appearing in policy documents, economic analyses, academic articles and business commentaries. It lacks a universally accepted definition, though.

One interpretation is that inclusive growth refers to a combination of increased participation of poor and marginalized people in economic activity (via employment) and increased sharing in the benefits of growth (Fourie, 2014). Some authors see inclusive growth as having components relating to income, poverty, employment or distribution (equity) (Anand et al., 2013; Klasen, 2010; Ramos et al., 2013). Another interpretation is that inclusive growth refers to the opening up of economic opportunities and benefits, especially to underserved or vulnerable groups, so that a country’s economic performance becomes more balanced and sustainable (Ianchovichina and Lundstrom, 2009).

Ianchovichina and Lunnstrom (2009) assert that the pace of growth can be hastened if ways can be found to utilize labour more productively, which would include those who are trapped in low-productivity activities or are completely excluded from the economic system. However, they emphasize that inclusive growth should

not focus only on the poor. It should be broad-based across sectors and inclusive of the country’s existing and potential labour force. The poor, as an underserved or vulnerable group, naturally deserve special attention, but not at the expense of other deserving economic segments, such as women (who are not necessarily poor) and aspiring entrepreneurs (whose economic contribution could be significant but whose specific needs often escape the attention of policymakers).

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Ianchovichina and Lundstrom (2009) also stress that inclusive growth is not simply about redistribution. It is about growing the economy or enlarging the “economic pie” (which would create new jobs) and making the economy more productive (which would boost incomes). They stress that government-driven industrial policies – which are an integral part of many countries’

development efforts – should be implemented in a prudent manner so as not to disrupt natural market forces or introduce a heavy regulatory burden. In other words, inclusive growth policies should be geared towards removing constraints to growth. This would make government an enabler of growth, not the main driver of it, which is largely a private sector responsibility. This does not mean that there is no room for regulation. Economic activity needs to be regulated in effective ways and unfettered competition should be discouraged. However, the priority

should be given to efficiency-enhancing structural transformation and economic (including export) diversification.

More inclusive growth has fiscal advantages. This is because more economically active and productive people mean higher tax revenues and less dependence on artificial support measures, such as government grants and other forms of social welfare. Inclusive growth also gives way to greater social stability as more people are engaged in occupations that make use of their time and their skills. Finding satisfying occupations that allow people to support themselves and their families is an important step on their journey towards personal fulfilment and dignity.

There is general agreement that economic growth (or gross domestic product (GDP)) is a prerequisite for inclusive growth. Whereas economic growth is a clearly defined measure of the value of goods and services produced by a country, inclusive growth is a broader concept, implying the equitable share of economic opportunities and benefits in society (Draper et al., 2019). Inclusive growth builds on economic growth by also focusing on specific segments, including the underserved groups whose contribution is not captured in the formal economic growth equation. In this context, inclusive growth is one of the cornerstones of sustainable development and its various components feature strongly in the United Nations (UN) Sustainable Development Goals (SDGs) (Draper et al., 2019).

However, inclusive growth is not a natural consequence of economic

growth. For example, Anyanwu (2013) points out that the high growth rates realized by a number of developing countries in recent years have not translated into inclusiveness, either during the development process or in its outcomes.

How are digital advances changing the world of work?

In policymaking circles, one of the main concerns about digital advances is their impact on employment. Opinions vary on whether, the extent to which or how quickly digital advances in the form of automation/robotics, artificial intelligence (AI), the Internet of Things (IoT) or 3D printing will affect traditional jobs. Yet no country can afford to ignore the encroaching reality of the world of work undergoing significant change – especially as the availability and quality of jobs are at the heart of the inclusive growth debate and form the bedrock of orderly, sustainable societies (Wisskirchen et al., 2017).

E-commerce, which, simply put, refers to digitally ordered, digitally delivered or digital platform-enabled transactions (BEA, 2018), is one of the central pillars of the digital economy. The ability to buy and sell online enables people to engage in business transactions that would be much more expensive or even logistically impossible if more traditional methods were used. E-commerce is not new, although the technologies that drive it (more rapid broadband, increasingly sophisticated mobile devices, more user-friendly and cost-effective payment platforms, and so on) are developing all the time.

E-commerce is particularly liberating for those who are looking for cost-

effective inroads into local and international markets, for those who are looking for flexibility and anonymity in their working environment, and for consumers who enjoy the freedom to transact at the times that suit them, using no-fuss payment arrangements. Of course, buying and selling physical goods online still require traditional logistics and distribution services, but the digital components of the transactions can greatly streamline the engagement between buyers and sellers.

AI and advanced robotics/automation often go hand in hand. Not so long ago, robots were mainly seen as replacements for humans performing routine, repetitive work. Human-less factory production lines and storage facilities are typical examples of robotics at work. However, the science behind robotics is becoming more and more sophisticated, with some robots now able to engage in intelligent reasoning and decision-making.

AI, in turn, is a collection of technologies, including computer vision, language processing, robotic applications and virtual agents, that are able to mimic humans' cognitive functions. Drones, autonomous vehicles, and facial and voice recognition applications all rely on AI. AI allows the processing and interpretation of huge quantities of data, which can speed up and enhance the quality of organizational decision-making. Also intriguing is AI's capacity for self-learning. There are plenty of stories of machines teaching themselves how to perform certain tasks after a short period of self-tuition, simply by studying the rules or procedures. However, concerns have been expressed about whether

high-level decisions requiring careful deliberation on matters of ethics and fairness can be left to machines.

The advent of 3D printing, in turn, is changing traditional manufacturing patterns and cost structures, with the quest for high-volume economies of scale and inexpensive production locations giving way in some cases to reshoring, on-demand production runs that cater to more specialized requirements and shorter global value chains (GVCs).

One of the defining features of the digital era is the immense quantity of data that are stored and processed in the cloud. Data are the pulse of the digital economy, originating in sensors and tracking systems, security cameras, point-of-sale transactions and innumerable other sources – even social media activity, such as app purchases, status updates and “likes”. Access to data is becoming a crucial competitive advantage, particularly when working across disciplines (such as marketing, finance, production and logistics), and has become increasingly affordable.

However, concerns about ownership of information (which has trade policy implications) and privacy and security are growing. Regarding the latter, the distinction between friendly online overtures from marketers and unscrupulous data mining is often far from clear. Cybercrime, in turn, is infiltrating more and more online applications and becoming more sophisticated. Often, countries' laws and regulations – conceived in an earlier era – are ill equipped to detect, pass judgment on or curtail errant or illegal behaviour in the digital space.

Digital advances: An economic driver or divider?

While some believe that the 4IR provides disadvantaged or excluded communities with the opportunity to improve their economic circumstances, others see the potentially corrosive effects of digital advances on societies that are at a relatively low level of development. The question should be asked: are digital advances an economic driver or divider?

It has been suggested that access to digital technologies could be a significant enabler for women and young people who are unemployed or operating on the economic fringes. For example, keeping in touch and engaging in marketing and financial transactions via cell phone could make a significant difference to their economic circumstances. The fact that such activities can be performed relatively inexpensively is an important enabler.

In addition, more women tend to work in the services sector than men (OECD, 2012). The fact that many services have become more accessible due to digital developments augers well for women's greater inclusion in the economy. For youth, the internet is an endless source of information about entrepreneurial possibilities and online courses. Because many young people have grown up with the internet, they could be good candidates for digitally supported work.

Notwithstanding the above, today the ability to manage and commercialize large quantities of data is becoming a key factor in the creation of competitive advantage, employment and wealth. Such technological prowess tends to be concentrated in advanced and

emerging-market economies. For example, eight of the 10 largest technology companies in the world – Apple (#1), Alphabet (the parent of Google) (#2), Microsoft (#3), Intel (#5), Facebook (#6), IBM (#8), Cisco (#9) and Oracle (#10) – are American. The other two – Samsung (#4) and Tencent (#7) – are South Korean and Chinese, respectively. Furthermore, it is mainly the Organisation for Economic Co-operation and Development (OECD) countries and the members of the European Union and BRICS (Brazil, Russia, India, China and South Africa) that have AI policies in place (Ndzendze and Marwala, 2020).

Many poorer countries talk about embracing the 4IR in order to enhance productivity and competitiveness, and to avoid being left behind in terms of economic development and trade. However, such aspirations might be tempered by the “Matthew effect”. This concept (originated by sociologist Robert K. Merton in the 1960s) relates to the tendency of those with an advantage to gain a further advantage, while the disadvantaged tend to slip further behind. In other words, the “rich get richer and the poor get poorer” (Rigney, 2010). Where the Matthew effect is in evidence, inequality supposedly becomes self-perpetuating and self-amplifying unless there are specific interventions to arrest its momentum (Ndzendze and Marwala, 2020).

With the world already characterized by high levels of inequality and stark differences in wealth and well-being, there is the danger that the unfolding digital era will simply exacerbate existing divisions. In his book *The Bottom Billion*, Paul Collier notes that the poorest people in the world tend

to live in countries that have a weak industrial and technological base (Collier, 2007). He notes that while it is possible for poor and technologically deprived countries to catch up (China, Singapore and South Korea are examples of countries that made the transition), it requires significant foreign direct investment to enhance their technological readiness, along with sound macroeconomic policies and heavy investment in skills development. All this points to the critical importance of formulating and implementing well-informed and forward-looking economic and trade policies.

Despite its potential to bring about positive change, the 4IR and all that it embodies – from large, physical infrastructure to hardware, software and ICT support services – are at times viewed with circumspection by developing-country policymakers. This is because they see 4IR as a threat to local industry and employment, especially when some traditional jobs are likely to be replaced by machines or more scarce skills are called for (which may not be available locally). As digital advances often have an international origin – which can be associated with uncomfortable levels of competition – countries' trade policies might even discourage foreign investment in certain industry sectors.

Such concerns about foreign competition and the potential impact on local industries should not be disregarded. There is growing tension between developed and developing countries over the extent to which data flows should be regulated across borders. The developed-country argument centres on the importance of digital liberalisation in the interests of market expansion and its associated

benefits. In contrast, the developing-country argument stresses that digital liberalisation, as envisaged by technology giants like Amazon, Facebook and Google, would make it extremely difficult to build digital capacity and traction (particularly among start-ups) at the domestic level (Third World Network, 2019).

A preferred option among many developing countries is to grow their own digital content and capabilities across various industry sectors, while exercising some control over data flows through data localization (ownership) rules and possibly even tariffs on cross-border digital trade. This is more indicative of a digital industrialization strategy which South Africa, for example, advocates (Roberts et al., 2019).

Measuring digital advances and inclusive growth

Growth should by definition be measurable. However, the different meanings attached to inclusive growth and the scarcity of data delineating the various elements of inclusivity make the measurement of inclusive growth challenging.

A number of international organizations (including the OECD, the World Bank and the World Economic Forum (WEF)) have arrived at measures of inclusive growth or development. For example, the WEF developed an Inclusive Development Index (IDI), the rankings for which are determined by the number of national performance indicators, with four pertaining specifically to "inclusion": median household income, poverty rate, and income and wealth Gini indices. According to the 2018 IDI, which ranked a total of 74 countries, the most

inclusive countries included Australia, Denmark, Iceland, the Netherlands, Norway and Switzerland. The least-inclusive countries included Chad, Egypt, Malawi, Mozambique, South Africa and Zimbabwe. Among the G20 countries, Argentina, Australia, China, Germany and the Russian Federation were at the upper end of the inclusiveness scale, while India and South Africa were at the bottom (WEF, 2018).

Measuring digital advances, in turn, is far from simple or straightforward because of the speed with which things change. However, it is possible to track variables such as internet connections and mobile subscriptions in different countries and regions. Not surprisingly, the more advanced countries are far more connected and digitally active than most developing countries – with Africa in general trailing behind the rest of the world (World Bank, 2016).

In a study on the compatibility of the goals of digital advances and inclusive growth in Africa using data from the World Bank, UNCTAD and the OECD, three indicators were selected as proxies for digital advances (international trade in digitally delivered services; ICT goods as a percentage of the total population and the number of people using the internet as a percentage of the total population). Six indicators were selected for inclusive growth (employment, youth employment, vulnerable employment, employment–population ratio, GDP per capita and life expectancy at birth) (Viviers, Parry and Jansen van Rensburg, 2019).

Among the early findings from the study are that there is a positive

correlation between internet usage and digital trade in goods and services, on the one hand, and a reduction in vulnerable employment, on the other. In addition, there is a positive correlation between greater internet usage and life expectancy. A possible reason for this is that the integration of digital technologies in healthcare in recent years has helped to map and monitor general illnesses and the spread of infectious diseases, track drug supplies and vaccines, and gauge the quality of care provided (WHO, 2018). The study has so far also shown that digital developments impact inclusive growth indicators differently, depending on factors such as employment sector, age and gender of the population (Viviers, Parry and Jansen van Rensburg, 2019).

There is much scope for individual and groups of developing countries to determine positive or negative correlations between digital and inclusive growth indicators so that policies are formulated from a well-informed base. This is important since the opportunities and challenges faced by vulnerable groups are often given inadequate attention at the policy level.

2. Digital advances and inclusive growth: policy implications

Regarding the influence of digital advances on inclusive growth, Gillwald (2019) is of the following view:

There is nothing inherent in so-called 4IR technologies of artificial intelligence, blockchain or drones that will result in economic growth, job creation or empowerment of the marginalised. Evidence from the so-called third industrial revolution tells us we should not take for granted that technology will translate

into wage or productivity growth – unless we develop a good set of complementary policies both as business and government.

In light of the above, and bearing in mind the “Matthew effect”, one can conclude that economic marginalization, the digital divide and other manifestations of an unequal society will not diminish unless they are specifically addressed at a high level. In the same way, inclusive growth will remain a distant, largely unattainable goal – despite all the new opportunities that the 4IR has brought in its wake – unless there is a supportive policy environment to drive the process.

The literature and the empirical analysis (see, for example, Parry, Viviers and Jansen van Rensburg, 2019) suggest that digital advances and inclusive growth have compatible ideals.

However, a complicating factor is that many developing countries (including China, India and South Africa) have very uneven development profiles. For example, while some segments of society have successfully transitioned to high levels of digital awareness and application, which adds lustre to an established industrial base, other segments remain trapped at the very lowest levels of development, unable to escape from simple economic pursuits, like subsistence farming. Many of those who live in the cities have no work at all. Closing the gap between those that have been left behind and those that are keeping the country on the map in terms of innovation is one of the most urgent challenges of governments today.

It seems inevitable that a two-pronged approach is needed at the policy level – one that facilitates “catch-up”

among vulnerable and excluded groups and one that encourages and rewards innovation and technological excellence.

In working towards a comfortable convergence between digital advances and inclusive growth, developing countries should note the following key policy implications:

- *Policymakers and their social partners need to arrive at a common understanding of inclusive growth and realistic goals for achieving a more inclusive society.* Giving these aspects definition will pave the way for specific targets and timelines to be set and accountability areas to be determined. It is also important that inclusive growth initiatives focus on expanding the economy in sustainable ways and making it more productive, rather than relying on redistribution.
- *The problem of data inadequacy needs to be addressed.* An important strategy in this regard is to ensure that the research community is adequately funded and capacitated and that it engages frequently with economic policymakers, regulators and other government stakeholders. This would, among other things, reveal the positive or negative correlations between different elements in the digital-inclusive growth mix and help to steer policy.
- *The problem of inadequate (including geographically uneven) digital connectivity needs to be resolved.* Sometimes connectivity problems are a sign of a much deeper malaise – such as an erratic power supply, low skills levels or a trade policy that restricts foreign investment and imports of digital goods and services. Structural transformation is therefore

required in priority areas to open the door to more economic (and particularly entrepreneurial) opportunities.

- *An effective regulatory framework is required to manage digital developments and data flows.* Such a framework should provide legal and regulatory certainty and allow a prudent level of control, particularly in respect of cross-border data flows and ownership, and the protection of privacy and intellectual property rights.
- *Current approaches to education and skills development need to be overhauled to address current weaknesses and to prepare people for the future.* The aim should be to put young people onto a surer path professionally while also re-skilling older people whose traditional occupations may be threatened by advancing technologies. As digitalization will continue to encroach on traditional jobs in the formal sector, opportunities for entrepreneurship (from training to financial assistance) need to be unleashed to absorb new entrants in the labour market as well as more experienced workers displaced by new technologies.
- *A digital trade policy is needed that caters to a country's level of development and relative inclusivity.* While a country may aspire towards building local capacity and expertise, a lack of inclusivity and an accompanying digital divide would necessitate high levels of foreign investment, supported by suitably liberal policies to allow inflows of ICT products, services and expertise.

Digital advances cannot, on their own, provide a shortcut to inclusive growth

and development or a fast pass into the future. The necessary foundations need to be in place before a digital policy framework can be formulated and successfully implemented. It is like building a house – without solid foundations and a sturdy, supporting structure, the house will be inherently weak and it will be difficult for it to withstand external pressures.

Endnotes

¹ Luebker (2010) describes the Gini coefficient (or Gini Index) as a summary of the extent of inequality in a single figure. According to the author, the Gini coefficient can theoretically take any value between 0 (perfect equality where everyone has the same income) and 1 (perfect inequality where all income goes to a single person).

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Comments



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Digital technologies are changing the way we consume, produce and trade. Thanks to the use of the internet, consumers and firms have direct access to online markets. Companies increasingly use artificial intelligence (AI) and big data to analyse consumers' online shopping habits and adapt products to their preferences. Businesses use the Internet of Things (IoT) to increase efficiency by improving maintenance of machinery and products, and also by selling new digital products and services.

As the authors of this chapter stress, digital technologies create new opportunities of development, as they may help overcome some of the financial constraints and difficulties of the business environment that hampered industrial development. By creating new ways of trading goods and services, digital technologies may modify comparative advantage. For instance, digital technologies make it possible for firms in remote, least-developed countries (LDCs) to sell products around the world. Digital technologies such as 3D printing make it possible for countries with appropriate resources of raw materials to localize production and supply customized goods without the need to set up a whole industry, for example, for small firms to develop a software component for printers. Mobile

banking and blockchains technologies, with their tracking systems, may help reduce problems related to the lack of institutional credibility for borrowing and lending or of product certifications of origin, even for agricultural products.

The potential force of inclusiveness of digital technologies goes beyond fostering development in poorer countries. It is also a force of inclusion for the poorer within a country – these are typically small business and women.

By significantly reducing the cost to access international markets, digital technologies provide new opportunities for small businesses to benefit from trade. Firms trading on the internet tend to be on average smaller than those that trade offline (Lendle et al., 2016). The system of verification possible through digitally enabled services helps solve the problem of trust that hampers small businesses. The development of a plethora of bed-and-breakfast facilities and holiday homes is one example of the type, as the rating provided by users of digital platform signal the quality of the service. In the case of women, digital technology not only improves women entrepreneurs' access to external finance, but it also eases the time burden of women workers or women entrepreneurs who have to handle both domestic duties and work.

* The contents of this commentary are the sole responsibility of the author and are not meant to represent the position or opinions of the WTO or its members.

Despite these benefits, digital technologies present a number of challenges. The authors highlight two major issues: the digital divide between richer and poorer economies and the risk of loss of privacy. There are also large inequalities in access and the ability to use digital technologies within countries: between old and young, women and men, and small and large firms. Small and medium-sized enterprises (SMEs) have less access to digital technologies than do large firms, and women have less access to digital technologies than do men (World Bank Group and WTO, 2020). The adoption of a development framework based on these new technologies may create important distributional consequences if these differences are not tackled.

The chapter highlights some of the policies that governments in developing countries can put in place to prepare for the changes that new technologies will bring about:

- Improving inadequate and geographically uneven digital connectivity.
- Developing an effective regulatory framework to manage digital developments and data flows. In this context, governments need to balance the legitimate objective of digital development with those such as consumer protection, cybersecurity and data privacy in ways that are not more trade-distorting than necessary.
- Addressing current weaknesses in education and skill developments to meet those required by the digitalization process. Note that this is important not only for workers (who need to be retrained), but also for consumers (older people can reap the benefits of new technology, but they need digital training) and self-employed individuals who can now access the global market.
- Creating the business environment to attract foreign investment, supported by suitably liberal policies to allow inflows of information and communications technology (ICT) products, services and expertise.

It is worth stressing further the role that trade policy can play to create the

appropriate environment for a country to take advantage of the opportunities that digital technologies provide and to attract investments. First, some digital trade policies can help reduce trade costs. For example, by enhancing data exchanges and allowing for the harmonization of e-certificates, governments can boost the impact of digital technologies to facilitate trade operations and

customs cooperation. Second, trade policies related to services sectors, such as finance, distribution, logistics and transport, are also key determinants of the extent to which a country can reap the benefits of digital technologies. Digital platforms can only partially help to reduce trade costs if uncompetitive transport services result in exorbitant transport costs. Third, goods-related

“One policy that can help to bridge the digital divide is by making further commitments under the General Agreement on Trade in Services.”

trade policy measures matter too. These include, for example, import tariffs on informatics and telecommunications equipment or a *de minimis* threshold to allow more shipments and parcels, typically shipped by individuals and small businesses engaging in cross-border e-commerce, to trade duty-free. In all of these cases, policies need to be carefully designed to take into account potential import-competition disruptions that may be caused by technology and policy changes.

Beyond the diverse unilateral measures that governments can put in place to reap the benefits of digital technologies and minimize risks, there is also an important role for international cooperation to play to make digital technologies more inclusive.

First, international cooperation may help to tackle the potential negative impact of digitalization on competition. One characteristic of digital technologies is that they are characterized by network externalities, that is, the value of the network increases with its size. When choosing between two products, consumers prefer the product with more users. In these circumstances,

winner-takes-all dynamics prevail and deter further market entry. Market dominance issues emerge. Product competition becomes fiercer, and some platforms create monopoly positions with big rents. They will tend to be geographically concentrated, since talented people and successful firms are concentrated. This may hinder

innovation and increase persistence of geographical inequalities. The issue of the power of digital platforms is particularly relevant for a large number of developing countries. Large digital providers, firms and platforms predominantly originate from a few countries. National competition authorities are likely to play a prominent role. But, since digital firms tend to be international, there is a rationale for international cooperation.

Second, international cooperation may address the issue of data availability. In a digital world, data availability is key for innovation in business models and for process optimization in the supply chain. Increasingly, data are essential to determine firms' competitiveness

and a country's comparative advantage. Data therefore are kept internal to firms. This raises an important challenge of structural inequality within and across countries.

Third, international cooperation may help to resolve some of the tensions generated by uncoordinated unilateral approaches to digitalization. Over the last decades, governments have

introduced several policies related to digital technologies. Some of these policies have created tensions. Other policies may simply have been unnecessarily divergent. This led some countries to look for a more coordinated approach. This need is reflected in some recent regional trade agreements (RTAs) that include digital technology-

“By significantly reducing the cost to access international markets, digital technologies provide new opportunities for small businesses to benefit from trade.”

related provisions, such as on the cross-border transfer of information, data localization requirements, e-signatures and e-authentication, protection of personal information of e-commerce users, and so on.

Finally, ongoing World Trade Organization (WTO) negotiations and joint initiatives related to services, electronic commerce and micro, small and medium-sized enterprises (MSMEs) can help deliver more inclusive digital development. One policy that can help to bridge the digital divide is by making further commitments under the General Agreement on Trade in Services (GATS). This could be a way to enhance policy credibility and thereby help attract foreign direct investment. As discussed

in the chapter and in this commentary, it is key to tackle the specific obstacles that MSMEs and unskilled workers (many of whom are women) face to take advantage of the opportunities that these new technologies present, as well as their costs of adjustments. Discussions at the WTO can work to this purpose.

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