

BRIDGING THE DIGITAL DIVIDE AND SUPPORTING INCREASED DIGITAL TRADE: SCOPING STUDY

Shamel Azmeh & Christopher Foster



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The Global Economic Governance (GEG) Africa programme is a policy research and stakeholder engagement programme aimed at strengthening the influence of African coalitions at global economic governance forums such as the G20, BRICS, World Trade Organization and World Bank, among others, in order to bring about pro-poor policy outcomes.

The second phase of the programme started in March 2016 and will be implemented over a period of three years until March 2019.

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- undertaking substantial research into critical policy areas and helping South African policymakers to prepare policy papers for the South African government to present at global economic governance platforms;
- ensuring that African views are considered, knowledge is shared and a shared perspective is developed through systematic engagement with African governments, regional organisations, think tanks, academic institutions, business organisations and civil society forums; and
- disseminating and communicating research and policy briefs to a wider audience via mass media and digital channels in order to create an informed and active policy community on the continent.

The programme will be focused on three thematic areas: development finance for infrastructure; trade and regional integration; and tax and transparency.

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EXECUTIVE SUMMARY

The global economy is experiencing important technological shifts, with the rise of digital technology a key driver. This can be seen today in the rapid growth of the digital economy, broadly defined as the use of digital technologies to facilitate business transactions, including production, exchange and consumption, and encompassing e-commerce, digitally delivered services, online payments and digital media. These shifts are likely to intensify in the coming years with new technologies that are emerging on the back of these earlier developments, such as artificial intelligence, cloud computing and autonomous vehicles.

The associated rise of 'digital trade', defined as the use of digital tools to exchange goods and services across countries either through digital intermediation or digital delivery, highlights the growth of information, products, services and financial flows exchanged through the Internet and underpinned by global data flows.

The economic implications of the growth of digital trade are yet to be fully understood. Today, the three major economic powers – the US, the EU and China – are engaged in what can be described as an arms race to dominate these 'industries of the future'. While the US was the early pioneer in the digital field, China has achieved rapid catch-up as a result of a highly interventionist industrial policy. The EU, for its part, is attempting a different path to digital development, driven by a fear of being left out of these new technological spaces.

In this context, developing and emerging economies face a serious challenge. On the one hand, the digital economy provides an opportunity to leapfrog and achieve economic and technological catch-up through using digital technologies and building capacities in the digital economy. On the other hand, these technological shifts threaten to widen the technological divide, with advanced economies making ongoing catch-up efforts ineffective. As such, developing and emerging economies need to understand these shifts and integrate digital policies into their industrial and economic development strategies.

This digital gap between developing and developed countries is often referred to as the 'digital divide'. While originally discussed in terms of Internet connectivity, a contemporary digital divide might be better conceptualised as the ability of developed countries to shape the direction of technological change and reap most benefits of these shifts, illustrated in the way advanced economies are rapidly dominating the digital economy and digital trade.

Firms from advanced economies are developing new digital technologies and benefitting from first-mover advantage and network effects to dominate emerging economic sectors. As a result, instead of empowering developing countries, digital changes are threatening to further weaken their position in global value chains in terms of control, value creation and value capture. Often this is exacerbated by the practices of leading digital firms that shift profits between different jurisdictions, affecting public revenues in many developing countries.

This discussion paper aims to provide an overall framework for examining these challenges in more detail. We first highlight the overarching economic shifts taking place as a result of digital transformation and their impacts in developing and emerging economies. We then provide a framework for systematically analysing these policies and establishing the basis of the subsequent research, looking at both policies that support markets in enabling digital trade and digital catch-up policies. While policymaking in this area is still nascent, through exploring policy activity across countries we are able to highlight a range of policies undertaken. From this analysis, we conclude that case studies of Brazil and from the Association of Southeast Asian Nations region can provide broader insights on policymaking in this area.

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DIGITAL TRANSFORMATION AND THE RESTRUCTURING OF THE GLOBAL ECONOMY

KEY POINTS

- The global economy is experiencing important technological changes driven by digital technology.
- The organisation and geography of, and value distribution in, global value chains are being affected.
- These shifts have important future implications for the developing world and for the economic and technological gap with advanced economies.

Major technological changes are taking place in the global economy. The evolution and dissemination of digital technologies are causing important shifts in the organisation of the global economy across different sectors. While such changes were initially felt in areas such as e-commerce, media and entertainment, it is evident that these shifts are beginning to have cross-sectoral economic impacts. In addition to the continuous growth in e-commerce, we are today seeing important changes in a wide range of economic activities such as services, manufacturing and

agriculture. In services, we are seeing a rapid growth in digitally delivered services that affect the service sector, trade in services and the ability to deliver services across national borders. In manufacturing, new innovations linked to robotics, artificial intelligence (AI) and machine connectivity are starting to re-shape models of industrial organisation through what is often referred to as 'industry 4.0', affecting traditional paths to industrialisation. In agriculture, new tools based on advanced sensors and data analysis are being tested and implemented in different parts of the world. Importantly, these new technologies are not only changing sectors but also blurring the lines between these different economic sectors. As products increasingly integrate tools that are traditionally seen as services, the line between products and services is being blurred.

New technologies are not only changing sectors but also blurring the lines between these different economic sectors

Data is emerging as a crucial resource in this digitalised economy. We are witnessing a rapid expansion in the collection of consumer, mobility and industrial data in different economic activities. The expansion in data capture is directly linked to the expansion of data storage capacities in the past two decades, including through cloud computing. According to market research firm MarketLine, global cloud computing revenues increased from \$27.6 billion to \$89.3 billion over the period 2012–2016, with growth expected to continue.¹ The economic value of data is realised through the ability to conduct data analysis and use the resulting analytical information, often in real time. Advancement in data analytics, AI and other tools are important for extracting more intelligence from data.

This growing importance of digital trade and data can be seen in the rapid growth in cross-border data flows. A report by McKinsey Global Institute shows that cross-border data flows have increased from 4.7 terabytes per second (Tbps) in 2005 to 211.3 Tbps in 2014, a 45-fold increase. The report estimates that these flows will increase nine-fold by 2021.² While a large share of global flows takes place in the developed world, the developing world is increasingly integrated into global data flows. These shifts, in technology and data, have important implications for the nature of the global economy and the forms of global value chains. We move to discuss some of these implications.

1 USITC (US International Trade Commission), *Global Digital Trade 1: Market Opportunities and Key Foreign Trade Restrictions*. Washington DC: USITC, 2017.

2 Manyika J et al., *Global Flows in a Digital Age: How Trade, Finance, People, and Data Connect the World Economy*. Washington DC: McKinsey Global Institute, 2014.

DIGITALISATION AND GLOBAL VALUE CHAINS

Digitalisation is likely to have important implications for control, geography and organisation and value capture in global value chains.

Organisation

Production of goods and services is organised along value chains that link different actors performing different tasks. The extensive literature on global value chains has investigated how these chains are organised across different countries and how the relationships between these different actors in the chain are constructed, maintained and transformed. Digitalisation is starting to have important impacts on the organisation of these chains in a number of sectors.³ In many cases, this can be seen in the entry of new actors into these sectors based on the growing role of data. In some instances, those actors are developing their own organisational structures to offer products and services that compete with incumbent players. In other cases, new digital-based firms are providing services and developing partnerships with incumbent firms in these sectors, resulting in a major role for digital firms in such chains.

Geography

The organisational changes also alter the geography of these chains. This takes place when economic actors make decisions on where activities in the value chain will be conducted. The rationale behind these locational choices is complex and reflects a wide range of factors, such as proximity to consumption markets, input and cost of labour, among others. Digitalisation promises to have important implications for these decisions. In many industries, the global value chain reflects a compromise between time-to-market and production costs. But new advancements in robotics and 3D printing allow lead firms to address this compromise through automated and local production. Adidas, for instance, is currently testing new ‘speed factories’ that will be located in Germany and the US to produce for these markets, rather than importing products from abroad. Start-ups such as Softwear are developing automated garment production lines. Furthermore, digitalisation could affect the type of skills needed for specific activities in global value chains, which could have implications for where these activities take place. As yet, the outcomes of these geographic changes in value chains are unclear, but trends suggest that it might reverse the offshoring and fragmentation of production seen in recent decades, potentially leading to re-shoring of production.

3 Butollo F, ‘Digitalisation and the Future of Globalized Production: Exploring the Issues’, Paper presented at SASE 2017 (Society for Advancement of Socio Economics) conference, Lyon, 29 June – 1 July 2017; Foster C *et al.*, ‘Digital control in value chains: Challenges of connectivity for East African firms’, *Economic Geography*, 94, 1, 2018, pp. 68–86; Rehnberg M & S Ponte, ‘From smiling to smirking? 3D printing, upgrading and the restructuring of global value chains’, *Global Networks*, 18, 1, 2018, pp. 57–80; Sturgeon T, ‘The “New” Digital Economy and Development’, Technical Note. Geneva: UNCTAD (UN Conference on Trade and Development), 2017.

Control and value distribution

Global value chains also determine the distribution of value between different activities and locations. As economic literature highlights, this distribution reflects the specific rents that different actors can extract based on the resources they control. These activities/resources are protected through establishing barriers to entry. Those barriers can be ‘natural’ (eg, control of natural resources in the energy sector) or built through technological advancement, investments in brand and marketing or other sources of rents.

Digitalisation creates new resources through which rents can be generated. Data is the most obvious of these. As data becomes an increasingly important resource in the economy, the control of data becomes a significant source of economic rent. Companies that provide ‘smart agriculture’ solutions, for instance, will be able to extract value through gathering, storing and analysing data associated with the production process. Another emerging resource for value capture is related to the control of ‘Internet platforms’. These are websites and online applications that act as large-scale Internet intermediaries and generate value by bringing buyers and suppliers of services together (eg, Amazon, Uber, Airbnb) and by creating environments in which other firms and individuals develop products and services (eg, Android, Apple).

Digital firms that are able to extract high value tend to create barriers to entry to maintain their positions. High economies of scale, large sunk costs and ‘network effects’ involved in the digital economy contribute to these barriers to entry and are leading to a rise in data and platform monopolies, with important implications for the future of value chains.

DIGITALISATION AND THE DEVELOPING WORLD

While these transformations are likely to have implications across the global economy, the nature of these changes will differ between different countries according to the policies they undertake. Countries that gain knowledge and control

Countries that gain knowledge and control of new technologies are likely to benefit from these shifts and extract value added from this technological control. Alternatively, countries that fall behind the ‘digital technological curve’ are likely to lose value added and see their global economic position weakened

of new technologies are likely to benefit from these shifts and extract value added from this technological control. Alternatively, countries that fall behind the ‘digital technological curve’ are likely to lose value added and see their global economic position weakened.

Over the last few decades it has become clear that developing countries need to deal with the core issues of global poverty and inequality by addressing the structural gap in the global economy. Evidence shows that long-term sustainable development in the majority of developing countries will require industrial development and an ability to upgrade in the manufacturing sector by moving to higher value-added activities. It is still an open question how digitalisation will affect such development strategies. Technologies such as data platforms, 3D printing and robotics could change the nature of global value chains and impact policies for upgrading. Similarly, in services, advancements in AI could affect jobs in the services offshoring sector – in which many developing countries specialise. Digitalisation could also have a major impact on attempts to use the domestic market to build economic sectors. Digitalisation, by creating new ways of delivering goods and services across borders, poses questions on the extent to which existing rules can protect domestic service industries from foreign competition in the future.

While it is important to recognise the challenges created by digitalisation, it would be wrong to ignore the opportunities digitalisation could create for developing countries. As digitalisation leads to a greater ability to trade in services, developing countries could benefit from new export opportunities. In particular, the growth in trade through digital platforms provides important opportunities to exporters in the developing world, including micro, small and medium-sized enterprises (MSMEs). A survey by the International Trade Centre⁴ highlighted the opportunities digital technology brought to MSMEs and women-owned enterprises, which are traditionally less engaged in international trade. This is particularly useful on a continent such as Africa, where 80% of enterprises are MSMEs.

To realise these opportunities, however, developing countries need to develop the digital capacities of their economies. This includes not only better connectivity but also greater participation in the ‘control and command’ aspects of the digital economy. As detailed in the previous section, core capacities and infrastructure of the digital economy are becoming highly concentrated in advanced economies and have significant entry barriers. Recent studies, for instance, show that US and Asian firms tend to own and benefit from platforms and apps in Africa, rather than local firms.⁵ Similarly, human capacities in this field are heavily concentrated in advanced economies and even when skilled workers can be promoted in the developing world, they are often attracted abroad to work in higher paid positions.

Despite some effort to promote local start-ups, most developing countries are struggling to scale start-ups beyond the early phase and to build competitive and sustainable businesses. Even successful start-ups in the developing world are often bought by global digital firms.

4 ITC (International Trade Centre), ‘New Pathways to E-Commerce: A Global MSME Competitiveness Survey’. Geneva: ITC, 2017.

5 Caribou Digital, ‘Winners and Losers in the Global App Economy’. Farnham: Caribou Digital Publishing, 2016; Evans P & A Gawer, ‘The Rise of the Platform Enterprise: A Global Survey’, Emerging Platform Economy Series. New York: Centre for Global Enterprise, 2016.

In sum, while digital technologies offer an opportunity to developing countries, their rapid expansion threatens to widen the technological gap between advanced economies and the developing world, and to make ongoing efforts to bridge this gap more difficult. This is particularly the case as advanced economies continue to invest in new capacities. To understand this issue better, we look at how advanced and emerging economies are trying to achieve digital development.

DIGITAL INDUSTRIAL POLICY AND THE TECHNOLOGICAL RACE IN THE GLOBAL ECONOMY

KEY POINTS

- Advanced and emerging economies are engaged in a technological race to maintain competitiveness in the digital economy.
- While the US was the early digital leader, the EU and China are trying to catch up through distinct comprehensive industrial strategies.
- China has followed a more interventionist approach that focuses on providing infant industry support, limiting market access to foreign firms, and encouraging technology transfer.
- The EU is following a softer approach of encouraging investments in the digital economy, and encouraging global firms to locate higher value-added activities in Europe.

Ongoing developments in digital technology are taking place not only because of market forces but also because of active policies to support firms and build national capacities. In this section we focus on two main cases: China and the EU.

Both show how desire to expand the digital economy on the one hand, and fear of lagging behind US digital firms, on the other, have resulted in policymakers' becoming increasingly aware of the importance of building digital capacity to maintain economic competitiveness.

THE EU

The EU was relatively slow to respond to the economic shifts created by digitalisation. As these shifts became more obvious, European policymakers started paying more attention through a range of initiatives and policies that aim to build European digital capacities.

A key challenge the EU faces is the strong position of US digital firms in the European market, where they sometimes enjoy market shares that are higher than their respective shares in the US market. Stemming from this and the desire to promote European digital firms, a range of European initiatives and policies in

the digital economy has emerged. These policies vary from efforts to enlarge the European market through removing digital barriers between different European economies to more active support for building European digital capacities. The European approach tends to be more market-friendly, with the overall frameworks governing the EU policy on digital development being the '[Digital Agenda for Europe](#)', launched in 2010, and the '[Digital Single Market](#)' (DSM), launched in 2015.

At a broad level, the EU strategy focuses on overcoming the more fragmented nature of the European Internet market. This fragmentation reflects a number of factors, including the greater number of languages used in the EU and the different national rules governing the Internet and data. The DSM thus includes liberalising measures aimed at integrating the European market. It also includes, however, more direct industrial policy measures, which are discussed below.

One component of the DSM is the '[Digitizing European Industry](#)' programme, which overall commits EUR⁶ 60 billion (\$70 billion) – public and private – to investments in the digital economy. The programme looks to build capacities in areas such as cloud computing and high performance computing. Another issue that was identified by European policymakers was venture capital for start-ups and policies to help those start-ups to scale up. As a result, the European Commission has launched a programme called [VentureEU](#), providing EUR 410 million (\$480 million) as a way to raise EUR 2.1 billion (\$2.45 billion) in venture capital investments.

CHINA

In comparison to the EU, China has adopted a very different approach to digital catch-up. In many aspects, the Chinese approach resembles a classic infant industry model that limits market access for foreign firms and encourages local firms to copy foreign technology. China has been able to achieve this because of its more integrated domestic market and the nature of its political system.

A core element in the Chinese approach is its active filtering and blocking of foreign digital services through the so-called '[Great Firewall of China](#)'. While some of this filtering is often justified (or criticised) from a national security lens, economic reasons have also become important. The blocking of foreign websites has encouraged local entrepreneurs to 'clone' these websites by creating similar Chinese websites. Over time, firm protection has expanded into a range of government policies, with the 'winners' in this early competition emerging as major global players.

Importantly, however, the Chinese approach focuses on a mixed market–state approach rather than a state-led strategy. In the area of financing, for instance, the Chinese state has not provided direct funding to start-ups but instead orchestrated the establishment of a Chinese venture capital market that has become the second largest in the world, after the US. In relation to foreign firms, the Chinese

6 Currency code for the EU euro.

government has provided selective entry to some foreign firms, often associated with conditions of technology transfer.

As a result of these policies, Chinese firms such as Baidu, Alibaba and Tencent (often referred to as the BAT) have emerged as powerful Chinese digital platforms with control of data extraction, large-scale data storage and cloud capabilities, and growing investments in data analysis and data use technologies. Today, the Chinese government continues to provide a range of support policies for the investments of these new firms in frontier areas such as autonomous driving and AI.

In sum, the different digital industrial policies in the EU and China highlight that at present multiple directions are taken to catch up and close the digital divide. For developing and emerging countries, the policy approaches highlighted can provide important insights into how they might use policy to maximise the gain from digital economies. In the next section, we draw upon these ideas – the broad impacts of digital technologies, the potential gains and challenges from these shifts, and the multiple pathways to policy – to build digital policy frameworks relevant to developing countries.

CATEGORISING DIGITAL TRADE

KEY POINTS

- Following the cases of EU and China, nations might look towards broader liberalisation policy and/or narrower, more interventionist policy.
- Under each of these policy approaches we define key types of policy action for infrastructure and regulation, ecosystems, disbenefits, linkage, learning and leverage.

What types of policy strategy might be undertaken in order to maximise the benefits of digital and digitalised activities? Here, following on from the discussion of digital industrial policy, we highlight two general directions, related to broader liberal strategies for enabling markets for digital trade and more planned approaches for pushing digital catch-up. In the next section we will discuss the merits of these two approaches and if they can cohere or not. Here we introduce the basic tenets of each approach.

ENABLING MARKETS FOR DIGITAL TRADE

As outlined, innovation in digital technologies, services and tools has typically been led by developed countries with advanced research and development (R&D) capacities. For many countries there is thus often a sense of following innovations elsewhere. For digital trade maximisation, the goal is to develop the national economy in order to support technological diffusion and maximise impacts.

Following recent work in this area, we can subdivide this approach into three important strands related to regulatory environments and infrastructure, digital economy ecosystems, and reducing so-called ‘disbenefits’.⁷

Regulatory shaping and infrastructure has been a core area of policy activity for several decades. While this sub-category might apply to both the enabling markets and catch-up directions, it is especially important for the more market-driven direction in terms of attracting firms.

The notion of the digital ecosystem refers to a wider set of capabilities, organisations and support that can facilitate digital trade in a country that moves well beyond the underlying regulatory environment. For example, having functional payment ecosystems is essential to the effective operation of e-commerce in a country.

The idea of disbenefits emerges from recent observations that, even as digital trade grows in a nation, it may have significant negative impacts. For example, peer-to-peer trade and labour transactions facilitated by platforms often lead to poor conditions and worse pay for workers.⁸ This might imply further policy activities that look to reduce risks and problems.

DIGITAL CATCH-UP

We should also consider more planned and interventionist approaches that accelerate digital trade through more rapid technology learning and localisation. Such approaches, being more interventionist, are liable to require more coherent strategies and greater political capital.

We highlight three policy areas that are essential to digital catch-up policies: building technology linkage, learning and localising digital technologies, and leveraging digital in the wider economy.⁹

Building technology linkage refers to the need for local firms and entrepreneurs to use new digital technologies – even if this is initially only for simple tasks. Access to new innovations and technologies then forms the basis for wider technology learning. Evidence suggests that the spillover effects of knowledge related to digital technology are easier to acquire than previously, yet as we will outline in the next section, the state can implement policies that push partnerships between national

7 Bukht R & R Heeks, ‘Digital Economy Policy in Developing Countries’, DIODE (Development Implications of Digital Economies) Working Paper. Manchester: University of Manchester, 2018.

8 Graham M, Hjorth I & V Lehtdonvirta, ‘Digital labour and development: Impacts of global digital labour platforms and the gig economy on worker livelihoods’, *Transfer: European Review of Labour and Research*, 23, 2, 2017, pp. 135–162.

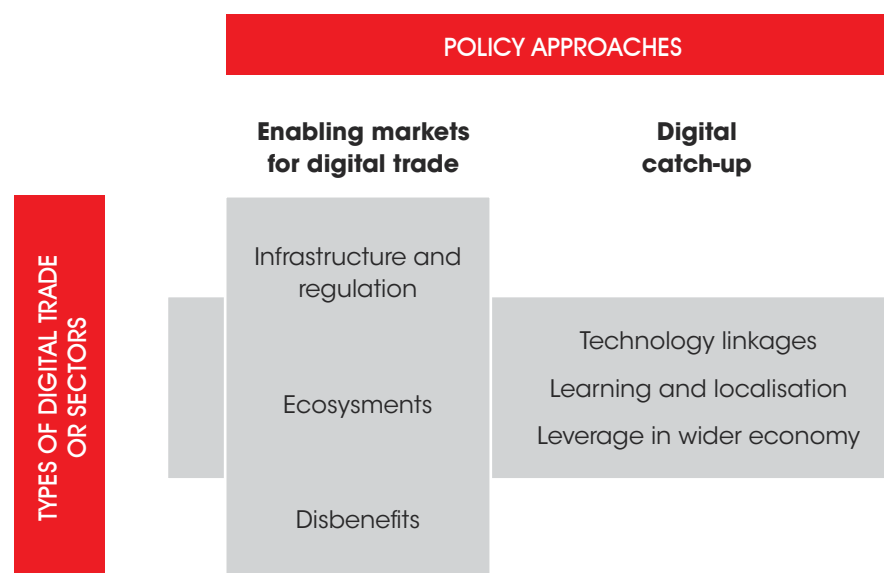
9 Foster C & S Azmeh, ‘Digital Latecomer Economies and National Internet Policy: The Case of China’, Paper presented at Internet, Policy & Politics 2016 conference, Oxford, September 2016.

and global firms, or induce more rapid technology transfer that can accelerate innovation flows.

In order to gain the greatest benefits of digital trade, learning and localising digital technologies is a vital step. This moves countries from being passive receivers of technology to being more active and innovative upgraders. In China, for example, rules linked to the ‘[Made in China 2025](#)’ strategy support learning and localisation of digital technologies through more interventionist activities focussed on public digital procurement, protection of digital sectors, government subsidies, financing and R&D.

We must be aware of the fact that impacts from the digital economy in terms of local firms may be minimal, and skewed towards elites. Thus, leveraging digital in the wider economy is a key scaling activity. Policy that leverages local digital resources, particularly localised technologies, can accelerate digitalisation and value chain upgrading. For example, China’s ‘[Internet Plus](#)’ strategy revolves around supporting large Chinese platform firms to drive initiatives related to digitalisation and modernisation of industry and retail.

FIGURE 1 POLICY AREAS RELATED TO THE OVERALL APPROACH AND TYPES OF DIGITAL ENGAGEMENT



Source: Author

Figure 1 illustrates this discussion on general policy directions. Broad-based, more liberalised policies across sectors can provide favourable conditions for value chains and attract digital economy investment, which are vital for learning and

growth. At the same time there is merit in governments' becoming more active and interventionist to support key sectors. Further research on specific country cases is required to investigate in more detail the way these two directions work together. The two directions are not mutually exclusive and could be complementary.

Broad-based, more liberalised policies across sectors can provide favourable conditions for value chains and attract digital economy investment, which are vital for learning and growth. At the same time there is merit in governments' becoming more active and interventionist to support key sectors

How a country decides its focus relates to its overall strategy and contexts. With these two directions, we have highlighted six key areas in terms of specific policy activities. Again, how policymakers choose to actually implement these directions in terms of policy instruments would depend on local contexts, finance and politics. One key aspect that may influence decision-making, as highlighted in the next section, is that some policies may facilitate broader development through MSME involvement in digital trade while others are more focussed on national economic growth and larger firms.

To support this framework, in the next section we link the six policy areas to specific policy instruments that might be implemented.

POLICY DIRECTIONS AND INSTRUMENTS

KEY POINTS

- The use of specific policy instruments will depend on national contexts, directions and politics.
- We provide an outline and examples of key policy instruments used globally for more liberalised and more interventionist approaches to policy.

INFRASTRUCTURE

Although many countries still have some way to go, over recent years there has been growing infrastructural development related to the provision of backbone fibre.¹⁰ In countries such as Kenya, Rwanda and India where digital activities have become

¹⁰ World Bank, *op. cit.*

core policy goals, cities have built dedicated digital zones with high bandwidth connections and other supporting infrastructure.¹¹

Regulation has been a key element of policy on information and communications technology (ICT) in recent decades.¹² Rules on independent regulation and pushing competition can make digital access viable and cheaper. Rules on importing digital devices, whether mobile phones or personal computers, are also important in ensuring large markets for digital trade.

Broad-based use of digital trade

Ensuring broad-based access to the Internet is a key aspect of infrastructural provision in developing countries. Measures pushing service provision to more marginal regions and groups are key to building infrastructure, whether that be licencing conditions or subsidies via universal service funds. Donor support for ICT for development projects can also push skills and local content provision, reducing the digital divide.¹³

It is no coincidence that successful digital latecomer nations such as Brazil and China have invested heavily in broadband infrastructure plans. These initiatives have led to a rapidly expanding digital user base, even among the middle and lower-middle class. Growing local consumer presence helps local producers and service providers to go on line, and organisations are more willing to adopt new digital innovation.¹⁴ As digital use becomes more reflective of a national population, it also becomes financially viable for MSMEs to survive through serving local firms or populations online.

New demands on infrastructure

While infrastructure and ICT policy are well established, as digital trade across borders increases, regulators are seeing new demands in terms of infrastructure. New infrastructural activities are particularly connected to technologies such as cloud computing, video conferencing and real-time data, with their high bandwidth requirements. New infrastructural components are crucial in allowing these interactive applications to operate in regions such as Southern Africa.

11 Graham M & L Mann, 'Imagining a Silicon Savannah? Technological and conceptual connectivity in Kenya's BPO and software development sectors', *The Electronic Journal of Information Systems in Developing Countries*, 56, 2, 2013, pp. 1–19.

12 Intven H, *Telecommunications Regulation Handbook*. Washington DC: World Bank, 2011; Nicol C, *ICT Policy: A Beginner's Handbook*. Melville: Association of Progressive Communications, 2003.

13 Unwin T, *ICT4D: Information and Communication Technology for Development*. Cambridge: Cambridge University Press, 2009.

14 Kelly T & C Rossotto, *Broadband Strategies Handbook*. Washington DC: World Bank Publications, 2011.

Thus, recent infrastructural initiatives on cross-regional Internet exchanges in Africa respond to the high price of backbone bandwidth in the region to reduce inefficient data transfers into the EU or US. Further, in countries such as Rwanda the government has promoted the stationing of content delivery networks (CDNs) and cloud servers from big firms such as Google and Microsoft. Regional servers and cloud computing nodes improve speed and reduce costs, as Internet traffic does not need to travel to and from the US or EU. They can also support more interactive and resilient applications in the region owing to the reduced risk of Internet traffic congestion.¹⁵

Payment infrastructures

Infrastructural development should not be confined solely to fibre infrastructure. Crucial to digital trade is having adequate payment infrastructures. Many regions, including Africa, still face serious challenges here. For instance, successful tourism providers in Kenya tend to use personal contacts in the US to help them open an account. This makes it easier to channel international transactions through the local banking system.¹⁶

In certain regions, payment infrastructure development has focused on national interoperability. This has been a particular goal in South-East Asia, where the number of smaller banking providers and innovative micro-finance has rapidly increased over the past decade. Policy that ensures that these fragmented entities are tied together to enable efficient integration is vital. In some countries this has led to government-led initiatives in terms of payment integration, including the Unified Payment Interface in India, National Payment Switch systems in Bangladesh and Cambodia and the National Payment Gateway in Indonesia.¹⁷

In countries where digital payment systems are less advanced, other payment systems have become popular for online activity. Policies that ensure that these local systems accommodate the new demands of digital trade are important. In a number of countries, lower income groups use payment slips for online or business payments. These slips are purchased from banks or local stores, such as in the Boleto Bancário system in Brazil. Reforms that increase the spread and speed of such systems (ie, through agent regulation) make online, e-commerce and e-business payments more viable.

15 Kende M & B Quast, 'The Benefits of Local Content Hosting: A Case Study'. Geneva: Internet Society, 2017.

16 Foster C & M Graham, 'The Internet and Tourism in Rwanda', Project Report. Oxford: Oxford Internet Institute, 2015.

17 Singh PJ, 'Digital Industrialisation in Developing Countries: A Review of the Business and Policy Landscape'. Delhi: IT for Change, 2018; USTR (US Trade Representative), 'National Trade Estimate Report on Foreign Trade Barriers'. Washington DC: USTR, 2018.

De minimis rules

A growing area of debate in digital trade relates to *de minimis* levels. These indicate the levels (by value) under which firms importing into a country do not have to pay import duties. Such duties have become increasingly important with the expansion of e-commerce, which frequently revolves around the international shipping of small packages.

Low *de minimis* levels, where smaller packages are taxed at the border, may result in delays and higher costs, and, when there is a lack of local competitors, increase the costs for e-commerce consumers. Low *de minimis* levels across regions can also limit the ability of small exporters in home markets to export, owing to the costs incurred. On the other hand, *de minimis* taxes provide a growing source of tax income to some developing countries, and can encourage consumers to use local providers when these are present. For instance, in countries such as Argentina, Brazil and Canada, low *de minimis* levels have arguably been an important factor in supporting the local development of e-commerce firms.

ECOSYSTEMS

The concept of digital economy ecosystems brings together the capabilities, institutions and governance vital in ensuring that the impacts of digital trade are both available and maximised.¹⁸

Ecosystem firms in digital trade

A common aspect of digital trade, and particularly activities that revolve around platforms, is the importance of so-called third parties – actors outside the actual platform that nevertheless provide services to support these platforms. Examples of such third parties include logistic providers, financial and payment services, and business support services.

As well as providing business and customer support, which enhances digital trade, these parties can be important in that they often exist at the interface between digital firms and local rules and regulation (indeed, this is one of their principal functions). As such, they provide local employment in the service economy with digitally oriented jobs.

One important consideration for digital services is that these are far more viable in a country when systems and platforms are localised. In some areas, such as ride-sharing, a service is not viable without this localisation. In other cases, such as e-commerce, a lack of localisation simply makes digital trade more difficult by not including local language support, local currency payment or local logistics. While platform localisation may be a business decision, there are ample cases where localisation has been influenced by government. For example, in South-East Asia,

18 Bukht R & R Heeks, *op. cit.*

localisation of Alibaba platforms is likely to support not only goods producers but also local ecosystems. Malaysia and Vietnam have been proactive in lobbying for localised versions.¹⁹ Similarly, reports in East Africa indicate that regional tourism chambers and associations, supported by government, have been an important factor in persuading tourism platforms to localise.²⁰ In South Africa there are also examples of the benefits of such localisation in e-commerce, such as payment provider PayPal and e-commerce platform Shopify's entering the market supported by local players.

A good example of the beneficial growth of ecosystems can be seen in Kenya with entrepreneurial support by the government, and the popularity of localised mobile money platforms. Entrepreneurs have formed a number of successful digital start-ups in areas such mobile loans, micro-insurance and agribusiness value chains related to identified local problems. This has led to rich ecosystems of financial services revolving around popular mobile money systems.²¹ Owing to the local nature of these ecosystem actors, a number of start-ups have focused on low-income groups such as savings groups and farmers.

Government interfaces and digital trade

As should be evident from the above discussions, making digitalisation viable for MSMEs by reducing costs or providing services is essential to support them in trading, innovating and exporting online. Another key aspect of ecosystems relates to the ability of these firms to easily engage with the state. More informally, this relates to how firms, often trading in novel areas, are able to share the policy challenges they are facing with government. Previous studies in the early days of the IT industry in India highlighted that when firms (or associations) were able to shape policy, conditions were often more conducive to growth.²²

There are also the more formal firm–government interfaces, whereby firms follow rules and regulations (eg, licencing, tax, export). As small firms become involved in digital trade, they may become subject to varying taxes and licencing and business rules, which can be difficult to negotiate. Some surveys have suggested the complexity of rules, licencing and taxes can form insurmountable barriers that prevent MSMEs from substantially engaging in digital trade.²³ To overcome such barriers, integrated online taxation and licencing systems can be valuable tools.

19 Mai N & N Tuan, 'Competition in Vietnamese e-marketplace: A case study of Alibaba in Vietnam', *International Journal of Business and Social Science*, 3, 10, 2012, pp. 60–67.

20 Foster C & M Graham, *op. cit.*

21 Kimenyi M & N Ndung'u, 'Expanding the Financial Services Frontier: Lessons from Mobile Phone Banking in Kenya'. Washington DC: Brookings, 2009.

22 Parthasarathy B, 'The computer software industry as a vehicle of late industrialization: Lessons from the Indian case', *Journal of the Asia Pacific Economy*, 15, 3, 2010, pp. 247–70.

23 Foster C, 'Digitalisation and Trade: What Hope for Lower Income Countries?', *UNCTAD Information Economy Report 2017*, Background Paper. Geneva: UNCTAD, 2017.

In Brazil, for example, the Simples Nacional system for integrated tax simplified the complex federal and national rules for small firms selling goods online in the country.²⁴ Similarly, India now provides a business-to-government portal to simplify licencing and tax activities, although there is less data on the extent to which this is used.²⁵

Additional challenges emerge as firms look to export goods and services, in terms of licencing, import codes and rules. Integrated online export services can thus be valuable in supporting small-scale exporters. This connects closely with ‘single window’ initiatives where states provide a single online resource to allow simple negotiation of import/export requirements. India, for example, has introduced the Indian Customs Electronic Commerce/Electronic Data Interchange Gateway, which provides single-site automated management of these needs, leading to reduced exporting and importing times.²⁶ South Africa was a leading nation in terms of digitising such interfaces through the South African Revenue Service system. eFiling simplifies small firm tax filing while initiatives around preferred traders for exports and cargo tracking highlight this area as a current aspect of digital policy. More analysis and benchmarking in terms of how these systems fit with online MSMEs might yield further insights.

Advanced payment infrastructure and digital trade

As mentioned in the previous section, payment infrastructure plays an important role in enabling digital trade, and a number of nations have looked to reform payment systems. As platforms become integrated into everyday transactions, both business and personal, even slight delays in interbank transactions could limit digital transactions or micropayments.

These limitations have led to certain countries’ pushing regulations and initiatives for advanced payment systems more suited to the Internet era. Various developing countries are looking to build advanced payment systems. In Thailand PromptPay, a national scheme run by the Bank of Thailand, already has 14 million subscribers. PromptPay provides instant payment linked to mobile numbers, with the government currently developing a number of new innovations such as Quick Response (QR) code-based payments and cross-border regional payments using the same system.²⁷ Phase 2 of the Indonesian National Payment Gateway currently in development is looking to implement similar functionality in the near future. In Latin America,

24 De Lima G, ‘National Report on E-Commerce Development in Brazil’, Inclusive and Sustainable Industrial Development Working Paper. Vienna: UNIDO (UN Industrial Development Organization), 2017.

25 Kumar H, ‘National Report on E-Commerce Development in India’, Inclusive and Sustainable Industrial Development Working Paper. Vienna: UNIDO, 2017.

26 USTR, *op. cit.*

27 Bank of Thailand, ‘Payment Systems Report 2015’. Bangkok: Bank of Thailand, 2015.

with a strong policy emphasis on e-commerce, payment initiatives are integrating instalment-based payments into e-commerce in Mexico, Brazil and Argentina.²⁸

DISBENEFITS

There is increasing discussion of the challenges that emerge from the growth in digital trade. As mentioned earlier, particular emphasis has been on the international firms that have penetrated developing markets, and that are beginning to act like monopolies.²⁹ Thus, beyond pushing and maximising digital trade, there may be conditions that encourage policymakers to attempt to reduce the ‘disbenefits’.

A range of policy actions around disbenefits

Policy exists on a sliding scale, ranging from light touch activities to those that actively attempt to reduce monopoly power. In terms of light touch activities, states might identify key sectors that require regulation and/or licencing to ensure that a sector or type of platform maintain standards. Ride-sharing is an example of an area that a number of countries have tried to regulate. This can take the form of licensing ride-sharing drivers, or instituting rules on minimum payments, hours worked, subsidies and even uniforms. China, Brazil and the United Arab Emirates are examples of countries with ride-sharing regulations.³⁰ Licensing firms approved to operate locally requires additional regulation, but can lead to more trusted sectors in key areas of digital trade. With the expansion of online payment, in some countries such as China and Indonesia licencing rules have been implemented for online payment apps.³¹ In more serious situations, governments can identify specific monopoly behaviour that is particularly damaging and seek to remedy it. The EU has a number of times sought to regulate digital monopolies such as Google and Apple with large fines and attempted forced break-ups.³²

As digital systems and platforms evolve, additional forms of protection may be necessary to identify and reduce disbenefits. A recent discussion in this regard concerns so-called ‘source code’ requirements, which require foreign firms to reveal their source code as a condition of trade. As digital systems and platforms are increasingly algorithmically operated, governments may require source code in order to verify systems. For example, in the areas of environmental protection and

28 De Lima G, *op. cit.*

29 Haucap J & U Heimeshoff, ‘Google, Facebook, Amazon, eBay: Is the Internet driving competition or market monopolization?’, *International Economics and Economic Policy*, 11, 1–2, 2014, pp. 49–61.

30 Mozur P, ‘Didi Chuxing and Uber, popular in China, are now legal, too’, *The New York Times*, 28 July 2016; USTR, *op. cit.*

31 USTR, *op. cit.*

32 European Commission, *A Digital Single Market Strategy for Europe*. Brussels: European Commission, 2015.

anti-discrimination, as well as in military and mission-critical digital infrastructure, source code exchange is a key facet of reducing the disbenefits of digital trade.³³

There have also been instances where governments have tried to run their own versions of digital platforms, with the goal of improving conditions for those using them. For example, in Indonesia an e-commerce ‘aggregator’ has recently been launched by a state-owned enterprise. The site’s goal is to push e-commerce inclusion online and to provide fairer and more inclusive e-commerce for MSMEs. In Nigeria, NaijaCloud is an attempt to set up a state-run digital work platform, with the goal of providing more and fairer jobs than the commercial sector. In both cases these ideas are in their infancy and may not succeed, but tracking them as experiments in attempting to counter disbenefits can inform future policy.

Data protection

One area in particular where disbenefits have emerged is data use. While the number of new digital services, apps and products is growing, the ways this data is used, shared and sold can be problematic. Poor data practices increase the potential risk to individuals and their trust in new technologies. Moreover, insufficient data rules tend to encourage footloose and extractive digital trade in developing countries that may not serve nations’ interests over the long term.³⁴

While data protection rules have been in use globally for a number of years, the expansion of the Internet has led to growing debates around these rules. The highest profile policy in this area is the General Data Protection Regulations (GDPR) in the EU, which provide enhanced protection and rights for EU citizens in terms of controlling, protecting and transferring their personal data.³⁵ Following on from GDPR legislation, many other countries have begun to implement similar data protection rules, including Brazil, Colombia, India and Japan.³⁶

India, Indonesia, Turkey and Vietnam have also connected data security to so-called data localisation rules, requiring strategic data to be stored within the country. However, it is debatable if such rules truly make data any safer. There may be arguments for data localisation in terms of broader national principles of sovereignty or as a way to spur local data ecosystems, but in terms of data security, other factors such as data encryption, quality and audits are likely to be more effective.³⁷

33 Smith S, ‘Some Preliminary Implications of WTO’s Source Code Proposal’, MC11 Briefing Paper. Geneva: Third World Network, 2017.

34 Weber S, ‘Data, development, and growth’, *Business and Politics*, April 2017, 1–2.

35 Bird & Bird, ‘Guide to the General Data Protection Regulation’. London: Bird & Bird, 2017.

36 USTR, *op. cit.*

37 Bauer M, Ferracane M & E van der Marel, ‘Tracing the Economic Impact of Regulations on the Free Flow of Data and Data Localization’. Brussels: ECIPE (European Centre for International Political Economy), 2016.

Tax and fiscal challenges

Disbenefits from digital trade may also be broader, relating to the way in which distant services and platforms are a growing part of an economy yet are difficult to tax and legislate. Ensuring tax rules are followed is a particular challenge when foreign firms operate from afar. Tracking taxable revenues and then ensuring that nations are able to take their fair share is problematic. Even where nations attempt to improve their methods of tax capture, this can lead to increased external financial flows to avoid such rules. Traditionally, taxes and other tariffs and rules have also been used to shape firm behaviours, signalling the desired direction of an orderly market. Ensuring such activities are continued in the digital domain is vital. Ongoing debates in the EU on so-called 'digital tax' reflect growing concerns in this area.

LINKAGE

As outlined previously, beyond market-shaping activities to ensure the expansion of digital trade, states can consider the potential of more interventionist policies to support digital catch-up and develop local resources, applications and services as part of a more coherent digital industrial policy. As part of this, considering how firms are supported in linking to higher technology firms to build capabilities is an important aspect.

Linkages and supporting entrepreneurs

As outlined, in many developing countries entrepreneurs see burgeoning digital sectors and are likely to begin to experiment and build businesses in the digital domain. Linkages will ensure that, as these digital firms emerge, they are able to gain digital and business skills and grow their firms.

Ideas around supporting entrepreneurship in the digital sector are well known, and potential policy directions include innovation hubs and other schemes that allow cross-fertilisation of ideas. Many countries also have centrally operated innovation funds, competitions and investment funds that might be shaped to support promising innovations.³⁸ Skills training initiatives and business development are also important policy aspects for improving SMEs' engagement with digital trade.³⁹

These measures thus support a more vibrant digital sector in its infancy. However, it may be that learning needs to be induced more rapidly within local firms, particularly as digital technology, data flows and AI make new systems more complicated. Thus interventionist rules that induce these technological linkages in certain sectors can be important. Local ownership and licencing rules are examples of such policy. In these scenarios, local ownership or a local partner is a licencing condition in a

38 Hellström J & P-E Tröfven, *The Innovative Use of Mobile Applications in East Africa*. Stockholm: SIDA (Swedish International Development Cooperation Agency), 2010.

39 ITC, *op. cit.*

country. This happens to some extent in Brazil and India, and potentially allows more rapid technological flows.⁴⁰

In developing countries, firms both large and small have also benefitted from building linkages with the diaspora. For smaller firms this can provide key skills and support for growth. A successful diaspora can also be an important investor. In countries such as China and India, policymakers look more actively at supporting the return of successful nationals from high-level jobs in Silicon Valley in areas such as data and AI.⁴¹

LEARNING

Building linkages is entirely possible in developing countries. However, developing and scaling can be challenging, particularly in sectors where localised digital products and services may initially be out-competed by well-resourced foreign alternatives.

Planned approaches with specific goals of developing certain types of digital trade might implement interventionist activities in order to level the playing field for local firms. As the history of industrial policy has shown, such rules can be challenging and likely need to be dynamic, offering protection for local firms as they develop and localise before slowly pushing them to innovate and expand over time.⁴² A number of policies have been tried in this area.

Limiting international firms

The bluntest tool here is simply to prevent certain international firms from operating and thereby supporting the development of local ones. Such rules have been criticised for reducing competition and potentially limiting important flows of skills and technology. However, they might have potential in selected sectors. In cloud computing in China, for example, legislation has effectively blocked international competition, supporting the development of Alibaba and Baidu's cloud products and protecting them from large suppliers such as Microsoft and Google.

Shaping the international/local firm balance

There is a range of additional rules that can more subtly shape markets, allowing foreign competition while encouraging local firms to survive and grow. For e-commerce, import duties on foreign competition have been used in countries such as Brazil as part of a wider strategy supporting the emergence of local stores

40 USTR, *op. cit.*

41 Foster C & S Azmeh, *op. cit.*

42 Amsden A, *The Rise of 'the Rest': Challenges to the West from Late-Industrializing Economies*. Oxford: Oxford University Press, 2001.

online. A parallel policy imposes a tax or levy on international payments, aiding local digital transactions over international ones, although this may have effects on other parts of the economy.

There are various localisation rules that, rather than preventing foreign firms from trading or limiting their activity, push them to source from local markets as a way of supporting local digital providers. Best known in this area are large-scale schemes such as Made in China 2025, with a range of rules pushing local sourcing of content, services, and/or government procurement. Similar rules on local advertising in Vietnam and local logistic providers in Indonesia also support the development of local firms.⁴³

Fiscal measures to support local firms

A final approach to supporting local technological learning and development employs more sophisticated fiscal activities. Both China and Brazil provide examples of these measures. In Brazil, 'TI Maior' legislation provides tax relief and exemptions to certain digital sectors based on their exporting certain levels of digital services. As such, these types of rules are more sophisticated as they allow states to shape firms' activities according to targets, in exchange for protection. They thus attempt to reduce risks around rentier activities that have been associated with local firm protection.⁴⁴

LEVERAGE

The actual economic impact of digital firms can be relatively low. Digital firms tend to be relatively small employers, and employees tend to be from more skilled and affluent groups, thereby exacerbating inequalities. Leveraging policy can thus support wider digital benefits across populations.

Large-scale leveraging schemes

Broad leveraging programmes see states using available digital tools and resources in an active way, as part of wider national plans and projects. China is perhaps the best example of this in its large-scale initiative Internet Plus. Here considerable capital has been spent on using the fruits of its localisation activities, namely growing Chinese digital giants, and then supporting them in digitising the rest of the economy, particularly as part of China's wider goal of moving from low-cost production toward innovation.⁴⁵

43 USTR, *op. cit.*

44 Amsden A, *op. cit.*

45 Foster C & S Azmeh, *op. cit.*

Ad-hoc leveraging through technology

The idea of attracting a wider array of actors to enter into digital activities is less pronounced elsewhere, but there are some examples of more ad-hoc leveraging. For instance, in the Philippines, the CloudFirst government policy on local cloud service creation supports both firm learning and the broader modernisation of government.⁴⁶ Locally created payment infrastructures in countries such as Vietnam and Cambodia are designed to eventually become the sole source of international payment, and as such support wider economic control and leverage of payment systems in the future.⁴⁷

IMPLEMENTATION OF DIGITAL POLICIES

KEY POINTS

- The use of specific policy instruments will depend on national contexts, directions and politics.
- We provide an outline and examples of key policy instruments used globally for more liberalised and more interventionist approaches to policy.

We provide some insight on the potential pitfalls of policy implementation. Awareness of these challenges might spur training, stakeholder identification and other forms of engagement to accompany policymaking for effectiveness. Three key aspects in particular can be identified: ownership of policymaking, established interests, and potential conflicts with international agreements and agendas.

OWNERSHIP OF DIGITAL POLICY BY MINISTRIES

ICT development and policy has typically been the domain of a specific government department, often an ICT ministry. With the expansion of digitalisation and the digital economy across a wide range of sectors, policy ownership becomes an important issue. For example, if a nation is looking to regulate the digitalisation of agriculture there can be conflicts between policymakers in the agriculture, trade and ICT ministries. There have been discussions that suggest such issues

46 Bhunia P, 'Government cloud service launched in Philippines for accelerating online deployment of agencies' services and data', *OpenGov Asia*, 28 October 2017, <https://www.opengovasia.com/articles/7462-government-cloud-service-launched-in-philippines-for-accelerating-online-deployment-of-agencies-services-and-data>, accessed 1 June 2018.

47 USTR, *op. cit.*

are a serious challenge in South Africa.⁴⁸ In some countries, such as Rwanda and Thailand, central government support of key initiatives, including specific digital implementation units, has been valuable in ensuring that roadblocks are overcome through political momentum. Elsewhere, digital policymakers will need to be aware of potential competing interests across government that may require engagement to avoid potential problems during implementation.

INCUMBENT AND LOWER-TECHNOLOGY FIRMS

As new innovations are introduced, policymakers need to be aware of any disruptive implications. For example, the implementation of platforms such as Uber and Airbnb may lead to lobbying from established players in the taxi and hospitality sectors. On the one hand, the core goal of new digital services and flows is often to disrupt these sectors in order to push digitalisation and impact business. On the other hand, there may be legitimate claims that new services are gutting local economies in favour of foreign providers. How policymakers balance such demands is a challenge.

It may be that more interventionist leveraging policy can shortcut this challenge by using localised technology and temporarily protecting local actors, in exchange for their rapidly developing and becoming competitive. For example, in China as e-commerce has advanced into the selling of daily goods, Chinese government policy in the area of 'offline to online' has guided the digitalisation of local logistic providers and small retailers, rather than replacing them with new infrastructures.⁴⁹

INTERNATIONAL TRADE AGREEMENTS AND DIGITAL TRADE

Many countries, including South Africa, are party to international trade agreements. Relevant agreements range from agreements on World Trade Organization (WTO) membership (particularly in the area of e-commerce and services) to regional agreements and bilateral free trade agreements.

Some of these agreements already have rules on digital trade, while others envisage potential future negotiations that may see such clauses added. These types of agreement are important in establishing norms of trade across borders, but in the area of digital trade are prone to lobbying from tech firms, and can potentially overstep the mark in dictating the types of policy undertaken locally. More interventionist national policies may therefore contravene digital trade rules in the future. Even

48 Gillwald A, Moyo M & C Stork, 'Understanding what is happening in ICT in South Africa', *Evidence for ICT Policy Action*, 7. Cape Town: Research ICT Africa, 2015.

49 Foster C & S Azmeh, *op. cit.*

without such rules, countries considering more interventionist catch-up policies might also find themselves being pressured by powerful nations or firms.⁵⁰

An awareness of such challenges is important in understanding the barriers to more active digital policymaking. It suggests careful consideration on overcoming such challenges through engagement or enlisting key political supporters.

In the longer term, as digital trade becomes increasingly central to trade deals, nations need to ensure that they possess skilled policymakers who are able to debate and articulate their national plans at an international level and build consensus. South Africa has led on these issues in the past years in Africa, including through strong engagement during the recent WTO ministerial. Continuing to support this work at an international level is crucial in ensuring that South Africa is able to align with international demands and national rules that it wishes to implement in the area of digital trade.

SUMMARY AND CASE SELECTION

This discussion paper has highlighted the significant changes that are taking place in the global economy. Digitalisation and the digital economy are affecting developing economies, changing patterns of production and consumption and transforming global value chains. In the future, as further digital products and services emerge in areas such as platforms, data, AI and industry 4.0, digital policy is liable to become a mainstream consideration for policymakers.

For developing countries, the potential changes pose challenges. Digital inclusion of the population is important in building a vibrant economy, but at the same time it is vital to ensure that firms and individuals interacting with digital products, services and systems do so in ways that do not lead to uneven relationships with global digital firms.

Digital inclusion of the population is important in building a vibrant economy, but at the same time it is vital to ensure that firms and individuals interacting with digital products, services and systems do so in ways that do not lead to uneven relationships

In the appendix, a table summarises the policy directions, areas and instruments discussed. Policymakers have taken different directions in response to these challenges. One direction, as exemplified by the EU, is broadly a market-enabling

50 Azmeh S & C Foster, 'The TPP and the Digital Trade Agenda: Digital Industrial Policy and Silicon Valley's Influence on New Trade Agreements', International Development Working Paper. London: LSE (London School of Economics), 2016.

and -shaping approach – looking to shape favourable conditions for both local and foreign digital firms alike in order to expand while developing strong leverage over those firms and encouraging localisation of functions. Other countries have begun to implement similar policies as a way to attract digital firms and maximise gains from these firms. In terms of specific policy areas, we have discussed infrastructure, ecosystems and regulating against ‘disbenefits’ as three important considerations.

A contrasting policy direction is highlighted by the actions of China. Here more interventionist activities have looked to actively shape digital economies in order to support the growth of local industries and to reap wider and fairer benefits from the digital revolution. This policy direction suggests that digital catch-up policy is an important tool to help countries accelerate technological growth in specific sectors. Policy areas for consideration are building technologically rich linkages, supporting technological learning and localisation, and then leveraging these into the wider economy.

It should be highlighted that the research on policy instruments that can be applied in these areas is still nascent, particularly with respect to the more interventionist direction. Many countries now have a scattering of relevant policies, but these are rarely joined up in a coherent way. Nevertheless, by examining a range of policies across countries, we have begun to outline the types of policy instruments that will be important in supporting these directions.

Moving on to future research that will build detailed studies of digital policymaking within countries, this lack of policy coherency limits the places where a broad case study can provide insights on best practices. In Africa, countries such as Rwanda and Kenya have pushed digital growth. However, their policies are still mainly focused on foundational regulation and digital divide issues, and are somewhat fragmented and not part of broad, coherent strategies. Meanwhile, countries such as Vietnam, Indonesia and Malaysia have implemented digital policies with some success.

More detailed study of the BRICS could also yield insights (particularly of China, India and Brazil). Although China, India and Brazil are all larger than South Africa and have different contextual conditions, there are parallels in that they are seeing the growing importance of digital economies and an expansion in digital firms. Yet there is concern about digital inclusion and the impact of digitalisation on broader industries. These three countries have explored relatively coherent digital plans, including enabling digital economies and strategically implementing catch-up policy.

Following this analysis, we will examine two case studies – Brazil and the Association of Southeast Asian Nations (ASEAN) bloc – in more detail. These provide us with a sufficient depth of material to analyse digital policies that can provide a diverse range of lessons for African policymakers. In addition, analysing regional elements of ASEAN can also provide lessons for regional agendas.

APPENDIX: SUMMARY OF POLICY CONTENT

This table summarises the extended discussion on specific policy instruments.

POLICY OBJECTIVE	POLICY AREAS	POSSIBLE POLICY INSTRUMENTS
Enabling markets for digital trade	Digital infrastructure & regulation	<ul style="list-style-type: none"> Ensuring regulation for broad adoption of digital Digital infrastructural investments Digital inclusion policy and practice Policy related to digital economy infrastructure (CDN, cloud) Payment infrastructure and regulation Payment interoperability <i>De minimis</i> considerations
	Nurturing digital ecosystems	<ul style="list-style-type: none"> Supporting digital ecosystem firms Promoting foreign digital localisation Business–government policy interface Government interfaces for firm rules and taxes Advanced e-payment systems
	Reducing ‘disbenefits’ of digital	<ul style="list-style-type: none"> Regulation of platform operation Digital firm licensing in key sectors Anti-monopoly rules Supporting state-owned digital enterprises Data protection rules Tax and fiscal rules
Digital catch-up	Supporting technological linkages for firms	<ul style="list-style-type: none"> Supporting entrepreneur skills and linkages Encouraging foreign firm linkages and technology transfers Encouraging diaspora investment and support
	Learning and localisation of digital technology	<ul style="list-style-type: none"> Limiting international firms within sectors Policy-shaping international/local firm balance Fiscal measures to support local firms
	Leveraging benefits to the wider economy	<ul style="list-style-type: none"> Large-scale leveraging strategies in digital Ad-hoc leveraging by technology

