ISSN 2413-3175
2021/10

INTERNATIONAL TRADE WORKING PAPER

Digital Reboot: The Case for a Newly Invigorated Aid for Digital Trade Initiative

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The Commonwealth

International Trade Working Paper 2021/10

ISSN 2413-3175

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This paper was commissioned by the Commonwealth Secretariat and was authored by Simon Lacey of the Institute for International Trade at the University of Adelaide, with valuable research support by Ziyaad Nazir Ebrahim, a doctoral student at the Institute. The author would also like to thank Michael Roberts and Lee Tuthill, both of the WTO Secretariat, who were instrumental in providing invaluable feedback on an earlier draft of this paper.

Please cite this paper as: Lacey, S (2021), Digital Reboot: The Case for a Newly Invigorated Aid for Digital Trade Initiative, *International Trade Working Paper* 2021/10, Commonwealth Secretariat, London.

Abstract

Aid for Trade (AfT), first launched in 2005, has come a long way over the last fifteen years and has undeniably made an important contribution to overcoming the many constraints holding developing countries back from greater participation in international trade, and thus from reaping many of its benefits. This paper first examines which AfT initiatives have sought to enable greater participation by developing countries in digital trade specifically, while also seeking to distil some of the more valuable lessons learned in this process. By way of four case studies it examines some recent successes of Digital AfT initiatives, including one that addresses connectivity infrastructure gaps and another that involves efforts to raise digital skills in order to support entrepreneurship in the e-commerce sector. The paper concludes by first advocating for the adoption of a greater focus on the digital dimension in the conceptualisation and implementation of AfT initiatives – proposing the launch of a new Aid for Digital Trade agenda in order to update the original AfT approach – and then outlining a number of specific ways in which this could and should happen.

JEL Classifications: F35, O14, O19, L81
Keywords: Aid for Digital Trade, Aid for Trade, digital trade, e-commerce, entrepreneurship

Contents

Abbreviations and Acronyms

ADB	Asian Development Bank
AfCFTA	African Continental Free Trade Area
AfT	Aid for Trade
CPTPP	Comprehensive Pact for a Trans-Pacific Partnership
DDA	Doha Development Agenda
DE4A	Digital Economy for Africa (an initiative of the Word Bank Group)
DFAT	Department of Foreign Affairs and Trade (Australia)
EU	European Union
GATT	General Agreement on Tariffs and Trade
IDB	Inter-American Development Bank
ISP	Internet Service Provider
LDC	Least Developed Country
OECD	Organization for Economic Cooperation and Development
OTT	Over the top (i.e. on top of existing communication network services)
SOE	State-Owned Enterprise
SSA	Sub-Saharan Africa
UNECA	United Nations Economic Commission for Africa
USMCA	United States, Mexico, Canada Agreement
USTR	United States Trade Representative
WBG	World Bank Group
WTO	World Trade Organization

Executive Summary

Aid for Trade (AfT) is now a well-established initiative that enjoys broad support across the trade and development community, with many success stories globally. Initially launched as an extension of efforts to mainstream trade, its focus has evolved in lockstep with better and deeper insights on the impediments to trade that exist and how they work.

Since 2017 at the very latest, a discernible shift has taken place in the AfT community, with an increased emphasis on interventions targeted to support the ability of developing and least developed countries to engage in digital trade. This shift coincided with the realisation that the digital and analogue economies were rapidly converging to simply become 'the economy' and that if developing countries did not embrace these new technologies, their firms and citizens would fall further behind those in advanced industrialised countries. The shift to digital also coincided with the realisation that embracing these technologies could likewise support and expedite efforts to achieve other related policy objectives, such as reducing the 'thickness' of borders (by reducing trade costs), boosting inclusion of women and youth in the economy, and improving economic governance more generally.

This shift was then given new impetus and heightened urgency by the seismic structural changes brought about by COVID-19 and the challenges countries now face in first overcoming the health crisis and then embarking on economic recovery. The trend towards wider adoption of digital technologies is something that policy-makers in developing and least developing countries, and the development community more broadly, are now irrevocably committed to, which calls for a profound rethink of the AfT agenda and a relaunch of this important initiative as Aid for *Digital* Trade.

This is not to give credence to the notion that digital technologies are themselves any kind of panacea, or to deny the fact that they come with risks as well as opportunities. However, failure to strongly emphasise the need for developing and least developing countries to embrace and leverage these technologies – and to do so now – risks forfeiting this unique moment in history, as the whole world prepares to 'build back better'.

This report is structured in four sections and contains two annexes. Section 1 discusses the evolution of the AfT agenda, including its already tentative turn to digital, and some of the gaps that exist in the data on AfT flows. Section 2 discusses some of the ways in which digital technologies are already having a profound impact on international trade, as well as ongoing efforts to negotiate new trade rules for the digital economy, and finally explores the digital promise of trade and development. Section 3 argues the case for a substantial pivot towards digital and for recasting AfT as the Aid for Digital Trade initiative. Finally, Section 4 proposes several ways in which this could be done in the context of current and ongoing initiatives at the WTO and elsewhere, where trade negotiators from developed and developing countries sit at the same table. The report is followed by two annexes. The first is a technical annex that lays out some of our findings when looking at the available data on AfT to Commonwealth countries. The second contains a series of case studies from development assistance initiatives targeting improvements in digital technologies in developing countries to support their integration into the digital economy, and thus their ability to engage in digital trade.

1. A Brief Introduction and Overview of Aid for Trade

The Evolution of Aid for Trade

Aid for Trade (AfT) was launched in 2005 at the 6th WTO Ministerial Conference in Hong Kong, China. What distinguished AfT from other longstanding efforts to address concerns by developing and least developed countries about the multilateral trading system, was that it focused on addressing a wide array of (predominantly) supply-side constraints that prevented these countries from participating more actively in international trade flows.[1] As it was, AfT was part of a continuing effort to 'mainstream' trade into overseas development assistance (ODA), i.e. embed trade policy and trade policy reforms into ongoing efforts by donor countries to promote economic development outcomes in recipient countries.

Over the years, the AfT agenda has gradually evolved as a clearer picture has emerged on what kind of ODA activities work best to support the objectives of the AfT agenda. In its earlier manifestations, AfT focused largely on stocktaking and benchmarking as it sought to identify what kind of interventions had the greatest impact or were the most favoured by both recipients and donors. Starting in 2013, a pronounced shift in emphasis took place, with the AfT agenda changing focus to help recipient countries connect to value chains, as development thinking caught up with the dominant reality of geographically fragmented and dispersed production processes prevalent across a wide range of manufacturing sectors, from textiles to consumer electronics. This shift in focus drove the AfT community to explore the main barriers preventing firms in developing countries from connecting with value chains and thus a renewed emphasis on reducing the 'thickness' of borders and improving business environments (OECD/WTO, 2013, pp. 22, 24). This shift in emphasis was further refined in the context of the 2015 Global Review, with a new onus on using AfT to support governments and policy-makers in developing countries to reduce the economic burden on their own firms and consumers by lowering trade costs (OECD/WTO, 2015, p. 23).

2017 saw the AfT agenda pivot significantly towards an important turning point with issues such as connectivity, the digital economy, e-commerce and e-readiness starting to become prominent (OECD/WTO 2017, p.23). By this time, the importance of digital trade was becoming increasingly clear to the world at large, and the development community in particular, not least because e-commerce or digital trade chapters began featuring in an increasing number of bilateral, regional and mega-regional free trade agreements (FTAs).

The 'Digital' in Aid for Trade Today

In the early years of the AfT initiative, specific interventions attributable to anything resembling today's digital economy (the next chapter explores this concept in more detail) were largely limited to efforts to build network communications infrastructure or were firmly embedded in customs modernisation efforts.[2] Other interventions, such as one targeting the digitisation of business registration procedures in Malawi, took place in the context of broader reforms seeking improvements in the business climate more generally.[3] With time, and the shift in focus to reducing trade costs (particularly in the context of implementing trade facilitation reforms), more emphasis was laid on the benefits of digitising various import processes and procedures, again in the context of customs modernisation and the establishment of Single Window facilities. The rise of e-commerce also began to gain recognition in the AfT literature, as a catalyst for more inclusive growth with respect to both small and medium-sized enterprises (SMEs) and women's economic empowerment.[4]

As alluded to above, by 2017, with the thematic emphasis of the AfT monitoring and evaluation exercise that took place that year fixed firmly on the benefits of online connectivity and the developmental promise of the digital economy, the 'digital' in AfT could be said to have finally arrived and was arguably itself on the way to being mainstreamed. In fact, many of the so-called case stories published in the context of the 2017 review display one or more elements of supporting online connectivity or promoting some aspect of digital inclusiveness; for example, the Samoa submarine cable project,[5] or the review of e-commerce legislation harmonisation in the Economic Community of West African States.[6]

Today, even a cursory look at the landscape of ongoing, planned or recently completed AfT interventions shows this trend has not abated and that both donors and their development partners are aware of the gains to be had by both promoting connectivity and getting more businesses and consumers online – for example, USAID's Digital Frontiers programme, which includes support to the African Union Commission on digital trade issues in the context of the African Continental Free Trade Area (AfCFTA).[7]

A Data-centric Analysis of Aid for Trade Disbursements

Based on OECD Credit Reporting Data, we tracked expenditures on ICT (Credit Reporting System (CRS) Code 22040) across all developing country members of the Commonwealth in the years 2017–18, assuming these to be good sample years where the attention of the donor community was the greatest on the importance of helping recipient countries to bridge the digital divide. Our findings are shown and broken down in greater detail in Annex 1 of this report. This approach does not claim to provide a comprehensive overview of all ODA disbursements aimed at improving developing countries' capacities in digital trade – far from it, in fact. Indeed, in the OECD Credit Reporting Data, 22040, ICT is the only CRS code that provides a reasonable proxy for the assistance developed countries are providing to developing countries. If anything, our efforts in this regard demonstrate just how difficult it is to arrive at a comprehensive overview of targeted support provided to developing countries to strengthen their ability to connect with digital value chains. To do so would require an extensive exercise in forensic accounting, which is beyond the scope of this study.

Looking at the categories into which various forms of AfT support have been classified since the 2005 Task Force undertook this task, it is clear to see how almost every one of these categories could include some form of targeted assistance aimed at raising digital capabilities. For example, technical assistance for trade policy and regulations could include support for the adoption of new legislation allowing for electronic authentication and e-signatures in domestic legal transactions. Trade-related infrastructure support can and often does encompass telecommunications networks. Assistance for productive capacity-building could include support for e-commerce start-ups or training workshops for entrepreneurs on e-commerce. Trade-related adjustment could include support for those affected by domestic policy reforms undertaken to build digital capacity that then made analogue resources redundant, or that required reskilling of these resources (such as the adoption of paperless trade and e-customs platforms). 'Other trade-related needs' is a catch-all category that likewise could encompass myriad forms of AfT assistance targeted specifically at upgrading capabilities for digital trade, such as a programme aiming to bring the unbanked into the formal economy by launching an e-wallet scheme. However, the way in which the OECD Credit Reporting Data is compiled – and this is the most complete data set we found – does not further disaggregate disbursements based on their specific uses, so that, apart from the general category of ICT, we cannot ascertain the true extent to which AfT resources are going towards upgrading digital capabilities.

Nevertheless, our findings – set out in more detail in Annex 1 – show how much various Commonwealth countries received under the ICT heading over the years 2017–18, which allows the reader to gauge where donors' priorities lay. For example, developing Commonwealth countries in the Caribbean/Americas region received considerably less than their peers in Africa, Asia and the Pacific, with most of these countries receiving no disbursements for ICT in 2017 and some also receiving nothing in 2018.[8] Africa, the largest region, with no fewer than 19 different recipient countries comprising the Commonwealth's membership, recorded by far the largest disbursements for ICT in both 2017 and 2018, at USD 36.3 and 31.38 million respectively.[9]

Our findings also show the main source of AfT funding for ICT for each region, which again allows readers to gauge the priorities of different donors. Surprisingly, the World Bank Group's International Development Association (IDA) is by far the largest contributor across all regions, in all cases, by a considerable margin.[10] Development Assistance Committee (DAC) members perform unevenly across regions and years. For example, in 2017 DAC members provided 10.5 per cent of the total AfT funding for ICT, rising to 16.1 per cent in 2018. But in the Commonwealth Pacific, only New Zealand and

Australia (both DAC members) provided any share of these disbursements, at 2.7 per cent and 1.3 per cent respectively.[11]

Apart from the data shortcomings identified above, the OECD reporting lacks coverage of targeted support provided outside of ODA flows, with the Bill and Melinda Gates Foundation being just one example of a private non-profit providing significant funding for expanding access to financial services for the poor via digital payment technologies (Daniel, 2020). Another example of a big gap in the data (a 'known unknown') are big development assistance projects, such as China's Digital Silk Road, which on the one hand engenders targeted support for recipient countries to upgrade their telecommunications networks, cloud computing infrastructure, e-commerce and mobile payments systems, and on the other hand also supports Chinese technology exporters to gain footholds or increase market share in recipient countries (Arcesati 2020). How much of this aid could and should be allocated to AfT assistance to improve digital trade capabilities is a significant question that the current study leaves unaddressed.

The next chapter discusses the digital dimension in international trade – both in terms of the technologies themselves and the way digital trade issues have been taken up in trade negotiations and trade agreements – and the promises digital trade holds for development.

2. The Digital Dimension in International Trade

This chapter discusses how digital trade has been defined by those most actively engaged either in trying to measure this phenomenon or in crafting trade rules to govern the digital economy, including intergovernmental organisations and governments negotiating FTAs. It also discusses the links between digital trade and development to set the stage for the next chapter, on why AfT must be repurposed to become Aid for Digital Trade.

The Digital Economy and Digital Value Chains

When contemplating what constitutes the digital economy, one possible approach is to focus on the notion of online connectivity. Whether or not an activity is done partially or wholly online or is facilitated by some process or capability that runs or exists online, is one way to delimit the digital economy from its analogue predecessor. However, even this approach runs into problems when one considers that in most advanced economies, and in a growing share of developing economies, an increasing share of payment transactions involve some element of online payment processing – every time we buy something and use a card or a mobile payment solution, we participate in the digital economy. This example simply serves to underscore the fact that the online and offline economies are already massively complementary and are fast converging to the point of becoming 'one intertwined and inseparable singularity' (Lacey, 2017b, p. 2).

Another way to think about the digital economy is in terms of its various constituent parts, segments and actors (see Figure 1), that is, by examining the ecosystem of players and how they each contribute to forming, maintaining and advancing the online world. At the most basic level is the underlying infrastructure.[12] This comprises various hardware elements that are largely invisible to the vast majority of users, including but not limited to 'optical fibre, coaxial cables, switches, signal amplifiers, servers, data centres, satellites, wireless base stations, mobile telephone towers, antennas, routers modems, range extenders' and the like (Lacey 2017b, p.4). On top of the infrastructure layer is a range of services and their respective providers, each of which is subject to a certain hierarchy. At the base of this hierarchy are those providing communication services – those who invest in, build and maintain communications networks and charge users a fee for the privilege of using them. These actors are, for the most part, either telcos, cable companies or internet services providers (ISPs).[13] They generally operate in oligopolistic market environments and have varying degrees of market power given the capital intensiveness of this business, which creates a significant barrier to entry. However, this layer is not generally where most of the economic gains are to be had

Figure 1. The various segments of the modern digital economy, simplified

Infrastructure

Various hardware elements, including but not limited to optical fibre, coaxial cables, switches, signal amplifiers, servers, data centres, satellites, wireless base stations, mobile telephone towers, antennas, routers, modems, and range extenders.

Devices/ Terminals

Hardware interface where the infrastructure layer, communications services and OTT value generators coalesce, in the form of a computer, laptop, smartphone, sensor, onboard navigation device etc.

Services (OTT)

Those providing communication services, providers of various kinds of digital services from the very visible and profitable to the many small and largely unknown entrepreneurs providing either B2B or B2C services via the internet or mobile networks.

Users

Often the end-point of most online functionality but also the provider of much of the data on which the whole digital economy runs. Can be both individuals, groups of users, or a business/organization.

Source: Author's illustration.

in this hierarchy – that honour goes to the so-called OTT (over the top) providers of various digital services. At the most visible level these are companies, such as Amazon, Facebook, Google, Netflix and others, that have built massive income streams on top of digital business models, but there are also many unseen and unsung entrepreneurs operating in this space, providing either B2B or B2C services and being remunerated at varying levels.[14]

A further constituent element of the digital economy is the device layer – the terminals where the infrastructure layer, communications services and OTT value generators converge to provide the user experience at the ultimate endpoint, namely the user herself (often also a business). The devices layer was traditionally dominated by a few highly visible consumer electronics firms, such as Apple or Samsung, but in the era of Big Data and Internet of Things (IoT), devices are increasingly being placed on everything (particularly in the form of sensors) so that many more players have joined this layer of the digital economy, providing functionality that goes considerably beyond satisfying the needs and tastes of consumers and reaching deep into the heart of industrial design and production processes across almost every economic sector.[15]

Finally, the user is yet another constituent element of the digital economy, just as he or she is in the offline economy. The user is often the target of most of this functionality but is also the provider of much of the data on which the whole digital economy runs.[16] As mentioned previously, the user is often also a business, since businesses use and consume a whole range of digital goods and services, such as cloud computing services (Gartner, 2020).

Although the digital economy has been prone to unacceptable levels of market concentration in some segments (particularly online advertising, which is dominated by Google and Facebook), there remain many points along the digital value chain that allow for challenge by small and scrappy upstarts, including SMEs in developing countries looking to either expand the geographic footprint of their own customer base, or to source inputs cross-border to better contest their local market. This is the case for e-commerce retailer Direct Fresh of Bangladesh,[17] and showcases the real economic development potential of the digital economy, which is discussed in more detail later in this chapter.

The Role of 'Digital Trade'

When describing the digital economy under the previous heading, we sought to keep things simple by focusing on the element

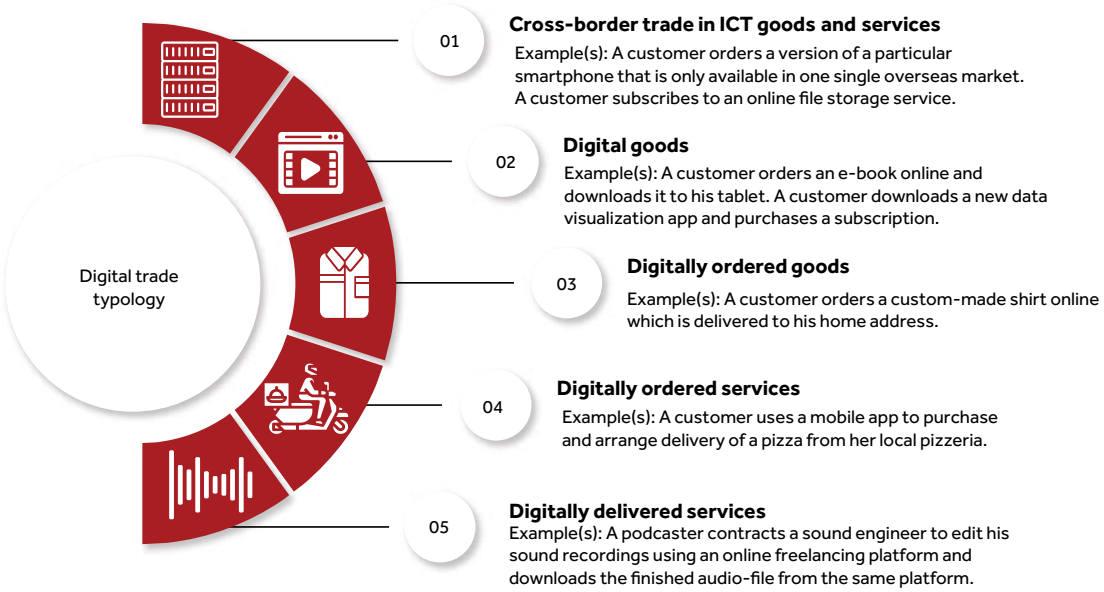
of online connectivity as the key factor that defines a given transaction as belonging in the digital realm. In terms of determining what constitutes digital trade, we would argue that keeping things simple is again helpful, so that the key element here can be whether or not a given digital transaction exudes a cross-border element. The absence of such a feature would imply that this is a purely domestic transaction and thus not one of interest to those studying or seeking policy insights in the area of international trade. However, this approach can also lead to results that fail to capture any cross-border elements of a given transaction and thus fail to categorise and record it as an instance of international digital trade (see Figure 2 for a possible typology of digital trade transactions).

Extrapolating this construct to some of the larger players in the digital economy demonstrates how useful it is for delimiting the purely domestic from the international. The example given previously, of businesses contracting cloud computing services, describes a digital transaction that may or may not include any number of cross-border elements.[18] Another example was that of the Bangladeshi online grocery delivery store. This looks like a simple domestic and local e-commerce venture, except that one of the founders was a US citizen and much of the produce sold on the platform is sourced from third-country markets, again providing the cross-border element necessary to define 'digital trade'.

The digital currency M-PESA, which has become a poster child for pathbreaking African digital innovation, was without doubt an exciting development, albeit not one which originally demonstrated any overarching cross-border characteristics, since it was initially a solely domestic payment platform, launched by Safaricom in 2007, that operated over Kenya's local 2G networks. However, over the years, Safaricom has partnered with international mobile operators such as Vodafone (itself a 40 per cent owner of Safaricom at the time M-PESA was launched) and MTN to expand the digital currency's reach into other markets, as well as entering into arrangements with various online payment processors, such as PayPal, Western Union, MoneyGram and AliExpress, to become the vehicle of choice for the Kenyan diaspora to transfer money or pay bills back home.[19] In fact M-PESA may well be one of the most successful case studies of Aid for Digital Trade since it emerged from a 2000 pilot project that was funded by the UK Government's Department for International Development as part of its Financial Deepening Challenge Fund.[20]

Different intergovernmental organisations have made various attempts to determine the scope of digital trade. For example, as part of its Measuring Digital Trade efforts, the International Monetary Fund, together with the OECD, define digital trade as 'all cross-border transactions that are either digitally ordered (i.e., cross-border e-commerce),

Figure 2. A typology of digital trade



digitally facilitated (by platforms), or digitally delivered'.[21] The OECD for its part, concedes that there is 'a growing consensus that it encompasses digitally enabled transactions of trade in goods and services that can either be digitally or physically delivered, and that involve consumers, firms, and governments'. In taking this approach, the OECD dismisses the need for any cross-border element. By the same token the OECD places less emphasis on the concept of online connectivity and greater weight on the movement of data as the defining element of what makes a given transaction digital. For all intents and purposes, whether one focuses on online connectivity or the movement of data is largely irrelevant since they are two sides of the same symbiotic coin; without online connectivity, no data can be moved between different ecosystem players, and without data there is no intrinsic value to either the connectivity infrastructure or the terminal devices they connect with.[22] It is also worth noting that different institutions, researchers or stakeholders do not and will not necessarily need one single definition. Indeed, their working definition will depend on what aspect of e-commerce or cross-border trade they wish to focus on for the purposes of their work. This fact implies that the search for one overarching and all-encompassing definition of what constitutes 'digital trade' that will satisfy everyone, may be doomed to fail from the outset.

Trade Rules to Govern the Digital Economy

From the very earliest days the WTO opted to address what, in 1998, was the fast-growing phenomenon of electronic commerce,[23] and agreed to a working definition of e-commerce as 'the production, distribution, marketing, sale or delivery of goods and services by electronic means' (World Trade Organization, 1998, 1.3). However, efforts to launch formal negotiations on e-commerce at the multilateral level were continuously stymied, until in January 2019 a large group of some 76 WTO members, comprising both developed and developing countries, announced their intention to launch what amounted to plurilateral negotiations on trade-related aspects of electronic commerce (World Trade Organization, 2019).

The regular updates provided by the WTO on the progress of these negotiations shows the kind of disciplines that are being contemplated and where some degree of consensus can be perceived to exist among the 86 members participating in these talks at the time of writing. These include rules on unsolicited email (spam), source code, open government data, trade facilitation in goods, services market access, electronic signatures and authentication, and online consumer protection.[24] Given what has already been included within the scope of various e-commerce and digital trade chapters of recent bilateral, regional and mega-regional FTAs (see below), this assortment of potential treaty provisions is not surprising. There is also still ample opportunity for developing countries participating in these talks to extract concessions and commitments of a developmental nature from their developed negotiating partners, and this is, in fact, a matter of the highest importance for developing countries and something this report will return to in the final chapter.

In addition to ongoing talks at the WTO between many members, a significant number of FTAs have already seen a set of benchmarks established with relation to disciplines on how to govern digital trade. The Trans-Pacific Partnership, which, after the US withdrawal from the completed agreement in January 2017, become the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), was the first FTA to contain binding treaty provisions on a set of commitments specifically negotiated with a view to addressing the needs of companies and (to a slightly lesser extent) citizens in the global digital economy.[25] This agreement did a lot to codify the existing status quo representing the balance of outcomes between what big digital business was asking for and what governments were willing to acquiesce to in terms of binding constraints on regulatory interventions in the digital economy.[26] It has since been followed by other initiatives, such as the digital trade chapter of the United States, Mexico, Canada Agreement (USMCA), the Digital Economy Agreement between Singapore and Australia, and the Digital Economy Partnership Agreement between Singapore, Chile and New Zealand, as well as – to a less ambitious degree – the Regional Comprehensive Economic Partnership Agreement (RCEP).

All these agreements contain explicit provisions on electronic commerce or digital trade and generally tackle these issues through a hierarchy of normative statements that range from: 1) binding with few to no exceptions or carve-outs; to 2) binding but subject to exceptions and carve-outs; to 3) non-binding best-endeavour undertakings.

What is apparent is that the commitments governments have shown themselves willing to enter into under these agreements demonstrate that consensus on a number of legislative and regulatory rule-making areas belonging to the digital economy exists in areas where governments are already working together in other intergovernmental forums or that do not call for them to sacrifice very much policy space or regulatory sovereignty. Examples from both the CPTPP and RCEP include paperless trading,[27] electronic authentication and electronic signatures,[28] domestic regulatory framework for electronic transactions,[29] and unsolicited commercial electronic messages (spam).[30]

Although all this activity takes place in the context of dedicated working groups or coalitions of FTA partners, all countries, developed and developing, need to be clear about an important reality inherent to both the digital economy and digital trade, regardless of their degree of active participation in these rule-making processes. This is that many areas of legislative or regulatory activity that are likely to impact the rights of individuals buying or selling, or the market access interests of firms operating in the digital economy, and which involve a sufficiently strong nexus to an element of cross-border trade, are likely to fall within the ever-expanding purview of digital trade rules. Given the increasing degree of both complementarity and convergence between the offline and online economies, governments can quickly find themselves wading into the area of digital trade, even when regulating matters they believe are exclusively subject to domestic law, such as consumer rights, privacy, liability, taxation or labour rights.

Digital Trade and Development

Conventionally, the development dimension of international trade has focused most of its attention on a number of areas, including – at the most fundamental level – allowing the gains from trade to support developing countries in their economic growth trajectories.[31] These arguments are well known: by engaging in trade, firms in developing countries can gain access to larger markets for their products, while consumers and firms benefit from a larger range of cheaper and better products and inputs (including services). Trade also exposes consumers and firms in developing countries to more modern technologies, again giving rise to consumer and producer surpluses. Even the more modern iterations of these arguments, as manifested in the focus on lowering trade costs and connecting with value chains, is to a large degree about allowing consumers and producers in developing countries to reap the gains from trade as traditionally conceived.

This is likewise true in the context of the digital economy. Many of the initiatives we have seen on issues like the digital divide (such as the International Telecommunication Union's (ITU) Broadband Commission for Sustainable Development) or the digital skills and regulation gap (UNCTAD's eTrade Readiness Assessments) are aimed at creating framework conditions or enabling environments that would better position developing countries to reap the benefits of digital trade. These benefits include lower barriers to entry and operating costs than many bricks-and-mortar businesses, less exposure to the dictates of economic geography, lower trade costs for digital products than for conventional tangibles, minimal to non-existent transport costs for digital products, obviation of the need to obtain trade finance for products that are digitally traded, greater market transparency and smaller information asymmetries, and many more similar such advantages (we discuss these in more detail in the next chapter under the heading The Gains from Digital Trade).

Another useful starting point for thinking about the development dimension of digital trade are the seven issues specifically spelled out by the Friends of E-Commerce for Development (FED) which met in 2017 in Geneva and articulated a consensus position in anticipation of the fact that WTO negotiations on e-commerce were no longer an issue of 'if' but rather 'when' (Ismail, 2020 p. 12). The FED comprised ten developing countries (six of which were from Latin America)[32] and highlighted the following issues as being key development concerns to be addressed under the impending e-commerce

negotiations: the identification of strategies for e-commerce readiness; access to ICT infrastructure and services; trade logistics and trade facilitation; e-payment solutions; legal certainty and regulatory frameworks; capacity-building and technical assistance; and access to financing.

Many of these issues fit neatly into the paradigms already discussed above. For example, e-commerce readiness, access to ICT infrastructure and services, capacity-building and technical assistance all relate to efforts to bridge the digital divide and close the digital skills gap. Trade logistics and trade facilitation, as well as e-payment solutions and legal certainty/regulatory frameworks correlate strongly with the issue of reducing trade costs. Access to financing is about inclusiveness. Ultimately, and similarly to the broader debates we have long had in the context of trade and development, the digital trade for development agenda is about levelling the playing field for consumers and firms (but especially firms) between developing and developed countries, not necessarily in the spirit of equality of outcomes, but rather equality of opportunities.

In the next section of this report, we discuss why contemporary and especially future AfT activities and initiatives must pivot to better reflect the realities imposed by the convergence taking place between offline and online business models. In the fourth and final chapter we present several proposals for how to do just this.

3. The 'Why' of Taking Aid for Trade Digital

In this chapter we make the case for why ODA in general but AfT in particular must pursue a 'digital first' strategy – namely because this is where the greatest impact can be achieved in the shortest period of time with the most efficient allocation of scarce development resources.

The Economic and Other Benefits of Digital Transformation

It can help to think about the economic benefits of increased uptake of ICT and digital tools at several levels. At the most basic level (so-called first-order economic benefits), there are the direct results of the economic activities inherent to building the network infrastructure and getting consumers and firms online, including but not limited to 'manufacturing and selling the equipment, its purchase (and any credit financing involved) as well as the installation work, drilling, ducting, deploying and testing of the equipment' (Lacey, 2017b, p.2).

Then there is a whole set of much more significant second-order effects, including all the economic activity that takes place on top of the network and device layers and the value generation inherent to this activity.[33] At yet another level, and given the nature of online connectivity as a general-purpose technology, are the many productivity and other efficiency gains that have accompanied the growth of the internet and related technologies, such as big data analytics, cloud computing and machine learning.[34]

Societies have also accrued other benefits more broadly, thanks to the technological developments of the last quarter of a century related to online connectivity and digitisation. These are linked to the relative ease of sharing information and organising online, which has boosted civil society in numerous ways and empowered governments to improve service delivery and participatory governance across a range of areas.[35] Similarly, these technologies have been found to have had a significant impact on reducing corruption, thereby contributing to better governance in those societies that embrace their adoption and implementation in government (Adam and Fazekas, 2018).

The obvious danger here is to view these technologies and their ubiquitous application as a kind of panacea, which obviously they are not. We discuss some of the downsides of the internet economy that have emerged, and their implications for developing countries in the context of digital trade, later in this chapter, under the heading The Dangers of Falling Behind. Suffice to say, however, that these technologies clearly bring many benefits to the economy and society, meaning that governments everywhere need to be deeply involved

in conceptualising and implementing ways to connect the greatest number of their people and firms with these technologies.

The Gains from Digital Trade

There are various benefits promised by the technological advancements that have come with online connectivity and digitisation. Suominem boldly posits that they are 'helping us close in on the Holy Grail of world trade: seamless integration and automation of the informational, financial and physical supply chains that undergird trade transactions' (Suominem, 2019, p.17). In its essence, digital trade is about the adoption of technologies that help to reduce costs and eliminate inefficiencies. As such, it represents a next logical step in the long historical arc of world trade, which has always been about finding new, more efficient, more innovative and more cost-effective ways of connecting and contesting geographically dispersed markets (Bernstein, 2008).

Because the gains from going digital are as compelling in international trade as they are in so many other areas of human interaction and commerce, it stands to reason that any initiative aimed at supporting developing countries in their efforts to integrate more closely into the global trading system must likewise embrace these trends. From its very inception, AfT has first and foremost been concerned with addressing the constraints that developing countries face in connecting with global trade and investment flows. It therefore stands to reason that when such constraints represent impediments to the broader and deeper adoption of digital technologies by people and firms in the developing world, then AfT efforts must focus on addressing these same constraints accordingly.

In fact, many of the inefficiencies and bloated cost structures that hold firms in developing countries back from competing at greater scale in regional and global value chains are more than amenable to digitally enabled solutions, particularly when they involve overcoming information deficits; reducing transaction costs; navigating complex procedural constraints associated with export and import regulations; proving identity, product origin or financial viability; obtaining short-term financing arrangements; identifying, contacting and communicating with potential distribution partners; and many similar impediments.[36]

Confronting Economic Realities

One of the most compelling reasons for focusing the AfT agenda on digital empowerment is, of course, because the offline and online economies continue to converge. As firms in developed countries increasingly adopt these technologies and leverage the efficiencies they bring, firms in developing countries that fail to do the same will be put at an even greater relative disadvantage than currently. This is essentially about levelling the playing field and goes to the heart of the original mandate of the AfT initiative.

The internet economy and related technologies are not only here to stay but constantly evolve as their uptake expands and both the pools of data and their intrinsic network effects continue to grow. The longer developing countries delay their digital transformation, and the longer firms in developing countries fail to adopt business models and tools that leverage these technologies in their production and export processes, the greater and more insurmountable the gap between developed and developing country firms is sure to become. This is yet another compelling argument affirming the need for the AfT agenda to pivot decisively towards initiatives aimed at empowering governments, citizens and firms in developing countries to go digital, and to do so without further delay. As the ancient Chinese proverb exhorts: the best time to plant a tree was 20 years ago; the next best time is today.[37]

The Dangers of Falling Behind

In addition to the dangers outlined above are the additional risks inherent to the digital economy that are slowly becoming more apparent as a number of unfavourable trends begin to assert themselves. As research by the OECD and others has pointed out, the gains from digital adoption are accrued unevenly and tend to be disproportionately captured by a few leading firms (OECD, 2019). We can see this anecdotally in the emergence and subsequent dominance of a small handful of mega-corporations in the digital economy and their unhealthy tendency to swallow competing firms or relentlessly drive them out of markets. For example,

the rise of Facebook essentially heralded the end of a number of other existing social network platforms, such as Hi5, Friendster and MySpace, in the second half of the 2000s,[38] and the company has been relentless in acquiring or copying competing firms.[39] Similarly, the many competing search engines that existed in the early 2000s, such as Lycos, Yahoo, Alta Vista Excite, Ask Jeeves, InfoSeek and WebCrawler, were all largely relegated to the dustbin of early internet history with the advent of Google, which has continuously innovated and in doing so cemented its dominant position at the heart of much of the online functionality we use every day, from search, email, navigation and translation to news, online advertising and even smart homes.[40] Although these are primarily problems of competition policy, the inherent power asymmetries underlying these imbalances also demonstrate an important development dimension, since the vast majority of the value captured in the digital economy today is accrued by firms in advanced industrialised countries and a small handful of large middle-income developing countries, with smaller developing countries and least developed countries (LDCs) almost entirely excluded.

This is referred to (among other things) as a winner-takes-all dynamic and appears to be particularly prevalent in the digital economy (Moore and Tambini, 2018). This phenomenon also bodes ill for the developing world since it may very well serve to exacerbate existing inequalities between rich and poor nations: between those with developed digital economies and those trying to catch up. The power asymmetries that the underlying network effects inherent to the digital economy seem to reinforce could – if left unchecked – render firms in developing countries irreparably disadvantaged and unable to dislodge competing developed-country firms from entrenched market positions captured as the latter continue to win the race to go digital. This is yet another compelling argument for AfT to support developing countries more fully in their trade-related digital transformations.

Yet another important risk factor that further underlines the importance for developing countries and LDCs to move quickly and assertively in embracing the technologies of the modern digital economy is the fact that many of them may be conspiring to close the traditional development pathways that have proven so successful for virtually every nation that has faithfully followed them. By this we mean the steady and relentless upward trajectory from subsistence agriculture to productive farming to low-skilled and then high-skilled manufacturing, and ultimately to the high-value added activities that constitute both upper ends of the so-called smile curve (highly skilled services and intellectual property). In both farming and manufacturing, the advent of automation and IoT technologies is driving a wedge between the very low- and very high-skilled labour inputs, further exacerbating the opportunity cost of the skills gap (Lacey, 2020a, p.7). The ability of nascent manufacturing sectors in developing countries to absorb large amounts of surplus and unskilled labour from the countryside is greatly diminished in an era where this labour must compete with robots in the automated factories and IoT-enabled manufacturing systems of more advanced countries.

The Optimal Forum for Progress

AfT, as conceived and implemented from its earliest days, has been about donor countries working together with their development partners to identify and formulate strategies for overcoming constraints to greater participation by developing countries in the world trading system. As such it represents almost an ideal forum for doing the same to overcome constraints faced by developing countries in participating more successfully in the global digital economy. The AfT initiative is characterised by a spirit of partnership and cooperation for mutual benefit and structured as a dialogue between equals, without the inevitable tensions that permeate trade negotiations, or talks on debt relief or hastily convened conferences on emergency stop-gap financing. It is perhaps uniquely suited as a forum to discuss the long-term needs of developing countries in gearing up for the digital economic realities of the future.

In addition to the underlying dynamics that make AfT such a suitable forum, there is also the sheer breadth and depth of technical expertise and development resources that the institutional players supporting AfT bring to bear. Led by the WTO – the pre-eminent global forum on all matters of international trade – and supported by organisations with deep-rooted technical expertise in matters of regulatory reform

and development, such as the OECD and the World Bank respectively, there is simply no better forum for the multifaceted complexities of these issues to be addressed with a view to achieving tangible development outcomes for the global trading system. These institutions are joined by the regional development banks that possess intricate knowledge of the constraints faced by the developing economies they oversee in their respective regions.

COVID-19 and the Recovery as Catalysts for Acceleration

Finally, as countries struggle to emerge from the ravages of the COVID-19 pandemic, at differing speeds and with new outbreaks continuing to disrupt the best laid plans for a return to normality, the long-term importance of online connectivity and digital business models has become even more evident. As the OECD has noted: '[faced] with a future where jobs, education, health, government services and even social interactions may be more dependent on digital technologies than ever before, failing to ensure widespread and trustworthy digital access and effective use risks deepening inequalities, and may hinder countries' efforts to emerge stronger from the pandemic' (OECD, 2020). This is especially true as international travel continues to stagnate and as policy-makers in many countries cast around for new ways to support economic recovery, particularly for SMEs (Clarke, 2020). The technology sector is one of the few sectors that has not only weathered the global pandemic but flourished, and again, sadly, the lion's share of the value captured has been accrued by firms in advanced industrialised countries (Waters, 2021).

This section has sought to rally arguments as to why now, more than ever, the AfT initiative must pivot decisively towards supporting governments, firms and consumers in developing countries, to embark upon a far-reaching and comprehensive campaign of digital transformation. The next and final chapter of this report offers some specific policy recommendations on how to leverage the AfT agenda to do just this, essentially by transforming this agenda itself into one focused on Aid for Digital Trade.

4. Giving the Aid for Digital Trade Agenda Legs

This section discusses several ways in which the AfT community could and should pivot towards a newly invigorated Aid for Digital Trade agenda. We begin by discussing the need to mainstream digital into efforts to harness trade for development outcomes, before moving on to a discussion of various policy actions through which this can be implemented.

Mainstreaming Digital into Trade and Development

Whereas the early 2000s saw the advent of mainstreaming trade into the development agendas of the donor community and policy-makers in developing countries, the degree to which online and digital technologies have come to dominate so many facets of economic life calls for a new focus on mainstreaming online connectivity and digital adoption into the AfT agenda. This is even more compelling given the many development gains that have already been proven to follow when digital transformation is embraced. In fact, failing to do so is likely to exacerbate existing digital divides within and between countries, going beyond only impacting firms to affect individuals/consumers, and this can be seen in many aspects of daily life, such as access to education, health care, services provided by governments and the private sector, and job opportunities. The rest of this chapter discusses several policy areas where this promises to have the most dramatic effects.

Infrastructure

Here the numbers really speak for themselves. Data published in early 2021 show that just over 40 per cent of the world's population were still without access to the internet as of October 2020, meaning they live in a world bereft of all the productivity and lifestyle-enhancing changes ushered in by this technology (Johnson, 2021). A group of scholars working under the auspices of the T-20 writing in a 2017 policy brief to the G20, then being hosted by Germany, identified

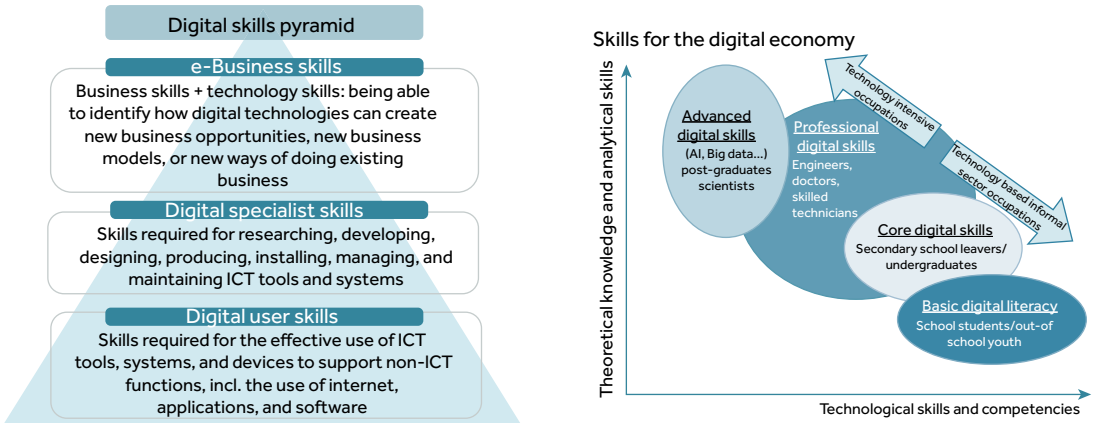
what needs to be done to connect the unconnected (Shenglin et al., 2017, p. 5). This group – like industry experts generally – breaks down the challenges into four distinct geographically designated segments, namely: 1) first mile; 2) middle mile; 3) last mile; and 4) the invisible mile. Beyond the challenges of network build-out are also a range of policy issues that impact access to and pricing of this infrastructure and the services that run on top of it (International Telecommunications Union, 2020). Each stage of bringing connectivity to users and firms requires a different set of policy interventions, the vast majority of which lend themselves relatively easily to capacity-building and technical assistance under various AfT and other similar policy support programmes.

For example, improving access conditions and stimulating infrastructure build-out for the middle mile requires 'liberalising the market for building and operating backbone networks, encouraging open access to the incumbent's network, requiring all major infrastructure programmes (such as roads, railways, pipelines and energy distribution) to include provision for an optical fibre link, setting up internet exchange points and creating local caches for frequently used content' (Shenglin et al., 2017). Except for the last two elements on this list, which actually require building physical infrastructure, all the other interventions can largely be achieved by the proverbial stroke of a regulator's pen.[41] Even overcoming the financial constraints incumbent on building internet exchange points and local data centres can be achieved through various combinations of vendor and export financing or preferential lending from the usual cohort of infrastructure lenders, such as regional development banks.[42]

Focusing on Digital Skills and Adoption

The World Bank, arguably the biggest donor in the ICT space as our data has revealed (see Annex 1), has developed a set of conceptual hierarchies that can help to structure practical approaches to raising digital skills in developing countries.[43] At the base of their Digital Skills Pyramid (see Figure 3), the World Bank Group (WBG) identifies simple Digital User Skills comprising 'skills required for the effective use of ICT tools, systems and devices to support non-ICT functions, including the use of the internet, applications and software'. At the top of this pyramid are e-business skills, defined as 'business skills+technology skills: being able to identify how digital technologies can create new business opportunities, new business models, or new ways of doing existing business'. In a similar and related exercise, the WBG differentiates the digital skills needed to participate in 'technology-intensive occupations' on the one hand, such as those requiring professional digital skills (engineers, doctors, skilled technicians), versus those requiring advanced digital skills in areas like Artificial Intelligence and Big Data (post-graduates and scientists), and on the other hand distinguishing 'technology-based informal sector occupations' such as those requiring core digital skills (secondary-school leavers and undergraduates) versus those requiring only basic digital literacy (school students, out-of-school youth).

Figure 3. Conceptual hierarchies for thinking about digital skills by the WBG



Source: Kelly (2019) based on WBG's Entrepreneurship in the Digital Economy Report (2017).

The 'where' and 'how' of imparting these skills to users will differ depending on whether they are formally enrolled in the education sector. Teaching the very basics of digital literacy to those no longer in schooling is something that can be entrusted to existing community-based organisations operating at the village or district level. Apart from the realm of international supply of educational services and vocational training, particularly via modes 3 and 4 (domestic presence of foreign education providers and free movement of natural persons providing such services, respectively), it is not immediately obvious how this important work gets embedded within AfT programmes per se, although many actors are already actively engaged from the broader ODA community. However, a comprehensive approach to digital transformation, as championed here by proposing the mainstreaming of Aid for Digital Trade, must take into account that digital inclusion involves more than digital infrastructure build-out and the simple act of connecting users to networks and digital functionality. This means that ways to support the building of digital skills among consumers, employees and entrepreneurs in developing country partners must be a flanking policy of any proposed Aid for Digital Trade activities.

In addition to empowering new users with digital skills, promoting wide scale adoption of new technologies is – on one level – about making devices inexpensive and easy to obtain, meaning low or even no tariffs or luxury taxes on consumer electronics, and refraining from subjecting imports of these products to onerous licensing regimes or quotas. These kinds of policies fall within the realm of established AfT initiatives aimed at reducing trade costs, improving trade facilitation and streamlining internal taxation regimes so that they don't overly burden economic sectors of central importance to raising productivity. On another level, enabling the ubiquitous uptake of internet services is about avoiding policy failures such as 'regulatory capture, troubled privatisations, inefficient spectrum management, excessive taxation of the sector and monopoly control of international gateways' (Shenglin et al., 2017, p. 7). Policy support to help governments in developing countries avoid these failures can and should be embedded in AfT programmes designed to bring more of the benefits of the digital economy to citizens and firms in recipient countries.

E-Government to Improve Business and Regulatory Environments

In order to avoid the problems of data silos and limited interoperability between different digital platforms, governments embarking on a process of moving services online should do so under the auspices of a broader ICT strategy, conceived at the national level but also allowing for gradual implementation as resources become available and the incorporation of lessons learned from earlier adoption efforts into subsequent rollouts.[44] The many benefits of e-government have already been alluded to in brief above, but some of these bear mentioning again here. First, there are several efficiency gains that – despite relatively high capital expenditure outlays when compared to legacy systems – free up government employees from various, more mundane, tasks and provide greater convenience and time/cost savings to users (citizens and firms). Second is the proven causality between introducing e-government and reducing corruption (Adam and Fazekas 2018).[45] Third is the possibility that online platforms provide to collect and process data, which can empower governments to improve performance over time across many different areas of governance and service delivery, from tax collection to healthcare, education, land administration and urban planning (World Bank, 2017).

The efficiency gains, reduced corruption and data-driven performance improvements all add up to business and regulatory environments that can unleash private sector growth in ways that distinctly favour SMEs, since these firms bear the highest incidence of the burdensome costs associated with red tape and bureaucratic complexity.[46] From the trade sector, efforts to promote the digital transformation of procedures and processes has been ongoing for some time, as governments try to adopt Single Windows for traders, one-stop-shops for investors and to implement regulatory reforms designed to make borders less 'thick' (i.e. by lowering trade costs), thereby allowing for the more seamless integration by firms in these countries into regional and global value chains.[47] Improving business and regulatory environments can of course be achieved, in theory, without recourse to digital technologies or online platforms. But given the efficacy that can result from the systematic and proper use

of these tools, and the impressive track record they have shown in improving governance in both developed and developing countries, combining efforts to improve the ease of doing business and facilitate trade with the adoption of digital and online systems makes the most sense for leaders and policy-makers in developing countries genuinely seeking tangible results. This is particularly true when donors and supplying firms are prepared to bear many of the associated costs.

Financial Inclusion and Lowering the Barriers to Formalisation

Using digital tools and platforms to bring financial services to the unbanked has been a welcome success story in places like Sub-Saharan Africa (SSA) and India, to the extent that SSA represents the highest percentage of mobile money usage in any region, an impressive achievement given that China has become a largely cashless economy over the last five years.[48] The benefits of this first wave of digital-driven financial inclusion have been various and well documented.[49] Digital technologies and platforms today are key enablers for access to affordable financial services that are so fundamental in supporting poverty reduction and economic growth.

A 2020 study by researchers at the World Bank discusses the regulatory approaches and market interventions governments must implement to enhance the positive economic benefits that digital financial services can have. These include: 1) enabling legal and regulatory environments (characterised by an openness to new players and approaches, enabling competition and a level playing field, consumer protection, and fostering demand and confidence by consumers); 2) enabling financial and digital infrastructure (payment systems, credit infrastructure and digital connectivity); and 3) ancillary government support systems (government data platforms, digital ID and government financial management systems) (Pazarbasioglu et al., 2020).

This is already an area where the development community is actively involved in supporting the adoption of FinTech and digital financial services (including mobile money), working with governments and the private sector to achieve greater financial inclusion. However, given the suitability of these technologies to support cross-border e-commerce and other international trade transactions, there is a compelling reason to mainstream efforts to promote both FinTech solutions and digital financial services into Aid for Digital Trade activities, and to direct them at problems such as the massive gap that has emerged in trade finance since the global financial crisis.[50]

Donors, Developing Countries and the Private Sector Working Together

The digital dimension of AfT is an area where the donor community, policy-makers in developing countries and the private sector must work together, since no single one of these can succeed on their own. Policy-makers in recipient countries have the best understanding of what constraints should be tackled and in what order of priority, since they understand best the constraints holding their economies back. The private sector is the only place that has the technical expertise to roll out online connectivity and digital technologies. Donor governments have the funds and the will to contribute them to supporting the digital AfT priorities that policy-makers in developing countries identify. However, because the impediments to uptake and deployment of digital technologies are various and complex, and many of these exist outside of the narrow regulatory silos that are the purview of ICT ministers, an all-of-government commitment and approach is needed if conditions on the ground in developing and least developed countries are going to be changed in any meaningful way. And this necessitates buy-in and direction from the highest levels of political leadership, since far-reaching changes can only come from the top if they are to reach the grassroots of society and the lowest rungs of the economy.

Conclusion

This report has argued for a step change in the prioritisation and implementation of AfT initiatives to focus more strongly on helping developing and least developed countries to embrace and leverage digital technologies. This is for several reasons, not least of which is because of the prominent role these technologies are assuming in every facet of social and economic life in advanced industrialised and middle-income developing countries. By failing to

embrace these technologies, firms and consumers in the developing world risk not only falling into entrenched rear-guard positions behind a growing digital divide, but also eroding their relative competitiveness to a point where they simply can no longer effectively compete. This could further lock them into a downward spiral of self-perpetuating economic decline and erase the modest gains we have seen in development outcomes over the last few decades.

Many activities under the auspices of AfT have already recognised the importance of going digital, and these stories need to be told so that the valuable lessons imparted from them can be disseminated to the wider audience that constitutes the trade and development community. The last time this was done in any systematic way was in the context of the biennial 2017 Aid for Trade Review. The OECD's efforts at collecting and publishing these stories ceased in 2017 and should be reinstituted.

The massive systemic changes wrought across the global economy in the wake of COVID-19 have only reinforced the necessity and the urgency for developing countries to accelerate their digital transformations, and AfT, recast as Aid for Digital Trade, has an important role to play in this process, as it addresses the many trade-related constraints that hold firms and individuals back from greater engagement in the global digital economy. We still live in a world where the lion's share of the gains from the internet economy is accrued by firms in advanced industrialised countries. There is an urgent need to address these imbalances and a newly repurposed Aid for Digital Trade agenda would be one powerful tool in efforts to do just this.

The March 2021 AfT stocktaking exercise that took place online and was hosted by the WTO had two overarching themes based on the subjects covered by the various panels and sessions listed.[51] These were the COVID-19 pandemic and digital transformation, and the impact of these two mega trends on international trade. As governments in both developed and developing countries struggle to overcome the virus and to position their economies for recovery, digital technologies will play a vital overarching role. It is time that the AfT agenda reflected this reality.

Annex 1. Data on Aid for Trade Disbursements

1. Disbursements (in Current USD millions) by Country and Region 2017 and 2018[52]

For the purpose of this study, the data extracted is specified under OECD Credit Reporting System (CRS) Code 22040 – Information and communication technology (ICT). Table A1.1 indicates that in 2017 African Commonwealth States received USD 36.3 million. The largest beneficiaries of the assistance in 2017 were Kenya, Uganda, Tanzania and Sierra Leone. In 2018, AfT resources for this region dropped by USD 4.9 million. The largest drop recorded was for Kenya, which received USD 20.4 million in 2017 but USD 7.9 million in 2018. However, there were substantial increases in AfT resources in 2018 for Malawi (USD 6.5 million), Mozambique (USD 3.2 million), South Africa (USD 1.2 million) and Rwanda (USD 1.1 million).

Table A1.2 shows the AfT resources provided to the Asian Commonwealth countries. In 2017, they received a total of USD 12.1 million and in 2018, the resources provided to them tripled to reach USD 39.7 million. In 2017, the largest beneficiaries were Bangladesh (USD 6.5 million), India (USD 4.1 million) and Sri Lanka (USD 1.3 million). The data for 2018 shows that substantial increases in AfT resources were recorded for Bangladesh (USD 18.4 million) and Pakistan (USD 13.1 million).

Table A1.3 indicates that of the five regions, the Caribbean Commonwealth countries received the least amount of AfT resources

Table A1.1. Commonwealth Africa (in USD millions*)

	2017	2018
Botswana	0.1	
Cameroon	0.03	0.02
Eswatini	-	0.02
The Gambia	0.004	0.012
Ghana	2.35	3.30
Kenya	20.41	7.90
Lesotho	-	-
Malawi	0.07	6.48
Mauritius	-	-
Mozambique	1.29	3.23
Namibia	-	-
Nigeria	0.19	0.487
Rwanda	0.55	1.06
Seychelles	-	-
Sierra Leone	1.78	0.025
South Africa	0.40	1.24
Tanzania	3.31	2.64
Uganda	4.87	4.59
Zambia	0.12	0.37
Total	**36.30**	**31.38**

*Figures have been rounded up to two decimal places.

Table A1.2. Commonwealth Asia (in USD millions*)

	2017	2018
Bangladesh	6.55	18.46
Brunei Darussalam	-	-
India	4.125	5.36
Malaysia	0.035	0.33
Maldives	-	-
Pakistan	0.09	13.10
Singapore	-	-
Sri Lanka	1.28	2.50
Total	**12.07**	**39.74**

*Figures have been rounded up to two decimal places.

Table A1.3. Commonwealth Caribbean and Americas (in USD millions*)

	2017	2018
Antigua and Barbuda	-	-
The Bahamas	-	-
Barbados	-	-
Belize		0.01
Canada	-	-
Dominica	-	-
Grenada	-	1.03
Guyana	-	-
Jamaica	-	0.13
St Kitts and Nevis	-	-
Saint Lucia	0.37	0.49
St Vincent and the Grenadines	0.25	0.41
Trinidad and Tobago	-	-
Total	**0.61**	**2.08**

*Figures have been rounded up to two decimal places.

Table A1.4. Commonwealth Pacific (in USD millions*)

	2017	2018
Australia	-	-
Fiji	0.01	0.06
Kiribati	0.22	0.20
Nauru	0.01	0.01
New Zealand	-	-
Papua New Guinea	0.80	2.50
Samoa	8.02	2.61
Solomon Islands	0.01	0.97
Tonga	0.01	0.01
Tuvalu	0.01	0.01
Vanuatu	0.01	0.08
Total	**9.10**	**6.42**

*Figures have been rounded up to two decimal places.

for ICT. In 2017, the region received USD 600,000, with the largest beneficiaries being St Lucia (USD 365,000) and St Vincent and the Grenadines (USD 246,000). In 2018, the region received USD 2.1 million and the largest beneficiaries were Grenada (USD 1 million), St Lucia (USD 495,000) and St Vincent and the Grenadines (USD 408,000). Canada is part of the Development Assistance Committee (DAC).

Figures provided in Table A1.4 show that the Commonwealth Pacific region received a total of USD 9.1 million in 2017 and, in 2018, the region received USD 6.1 million, representing a 32 per cent decline. The largest beneficiary in 2017 was Samoa (USD 8 million). In 2018, the largest beneficiaries were Samoa (USD 2.6 million) and Papua New Guinea (USD 2.5 million). Australia and New Zealand are part of the DAC.

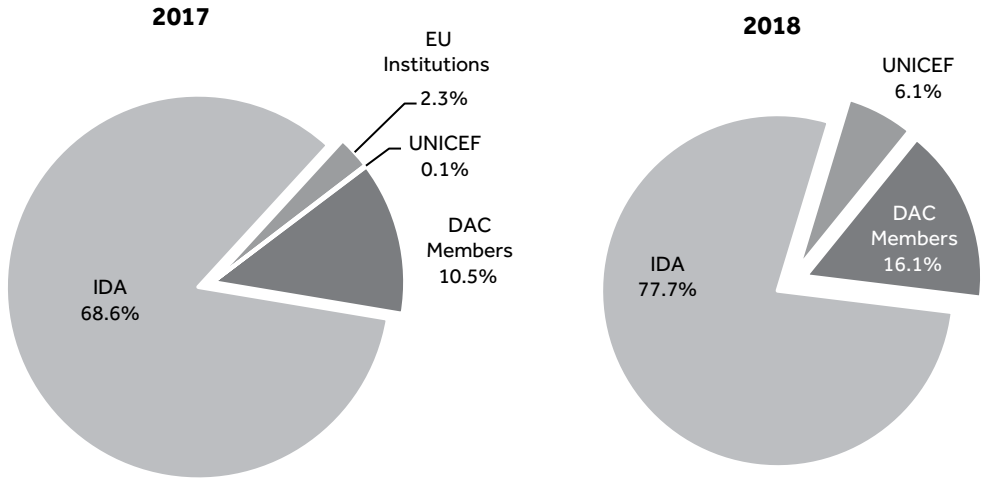
Donors by Region

Figures A1.1 to A1.4 provide an insight on the donors for each region in 2017 and 2018. For the African region, Figure A1.1 indicates that the IDA, part of the World Bank Group, provided the lion share of the funding for ICT – 68.6 per cent in 2017 and 77.7 per cent in 2018. Contributions from DAC members increased from 10.5 per cent to 16.1 per cent. UNICEF's funding also increased from 0.1 per cent to 6.1 per cent.

Figure A1.2 shows that the IDA was the major contributor to ICT in Commonwealth Asian countries. In 2017, its contribution accounted for 79.8 per cent of the region's total funding for ICT and 91.7 per cent in 2018. The DAC members' contribution fell from 18.5 per cent to 5.1 per cent – a six-fold decline. The contribution by the Asian Development Bank (ADB) remained the same for both years at 0.1 per cent. The contributions from the EU institutions reduced by half, from 1.5 per cent to 0.7 per cent.

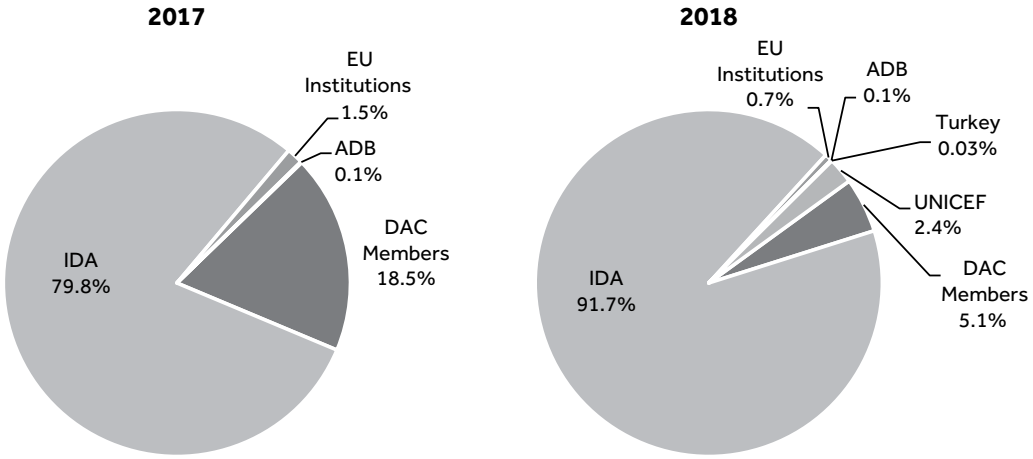
As shown in Figure A1.3, the IDA was the largest contributor to ICT in the Commonwealth countries in the Caribbean and Americas. IDA's contribution fell from 99.8 per cent to 93.2 per cent in 2018, but the shortfall was made up by contributions from the Inter-American Development Bank (IDB) (6.2 per cent) and UNICEF (0.7 per cent).

Figure A1.1. Main Sources of Aid for Trade funding in Commonwealth Africa (as a percentage)



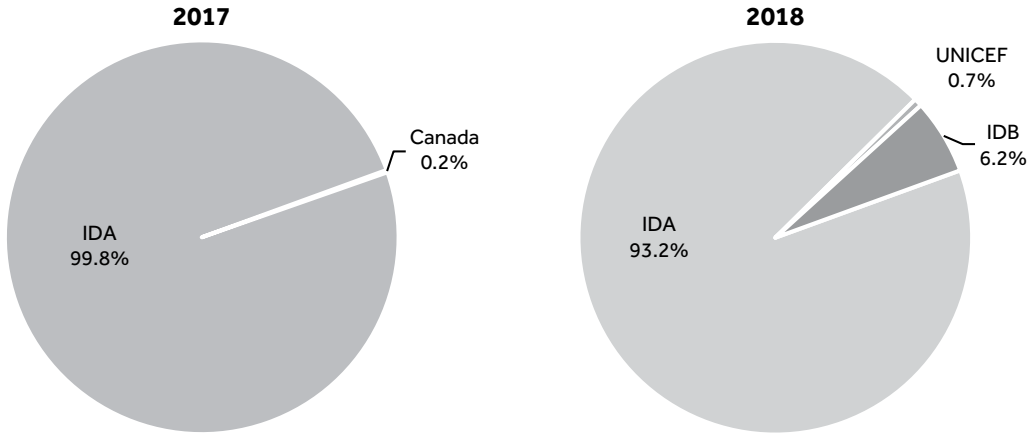
Note: percentages shown represent the respective shares of total AfT funding for ICT.

Figure A1.2. Main Sources of Aid for Trade funding in Commonwealth Asia (as a percentage)



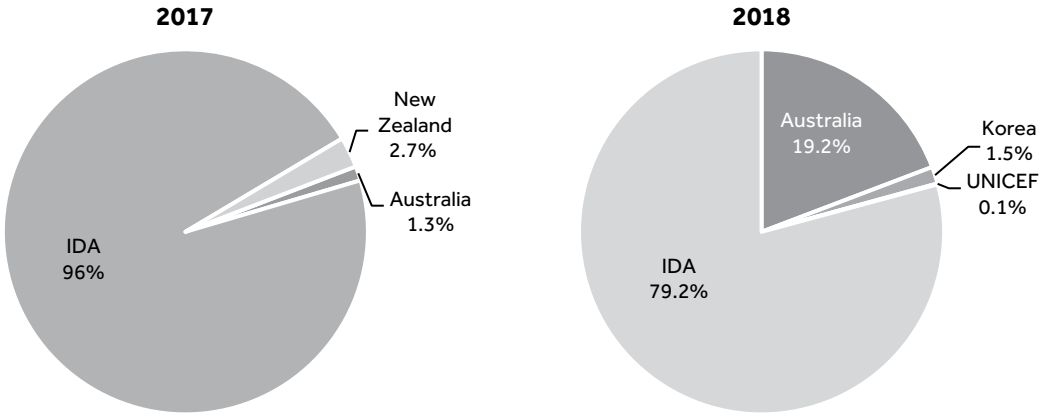
Note: percentages shown represent the respective shares of total AfT funding for ICT.

Figure A1.3. Main Sources of Aid for Trade funding in Commonwealth Caribbean and the Americas (as a percentage)



Note: percentages shown represent the respective shares of total AfT funding for ICT.

Figure A1.4. Main Sources of funding for Commonwealth Pacific (as a percentage)



Note: percentages shown represent the respective shares of total AfT funding for ICT.

Figure A1.4 indicates that the IDA was the largest contributor to ICT in the Commonwealth Pacific countries. In 2017, it contributed 96 per cent of the total resources to the region; however, in 2018, its contribution declined to 79.2 per cent. Australia's contribution increased from 1.3 per cent in 2017 to 19.2 per cent a year later. Up to 1.5 per cent of the region's total support to ICT was provided by South Korea, and UNICEF's contribution totalled 0.1 per cent.

2. Other Sources

Information on these other sources is somewhat unreliable because of a lack of adequate details. For instance, the funds allocated for specific ICT projects are denoted by N/A (not applicable) which makes it impossible to ascertain the costs. There are also some projects that have been sponsored by developed countries through international agencies such as the ITU for ICT capacity-building projects, however, they do not specify any beneficiary countries. The third issue faced by the collection of data is that there are several projects that specify a large number of beneficiary countries and include non-Commonwealth countries; it is therefore difficult to apportion the total amount of the project to specific beneficiaries.

Table A1.5. Other sources of funding

Funding Agency	Activity	Amount	Beneficiary
USAid	Small Grants Programme (Aug 2018)	USD 10,000	Ghana
USAid	Development Partnership Activity	USD 18 million	India
AusAid	Cyber Security Programme	USD 500,000	Asian and Pacific Countries

3. Indicators

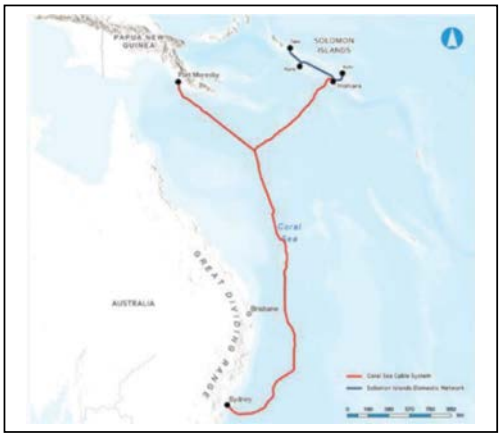
The following indicators are available in Excel format.

Indicators	Source
Internet Penetration	World Bank
Secure Internet Servers (per 1 million)	World Bank
ICT Goods as a percentage of Total Trade	World Bank
ICT Services as a percentage of Total Trade	World Bank
Mobile-Cell Subscriptions (per 100 people)	World Bank
Fixed Broadband Subscriptions (per 100 people)	World Bank
Access to Electricity (% of population)	World Bank
Account Holder (% of population)	World Bank
Net Primary School Enrolment	World Bank
Net Secondary School Enrolment	World Bank
Labour with basic education (%)	World Bank
Adult Literacy Rate (%)	World Bank
High Technology Exports (% of Total Manufacturing)	UNCTAD
B2C E-Commerce Index (0–100)	UNCTAD
Average Price of 1 GB (in USD)	www.cable.co.uk
Indicators	**Source**
Capacity for Innovation (1–7)	WEF
Laws related to ICT	WEF
Firm-level Technology Absorption (1–7)	WEF
Network Readiness Index (1–7)	WEF
ICT Infrastructure Index (1–7)	WEF
Digital Trade Restrictiveness Index	OECD

Annex 2. Case Studies on Aid for Digital Trade

Building Digital Connectivity Infrastructure in the Pacific

Overview	
Donor(s):	Australia
Recipient(s):	Papua New Guinea, Solomon Islands
Project Name:	Coral Sea Cable System
AfT Category:	Connectivity Infrastructure
Year(s):	2017–19
Value:	USD 131 million



The Coral Sea Cable System (CS2) is a fibre-optic submarine telecommunications cable that links Papua New Guinea (PNG) and the Solomon Islands to Sydney on Australia's eastern seaboard. Launched in late 2017 at the joint initiative of the governments of Australia, PNG and the Solomon Islands, it significantly upgraded connectivity in the two Commonwealth Pacific islands, with PNG previously relying on two low-capacity submarine cables and the Solomon Islands relying on expensive and less reliable satellite links.

The project was financed to the tune of two-thirds of the cost by Australia, with PNG and the Solomon Islands jointly committing to pay the remaining third. On the Australian side, this was managed by Vocus Communications, under a mandate from the Australian Department of Foreign Affairs and Trade (DFAT). On the PNG side, the project was managed by DataCo Limited, a State-Owned Enterprise (SOE) established by the government of PNG in 2014 to own, manage, operate and maintain wholesale infrastructure assets.[53] In the Solomon Islands, the Solomon Islands Submarine Cable Company Limited or Solomon Submarine Cable is a wholesale operator and government-backed joint venture between the Investment Corporation of the Solomon Islands and the Solomon Islands National Provident Fund.[54]

The day-to-day operations of the CS2 following its completion are in the hands of a special purpose vehicle, the Coral Sea Cable Company Pty Ltd (CSCC), an Australian proprietary company limited by shares, which is required to remain solvent under the Australian Federal Corporations Act (2001). CSCC has three equal shareholders, namely the governments of Australia, PNG and the Solomon Islands, each of which is represented by company directors. Solomon Submarine Cable and DataCo, together with the Australian Government, are represented on the board of directors. DataCo and Solomon Submarine Cable do not have direct ownership per se of the undersea submarine cable, but instead are each furnished with indefeasible rights of use (IRU) contingent on their meeting operating costs.

The CS2 has dramatically improved connectivity for both PNG and the Solomon Islands, with the latter for the first time being afforded access to high-speed fibre-optic cable. However, reports from both countries on the impact this has had on retail prices for internet access show little has changed at the time of writing. A June 2020 report by the ABC (several months after completion of the CS2), featuring an interview with the acting Solomon Islands Telecommunications Commissioner Haggai Arumae, noted that changes would only happen gradually, since ISPs had existing contracts with satellite operators, in some cases through 2022, and that switching costs to the new fibre-optic cable were also a hurdle for some operators. In fact, investments in landed infrastructure, including transmission towers, is necessary to handle larger bandwidth and this represented another cost constraint for domestic ISPs,

preventing the benefits of the CS2 from being passed on to firms and consumers at the retail level.[55]

In Papua New Guinea the story is similar, with a lack of competition in the retail segment, particularly for mobile internet, where the vast majority of the country's people go online, stifling the passthrough of cost savings from the wholesale market to end users. The national telecoms regulator, the National Information and Communications Technology Authority, has so far only concluded pricing arrangements with wholesalers, which have contributed to a reduction in prices, but has not done the same at the retail level. Also, as Pacific connectivity expert Dr Amanda Watson of the Australian National University has noted, '[while] internet price decreases would be welcomed by internet users, it is worth remembering that many people in PNG do not access the internet. Such people are unlikely to use the internet for some time to come, due to a range of factors such as remoteness, marginalisation, limited income, lack of electricity and illiteracy'.[56]

Thus, the support provided by Australia to address hard infrastructure constraints has yet to culminate in tangible improvements for firms and individuals in these Pacific island nations, due to a lack of required complementary policy interventions to improve the domestic regulatory environment and other enabling factors.

Caribbean Mobile Innovation Project (CMIP)

Overview

Donor(s):	Government of Canada/WBG
Recipient(s):	Jamaica (hub country); Trinidad and Tobago; Barbados; St Kitts and Nevis; Dominica
Project Name:	Caribbean Mobile Innovation Project (CMIP)
AfT Category:	Productive Capacity, Business Environment, Digital Entrepreneurship
Year(s):	2014–18
Value:	CAD 1.5 million

The Caribbean Mobile Innovation Project (CMIP)[57] was a multi-year programme aimed at supporting the development of a regional mobile app and enterprise ecosystem and in doing so worked with different stakeholders, including developers, entrepreneurs, angel and venture capitalists, national governments and regional intergovernmental organisations, civil society organisations, and academic institutions such as the University of the West Indies.

A sub-component of the Entrepreneurship Program for Innovation in the Caribbean, the CMIP, which was run from its central office in Jamaica, executed its model via four regionally located hubs (in Barbados, Dominica, St Kitts and Nevis, and Trinidad and Tobago) and driving a series of training/mentoring activities and challenges such as the Lean Mobile Startup Development Course, PitchIT Hackathons, PitchIT Regional Bootcamps and the PitchIT Regional Start-Up Challenge. These activities helped participants to perfect their public speaking and business advocacy skills to enable them to successfully pitch their mobile business ideas to investors. Winners of the competitive challenges were awarded monetary prizes to serve as seed funding for their businesses.

In terms of outcomes, the CMIP is credited with having been behind 36 commercial product launches, some USD 473,666 in investment funds raised and USD 387,023 sales revenue generated, as well as effectively kick-starting a large regional network of mobile entrepreneurs.

The CMIP was a very ambitious project and would have been well-placed to address knowledge and funding gaps not only in a developing

country context but also in many advanced industrialised countries where governments at different levels are keen to support and promote similar technology-based start-up ecosystems. In fact, the kind of expertise to successfully execute a programme such as this is not only in short supply in the developing world, but also more generally. This becomes evident when reading the subsequent project reporting that was carried out by the WBG, which indicates that some of the consultants who were hired to participate in the training and mentoring activities actually lacked real-world experience in launching mobile apps or mobile-based services businesses beyond a purely theoretical level.[58] This is indeed the problem that any such project will inevitably face; namely that these skills are in such high demand on the global commercial job market currently that those who have them are able to charge fees well in excess of those on offer in the world of overseas development assistance. In fact, because the tools, technologies and business methods in this segment of global commerce are changing so rapidly, training programmes developed for one project will quickly lose their value as they become redundant.

The best way to ensure that young and ambitious entrepreneurs in these countries have access to the latest cutting-edge tools and insights is to ensure they have ubiquitous and affordable access to the internet at home, on their smartphones and in schools and universities, where they can learn about new technologies and innovations, download affordable productivity software and participate in online forums and build their networks, as entrepreneurs in developed countries do.

East Africa's Regional Electronic Cargo and Driver Tracking System (RECDTS)

Overview

Donor(s):	European Union, Canada, Denmark, Finland, the Netherlands and the United Kingdom
Recipient(s):	East African Community
Project Name:	Regional Electronic Cargo and Driver Tracking System (RECDTS)
AfT Category:	Business Environment/Transport Infrastructure/ICT
Year(s):	2020
Value:	Unknown

This initiative, launched in September 2020, follows and expands upon similar initiatives in the region to improve the reliability and safety of overland cargo transport, namely the Regional Electronic Cargo Tracking system, which also saw substantial improvements to the physical safety of truck drivers who move the vast majority of the region's cargo.[59]

In April 2020, border closures and bottlenecks became commonplace across the region, as drivers were forced to submit to testing for COVID-19. Thanks again to a previous ODA project in the area of public health, which saw the East African Community (EAC) partner with the German Bernhard-Nocht-Institute for Tropical Medicine (BNITM), a network of mobile testing laboratories was established and integrated into the National Public Health Laboratories of the six partner states for molecular diagnosis of viral haemorrhagic fevers and SARS-CoV-2.[60] Starting in May 2020, the national public health testing authorities of Kenya, Rwanda, Burundi, Uganda and South Sudan deployed these mobile laboratories to their respective borders, and because of the common procedures and protocols that they were all using, they were able to begin issuing the newly developed Electronic EAC COVID-19

Digital Certificate to truck drivers who tested negative for COVID-19. This allowed regional trade to resume largely as before.

The last piece in the puzzle was the development of the mobile phone app, which drivers can download from the Google Play store, and which provides a way to monitor long distance truck drivers' health while also enabling contact tracing. Thus, the RECDTS sits at the crossroads of trade facilitation and public health and represents an innovative approach to real-time mutual recognition and risk mitigation, enabled through digital technologies such as mobile communication networks, smartphones and the cross-border sharing of health data for programme participants (truck drivers). This solution also allows goods to cross borders, thereby keeping supply chains and whole economies open, and allows an economically and socially vulnerable segment of the population (transport workers) to keep plying their livelihoods and enjoy an enhanced level of health and safety. As the relevant press release from the EAC Secretariat notes, the RECDTS and its related elements provide a set of digital-based solutions that aim to achieve the following six objectives:

1. Enabling mutual recognition of COVID-19 test results across borders.
2. Manage the issue of digital certificates for cross-border movement of authorised persons during the COVID-19 pandemic.
3. Provide a cross-border joint coordination framework for Ministry of Health officials along the transit trade corridor to control the spread of the virus across borders.
4. Enable digital verification of transit documents and travel authorisation by law enforcement, customs and immigration at border crossings and other strategic locations along the transit corridors.
5. Facilitate intuitive analytics of data and surveillance of mobility related to cross-border movements for better management of the pandemic in relation to cross-border mobile population segments (e.g. truck drivers).
6. Enable cross-border sharing of information relating to truck driver movement, behaviour while on transit and health status.[61]

This solution, ground-breaking as it is, shows that the most innovative approaches do not always emanate from advanced industrialised countries. Similar to the 2G mobile wallet M-PESA, launched in Kenya years before similar mobile payment schemes became commonplace in countries with more developed financial systems, the RECDTS shows what can be done when regional governments are willing to look beyond narrow regulatory silos and cooperate across borders. This scheme also highlights the importance of pivoting towards digital solutions to solve real-world problems, as doing so can help cut through red tape and institutional inertia.

Notes

1 Paragraph 57 of the Hong Kong Ministerial Declaration noted: 'Aid for Trade should aim to help developing countries, particularly LDCs, to build the supply-side capacity and trade-related infrastructure that they need to assist them to implement and benefit from WTO Agreements and more broadly to expand their trade.' As the mandate took shape over the ensuing months, these supply-side constraints were categorised into six broad headings: 1) trade policy and regulations; 2) trade development; 3) trade-related infrastructure; 4) building productive capacity; 5) trade-related adjustment; and 6) other trade-related needs.

2 For example, the introduction of a digital communications system in the Dominican Republic (see WTO, IDB and OECD (2011), p.29); Or the establishment of an ICT platform in Mongolia that allowed for 100 per cent online submissions for export and export clearance (see WTO, UNESCAP and OECD (2011), p.13.)

3 For more information on the digitisation of a business registry database in Malawi, see UNECA (2011), p. 29.

4 See Di Caprio and Suominen (2015).

5 Read this case story at: https://www.oecd.org/aidfortrade/casestories/casestories-2017/CS-08-Samoa-Submarine-Cable-Project.pdf.

6 Read this case story at: https://www.oecd.org/aidfortrade/casestories/casestories-2017/CS-59-Review-of-e-commerce-legislation-harmonization-in-ECOWAS.pdf.

7 See a description of the Digital Frontiers programme at: https://www.dai.com/our-work/projects/worldwide-digital-frontiers-df.

8 Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St Kitts and Nevis, and Trinidad and Tobago all recorded zero disbursements for ICT in 2017, with only Belize, Grenada and Jamaica recording any disbursements for 2018. St Lucia, and St Vincent and the Grenadines by contrast, recorded modest disbursements for both years; see Table A1.3 in Annex 1.

9 See Annex 1, Table A1.1.

10 For example, in the Commonwealth Caribbean and Americas region in 2017 the IDA provided a staggering 99.8 per cent of recorded disbursements of AfT in ICT, with the rest (0.2 per cent) recorded by Canada.

11 The rest was provided by the IDA. Australia's share rose to 19.2 per cent the following year.

12 See Blum (2012) for a very accessible introduction to the infrastructure that makes up the modern internet.

13 See Crawford (2013) for a discussion of how market power has become centralised in this sector in the USA.

14 See Molotkova, Khazanova and Ivanova (2018) for a discussion of the challenges faced by SMEs in the digital economy; See also Ganne and Lundquist (2019) on how SMEs can harness digital tools to become part of global value chains.

15 See Lohr (2015) for an accessible account of the rise and growing impact of Big Data; See also Schwab (2017) for some over-the-horizon analysis of what these technologies mean for individuals, businesses, societies and governments.

16 For a slightly alarming account of how user location data is collected and processed in the app economy, see Valentino-DeVries et al. (2018).

17 Direct Fresh was started as a joint venture between Bangladeshi and American business partners and catered to retail and wholesale (restaurants and hotels) customers in Dhaka, selling almost entirely imported foods, see https://directfreshbd.com/.

18 For example, if the firm buying cloud computing services is in another country than the firm that provides these services then this would meet the definition of mode 1 trade in services (cross-border supply). If, on the other hand, the firm offering the services sets up a subsidiary in the same country as the firm procuring these services, then this would in all likelihood be a form of investment that would meet the definition of mode 3 trade in services (domestic presence). However, if the cloud-computing provider and the procuring firm are both located and owned by interests domiciled in one market, then this is unlikely to be an example of digital trade, but rather a purely domestic transaction.

19 See Kyule, Kangu and Emuron (2018) for a short history of the company's internationalisation.

20 This statement of course belies the fact that this ODA project was launched before the AfT initiative came into existence and was focused on financial inclusion rather than on international trade. See the description of this on the website of the development contractor that implemented the programme, Nathan Inc: https://www.nathaninc.com/design-of-the-financial-deepening-challenge-fund/.

21 See International Monetary Fund (2018).

22 An iPhone without any functionality is just an expensive paperweight and a cellphone tower that doesn't connect users or devices to a network is an expensive eyesore.

23 Amazon, perhaps the most iconic e-commerce retailer at the time of writing, began service as an online bookstore in 2005, only three years before the WTO Declaration and Work Programme.

24 This list of negotiating topics care of an October 2020 update on these talks, see https://www.wto.org/english/news_e/news20_e/ecom_26oct20_e.htm.

25 See Lacey (2017a) for a discussion on how the TPP chapter on electronic commerce set a new benchmark for trade rules to govern the digital economy.

26 For a critique of just how reluctant governments were to suffer any binding constraints on their policy space in this area, and thus how little business certainty is afforded by the trade rules negotiated so far under CPTPP and subsequent agreements like USMCA (the United States, Mexico, Canada Agreement), see Lacey (2020b).

27 Most of these governments have already committed to some degree of paperless trade under either the WTO Trade Facilitation Agreement, or similar initiatives under the World Customs Organization, or the Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific negotiated

under the auspices of UN ESCAP, and which entered into force on 20 February 2021.

28 This is work that has been ongoing under the auspices of the United Nations Commission on International Trade Law (UNCITRAL) for many years.

29 Also, the subject of collaborative efforts at UNCITRAL for many years.

30 There is, it seems, no constituency for the protection of the right to spam email recipients.

31 See, for example, Linder (1967), or for a more recent retelling of the history of export-led economic growth models, see Studwell (2013).

32 The ten members of FED were Argentina, Chile, Colombia, Costa Rica, Kenya, Mexico, Nigeria, Pakistan, Sri Lanka and Uruguay.

33 See Brynjolfsson et al. (2018) for a discussion on measuring the value of digital goods and services.

34 This despite an observed slowdown in labour and multifactor productivity growth more generally over the last decade in OECD countries, see OECD (2019).

35 See, for example, Armstrong and Butcher (2018) on the use of social media platforms by NGOs in Nigeria; See also Falco and Kleinhans (2018) for a discussion on digital platforms facilitating participatory interactions between governments and citizens.

36 See Harcar and Karakaya (1997) for a discussion of the export barriers plaguing firms in developing countries based on survey data from Turkey; See also Gebrewahid (2016) for a discussion of the impediments to export faced by Ethiopian firms in the leather footwear manufacturing sector.

37 Quoted at https://www.quotespedia.org/authors/c/chinese-proverbs/the-best-time-to-plant-a-tree-was-20-years-ago-the-second-best-time-is-now-chinese-proverb/.

38 Press (2018) discusses these developments in some detail.

39 Dwoskin (2020) documents these practices at great length.

40 Vaughan-Nichols (2017) provides a succinct and accessible account of the history of internet search and the success of Google in this market.

41 Including any necessary changes to the law, which would also constitute relatively 'easy' changes when compared with the costs and logistical challenges of network build-out.

42 For instance, the example of an AfT digital infrastructure project discussed previously, involving connecting Samoa with an undersea submarine cable, was financed by the Asian Development Bank and the Australian Government.

43 See Tim Kelly's thoughtful slide deck outlining in some detail the various elements of the WBG's Digital Economy for Africa (DE4A) initiative, Kelly (2019), p. 26.

44 Muñoz and Bolívar (2018) discuss challenges, problems and solutions in the implementation of e-government in developing countries, see in particular pp. 8–9.

45 See also Park and Kim (2019), who use panel data analysis on longitudinal data collected from 214 countries between 2003 and 2016 to conclude that 'e-government as a whole significantly reduces corruption'.

46 See Lacey (2020a) for a discussion of the urgent need for governments to reform private-sector governance in a way that genuinely favours the poor.

47 The 2013 and 2015 iterations of *Aid for Trade at a Glance* discuss these efforts in great detail, see for example WTO/OECD (2013), pp.37 ff. and WTO/OECD (2015), pp.133 ff.

48 On Africa's position as a global leader in mobile money, see Kelly (2019), p. 23, and Pazarbasioglu and Mora (2020); On China's evolution towards becoming a cashless economy, see Morris (2019).

49 See, for example, Suri and Jack (2016).

50 Suominen (2019), pp. 136 ff. advocates forcefully in favour of doing precisely this.

51 See the program agenda at: https://www.wto.org/english/tratop_e/devel_e/a4t_e/gr21_e/stocktaking_outline_programme11221_e.pdf.

52 European Commonwealth members are not included here since they are categorised as donors of AfT.

53 https://www.pngdataco.com/

54 https://siscc.com.sb/

55 See the ABC's reporting on this at: https://www.abc.net.au/radio-australia/programs/pacificbeat/full-benefit-lof-aus-funded-interent-to-sols-png-still-to-come/12306288.

56 https://devpolicy.org/internet-prices-in-papua-new-guinea-20200130/

57 See the World Bank's own factsheet on the project at: https://www.s4ye.org/sites/default/files/S4YE%20Digital%20Jobs%20Case%20Study%20-%203.%20CMIP.pdf.

58 See, for example, some of the comments reported in the programme evaluation, at: https://documents1.worldbank.org/curated/en/272271562946070734/pdf/End-of-Program-Evaluation-of-the-Entrepreneurship-Program-for-Innovation-in-the-Caribbean.pdf.

59 See Trademark East Africa's case study on this programme, at: https://www.trademarkea.com/stories/technology-reduces-lurking-danger-for-truck-drivers-and-goods/.

60 See https://globalizationandhealth.biomedcentral.com/track/pdf/10.1186/s12992-021-00700-9.pdf.

61 See the press release of the EAC Secretariat, at: https://www.eac.int/press-releases/147-health/1851-eac-rolls-out-regional-electronic-cargo-and-driver-tracking-system.

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