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World Trade Organization

Economic Research and Statistics Division

DIGITAL CONNECTIVITY & E-COMMERCE: OVERVIEW OF FINANCING FLOWS AND EXAMPLES OF AID FOR TRADE SUPPORT

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ABSTRACT

Digital networks are an increasingly critical component of global trade. In 2017, the Global Review of Aid for Trade highlighted the importance of accessible and affordable connections for trade connectivity. Drawing extensively on information harvested in the Monitoring and Evaluation exercise in preparation for the Review, this paper analyses aid for trade for digital connectivity and e-commerce. Also presented in this paper are the types of issues and challenges faced in cross-border electronic transactions – an area in which demand for support is set to grow. The paper also surveys flows reported to the Organisation for Economic Cooperation and Development Creditor Reporting System. Funds disbursed to digital connectivity amounted to US$6.6 billion in concessional financing and US$8.3 billion in non-concessional financing in the period 2006-2016. The top providers of financing were the European Union, Japan, Korea, the United Kingdom and the World Bank Group. The paper also highlights the various methodological difficulties encountered, and explains the need to further refine reporting definitions so as to better capture financing flows to digital connectivity and to understand how aid for trade is being used to leverage private sector financing for ICT. The analysis concludes by reviewing the catalytic role that aid for trade is playing in mobilizing private sector financing. Research for the 2017 Global Review suggests that both developing countries and donors view ICT connectivity as an area where demand for financing will grow in future.

Keywords: *aid for trade, digital connectivity, ICT connectivity, e-commerce*

JEL classification: F35, P33, P45, L81, O33

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This is a working paper, and hence it represents research in progress. This paper represents the personal opinions of individual staff members and/or external contributors and is not meant to represent the positions of opinions of the WTO or its Members, not the official position of any staff members. Any errors are the fault of the authors.

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Table 1 – Abbreviations and Acronyms

A2i	Access to information
A4Ai	Alliance for Affordable Internet
ADI	Affordability Drivers Index
AfDB	African Development Bank
AfT	Aid for Trade
AsDB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
B2B	Business to Business
B2C	Business to Consumer
BRI	Belt and Road Initiative
CARICOM	Caribbean Community
CIVs	Collective Investment Vehicles
CRS	Common Reporting Standard
CS	Case story
DAC	Development Assistance Committee
DFAT	Department for Foreign Affairs and Trade, Australia
DFID	Department for International Development, UK
EABN	East Africa Broadband Network
ECOWAS	Economic Community of West African States
EBRD	European Bank for Reconstruction and Development
EU	European Union
FDI	Foreign Direct Investment
ICT	Information and Communications Technology
ITC	International Trade Centre
ITU	International Telecommunications Union
LACs	Latin America and the Caribbean
LDC	Least developed countries
LMICs	Lower Middle Income Countries
M&E	Monitoring and Evaluation
MSMEs	Micro, Small and Medium-sized Enterprises
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
OOF	Other Official Flows
REC	Regional Economic Community
SADC	South African Development Community
SPS	Sanitary and Phytosanitary Standards
STIKK	Kosovo ICT Association
TC	Transport Corridor
TFA	Trade Facilitation Agreement
UK	The United Kingdom
UNCTAD	United Nations Conference on Trade and Development
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific and Cultural Organization
UMICs	Upper Middle Income Countries
UNDP	United Nations Development Programme
WAPP	West Africa Power Pool
WBG	World Bank Group
WSIS	World Summit on the Information Society
WTO	World Trade Organization

1 SUMMARY

1. A key message emerging from the 2017 Global Review of Aid for Trade (AfT) is that digital networks are now an integral component of global trade. Accessible and affordable digital connections are critical for trade connectivity. Drawing extensively on the information collected as part of the OECD-WTO monitoring and evaluation exercise, this working paper reviews actions by developing countries and their development partners to promote digital connectivity (herein referred to as ICT connectivity) and e-commerce.

2. In 2017, 63 developing countries, of which 25 are least developed countries (LDCs), submitted aid-for-trade self-assessment questionnaires in response to the monitoring and evaluation (M&E) exercise. Thirty of them indicated having a national e-commerce (or other digital-related) strategy. According to respondents, the main e-commerce issues faced were difficulties with payments, business-to-business (B2B) transactions and business-to-consumer (B2C) transactions. They also indicated facing issues in accessing and using internet services. Thirty-seven of them said that the cost of broadband subscription, slow internet connection speeds, data protection and e-signatures were the biggest difficulties encountered.

3. International Telecommunications Union (ITU) data indicates that many more countries actually have e-strategies than reported these strategies in the M&E exercise. As part of its efforts to promote connectivity, the ITU launched the World Summit on the Information Society (WSIS) process. The 2003 Geneva phase of the WSIS resulted in a Declaration and Action Plan that, among other things, called for the development of national e-strategies.[1] Figures show that 163 national e-strategies had been developed by 2011 (ITU) and 151 national broadband strategies by 2016 (ITU/UNESCO).

4. A majority of donors (23 out of 38) indicated that ICT connectivity and e-commerce were prioritized in their national development policies. These priorities consisted of ICT development, e-government and e-commerce development, together with other digital strategies. Twenty-nine donors stated that they provide support for ICT connectivity and e-commerce development, more particularly in the area of ICT infrastructure development and upgrading. Both donors and recipients expect demand for ICT connectivity and e-commerce support to grow.

5. According to data reported to the OECD CRS, a total of US$6.6 billion in concessional financing was disbursed to ICT connectivity from 2006 to 2016. This figure represents 1.92% of all aid for trade disbursed in the period (US$342.3 billion). A further US$8.3 billion was disbursed in non-concessional financing, mainly to middle income countries. In terms of geographical distribution, Asia was the largest recipient, followed by Africa, and Latin America and the Caribbean. A core group of five donors, the European Union (EU) institutions, Japan, Korea, the United Kingdom (UK) and the World Bank Group, provided approximately two-thirds of total concessional financing over the 2006-2016 period.

6. Various methodological difficulties arise in estimating donor support for ICT connectivity and e-commerce. Indeed, the OECD CRS categories only offer a partial reflection of the elements discussed in the World Trade Organization's (WTO) E-Commerce Work Programme. Using alternate metrics generates different results. The United Nations Conference on Trade and Development (UNCTAD) eTrade of All framework identifies seven critical areas for e-commerce development: e-commerce assessments, ICT infrastructure services, payments, trade logistics, legal & regulatory frameworks, skills development, and financing for e-commerce. Using this e-trade for all categorization against OECD reporting codes gives a different perspective on financing flows. Figures for the period 2006-2016 amount to US$54.7 billion in concessional financing and US$40.6 billion in non-concessional financing. However, it is worth noting that given the breadth of the OECD reporting categories, not all reported support can be attributed to ICT connectivity or e-commerce. South-South partners are also becoming increasingly important providers of ICT financing, but data on their financing flows is limited.

7. A further methodological difficulty is understanding how aid for trade interacts with other financing flows, particularly foreign direct investment (FDI). UNCTAD's World Investment

[1] WTO, Aid for Trade at a Glance 2017, https://www.wto.org/english/res_e/booksp_e/aid4trade17_e.pdf.

Report 2017 on Investment and the Digital Economy reports a total of 730 greenfield project investments in ICT infrastructure announced between 2012 and 2016.[2] These projects were worth US$118 billion, US$37 billion of which went to Asia and US$25 billion to Africa.

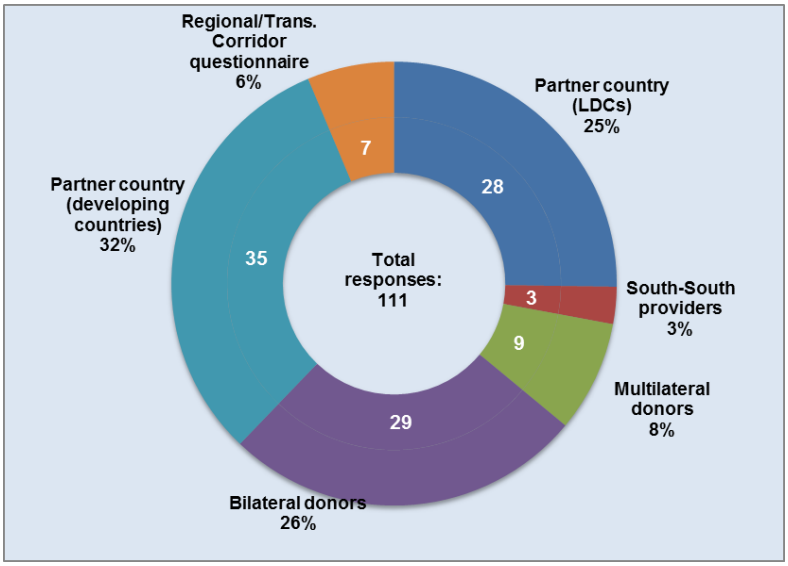
8. This preliminary analysis of financing for ICT and e-commerce development highlights three particular needs: the first is to refine the reporting definitions so that it more accurately captures financing flows to the sector; the second is to consider financing in a broader sense; and, the third is to study how concessional funding is interacting with private sector investment.

2 INTRODUCTION

9. This working paper provides an overview of the information collected on ICT connectivity and e-commerce through the 2017 AfT M&E exercise.[3] It collates material from three sources: first, the responses to self-assessment questionnaires; second, submissions of case stories; and third, information on financing flows reported to the OECD CRS for the period 2006-2016.[4]

10. Self-assessment questionnaires and the call for case stories were addressed to partner countries (developing and least developed Members), regional economic communities (RECs) and transport corridors (TCs), donors (bilateral and multilateral), and providers of South-South trade-related assistance. Figure 1 shows a breakdown of the replies received from 111 respondents. Figure 2 categorizes the 143 submissions made to the call for case stories.

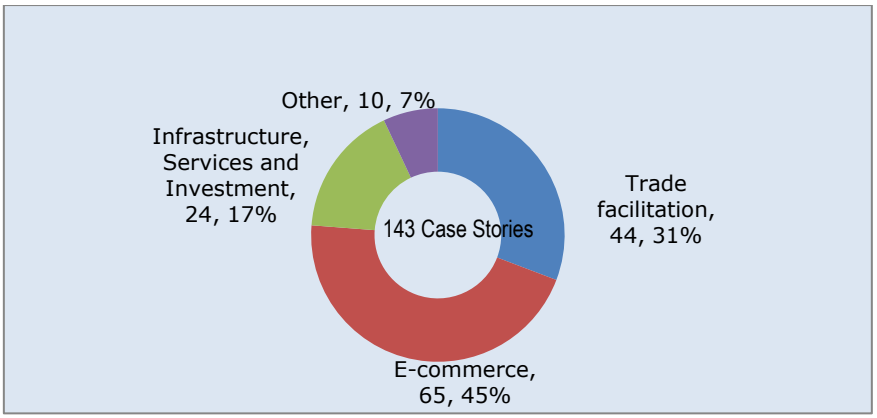
Figure 1 – Self-assessment questionnaires by respondents



Source: OECD/WTO Aid-for-Trade M&E exercise (2017).

[2] World Investment Report 2017, Investment and the Digital Economy, http://unctad.org/en/PublicationsLibrary/wir2017_en.pdf.
[3] In this document, ICT connectivity and digital connectivity are used interchangeably.
[4] OECD Creditor Reporting System http://www.oecd.org/dac/aft/aid-for-tradestatisticalqueries.htm.

Figure 2 – Case story (CS) by focus



Source: OECD/WTO Aid-for-Trade M&E exercise (2017).

11. Reporting to the OECD CRS provides detailed information on official development assistance (ODA). Several of the purpose codes capture support to upgrade ICT capacity. These codes broadly capture digital connectivity support, but do not represent the full range of activity in this area.

12. Tracking support for e-commerce participation is similarly problematic, with relevant reporting codes capturing not only e-commerce-relevant activities but also much broader support in this category. An example here is support for banking services; while it is important as it facilitates access to e-commerce related payment systems, many of the actions funded are unrelated to e-commerce.

13. An additional shortcoming is that information on South-South cooperation flows is limited. This paper provides examples of South-South cooperation, but a more systematic analysis would yield a more complete picture. The private sector is also engaged in a number of initiatives to promote digital connectivity and e-commerce skills, which are also not captured in the OECD CRS database. Many of these activities are conducted by corporate foundations or in form of corporate social responsibility actions.

14. A final issue is that information on foreign direct investment (FDI) is not available at the sectoral level. The 2016 OECD-DAC Survey estimates that between 2012 and 2015, US$81 billion was mobilized from the private sector by official development finance interventions in the form of guarantees, syndicated loans, shares in collective investment vehicles (CIVs), credit lines and direct investment in companies. These metrics show that US$1.5 billion (or 2%) went to "communications".[5] A sectoral breakdown of this information, and FDI in general, would be highly relevant to understand if and how official development assistance is mobilizing private finance in the ICT sector.

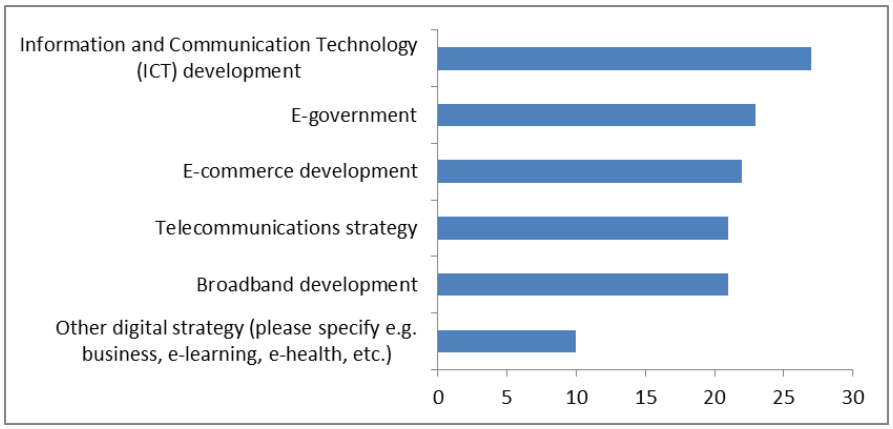
15. These methodological concerns are discussed in a final section that examines support to ICT connectivity and e-commerce using different measurement methods, including UNCTAD's eTrade for All e-commerce readiness framework.

3 ICT CONNECTIVITY & E-COMMERCE PRIORITIES IN PARTNER COUNTRIES

16. Information collected through the Aid-for-Trade monitoring and evaluation (M&E) exercise shows that developing countries are formulating policies relating to ICT connectivity and e-commerce. In 2017, 63 developing countries governments replied to the self-assessment questionnaire. According to responses received, 30 developing countries said they have a digital-related strategy. Out of this group, nearly all countries (29) said that they also have another type of strategy running in parallel, including national ICT development, e-government, e-commerce, telecommunications and broadband strategies (See figure 3 below).

[5] Source: OECD – Amounts Mobilised from the Private Sector By Official Development Finance Interventions, http://www.oecd.org/development/stats/mobilisation.htm.

Figure 3 – National e-commerce or digital related strategies



Source: OECD/WTO Aid-for-Trade M&E exercise (2017).

17. These national strategies cover a diverse range of national government policy areas including: e-health, e-learning, ICT for productive development, ICT and environment, legal frameworks on electronic signatures and documents, cyber-security, and a strategy for MSME entry into the digital economy.

18. It is interesting to note that the M&E responses did not demonstrate any link between the elaboration of national strategies and the level of economic development. Among the country respondents that cite a national e-commerce or other digital strategy two are high-income, 15 middle-income, and 13 least-developed. Box 1 below provides further information given by respondents about their national strategies. Twenty-one of the 30 respondents stated that their national e-commerce or digital-related strategy was also reflected in their national development strategy.

Box 1 – Quotes on national e-commerce and other digital-related strategies[6]

Burkina Faso: "[The] e-commerce sectoral cyber strategy [was] adopted in 2013 by the Government".

Dominica: There is a draft strategy for e-government which takes e-commerce into consideration.

Mali has adopted a national policy document and a strategic plan to develop ICTs in 2004. In 2010, a sector-wide development policy for e-commerce was created.

Rwanda [outlined the] SMART Rwanda Master Plan 2015-2020.

Senegal [communicated that its] strategy entitled "2025 Digital Senegal" was currently being drafted.

Saint Vincent and the Grenadines: "The National ITC Strategy expired in 2015. We are currently in the process of developing a new strategy".

Tonga: "There is little awareness about e-commerce".

Uganda [quoted the] National e-Government Master plan and [the] Roadmap.

Source: OECD/WTO Aid-for-Trade M&E exercise (2017).

[6] Among the information offered were links to national strategies. These national strategies have been added in Annex 1.

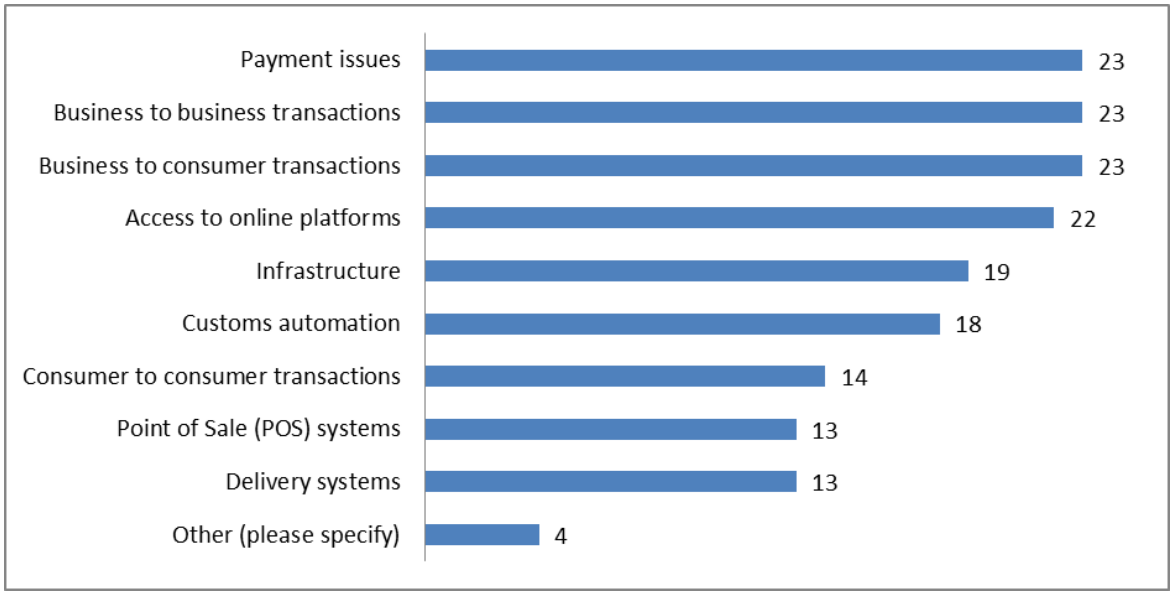
19. Data from the ITU indicates that 163 countries had national e-strategies in place in 2010.[7] The Broadband Commission also reports that 151 countries had National Broadband Plans in 2016.[8] Comparing ITU data with data received as part of the 2017 AfT M&E replies suggests that all 63 respondents have a broadband strategy, and that 61 of them have an ICT strategy[9] – a higher figure than the 30 who reported a strategy.

20. A possible reason for the apparent discrepancy could stem from the wording of the questions, as it may have inadvertently placed more emphasis on e-commerce than on other types of digital strategies. Developing countries may well have ICT or digital-related strategies but no strategy that specifically applies to e-commerce. Alternatively, some respondents may have decided not to reference a recently-expired or currently-being-updated strategy. Eighteen respondents noted that they planned to develop or update their national development strategy to include e-commerce. In addition, 16 respondents said they were planning to develop a separate e-commerce or digital-related strategy.

21. Another reason why respondents may not have cited national e-commerce or digital strategies might be due to national coordination shortcomings. Among respondents that have e-commerce or digital-related national strategies, 21 stated that coordination is ensured by their Ministry in charge of ICT. From the information collected, it appears that Ministries of Trade are not systematically represented in coordination mechanisms. In short, the respondents may not necessarily have been aware of new national ICT strategies.

22. According to developing country respondents, the top three issues covered in national strategies were payment issues, B2B transactions, and B2C transactions. Other issues include access to online platforms, ICT infrastructure, customs automation and provisions to promote confidence in e-commerce. In addition, provisions to encourage investment in, and financing of, e-commerce, data protection, and consumer protection were cited in national strategies (See Figure 4).

Figure 4 – Issues covered in national e-commerce or other digital-related strategies



Source: OECD/WTO Aid-for-Trade M&E exercise (2017).

23. Several of the case stories received highlighted the issues and priorities addressed in national strategies as well as the different steps governments are taking to integrate ICT development and e-commerce into national development policies. These steps include regulatory reforms and investments in infrastructure, and public awareness initiatives on the benefits and opportunities of

[7] See, (2011) ITU National e-Strategies for Development: Global Status and Perspectives 2010, p. 4.
[8] See, (2016) State of Broadband 2016, p. 88.
[9] Annex 1.

the digital economy. Also included were training and capacity-building programmes, and strategic actions to connect rural and hard-to-reach populations at affordable rates.

24. The Government of Côte d'Ivoire noted in its self-assessment questionnaire that it is working on developing an e-commerce ecosystem. Its national regulatory reforms aim to encourage electronic transactions, including laws to protect personal data and consumers, and fight cybercrime. The government has created a Ministry of Posts and the Digital Economy, and has opened an academic institution which focuses on new technologies. Online businesses are tapping into the growing consumer demand. Nevertheless, the growth of e-commerce is still constrained by limited logistics, insufficient payment services, and by high costs of electricity and broadband. Recognizing these challenges, the Government has launched an ICT development initiative targeting infrastructure, services accessibility, the development of national expertise and the implementation of a technological free zone (CS 138).

25. Also integrating ICT development in its national development strategy, the Dominican Republic focusses on the need to make broadband access affordable. This increased focus led to the review and update of E-Dominica, the country's e-strategy (CS 4). Box 2 below highlights Bangladesh's experience with the Access to Information (A2i) programme (CS 141 and CS 142).

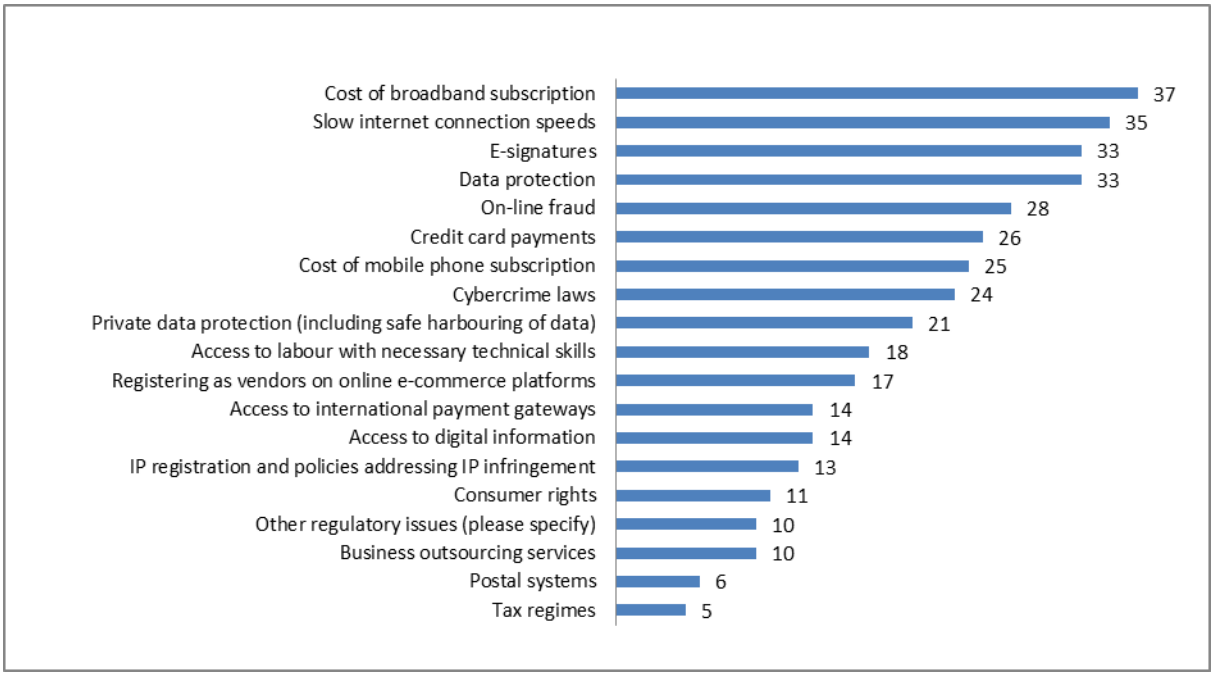
Box 2 – A2i and E-commerce – "Digital Bangladesh"

In Bangladesh, e-commerce hit the big wave of transformation in the early 2010s. However, with less than 15% of the country's total population shopping online, mostly in urban areas, the market became saturated with big e-commerce players trying to get a share of the pie. In the rural areas of Bangladesh, mobile phone usage is now seeing a new revolution. However, cultural norms, language barriers, social practices, and resistance to change are making it difficult for e-commerce to succeed. Hence, A2i crafted an "Assisted E-commerce model" to bridge the gaps and create opportunities for rural e-commerce, A2i aims to facilitate a comprehensive e-commerce ecosystem, and takes care of the crucial factors determining the functionality of the ecosystem, allowing any partner or player to take advantage of the backbone created by A2i. The ecosystem proposed by A2i follows an "Assisted E-commerce model", and will include entrepreneurs or agents as facilitating parties in the entire transaction cycle.

Source: OECD/WTO Aid-for-Trade M&E exercise (2017), CS 141 and CS 142.

26. The cost of broadband subscription was highlighted by 37 respondents as their main issue in accessing and using internet services. It was closely followed by slow internet connection speeds, data protection and e-signatures (See Figure 5).

Figure 5 – Main issues faced in accessing and using the internet



Source: OECD/WTO Aid-for-Trade M&E exercise (2017).

27. A similar picture emerges from the monitoring exercise responses submitted by LDCs. Seventeen LDCs identified slow internet connection speeds as a main issue for enterprises and consumers alike, followed by e-signatures (16) and the cost of broadband subscription (14). Other issues they ranked highly included private data protection (12), problems registering as vendors on online e-platforms (11), cybercrime laws (11), and credit card payments (11). In its self-assessment questionnaire response, Nepal noted that e-banking, mobile money and e-government transactions were held back by the cost of broadband subscription, insufficient access to digital information, insufficient private data protection, and problems with e-signatures. Similarly, Suriname added that e-payment services were held back because of the lack of a legal framework.

28. The Alliance for Affordable Internet (A4AI) makes recommendations on what governments can do to address restrictions related to cost (see Box 3 below). The case story they submitted discusses the A4AI – Affordability Drivers Index (ADI) which examines policies, incentives, and infrastructure investments across 51 developing and emerging countries, as well as corresponding levels of implementation.

Box 3 – A4AI: Everyone should have access to the internet

On our current trajectory, by 2020 only 16% of people in the world's poorest countries and 53% of the world as a whole will be connected. This connectivity lag will undermine global development across the board, contributing to lost opportunities for economic growth and denying hundreds of millions access to online education, health services, political voice, and much, much more.

As stark as the affordability picture appears for those living in poverty and at the bottom of the income pyramid, the cost to connect is even higher for women in these groups. The gender wage gap diminishes the ability of women – and female-headed households in particular – to afford Internet access. Recent research by the Web Foundation shows that poor urban women are 50% less likely to be connected to the Internet than men in the same age group with similar levels of education and household income. However, on the whole, scores on the ADI are low, meaning much hard work lies ahead for countries to create the right environment to drive prices down and connection rates up.

Recommendations:

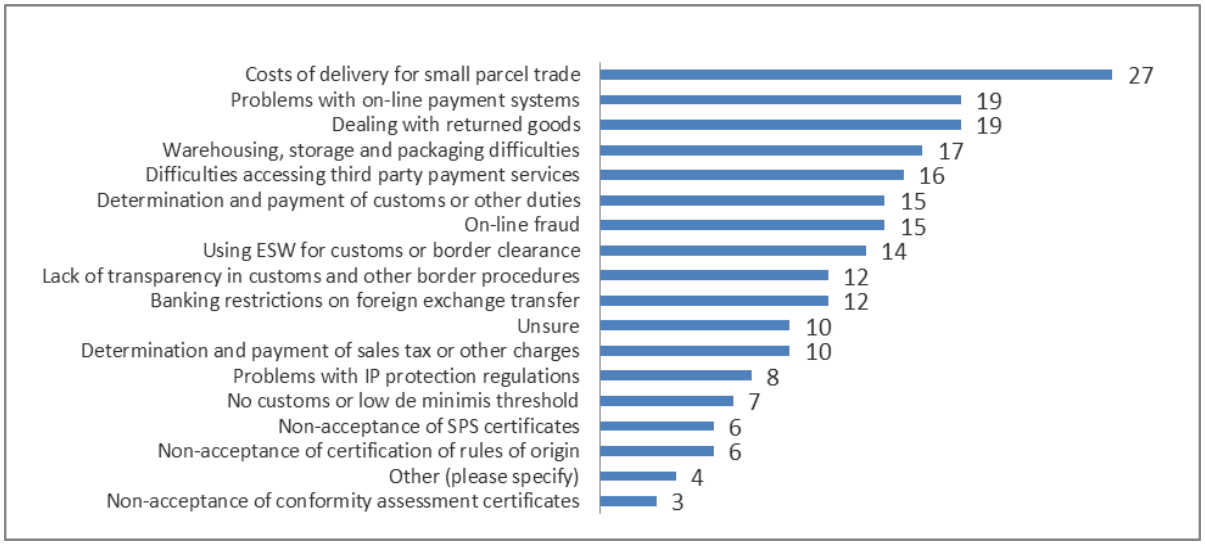
1. Develop and work toward a more ambitious affordability target.
2. Reduce the cost of mobile phones and ICT devices.
3. Increase investment in and availability of public, subsidized access.
4. Create specific, time-bound targets to close the gender digital divide.
5. Integrated approach to policy-making.

Source: Alliance for Affordable Internet and OECD/WTO Aid-for-Trade M&E exercise (2017), CS 2.

29. Internet access enables firms to connect to a new global market of consumers and suppliers. Poor physical and digital connectivity prices small firms out of the internet marketplace, particularly in LDCs. Micro, Small and Medium-sized Enterprises (MSMEs) are least likely to establish a business online than larger firms, and MSMEs that do succeed in establishing an online business face a myriad of other "softer" issues. Other connectivity gaps persist even when the internet is available (for example between rural and urban citizens, between men and women, etc.).

30. The top five import challenges identified by partner countries and that MSMEs report in relation to cross-border e-commerce transactions are: cost of delivery of small parcel trade, problems with online payment systems, dealing with returned goods, warehousing, storage and packaging difficulties and difficulties accessing third party payment services (Figure 6).

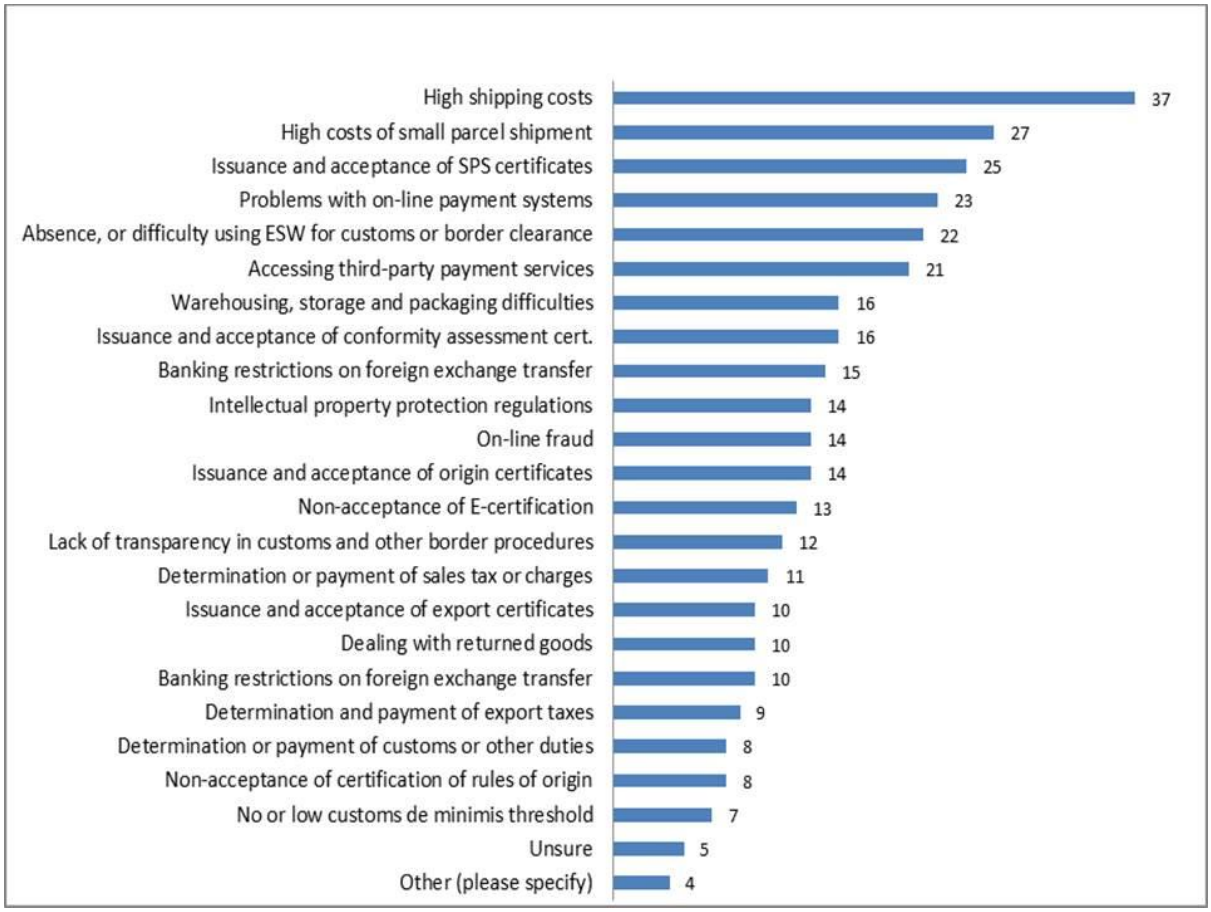
Figure 6 – Import challenges MSMEs face in cross-border e-commerce



Source: OECD/WTO Aid-for-Trade M&E exercise (2017).

31. In cross-border transactions, the top five export challenges faced by MSMEs identified by developing country respondents to the monitoring exercise are high shipping costs, high cost of small parcel shipment, issuance and acceptance of sanitary and phytosanitary (SPS) certificates, problems with online payments, and absence of or difficulties in using the electronic single windows (see Figure 7).

Figure 7 – Export challenges faced by MSMEs in relation to cross-border e-commerce



Source: OECD/WTO Aid-for-Trade M&E exercise (2017).

32. Policymakers can help MSMEs overcome these e-commerce export and import barriers with appropriately designed and effective enforcement of regulatory frameworks. The International Trade Centre (ITC) highlights key regulatory elements along the e-commerce process chain as: establishing a business online, e-signatures, e-payments, cross-border delivery, and aftersales service.[10]

33. Physical delivery costs emerged strongly as a factor limiting e-commerce participation for MSMEs, for both their imports and exports. Implementation of the WTO Trade Facilitation Agreement (TFA) may thus support developing countries in reducing the barriers to e-commerce

34. Aid for Trade can help developing countries bridge the digital and e-commerce divide by building or upgrading ICT infrastructure, and helping countries design the right policies to enable their firms to access and utilize the internet marketplace. The next section maps out support to ICT connectivity and e-commerce.

[10] 2017 Aid for Trade at a Glance, p. 231.

4 ICT CONNECTIVITY AND E-COMMERCE PRIORITIES AND SUPPORT

35. Aid for Trade for ICT connectivity is reported according to five OECD reporting codes.[11]

- *Communication policy and administrative management* (22010) which includes communications sector policy, planning and programmes; institution capacity building and advice; including postal services development; and unspecified communications activities.

- *Telecommunications* (22020) regroups telephone networks, telecommunication satellites, earth stations.

- *Radio, television and print media* (22030): this sub-code covers radio and TV links, equipment, newspapers, printing and publishing.

- *Information and communications technology* (22040) includes computer hardware and software, internet access and ICT training.

- *Technological research and development* (32182) which adds industrial standards, quality management, metrology, testing, accreditation and certification.

36. The following analysis considers both concessional financing (official development assistance) and non-concessional funding (other official flows) to ICT connectivity. Concessional financing falls within the definition of Aid for trade.

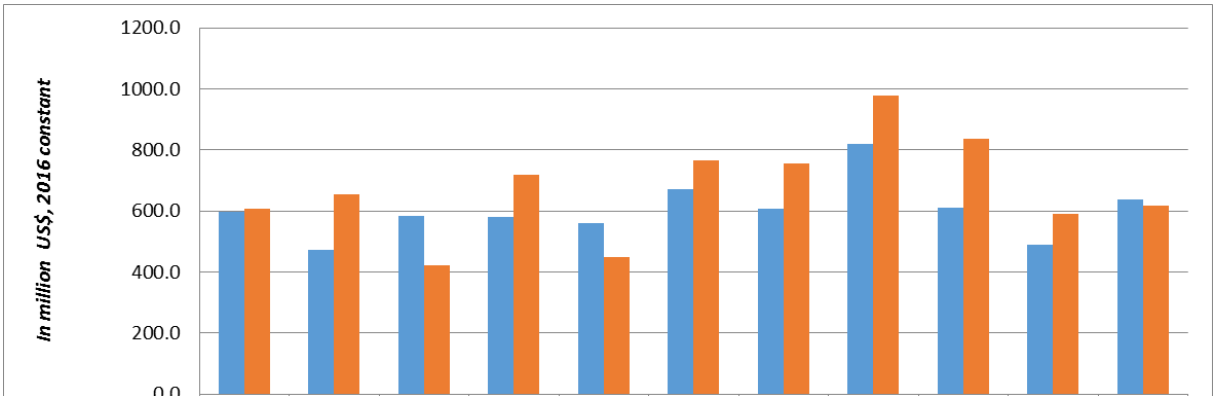
- Concessional financing is grants and loans offered as official development assistance (ODA) with the main objective to promote economic development and welfare of developing countries. To fall within the definition of ODA, funding must be concessional in character with a grant element of at least 25% (calculated at a discount rate of 10%).

- Non-concessional financing is transactions by the official sector which do not meet the conditions for eligibility as ODA, either because they are not primarily aimed at development, or because they have a grant element of less than 25%. This category is termed other official flows and reported to the OECD Creditor Reporting System in the same categories of support as ODA.

37. A total of US$6.6 billion in concessional financing disbursements for ICT connectivity was reported to the OECD CRS over the period 2006-2016. This figure represents 1.92% of all aid for trade disbursed over this period (US$342.3 billion). In 2016, aid for trade disbursed to ICT connectivity totalled US$637.7 million or 1.64% of total aid for trade (US$38.8 billion). Support for ICT represented less than 0.4% of total official development assistance (US$142.6 billion) in the same year.

[11] Aid-for-trade data: Creditor Reporting System, Explanatory Note http://www.oecd.org/trade/aft/43234667.pdf.

Figure 8 – Concessional financing for ICT connectivity by year

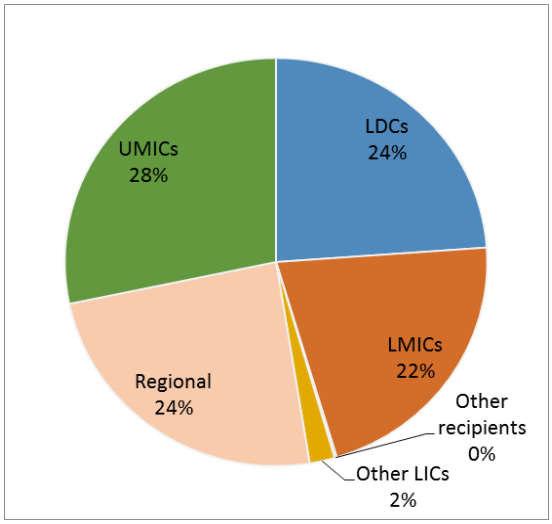


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Disbursements	598.5	471.5	583.6	580.2	561.3	672.5	607.8	818.1	611.2	488.0	637.7
Commitments	608.5	653.5	422.8	718.1	449.5	765.5	756.8	979.5	837.5	589.9	617.0

Source: OECD CRS.

38. Most concessional financing went to multi-country and regional projects between 2006 and 2016. Regional flows represented 24% (or US$1.5 billion) of the US$5.9 billion total. The next largest group of beneficiaries were low middle income countries with US$1.4 billion in concessional financing disbursements for ICT connectivity (or 24% of total spending). LDCs received financing totalling US$1.4 billion. Upper middle income countries received 28% (or US$1.9 billion) and other low income countries a further 2% (or US$127.8 million).

Figure 9 – Concessional financing for ICT by income level of recipient



(In million US$, 2016 constant)

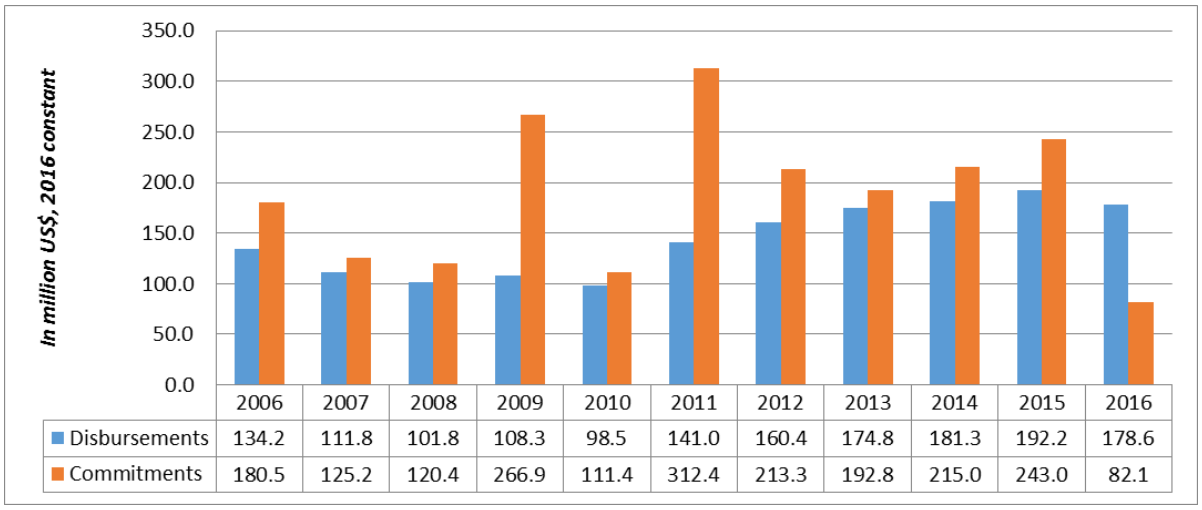
Upper middle income countries: 1,875.7
Regional: 1,608.6
Least developed countries: 1,582.9
Lower middle income countries: 1,424.5
Other low income countries: 127.8
Other recipients: 11.1

Source: OECD CRS.

39. Funding commitments for LDCs rose from US$180.5 million in 2006 to US$243.0 million in 2015 with two peaks in 2009 (US$266.9 million) and 2011 (US$312.4 million). In 2016, they decreased to US$82.1 million.

40. Disbursements started at US$134.2 million in 2006, fell to US$98.5 million in 2010 before recovering to US$178.6 million in 2016, with a peak of US$192.2 million in 2015.

Figure 10 – Concessional financing for ICT connectivity in LDCs

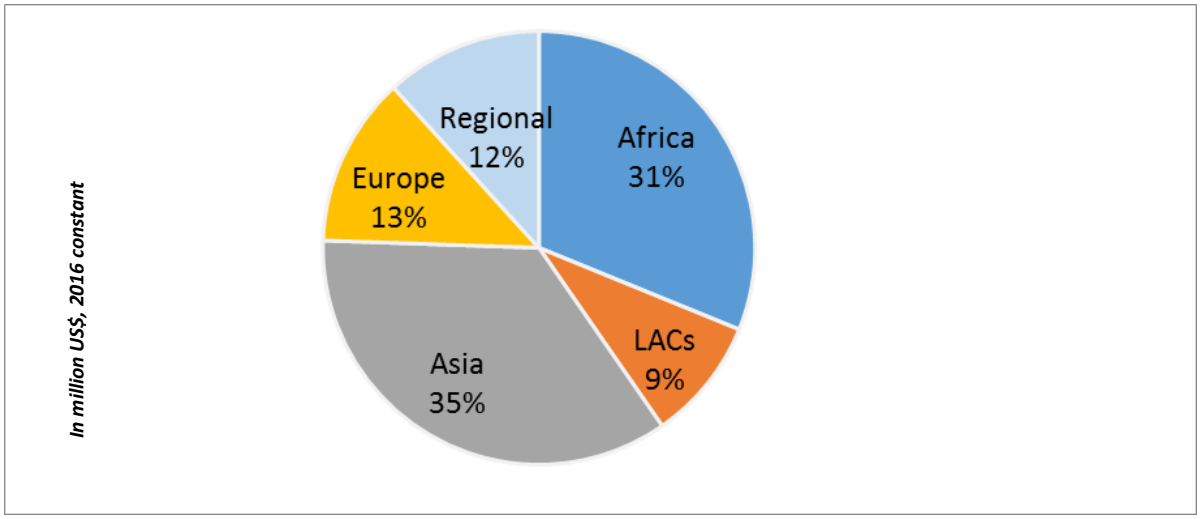


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Disbursements	134.2	111.8	101.8	108.3	98.5	141.0	160.4	174.8	181.3	192.2	178.6
Commitments	180.5	125.2	120.4	266.9	111.4	312.4	213.3	192.8	215.0	243.0	82.1

Source: OECD CRS, the Asian Development Bank, OECD Aid-for-Trade M&E 2017.

41. Some US$2.6 billion was provided in concessional financing for ICT connectivity to Asia – 35% of the total amount. Africa received 31% of funding (US$2.5 billion) and Latin America and the Caribbean saw 9% of total disbursements (US$0.7 billion).

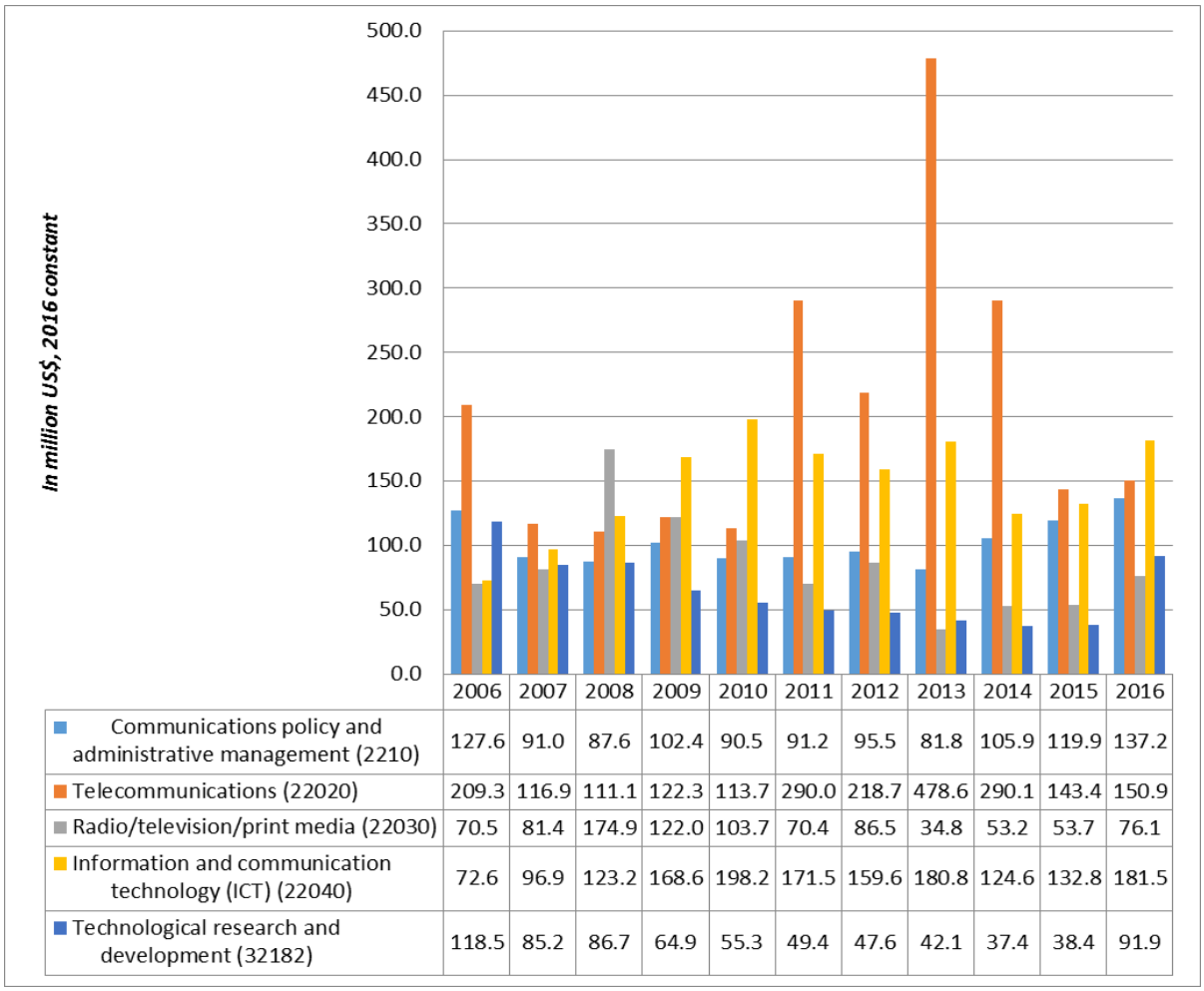
Figure 11 – Concessional financing for ICT by region



Source: OECD CRS.

42. Of the US$6.6 billion disbursed in concessional financing for ICT connectivity, US$2.2 billion went to telecommunications, US$1.6 billion to ICT, US$1.1 billion to communications policy & administrative management, US$927.3 million to radio/television/print media and US$717.5 million to technological research & development.

Figure 12 – Concessional financing for ICT by purpose sub-code and by year

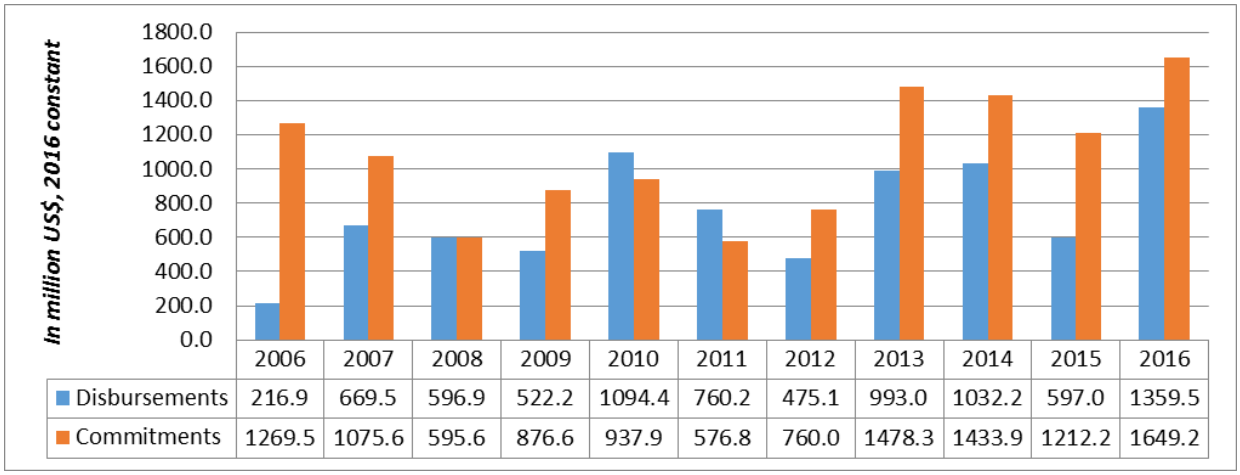


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Communications policy and administrative management (2210)	127.6	91.0	87.6	102.4	90.5	91.2	95.5	81.8	105.9	119.9	137.2
Telecommunications (22020)	209.3	116.9	111.1	122.3	113.7	290.0	218.7	478.6	290.1	143.4	150.9
Radio/television/print media (22030)	70.5	81.4	174.9	122.0	103.7	70.4	86.5	34.8	53.2	53.7	76.1
Information and communication technology (ICT) (22040)	72.6	96.9	123.2	168.6	198.2	171.5	159.6	180.8	124.6	132.8	181.5
Technological research and development (32182)	118.5	85.2	86.7	64.9	55.3	49.4	47.6	42.1	37.4	38.4	91.9

Source: OECD CRS.

43. A total of US$8.3 billion in non-concessional financing for ICT connectivity was reported to the OECD CRS over the period 2006-2016. This figure represents 3.1% of total non-concessional financing reported for aid for trade (US$264.0 billion). In 2016, non-concessional flows disbursed for ICT connectivity (US$1359.5 million) accounted for 3.4% of non-concessional financing in all sectors (US$39.7 billion).

Figure 13 – Non-concessional flows to ICT connectivity by year



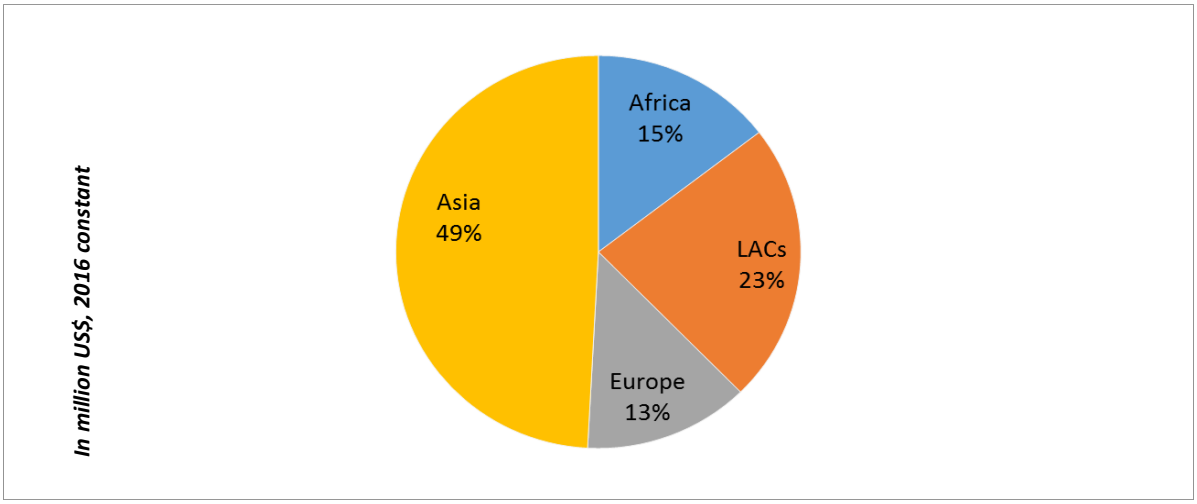
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Disbursements	216.9	669.5	596.9	522.2	1094.4	760.2	475.1	993.0	1032.2	597.0	1359.5
Commitments	1269.5	1075.6	595.6	876.6	937.9	576.8	760.0	1478.3	1433.9	1212.2	1649.2

Source: OECD CRS.

44. Non-concessional financing went to communications policy & administrative management (25%), to telecommunications (26%), to ICT (32%), to technological research and development (12%). A residual proportion went to radio/television & print media (5%).

45. Over the period 2006-2016, most non-concessional financing (US$4.0 billion) for ICT connectivity went to Asia (58% of the total). Latin America and the Caribbean accessed US$1.7 billion and African countries a further US$1.2 billion. Europe received 1% or US$75.9 million.

Figure 14 – Non-concessional financing for ICT by region



Source: OECD CRS.

46. Some 89% (US$7.4 billion) of non-concessional ICT connectivity flows went to middle income countries (US$5.3 billion to UMICS and US$2.1 billion to LMICS). Eight percent went to regional or unspecified recipients.

47. Table 1 overleaf highlights support reported by the top ten donors providing concessional support for ICT connectivity. The top 5 donors (EU, Japan, Korea, the United Kingdom and the World Bank) accounted for two-thirds (66%) of concessional flows.

48. Among non-concessional financing providers, the top five donors (Korea, World Bank, EU institutions, Japan and Germany) accounted for 83% of all flows. Non-concessional flows totalled US$8.3 billion between 2006 and 2016.

49. The table overleaf, presents the ten largest providers of funding for ICT connectivity and e-commerce for the period 2006-2015, as well as funding disbursed in the period. Also provided are the titles and amounts of the largest projects conducted (see Table 1).

Table 2 – Donor funding for ICT connectivity and top projects (2006-2015)

#	Donor	Total concessional funding reported (in million US$)	Total non-concessional funding reported (in million US$)	Top concessional projects by value (in million US$)	
1	EU Institutions	1,235.5	1,219.8	1. Turkey Broadband telecommunication, US$696 million 2. Brazil Mobile broadband, US$260 million	3. South Africa Programme in Science and Tech, US$23.1 million 4. Seychelles Submarine cable project, US$10.2 million
2	Japan	855.0	774.9	1. Vietnam Television centre, US$156 million 2. China Broadcasting, US$147.1 million	3. Asia Aggregated activities, US$30.3 million 4. Tunisia National TV centre, US$13 million
3	World Bank	764.5	1,379.2	1. Tonga Pacific Regional Connectivity, US$10.4 million 2. GH e-transform Ghana, US$14.6 million	3. Mauritania Telecoms, US$8.9 million 4. Ethiopia Communication capacity building, US$4.9 million
4	Korea	548.8	3,479.6	1. Vietnam Broadcast equipment, US$23.82 million 2. India Invitation to Scientists and students exchange, US$2.9 million	3. Iraq Modernisation of Quality Control Lab US$2.6 million 4. ICT expert training programme, US$2 million
5	United Kingdom	485.1	10.5	1. South Africa Media project, US$19 million 2. Nigeria Media project, US$8.1 million	3. China Media, US$5.3 million 4. INASSA research programme, US$4.2 million
6	Sweden	323.6	-	1. CIGAR 2008-2009, US$18.6 million 2. International Science programme, US$12 million	3. International foundation for Science, US$9million 4. Swedish development research grants, US$4.1 million
7	United States	302.9	80.6	1. Iraq DOD relief and reconstruction, US$21.4 million 2. Iraq telecommunications, US$8.6 million	3. Afghanistan Task for business stability, US$8.1 million 4. Iraq Commander Emergency response programme, US$6.2 million
8	Germany	262.3	294.1	1. Africa training employees in media, US$6.4 million 2. Indonesia, Establishment of FM broadcasting, US$4.9 million	3. LACs Media investment US$2.1 million 4. Turkey, Computer-aided chip design (EDA) US$1.3 million
9	France	147.4	156.6	1. Indonesia, TV station improvement US$23 million 2. Senegal research, US$4.9 million	3. Wallis and Futuna mobile phone infrastructure US$4.1 million 4. Morocco, private TV channel US$3.7 million
10	Canada	138.1	-	1. Global Infrastructure facility, US$3 million 2. South Africa, Enablis US$2 million	3. Africa, communications policy & admin, US$1.5 million

Source: OECD CRS.

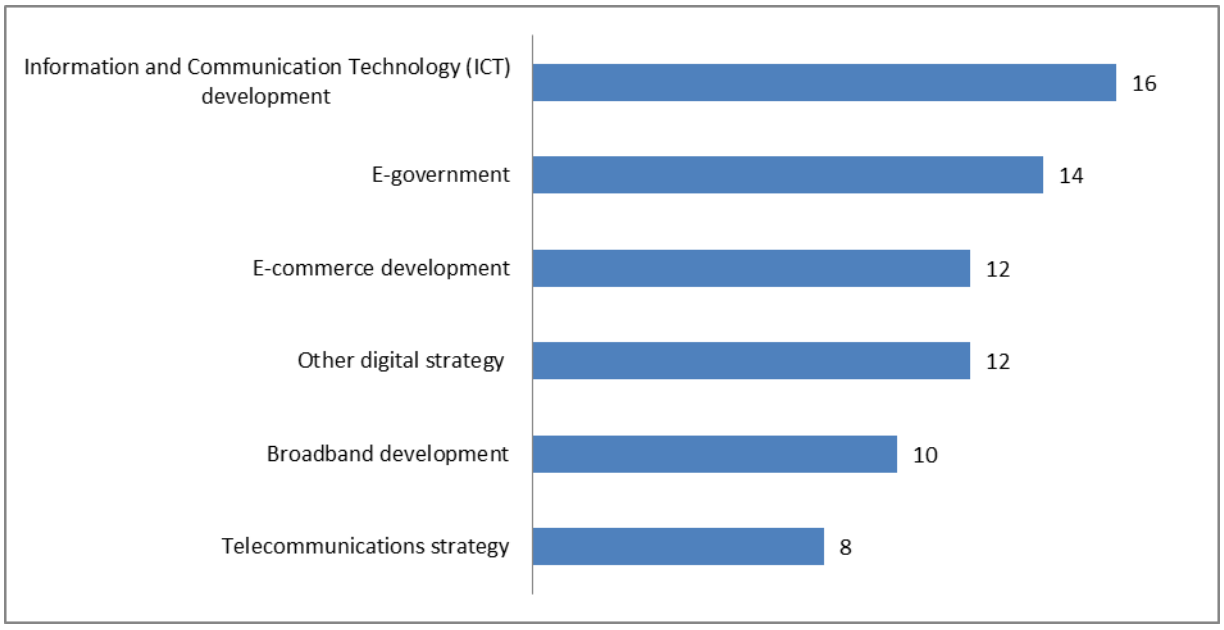
50. The monitoring and evaluation exercise identified the ITU as a key actor promoting ICT connectivity globally. The ITU-led World Summit on the Information Society (WSIS) played a catalytic role in mobilizing funding. The WSIS Summits in Geneva in 2003 and in Tunis in 2005 resulted in a declaration and an action plan. The rationale behind these global actions is to secure ICT access and create a framework for promoting its use in addressing development goals.

51. The Geneva Declaration of Principles and Plan of Action call for a connected and inclusive information society that enables sustainable development. They include actions towards the integration of national e-strategies both in national development plans and in poverty reduction strategies. They also call for the mainstreaming of ICT priorities into development assistance strategies. The Tunis Agenda for the Information Society focuses, *inter alia*, on giving momentum and direction to financial mechanisms to bridge the digital divide.

52. A series of regional summits complemented the WSIS process under the ITU's "Connect the World" programme. The aims of these summits were to mobilize human, financial, and technical resources for the implementation of the WSIS connectivity targets. Five regional summits have been convened to date: the Connect Africa Summit (Rwanda, 2007), the Connect CIS Summit (Minsk, 2009), the Connect Arab Summit (Doha, 2012), the Connect Americas Summit (Panama, 2012), and the Connect Asia-Pacific Summit (Bangkok, 2013).

53. ICT Connectivity and e-commerce featured as a priority in the national development policy of 23 out of the 38 donors that participated in the monitoring exercise. High on the list of their priorities figures ICT development, e-government and e-commerce development, together with other digital strategies (Figure 15). Box 4 provides further information given by donors about their special policy initiatives covering ICT connectivity and e-commerce.

Figure 15 – E-commerce as a priority in donors' national development policy



Source: OECD/WTO Aid-for-Trade M&E exercise (2017).

Box 4 – Special policy initiatives that cover the area of ICT Connectivity and e-commerce

The EU: The European Commission submitted a proposal for a new European Consensus on Development in November 2016, which includes a "Digital for Development" statement. The EU and its member States will continue to develop their support for promoting information and communication technologies in developing countries as powerful enablers of growth. This is a policy stream currently under development.

WBG: The 2016 World Development report details a number of aspects of the WBG work on the digital economy more widely, and a specific e-trade programme published at www.worldbank.org/trade.

EBRD: has launched the Knowledge Economy Initiative, working with countries on innovation-related issues such as improving telecoms regulation and developing ecosystems that allow venture capital and private equity firms to grow. The EBRD also provides funding to the private sector, including for projects related to the development or expansion of e-commerce. These efforts take into account the different levels of development across the region while seeking to stimulate competition, attract investors and encourage entrepreneurs to commercialise their ideas.

Finland: is planning to support the new UNCTAD's e-Trade for All Initiative.

Germany: There are currently a few isolated initiatives in the area of e-commerce and a more coherent strategy is currently being developed.

ITC: For ITC, digital is core to several of their strategic programmes – most clearly the "E-Solutions Programme" which structures offering for how to improve access and successful digital trade by SMEs from developing and least developed countries.

UNDP: In the context of the Aid-for-Trade Initiative for Arab States, UNDP's support on trade facilitation promotes broader governance reforms inclusive of e-Government approaches for enhancing transparency and accountability and access to information by economic operators, including trade-related provisions and regulations, promoting better compliance.

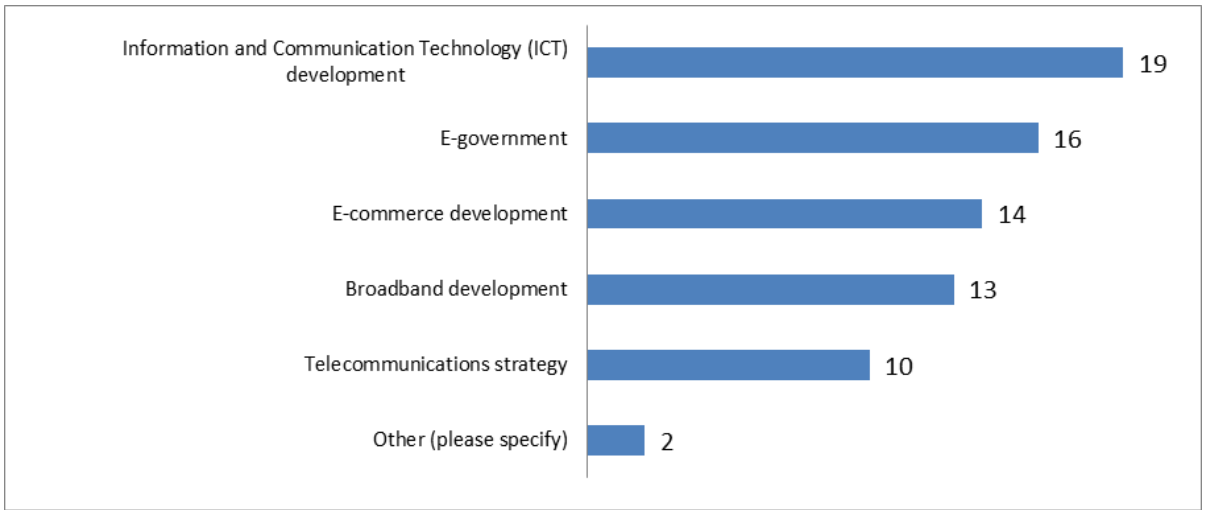
United Kingdom: DFID is actively engaged in e-commerce policy and supports initiatives by other organizations.

New Zealand: Specific policy initiatives focus on the development of connectivity solutions and cyber safety initiatives.

Source: OECD/WTO Aid-for-Trade M&E exercise (2017).

54. Donors also noted growth in demand for e-commerce support in the past five years. Thirty-one donors anticipated growth in future demand for e-commerce support, from both partner countries and regional partners. In-country dialogue with partner countries and regional partners features e-commerce issues according to 25 donors.

Figure 16 – E-commerce issues addressed in donor – partner country dialogues



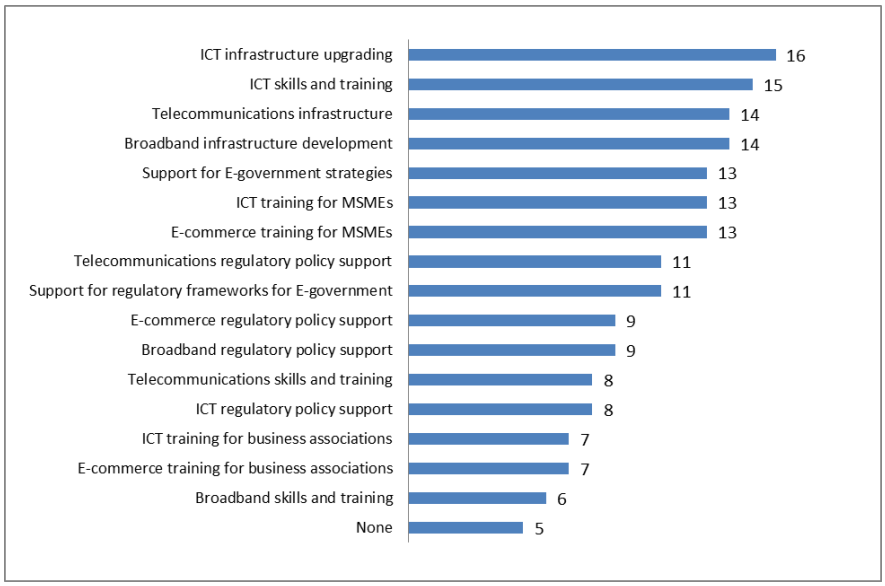
Source: OECD/WTO Aid-for-Trade M&E exercise (2017).

55. The European Bank for Reconstruction and Development (EBRD) engages in policy dialogues related to project finance, supporting improved telecoms regulation, and the development of e-procurement databases. In its dialogue, the ITC focuses on e-commerce and trade facilitation, raising awareness on the barriers to participate in e-commerce and on practical solutions available to help SMEs overcome them.

56. In its dialogue with partner countries, and particularly with Pacific partners, Australia noted that attention was increasingly placed on reducing the cost, and on increasing the access to broadband infrastructure to enable businesses and governments to participate in the global economy, hence capturing the benefits of greater e-commerce. Furthermore, 20 donors indicated that e-commerce featured in their dialogue with regional partners, particularly the area of ICT, e-commerce development and broadband development. The ITC added that e-commerce has been linked with the Trade Facilitation Agreement (TFA) implementation in its dialogue on regional implementation approaches with CARICOM.

57. Of the 40 respondents to the donor self-assessment questionnaire, 29 donors stated that they provide support for ICT connectivity and e-commerce development. Figure 17 provides additional information about the areas in which this support is provided, ranked by the number of respondents.

Figure 17 – Donor's ICT connectivity and e-commerce development support



Source: OECD/WTO Aid-for-Trade M&E exercise (2017).

58. Canada noted that it places emphasis on building ICT infrastructure, on enhancing technology skills and know-how, and on building confidence and democratic expression (to protect and empower users and consumers in cyber space). It focuses on stimulating sustainable economic growth by building ICT infrastructure (i.e. internet, broadband and telecommunications infrastructure, public-private partnerships, and the enabling environment). In addition to enhancing efficiency, effectiveness and impact towards development goals, it ensures that people and businesses have the skills and know-how to take advantage of technology-driven sources of innovation, and of enablers of political, economic, social, and cultural activities through open data. Canada also supports multilateral financial institutions in, among other areas, addressing infrastructure gaps in developing countries, accessing ICT infrastructure, developing the private sector, increasing the supply of skilled workers and accessing technology.

59. The M&E exercise received case stories on initiatives to enhance ICT infrastructure, particularly broadband, in developing countries. The African Development Bank (AfDB) highlighted its support to African countries in the area of broadband infrastructural development with the aim to provide affordable internet connection (CS 16). The Connect Africa Initiative, a global partnership launched in October 2007, aims to mobilize the human, financial and technical resources needed to bridge major gaps in ICT infrastructure across Africa, with a total of US$55 billion pledged to date (See Box 5).

Box 5 – Connect Africa Initiative

The Connect Africa Initiative actions fall under four major programmes: International fibre connectivity, national backbone initiatives, policy regulation and e-applications.

Key ICT investments include the East African Submarine Cable System along the east and south coasts of Africa, connecting 21 African countries to each other and the rest of the world. One submarine fibre-optic cable will run from Portugal to South Africa, with many landings along the route. The project will lay 7,000 km of submarine fibre optic cable between Seixal (a suburb of Lisbon) in Portugal, Accra in Ghana, and Lagos in Nigeria. These investments will provide Africa with increased bandwidth and help meet the growing demands of governments, traders, businesses and private users for more efficient and less costly data services.

Specifically, these include the Central African Backbone that implements a telecommunications network made up of onward terrestrial fibre connections linked to an undersea optical fibre cable system in the African Western Coast. A broadband backbone leverages the fibre optic infrastructure laid along the oil pipeline between Kribi, Cameroon and Doba, Chad. The East Africa Broadband Network: The project implements an integrated East African Broadband ICT infrastructure network that provides cross-border connectivity between Burundi, Kenya, Rwanda, Tanzania and Uganda. It links up with global gateways through submarine fibre cable systems. The South Africa Region Backbone: The project is improving cross-border links that interconnect the South African Development Community member states through optical fibre networks. And, the Economic Community of West African States Power Pool-based Fibre Network: The project expands broadband access by leveraging the West Africa Power Pool's communications infrastructure network. It links the WAPP network to national and regional infrastructure to bridge connectivity gaps in the ECOWAS region.

Source: OECD/WTO Aid-for-Trade M&E exercise (2017), CS 16.

60. In 2014, Denmark designed and delivered a national cloud and fibre optic cable infrastructure in Burkina Faso. The US$17 million project aimed to put in place conditions favourable to the introduction of e-government solutions. It included a 513-km metropolitan optical fibre network, a government cloud platform, and 741 km of inter-urban optical fibres. Japan provides various forms of support for international digital connectivity. It helps supplying optical submarine cables and pioneered a biometrics authentication system adopted by over 70 countries. It supports implementation of ICT for disaster management in many countries. It offers technology transfers aimed at making practical use of ICT. With the introduction of digital terrestrial broadcasting in Botswana, Japan is striving to develop businesses that make use of data broadcasting and transfer TV programme creation technology.

61. In its communication satellite business in Turkey, Japan has not only produced and delivered satellites but has also provided high-level technology education programmes aimed at independent learning. Japan's ICT is also contributing to the optimization and increased lifespan of existing public infrastructure. In the case of Vietnam's Can Tho Bridge construction, Japan has introduced a system for real-time measurement of strain and oscillations. By detecting abnormalities quickly, serious damages and deformation can be prevented.

62. Australia directly supports the efforts of Association of Southeast Asian Nations (ASEAN) to improve regional connectivity. This has included the development of an ASEAN Master Plan for Connectivity which covers the physical connectivity underpinning e-commerce, such as international undersea telecommunications cables and domestic broadband coverage. In the Indo-Pacific region, Australia also delivers support, with co-financing from the Asian Development Bank and the World Bank Group, in ICT infrastructure development such as international undersea cable connections, and policy and regulatory technical assistance to improve access to ICT infrastructure assets and services. Australia has supported internet connectivity in Tonga and Fiji, improved telecommunications in Vanuatu and of mobile coverage in Kiribati and the Solomon Islands.

63. The AsDB found that the laying of an undersea fibre-optic cable that linked Tonga to Fiji through the Southern Cross Cable (the main link between Australia and the United States)

(CS 97), had led to "faster internet speed and higher bandwidth at cheaper and more affordable prices". It resulted in improved internet connectivity, led to a 60% drop in the cost of international connectivity and to an increase in international trade, particularly in the tourism sector and business process outsourcing. The AsDB approved a US$25 million grant for a submarine cable project to support a fibre-optic cable system linking Samoa to Fiji's international submarine cable network. The Samoa Submarine Cable Company provided US$8.2 million in equity; the government of Samoa covers taxes and duties of US$6.7 million. The total project cost was estimated at US$57.4 million.

64. Germany provided an overview of its joint support to Kosovo in boosting its IT industry through the export of services and software (CS 63). The project led to the reduction of custom tariffs and VAT for IT equipment in order to reduce the cost of business for IT companies, supporting the Kosovo Association of ICT (STIKK) educational programmes and facilitated business-to-business export promotion services among others.

65. Australia's focus is on ICT policy and regulatory reform to support competitive market structures, increase equitable access to services and enable private sector-led investment in ICT infrastructure and services. Box 6 summarizes.

Box 6 – Telecommunication reform

A good example of soft infrastructure investment is Australia's support for telecommunications reform. The World Bank estimates that a 10% increase in access to broadband and mobile communications in lower middle income countries results in an additional 0.8%-1.4% increase in GDP.[12] In Indonesia, specialist advice was provided on the most transparent and economic way to award radio spectrum for 3G mobile telephony and internet services. This resulted in an auction from which the government secured over A$700 million in revenue and one of the fastest roll-outs of 3G services in the world. Similarly in Vanuatu, Australia helped to introduce private sector competition and independent regulation that expanded mobile coverage from 20% to 85% of the population from 2007 to 2009. The prices of handsets dropped from A$100 to A$25 and monthly internet access from A$200 to A$60.

Source: Commonwealth of Australia, DFAT, Strategy for Australia's aid investments in economic infrastructure, June 2015.

66. In 2012, the Government of Nepal and the AsDB in association with the Government of the United Kingdom and the European Commission partnered to fully digitize the country's public procurement system under the AsDB-supported Strengthening Public Management Program. In December 2015, the Public Procurement Monitoring Office in the Office of the Prime Minister and Council of Ministers of the Government of Nepal approved the rollout of a comprehensive national e-GP system. As a part of Myanmar's postal service, Japan is working to digitize money transfer services.

67. Korea is the fourth largest provider of concessional financing and the largest provider of non-concessional financing. Examples of Korea's support include: a US$4.6 million cybersecurity capacity-building project in Indonesia; the establishment of an ICT Master plan for Cambodia (US$2 million); and a CARICOM e-government project (US$1.1 million). Many ICT expert training courses and academic exchanges take place. Korea supports technological research and development by establishing bridges between its universities, research centres and labs and those in developing countries. Finally, Korea places great importance in ensuring developing countries access the latest technological equipment for media broadcasting.

5 SUPPORT TO ICT CONNECTIVITY FROM SOUTH-SOUTH PARTNERS

68. South-South partners do not report to the OECD Creditor Reporting System. The OECD CRS is the most comprehensive dataset on ODA, but the absence of data on South-South partners

[12] Kim, Kelly, & Raja, World Bank, 'Building broadband: Strategies and policies for the developing world', 2010.

creates difficulty in estimating the full extent of Aid for Trade. Public information on South-South cooperation and investment flows suggests that developing countries are an important and growing source of concessional financing and foreign direct investment for digital connectivity of other developing countries.

69. In its 2014 White Paper on Foreign Assistance China noted that it had supported over 60 IT-related projects, including optical cable telecommunication networks, e-government websites, and radio and television frequency modulation transmitters. The telecommunication projects assisted by China in Turkmenistan, Togo and Eritrea provide high-quality and steady telecommunication systems to these countries, and the number of users has grown exponentially. The optical cable transmission networks assisted by China in Cameroon and Tanzania have effectively promoted the application of fibre cables in African nations.[13] Another example is Ethiopia's Ethio-Telecom which received US$3.5 billion in loans in 2006 and 2011.[14]

70. ICT connectivity is also an important component of the Belt and Road Initiative (BRI). For example, through the Asia-Pacific Information Superhighway initiative, UN Economic and Social Commission for Asia and the Pacific (UNESCAP) is collaborating with the Chinese Government to promote the BRI to member States along the BRI corridors as well as the wider Asia-Pacific region.[15]

71. Indian ICT companies are increasing their global footprint. One early mover has been Bharti Airtel. The company has increased its presence on the African continent and currently counts some 70 million subscribers in 17 African countries. Bharti Airtel is also engaged with Facebook to expand internet penetration through Facebook's Free Basics Programme. Other Indian ICT and software companies like Essar, Tata, Wipro Infosys and Wipro have followed and are now a significant presence in Africa.[16]

72. The expansion of Indian ICT private investment flows has been encouraged with support from the Indian EXIM bank and the Confederation of Indian Industry. The India-Africa conclave with strong business engagement just held its 12th annual edition and is supported by the India-Africa Forum Summit held every three years. In September 2017, Lagos hosted the Third Indo-Africa ICT expo. At the event, Indian investors promised to invest US$4 billion in the Nigerian IT industry. The two previous editions of the Indo-Africa ICT expo were held in Kenya and Mauritius.

6 PRIVATE SECTOR SUPPORT TO ICT CONNECTIVITY AND E-COMMERCE SKILLS

73. Private sector engagement in ICT connectivity and e-commerce is growing, including through public, private partnerships. The private sector is also engaged in its own activities through corporate social responsibility and corporate philanthropy mechanisms.

74. Fifty-four percent of the donors who responded to the M&E exercise stated that they work with the private sector to support growth in e-commerce in partner countries and regions. This work covers the development of ultra-fast 5G networks public-private dialogue, direct investments, support to the development of ICT investment frameworks, and to data on e-commerce flows. Furthermore, donors indicate that the private sector participates in dialogues which go on to form the basis of cooperation strategies and implementation. An example of this kind of collaboration can be seen in implementation of "Digital Bangladesh". This initiative seeks to create a digital ecosystem that addresses the gap in access to ICT facilities.

[13] White Paper on Foreign Aid 2014: http://english.gov.cn/archive/white_paper/2014/08/23/content_281474982986592.htm.

[14] China's Telecommunications Boom in Africa: Causes and Consequences, Alfred Wong, 2015 http://www.e-ir.info/2015/09/21/chinas-telecommunications-boom-in-africa-causes-and-consequences.

[15] A Study of ICT Connectivity for the Belt and Road Initiative (BRI): Enhancing the Collaboration in China-Central Asia Corridor, http://www.unescap.org/sites/default/files/ICT-Connectivity-for-Belt-and-Road-Initiative-in-China-Central-Asia-Corridor.pdf.

[16] India's ICT Companies Lead the Way to Further Indian Investment in Africa, Stephanie Keene 24 March 2015 https://www.covafrica.com/2015/03/indias-ict-companies-lead-the-way-to-further-indian-investment-in-africa.

75. Public and private cooperation are also supporting e-commerce development by financing infrastructure support projects which aim to provide affordable broadband connection. Under the Pacific Regional Connectivity Program, the AsDB, the Government of Tonga, Tonga Cable and the World Bank partnered to get Tongans online. The US$25 million project resulted in an 827-km submarine fibre-optic cable system linking Tonga to Fiji.

76. In total, 24 case stories were submitted by the private sector on support for e-commerce and ICT development projects. The projects follow three broad themes: promoting local adoption and use; promoting ICT awareness and skills; and ICT infrastructure projects to support affordable internet.

77. eBay entered into a partnership with the ITC to connect SMEs in developing countries to its global marketplace (CS 27). Under the agreement, the eBay marketplace provides export-ready companies supported by ITC's e-Solutions programme the opportunity to connect with over 162 million buyers worldwide. Participating businesses can open 'anchor stores' on eBay which provides them with greater online visibility, and the opportunity to reach more clients. Participating SMEs can also benefit from more cost-effective logistics solutions by accessing the eBay network of fulfilment centres. They also benefit from eBay's latest e-commerce research and better position their offerings in selected target markets. Finally, eBay provides courses that complement those offered by ITC. These cover product listings optimization, online promotion, analytics and inventory management.

78. The private sector is active in projects to address the need for digital skills and capacity to fully benefit from fast-changing new technologies. IBM Digital-Nation Africa is one such programme. The IBM Digital-Nation Africa is designed to train 25 million young people in Africa between the ages of 15 and 24, providing training ranging from basic IT literacy to specific skills in digital privacy or cyber protection.[17]

79. In terms of private sector initiatives, the ICT sector is designing large-scale projects to address connectivity concerns, particularly for hard-to-reach rural or landlocked countries that lack direct access to submarine fibre cables. Google's Project Loon, (Box 7) and Nokia's FastMile are examples of technologies that provide an alternative to fixed broadband.

Box 7 – Google's Project Loon and internet connectivity in Indonesia

Following 17 million km of test flights, Project Loon has signed agreements with three mobile network operators - Indosat, Telkomsel and XL Axiata - to begin testing balloon-powered Internet over Indonesia in 2016. Currently, only about one in three of Indonesia's 250 million residents is connected to the Internet.

Stringing fibre networks or installing and maintaining mobile phone towers across the more than 17,000 islands that make up Indonesia is a significant challenge. Through balloon-to-balloon communication, Project Loon has the capability to transmit signal from areas that *are* connected to an Internet ground station and bounce that signal across a constellation of balloons and back down to even the most remote islands.

In flight testing, the Loon team has already been able to wirelessly transfer data between individual balloons floating over 100 km apart in the stratosphere, enabling local network operators to extend their Internet service into areas that are too difficult to reach with current technology. The Indonesian tests will form part of the foundation for our longer-term goal of providing a continuous ring of connectivity in partnership with mobile network operators around the globe.

Source: Google Project Loon viewed at https://plus.google.com/+ProjectLoon.

80. The Telecom Infra Project is a collaboration between private sector companies that are working together to scale up traditional telecom infrastructure to meet the needs of the unconnected (CS 154).

[17] See http://www-03.ibm.com/press/us/en/pressrelease/51550.wss.

81. Some of the work of private sector corporate foundations is captured but most private sector support is not reported to the OECD CRS database. While the Aid-for-Trade M&E exercise has increased private sector engagement, the magnitude of private sector support to ICT connectivity and e-commerce is largely unknown.

82. UNCTAD's World Investment Report 2017 reports a total of 730 greenfield project investments in ICT infrastructure as having been announced between 2012 and 2016.[18] These projects were worth a total value of US$118 billion. Table 16 below provides further details.

Table 3 - Announced greenfield FDI projects in ICT infrastructure, by region, 2012–2016

Destination region	Number of projects	Jobs		Capital investment	
		Total	Avg.	Total (in million US$)	Avg. (in million US$)
Africa	145	11,337	78	24,877	171.6
Asia	357	27,121	76	36,612	102.6
Latin America and Caribbean	186	17,456	93	54,496	293.0
Transition economies	42	3,642	86	2,401	57.2
Total	**730**	**59,556**	**81**	**118,386**	**162.2**

Source: UNCTAD, based on information from Financial Times Ltd, FDI Markets.

83. The Africa Investment Report for 2016 reports that foreign direct investment in ICT and internet infrastructure totalled US$4.8 billion. This figure was 7% of all FDI into Africa in 2016.[19]

84. A further source of information on financing flows is the World Bank's Private Participation in Infrastructure database.[20] This database captures 5292 ICT projects funded in developing countries between 2006 and 2016, with a total value of US$19.4 billion. Europe and Central Asia recorded 601 projects worth US$5.8 billion. Sub-Saharan Africa received 1,005 projects worth US$5.1 billion. LACs benefited from 2543 projects worth US$3.2 billion. And, East Asia and the Pacific accounted for 889 projects worth US$1.7 billion. These projects use public funding to mobilize private financing. As such, they speak to an emerging trend in Aid for Trade financing: the leveraging of private sector financing with concessional public funds.

85. Aid for Trade can help to create the enabling environment to attract more investments or FDI in the area of ICT connectivity. This includes favourable policies, investment incentives and public private partnerships. In the 2017 Aid for Trade at a Glance, the ITU notes ways in which LDCs can stimulate investment and increase ICT access and use (see Box 8).

Box 8 – Attracting investment to ICT in lower-income countries

Two-thirds of all LDCs are still in either the first or the second generation of regulation and need to urgently carry out basic reforms, including the promotion of privatization, liberalization, and intra-platform competition. Other important reforms for many LDCs include the removal of entry barriers to foreign ownership and investment.

When private investment is not sufficient, it is possible to look into direct government investment; take advantage of public-private partnerships; use universal service funds and obligations to bring services to areas that provide limited business opportunities; and provide tax incentives for investments.

Source: ITU, Aid for Trade at a Glance 2017, Chapter 5.

[18] World Investment Report 2017, Investment and the Digital Economy, http://unctad.org/en/PublicationsLibrary/wir2017_en.pdf.

[19] The Africa Investment Report 2016 https://www.camara.es/sites/default/files/publicaciones/the-africa-investment-report-2016.pdf.

[20] World Bank's Private Participation in Infrastructure database, http://ppi.worldbank.org/visualization/ppi.html#sector=ICT&status=&ppi=&investment=&region=&ida=&income=&ppp=&mdb=&year=&excel=false&map=&header=true, accessed 20 December 2017.

7 DEFINITIONAL ISSUES IN MEASURING SUPPORT TO ICT CONNECTIVITY AND E-COMMERCE

86. The paper has highlighted Aid for Trade to ICT connectivity offers some methodological shortcomings due to the lack of detailed data on South-South cooperation and private sector investment or support. Aid for Trade to ICT connectivity and e-commerce is therefore underestimated. Further, the definition of ICT connectivity used by the OECD does not capture the full range of activity in this area.

87. No single reporting category captures the full scope of the discussions on the E-commerce Work Programme at the WTO. Instructive is to examine the E-trade for All analytical framework that lists seven key thematic areas where support should be provided to upgrade the ability of developing countries to engage in e-commerce. The framework includes e-commerce assessments, ICT infrastructure and services, trade logistics and trade facilitation, payment solutions, legal and regulators frameworks, e-commerce skills development and access to finance. According to UNCTAD, these areas define the e-commerce landscape (Box 9).

Box 9 – The E-trade for All analytical framework for e-commerce

Source: Aid for Trade at a Glance 2017, Chapter 7.

88. Mapping these seven key e-commerce thematic areas against support reported to the OECD CRS in CRS codes that regroup these areas provides a significantly different view of total support for e-commerce development. Hence, the total amount for concessional support reached for the period 2006-2016 is US$54.7 billion as opposed to the US$6.6 billion according to the OECD definition. Using the same method, the total amount for non-concessional support is US$40.6 billion as opposed to US$8.3 billion (see Table 4).

Table 4 – Volume, description, and CRS codes of e-commerce areas

E-commerce area	CRS code and description	CRS code guidance notes on coverage	Concessional (ODA) Disbursements in billion US$ (2006-2016)	Non-concessional (OOF) Disbursements in billion US$ (2006-2016)
- National policies - Legal and regulatory frameworks	Communication policy and administrative management	Communications sector policy, planning and programmes; institution capacity building and advice; including postal services development; unspecified communication activities. (22010)	1.1	0.2
- ICT infrastructure and services	Telecommunications	Telephone networks, telecommunication satellites, earth stations. (22020)	2.2	0.9
	Information Communications Technology	Computer hardware and software; internet access; IT training. When sector cannot be specified. (22040)	1.6	0.4
- Trade logistics and trade facilitation	Trade facilitation	Simplification and harmonization of international import and export procedures (e.g. customs valuation, licensing procedures, transport formalities, payments, insurance); support to customs departments; tariff reforms. (33120)	3.2	2.3
- Payment solutions	Formal sector financial intermediaries	All formal sector financial intermediaries; credit lines; insurance, leasing, venture capital, etc. (except when focused on only one sector). (24030)	25.4	25.3
- Access to finance	Informal/formal financial intermediaries	Micro credit, savings and credit co-operatives etc. (24020)	4.0	4.4
- E-commerce skills development	Business support services and institutions	Support to trade and business associations, chambers of commerce; reform aimed at improving business and investment climate; private sector institution capacity building; trade information; public-private sector networking including trade fairs; e-commerce. (25010)	17.0	7.2
		Totals (in US$ billon, 2016 constant)	***54.7***	***40.6***

Source: Aid-for-trade data: Creditor Reporting System Explanatory Note.[21]

89. Further research would be necessary to determine how much of the support in each category is actually related to promoting ICT connectivity or e-commerce. Relevant reporting codes capture both e-commerce-relevant activities and much broader support in this category. An example here is support for banking services. While this is important for access to e-commerce related payment systems, a range of other actions may also be funded in this category that are unrelated to e-commerce.

[21] Aid-for-trade data: Creditor Reporting System Explanatory Note http://www.oecd.org/trade/aft/43234667.pdf.

8 CONCLUSIONS

90. The 2017 M&E exercise highlights that both developing countries and their development partners (donors and South-South partners) have, or are developing, digital-related policies/strategies.

91. More than half the developing country governments that replied to the self-assessment questionnaire indicated that they have national e-commerce or other digital strategies, including national ICT strategies, e-government, e-commerce, telecommunications and broadband strategies. ICT connectivity and e-commerce also featured as a priority in the national development policy of most of the donors that participated in the monitoring exercise. High on the list of their priorities figure ICT development, e-government and e-commerce development, together with other digital strategies.

92. A total of US$6.6 billion in concessional financing disbursements for ICT connectivity was reported to the OECD over the period 2006-2016. This figure represents 1.92% of all aid for trade disbursed over this period (US$342.3 billion). An additional US$8.3 billion was also disbursed in non-concessional financing for ICT connectivity, mainly to middle income countries. Asia was the largest recipient of financing to ICT connectivity followed by Africa, and Latin America and the Caribbean. A core group of five donors accounted for two-thirds of all concessional funding.

93. Many gaps remain in the data. Using UNCTAD's eTrade for All framework and mapping concessional flows reported to OECD on UNCTAD seven categories for support results in much higher figures of US$54.7 billion in concessional and US$40.6 billion in non-concessional support. This approach has shortcomings given that much support may not be closely linked to ICT connectivity or e-commerce support *per se*.

94. Another gap arises from the limited data on South-South cooperation. Publicly available information on funding from official and private sources from China and India suggests that South-South cooperation and investment flows are significant and growing. Important also to note is that other developing countries are also emerging as important actors (e.g. Malaysia, Thailand and others) in the ICT connectivity and e-commerce areas.

95. One point which comes out from the preceding analysis is that concessional financing flows are modest when compared to foreign direct investment flows. UNCTAD's World Investment Report 2017 on Investment and the Digital Economy reports a total of 730 greenfield project investments in ICT infrastructure in developing countries worth US$118 billion between 2012 and 2016. The World Bank's Private Participation Database registered 5,292 ICT projects in developing countries worth US$19.1 billion between 2006 and 2016.[22] These projects use public funding to mobilize private financing. As such, they speak to an emerging trend in Aid for Trade financing: the leveraging of private sector financing with concessional public funds.

96. This preliminary analysis of financing highlights a need for further in-depth research, not least to agree a definition for reporting of financing flows that adequately reflects the scope of activities discussed within the E-Commerce Work Programme. It also highlights that development financing from official sources is working in tandem with foreign direct investment to upgrade ICT connectivity and address e-commerce capacity constraints.

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[22] World Bank Private Participation Database: https://ppi.worldbank.org/snapshots/sector/ict

BIBLIOGRAPHY

China, The People's Republic of (2014), China's Foreign Aid

Keene Stephanie (24 March 2015), India's ICT Companies Lead the Way to Further Indian Investment in Africa

ITU (2010), National e-Strategies for Development: Global Status and Perspectives, Geneva

ITU-UN Broadband Commission (2016), The State of Broadband 2016, Geneva

Kim, Kelly, & Raja, World Bank (2010), 'Building broadband: Strategies and policies for the developing world', Washington, D.C.

OECD (2009), Aid-for-trade data: Creditor Reporting System, Explanatory Note

OECD (2016), Benn, Sangaré and Hos, Amounts Mobilised from the Private Sector by Official Development Finance Interventions, Paris 2016

UNCTAD (2016), The Africa Investment Report 2016

UNCTAD (2017), World Investment Report 2017, Investment and the Digital Economy

UNESCAP (2017), A Study of ICT Connectivity for the Belt and Road Initiative (BRI): Enhancing the Collaboration in China-Central Asia Corridor

Wong Alfred (2015), China's Telecommunications Boom in Africa: Causes and Consequences

World Bank Group (2017), Private Participation in Infrastructure database available at https://ppi.worldbank.org

WTO and OECD (2017), Monitoring and Evaluation Exercise Case stories, available at http://www.aid4trade.org

WTO and OECD (2017), "Aid for Trade at a Glance – Promoting Trade, Inclusiveness and Connectivity for Sustainable Development", Geneva and Paris