



Donor Support to the Digital Economy in Developing Countries

A 2018 Survey of Public and Private Organizations

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The views and recommendations expressed in this paper do not necessarily represent UNCTAD's or Germany's official positions, those of the German Federal Ministry for Economic Cooperation and Development (BMZ) or those of its implementing agencies.

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EXECUTIVE SUMMARY

International aid flows to developing countries amounted to about \$177.6 billion in 2017. The extent to which these flows support value creation and capture in the digital economies of developing countries is currently not well known. However, available estimates suggest that only a small fraction of aid flows are explicitly addressing the development implications of digital transformations. While aid policy and decision makers worldwide are increasingly recognizing that such processes create both opportunities and risks for the realization of the sustainable development goals (SDGs), there is a great need for further exploring the nexus between official development assistance (ODA), digital economies and sustainable development. This is still relatively new territory, and many donors are only starting to give it due attention through dedicated strategies and resource allocation.

The present report is the result of research carried out for UNCTAD's Division on Technology and Logistics with support from the Government of Germany. The report sheds light on how donor agencies are currently supporting developing countries in their efforts to realize the potential benefits and limit the potential risks associated with the emergence and expansion of the digital economy within and beyond their borders.

Based on a survey of public and private sector donor organizations, the report finds that among donors that have developed strategies on digital for development, many emphasize the potential benefits of digital development in terms of promoting inclusive and sustainable economic growth. Meanwhile, it is less common to provide a clear vision or approach for the mitigation of potential downside risks, such as harmful concentration and monopoly, rising inequality, or state and corporate use of digital technologies to control rather than empower citizens.

The nature of donor strategies and policies in support of digital economies in developing countries vary widely. The report investigates their sectoral and thematic focal points, the transparency of their resource bases (budgets etc.), the use of different instruments (grants, loans, trust funds etc.), the role of networking with stakeholders and other donors, the assessment of outcomes and impacts, and their alignment with the SDGs. Local ownership, i.e. the extent to which donor strategies and policies are aligned to the development priorities of their partners and target groups in developing countries, is also important, but it is difficult to assess given the general paucity of relevant information.

The report reviews selected donor initiatives to support SDG achievement and some open issues in donor support to SDGs through digital solutions. It also notes that opportunities

and risks from digital economies in developing countries can be considered as two sides of the same coin. Selected donor initiatives aimed at mitigating risks are cited, for example, related to impact on workers on digital platforms, cybersecurity, skills development and e-waste management.

The last chapter of the report presents ten recommendations for making sure that the digital dimension is adequately reflected in the development cooperation strategies of both public and private donor organizations:

A. Recommendations for actions by donors

1. Establish an alliance of donor agencies at the global level – for example through the OECD’s Development Assistance Committee (DAC) and/or other established international fora – to document, exchange and promote good standards and practices in donor support to digital economies in developing countries with special emphasis on digital inclusion and leaving no one behind.
2. Improve the alignment of donor support through digital economies in support of the SDGs and development strategies and programmes of partners in developing countries.
3. Promote broad-based awareness of the opportunities and risks of digital economy development among partners in developing economies, with a view to strengthening local ownership and stakeholder empowerment, as well as within donors’ home constituencies.
4. Develop and apply viable concepts and tools for evidence-based, results-oriented and unbiased monitoring and evaluation of the outcomes and impacts of donor interventions to support digital economies in developing countries.

B. Recommendations for actions by policy and decision makers in developing countries

5. Promote - through appropriate capacity and awareness building measures - an open, lively and well-informed public debate as well as regional and international peer exchange with a view to improving own strategies and programmes and aligning international assistance that addresses the opportunities and risks of digital development in achieving the SDGs and other national policy goals.
6. Reinforce own systems of impact monitoring, evaluation and reporting of digital economy impacts on the achievement of the SDGs.
7. Adopt and implement national strategies and programmes for digital development, drawing on the results of independent and evidence-based reviews such as eTrade Readiness assessments, with due consideration of the associated opportunities and risks.

8. Integrate donor support to digital economies into local systems of resource mobilization and allocation including national planning and public financial management systems.

C. Recommendations for actions by the competent UN agencies

9. Facilitate donor dialogue through existing channels (e.g. eCommerce Weeks, the eTrade for all initiative and the OECD Development Assistance Committee) and efforts to adopt and apply good standards and practices, create synergies and enhance aid efficiency and effectiveness in donor support to digital economies in developing countries.
10. Facilitate the design and implementation of strategies and programmes within the UN system for more efficient and effective support to digital economies in developing countries.

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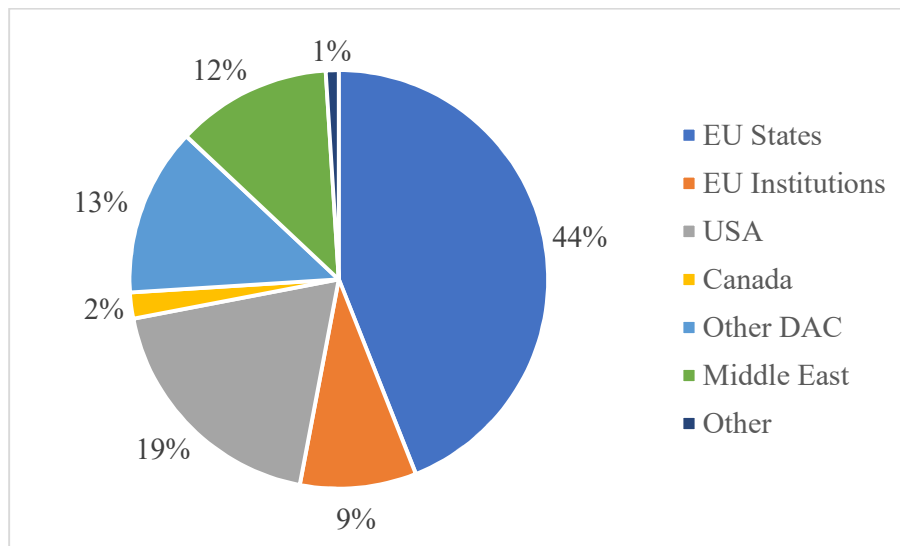
Abbreviations

ADB	Asian Development Bank
AFD	Agence Française de Développement (France)
AfDB	African Development Bank
BMGF	Bill & Melinda Gates Foundation
BMZ	Federal Ministry for Economic Cooperation and Development (Germany)
CSTD	Commission on Science and Technology for Development (United Nations)
D4D	Digital for Development
DAC	Development Assistance Committee
DFID	Department For International Development
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (Germany)
GSMA	Groupe Speciale Mobile Association
ICT	Information and Communications Technology
IDRC	International Development Research Centre (Canada)
IFC	International Finance Corporation (World Bank)
ITU	International Telecommunication Union
JICA	Japan International Cooperation Agency
LDC	Least developed country
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
SDG	Sustainable Development Goal
Sida	Swedish International Development Agency
UNCTAD	United Nations Conference on Trade and Development
USAID	United States Agency for International Development
WSIS	World Summit on the Information Society
WTO	World Trade Organisation

1 Introduction

According to the Organisation for Economic Cooperation and Development (OECD), international aid flows (official development assistance, ODA) to developing countries amounted to about \$177.6 billion in 2017. More than half of this amount (53 per cent) was provided by member states and institutions of the European Union (see Figure 1 below). The main bilateral European contributors were Germany, the United Kingdom and France. The United States accounted for about 19 per cent of the total. Important contributions (13 per cent) were made by some other member countries of OECD's Development Assistance Committee (DAC) including Japan, Norway, Switzerland and the Republic of Korea. Some non-DAC countries in the Middle East region – in particular Saudi Arabia, Turkey and the United Arab Emirates – contributed together about 12 per cent of the total.² The volume of aid has increased since 2014 by about six per cent, i.e. two per cent annually, thanks mainly to increased contributions from EU member states and the United States.³

Figure 1. Net ODA contributions, 2017 (% of total)



Source: OECD, Dataset: total flows by donor (retrieved on Nov. 30, 2018); own calculations

² Recent data was incomplete for some countries. In order to fill these gaps for the configuration of Figure 1, the author applied three-year moving averages.

³ The International Monetary Fund defines ODA as follows (IMF, 2014): "Official flows to countries and territories on the DAC list of ODA recipients and to multilateral development institutions that are administered with the promotion of the economic development and welfare of developing countries as the main objective, and which are concessional in character with a grant element of at least 25 per cent (using a fixed 10 per cent rate of discount). ODA receipts comprise disbursements by bilateral donors and multilateral institutions. Lending by export credit agencies - with the pure purpose of export promotion - is excluded." This definition is applied today by the OECD, among others.

Many aid policy and decision makers worldwide have recognized that digital transformation processes are creating both opportunities and risks, and that different levels of readiness to engage in these processes may induce widening income inequalities and thereby undermine social cohesion and achievement of the Sustainable Development Goals (SDGs). ODA has an important role to play in this context. But as the nexus between ODA, digital economies and sustainable development is still a relatively new territory, many donor governments and agencies are only starting to give it due attention. Hence the importance of exploring ways for donors to learn from their own experiences and those of others. Among some donors, there is already a sense of urgency: Digitalization processes move fast, while ODA strategies and programmes tend to evolve slowly.

Against this background, some of the key questions raised in this paper are how global ODA is distributed, how it is used, and whether it is making a difference in terms of enhancing the quality of human development. Moreover, it asks how donor agencies are supporting developing countries in their efforts to create and capture value, realize the potential benefits and limit the potential risks associated with the emergence and expansion of the digital economy within and beyond their borders. Conclusive answers to many of these questions remain elusive due mainly to lack of reliable information.

Key questions that we shall attempt to answer, at least in part, in the present report include the following: ⁴

1. In which areas relating to digital economies do donors primarily advise and why?
2. What resources (budgets etc.) are allocated to this kind of work?
3. What are the associated instruments and approaches applied?
4. What evidence is available regarding how developing countries can benefit from digital economies?
5. What are the major associated risks and how can these be mitigated?
6. How can digital economies contribute to achieving the SDGs?

Both primary and secondary information have been accessed and compiled for the purposes of the present “donor mapping exercise”. Primary information has been derived from a donor expert survey conducted in October and November 2018 with support from the *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)*. This survey targeted

⁴ In general, we distinguish here between different channels (bi- and multilateral aid), instruments (grants, loans) and modes of delivery (programmes, projects, budget support) in development cooperation.

representatives of selected bi- and multilateral aid organisations as well as private-sector based and other organisations with a mission to support digital economies in developing countries. The survey focused on the following three open-ended questions:

- Does your organisation have its own strategy for support to digital economies in least developed countries (LDCs)? (If yes, how can we access it?)
- What are your organisation's main priorities in the provision of support to digital economies in LDCs?
- What are the main financial and non-financial resources that your organisation is currently allocating to support digital economies in LDCs?

In total, 14 organizations responded to the above questions and a few provided additional information per telephone interview as well. While the survey results may hardly qualify as representative, they do provide some valuable insight into the rationale, instruments and challenges of donor support to digital economies in LDCs.

The main source of secondary information gathered for preparing this report was the Internet. Some off-line “grey” literature stemming mainly from German sources (e.g. internal status reports regarding specific topics such as taxation of digital economies and progress in specific digital projects) has also been accessed and reviewed. The report highlights strategies and programmes that have been put in place since 2015. While various elements of these strategies and programmes are reviewed, it is generally premature to assess them in terms of outcomes and impacts.⁵

The choice of donor and other agencies for review was largely systematic and objective. Out of 49 bilateral donor countries currently listed in OECD aid statistics, the 30 bilateral donors with the highest volume of ODA (accounting for 99 per cent of total ODA in 2017), were selected for the fact-finding. In section 2.2, the top six bilateral donors are reviewed. Reference is also made to other bilateral donors inasmuch as the findings are considered to be of particular relevance to the present study.

Multilateral donors handle about one quarter of total ODA in 2017. National ODA contributions are provided through UN agencies, EU institutions, World Bank bodies, regional development banks and other agencies, which then channel them to developing countries based on a wide variety of agreed programmes and modes of delivery. The selection of specific

⁵ Strategies and programmes dedicated primarily to issues of digitalization to improve the administrative processes of donor agencies are not within the scope of the present review.

multilateral donors to investigate for the purposes of this report (section 2.3) was based, in a first stage, on suggestions garnered from several experts. In a second stage, priority was given to multilateral donors with high annual expenditures and a strong focus on digital economies.

A two-stage approach was also applied for the selection of private sector-based and other development actors (foundations etc.) for investigation (section 2.4). First, suggestions were collected from experts; then priority was given to such entities partnering with public sector donors.

Chapter 3 explores the relationship between ODA, digital economies and the SDGs (also known as the Global Goals). The selected case studies attributed to each SDG seek to illustrate how ODA can contribute to SDG achievement through support to digital economies.

Chapter 4 draws on available literature to identify opportunities and risks associated with the emergence and expansion of digital economies in developing countries. Based on the results presented in earlier chapters, it discusses the extent to which donors are responding to these opportunities and risks, and what might be done to close gaps between donor contributions and developing-country needs.

Chapter 5 provides preliminary responses to the six key questions enumerated above and Chapter 6 proposes recommendations targeting specific development actors in the realm of digital economies. Ideally, setting priorities and channelling resources for development cooperation should be guided by the basic principles of good governance i.e. transparency, accountability and participation. This chapter considers what needs to be done in order to transform these basic principles into a reality in the realm of digital economy and development.

2 Overview of donors' support related to the digital economy in developing countries

2.1 Research coverage

This chapter reviews a variety of public and non-public development actors, focussing on the following six dimensions of their support to digital economies in developing countries:

1. Strategies, policies and priorities in terms of sectoral and thematic focus;
2. Resource allocations (human, technical, financial etc.);
3. Conceptual approaches, methodologies and instruments including modes of delivery;
4. Evidence of benefits accruing to the targeted countries or regions (outcomes, impacts);
5. Efforts to identify and mitigate risks; and

6. Potential contributions to the achievement of the SDGs.

In addressing the dimension of resource allocation, some attempts have been made in the past to assign a monetary value to aid flows dedicated to digital economies. To date, however, none of these efforts have yielded useful or viable results.⁶ This report considers how donors allocate their resources to support digital economies in developing countries: are resources dedicated (“ringfenced”), mainstreamed, or resulting from a combination of the two?

2.2 Bilateral donors

The United States, United Kingdom, Germany, Japan, France and Sweden are the 6 main providers of ODA worldwide (OECD 2019). Together they accounted for about 60 per cent of total ODA in 2017. Their strategies and programmes for support to digital economies in developing countries may be expected to yield important results not only in terms of development impact, but also as models for other donor agencies and partners to emulate.

2.2.1 United States

The U.S. Agency for International Development (USAID) launched its strategy paper entitled “Digital Download” in 2017 (box 1). The strategy is complemented by other policy papers, such as the report “Open Data in Developing Countries. Toward Building an Evidence Base on What Works and How” (Verhulst and Young 2017) and "Identity in a Digital Age: Infrastructure for Inclusive Development" (USAID 2017b). USAID’s strategy paper places special emphasis on digital development in the health, food and finance sectors, on education for digital literacy and geospatial technologies, and on support to women and girls. Numerous past and ongoing programmes to promote the digital economy in developing countries are mentioned, in some cases with reference to specific budgets. The benefits accruing to specific target groups (e.g. “more than 15 million underserved women”) are also mentioned, albeit without naming the source documents. The strategy emphasizes the need for digital and financial inclusion but makes no reference to specific risks beyond instability resulting from the digital divide. There is no reference to the SDGs.

⁶ In Sweden, there was an attempt to calculate the value of all Swedish aid within the information and communications technology (ICT) sector, based on data from the official Swedish aid tracker. For 2013, the test run yielded a figure of \$107 million, equivalent to 1.84 per cent of Sweden’s net ODA contribution. However, due to the difficulties of the calculation, the effort was abandoned, and no further calculations of this type have since been published.

Box 1: USAID’s strategy paper “Digital Download” (2017)

USAID's strategy and programming focuses broadly on five technical areas:

- Digital inclusion facilitates the expansion of Internet access in USAID presence countries to accelerate the Agency’s development objectives, while ensuring the most marginalized have the skills and resources to be active participants in the digital economy.
- Digital finance helps people gain access to and have the ability to effectively use a full suite of financial services that are affordable, accessible and secure.
- Development informatics drives the Agency and other development actors to better use digital information systems to improve development outcomes.
- The Geocenter uses geospatial technology, data analytics and visualization techniques to improve the strategic planning, design and monitoring of USAID's programmes.
- “Digital Development for Feed the Future” is a special initiative that helps integrate digital tools into existing Feed the Future programmes and the upcoming Global Food Security Strategy for countries aiming to improve agriculture and nutrition outcomes.

USAID has adopted a multi-stakeholder approach in numerous fields. For example, the “RegTech for Regulators Accelerator” (R2A) programme – launched in partnership with the Gates Foundation and the Omidyar Network – is described as “an innovation sandbox with the goal of creating a market for technology-enabled tools that enhances the capacity of financial sector regulators and reduces the compliance burden of the private sector” (USAID 2017a, p. 10). Another such multi-stakeholder initiative is the “Better than Cash Alliance” (BTCA). Its stated purpose is “to accelerate the transition from cash to digital payments in order to reduce poverty and drive inclusive growth”. It is co-funded by the Gates Foundation, Citi Foundation, MasterCard, Omidyar Network and Visa Inc. The United Nations Capital Development Fund (UNCDF) serves as its secretariat.

2.2.2 United Kingdom

In its strategy entitled “Digital Strategy 2018-2020: Doing development in a digital world” (box 2), the United Kingdom’s Department for International Development (DFID) positions itself as a leader in many ways: Recalling that “Global Britain has a proud history of digital innovation – from the earliest days of computing to the development of the World Wide Web”, its digital strategy 2018-2020 posits that (a) “DFID leads the world at open, modern and innovative approaches to development and digital technologies are at the heart of our work - using cutting-edge technology to lift millions of people out of poverty” and (b) “Britain leads the world in humanitarian response; digital technology helps us focus our aid where the need is

greatest”. One key message in its digital strategy is that DFID will “play its part” in delivering on the vision of the UK Government Transformation Strategy (2017-2020) for digital, data and technology.

Box 2: DFID’s “Digital Strategy 2018-2020” (excerpt)

DFID’s Digital Strategy 2018-2020 sets out a vision and approach for doing development in a digital world. Its aim is to establish DFID as a global leader in digital technology and development, in order to have a bigger, faster and more cost-effective impact on the lives of poor people. The vision is for a future where DFID will be harnessing the benefits of digital technology at two main levels:

- **Doing development in a digital world:** DFID will be using digital technology to improve the speed, value for money, reach and impact of its programmes, which will be more flexible and user-centred. DFID will be playing its part in maximising the development benefits of digital technology - realising a world where the Internet will be more widely available, and more digital products and services will be scaled and targeted to reach, empower and improve the lives of poor people, particularly those at risk of being left behind.
- **Transforming as a digital department:** DFID will have re-designed departmental services around the needs of its users. This will mean more open and responsive communications and transactions with the UK public, beneficiaries and partner countries, suppliers and civil servants. DFID and other international departments will be able to work together effectively in pursuit of the government’s policy aims worldwide through common platforms, technologies and systems. Data will be used routinely to inform delivery of the UK Aid Strategy and Global Goals, drive better decision-making within DFID, and to strengthen DFID’s accountability and public engagement.

DFID makes ample use of strong language in its digital strategy. Two examples:

- “The Global Goals are ambitious, and rightly so. We can only achieve them by making best use of the latest digital technology.”
- “Digital technologies have the potential to revolutionise the lives of the poor”.

The strategy mentions many programmes but without indicating any programme budgets. The strategy sees opportunities in a wide range of thematic areas: economic growth, financial inclusion, utilities, agriculture, health, education, governance and accountability, and humanitarian response. As for its modes of delivery, it refers to the Digital Spend Panel and the Digital Trailblazers, the latter serving as high-level demonstrators for innovative practices. Regarding areas of impact, many footnotes refer to reports providing evidence of benefits to target groups. The strategy identifies some risks - harmful concentration and monopoly, rising

inequality, state and corporate use of digital technologies to control rather than empower citizens – but provides no clear vision or approach for their mitigation. There are numerous references to the Global Goals.

2.2.3 Germany

The digital strategy of the main department in charge of development cooperation (the Federal Ministry for Economic Cooperation and Development (BMZ)) in Germany is defined as a derivative of a broader government-wide strategy. The goal of the latter is “to accompany and take control of the digital transformation”. The Federal Ministry for Economic Affairs and Energy, the Federal Ministry of the Interior and the Federal Ministry of Transport and Digital Infrastructure have a leading role in the implementation of the government-wide “Digital Agenda 2014-2017” (BMW i et al 2014). In the meantime, the German Federal Government has introduced its Digital Strategy for 2025 (BMW i 2016) which intends to create, among other things, a 10 billion Euro fund to finance future digital projects. Other German agencies engaged in development cooperation, such as the German Development Bank (KfW) and the National Metrology Institute (PTB), align their own strategies for support to digital economies to the strategies of the Federal government, cooperation ministry and other departments.

This underlines the importance of considering the extent to which digital for development strategies are embedded in broader strategies and complemented by either parallel strategies (e.g. in other departments) or sub-strategies in the same department. Are these strategies mutually compatible, or do they overlap or contradict each other? Are these strategies being implemented as foreseen? While it is beyond the scope of the present report to respond to these questions, note should be taken that harmonization and sequencing of the implementation of these strategies have consequences for the overall effectiveness of donor support to digital economies in developing countries.

Before launching its ministerial strategy entitled “Harnessing the digital revolution for sustainable development – The Digital Agenda of the BMZ” (BMZ 2017) (box 3), BMZ had already published several thematically related works, most notably its strategy paper for “Information and communication technology (ICT). Key technologies for sustainable development. BMZ Strategy paper 2 / 2013e” (BMZ 2013) and its “Toolkit - Digitalisation in Development Cooperation and International Cooperation in Education, Culture and Media” (BMZ 2016).

Box 3: The Digital Agenda of the BMZ (2017)

With its Digital Agenda, the BMZ aims to achieve the following 5 objectives:

- (1) Harnessing digital innovation,
- (2) Reinforcing democratic processes,
- (3) Helping forcibly displaced persons,
- (4) Creating future-proof jobs and
- (5) Safeguarding human rights and ensuring participation.

The Digital Agenda of the BMZ follows, in its own words, a “value-driven, liberal, democratic, human rights-based rule-of-law approach”. Resource allocations are not specified, with the exception of funds for its Digital Africa initiative, which amounted to 100 million Euro during 2015-17. Some figures are provided regarding the beneficiaries of its past programmes - more than 15,000 healthcare facilities in Bangladesh, more than 21,000 households in East Africa, more than 8,000 young people in Tunisia – but no source documents are indicated. Emphasis is placed on raising awareness of digital risks among specific target groups: migrants, refugees, journalists and bloggers. Major challenges are seen in new production methods and ways of working, digital divides, data protection and human rights, and dealing with electronic waste. Germany’s Digital Agenda includes only few direct references to the SDGs.

Germany financially supports UNCTAD’s Rapid eTrade Readiness Assessments of LDCs, which aim to help countries to quickly identify barriers to the development of their e-commerce development and to propose concrete actions on how to overcome these barriers. After Japan and the United States, Germany is the third largest financial contributor to the International Telecommunication Union (ITU).

2.2.4 Japan

Japan’s approach to international cooperation for digital development is most aptly expressed in a short statement on the website of the Japan International Cooperation Agency (JICA) (box 4). Japan has been the top contributor to the Asian Development Fund (ADF) of the Asian Development Bank (ADB), which supports many ICT projects. The Japan Fund for Information and Communication Technology (JFICT) supports initiatives that create an enabling environment, build human resources, and develop ICT applications and information content - the three thrusts of ADB’s ICT Strategy.

Box 4: JICA's development strategy in the ICT sector

The strategy comprises four components:

- Improvement of ICT policy-making capacity,
- Development of human resources to support ICT,
- Development of ICT infrastructure, and
- Promotion of use and application of ICT.

This development strategy has been translated into specific measures, including dispatching promotion and policy advisors on ICT, supporting the training of ICT engineers, developing fibre-optic networks, and delivering assistance with the use and application of ICT in such sectors as education, industrial promotion and disaster risk reduction. In the cyber security sector, JICA works within a framework of cooperation between the Japanese government and ASEAN member states, namely the Japan-ASEAN Ministerial Policy Meeting on Cyber Security Cooperation, to assist these countries in building their cyber security capacities, thereby contributing to safe and secure cyberspace.

With a view to supporting the achievement of the SDGs, JICA is currently considering the following solutions:

- Industry-based solutions: Providing ICT services as a package to address problems in developing countries, utilizing ICT solutions used in Japan and other countries;
- Business-enabling solutions: Proposing utilization of ICT services as a tool to further improve the effectiveness of existing projects; and
- Incubating solutions: Utilizing ICT to support the set-up of new projects, services, etc. in developing countries.

2.2.5 France

The Agence Française de Développement (AFD) recently published its cooperation strategy “Towards a World in Common. AFD Group 2018 – 2022” (AFD 2018), according to which the AFD Group commits itself to promoting dialogue and cooperation and to expanding inclusive, durable and responsible financing and financial systems. This engagement will serve to accelerate six major transitions currently underway across the globe, one of which is related to digital and technological transition (box 5).

Box 5: The AFD Group's strategy to support digital and technological transition

The AFD Group aims to promote technology in the service of accelerated development pathways, management of digital revolution social impacts, and a French and European vision of the major social, ecological and economic issues that new and digital technologies raise: cyber security, Net neutrality,

open source software, personal data protection, cultural diversity and environmental protection. The AFD Group will also champion responsible public data management.

The AFD Group will use digital technologies to fast-track the SDGs, accelerating development by integrating these goals into all sectors of intervention. For example, the Agency will include digital means when planning and monitoring the projects and programmes it finances. It will support pro-environmental actions with “green tech” while helping governments transform into “e-governments,” and cities and towns into “smart” cities and villages. In addition, it will exploit the power of data for more open, accountable and effective projects and evaluations.

AFD Group aims to reduce the digital divide and support universal Internet access through finance for training, norm setting and digital infrastructure expansion, fortification and security.

The strategy makes no reference to specific budgets or expenditures, but AFD does have a dedicated operational team of experts for digital projects. As a general approach, AFD aims to accelerate ongoing global digital transitions while acting as a platform to mainstream digital technologies and culture in its own organization. Regarding the benefits and impacts of AFD’s digital projects, neither the strategy nor AFD’s most recent annual report (“Panorama 2018”) provides for such information. The annual report does, however, highlight the benefits of one innovative digital project aiming to reduce deforestation in Côte d’Ivoire. Risk management is not given a major role in either of these reports. The strategy stipulates that the AFD Group will integrate the SDGs into all sectors of intervention. There are frequent specific references to SDGs in the Strategy.

2.2.6 Sweden

Sweden has long been a pioneer in development cooperation. This holds true in its support to digital economies in developing countries as well. Sida began selectively supporting ICTs in the mid-1990s. In 1999, Sida adopted a strategy for the use of ICTs in development cooperation, also referred to as ICT for Development (ICT4D). The strategy was updated in 2005. Over the past two decades, however, Sida has rather aimed at mainstreaming ICT4D into its overall portfolio. Hence, it has no specific strategy today to guide its support to digital economies in developing countries (box 6).

Box 6: Sweden’s results strategies for development cooperation since 2014

The “Results strategy for global action on economically sustainable development 2014–2017” (Government of Sweden 2014) guided Sida’s activities on inclusive economic development until 2018.

One section of this strategy focuses on improved access to open and secure ICTs and defines 3 expected results: (1) greater access to, and increased use of, open, secure and free ICTs, (2) greater capacity for innovation, entrepreneurship and security in ICT for the promotion of economic development, and (3) enhanced capacity to take part in the dialogue on the global development of the Internet and its contribution to economically sustainable development. Furthermore, the strategy stipulates that “with a view to promoting inclusive economic development, activities will aim to contribute to improved and more equitable access to ICT and a reduced digital divide between and within countries. As women generally have less access to ICT tools, their specific needs are to be identified and supported.

The new “Strategy for Sweden’s global development cooperation in sustainable economic development 2018–2022” (Government of Sweden 2018), currently available in Swedish only, highlights improved access to and increased utilization of open, secure and free ICT as one of ten areas of intervention. The focus is on digital infrastructure, digital use for private sector development, digital skills and financial inclusion through digital solutions. Digitalization is considered as an important area for developing countries’ integration into the world economy and global value chains.

Sweden’s aid flows are presented in a user-friendly manner on openaid.se. Regarding approaches and modes of delivery, Sida invests as a partner in large digital for development (D4D) initiatives with other donors such as USAID and DFID. It provides funds to relevant NGOs active in D4D and digital rights that work on the ground in partner countries. As for the benefits accruing to the target groups, the relevant strategy and policy documents provide little evidence. Benefits and impacts are assessed in separate evaluations. Sida publishes an annual summary of the results of its evaluations – there were 33 evaluations conducted in 2017 - but ICTs play at best a marginal role in these reviews. As for risk management, Sida initially focused on the positive and enabling character of digital technologies, but there appears to have been a shift towards a more critical assessment of the potential downsides and negative effects of digital technology, e.g., in the surveillance and suppression of activists and journalists. The most recent sustainable economic development strategy points out SDGs that represent focus areas for Swedish development cooperation.

2.2.7 Other bilateral donors

Several other bilateral donors have introduced dedicated or embedded D4D strategies in recent years. For reasons of economy, these strategies will not be reviewed in detail here, but their existence does warrant mention for the interested reader:

- **The Netherlands:** Currently, there is only a dedicated national digital strategy in place (Ministry of Economic Affairs and Climate Policy, 2018), but the recent policy document entitled “Investing in Global Prospects the world, for Netherlands” (Ministry of Foreign Affairs, 2018a) sees a key priority in filling this gap, indicating that the “government will develop a digital strategy in order to take advantage of the opportunities offered by digital technology for sustainable and inclusive growth”. The strategy is expected in early 2019. Starting in 2018, the Netherlands has been providing financial support to UNCTAD’s work on e-commerce and the digital economy.
- **Norway:** The Government’s strategy is presented in “Digitalisation for Development. Digital Strategy for Norwegian Development Policy” (Ministry of Foreign Affairs 2018b). It aims to “integrate digitalisation into existing thematic priorities for Norway’s development policy, and the areas where Norway is already playing an important role will be prioritised. The thematic priorities are health, education, climate, the environment and oceans, business development, agricultural development and renewable energy, as well as humanitarian aid.” Among other things, Norway aims to strengthen investment in digitalisation through existing funding mechanisms for business development and job creation. The Enterprise Development for Jobs scheme, administered by the Norwegian Agency for Development Cooperation (Norad), supports companies planning to invest in developing countries for conducting preliminary studies, pilot production, partner searches and expansion projects. The scheme has already been utilized by well-established Norwegian ICT businesses seeking to expand into developing countries.
- **Canada:** While Canada does not have a dedicated strategy for support to digital economies in LDCs, its Feminist International Assistance Policy (Global Affairs Canada 2017) provides vision and direction for women and girls to seize opportunities that digital technologies offer for socio-economic development and empowerment. Canada’s International Development Research Centre (IDRC) has a strategy to harness digital innovations that create inclusive economic opportunities and advance democracy in the developing world. This is embedded in IDRC’s Networked Economies programme.
- **Belgium:** A document entitled “Strategic policy note. Digital for Development (D4D) for the Belgian development cooperation” (Belgian Development Cooperation 2016) defines three strategic priorities: (1) better use of (big) data, (2) digital for inclusive societies, and (3) digital for inclusive and sustainable economic growth.

2.3 Multilateral donors

Country contributions to EU institutions, the World Bank Group, UN agencies, regional development banks and other multilateral development cooperation organisations (net recovery of grants and loans) represented 24.2 per cent of total ODA in 2017. Contributions to EU institutions and the World Bank Group accounted for 33 per cent and 19 per cent of multilateral ODA, respectively. Given the scope of its engagement for developing countries, the African Development Bank (AfDB) is also included. The ADB, ITU and UNCTAD, the latter as two UN agencies with leading roles in the realm of digital for development, are featured under “others”.

2.3.1 European Union (EU)

In the past two decades, the EU has played an active role in the promotion of digital technologies and services in partner countries but lacked an appropriate framework for mainstreaming digital technologies, while contributing to the achievement of the SDGs and ensuring effective aid delivery. The EU contributes to many international fora that address issues of digital economies in developing countries. It is, e.g., after Finland the second largest contributor to the trust fund of the Internet Governance Forum (IGF), a multi-stakeholder dialogue forum whose meetings are convened on behalf of the UN General Secretary with a mandate, among other things, to discuss public policy issues related to key elements of Internet governance in order to foster the sustainability, robustness, security, stability and development of the Internet.

The European Commission’s Directorate-General for International Cooperation and Development (DG DEVCO) and Directorate-General for Neighbourhood and Enlargement Negotiations (DG NEAR) have dedicated teams working in the field of D4D in close cooperation with the Directorate-General for Communications Networks, Content and Technology (DG CONNECT), EU member states and the African Union.

With a view to creating a framework for mainstreaming digital technologies in EU development policy, a staff working document (SWD) entitled "Digital4Development: mainstreaming digital technologies and service into EU development policy" was adopted in 2017 (European Commission 2017). The EU describes it as “a solid, comprehensive and targeted approach, (which) should enable EU development policy interventions to have a greater transformative potential” (box 7).

Box 7: Priorities in the EU's Digital4Development (D4D) framework

The European Commission aims to mainstream digital technologies across four main priority areas:

- 1) To promote access to affordable and secure broadband connectivity and to digital infrastructure, including the necessary regulatory reforms,
- 2) To promote digital literacy and skills,
- 3) To foster digital entrepreneurship and job creation and
- 4) To promote the use of digital technologies as an enabler for sustainable development.

With its new D4D approach, the EU aims to promote digital technologies and services as enablers of growth through a multi-stakeholder and rights-based approach. For this purpose, the EU-Africa Infrastructure Trust Fund is to be used as a blending instrument i.e. to leverage buy-in from other donors and private sector-based development actors. According to the SWD, the EU recognizes that some of the perceived benefits of the Internet are being neutralised by new risks e.g. cybercrime, online child sexual exploitation and non-cash payment fraud. Promoting digital security awareness, tools and training is expected to help mitigate the potential negative impacts on privacy and human rights.

The EU's D4D framework effectively addresses digital technologies and services as proven enablers of sustainable development and inclusive growth. They are key in improving lives in the poorest countries, bridging the rural-urban divide and empowering women and youth. There is a strong correlation between poverty reduction and access to digital information and means of communication (digital inclusion).

The SWD points to some potential benefits of digitalization e.g. through mobile banking and remote health diagnosis, but the extent to which these benefits will be facilitated and/or enhanced through development cooperation remains unclear. The situation is similar regarding the SDGs: The EU presumes that "digitalisation acts as an accelerator and enabler of many, perhaps all of the SDGs". Explicit reference to the specific EU contribution to SDG targets through D4D, however, are limited to the areas of cyber security and civil registration systems.

The EU's Multiannual Financial Framework (MFF) 2014-2020 provides funds equivalent to \$33.7 bn to the European Development Fund (EDF) for African, Caribbean and Pacific (ACP) partner countries and \$21.7 bn to the Development Cooperation Instrument (DCI) for other partner countries. While funds explicitly dedicated to digital technologies and services are limited, a specific "digital window" under the European Fund for Sustainable Development, the guarantee scheme of the External Investment Plan, is dedicated to support

digital economies by de-risking private investments in Africa and the “European Neighbourhood”.

Within the EU D4D framework, two important initiatives may be noted:

- EU member states adopted on 20 November 2017 the Council Conclusion on Digital for Development in order to strengthen the digital economy in development cooperation. In this context, the Council urged the Commission to set up a D4D multi-stakeholder group to share best practices and lessons learnt from digital transformation. The group was established in 2018.
- An EU-AU Digital Economy Task Force was launched end 2018, bringing together interested stakeholders from both continents in order to provide recommendations on policies and measures that can support pan-African digital integration.

2.3.2 World Bank Group

With the release of its publication entitled “ICT for Greater Development Impact. World Bank Group Strategy for Information and Communication Technology 2013-2015” (World Bank 2012), the Bank committed itself to promote the use of ICTs in developing countries for more innovation and productivity increase, to simplify the infrastructure of services and to improve competitiveness. This strategy had three pillars:

- Connect: Expand accessible broadband networks for all people in every area;
- Innovate: Support ICT service enterprises, encourage innovation in that field with focus on job creation for women and children; and
- Transform: Create responsibilities and transparency for sustainable development.

A few years later, the Bank published its 2016 World Development Report (WDR) entitled “Digital Dividends” (World Bank 2016) and then formulated a 3-year business plan for support to the ICT sector during the period 2016-2018. The business plan was based largely on the 2012 sector strategy (box 8).

The Digital Development Partnership (DDP) helps operationalize the WDR 2016 and offers a platform for digital innovation and development financing. The DDP brings public and private sector partners together to catalyse support to developing countries in the articulation and implementation of digital development strategies and plans. Currently, the members of the Partnership are Denmark, Finland, Japan, Korea, the Groupe Speciale Mobile Association (GSMA) and Microsoft.

Box 8: Foundations of the World Bank’s strategy

The World Bank sees digital technology as a game-changing opportunity for sustainable development. To help client countries harness the benefits of digital technologies, its work in the sector focuses on the 5 foundations of the digital economy:

- Digital infrastructure, such as broadband networks and fibre-optic cables, is the backbone of the digital economy. Access to digital connectivity should be universal and affordable.
- Digital Financial Services and Digital Identification allow individuals, businesses and governments to interact and conduct transactions.
- Digital innovation and Entrepreneurship need a supportive ecosystem of government regulations and access to financing.
- Digital Platforms, including e-commerce and e-government, drive usage and foster economic activity.
- Digital Literacy and Skills create a digitally savvy workforce and boost competitiveness.

World Bank Group members IFC and MIGA allocated significant sums (\$7 bn and \$2 bn respectively) to the ICT sector in recent years. In Fiscal Year 2018, the World Bank portfolio included 28 stand-alone digital development projects, with total commitments amounting to \$1.26 billion. In addition, digital components are increasingly included in projects across different sectors such as transport, education, health, agriculture and public sector management.

The Bank’s Digital Adoption Index (DAI) provides ICT measures in 3 dimensions for 180 countries in 2014 and 2016. As for the Bank’s stance on risk in digital development, WDR 2016 draws attention to many associated risks and states that without strong analogue complements, opportunities may turn into risks e.g. concentration and inequality. Some of the perceived benefits of digital technologies are offset by emerging risks e.g. on labour markets, and the risk that states and corporations could use digital technologies to control citizens. Risk mitigation measures are considered in brief. The risks of digital development are addressed in a recent paper prepared by the Bank’s Development Committee entitled “Disruptive Technologies and the World Bank Group. Creating Opportunities—Mitigating Risks” (World Bank 2018).

As for the potential benefits of digitalization, WDR 2016 notes that “the rapid adoption of digital technologies in the economy has meant that its benefits are widely dispersed, and its indirect growth impacts difficult to estimate”. Only few examples of evidence-based impact assessment are considered (one exception: the “One Laptop Per Child” initiative). WDR 2016

devotes one box to ICTs and the SDGs, but otherwise assigning little explicit attention to the Global Goals.

The World Bank Group networks with many private and public organisations globally to support digital economies. One example of such a network is the Global Infrastructure Connectivity Alliance (GICA), launched by the G20 in July 2016 to work across regions and disciplines to promote cooperation, knowledge exchange, and meaningful progress in the field of global interconnectivity. The GICA held its first meeting on January 25-26, 2018 in Paris at the OECD Headquarters. The meeting was co-organized by the World Bank and the OECD. The meeting included a plenary session dedicated to ICT connectivity and addressed new perspectives in digital economies such as the use of blockchain to facilitate trade with developing countries.

2.3.3 African Development Bank (AfDB)

The AfDB Group comprises the AfDB, the African Development Fund (ADF) and the Nigeria Trust Fund (NTF). Its SDG Technical Assistance Facility targets diverse sectors including ICT infrastructure and management. Some loan operations have a strong digital focus e.g. the Bamako Digital Complex and the Regional ICT Centre of Excellence in Kigali.

In 2012, the Bank introduced its “Information Technology Strategy 2013-15” (AfDB 2012a). Nevertheless, the general role assigned to ICTs in the Bank’s interventions remained somewhat unclear. Its corporate strategy entitled “At the Center of Africa’s Transformation. Strategy for 2013–2022” (AfDB 2013) made no direct mention of ICTs or digital economies.

A year later, AfDB presented a contribution to the e-health sector: “Innovative e-Health Solutions in Africa Award. Investing in smart human capital innovations: Spreading inclusive growth capacities in Africa” (AfDB 2014). More recently, the AfDB has toned down digital development once again in its “Bank Group Results Measurement Framework 2016-2025: Delivering the High 5s, Increasing the Bank’s Impact on Development” (AfDB 2017), which addresses technologies in a general sense only. The Bank’s “African Economic Outlook 2018” (AfDB 2018a) makes only few references to the role of digital economies in development.

This recent, seemingly weak corporate embracement of digital economies contrasts sharply with the “East African Regional Integration Strategy Paper 2018-2022” (AfDB 2018b), which has a prominent digital orientation. The latter comprises three major interventions in the ICT sector:

- To interconnect government-owned optical fibre backbone networks in Burundi, Kenya, South Sudan and Uganda,
- To construct cross-border backbone ICT interconnection stations at 8 EAC common borders, and
- To support the EAC Digital Agenda (E-Government) in collaboration with EASTECO.

The regional integration strategy refers to the results of a Regional Diagnostic Note (RDN) based on sectoral analytical notes, economic sector works conducted by the Bank and partner institutions, and feedback from a comprehensive consultative process. Conclusions relating to the ICT sector are summarized in the document's annex, in which the importance of ICT infrastructure (development of submarine cable systems, broadband and metropolitan networks and mobile broadband networks) and the harmonization of the legal and regulatory framework at regional level (addressing licensing, universal service and access, frequency management, numbering, interconnection and cyber security) are emphasized. Despite progress made in the region to date, however, "extending access to underserved areas such as rural areas is still the main challenge in all countries, although the situation varies from one country to the other".

Risk management is a prominent topic in the Bank's strategies. The "Review of the Bank's ICT Operations Strategy & Action Plan for the Medium Term 2012-2014" (AfDB 2012b) includes a logical framework (logframe) describing assumptions, risks and mitigation measures. The IT Strategy 2013-15 dedicates one full chapter to "Success Factors & Risks".

Numerous reviews aim to analyse the impact of ICT investments on specific SDGs relating e.g. to girls' education, financial inclusion, productivity growth and youth employment in Africa. They can be downloaded from the Bank's website. Many of these, however, were published before 2016.

In sum, although lacking a general framework for its interventions in the ICT sector, AfDB supports many African countries and regions in their efforts to formulate well-founded ICT strategies with a strong emphasis on ensuring conducive legal and regulatory frameworks and developing the required infrastructure.

2.3.4 *Other multilateral donors*

Several other multilateral donors and international organizations were reviewed for the purposes of the present donor mapping exercise. Some of the strategies, policies and programmes adopted by these donors warrant special mention here:

- The **Asian Development Bank (ADB)** has recently published a corporate strategy entitled “Strategy 2030 - Achieving a Prosperous, Inclusive, Resilient and Sustainable Asia and the Pacific” (ADB 2018), which addresses, among other things, opportunities and risks in digital transformation. On the one hand, new technologies can “usher in new industries and improve people’s lives”. At the same time, downsides such as the possibility of labour displacement are recognized. The Bank advises: “To prepare for possible adverse impacts, governments must adapt their education, training and social protection systems.” ADB hosted the Digital Development Forum (DDF) in September 2018, held in Manila, Philippines. The Forum addressed country, sectoral and thematic development strategies towards Digital Economy in Asia and the Pacific.
- The **International Telecommunication Union (ITU)** is a specialized agency of the United Nations (UN), responsible for issues that concern ICTs. The ITU hosting the annual World Summit on the Information Society (WSIS) Forum (co-organized with UNESCO, UNCTAD and UNDP) in Geneva. The ITU supports country-level research efforts, such as Moldova’s ICT-centric innovation ecosystem country review, as well as the preparation of policy and regulatory reforms, as in the case of Malawi’s E-waste Policy and Regulatory Framework, both published in 2018. The ITU also leads “EQUALS - The Global Partnership for Gender Equality in the Digital Age”. Through its ICT Development Fund (ICT-DF), the ITU co-finances more than 50 projects with partners from ITU Members, the public and private sector, multilateral organizations, financial institutions and development agencies. ITU is also quite active in the area of applying and measuring ICTs for the SDGs, as amply illustrated on its “ITU News” website dedicated to matters of “ICT4SDG”. ITU is part of the steering committee of the Partnership on Measuring ICT for Development and produces a large amount of statistics that are of relevance for measuring the information economy and society.
- The **United Nations Conference on Trade and Development (UNCTAD)** serves not only as the global promoter of the interests of developing countries in the realm of international trade, having positioned itself within the United Nations System as a leader in matters of e-commerce and the digital economy. It conducts work related to e-commerce legislation, ICT policy reviews and e-commerce strategies, ICTs and women's entrepreneurship, and

measuring the information economy. UNCTAD has been promoting a global e-commerce agenda for more than a decade, including through the annual eCommerce Weeks. Since 2017, policy dialogue has also been held at the annual Intergovernmental Group of Experts on E-commerce and the Digital Economy. The agency's overall track record can be illustrated by the following initiatives and activities:

- a) Since 2005, UNCTAD has published 11 "*Information Economy Reports*" covering a broad spectrum of topics relating to e-commerce, the digital economy and development.
- b) In 2016, the organization launched the "eTrade for all" initiative, which has 30 members from international and civil society organizations. It aims to improve the ability of developing countries to access technical assistance and capacity-building from the international community aimed at raising their ability to participate in and benefit from e-commerce.
- c) UNCTAD's "Rapid eTrade Readiness Assessment" of LDCs series was launched in April 2017 with the publication of the Cambodia assessment; since then, 16 more such reports have been completed. The project will from 2019 also be available to non-LDCs.
- d) UNCTAD runs technical assistance projects related to measuring the digital economy, improving the legal framework for e-commerce and ICT Policy Reviews and e-commerce strategies.
- e) UNCTAD services the UN Commission on Science and Technology for Development (CSTD), which among other things follows up on the implementation of the World Summit on the Information Society.

2.4 Other development actors

Private donor contributions to ODA were equivalent to about 3 per cent of total ODA in 2017. According to OECD statistics, the largest private donor was the Bill & Melinda Gates Foundation, contributing 59 per cent of all ODA from private sources. The second largest contribution was provided by the MasterCard Foundation. These two foundations and many others, such as the Rockefeller Foundation, which is also highlighted below, have assigned high priority to supporting developing countries in their efforts to strengthen their digital economies. Many of them cooperate closely with public sector donors in specific D4D programmes and projects.

2.4.1 Bill & Melinda Gates Foundation

The Bill and Melinda Gates Foundation (Gates Foundation) is endowed with more than \$50bn in assets (end 2017), making it the largest private foundation in the United States. It cooperates with many other global players in the realm of digital economy development. Like many other organizations, it emphasizes the power of innovation as a force to disrupt existing patterns of poverty and inequality. For example, its “Grand Challenges” initiative aims to “solve global health and development problems for those most in need”. It is one of three such programmes under the umbrella of Global Grand Challenges, alongside those supported by the Governments of Canada (Grand Challenges Canada) and the United States. Through this initiative, the Gates Foundation provides grants to many health and development-related projects based on digital solutions. It also funds the UN’s Capital Development Fund alongside Sweden’s Sida, the MasterCard Foundation and the Metlife Foundation, among others, to scale mobile money deployment in Africa.

The Foundation has no single strategy for digital development. Its main sector strategies, however, contain many digital elements. Its focal points are public access to information and libraries (ended in 2018), health, agriculture (“Digital Green”), financial technology (fintech) and ICT impact assessment. It has a global perspective, albeit with a strong focus on the United States. Some of its funds are earmarked for projects with a strong digital focus e.g. the Digital Frontiers Institute, based in Cape Town, which promotes inclusive digital financial services within and across sectors, markets and regions. In general, digital components are mainstreamed into project financing.

Most of its support is provided in the form of grants and scholarships. The main target sector is health. In projects outside the United States, digital technologies play no prominent role. With few exceptions, risk management related to the digital economy plays no explicitly prominent role in the Foundation’s project descriptions.⁷ Through its diverse interventions, the Foundation supports in particular the achievement of SDGs 1 through 6.

2.4.2 MasterCard Foundation

The MasterCard Foundation (created in 2006) works almost exclusively in Africa. Since 2008 it has committed \$2 bn to its work in this region, currently active in 28 African

⁷ One exception is a 1.6m USD grant to Columbia University to support research into cyber security-related risks to digital financial inclusion in developing countries and to promote appropriate mitigating measures through the creation of a risk management framework that could be adopted by regulators or industry.

countries. Digital technologies play a key role in most of its work, but there is no dedicated funding for digital development.

Its mission is “to advance education and financial inclusion to catalyse prosperity in developing countries”. The Foundation’s Young Africa Works strategy, adopted in 2018, focuses on youth employment. A first country-level strategy has been introduced in Rwanda. The overall focus of the foundation’s work is on access to education, financial services and skills training in Africa. “Inclusive digital economies in Africa” (IDEA) is a cross-cutting theme.

The Foundation aims to develop a long-term plan for each partner country. The key elements are education and skills building, leveraging technologies and business access to financial services. The IDEA Team has been formed as a technical expertise group that primarily supports the development of country strategies and programmes for inclusive digital economies. The Foundation’s website suggests strong risk awareness.⁸

Together with the International Finance Corporation (IFC), a member of the World Bank Group, the Foundation has published a “Digital Financial Services and Risk Management Handbook” (MasterCard IFC 2016) and “Digital Financial Services for Agriculture Handbook” (MasterCard IFC 2018), both with impact assessment as a key topic. Foundation reports include many facts and figures relating to outcomes and impacts. The objectivity of this information is difficult to verify due to lack of independent sources.

The Young Africa Works strategy aims to ensure that 30 million young people find dignified and fulfilling work by 2030. This would contribute to the achievement of SDG 8 (decent work and economic growth). MasterCard Foundation publications make only few explicit references to the SDGs, although contributions to the achievement of these goals are implicit in most if not all its programmes.

2.4.3 Rockefeller Foundation

Founded in 1913, the Rockefeller Foundation is one of the oldest philanthropic foundations in the world. As a science-driven philanthropy focused on building collaborative relationships with partners and grantees, it seeks to inspire and foster large-scale human impact that promotes the well-being of humanity throughout the world by identifying and accelerating

⁸ Anne Maftai, Associate Programme Manager, for example, cites “new client protection risks that may arise relating to privacy of client data, disclosure of terms and conditions, algorithm design, digital harassment, transaction security and informed consent for credit scoring”.

breakthrough solutions, ideas and conversations”. The Foundation reports assets amounting to \$4.1 bn. Since its creation, the Foundation has supported thousands of grantees worldwide and assisted in the training of nearly 13,000 Rockefeller Fellows. It works with many national and international organizations to promote innovation in many fields, including digital development, for example with Ausaid, the Gates Foundation, Canada, Sida, USAID and others in the International Development Innovation Alliance (IDIA).

The Foundation has no overarching corporate or digital strategy, but it does have a “Director of Digital” in charge of the Foundation’s “digital strategy”, which consists essentially in using digital media for advocacy purposes. The Foundation’s Data and Technology team assigns a key role to technology (e.g. digital customs clearance and tax collection systems) in realizing the African Continental Free Trade Area. The Foundation has no dedicated budget for digital development. Some programmes, however, have a strong digital focus e.g. “Digital Jobs Africa”.

The Foundation emphasizes the importance of enabling environments for innovation, “nimble & agile” digitalization and demand-driven solutions. It provides many scholarships and research grants, selecting candidates upon invitation only. The Foundation employs various on-line tools such as webinars and supports e.g. the Fuzu portal in Kenya, which applies psychometric testing making it easier for young job seekers to find a job that matches their interests. The Digital Storyteller’s Toolkit is another innovative digital instrument that has benefited from a Foundation grant. In 2014, the Foundation invited experts to address the opportunities and risks of Big Data for resilient societies (Bellagio Big Data Workshop Participants 2014). The Foundation’s overall approach to risk may be characterized by its expressed intention to “create unlikely partnerships that span sectors and take risks others cannot – or will not.”

The Solutions for Youth Employment (S4YE) coalition – a multi-stakeholder partnership including the Foundation, Accenture, World Bank and others – has prioritized “Digital Age Impact” as one of its focus areas. The emphasis is on a better understanding of how young workers participate in the digital economy and gain access to digital jobs. The Foundation’s strongest link to the SDGs with a focus on digital development may be its “Coding for Employment Program”, which is aligned to SDG 8 (decent work and economic growth).

2.4.4 Others

Many other large philanthropic and private non-profit organizations with a global perspective have integrated digital economies and development into their programmes. Here are a few examples:

- **Google.org** is the philanthropic arm of Google. It supports the growth of start-up communities around the globe by providing them with technical training, mentoring, business tools and financial sponsorship. Its network of partners includes CcHub in Lagos, Jozihub in Johannesburg, iHub in Nairobi, iSpaces in Accra and Outbox in Kampala. Among other things, it is aiming to train 100,000 software developers in Nigeria, Kenya and South Africa. This will be offered in-person and online and carried out in several languages including Swahili, Hausa and Zulu with the goal that at least 40 per cent of people trained are women.
- **The Omidyar Network (ON)** is the social business of Ebay's founder, Pierre Omidyar. It invests in civil society and social entrepreneurs. Among other things, the ON has supported initiatives to combat fake news. This includes enabling organizations around the world to utilize fact-checking tools including Africa Check in South Africa and Chequeado in Argentina.

3 Donor support to achievement of the SDGs through digital solutions

Donor support to digital economies in developing countries can have significant impacts on the achievement of the SDGs. The experience gathered to date suggests that all SDGs are affected in some way by digitalization – positively or negatively. Against this background, it is important for donor agencies to understand how ODA may contribute to securing net positive effects from digitalization.

3.1 Examples of donor support to SDG achievement through digital solutions

In table 1, examples are provided of donor initiatives targeting specific achievements through digital solutions of each of the 17 SDGs. The initiatives are not necessarily typical or representative for existing donor initiatives in the specific areas of intervention related to the achievement of the SDGs. Nor does the table take cross-cutting issues of digital development (such as legal and regulatory frameworks, institutional strengthening, capacity development and statistical systems for SDG achievement) adequately into account. While some donors explicitly address these issues in their strategies and programmes, the scope, nature and results

of such support are not well documented. In any case, many of the above-mentioned cross-cutting issues cannot be handled well at the national level, as they require policy dialogue and agreements at the international level to be effective.

Table 1 Exemplary donor initiatives to support SDG achievement through digital solutions

SDG	Goal	Donor(s) / Initiative	Objective
1	No poverty	World Bank: Identification for Development (ID4D) initiative	To create inclusive and trusted digital ID systems that can unlock economic opportunities for the world's most vulnerable people
2	Zero hunger	FAO, ITU: #HackAgainstHunger	To develop ideas into impact and to support young entrepreneurs by incubating and accelerating innovative tech-driven solutions that contribute to ending hunger and food insecurity
3	Good health and well-being for people	UK, Unilever: Kasha - Improving women's health in Rwanda (online-platform)	To help women overcome issues of social stigma so they can purchase the health products they need online
4	Quality education	Finland: ICT education in Vietnam	To enhance the relevance of higher education and the employability of higher education students in the field of ICT
5	Gender equality	France: Digital Challenge 3rd edition - Innovation for Women in Africa	To reward start-ups who actively promote gender equality and women's condition in Africa
6	Clean water and sanitation	Germany: MajiData - Database for Clean Water in Kenya	To contribute to a progressive improvement of water and sanitation services in Kenya's urban low-income areas through transparency
7	Affordable and clean energy	AfDB, Sweden, United States, World Bank: Power Africa	To double the number of people with access to electricity in Africa over the next ten years
8	Decent work and economic growth	EU, Germany: Decent Work for Youth Using ICT (Egypt ICT Trust Fund)	To enhance the professional capabilities of young people with medium education in ICT-related jobs
9	Industry, innovation and infrastructure	AfDB, France, Germany, World Bank: The Eastern Africa Submarine Cable System	To carry telecom traffic for all African operators from the Eastern and Southern African markets to connecting Cable networks in Europe, Asia and the Americas
10	Reducing inequalities	Germany: Mobile communication for rural areas in India	To enable the construction of mobile phone masts in rural areas
11	Sustainable cities and communities	United States: Youthmappers (Nigeria)	To identify the location of illegal dumping sites using GPS coordinates, descriptions and photos and provide solutions to problems of urban waste
12	Responsible consumption and production	ITU: Support to e-waste management in Malawi	To develop a national policy and regulatory framework including a strategy and action plan for e-waste management in Malawi
13	Climate action	GSMA, UK: Mobile for Humanitarian Innovation	To foster innovative solutions and build partnerships in areas such as digital identity, mobile money, mobile-enabled energy, climate resilience and food security
14	Life below water	UK: Global Challenges Research Fund, International Partnership Programme (UK Space Agency/Indonesia)	To improve the sustainability of Indonesia's fisheries and secure the livelihoods of fishermen, reduce safety concerns through improved connectivity and encourage less environmentally damaging fishing practices

15	Life on land	Finland: Development of Management Information System for the Forestry Sector in Vietnam	To manage forest resources in a sustainable way based on up-to-date information and contribute to the alleviation of poverty
16	Peace, justice and strong institutions	UNCTAD: automated systems for customs data in 100 developing countries (e.g. Afghanistan)	To facilitate trade and improve customs processes through automation, improved transparency and efficiency, and increased government revenue.
17	Partnerships for the goals	Canada and UK: Information and Networks in Asia and Sub-Saharan Africa (INASSA)	To produce and share credible, high-quality evidence on the influence of digital initiatives in governance, science, learning and entrepreneurship

Donor support to SDG achievement through digital economies is quite diverse in terms of thematic focus, levels of funding, modes of delivery, conceptual approaches and expected results. It is also quite unevenly distributed among the SDGs. Some SDGs are already benefitting significantly from donor-supported digital solutions, while others appear to be trailing in terms of donor priority. However, due to insufficient data and analyses, it is still too early to draw conclusions in this respect. The roles that donors and digital solutions play in SDG achievement may be expected to vary from one SDG to another. Furthermore, there is a need to distinguish between the short, medium and long-term expected results of donor interventions. Such distinctions underline the potential complexity of the nexus between ODA, digital economies and sustainable development and the need for more comprehensive research and policy support in this area.

3.2 Open issues in donor support to SDGs through digital solutions

During the early years of the present century, wide-spread criticism of the weak efficiency and effectiveness of international development cooperation gave rise to the Paris Declaration on Aid Effectiveness (Paris High-Level Forum on Aid Effectiveness 2005), adopted by over 90 states and many multilateral and civil society organizations. The Paris Declaration identifies five factors that can contribute to aid effectiveness: ownership, alignment, harmonization, results-orientation and accountability. In the context of digital for development, donors and their development partners are today challenged to provide responses to the following key questions:

- **Ownership:** Do stakeholders in developing countries have strong ownership of and control over the design and implementation of donor support to their digital economies?

- **Alignment:** Is donor support to digital economies in developing countries well integrated into local strategic planning, operative programming and public financial management processes and systems?
- **Harmonization:** Are donor practices in the design and implementation of support to digital economies in developing countries harmonized such that their transparency at the stakeholder level is facilitated?
- **Results-orientation:** Are adequate resources allocated to ensure evidence-based and results-oriented monitoring and evaluation of donor support to digital economies in developing countries?
- **Accountability:** Are decision makers and project managers held accountable for the success or failure of donor support to digital economies in developing countries?

It remains difficult to provide an affirmative response to any of these five key questions, possibly reflecting a deficit of aid governance in the digital domain. However, many donors recognize the need to strengthen aid governance through enhanced donor dialogue and peer learning. This was the message conveyed, for example, by participants at a donor round table conducted during the first “Africa eCommerce Week” (eWeek), held in December 2018 in Nairobi, Kenya. Key areas in need of attention include ensuring the adequate mobilization of resources for support to digital economies in developing countries. Current estimates of aid flows for digital economy development in developing countries currently represent only a small fraction of overall ODA.

The approach adopted by the OECD and WTO in their joint publication entitled “Aid for Trade at a Glance 2017: Promoting Trade, Inclusiveness and Connectivity for Sustainable Development” (OECD, WTO 2017) captures data from the OECD’s Creditor Reporting System (CRS) in five sectors. Own calculations to replicate the OECD/WTO approach for the period 2015-2017 suggest that aid flows to developing countries in the same 5 sectors currently amount to less than 0.4 per cent of total ODA from all official donors (DAC and non-DAC). While inclusion of some non-digital elements (e.g. print media) in these sectors suggests that this figure should be adjusted downward, exclusion of aid flows to digital economies in other sectors such as health, education, agriculture and financial services point in the other direction. Unfortunately, the CRS does not provide sufficient details. Given the observed trend towards mainstreaming, as opposed to ringfencing, in donor budgets for digital economies, it is highly likely that the actual amount of aid flowing into digital economies in developing countries is higher than 0.4 per cent.

However, a recent study entitled “Closing the investment gap: How multilateral development banks can contribute to digital inclusion” (World Wide Web Foundation and Alliance for Affordable Internet 2018), also finds that the attention given to the digital economy is still limited. It found that only 1 per cent of multilateral development bank (MDB) project funding in developing countries has gone to ICT projects. Moreover, the study found that MDB support to ICT sector regulation and policies amounted to less than 5 per cent of total MDB commitments to the ICT sector.⁹

Most donor agencies should have the means to be more transparent in their allocation of resources for digital economies in developing countries: Most of them have sophisticated budgeting and accounting systems at their disposal to track and report on the allocation of human, technical and financial resources allocated and expended in the realm of aid to digital economies. Many donor countries have established government-wide, medium-term expenditure frameworks for public financial management purposes, and their medium-term cooperation strategies are well-aligned to these frameworks. Based on research for this report, however, donors publishing digital development support strategies and programmes with indicative budget figures are the exception rather than the rule.

Enhanced transparency would be valuable with regard to actual expenditures and the reasons for gaps between planned aid allocations and actual disbursements. Accurate and unbiased monitoring of all aid flows, including those targeting digital economies should be made available to the general public and their elected officials. With this, aid policy and decision makers as well as aid managers can be held accountable and support to digital economies in developing countries can be delivered more efficiently and effectively.

One more open issue in donor support to SDGs through digital solutions may merit attention: the ethics of cooperating with governments and non-government entities that use or intend to use digital economies for malicious purposes. Some examples include the unauthorized capture and sale of personal data, the digitally supported surveillance of opposition politicians, and the propagation of hate messages and fake news through online media. Donors should adopt clear principles and know where to draw the line, while coordinating their actions with each other to make them more effective. Some practical recommendations in this sense have been put forward online under the heading of “Responsible

⁹ The sample used for the study focuses on projects specifically identified by MDBs as ICT projects and/or projects deemed by the authors to include an “ICT component that superseded components pertaining to other sectors”. Inclusion of investments for digital solutions in projects outside the ICT sector in the narrow sense might give rise to higher estimates of total donor allocations to the digital economy in developing countries.

Data” (RD) and in recent publications such as “Donor Organizations & the Principles for Digital Development: A Landscape Assessment and Gap Analysis” (Hassler et al 2018).

4 Opportunities and risks

The opportunities offered by digital economies in developing countries come together with various inherent risks. This dichotomy is exemplified in the table 2. Donor support in areas of relevance to the digital economy and development therefore need to consider both how to seize capture the potential gains and how to mitigate the costs and challenges associated with digital transformations. Some examples of how bilateral donors and international organizations are responding to these are provided below.

Table 2. Potential opportunities and risks of digital economies in developing countries

Opportunities	Risks
Ubiquitous access to the Internet	Vulnerability to malicious practices such as digital tracking and intrusion
Broad-based digital literacy and inclusion	Exposure of digital newcomers to offensive content, spam, phishing etc.
Creation of new knowledge through big data and artificial intelligence	Use of new knowledge to manipulate and disempower citizens
Enhanced efficiency of value chains through interconnectivity	Malicious intrusion into firm data by competitors, extortionists etc.
Job creation	Job destruction and unemployment
Efficiency gains through digitization and automation in industry	Erosion of jobs especially in industry and services, de-industrialisation / re-shoring
Creation of new job opportunities in online platforms and economies	Exploitive unregulated digital job platforms (gig economies etc.)
Improved access to government services through eGovernment	Vulnerability of eGovernment services to cybercrime
Easy access to affordable goods and services through online platforms	Vulnerability to online transaction fraud and misuse of customer data
Comfort of online transactions and direct delivery to end customer	Erosion of traditional (analogue) retail trade sector
Improved access to financial services at the global level	Facilitation of money laundering and illicit financial flows
Rapid advances in soft- and hardware technologies	Increasing burden of e-waste

- **Germany:** Promotion of the Fairwork Foundation, which aims to harness consumer power, along with leverage from workers and platforms, to significantly contribute to the welfare and job quality of digital workers.
- **France:** On 6 November 2018, the French Minister for Europe and Foreign Affairs, Jean-Yves Le Drian, opened a new school in Dakar, Senegal, to train African officials on cyber security issues. This school, the only one of its kind in Africa, is intended to be a reference in the field. It will start offering training in 2019.

- **Canada:** The Anti-Crime Capacity Building Program (ACCBP) was established by Global Affairs Canada to improve the capacity of states to counter terrorism and transnational organized crime. The ACCBP works to build an open, free and secure cyberspace in the Americas by helping states develop their technical and policy-level cyber security capacity. This includes working with states to develop national or regional cyber security strategies that involve relevant stakeholders and are tailored to each nation's legislative, cultural, economic and structural milieu.
- **United Nations Office on Drugs and Crime (UNODC):** The Global Programme on Cybercrime is designed to respond flexibly to identified needs in developing countries by supporting Member States to prevent and combat cybercrime in a holistic manner. East Africa is one of the Programme's geographic focus regions. The Programme is funded by the governments of Australia, Canada, Japan, Norway, UK and United States.
- **United Nations Environment Programme (UN Environment):** Through its Switch Africa Green project in Ghana, UN Environment, jointly with the Environmental Protection Agency and in partnership with Ghana National Cleaner Production Centre, implemented a project on electronic waste and developed the Ghana e-waste model that formed the basis for the Hazardous and Electronic Waste Control and Management Act (2016). This led to the Government of Ghana to prepare for the setup of an e-waste recycling plant at Agbogbloshie, Ghana's most infamous digital dumping ground.
- **The International Finance Corporation (IFC),** a member of the World Bank Group, and the MasterCard Foundation published their joint "Digital Financial Services and Risk Management Handbook" in 2016. The Handbook addresses many categories of risk, including software failure, network connectivity loss, data loss and cyberattacks.

These examples cover only some of the risks mentioned above. As indicated in chapter 2, some donor strategies for support to digital economies make little or no reference to the risks that are involved in this field. This may be explained, at least in part, by a lack of risk awareness among opinion leaders, policy makers and citizens in developed and developing countries alike. Fortunately, developing countries can benefit from the positive and negative experiences of developed countries in recognizing and dealing with the many risks of digital development.

5 Preliminary responses to the six questions

In the introductory chapter, six key questions were formulated. Based on the information and analysis in chapters 2-4, it is possible to prepare preliminary responses to them.

- *Q1: Which areas relating to digital economies do donors primarily support and why?*

Donors have dedicated a large part of their support to digital solutions in health (SDG 3), education (SDG 4), decent work and economic growth (SDG 8) and industry and infrastructure (SDG 9), while other areas appear to have attracted relatively little attention from donors. Often the proclaimed goal of donor support to digital economies is to reduce poverty (SDG 1), at least indirectly. In some areas, donors have expressed an intent to establish themselves as leaders in their field of specialisation.

- *Q2: What resources (budgets etc.) are allocated to this kind of work?*

OECD statistics up to 2017 include few figures for aid flows to digital economies. Aid flows to the ICT sector and a few similar areas provide an incomplete picture of donor support to digital economies, while statistics relating to donor support to digital solutions in sectors such as health, education and financial services are generally lacking. Due mainly to lack of reliable information, therefore, the share of ODA allocated to ICT and the digital economy is currently quite difficult to estimate.

- *Q3: What are the associated instruments and approaches?*

Donors have introduced a wide variety of instruments to achieve their aims in the field of digital for development. These include various tools to promote digital innovation and start-ups through incubators, grants, competitive awards etc. and the exchange of information via online platforms, webinars, toolkits, and the like. Indicator and index systems have been developed to measure the status and evolution of digital economies. Cooperation through donor alliances including private sector-based actors and multi-stakeholder approaches are quite common. Many donors contribute to and participant in D4D-relevant fora such as the eCommerce Week, the WSIS Forum and the Internet Governance Forum. However, to date, no specific forum has been created to facilitate donor exchange and peer learning in matters of support to the SDGs through digital economies in developing countries.

- *Q4: What evidence is available regarding how developing countries can benefit from digital economies?*

In recent years, donors have produced a vast amount of information and reports relating to their support to digital economies in developing countries. More research is needed to document the benefits or costs accruing to countries through digital economies. Often, benefit-related statistics are provided in strategy papers and project descriptions, but the data sources are not cited. More evidence is needed to verify such information objectively.

- *Q5: What are the major associated risks and how can these be limited?*

Along with the benefits anticipated from digitalization, there are also associated risks that need to be managed and mitigated. They include risks at the individual level such as exposure to offensive content, spam and phishing; risks at the societal level, such as the erosion of the traditional retail sector and the threat of cyber-attacks undermining government services; and environmental risks such as the increasing burden of e-waste. While value creation in digital economies is largely private sector-driven, most developing countries are ill-equipped, despite well-intended ODA, to capture value in terms of job creation, domestic resource mobilisation (taxation etc.) and contributions to the achievement of the SDGs. Digital economies give rise to the risk of elite capture of value on a broad scale – from the local to the global level. Some donors are addressing these issues through specific interventions, but the challenges of risk management in the digital economies of developing countries remain daunting.

- *Q6: How can digital economies contribute to achieving the SDGs in developing countries?*

Many donors are already contributing to achieving the SDGs through support to digital economies in developing countries. Their contributions can be indirect, e.g., by supporting digital identity verification systems as a pre-requisite for access to government services and, in the longer run, poverty reduction. The level of donor support varies by SDG. SDGs relating for instance to health and education, as mentioned above, appear to be benefitting more from donor support to D4D than others. It is unclear, whether these differences can be explained by variations in donor priorities, developing country priorities, inherent differences between the SDGs, or other factors.

6 The way forward: Ten recommendations for action

Based on the results of the inquiries and research carried out to date and presented in this report, the following ten recommendations for action may be put forward with a view to improving the efficiency and effectiveness of donor support to digital economies in developing countries:

A. Recommendations for actions by donors

1. Establish an alliance of donor agencies at the global level – for example through the OECD’s Development Assistance Committee (DAC) and/or other established international fora - to document, exchange and promote good standards and practices in donor support to digital economies in developing countries with special emphasis on digital inclusion and leaving no one behind.
2. Improve the alignment of donor support through digital economies to the SDGs and to the development strategies and programmes of partners in developing countries.
3. Promote broad-based awareness of the opportunities and risks of digital development among partners in developing economies, with a view to strengthening local ownership and stakeholder empowerment, as well as within donors’ home constituencies.
4. Develop and apply viable concepts and tools for evidence-based, results-oriented and unbiased monitoring and evaluation of the outcomes and impacts of donor interventions to support digital economies in developing countries.

B. Recommendations for actions by policy and decision makers in developing countries

5. Promote - through appropriate capacity and awareness building measures - an open, lively and well-informed public debate as well as regional and international peer exchange with a view to improving own strategies and programmes and aligning international assistance that addresses the opportunities and risks of digital development in achieving the SDGs and other national policy goals.
6. Reinforce own systems of impact monitoring, evaluation and reporting of digital economy impacts on the achievement of the SDGs.
7. Adopt and implement national strategies and programmes for digital development, drawing on the results of independent and evidence-based reviews such as eTrade Readiness assessments, with due consideration of the associated opportunities and risks.
8. Integrate donor support to digital economies into local systems of resource mobilisation and allocation including national planning and public financial management systems.

C. Recommendations for actions by the competent UN agencies

9. Facilitate donor dialogue through existing channels (e.g. eCommerce Weeks and the eTrade for All initiative) and efforts to adopt and apply good standards and practices, create synergies and enhance aid efficiency and effectiveness in donor support to digital economies in developing countries.
10. Facilitate the design and implementation of strategies and programmes within the UN system for more efficient and effective support to digital economies in developing countries.

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