



DIGITAL
DEVELOPMENT
PARTNERSHIP

ANNUAL REVIEW 2018

Moving the Needle –
Digital Technologies Becoming
a Driver for Development



WORLD BANK GROUP

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 Microsoft



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Message from the Vice President



The launch of the 2018 Annual Review of the Digital Development Partnership (DDP) is an excellent opportunity to look back at the milestones achieved and the numerous initiatives implemented during the second year of DDP. I would like to extend greetings and best wishes to all the clients, donors, and partners involved in this ongoing collaboration.

In my previous role as World Bank's Vice President for Africa, I have witnessed and supported the rapid uptake of digital technologies in Sub-Saharan Africa. As evidenced by the emergence of mobile payments in East Africa, the expansion of smart grids in Central Africa, and the ever-increasing range of IoT applications for West African agribusinesses, there is an enormous potential to leapfrog development stages through digital technologies.

In my current role as Vice President for Infrastructure, I am determined to further advance and radically scale up our work on digital development solutions. This is a development imperative and a much-needed response to the overwhelming demand of our client countries. I am committed to use all the instruments at hand, including investment lending, trust-funded analytical work, and innovative partnerships, to take our efforts to the next level as soon as possible. Stay tuned for our updates in the next few months.

DDP is a wonderful vehicle to ensure progress on this agenda. I look forward to meeting many of you at our upcoming events, be it in Washington, DC or elsewhere in the world where DDP is achieving promising results.

A handwritten signature in black ink, appearing to read 'Makhtar Diop', written over a horizontal line.

MAKHTAR DIOP

Vice President for Infrastructure
World Bank

Message from the Director



It is my pleasure to present the Digital Development Partnership (DDP) 2018 Annual Review, reporting on results, milestones, and strategic direction during the second year of DDP.

This has been a rich, eventful, and highly positive year for the digital agenda and for DDP as a partnership platform. While fiscal year 2017 (FY 17) was a starting year, the progress DDP is contributing to the digital agenda can now clearly be felt. The needle is moving: Digital technologies are becoming an important driver for development.

Countries around the globe increasingly recognize the opportunities digital technologies offer for their development aspirations. Building the “Digital Economy” – a concept the World Bank featured prominently at the 2018 World Bank Spring Meetings – has become an ambition for many, with estimated economic gains over the coming years in the range of several billion dollars. DDP has been fostering awareness and recognition for the Digital Economy through a large number of engagements, from sessions at the World Bank-IMF Annual Meetings and Spring Meetings, to countless meetings with our clients in Washington, DC and at country level. We are delighted to see the positive uptake and interest in this promising agenda all around the world.

The past fiscal year has been a year of delivery on the concrete activities DDP is funding. Many of the activities launched in FY 17 have delivered or are about to finalize their results. As examples, FY 18 has seen the publication of the Information and Communication for Development (IC4D) Report on Data-Driven Development. A whole range of Digital Economy assessments have been completed, including in Indonesia, Senegal, Tunisia, and in Central Asian countries. The cybersecurity agenda is evolving rapidly, with comprehensive regional activities launched in West Africa and South Asia, undertaking assessments on preparedness and resilience against cyber threats. Global efforts to close the connectivity gap are profiting from new, DDP-supported instruments to foster innovative business models for expanding fiberoptic networks. We have developed 15 knowledge products, advised more than 30 clients through technical assistance and advisory services, and leveraged several hundred million dollars for a large amount of lending projects. Our results will continue to grow as we advance on our second tranche/FY 18 activities and launch the third tranche/FY 19 activities.

These results have been enabled by our partners' support, including new partners that joined DDP in the past year. DDP was delighted to welcome Denmark at the Spring Meetings over a discussion between Denmark's Minister for Development, Ulla Tørnæs, and the then World Bank Vice President for Sustainable Development, Laura Tuck, on the opportunities of mainstreaming digital solutions across sectors. In June, the United Kingdom joined DDP through its Foreign and Commonwealth Office with a focus on the cybersecurity agenda, a theme that will see particular attention in the global arena in calendar year 2019, during the Japanese G20 Presidency.

While we are delighted about the progress, both with the big picture and in the concrete support we are offering to client countries, it must be noted that we are still seeing a significant gap between the fast and ambitious development of the digital agenda overall, and the size and delivery capacity of DDP. The need to close the connectivity gap is getting more pressing as it becomes a bottleneck for many other technologies and development solutions. Cutting-edge technologies, such as the Internet of Things (IoT) and Artificial Intelligence (AI), emerge quickly and can become useful for development. A broad field of policy and regulatory updates remains to be tackled to accommodate the realities of the digital age. And the need to keep the digital space safe and trustworthy is becoming ever more relevant, emerging as a global public good. This means there is a continued need for knowledge development so that the opportunities of the digital age can translate into development benefits. At country level, demands for DDP to deliver technical assistance is very high and currently exceeds what the young partnership is delivering.

Moving forward, we will need to leverage the enthusiasm and respond to the strong client demand through an even stronger DDP partnership platform. On the one hand, this will mean continuing the expansion of DDP, inviting new partners to join and scaling up the portfolio in line with the needs of low- and middle-income countries. On the other

hand, two years into the program, we also have an opportunity to seek efficiency gains in our delivery. Setting DDP fresh, numeric targets can help give rhythm and pace to our delivery. In some areas, such as Digital Economy, shifting the focus from analytics to rolling out the finalized assessment methodology in as many client countries as quickly as possible will allow us to move to a bigger scale. Small adjustments to our engagement with the private sector may allow us to tap into private sector knowledge even more effectively.

Last but not least, we can further scale up our level of external communication to convene platforms between our clients and our partners and to share information on the results we are achieving – a topic discussed with partners during the last year of operation. The workshop we carried out in Seoul in mid-October, bringing together clients from around 40 countries to discuss technological innovation and DDP-supported digital development reform activities, was an important step for us to increase our public exposure and communication with partners, clients, and friends of DDP.

Fostering the digital agenda and making sure that digital technologies are available to low- and middle-income countries is an effort that can only be achieved with a strong collaboration between likeminded stakeholders. I am immensely grateful to all our partners and donors for their collaboration and ongoing support.



BOUTHEINA GUERMAZI

Director
Digital Development
World Bank

A Partnership for the Digital Age

Digital technologies can help address some of the toughest development challenges: providing access to information, overcoming remoteness, exclusion, and disconnects, and offering economic opportunity. World leaders, academics, the private sector, and development specialists agree on the tremendous potential of using digital technologies for development.

To leverage digital solutions for development, the World Bank's Digital Development Partnership (DDP) offers a platform for digital innovation and development financing. DDP brings public and private sector partners together to catalyze support to low- and middle-income countries in the articulation and implementation of digital development strategies and operational work programs. As digital progress is fast and primarily private sector driven, DDP draws on best practices from client countries and the private sector. To this end, DDP is bringing together traditional partners from the development community and leading global IT firms. Much of the agenda is also encouraged through loans and grants from the World Bank and other development partners.

The DDP Annual Review 2018 reports on activities and results achieved during the last fiscal year.¹ It is the second report in the series, after the inaugural report was issued in 2017. Chapter I gives a snapshot on the main contributions DDP has made to foster progress on the digital development agenda. Chapter II presents operational highlights across the different activities. Chapter III offers suggestions for planning FY 19.

DDP brings public and private sector partners together to catalyze support to low- and middle-income countries

¹ As the draft DDP Annual Review is discussed every year in October at the World Bank-IMF Annual Meeting, the reporting year broadly coincides with the World Bank's Fiscal Years, which run from July 1 to June 30 every year. The 2017 Annual Review therefore broadly covered the reporting for FY 17 (with a cut-off date October 2017). The 2018 Annual Review covers – broadly – FY 18 (with a cut-off date October 2018).



Study tour and learning workshop in Seoul, with representatives from 35+ low- and middle income countries



I. DDP – A Growing Partnership on a Path of Delivery

Two years into the operation of DDP, the young partnership continues on its ambitious growth path. New donors joined DDP during FY 18. The portfolio continues to grow. Output and outcome figures have started to build up and evidence progress in delivering results. This chapter offers an overview on the overall evolution of DDP along with a few portfolio and results figures, and it highlights how digital development is moving into the center of the World Bank's corporate agenda.

(i). EMERGING RESULTS

In line with its title “Moving the Needle – Digital Technologies Becoming a Driver for Development”, the 2018 Annual Review covers outputs, outcomes, and results. While outputs such as reports, workshops, and client interactions give some idea of the level of effort undertaken, outcomes highlight real achievements, such as policy or regulatory changes to improve the enabling environment for digital technologies, or the preparation of new lending and investment projects which promise greater scale and development results in the future. This reporting reflects DDP's aspiration to function as a reform engine for the digital agenda. Over time, DDP will aim to increasingly shift its delivery – and its reporting – from activities, to outcomes, and to impact.

In terms of outputs, DDP has, up to fall 2018, delivered roughly 15 knowledge pieces and reports. These include:

- Global flagship reports, such as the ICT4D Global Report, and the report on Innovative Business Models for Expanding Fiberoptic Networks.
- Analytical assessments, such as the analytical reports prepared for the ECOWAS Regulatory Watch Initiative, a ICT household questionnaire in Tanzania, and Digital Economy assessments in Indonesia, Cambodia, and Central Asia.
- Advisory pieces for government – i.e. not necessarily public documents – such as advice offered to Myanmar or Vietnam for the preparation of their next investment lending projects.





Around 25 workshops/seminars were carried out to foster engagement and understanding on the reform agenda, both globally and at the country level:

- Tanzania: Two workshops were conducted to kick-start the survey activity and raise awareness on the objective of the activity with government stakeholders.
- Indonesia: Several workshops were organized in Jakarta and the South Asia region on the Digital Economy of South Asian countries.
- Senegal: A workshop entitled “Digital Economy for Inclusive Growth in Senegal” was organized in Dakar in spring 2018 to consult with key stakeholders on the progress and priorities of the analysis.
- East Africa: A regional workshop was delivered on the cybersecurity agenda, for West and East Africa participants.
- Two consultative workshops were carried out in support of the development of the Innovative Business Models for Expanding Fiberoptic Networks report.
- Peru: Two workshops were carried out in December 2017 and May 2018 to obtain feedback from stakeholders (government, mobile network operators, DDP donors, and other interested institutions) on the initial report findings and proposed recommendations, as well as to disseminate the findings.
- Vietnam: The team organized a kick-off workshop for the activity in January 2018. In his address to about 200 representatives of government agencies, private sector, media and diplomats, Minister Dung endorsed digital government and open data as an “inevitable trend” and “the necessary step towards Industry 4.0”.
- Cambodia: One public workshop on Digital Economy and Skills, hosted by the Secretary of State for the Ministry of Finance and Economy was attended by government ministries, private sector, stakeholders and civil society. The workshop was covered by television, radio, and print media.
- Several workshops took place in Central Asia and Russia, highlighting opportunities and discussing strategies to advance the Digital Economy.

DDP-funded interventions contributed to the shaping of views and understanding of the digital environment and efficient sector regulations:

- In Indonesia, DDP-funded work on the Digital Economy has fostered appreciation for regional benchmarks and the need to focus on policies and regulations for enabling Digital Economy growth, going beyond new technologies and business models.
- In Malawi, DDP-funded work has contributed significantly to developing both political will and country commitment for Malawi's Digital Economy agenda, both through illustrative videos, which visualize Malawi's digital future, and also by providing objective economic and financial analysis for an existing and a future lending project.
- In Peru, policy and spectrum management regulations are currently being reviewed, along with an update of the National Broadband Plan. More flexible and innovative uses of spectrum to enable new technologies and business models will be a significant feature of the new plan.
- In Myanmar, the DDP-funded report offered a concrete basis for determining investment worthiness of the lending project. As a result, the proposed project was included on the government's priority project list, and consequently the World Bank initiated project preparation.
- In Cambodia, Digital Economy analysis and recommendations have been incorporated in the newly-released Rectangular Strategy and National Strategic Development Plan (September 2018) which prominently prioritizes the need to develop the Digital Economy in Cambodia.
- In Senegal, the government has adjusted its priorities and is keen to advance the digital agenda, with a focus on a few specific items (ports, taxation, identification).

DDP work also contributes to the development of the World Bank's lending pipeline, which complements analytical and advisory work and leads to higher impact for our clients. The current leveraging factor of around US\$800m includes confirmed lending operations, pipeline planning, and lending operations that are confirmed with a yet to be determined lending amount, including:

- A Digital Tanzania project, in development.

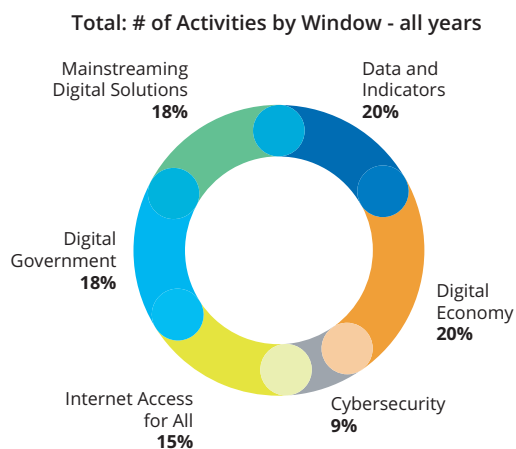
This reporting reflects DDP's aspiration to function as a reform engine for the digital agenda. Over time, DDP will aim to increasingly shift its delivery – and its reporting – from activities, to outcomes, and to impact.

- A lending operation to support the development of the Digital Economy in Senegal, in development.
- A grant in support of the development of the Digital Economy in Myanmar.
- A Digital CASA Kyrgyz Republic Project, approved in March 2018, with contingent financing arrangements on some of the project components.
- A Digital CASA Uzbekistan Project, currently under preparation and expected to be approved in May 2019.
- A recently approved and effective IDA-financed Digital Malawi project.

Finally, work funded by DDP helps to better articulate the digital agenda in World Bank country-partnership frameworks (CPFs), a necessary pre-condition to assist countries through lending operations.

- DDP-funded teams have supported the development of CPFs including the Armenia CPF, Burundi CPF, Morocco CPF, Senegal CPF, and Somalia CPF. Support to several other CPFs is forthcoming in the next fiscal year, including support for the next Indonesia CPF.

Figure 1: Portfolio Development by DDP Windows/Topic Areas



(ii). A GROWING PORTFOLIO

As DDP moves into its third year of operation, it has launched three packages (or tranches) of activities. The growing portfolio has been made possible by funding contributions from new donors joining the partnership, as well as sliced funding contributions from existing donors, making resources available step by step over time.

DDP has launched 45 activities, spread equally over the three tranches: Tranche 1 comprises 15 activities; tranche 2 comprises 14 activities; and tranche 3 comprises 16 activities. This picture may include two trends with opposite effect: On the one hand, a trend towards fewer, more impactful activities, which may be normal for work programs that mature over time. A first step in this direction may be seen in the umbrella activities the cybersecurity window is launching, covering a larger set of standard assessments under fewer umbrella activities (as below, Chapter III, (iii)). Other windows such as Digital Economy and Digital Government may take a similar approach moving forward. At the same time, very high client demand

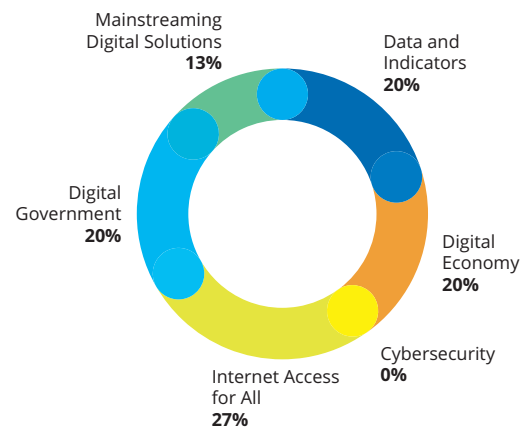
and a still underserved agenda can lead to a spread of funding to a higher number of activities, with a higher risk to achieve the planned impact with funding spread thinly. Both aspects are currently characteristic of the DDP portfolio.

In terms of distribution of DDP’s activities by windows/topic areas, the picture is fairly balanced. Few outliers over time indicate a particular focus on some areas at certain moments. For example, current, strong demand for Digital Economy assessments has led to a slight expansion of this window during the third tranche/FY19. Overall, focus on different areas balances the portfolio out over time. This can be seen as an indication that DDP’s initial categorization in six windows generally continues to be helpful.

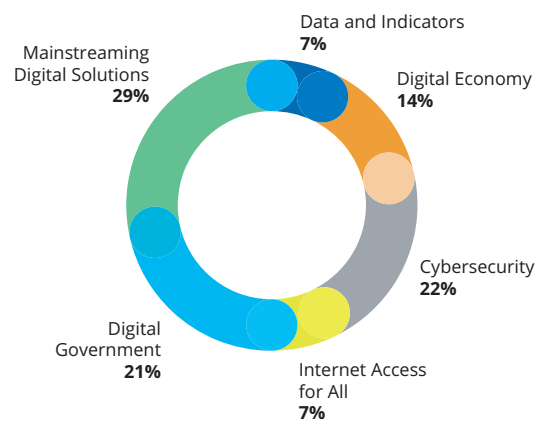
Part of DDP’s impact model includes the distinction between global knowledge and country-specific activities. This is a standard approach to foster efficiency in developing assistance, as low- and middle-income countries can be served through standardized knowledge and solutions offerings that need to be developed only once and can subsequently be rolled out globally (with some adaptation to local needs). In its first year, DDP began with a focus on knowledge work, to fill knowledge gaps and start development of a few principle toolkits and benchmarks for the digital agenda.

Years 2 and 3 rebalanced the portfolio towards higher levels of country-specific activities at a share of 40 percent/60 percent. With an increasing focus on a rapid roll-out of the standard assessment methodologies and toolkits that have been developed (such as Digital Economy assessments, digital government assessments, and cybersecurity related assistance, see below Chapter III), it is likely that the distribution between Global Knowledge and Country-Specific Activities will, over the next two years, reach a level of around 30 percent/70 percent, which the World Bank team generally considers a good ratio to sustainably build knowledge and offer impactful client advice.

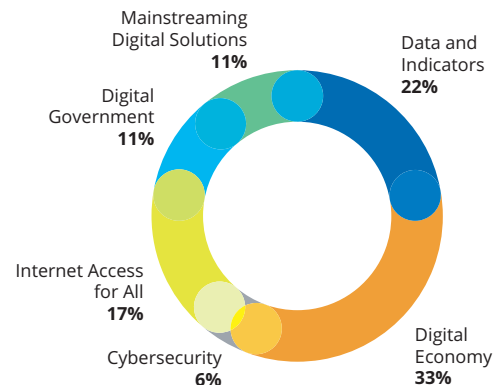
Fiscal Year 2017: # of Activities by Window



Fiscal Year 2018: # of Activities by Window

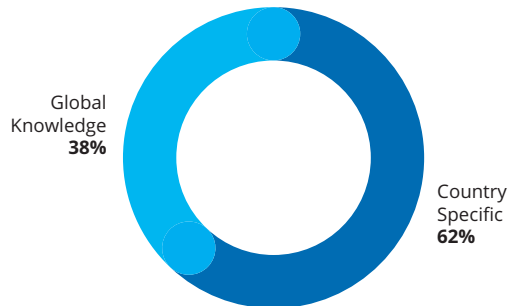


Fiscal Year 2019: # of Activities by Window



**Figure 2: Portfolio Development
Global Knowledge vs. Country-
Specific Activities**

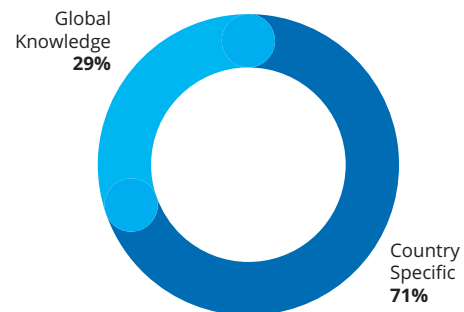
**All years:
of Global Knowledge vs Contry-Specific Activities**



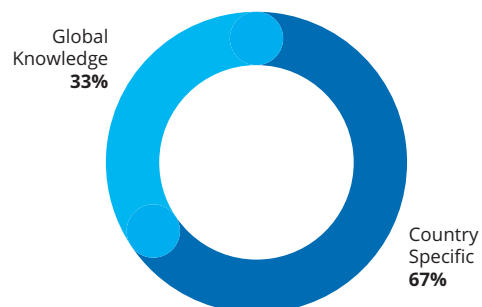
**Fiscal Year 2017:
of Global Knowledge vs Contry-Specific Activities**



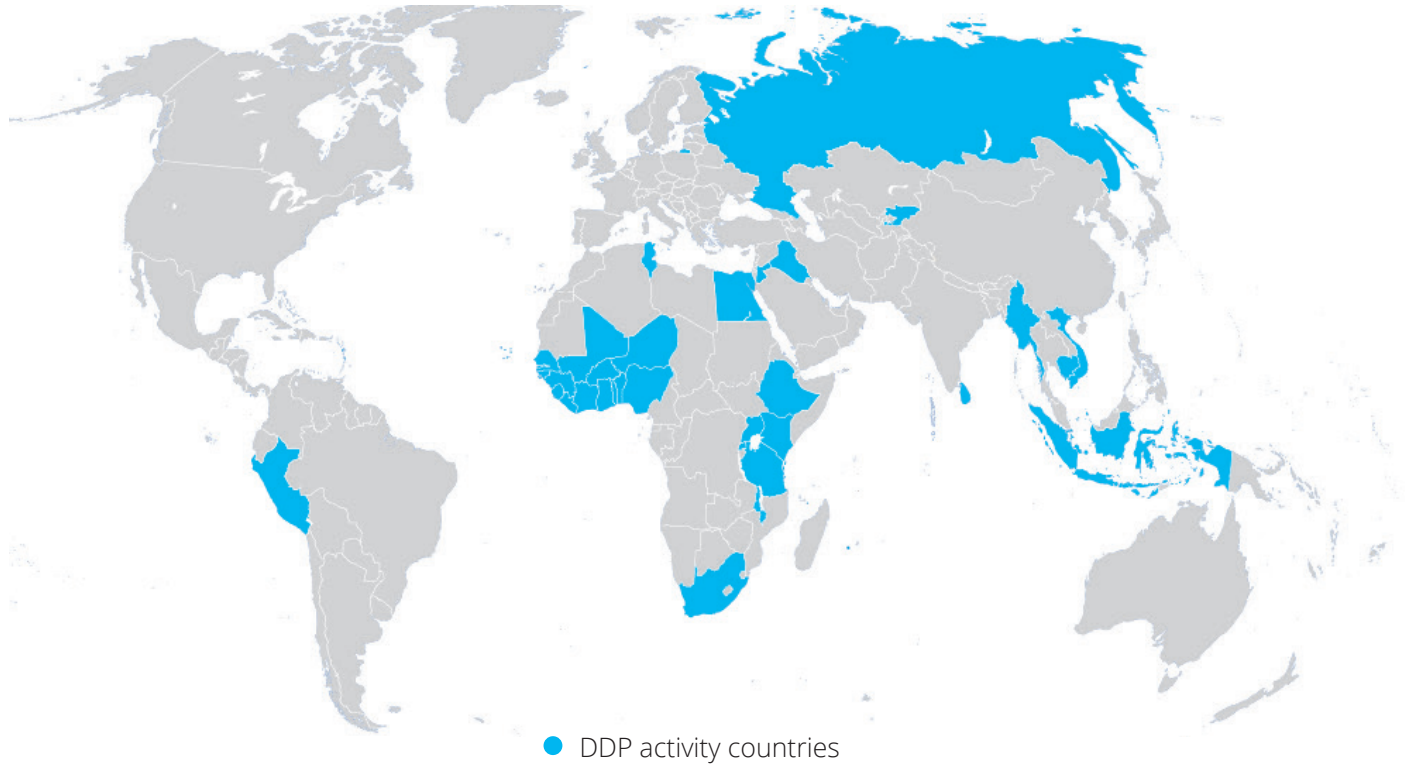
**Fiscal Year 2018:
of Global Knowledge vs Contry-Specific Activities**



**Fiscal Year 2019:
of Global Knowledge vs Contry-Specific Activities**



In terms of geographical coverage, DDP is currently working with around 25 client countries and is rapidly expanding its global footprint. In Africa, DDP is currently assisting 11 client countries; five in East Asia/Pacific; four in the Middle East and Northern Africa region; two in both Eastern Europe/Central Asia and South Asia; and one client in the Latin America region. If all countries in which DDP is delivering lighter touch interventions through regional umbrella projects are counted separately, DDP is involved in around 60 countries, amongst which approximately 28 are in Africa, and 20 are in East and Central Asia. A strengthening of the portfolio could in particular be considered in the Latin America region, which lags behind in terms of assistance offered.

Figure 3: Geographical Overview of DDP-Funded Activities**(iii). AN EXPANDING PARTNERSHIP**

During FY 18, DDP saw two new funding partners joining. In April, at the World Bank-IMF Spring Meetings, Denmark, represented by Ulla Tørnæs, Minister for Development, and World Bank Vice President for Sustainable Development, Laura Tuck, signed a DDP administration agreement. In June, DDP welcomed the United Kingdom represented by its Foreign and Commonwealth Office. With these additions, the number of DDP funding partners has increased to seven, adding roughly two partners per year. This reflects a dynamic but organic growth of the partnership, steadily developing the agenda with an increased knowledge offering and a growing portfolio. Attracting additional private sector partners will be a focus for FY 19.



Denmark's Minister for Development, Ulla Tørnæs, and then World Bank Vice President for Sustainable Development, Laura Tuck, sign the Administration Agreement with which Denmark joined DDP at the World Bank – IMF Spring Meetings 2018

Digital solutions increasingly mainstream across sectors as diverse as health, agriculture, energy, and education

(iv). AN EVOLVING WORLD BANK INSTITUTIONAL ENVIRONMENT

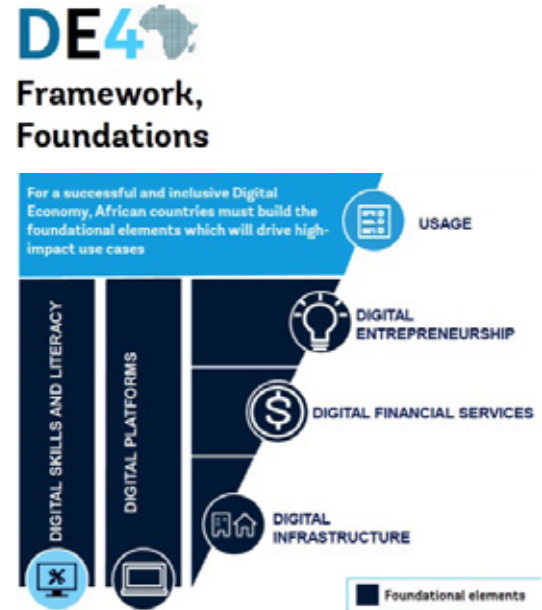
With the increasing opportunities digital technologies offer for development, the digital agenda has, over the past two years, grown in relevance at the World Bank Group (WBG). On the one hand, digital solutions increasingly mainstream across sectors as diverse as health, agriculture, energy, and education. At the same time, a further strengthening of the digital verticals is necessary to allow digital technologies to play their beneficial role and mitigate their risks. This includes a stronger focus on the broadband agenda, data depositories and cloud infrastructure – a prerequisite for all digital development. It also includes more attention to digital platforms, and a stronger focus on cybersecurity and related matters to create a trust environment for digital development. DDP and the Digital Development Global Practice (GP) have over the past few years played a key role in helping to escalate digital development on the World Bank's corporate agenda. The following summarizes a few activities and corporate developments that illustrate the evolving World Bank institutional environment for digital technologies.

Annual Meetings and Spring Meetings: Since the Digital Development GP announced the launch of DDP at the World Bank-IMF Spring Meetings in 2016, during a high-level roundtable hosted by World Bank President Jim Kim and then US Secretary of State John Kerry, every subsequent Annual and Spring Meetings have featured high-level sessions such as panels, roundtable discussion, or closed-door engagements, often constituting the flagship event for the respective meetings. These activities helped position the agenda amongst the development community. The 2017 high-level panel session, featuring a conversation between President Kim and Joe Gebbia, CEO and Founder of Airbnb and other industry leaders, attracted 5,000 online viewers, making it the most widely attended event at the Annual Meetings ever. More than 110,000 visited the event's webpage and accessed the content on mobile devices, with more than 90 percent of these being from low-income countries.

Strategic initiatives: The Digital Economy for Africa initiative (DE4A) was developed in early 2018 as a cross-sector initiative between several World Bank teams and a large number of partners from across Africa. During the 2018 World Bank-IMF Spring Meetings, President Kim met with Jeff Weiner, CEO of LinkedIn, and Tony Elumelu, Founder of the Tony Elumelu Foundation, on building Africa's Digital Economy. The DE4A framework has since been finalized, and leverages expertise from across the WBG, to provide a holistic approach to developing the digital economies of African countries. DDP has been supporting the development of this initiative from the beginning through its Digital Economy window, and will play a key role in its implementation.

Experimental knowledge hubs: To provide opportunities for innovation and testing on cutting-edge agendas, the past year has also seen the establishment of innovation labs and learning communities, exploring topics such as blockchain, big data analytics, and AI. The hubs foster understanding of new technological capabilities and their application to the World Bank's mission. The various labs organize periodic learning events with leading technology developers. The Digital Development team is involved in these hubs. DDP will increasingly provide support to bring test cases to real-life deployment.

Corporate updates: To reflect the increasing relevance of the digital development agenda in the World Bank's corporate structure, the Digital Development team was escalated to become a GP in mid-2018, anchoring the core themes of the digital agenda in its own department, under the World Bank's Infrastructure Vice-Presidency.



Executive Chairman of Alibaba Jack Ma, and World Bank Group President Jim Kim, in a conversation on the promises of digital development, at the flagship event of the 2019 World Bank-IMF Annual Meetings in Bali



DIGITAL ECONOMY



live.worldbank.org #DigitalAfrica



Discussion between World Bank President Jim Kim, LinkedIn CEO Jeff Weiner, and the Founder of the Tony Elumelu Foundation on the Digital Economy, at the World Bank – IMF 2018 Spring Meetings

II. Operational Highlights – Digital Technologies Becoming a Driver for Development

Two years into its operation, DDP is recording progress and results across all its topic windows. Most activities launched at the beginning of the program in FY 17, have completed or are close to completion. Activities launched in FY 18 are typically in the middle of their life-cycle. Activities developed during FY 18 and just launched are mentioned in the following sections as well, to provide a complete picture of DDP operational highlights.

(i). DATA AND INDICATORS

Under its first workstream on Data and Indicators, DDP seeks to scale up the use of data and indicators – including Big Data – to benchmark and advance the readiness of low- and middle-income countries in reaping digital dividends. DDP addresses the lack of systematic data on access to connectivity and digital solutions, low awareness of the opportunities of digital development, and poor information on policy and regulatory impediments in the digital environment. It provides data and insights needed to assess, track, and improve digital-related policies and their impact on growth and poverty reduction.

In FY 18, the major deliverable has been the new edition of the ***Information and Communication for Development Report: Data-Driven Development***, which is the fourth in the series. The report examines how better information can foster better policies. It aims to help firms and governments in developing countries unlock the value in the data they hold to improve service delivery and decision making and empower individuals to take more control of their personal data. The report was launched during the DDP workshop in Seoul, October 16-17, 2018 and during the inaugural DDP Speaker's Series in Washington, DC, October 30, 2018.



Two years into its operation, DDP is recording progress and results across all its topic windows. Most activities launched at the beginning of the program in FY 17, have completed or are close to completion

A further FY 18 deliverable was the completion of research for the *ICT Household Survey of Tanzania*. This survey covers 1,400 households across Tanzania and focusses on the adoption of digital technologies among households at the base of the pyramid, including in zones not yet covered by mobile broadband. It examines the linkages between the use of ICTs and pathways out of poverty. It therefore fills an important methodological gap supporting the evidence on the relevance of digital development for poverty reduction. It also supports the preparation of the forthcoming “Digital Tanzania” IDA lending program (approximately US\$130m).

The *Doing Business Digitally* is a new pilot initiative supported by several World Bank teams, offering an assessment framework for measuring the enabling environment and regulatory challenges faced by companies and service providers pursuing business in the digital industry. The goal is to provide objective, cross-country comparable measures of laws and regulations supporting a thriving Digital Economy across four dimensions: internet connectivity, online payment systems, logistics for e-commerce, and regulations for digital markets. Following a finalization of the methodology and the list of core indicators, data collection and systematization has been completed in 20 priority countries. A pilot report will be prepared at the end of 2018, which will offer a strategic moment to review this activity amongst DDP partners and stakeholders, and discuss possible finetuning of the methodology. The activity’s analog predecessor, the existing “Doing Business” series, has effectively used indicators and case studies to encourage regulatory change, recording more than 3,000 regulatory reforms globally since its launch in 2003.

Completing the FY 18 portfolio of activities under the Data and Indicators window is a survey on the *Use of Digital Technologies by Small and Medium-sized Enterprises (SMEs)*. This activity informs the debate on underexploited opportunities to use digital technologies by SMEs. Widespread adoption of digital technologies by businesses, especially SMEs, has great potential to accelerate innovation, productivity growth, and job creation in a country. In many countries, the sparse available data suggests that adoption of basic digital technologies in SMEs is limited and there are therefore several governments that are expressing interest in piloting the instrument.

The survey instrument will be finalized by the end of 2018 and will then be piloted in three case study countries, aiming to reach a sample size of around 1,000 participants. In Senegal, for instance, the digital adoption survey will form a “Digital Sources of Growth” analytical report.

In FY 19, new activities will continue to build knowledge relevant to the digital agenda. These activities will focus more strongly on latest technologies such as Big Data, AI, and IoT, and policy and regulatory frameworks covering the different use cases.

In a first activity under the FY 19 workplan, the **General Regulatory and Governance Framework for Disruptive Technologies** will be assessed, including AI, Blockchain, IoT, bio-tech, and others. This framework – to be developed in cooperation with Harvard University – will serve as a building block for a sustainable technology-led economy and will be scaled through current and future World Bank engagements and investments.

At the GSMA Mobile World Congress 2018 in Barcelona, WBG President Jim Kim and GSMA Director General Mats Granryd announced that the two institutions would partner with mobile network operators around the globe to unlock new insights from anonymized data collected by the operators through IoT devices and aggregate data from smartphone use. This activity on **Big Data Analytics** will allow this collaboration to move forward, with plans to embed the concrete outcomes in some IoT/Big Data pilot projects/demonstration projects, as part of World Bank lending operations.

Engendering ICT was a 2017-18 project which aimed to develop a toolkit that could help task leaders ensure their projects in the ICT domain are sensitive to the needs of women. This activity will further the digital development/gender agenda by practically integrating gender concerns into three digital development lending projects.

(ii). DIGITAL ECONOMY ENABLING ENVIRONMENT

DDP’s Digital Economy topic window has seen a steep evolution. From an emerging agenda two years ago, the concept of the Digital Economy has attracted significant attention in the developing world, building on a new vision for development and a high level of enthusiasm for the opportunities created by

Screen shot from the DDP-funded Digital Malawi videos, which helped create an aligned vision for a Digital Malawi and helped bring on the way a \$73m IDA lending project





digital technologies. DDP was able to make a contribution to this evolution by articulating the agenda, underpinning it with an assessment framework, forging a cooperative approach between international stakeholders and different GPs within the WBG, and helping to galvanize a fragmented agenda into a powerful operational concept that can drive the implementation of development solutions forward.

Part of its **Global Knowledge on Digital Economy** work was the development of a Digital Economy Enabling Environment assessment methodology to support WBG-wide interventions on Digital Economy assessment. The multi-disciplinary team included experts from IFC, MIGA, the Digital Development GP, the Governance GP, the Finance, Competitiveness and Innovation GP, the Macro, Trade and Investment GP, as well as the team working on Public-Private Partnerships. Four leading global institutions associated with this effort included the Massachusetts Institute of Technology, the University of London, Cairo University, and Moscow University. Engagement and outreach during the concept development included representation at the G20 Task Force on Measuring the Digital Economy, engagement with Argentina's G20 presidency; and support to the World Bank's Digital Economy for Africa (DE4A) initiative. Knowledge created during this effort was also leveraged for different academic articles on the policy and regulatory framework of digital platforms, on competition and regulation of network industries, and for a chapter of the ICT4D Report (as above).

At country level, in Indonesia, FY 18 saw the finalization of the overview report ***"The Digital Economy in South East Asia: Strengthening the Foundations for Future Growth"***. The report surveys the available evidence on the foundations for the Digital Economy, focusing on four economies in Southeast Asia (Indonesia, Malaysia, Thailand, and Vietnam) with additional benchmarking data across the other six members of the Association of Southeast Asian Nations (ASEAN) countries where available. It reviews five foundations – connectivity, skills, payments, logistics, and cross-cutting digital policy and regulation – and provides recommendations for policymakers to consider. It also provides an overview of relevant national Digital Economy plans that cover these foundations and other priorities like supporting digital entrepreneurs, as well as covering regional integration efforts. The preparation of the report has been a cross-GP effort within the World Bank, also including IFC's Technology, Media and Telecommunications (TMT) team.

Complementing the report, two Digital Economy learning events were co-hosted with Indonesia's Coordinating Ministry for Economic Affairs, a working session on e-commerce in December 2017, and a working session on Digital Skills in March 2018. Initial consultation events on the report were held in Vietnam, Thailand, and during a World Bank-Ministry of Finance conference on Public Policy in the Digital World, in Kuala Lumpur, in September 2018. EAP Vice President Victoria Kwakwa outlined the key findings of the report at the World Economic Forum on ASEAN in September 2018, to a high-level government and private sector audience.

This activity has stimulated requests for downstream technical advisory work in Vietnam (e-commerce roadmap), Thailand (digital adoption in key economic sectors), Indonesia (data flows, logistics, fintech and connectivity), and Cambodia (Digital Economy enabling environment, connectivity, e-regulation and skills). Evidence gathered through the report has also been used in ongoing or pipeline advisory projects in Lao PDR (e-commerce regulations), Myanmar (services and e-commerce), and the Philippines (Digital Economy report). Lending projects in some of these countries will likely materialize during the next two years.

In Senegal, DDP support was mobilized in 2018 following the government's request for assistance in strengthening the key foundational elements of its Digital Economy. A situational analysis of the Digital Economy foundations took place from February to June 2018, centered around a workshop entitled **"Digital Economy for inclusive growth in Senegal"** in Dakar in spring 2018. The workshop was attended by around 60 decision-makers from 12 ministries and public agencies, and zoomed in on three areas of reform priority: (a) digital identity systems that can facilitate the reliable authentication of citizens, legal entities or devices, and thus facilitate digital transactions and services; (b) strengthening digital taxation to expand the use of digital financial services and increase government revenues for easing business; and (c) a digital Port of Dakar activity to build on innovative digital platform and digital capabilities in Senegal for improving logistics and accelerate goods management in a key trade gateway for West Africa. The findings of the analysis were informed by inputs from a range of technical partners, including DDP members such as Microsoft. The recommended policy reforms will be published in a report entitled **"Unleashing Senegal's Digital Economy Potential"** in January 2019. A final conference is expected to be

In FY19, activities will focus more strongly on latest technologies such as Big Data, AI, and IoT, and policy and regulatory frameworks covering the different use cases

In FY 19, DDP will focus its attention on a rapid and ambitious roll-out of many Digital Economy assessments, so that a large number of low- and middle-income clients can profit from the assessment methodology developed

held in Dakar to disseminate the key findings of the analytical report and follow up with key stakeholders on implementing the report's recommendations. In terms of medium-term outcomes, lending projects on the three key aspects are under discussion. The analytical work has also contributed to the ongoing formulation of the new World Bank CPF in Senegal.

In a regional activity in Central Asia (Kyrgyzstan and Uzbekistan), DDP undertook country-level assessments of e-government environment and the broader Digital Economy aspirations, using the Digital Economy Country Assessment/Digital Economy Express Assessments (DECA/DEXA). These efforts focused on the most critical aspects of the Digital Economy allowing for rapid and low-cost data gathering from global indexes and an online survey for key stakeholders. Meetings with key stakeholders from public and private sectors were carried out, along with online surveys. This activity will remain active for further assistance to the clients.

In FY 19, DDP will focus its attention on a rapid and ambitious roll-out of many Digital Economy assessments, so that a large number of low- and middle-income clients can profit from the assessment methodology developed. Digital Economy umbrella assessments will typically lead to a deepened engagement with the government on priority policy and investment needs, depending on the specific client context. With a very long list of client requests for Digital Economy assessments, FY 19 will start with assistance to Egypt, Iraq, Nigeria, Pakistan, Rwanda, and South Africa.

(iii). CYBERSECURITY

Work under DDP's cybersecurity window is currently being scaled up to deliver on a range of ambitious work programs, including in particular two comprehensive umbrella initiatives delivering multiple cybersecurity assessments in West Africa and South and Central Asia, including selected Commonwealth countries.

In terms of global knowledge development, ***Guidelines on Cybersecurity in Cloud, IoT and other Cutting-edge Technologies*** are in development. World Bank clients frequently face challenges securing necessary cybersecurity levels in innovative technologies. Cloud security is among the key considerations, next to data sovereignty, existing country-specific legal and regulatory policies, and contractual considerations.

The guidelines will respond to the challenge by (i) determining a relationship between security classifications for services and data applicability of specific cloud models (private cloud, outsourced, hybrid, PPP); (ii) identifying steps involved in the decision making on data classification and cloud architecture in the context of security concerns; and (iii) providing recommendations on security risks and mitigation measures as applicable for each model.

Countries of the ECOWAS community and select African Commonwealth countries have prioritized the development of their digital economies over the past decade by investing in regional digital infrastructure. Whilst the effort to develop an ECOWAS regional Digital Economy is laudable, it has also exposed member states to serious cybersecurity threats, exacerbated by the interconnected nature of the networks. DDP funding has therefore enabled the launch of an ambitious program to conduct Cybersecurity Maturity Assessments for all 15 ECOWAS member states and nine Commonwealth African countries, including Benin, Burkina Faso, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo, Botswana, Cameroon, Lesotho, Mauritius, and Namibia.

The assessments are based on a recognized, international framework, and look into cybersecurity legislation, technology, awareness and capacity building, as well as national, bilateral, and multilateral cooperation. Each member state beneficiary is being provided with an assessment report that includes measurement of current maturity levels, recommendations on how to progress to the next maturity level, and a prioritized action plan. Assessments are complemented with training and capacity building, to ensure full country participation and ownership of the process and to allow members states to track their progress in meeting the targets of their country action plans.

In spring 2019, as soon as individual country assessments have been completed, and priorities and a strategic direction for cyber resilience are set, the implementation of a regional approach to cyber resilience including responses to threats, and the development of regional training and simulation centers, will be launched. The assessments will also factor in a review of the energy and financial sectors, which are common critical infrastructures across these countries.





Similarly, DDP is in the launching phase for a regional umbrella initiative to improve cybersecurity levels in South and Central Asian countries, including select Commonwealth countries, building capacity in cybersecurity based on current cybersecurity status and aiming to scale up engagements through World Bank lending operations where suitable. Participating countries include – with some finetuning of the list still possible – Cambodia, Malaysia, Laos, Myanmar, Indonesia, Nepal, India, Sri Lanka, Pakistan, the Philippines, Uzbekistan, Tajikistan, Afghanistan, Kirgizstan, and Kazakhstan. As well as assessments, every country will also be offered capacity-building support, including CMM assessment trainings, study tours, and clinics, to expose these countries to technology and thought leaders with advanced cybersecurity practices and expertise. This work is supported by a partnership with the Global Cyber Security Capacity Centre (GCSCC) at the Oxford Martin School, University of Oxford.

FY 19 will see a focus on the successful delivery of the ambitious and comprehensive work program noted above. One additional, forthcoming activity will cover **Cybersecurity in Utility Sectors** such as electricity and sanitization, subject to more detailed definition and scoping.

At the global level, the Japanese G20 Presidency in calendar year 2019 will mobilize significant international attention on the cybersecurity agenda. DDP's broad global footprint through cybersecurity assessments will by then allow DDP to support this agenda with experience and insights, and anchor learning events such as study tours with the Japanese leadership.

(iv). INTERNET ACCESS FOR ALL

Through its fourth work stream, Internet Access for All, DDP fosters the broadband access agenda, offering knowledge, technical assistance, and advisory support to assist low- and middle-income countries in enhancing their connectivity. The work covers national policy and strategy, regulation, and new technologies and business models.

In the area of knowledge development, DDP has funded a flagship report on **Innovative Business Models for Expanding Fiber-Optic Networks and Closing the Access Gaps**. This report assesses approximately 70 connectivity cases globally and presents lessons learned from cross-border, backbone and last mile network deployments, proposing options for new and

future business models that can be applied in various country contexts to ensure network access over the first, middle and last mile. As a joint effort with the IFC's TMT team, the assessment reviews developing technologies such as satellite, microwave, balloons, and drones; business models such as rural Internet Service Provider (ISP), community GSM and micro-telcos providing connectivity to un/underserved communities; as well as recent market trends of coupling energy and connectivity solutions.

Between completing the first draft of the report in January 2018 to its publication in November 2018, the team has undergone intensive consultations, both internal and external to the WBG, and in the process increased awareness and knowledge of the various business models, financing structures and regulatory implications for rolling out fiber-optics networks and expanding last mile access. Two web-based consultation workshops were carried out. The global consultation on March 29, 2018 connected about 70 participants, in person and remotely, including in client countries (including Afghanistan, Uzbekistan, Kyrgyz Republic, Ukraine, Nigeria, Nicaragua), international private sector operators (including from India and Bangladesh), USAID, WEF, Microsoft, GSMA, and World Bank and IFC staff. The May 2, 2018 workshop convened World Bank and IFC staff to discuss the draft report and the strategic options, risks, and opportunities for integrating lessons learned into WBG lending and investment operations to support client countries in achieving their Internet Access for All goals. A targeted awareness-raising campaign will be carried out through July 2019, to share the new knowledge broadly, assist client countries in their broadband work, and ensure broadband connectivity will be included in as many future World Bank projects covering the digital agenda as possible.

In terms of country-specific activities, a number of technical assistance and advisory activities have been rolled out.

Through its fourth work stream, Internet Access for All, DDP fosters the broadband access agenda, offering knowledge, technical assistance, and advisory support to assist low- and middle-income countries in enhancing their connectivity





Public workshop in Lima carried out as part of the DDP-funded Innovative Spectrum Management activity

In Latin America, a focus activity on Innovative Use of Spectrum Management in Peru has supported the development of an action plan for using emerging technologies, frequencies, and licensing approaches to accommodate new broadband spectrum access, while not harming existing services. As a result of the work, the Ministry of Transport and Communications (MTC) requested that the analytical work be expanded to introduce the essential concepts, definitions, and public policy implications on spectrum management. Best practices and lessons learned are presented based on case studies (Brazil, Mexico, Argentina, United States, and Colombia) and recommendations from relevant international organizations (ITU, the Inter-American Telecommunications Commission - CITEC, the European Community, and IEEE).

The reports are undergoing final internal review before publication. In the process of completing the documents, intensive consultations, both internal and external to the WBG were carried out. In December 2017, a public workshop in Lima was conducted to obtain feedback from stakeholders (government, mobile network operators, DDP donors, and other interested institutions) on the initial findings and proposed recommendations. In May 2018, a follow-on workshop was held in Lima to focus on the spectrum efficiency analytical work findings. As a result of the technical assistance, MTC is moving forward with modifying its policy and spectrum management regulations (See Box 1. Innovative Use of Spectrum Management in Peru). Other Latin American countries that have become aware of the analytic work and they have expressed interest in implementing similar spectrum assessments.

Box 1. Innovative Use of Spectrum in Peru

Peru has in the past improved its broadband connectivity through a national fiber-optic backbone network and promoting universal funding mechanisms and incentives through its FITEC program to expand coverage in remote areas of Peru. Yet, with the rise in global demand for high-speed wireless broadband, infrastructure deployment alone is no longer sufficient to ensure affordable, accessible, high quality internet in rural or densely populated urban areas. DDP-funded analytical activity is therefore supporting the government in using emerging technology, new frequencies, and regulation on spectrum allocation to spread digital dividends across its population at lower cost and higher adoption rates. Stakeholders increasingly expect regulators to ensure the rational, equitable, efficient, and economic use of the radio frequency spectrum. In consequence, the models and technologies that enable spectrum management are coming under increasing scrutiny.

When considering the spectrum management cycle and how it has developed in Peru, there is little evidence of innovative practices towards a more flexible and efficient use of the spectrum. While spectrum planning in Peru is primarily based upon recommendations from the ITU and WRC, activities such as assessing spectrum demand, planning for new bands, spectrum caps, and migration plans are limited. Spectrum management has been focused on a traditional approach, without regulations that consider competition factors. In consequence, the spectrum assignment process responds to this model and can be qualified as rigid, although there are procedures in place that ensure consistency. As a result, there is a pressing need for innovative approaches to reduce the spectrum availability gap.

The main implication for Peru arising from this study derives from two approaches focused on promoting efficiency in spectrum management: reviewing the current regulatory framework to allow for increased flexibility, and incorporating new technologies, such as cognitive radio, software-defined radio (SDR), TV white space (TVWS), and IoT. Aiming to provide a prioritized approach for implementation, the study performs an initial assessment of all the potential initiatives identified, analyzing two aspects: potential impact versus implementation feasibility.

The DDP-sponsored analytical work was a key input into Peru's policy and regulatory debate and, as a result, the Ministry of Transport and Communications (MTC) has begun implementation of a more future-focused spectrum management. During August 2018 MTC issued a consultation process to begin the process of reordering its spectrum resources through a new policy and regulation to reform certain spectrum bands and revise the spectrum allocation table. Additionally, MTC is in the process of updating its National Broadband Plan. More flexible and innovative uses of spectrum to enable new technologies and business models will be a significant feature of the new plan. As a result of the technical assistance, MTC is moving forward with modifying its policy and spectrum management regulations.





In East Africa, a series of activities were funded under the **Telling Malawi's Digital Story activity**. These included an economic and financial ex-post impact assessment of the IDA-financed Regional Communications Infrastructure Program (RCIP) program, including the innovative demand stimulation model for international connectivity which incentivized private sector fiber backbone investments, and development of a “virtual landing station” to connect the landlocked country to the global internet infrastructure at dramatically lower prices for wholesale international bandwidth. As a result, the price of internet access has fallen significantly and internet access rates have spiked. The activity also supported an economic and financial analysis for the recently approved and effective US\$72.4 million IDA-financed Digital Malawi project, which illustrated the strong return on investment expected under the project and helped build the case for its approval with the Ministry of Finance and Members of Parliament. The economic and financial analysis model which was designed and created under this window are being replicated for similar new Digital Economy investments.

In West Africa, country members of the Economic Community of West African States (ECOWAS) have, over the past few decades, established independent regulatory authorities to oversee the liberalization and constructive development of their telecommunications sectors. DDP supports the **ICT Africa Regulatory Watch Initiative (ARWI)** in West Africa to assist ECOWAS member states to undertake regulatory and policy reforms and address some of the main market failures. The ARWI is a multi-phased activity designed to strengthen the analog foundations of the digital revolution and maximize the benefits of the Digital Economy in the ECOWAS Region. The ARWI is positioned to tackle the legal, regulatory, and competitive challenges that threaten to jeopardize the uptake of digital technologies. By doing so, the ARWI will support regional bodies in Africa to move towards a single telecommunications market. The Task 1 report (Market Analysis: roaming, OTT, and gateway liberalization) was completed in May 2018 and has undergone internal review. The draft Task 2 report has since been completed and is currently undergoing internal reviews. Following this process, the reports will be circulated to a wider group of stakeholders, both within and external to the Bank, for their comments and feedback prior to the completion of this phase of the activity.



WITH AN EMPOWERED YOUTH

DIGITAL
MALAWI



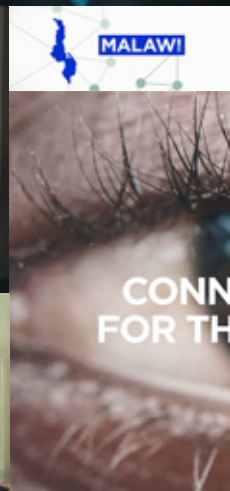
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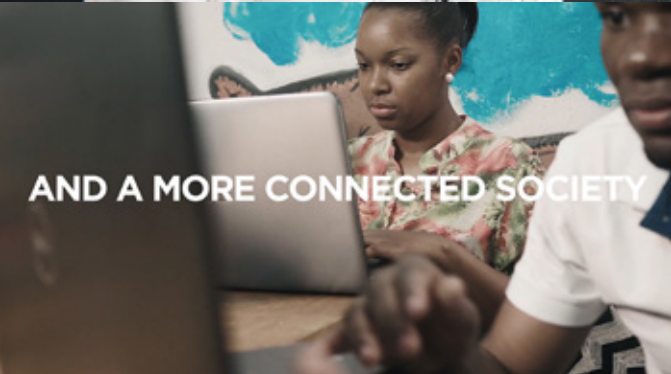


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DDP-funded engagement in Malawi



AND A MORE CONNECTED SOCIETY



WILL CREATE A BRIGHTER FUTURE



DIGITAL PUBLIC SERVICES



CONNECTIVITY IS CRUCIAL
THE FUTURE OF MALAWI



In the Middle East, DDP supports the **Jordan National Broadband Network**. The government of Jordan has expressed interest in expanding their government broadband network connecting public administration offices, schools, and hospitals in main cities and second tier centers, using a PPP model that could be similar to the one implemented in Malawi and evaluated under DDP. The objective of the activity is to provide an assessment of Jordan's readiness to go digital, a roadmap for the strategic investments and policy reforms needed to enable the transformation of the existing services, and assistance to help implement the policy recommendations through suitable reforms. In August 2018 the first draft report, including technical, economic, and legal assessments was completed and has been discussed extensively with ministerial-level government authorities. The activity is viewed as highly impactful. The assistance is directly followed by the Ministry, which is using it as a decision support tool to move quickly into implementation of the recommendations.

FY 19 will focus on one knowledge piece and two strategic country initiatives: Building on the report Innovative Business Models for Expanding Fiber-Optic Networks and Closing the Access Gaps, an **Action Plan for Doubling Broadband Connectivity** will be developed to scale the knowledge and double connectivity levels worldwide by 2021 and close the connectivity gap by 2030. This builds on a commitment President Jim Kim made at the WBG-IMF Annual Meetings (AMs) 2018 in Bali.

In terms of country-specific work, DDP has been asked to offer inputs to the considerations of the government of **Ethiopia** to restructure the telecom sector, including a state-owned enterprise (SOE) reform, specifically on the privatization of Ethio-telecom. This is a strategic initiative with high relevance for one of the world's last, closed telecom sectors, which will also have a strong signaling effect far beyond Ethiopia. Also in East Africa, ongoing work by the team focuses on the development of the **East Africa Single Digital Market**. This is an important and comprehensive regional activity which requires some time to move from analytical work to pre-investment support.

(v). DIGITAL GOVERNMENT

During FY 18, the Digital Government window focused on completing, testing, and rolling out the **Digital Government Readiness Assessment (DGRA)**, a flagship analytical tool to

assess the state of digital government transformation readiness to improve public administration and empower all citizens and entrepreneurs in low- and middle-income countries. The tool was produced by a core team of World Bank experts and international consultants and benefitted from several rounds of internal and external consultations before finalization.

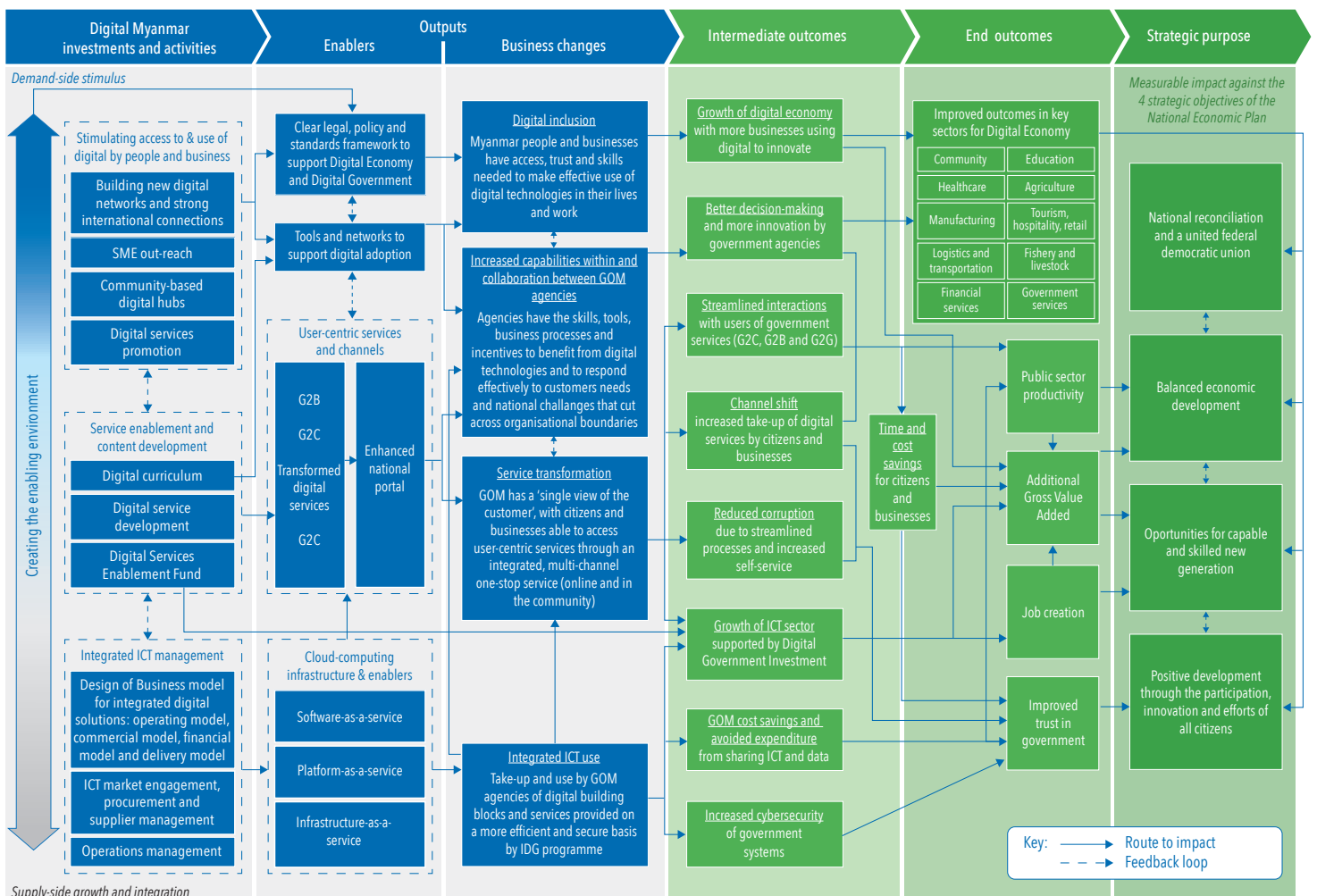
Beyond development, DDP has also supported some of the first clients with roll-out of the toolkit, including assessments of digital government leadership, public sector digital infrastructure and enterprise architecture, data and analytics platforms, shared services and interoperability; as well as matters of the enabling environment and ecosystem. The first countries benefiting from the new DGRA toolkit included Cambodia, Central Asia (Kyrgyzstan and Uzbekistan), Lebanon, Myanmar, Senegal, and Vietnam. An important outcome of these interventions was the strengthening of client knowledge through sustained policy dialogue with the DDP teams.

DDP-enabled consultation and capacity-building workshops in these countries brought together, sometimes for the first time, policymakers and private sector actors of relevance to the digital government agenda. Furthermore, after the finalization of the DGRA assessments, several of these clients requested World Bank support for an investment operation in digital transformation. These countries include Lebanon, Kyrgyzstan, Myanmar, and Senegal, for which approved project concepts for an investment project were developed. In Vietnam, an investment lending operation may be considered in FY 20. This client interest in follow-up work is testimonial to the power of the analytical tool produced and the policy dialogue carried out with its support. The DGRA was for the first time presented at the DDP Workshop in Seoul, Korea, in October 2018. It has also been translated into French, and a transformation of the survey tool into a bilingual app is planned, which will allow users to analyze and benchmark country results using the app's reporting functions.

In more detail, in Myanmar, DDP assisted the government in analyzing the investment feasibility of a proposed US\$100 million Digital Myanmar project. The ***“Myanmar - Investment Analysis and Implementation Options for Digital Government Project”*** report was completed in June 2018. The study highlighted the global best practice of a whole-of-government approach to digital government and public service delivery, its key concept, and international experiences from early adopters of such an approach. A comprehensive action plan highlighted

During FY 18, the Digital Government window focused on completing, testing, and rolling out the Digital Government Readiness Assessment, a flagship analytical tool

the need to introduce user-centered service design; transform business processes to make them digital end-to-end; provide mobile-based access to services; introduce and use common data and shared services consistently across the government; renew and upgrade the ICT architecture towards secure cloud technology; and bring to application accompanying leadership, change management, and governance models. The analysis leveraged the government's concept-level design based on the country's e-Governance Master Plan. Financial and economic analyses were modeled on a comprehensive benefit map, estimating a net present value (NPV) of the future project of nearly US\$40 million (in terms of financial gains in public sector productivity over five years), and a total economic impact estimated at US\$448 million. The successful engagement serves as the basis for the Bank's decision to start preparation of the proposed lending project.



Benefit map developed for the DDP funded support to Myanmar, preparing the ground for a World Bank financed lending project for Myanmar

In **Cambodia**, DDP carried out a rapid assessment and policy note for the development of the Digital Economy in Cambodia as inputs to the preparation of the next Rectangular Strategy and National Strategic Development Plan. Key priority areas identified to facilitate digital development include: (i) closing the digital gap by developing sector regulatory capacity and enhancing spectrum reallocation; (ii) aligning efforts towards the implementation of the Digital Government Strategy (iii) elaborating a Digital Skills Readiness Strategy; and (iv) adopting laws in e-commerce, cybersecurity, data protection and privacy. These recommendations have been accepted by the Government and incorporated into the newly-released Rectangular Strategy and National Strategic Development Plan (September 2018) which prominently prioritizes the need to develop the Digital Economy in Cambodia. The Rectangular Strategy is the key policy instrument for the Government that lays out the strategic policy measures for implementation during the term of the sixth mandate from 2018 to 2023. This DDP activity is ongoing and the team will continue to accompany the government on its way to leveraging digital technology for enhanced government service delivery and a growing Digital Economy.

In a regional activity in Central Asia (Kyrgyzstan and Uzbekistan), DDP undertook country-level assessments of the e-government environment and the broader Digital Economy aspirations, using the Digital Economy Country Assessment/Digital Economy Express Assessments (DECA/DEXA). These efforts focused on the most critical aspects of the Digital Economy allowing for rapid and low-cost data gathering from global indexes and online surveys for key stakeholders. Meetings with key stakeholders from the public and private sector were carried out, along with online surveys. Leading experts on digital government from Moldova (which completed a very successful, World Bank-financed digital government project in 2017), visited Kyrgyzstan and Uzbekistan in May and August 2018. They worked closely with government clients, to share best practices for a future proofing of digital government components in Digital CASA Kyrgyzstan and Uzbekistan projects. In addition, the World Bank team organized a study tour on digital government and AI for high-level representatives of the Kyrgyz and Uzbek governments to Finland in September 2018. The participants were also exposed to peer-to-peer networking and knowledge sharing with Government Chief Information Officers (CIOs) of other leading countries, such as Japan, Israel, Singapore, Sweden, and Denmark, during the ICA CIO conference.

In Cambodia, DDP carried out a rapid assessment and policy note for the development of the Digital Economy in Cambodia

In Vietnam, the team provided the Government of Vietnam (GoV) with strategic action plans to implement key components of digital government



DDP-funded discussion session on the strategic action plan for digital government solutions in Vietnam

In both countries, lending projects were launched in 2018 (Kyrgyzstan, US\$50 million) or are planned for 2019 (Uzbekistan), covering in different pillars different aspects of the Digital Economy and e-government agenda and establishing Centers of Excellence for Digital Economy innovations. Analysis and advice on the Digital Economy has been crucial in shaping these lending projects.

In Vietnam the team provided the Government of Vietnam (GoV) with strategic action plans to implement key components of digital government that can facilitate user-centric, data-driven, and innovative government services and as a result help the country transform its economy by increasing digital adoption and ICT use. To achieve this objective, the team has assessed the readiness of the government on key capabilities including leadership of a digital government landscape, governance, user focus, data, and infrastructure, and prioritized institutional and technical areas that require government investment and support. A comprehensive action plan has been prepared in collaboration with the World Bank's Governance GP and was presented to the GoV in November 2018. This plan has highlighted concrete next steps to introduce user-centered service design; transform business processes to make them digital end-to-end; provide mobile-based access to services; use common data and shared services consistently across government; renew and upgrade the ICT architecture towards secure cloud technology; and bring to application accompanying leadership, change management, and governance models.

FY 19 offers the opportunity to leverage the existing DGRA toolkit for a rapid expansion of its work in many client countries requiring assistance. Further work is planned in Vietnam, as well as a new activity in Sri Lanka. Client demand is high and the work can be scaled up in line with availability of resources.

(vi). MAINSTREAMING DIGITAL SERVICES, SOLUTIONS, AND PLATFORMS

Through the Mainstreaming Digital Innovations window, DDP fosters digital capabilities in a range of areas by incubating digital solutions and supporting systematic integration and scaling up of these into mainstream practices. The window plays a key role in meeting the increasing demand for digital technologies, services, and platforms in World Bank operations and in the programs of its clients and partners. It is a collaboration space

with other GPs and units, forming a sandbox for digital experimentation, learning and awareness raising across sectors, leveraging common technology enablers such as big data, IoT, AI, and mobile platforms. The projects under this window aim to build local skills, innovation capabilities, and increased digital inclusion. What in the initial year began as a focus on the transport sector has in the past year expanded into several areas.

Better Data for Smarter Transportation is an activity to develop a knowledge base (toolkit) and a working prototype of an integrated geospatial platform that brings together various tools for managing transport data. It is addressing the lack of data standardization and benchmarking, and matters of interoperability of platforms and solutions in the transport sector. These include data-driven tools on congestion, crash information, vehicle locations in public transport, and a variety of infrastructure and safety data from multiple sources. Key design features of the integrated platform include: a web-based visualization tool, APIs for integration of data from different sources, automatic generation of a separate GIS layer for each data source analyzed, and role-based access for different types of users. A research paper analyzing and categorizing the various existing data innovations and solutions contained in the toolkit has been prepared for standalone publication and a summary has been featured in the upcoming ICT4D 2018. Beyond these aspects, which will underpin World Bank transport projects with a better use of digital technology, the activity has also supported one specific aspect of concern in some transport projects. In the recent past, several cases of worker influx into rural communities have led to adverse social and environmental impacts, including an increase in gender-based violence (GBV). In order to identify and monitor GBV, innovative digitally-enabled tools such as Social Media analytics and sentiment analysis can help. The activity has therefore supported a proof of concept to mine social media data and blend it with geospatial information related to World Bank-funded transport projects in the Democratic Republic of Congo.

The activity **Operationalizing Big Data Analytics** facilitates the integration of big data analytics in development programs by engaging in a range of interrelated activities, including providing support to World Bank operational teams to solve specific development problems, building skills, and deepening partnerships with big data owners. To date, the Bank has submitted nine mobile big data proposals to the GSMA Big Data for Social Good team (with two in pre-submission discussion) and four





IoT big data proposals to the IoT Big Data team (with one in pre-submission discussion) at GSMA for review. These include (a) Using Narrow-Band IoT Smart Water Solutions in China, (b) Using IoT sensors in rural water pump monitoring in Nigeria and (c) Using IoT sensors to assess sanitation of school restrooms in Ghana; (d) A digitally-enhanced product certification for Morocco's agriculture sector; and (e) Innovative counting technologies to inform bicycle infrastructure investments in Colombia. Further proposals will be elicited following targeted outreach to the smart cities, disaster response, and agriculture sector teams. The Operationalizing Big Data activity has furthermore partnered with the Big Data Community of Practice at the Bank to host three Brown Bag Lunches, presented on the promise of operationalizing Big Data to the World Bank's Data Council, and is a member of the Disruptive Technologies Network at the Bank.

In the **Digital-Energy Nexus** activity, DDP has assessed the potential of digital technologies in the energy sector. A workshop was carried out in June 2018 to explore the synergies between mobile connectivity, digital technology, and energy access, and how they can be leveraged to close the energy and connectivity access gaps. While mostly deployed in mature markets, the impact of innovative digital solutions and technologies in energy on improving lives and increasing resource efficiency in emerging and developing markets is found to be significant. The workshop has led to greater collaboration between the digital development and energy practices at the World Bank and IFC, including plans to identify target countries and projects for piloting joint interventions pairing rollout of mobile broadband, mobile payments, and pay-go solar solutions in rural areas. The activity also provided incremental support to the MogadishuWatt innovation challenges (<http://irisehub.so/mogadishuwatt/>), which provided prizes and business development support to create innovative solutions to energy access and energy efficiency challenges through a Hackathon held in June 2018.

In terms of country-specific activities, DDP has funded work to explore **Connected Buses in Peru**. The project offers an opportunity to analyze and measure the impact on how new satellite and IoT technologies can facilitate access to connectivity services for rural communities, analyze the impact of new ways of collecting data, for example to monitor road and environmental conditions, and to develop new innovative solutions. Connected buses can provide significant value to local

communities. The activity takes a collaborative approach with Airbus Industries and includes several technology and analytics partners. The pilot project was officially launched in August 2018 in a workshop event in Lima, attended by 40 participants from government, academia, industry and the private sector. Equipment (sensors, cameras, on board data platforms, and flat panel antenna) is currently being installed on buses and will begin rolling through various geographical terrains in Peru in December (highland mountains, jungle, desert, and coastal) collecting data with storage in a cloud-based digital platform. After a two-month period of collecting data, analytics will be conducted as well as design hackathons held regionally to begin the process of developing applications and defining use cases. The total pilot project through to report completion is planned to be finalized by July 2019.

In the **Autonomous Aerial Systems** in Tanzania project, DDP has supported the Lake Victoria Challenge (LVC) Symposium and Expo with a flying start since July. Partnerships have been formed with UNICEF, World Economic Forum, African drone community organizations and industry players such as drone firms and UTM providers. An International Advisory Board has been formed with world experts in drone technology, supply chain, UTM, and sustainable transport applications. The trial event took place on October 29-31, 2018 at Malaika Beach Resort in Mwanza, Tanzania, drawing in UAV companies, including startups. This activity has contributed to a shift in the government mindset towards a competitive sector regulation and has resulted in a new sector strategy. Agreements are in place to collaborate in the planning of joint activities related to the LVC, and to facilitate the cross-exchange of lessons learned and solutions developed for implementation. An operations manual covering all aspects of facilitating the drone challenge has been developed, serving as a basis for events utilizing UAVs for beyond line-of-sight flying. There is much broader appreciation for convening a series of drone experiences which would focus on the broader enabling environment. The government is working on a draft UAV regulation and is interested in using the LVC experience to inform its strategy. The LVC team is working with the Deloitte Center of Excellence for Drones on the Tanzania medical supply chain use cases and DronePort concept.





FY 19 will see the expansion of the work within the Mainstreaming Window into new areas. In the area of Digital Agriculture, DDP will assist with ***Developing an Economic Framework Applying Digital Technologies to Agriculture***, for increasing efficiency, equity, and sustainability of agricultural transition, enabling countries and communities to utilize technologies such as satellites, sensors/IoT and blockchain in the agricultural sector in an evidence-based way. This is a principle toolkit to be developed jointly by the World Bank's Agriculture GP and the Digital Development GP, to serve as a blueprint for a new generation of digital agriculture lending projects. An activity implemented in Indonesia will build on the regional Digital Economy program to enhance data-driven strategies, tools, and public-private partnerships to foster ***Digital Skills Development in South Asia***. Existing activities will continue and in some cases might receive a boost through new partnerships or the expansion of initiatives. The future strategy within this window will see DDP continuing to develop innovative solutions to cross-sectoral challenges, leveraging technology platforms and drawing in the best possible expertise from within the Bank.



Impressions from the DDP-funded work on drones in Tanzania / Lake Victoria region

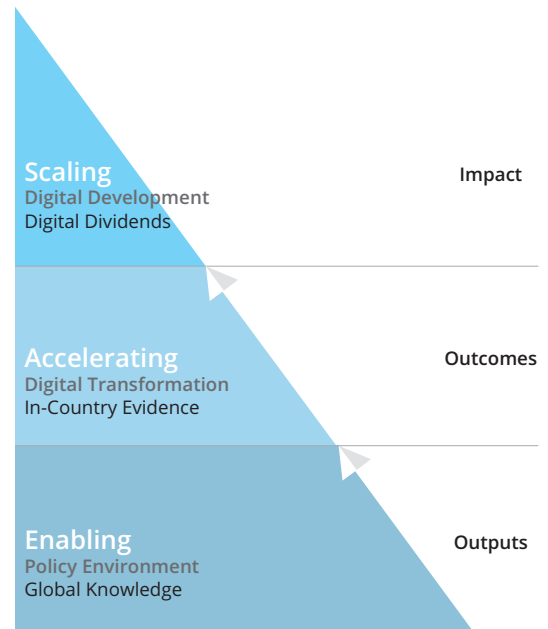
III. Looking Ahead – Plans for Fiscal Year 2019

Two years into its existence, DDP has developed into an important partnership platform. The amount of activities has grown steadily, reinforced by strong partner support and a lot of enthusiasm to foster the uptake of digital technologies for development. To respond to the existing client demand, DDP will need to grow significantly over the next few years. While the pace of growth will mostly be determined by the level of commitments that donors – from both the public and private sectors - will be able to make towards this agenda, expectations and hopes for DDP to deliver knowledge and digital development solutions are high.

Beyond its general growth perspective, DDP has at this stage a good opportunity to make progress in its delivery, based on what has been built during the first two years. The following aspects could be considered in particular to make sure that DDP delivery is most impactful.

UPDATING DDP TARGETS

To date, DDP has developed, prepared, and launched three packages of activities, amounting to 45 activities in total (see above, chapter II). These activities fall into six windows, which create the structure and scope of DDP engagements (Data and Indicators; Digital Economy Enabling Environment; Cybersecurity; Internet Access for All; Digital Government; Mainstreaming Digital Solutions). While the overall structure has proven helpful, a strategy exercise may be a good way to refresh DDP delivery targets. Such exercise would review the latest trends across the different windows including recent policy and regulatory aspects, as well as key emerging technologies that are transforming countries' economies and development pathways. To monitor progress, it will also set a range of numeric targets for DDP delivery. While not fundamentally changing the delivery, this will ensure that DDP activities follow a clear prioritization, remain aligned with latest technology trends, and can be measured against updated benchmarks. The team will start preparing a draft strategy document and closely involve partners and donors in this process, with a suggested date of delivery by March 31, 2019.



Perspective: Outputs and outcomes driving impact and scale in delivery.



Trends: Five emerging technologies that are transforming economies and disrupting countries' development pathways.

FOSTERING INTEGRATED DELIVERY

It has been part of DDP's DNA from the beginning to focus on a mix of global knowledge (such as toolkits, indicators, benchmarks etc.) and country-level technical assistance, reflecting a delivery model where knowledge needs to be developed only once before it can be used in many client countries. With a few core toolkits developed, DDP now has a strategic opportunity to focus on a rapid roll-out of assessments and knowledge in as many countries as possible. These countries will need to be chosen strategically, keeping in mind opportunities to develop Bank lending projects. Fostering such an integrated delivery will maximize the interplay between knowledge development, technical assistance, and lending operations, and maximize efficiency in delivering impact. A few examples are:

- First, the World Bank has collected a long list of countries requesting a Digital Economy assessment to develop comprehensive Digital Economy lending projects. This is an opportunity DDP can deliver on, quickly, using its new Digital Economy assessments.
- Second, the flagship report on Innovative Business Models to Foster Broadband Connectivity can be used comprehensively to close the connectivity gap worldwide. Client demand is high.
- Third, the Digital Government Readiness Assessment (DGRA) is ready for roll-out, and clients across the world are expressing an interest in using it for assessments and reform projects.
- Last, the Massive Open Online Course (MOOC) on Digital Dividends sees demand for repetition, possibly in additional languages, which will drive bigger impact based on an investment already made.

DEEPENING DDP PRIVATE SECTOR ENGAGEMENT

Two years into the operation of DDP, the successes of a close collaboration with the private sector are evident: an ongoing injection of knowledge on latest technologies into the work of the World Bank teams, experimentation on disruptive solutions, and the high motivation of the private sector to focus on speed, delivery, and results. The benefits for clients are many: Knowledge of the range of technological options available to them, preparation for choosing cutting-edge solutions, and connections that are catalytic to making progress. In this sense, DDP delivers on its mission to make disruptive, digital technologies fruitful for development.

Small adjustments to the engagement with the private sector may allow DDP to tap into private sector knowledge even more effectively. Working in faster delivery cycles, private stakeholders may prefer to join DDP for shorter timeframes, with a more clearly defined work program. While funding contributions remain a vital foundation for DDP to carry out its work, private sector stakeholders often prefer to contribute a mix of direct funding and indirect contributions, including knowledge and expertise. Lastly, stepping up on communications and engagement activities will make it easier for private sector stakeholders to join and contribute. DDP will therefore introduce small updates to the criteria for private sector participation, as an option for future private sector partners to join the partnership.

IMPROVING COMMUNICATIONS AND EXTERNAL OUTREACH

DDP has made a strong contribution to engagement and outreach through the Bank's own high-level events (such as WBG-IMF AMs) and those of DDP partners (such as Mobile World Congress). Activities in DDP partner countries, such as the study tour/workshop in Korea and events in Finland and Denmark, have offered further opportunities for exchange. At the same time, DDP can improve further in systematizing its communications and convening activities, in order to promote engagements between clients, partners, and friends of DDP. A suggested DDP Speakers' Series in Washington, DC, and a better level of information sharing on DDP activities in client countries will be beneficial for DDP's public profile. Further, opportunities to strengthen DDP as a brand can be tapped into, such as by developing the current, standard webpage into a more visual platform for news and exchange. The team will further strengthen its delivery on communications and outreach, and closely involve its partners in these endeavors.

Beyond its general growth perspective, DDP has at this stage a good opportunity to make progress in its delivery, based on what has been built during the first two years

Annex: Portfolio of Ongoing Activities and Financial Highlights

Window	Activity	Description	Year	Scope	Start Date	Closing Date	TOTAL Allocation	Remaining balance *as of Sept 2018
	ICT4D Report	International evidence and policy experience on "Data Driven Development"	1	Global Knowledge	Feb 17	Jun-19	\$150,000	\$12,988.14
	Doing Business Digitally	Framework for measuring the enabling environment faced by companies pursuing business in the digital industry	1	Global Knowledge	Mar-17	Jun-19	\$200,000	\$32,962.63
	Tanzania Data Diagnostic	Household survey on ICT usage Tanzania	1	Country Specific	Feb-17	Jan-19	\$180,000	\$26,489.56
	Use of Digital Technologies by SMEs	Survey assessing the extent of digital technology use by SMEs	2	Global Knowledge	Dec-17	Sept-19	\$200,000	\$71,549.23
	Developing the General Regulatory and Governance Framework for Disruptive Technologies	Develop and test a general regulatory and governance framework for disruptive tech (AI, blockchain, IoT, etc)	3	Global Knowledge	Upcoming activity	Upcoming activity	\$100,000	Upcoming activity
	Operationalizing Big Data Phase 2	WB/GSMA partnership on unlocking new development insights from mobile network operator (IoT and other data). The activity will support pilots	3	Global Knowledge	Upcoming activity	Upcoming activity	\$100,000	Upcoming activity
	Engendering ICT Toolkit	Supporting the completion of the engendering ICT toolkit, that aims to practically integrate gender concerns into WB operations in the DD space	3	Global Knowledge	Upcoming activity	Upcoming activity	\$30,000	Upcoming activity
	Niger: Assessing Migration using CRD data and other geo-spatial technologies	Using data from mobile network operators to monitor and study migration flows and return migration, and identify emerging crises	3	Country Specific	Upcoming activity	Upcoming activity	\$100,000	Upcoming activity
	Development of the Enabling Environment for Digital Economy	Cross-sectoral inventory of assessment instruments for the Digital Economy, deep-dive analytical work on cutting-edge challenges, and country case studies	1	Global Knowledge	April-17	Sep-18	\$275,000	\$19,162.04
	Indonesia: Framework for a Digital Economy	Capacity development on assessing the enabling framework for the Digital Economy, and policy recommendations	1	Country Specific	Jul-17	Mar-19	\$250,000	\$41,710.22
	Senegal: Digital Economy	Digital government readiness assessment, recommendations for maximizing digital dividends, preparation for "Digital Senegal" lending operation	1	Country Specific	Nov-17	Jun-19	\$200,000	\$40,245.23

Window	Activity	Description	Year	Scope	Start Date	Closing Date	TOTAL Allocation	Remaining balance *as of Sept 2018
	Tunisia: Framework for Digital Economy	Assessment of Tunisia's digital readiness, a roadmap for the strategic investments and policy recommendations through suitable reforms	2	Country Specific	Nov-17	May-19	\$100,000	\$50,000.00
	Central Asia: Designing and Piloting Digital Economy eXpress Assessments (DEXA)	Country application of the Digital Economy Enabling Environment eXpress Assessment tool	2	Country Specific	Jan-18	Dec-18	\$100,000	\$210.53
	South Africa: Accelerating the Digital Economy	Focusing on implementing programs to accelerate South Africa's Digital Economy (digital skill development, infrastructure, national open data framework)	3	Country Specific	Upcoming activity	Upcoming activity	\$150,000	Upcoming activity
	Rwanda: Accelerating the Digital Economy	Digital government readiness assessment, preparation for a possible "Digital Rwanda" lending operation	3	Country Specific	Upcoming activity	Upcoming activity	\$150,000	Upcoming activity
	Egypt: Developing the Digital Economy	Development of a roadmap and providing implementation support for the ICT Sector Strategy 2025	3	Country Specific	Upcoming activity	Upcoming activity	\$200,000	Upcoming activity
	Egypt: Developing the Digital Economy	Development of a roadmap and providing implementation support for the ICT Sector Strategy 2025	3	Country Specific	Upcoming activity	Upcoming activity	\$200,000	Upcoming activity
	Iraq: Developing the Digital Economy	Digital government readiness assessment, preparation for a possible "Digital Iraq" lending operation	3	Country Specific	Upcoming activity	Upcoming activity	\$150,000	Upcoming activity
	Pakistan: Developing the Digital Economy	Digital government readiness assessment, preparation for a possible "Digital Pakistan" lending operation	3	Country Specific	Upcoming Activity	Upcoming Activity	\$100,000	Upcoming Activity
	Nigeria: Developing the Digital Economy	Digital government readiness assessment, preparation for a possible "Digital Nigeria" lending operation	3	Country Specific	Upcoming Activity	Upcoming Activity	50,000	Upcoming Activity
	Cybersecurity in Innovative Technologies	Development of a Toolkit	2	Global Knowledge	Jul-18	Jul-20	\$300,000	\$300,000
	Cybersecurity Capacity Building in Africa	Supporting regional cybersecurity maturity assessments and capacity-building activities in Africa	2	Country Specific	Jul-18	Jul-20	\$500,000	\$500,000
	Cybersecurity ECA and Asia	Supporting regional cybersecurity maturity assessments and capacity-building activities in Europe, Central Asia, South Asia, and East Asia	2	Country Specific	Jul-18	Jul-20	\$500,000	\$500,000
	Cybersecurity Issues in public utilities	Assess, advocate, and build capacity on cybersecurity threats in countries that are particularly vulnerable with regards to their energy sectors	3	Global Knowledge	Upcoming activity	Upcoming activity	\$200,000	Upcoming activity

Window	Activity	Description	Year	Scope	Start Date	Closing Date	TOTAL Allocation	Remaining balance *as of Sept 2018
	Innovative Business Models for expanding Fiber-Optic Networks and Closing the Access Gaps	Lessons learned and new models for fiber optic network deployment	1	Global Knowledge	Feb-17	Dec-18	\$360,000	\$23,858.45
	ECOWAS: Regulatory Watch Initiative	Monitoring of progress and competition in the ICT sector in West Africa	1	Country Specific	Feb-17	Nov-19	\$250,000	\$5,788.53
	Telling Malawi's Digital Story	Impact assessment of the Regional Communications Infrastructure Program and economic analysis of the planned Digital Malawi investment lending project	1	Country Specific	Feb-17	Jun-18	\$100,000	\$147.99
	Peru: Innovative Use of Spectrum	Policy recommendations on emerging technology, new frequencies, and resourceful regulation on spectrum allocation	1	Country Specific	Feb-17	Sep-18	\$100,000	\$3,484.70
	Jordan: Analysis of PPP options for Broadband and Digital Platforms	Assessment of Jordan's digital readiness, a roadmap for the strategic investments and policy recommendations through suitable reforms	2	Country Specific	Jan-18	May-19	\$200,000	\$50,059.69
	Action Plan for Doubling Broadband Connectivity	Developing an Action Plan for the World Bank's new broadband targets	3	Global Knowledge	Upcoming Activity	Upcoming Activity	\$100,000	Upcoming Activity
	Ethiopia: Telecom sector reform	Advisory work that would cover state-owned enterprise (SOE) reform, specifically on the privatization of Ethio-telecom	3	Country Specific	Upcoming activity	Upcoming activity	\$250,000	Upcoming activity
	East Africa (Kenya, Rwanda, Uganda): Pre-Investment Support for East Africa Single Digital Market	Advisory work to support the Africa Single Digital Market	3	Country Specific	Upcoming activity	Upcoming activity	\$300,000	Upcoming activity
	E-Government Master Toolkit	A toolkit/ questionnaire that intends to incorporate lessons learned on e-Government to assess digital government maturity	1	Global Knowledge	Apr-17	Jun-19	\$340,000	\$138,512.90
	Massive Open Online Course (MOOC) on Digital Dividends	E-learning course on Digital Dividends (EdX Platform)	1	Global Knowledge	Mar-17	Jun-17	\$80,000	\$0.00 *this activity is complete
	Myanmar: Advanced Digital Solutions	Analytical foundations for the proposed Digital Myanmar investment lending project	1	Country Specific	Jan-17	Jun-18	\$150,000	\$15.66
	Cambodia: Getting Ready for an Increased Use of ICT Enablers in Government Services	Supporting national digital strategy work in Cambodia	2	Country Specific	Aug-18	Jun-19	\$100,000	\$100,000
	Digital CASA Kyrgyz Republic: Rapid Assistance to Support Digital Government Lending Projects	Analytical and assessment work on digital government in Central Asia	2	Country Specific	Jan-18	Dec-18	\$100,000	\$61,147.95

Window	Activity	Description	Year	Scope	Start Date	Closing Date	TOTAL Allocation	Remaining balance *as of Sept 2018
	Vietnam: Digital Government Implementation of Cloud-Based G2C Services	Digital Government Assessment, policy advice, and recommendations for maximizing digital transformation (investments, services, cloud technology, etc.)	2	Country Specific	Jan-18	Dec-18	\$100,000	\$24,677.04
	Vietnam Cloud: Computing Readiness Assessment	Cloud computing readiness assessment that will lead to the preparation of cloud computing investment	3	Country Specific	Upcoming activity	Upcoming activity	\$150,000	Upcoming activity
	Sri-Lanka: Digital Government Readiness Assessment	Assess the current state of digital government and cloud computing readiness to prepare for future investments	3	Country Specific	Upcoming activity	Upcoming activity	\$100,000	Upcoming activity
	Better Data for Smarter Transport	Stocktaking of innovative and cost-effective data driven digital technologies in the area of transport	1	Global Knowledge	Mar-17	Dec-18	\$225,000	\$8,626.46
	Operationalizing Big Data Analytics	Development of relevant models and training for Big Data interventions	1	Global Knowledge	Feb-17	Jun-19	\$75,000	\$0.00 *this activity is complete
	Digital technologies in the Energy Sector: Assessment Methodology	Study/recommendation on how countries can better prepare to leverage the transformative potential of disruptive technologies (IoT, Blockchain, big data analytics, etc.) with specific focus on the energy sector	2	Global Knowledge	Feb-18	Jun-19	\$200,000	\$107,286.37
	Peru: Spectrum Analytics - Connected Roads Pilot	This pilot will utilize existing satellite tech to model an IoT usage case related to road asset management and monitoring of rural roads that could be supported by fiber or mobile broadband once terrestrial infrastructure is deployed	2	Country Specific	Jan-18	Dec-18	\$200,000	\$176,025.59
	Autonomous Ariel Systems in Tanzania	Enabling cargo drones to alleviate transportation supply chain burdens around Lake Victoria	2	Country Specific	Jul-18	Aug-19	\$500,000	\$351,000
	Developing an Economic Framework Applying Digital Technologies to Agriculture	Assess how digital technologies can support efficiency, equity, and sustainability of agricultural transformations. Identify policies and instruments to mitigate risks	3	Global Knowledge	Upcoming activity	Upcoming activity	\$400,000	Upcoming activity
	South Asia - Data-driven digital skills development strategies	The activity aims to develop an analytical framework for skills tracking and planning, capacity building for data analytics, improved job/skills matching, improved availability and capacity of data for decision making and education resources planning	3	Country Specific	Upcoming activity	Upcoming activity	\$200,000	Upcoming activity

DDP Partners

Denmark



Digital technologies are enablers, drivers and accelerators of sustainable development and growth. The exponential spread of digital technologies is already improving societies and people's lives and holds the potential for us to accelerate the implementation of the SDGs. Digitalisation is a new cross-cutting tool in Danish development cooperation and together with DDP we seek to contribute to bridging the digital divides and harness the digital dividends in developing countries.

Finland



The ongoing digital revolution is fundamentally changing the world we live in and will provide new opportunities to enhance development and the achievement of the SDGs. DDP strengthens Finland's long-term commitment to enhance development of information societies and innovation capacities in partner countries.

GSMA



Digitalization is revolutionizing the way entire sectors operate and has the power to transform communities and people's futures. In many markets, mobile networks are the most widespread and reliable infrastructure to deliver digital services, so mobile is a key enabler in connecting populations and driving economic growth. On behalf of the mobile industry, the GSMA is proud to be part of DDP and believes that the framework it provides for public-private sector partnership has the potential to deliver substantial change for good.

Japan



Cyberspace is a place in which intellectual property, such as technological innovations and new business models can be created, and will continue to serve as a platform for sustainable development of economic society. The security of cyberspace, which serves as the foundation of economic society, must be ensured, and at the same time, its autonomously sustained evolution and development has to be ensured in order to achieve sustainable progress and wealth to society. Japan will continue to actively contribute to DDP so as to promote cybersecurity capacity building for developing countries.

Korea



Digitalization possesses the potential to benefit people's way of life with digital technologies. On the other hand, rapid development of technology also has risks of widening the digital divide. The Digital Development Partnership has been helping to bridge such digital divide between countries. Korea, as a partner of DDP, will stand by the World Bank and keep working together to maximize benefits and reduce risks of digitalization.

Microsoft Corporation



The Digital Development Partnership teams Microsoft (and others) with the World Bank to help operationalize the 2016 WDR on Digital Dividends, by bringing public and private sector partners together to catalyze support to developing countries and emerging economies with digital development strategies and plans. Entirely consistent with the mission “To empower every person and every organization on the planet to achieve more”, Microsoft supports DDP efforts to empower countries by ensuring an Enabling Environment for Digital Development by advancing technology adoption and accelerating digital transformation, enabling them to achieve digital dividends for all their constituents.

United Kingdom



Digital technologies have the potential to revolutionize the lives of the poor, unlock development and prosperity, and accelerate progress towards the UN Sustainable Development Goals. Currently, significant barriers stand in the way of realizing the full potential of digital development, including the lack of access to the internet, exposing the most vulnerable and marginalized to the risk of being left behind. The UK will work to reduce these digital divides by enabling secure and inclusive access to the growth and prosperity promised by digital development. Our partnership with DDP will support the delivery of our digital development and cybersecurity strategies.

Abbreviations and Acronyms

AI	Artificial Intelligence
AMs	(World Bank - IMF) Annual Meetings
CERT	Computer Emergency Response Team
DDP	Digital Development Partnership
DECA	Digital Economy Country Assessment
DEC	(World Bank) Development Economics Research Group
ECOWAS	Economic Community of West African States
FY	Fiscal Year (FY18: July 2017-June 2018; FY19: July 2018-June 2019)
GP	(World Bank) Global Practice
ICT	Information and Communications Technology
ICT4D	Information and Communication Technologies for Development
IFC	(World Bank Group's) International Finance Corporation
IoT	Internet of Things
ISP	Internet Service Provider
MOOC	Massive Open Online Course
PPP	Public-Private Partnership
RCIP	Regional Communications Infrastructure Program
RWI	Regulatory Watch Initiative
SDG	(UN) Sustainable Development Goals
SME	Small and Medium Sized Enterprise
TA	Technical Assistance
TMT	(IFC's) Technology, Media and Telecommunications team
WEF	World Economic Forum
WB	World Bank
WBG	World Bank Group
WDR	World Development Report



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