



Donor Organizations & the Principles for Digital Development: A Landscape Assessment and Gap Analysis

Donor Organizations & the Principles for Digital Development: A Landscape Assessment and Gap Analysis

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on behalf of DIAL and the Principles for Digital Development

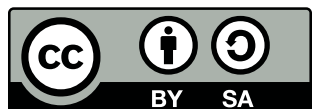
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Executive Summary

This study engages with a comprehensive spectrum of stakeholders within the development and aid sectors around the role of digital, and the ideals that guide that role. The Principles for Digital Development,¹ stewarded by Digital Impact Alliance,² and the community of endorsers present a key forum for guiding best practice in digital development. The report introduces the context with a brief overview of existing donor policies and strategic plans and an analysis of how they align with the Principles for Digital Development. Analysis from 41 interview respondents, primarily with donors active in digital development, informs a series of actions for community consideration. Through consultation with key actors and a thorough review of relevant documents and resources, this study identifies opportunities to enhance the knowledge of donors and improve their practice with regard to achieving their goals in a digital world. This culminates in a series of focused recommendations for addressing the needs of donors. Additional analysis of existing resources relevant to donors and the Principles for Digital Development is covered within the appendices.

The study further demonstrates how the Digital Principles can be adapted to serve as a roadmap for achieving donors' digital strategies, exploring how the internal processes of donor organizations can be enhanced to improve desired outcomes in technology-based development programs. The Digital Impact Alliance has a crucial role in supporting the coordination between donors and implementers through a coordinated understanding of the Digital Principles. The present review and analysis of current practice can inform future efforts and resources, with a pragmatic view to the requirements of donor organizations and their approach to digital development.

The recommendations for donors, for the wider Digital Principles community, and the Digital Impact Alliance fall into four distinct categories:

1. Shape and promote existing resource materials

- Raise awareness for existing resource materials
- Increase usability and discoverability of existing resources
- Adapt key resources to more languages

2. Iterate on and shape the Principles for Digital Development

- Assess the positioning of 'open content' and 'open access'
- Link to the Sustainable Development Goals

3. Support the release of materials, and curate and develop new materials where needed

- Work with donors to release more existing internal resources for wider use
- Consider development of additional case studies and sectoral guides
- Curate evidence for the Principles for Digital Development
- Determine what specialized resources are needed and support their development
- Collaborate with organizations that have shared goals

4. Undertake design experiments to determine what the community needs, including

- Facilitate special interest groups
- Deliberately seek out specific audiences
- Trial a shared help desk
- Trial a professional development program
- Stewarding global public goods through a register of programs and resources

These recommendations capture the views of donors and implementing partners around their engagement with the Principles for Digital Development, and bring their wisdom to bear on the challenges they face corporately.

¹ <https://digitalprinciples.org/>

² <https://digitalimpactalliance.org/>



Introduction

Digital, agile and open approaches play a central role in international cooperation and development. Supported by the United Nations (UN) Foundation and a number of donors, the Digital Impact Alliance is stewarding the Principles for Digital Development³ (Digital Principles) to ensure that digital development approaches are as effective as possible.

The intended outcome of this assessment is to better understand current capacity within donor organizations and provide recommendations on how their development impact can be improved through the more effective use of technology and digital methodologies. To do this, it provides an overview of the current landscape, identifies existing gaps, and surveys current practices in digital development that are already being implemented by donor organizations. It identifies donor processes, knowledge and expertise regarding the Digital Principles. In this, it highlights successes that have been achieved to-date by donor organizations and identifies the areas of knowledge and practice that still need to be addressed or can be improved upon.

In addition to exploring ideas and views about the Digital Principles, the study also considers how they can be embedded and effectively operationalized. It points to further research and resources so that stakeholders can easily access relevant materials, as well as to continue to engage with the Digital Principles as new areas emerge. Finally, the study seeks to inform the development of future resources and tools that are useful, practical, user-friendly and effective for donor organizations. Alongside this, there are four goals that guide the study:

Goal 1. Identify existing knowledge and practice of donors, as well as gaps, vis-à-vis achieving their goals in a digital world

Goal 2. Understand how the internal processes of donor organizations (e.g., procurement processes, internal training, evaluation practices) can be enhanced to improve desired outcomes in technology-based development programs

Goal 3. Identify how the Digital Impact Alliance can best support coordination between donors and implementers/grantees to promote the Principles for Digital Development

Goal 4. Understand how the Principles for Digital Development can be adapted and articulated to serve as a roadmap for achieving donors' digital strategies

³ <https://digitalprinciples.org/>

Context: Donor Policies and Strategic Plans

The starting point for this research is a review of the existing policies and strategic plans relevant to the Digital Principles. Across the sector, donor approaches can appear closely aligned with the Digital Principles, which validates the work that has been done to consolidate best practice and articulate it in a manner that reflects the broad agreement of key stakeholders in the sector. The recent “DFID Digital Strategy 2018 to 2020: Doing Development in a Digital World”⁴ explicitly references the Digital Principles, demonstrating the direct impact on their policy. However, there are inevitable challenges that surface from the different sources and sectors from which parallel guidelines emerge, such as the use of language. For example, legal frameworks around data protection regulations naturally bring the language of the legal profession to bear on their articulation. Similarly, best practices in software development appropriately use technical jargon, which expresses similar values to the Digital Principles but in a different idiom.

Donor Policies: Sustainability

Sustainability is a recurring priority in donor guidance, reflecting the influence of the value-for-money agenda on governmental priorities as well as changing priorities in corporate social responsibility toward sustainable futures. The same is true for in the corporate sector. For example, technology designer Qualcomm underscores this in their ‘Sustainability Report’.⁵ From a government perspective, the increased focus on value-for-money metrics in the U.K. and Australia, for example, has led to an increased emphasis on demonstrating the sustainability of programs.

In both the corporate and governmental use of ‘sustainability’, the term is shorthand for communicating the complexity of responsible, long-term and outcome focused use of resources aimed at maximizing impact. Because of this particular context of usage, the concept of sustainability is something of a ‘buzzword’ that reflects a specialized embedded meaning for donors and those to whom they are accountable—for businesses, their investors and for governments, and their taxpayers.

Open Government

An additional domestic driver of governmental donor policies relates to the increased demand for accountability from taxpayers that has led to open government initiatives, particularly around data. The development sector has benefitted from the greater transparency of aid data. While open government initiatives by donor governments relate primarily to their internal operation, this includes spending by aid departments. Depending on how this funding is distributed, open data may or may not fully extend to their programming.

Three of the foreign aid donors whose policies have the greatest impact on openness in digital development are the U.K., U.S., and French governments. While all are affected by the political environment within which policies are made and enforced, the U.K. and France (alongside other E.U. bilateral and multilateral donors) are governed by E.U. guidance as well. Other governments, including recipients of aid, have followed suit, including Kenya’s Open Government platform.⁶ Rwanda Online aims to provide various citizenship services online, including its Irengo platform.⁷ Ghana’s governmental ‘eServices portal’ likewise provides certain open resources. However, this is focused on streamlining basic bureaucratic activities for constituents, rather than providing access to data.⁸ In Tanzania, open data around education and social change has been a catalyst for reform and prompted greater citizen engagement and constituent accountability through the Education Open Data Dashboard and Shule.⁹

Setting for Change

In this climate of apparent donor and government alignment with the Digital Principles, the role of the Digital Impact Alliance is crucial in bringing together key stakeholders and catalyzing change. In the midst of the wide-ranging priorities of donors and implementers, and including the different voices within their organizations, from technical and legal to political and operational, the Digital Impact Alliance convenes a common ground for meaningful exchange. This consultation represents and synthesizes those voices and the dialogue they represent.

4 DFID Digital Strategy 2018 to 2020: Doing Development in a Digital World. Retrieved from <https://www.gov.uk/government/publications/dfid-digital-strategy-2018-to-2020-doing-development-in-a-digital-world>

5 Qualcomm. (2016). 2016 Qualcomm Sustainability Report. Qualcomm. Retrieved from <https://www.qualcomm.com/sustainability>

6 <https://www.opengovpartnership.org/countries/kenya>, <http://www.opendata.go.ke/>

7 www.irembo.gov.rw

8 <http://www.eservices.gov.gh/Government/SitePages/Government-Home.aspx>

9 <http://odimpart.org/case-open-education-information-in-tanzania.html>

1. Findings and Recommendations

These findings synthesize analysis from 41 respondents, primarily semi-structured interviews with donors (such as USAID, DFID, GAC) and donor-like organizations. Through consultation with key actors, the interviews explored awareness and implementation, barriers and enablers, and how the Digital Principles can be supported in the donor space. The annex to this report provides further methodological details.

1.1. Awareness and Implementation of the Principles for Digital Development within Donor Organizations

Awareness of the Digital Principles differed significantly from individual, to program, to organization. Among interviewees, two-thirds were aware of the Digital Principles, but not of the Digital Impact Alliance; conversely, and perhaps surprisingly, a few interviewees were aware of the Digital Impact Alliance, but not the Digital Principles. Few organizations interviewed were aware of both the Digital Principles and the Digital Impact Alliance. It is notable that some individuals within prominent organizations had never heard of the Digital Principles, despite clearly being leading contributors to the sector otherwise. Respondents indicated that this might be due to how donors communicate internally about their endorsement.

Note: We examined the prevalence of the Digital Principles with regard to sectors in case studies (Appendix 4) and formal research (Appendix 5). In both areas, health was most prevalent, leading by a significant margin. Poorly represented sectors include governance, environment, energy, and gender. The educational sector has some representation in case studies, but none in formal research. In this report, we will thus use ‘health’ to represent a sector with high prevalence of the Digital Principles, ‘education’ and ‘agriculture’ as a sector where case studies are available but little rigorous work (in relation to the Digital Principles), and ‘governance, environment and gender’ as sectors with low prevalence of the Digital Principles. We also occasionally include ‘financial technology’, as we conducted an interview in this area (Mastercard Foundation).

1.2. Practice-related Barriers and Enablers to Implementing the Principles for Digital Development

In addition to the challenges in getting potential endorsers fully on board with the Digital Principles, further barriers emerged in the interviews regarding implementation. Some of these challenges were between donors and grantees, but some were within donor organizations, e.g., around monitoring the implementation of the Digital Principles in their programs. Competing priorities around development programming and the capacity challenges in addressing multiple priorities was raised as a barrier to implementation.

Tensions Between Funders and Implementers

Defining strategies and priorities can be the responsibility of country units and regional departments in some donor organizations that have a highly distributed model of program management (e.g., Formin and Agence Française de Développement). This can make it highly challenging to implement a specific strategy or set of guidelines, with a focus on digital or otherwise, that needs to be taken on board across all units. For example, Formin relies on networks, conversations between people, and advisors. It also has to be recognized that development is about collaboration and partnerships. For example, M. Trucano (World Bank) notes that the World Bank, as an organization, is increasingly “open by default”, with notable exceptions pertaining to issues related to personal information; security and safety; attorney-client privilege; and other issues detailed in the Bank’s Access to Information Policy.¹⁰ Since 2012, the Bank has instituted an Open Access Policy for all of its research, making its content available under a Creative Commons license¹¹ and making data available through an open data portal.¹² G. Prié (Agence Française de Développement) notes that where funding is given to members as a loan, AfD cannot unilaterally impose its operating standards, but needs to ‘Design with the User’ on a case-by-case basis.

¹⁰ <http://documents.worldbank.org/curated/en/391361468161959342/The-World-Bank-policy-on-access-to-information>

¹¹ <http://www.worldbank.org/en/news/press-release/2012/04/10/world-bank-announces-open-access-policy-for-research-and-knowledge-launches-open-knowledge-repository>

¹² <https://data.worldbank.org>



The need to work more collaboratively resonates with *From Principles to Practice*,¹³ which exhorts donors to “complement internal digital development strategies with an external strategy that lays out a vision for development implementers, and aligns with that of other global development donors” and to “adapt procurement processes to enable integration of best practice” (p. 69). Indeed, some organizations feel that they are constrained by how donors offer funding, and by donor requirements that take little note of the Digital Principles. Defining the appropriate use of—and target for—the Digital Principles appeared to be challenging for interviewees to unpack. A. Waugaman (USAID) notes that the Digital Principles were initially meant for implementers and not

donors, indicating that work with donors is needed. This tension in the target audience of the Digital Principles was also addressed by J. Hellström (Sida), who warned that some see the Digital Principles as only beneficiary-facing rather than also concerning program operation and logistics and “day-to-day use in all programs”.

Other limitations of conveying the Digital Principles between donors and implementers can include the digital literacy of staff members, lack of well-presented good practice examples, and not looking beyond their own project (L. Gimpel, C. Gmelin, GIZ). Interviewees suggested that donors should require principles at a higher level, but leave enough room for interpretation for the implementer (J. Khan, Palladium Group) which presents a discrepancy between donor perception of the Digital Principles and their intention. An implementer restated this from his perspective: “It is good for implementers to know about the Digital Principles, and the donors encourage that, but it can’t be a burden; this won’t improve our impact on the ground in an obvious way” (M. N’Doungo, Markaz Atarbiya Talibe). Regarding operationalizing this approach, Development Alternatives Incorporated suggested a decentralized approach within donor organizations with an aligned communication strategy and engagement at the field level (K. Baptista, V. Anand, Development Alternatives Incorporated).

ACTIONS FOR COMMUNITY CONSIDERATION

- 1 | Clarify the actionable and operational steps to applying the Principles for Digital Development across sectors, e.g., through guiding questions and specific case studies on the implementation of the Principles for Digital Development (within donor organizations).
- 2 | Provide and promote clarity around the role of the private sector in the Digital Principles. For example, determine where proprietary software¹⁴ can be mandated and where open-source plays an important role in scaling and sustaining programs.

¹³ Waugaman (2016). *From Principles to Practice*. Retrieved from https://digitalprinciples.org/wp-content/uploads/From_Principle_to_Practice_v5.pdf

¹⁴ Useful proprietary software could include Google Apps for Education. One could argue that more and more organizations are switching to Google Apps, and it is may be counterproductive to expect a ministry to run their own email server when Google Apps for Education is free and offers facilities that will integrate with mobile devices too. On the other hand, there are many open source solutions for health, management and information systems, learning systems, etc., that it would seem counterproductive to employ a proprietary solution. Similarly, there are areas that are strongly backed by evidence for cost-savings, such as open data and open textbooks; here a role for a commercial provider would be to provide a service to produce the data and textbooks, but with the outputs released under an open license (and in editable formats).



Measuring the Impact of the Principles for Digital Development in Practice

Donors consulted reported that while certain Digital Principles are easily actionable (such as human-centered design, open source and open licensing), others are more difficult to action (such as scale and sustainability). Tableau, Agence Française de Développement, and Gates Foundation said that they did not have any measured indicators that were specifically associated with the Digital Principles. As T. Wood (Gates Foundation) described, “program-facing Theories of Change are too diverse and as such are not anchored to any single philosophy or approach to modeling change in the [Informations and Communications Technology] (ICT) space”. Many interviewees agreed that metrics and Theories of Change need to be country-

driven to respond to local context. K. Lähde (Saliens Ltd), for example, highlighted that in the Formin programs she has been involved in, each project has their own results matrix with no overarching guidance for digital. While there is clearly an opportunity for the Digital Principles to inform theoretical frameworks and Theories of Change for partners as they plan their programming, a greater degree of consistency should be attained through workshops, practicums, and face-to-face implementation support. With such a broad international audience, the Digital Principles are bound to be interpreted inconsistently without hands-on support. Given the range of interpretations and the diversity of digital issues the Digital Principles address, active engagement with partners at the point of implementation is key to ensuring the Digital Principles and the accompanying lifecycle guidelines are well understood and utilized.

ACTIONS FOR COMMUNITY CONSIDERATION

- 1 | While it would be difficult and perhaps not productive to associate specific metrics directly with the Principles for Digital Development, it may be possible to map existing indicators onto the Principles for Digital Development and create proxy-indicators in this way. These would not be universal, but they would give insight into how different organizations related concrete program indicators to higher level concerns.¹⁵
- 2 | Promote the existing lifecycle guidance for each Digital Principle more prominently on the website, in workshops, and conferences to ensure that all endorsers are aware of them.
- 3 | The Digital Principles lifecycle guidance is thorough but written in the form of instructions, which may not appeal to donors who favor co-design. It may be helpful to augment the lifecycle guidance with questions for reflection to stimulate ‘out of the box’ thinking.

Advances and Challenges in Implementing Different Principles for Digital Development

The interviews found some Digital Principles more challenging to implement than others, as detailed in the sections below. Additionally, interviewees prioritized some Digital Principles over others, such as K. Baher (Mubadarat Atadrib), who argued that while the ‘Address Privacy and Security’ Digital Principle and ‘Design with the User’ Digital Principle are essential in his context, others are not a priority.

¹⁵ This problem is not unique to the Digital Principles, but for example is also relevant in monitoring the Sustainable Development Goals.

Reflecting on her work for HDIF, K. Lähde (Saliens Ltd) described the easiest Digital Principles to gain buy-in for and implement as the ones she termed ‘people-driven’: ‘Design with the User’, ‘Be Collaborative’, and ‘Understand the Existing Ecosystem’. She viewed the most difficult Digital Principles to gain buy-in for and implement as: ‘Address Privacy and Security’,¹⁶ ‘Use Open Standards, Open Data, Open Source and Open Innovation’, and ‘Be Data Driven’, which in her experience were more disconcerting to field level stakeholders.

For ‘Design with the User’, most organizations found that this was already a focus for them even if they were not already aware of the Digital Principles. There were no consistent problems outlined with this principle, although R. Tibbles (Learning Equality) recommends a further distinction be made between iterative and participatory design.

The notion of scale in the ‘Design for Scale’ principle was interpreted differently by different individuals. Donors expressed concern regarding what scale means in this context as there are many pathways to scale. In addition, interviewees noted barriers to scale that made this principle difficult to implement, such as the complexity of working in different contexts and environments (anonymous; J. Strecker, UNHCR). Capacity building is needed where governments do not have the capacity to scale digital solutions and the lack of country-wide coordination as big inhibitors to scale (anonymous). J. Strecker (UNHCR) also notes that there is an “ongoing tension between wanting to scale out initiatives and waiting to see the impact, and being able to do iterative change to respond to the need on the group”.

Donor organizations also highlighted specific challenges regarding the Digital Principles ‘Be Data Driven’. An example is Sida, which currently does not have a clear related data strategy. Data may also be siloed because funding is siloed (anonymous), and there is a case for data sharing and collaboration to be added to this Digital Principle to make it more robust. Likewise, the interoperability and fragmentation of data poses significant problems (F. Ben Abda, African Development Bank). Others worried that this principle was too simplistic and may create an over-dependence on quantitative data (Z. Rahman, The Engine Room).

The Digital Principle that garnered the strongest reactions from respondents was ‘Use Open Standards, Open Data, Open Source, and Open Innovation’, which proved to be highly politicized from both donor organizations as well as implementation teams. As M. Trucano (World Bank) noted: “openness [is] fundamentally at odds with how many people operate”. Current practice included Enabel’s document management system that is open source and their use of open data in refugee camps in the field. B. Cornille (Enabel) noted that the biggest challenge that remained for the implementation of this Digital Principle was changing the habits of staff. Further, an interviewee who requested to remain anonymous mentions that ‘open government’ and ‘digital development’ can seem to be at odds when they are not developed in parallel, because the capacity of NGOs can quickly outstrip government digital capacity, creating a tension or antagonism, and undermining the role of government in providing certain services. D. Rosen (Centers for Disease Control and Prevention) described the additional challenge of open systems taking longer to build and socialize than the 2 to 4 years of average contracts on the funder and local government side. A further concern was regarding the support for grantees to purchase licenses and, in particular, a potential disconnect between goals around advancing digital literacy and capacity and a desire to use only open source software (anonymous).

For ‘Address Privacy and Security’, in some domains more robust regulations on data privacy are driving the approaches of donors and implementers, particularly the E.U. General Data Protection Regulation (GDPR)—touted as the “most important change in data privacy regulation in 20 years”.¹⁷ For this principle to be implemented and bought-in by implementing staff, foundational knowledge is first needed regarding its precise meaning (anonymous). K. Baptista and V. Anand (Development Alternatives Incorporated) argue that the wording of this Digital Principle needs updating to keep pace with developments in security, particularly in relation to the privacy of social media data. K. Lähde (Saliens Ltd) also recognized the requirement of ensuring that when individual information is being documented and housed, special consideration needs to go into ensuring that users understand informed consent and what their permission really means and translates to.

¹⁶ The exceptions to this were perhaps European organizations, which are focusing on the E.U. General Data Protection Regulation, c.f. below.

¹⁷ <http://www.eugdpr.com>



There appeared to be a consistent commitment on the part of donors to implement the Digital Principle 'Be Collaborative'. Interviewees noted their organizational priority of knowledge and learning dissemination and wanted to engage in better collaborative processes with other donor organizations. At the same time, very few donor documents (with the exception of the World Bank) are currently Creative Commons-licensed (as suggested by 'Be Collaborative').

More widely, respondents were asked what might be missing from the Digital Principles or what could have higher profile. For example, 'open content' does not appear in the 'open' Digital Principle, but it is strongly suggested when working with disconnected communities (R. Tibbles, Learning

Equality) and is thus related to access for the most marginalized. The Digital Principles do not foreground equity around gender, disabilities, or socio-economic status, which could be emphasized as a cross-cutting theme or potentially shaped into a separate Digital Principle as recommended by K. Lähde (Saliens Ltd). Ethical considerations may also need to be foregrounded (Z. Rahman, The Engine Room), for example by making explicit links to the Responsible Data Principles¹⁸ and ethical standards.¹⁹

Further, the idea of graceful degradation was raised by an interviewee who requested to remain anonymous, which is linked to progressive enhancement²⁰ and iterative ways of working. Some respondents reflected on the need for an 'educational lens' on the Digital Principles, which makes them easier to apply to education (M. Ehlers, UNEVOC), and that the area of teacher education needs more focus (R. Tibbles, Learning Equality). Finally, the environmental impact of devices also needs to be considered and addressed (A. Baker, Qualcomm CSR).

ACTIONS FOR COMMUNITY CONSIDERATION

- 1 | Facilitate the sharing of data and cooperation between donor organizations so that they may be more likely to run joint open data projects.
- 2 | Explore whether the Principles for Digital Development-community could be a focal point for open data projects, utilizing and evolving shared frameworks.²¹

¹⁸ On 'Responsible Data', also see Appendix 3, and these resources: What is Responsible Data? <https://responsibledata.io/what-is-responsible-data/>; The Responsible Data Handbook, <https://responsibledata.io/resources/handbook/>.

¹⁹ E.g. the ICT4D draft standards, <https://ictethics.wordpress.com/>. Examples of more specific guidelines, e.g. 'The British Education Research Association guidelines and charter', <https://www.bera.ac.uk/researchers-resources/resources-for-researchers>, are often framed quite broadly, and would thus be helpful for broader audiences.

²⁰ https://www.w3.org/wiki/Graceful_degradation_versus_progressive_enhancement

²¹ What we envisage here is that the Digital Impact Alliance could play a light convening role, identifying a community leader (such as a particular donor), who could work with other donors in establishing frameworks. The role of the Digital Impact Alliance would not be to contribute expertise, but guide this overall process, learn from it, and apply it to similar processes in other areas.



1.3. Supporting the Implementation of the Principles for Digital Development

Capacity Building

Respondents were clear that organizations approach capacity building and professional development at headquarters and field levels in very different ways. In most organizations, there are clear staff development programs (including onboarding processes), but naturally, this does not extend to contractors or implementers. For staff professional development, donor organizations varied in the integration of ‘digital development’ in their internal processes. In order to bridge capacity gaps across donor organizations and implementing bodies, interviewees emphasized the importance of developing appropriate tools and resources. These included investments in software as a global good (anonymous).

ACTIONS FOR COMMUNITY CONSIDERATION

- 1 | Create resources with donor organizations to support and scaffold professional development to build donor and implementer capacity.
- 2 | Developing a set of self-study materials covering all Principles for Digital Development, linking to existing resources for deepening engagement.²²
- 3 | Engage with organizational learning centers and embed the Principles for Digital Development in existing programs to scale within the organizations.²³

²² Such a set of self-study materials would be different from existing guidance and other resources. The materials would follow an explicit program of study, including reading, individual activities and —of course—practical activities to be explored with colleagues. For example, this could include: “At a suitable moment, make time for a discussion with colleagues, and discuss your project’s / organization’s definition of scale”. This set of self-study materials could be built on the basis of the existing resources but would frame them in a self-study format. If such a set of self-study materials is built carefully, it could also be adapted by workshop leaders and for wider professional development. The set of self-study materials mentioned in the previous point could be co-developed with organizational learning centers.

²³ Especially if the above set of self-study materials were co-developed with organizational learning centers, the staff involved would already be considering how the set could be embedded in the organizational professional development programs. This could be as part of a separate offer, such as “An introduction to the Principles for Digital Development”. However, it would also be advantageous to embed aspects of the program more organically throughout other relevant organizational professional development programs. E.g., a course on “Collecting and managing quantitative data” could refer to the relevant Digital Principles.



Some donor organizations, such as Agence Française de Développement, did explain that they are currently building digital training for colleagues at both headquarters and field levels for how to manage, finance and identify digital projects, but they also noted that capacity building at the implementation level is primarily the responsibility of the implementing organizations. A similar sentiment was expressed by most other organizations even though in practice specialist skills (e.g., around the Digital Principles) are hard to find in the market. Respondents also felt that the digital literacy and complex competencies needed from system actors to accurately employ the Digital Principles is rarely present. Overall, donor organization respondents working at the

field level were keen to have more professional development materials on digital development that could easily be contextualized for their environment. This could include a self-study set of materials that are concise and simplified for each Digital Principle, potentially with “layers built into the material” to deepen the engagement over time (K. Lähde, Saliens Ltd).

Examples of professional development systems within donor organizations include GIZ’s Digital Gateway. This aims at building a community of practice “where we will establish a group to discuss experiences and lessons learned when working with the Digital Principles” (L. Gimpel, C. Gmelin, GIZ). Development Alternatives Incorporated offers training events, and also works through a decentralized model with regional champions and local groups that utilize social media (K. Baptista, V. Anand, Development Alternatives Incorporated). The British Council has a center of excellence that is widely used by staff but is not mandatory for them to use. Enabel has developed ‘Digitalks’ that present relevant interventions and invite partner organizations to attend, which they also stream on Facebook. Mastercard Foundation has a strategy and learning team that combines their monitoring, evaluation and organizational learning strategy. UNHCR has the Global Learning Centre with online and blended learning programs. Similarly, DFID hosts practical workshops with staff, where they work through case studies in teams and “engage with principles beyond how they would from merely reading” (F. Sibbet, DFID). Within these learning opportunities, digital practices are integrated and promoted in a range of ways. Further examples can be seen in Appendix 3.

Resources and Tools to Bridge Capacity Gaps

Overall, there is no shortage of information and examples pertaining to the Digital Principles, but they are not discoverable enough, they do not “get to people at the right time” and can be “lost in a big sea” of information (M. Trucano, World Bank). Documents are often hard to track down even within organizations (B. Grubb, UNICEF), and there are certain areas where specialist experience is required to be able to find appropriate resources and use them effectively. This can result in project implementation failures even when donors and implementers are willing to learn and emphasize overall approaches in line with the Digital Principles. Current Digital Principles-related products are broad by design. However, how these approaches apply to specific verticals, such as financial inclusion (M. Wensley, Mastercard Foundation), should be considered.²⁴ Respondents raised the importance of interactive tools that help colleagues to understand and apply the Digital Principles, particularly those who are not experts in Information and Communication Technologies for Development (ICT4D) or do not have the required highly-specialized technological skills (L. Gimpel, C. Gmelin, GIZ). Respondents broadly agreed that their donor organizations would benefit from targeted content including training manuals, how-to guides and materials. Such materials would both increase digital literacy in an accessible and relevant way, as well as address specific issues that require highly-specialized inputs.

²⁴ At present, a specific set of ‘Principles for Digital Development in Health’ is being developed at USAID by A. Waugaman. These new principles are built directly from the existing Principles for Digital Development but tailors them to (1) the donor context, and (2) digital health. It seems advantageous to do this for other verticals as well, such as agriculture, education, financial inclusion, environment, gender, etc.

It is important to consider which audiences could benefit from these materials. For example, several respondents noted that involving governments early on is critical (A. Baker, Qualcomm), as is equipping civil servants to operate in post-war, post-crisis contexts (J. Strecker, UNHCR). It was also noted that Digital Principles-related documents would ideally be available in all official languages, including French for use in Canada (I. Roy, GAC).

ACTIONS FOR COMMUNITY CONSIDERATION

- 1 | Highlight existing case studies and develop more case studies to draw attention to projects that have been guided by the Principles for Digital Development, as well as quick reference guides paying attention to language and keeping resources jargon-free.
- 2 | Translate the Principles for Digital Development into additional languages (beyond English, French, Spanish). Consult the donor community and consider Chinese and Portuguese as next additional translations.²⁵
- 3 | Make the links between the Principles for Digital Development and the Sustainable Development Goals explicit in order to gain additional support across donor organizations.
- 4 | Offer highly specialized tools specifically in areas where organizations lack capacity.²⁶
- 5 | Include verticals and sectors which have not engaged with the Principles for Digital Development thus far (e.g., environment, gender, financial inclusion, etc.).
- 6 | Add a set of questions to each Principle for Digital Development to guide donors, program managers, and implementers, supporting the development of requests for proposals, program design and evaluation.²⁷

Sharing Information and Content

It was also raised that having a detailed landscape of different initiatives across the ecosystem would be helpful. Clearly, this is a moving target, with much information residing within the community rather than being made explicit. However, having a broader sense of who is acting where and in what context, as well as having accessible networks that individuals who are seeking information can easily connect to would be extremely valuable (J. Strecker, UNHCR).

Like the need to share information, there is a significant need to share content, as well as information about planned content.

Respondents highlighted the following concerns regarding content:

- There is a lot of content, but it is locked inside of institutions. It appears as if only a minority of content is available publicly
- Even where content is available publicly, it is usually difficult to discover
- Even where content is discovered, it is not licensed for reuse and is not available in editable formats whereby staff can contextualize it for their needs and build on what is available, adding their own expertise to then share with the wider community

²⁵ While the determination of languages was not part of this study, we do have two suggestions. Asian donors were suggested for further engagement, and we suggest Chinese as a candidate. Further, there are fewer materials available for Portuguese-speaking countries in sub-Saharan Africa, and so we also suggest Portuguese as a candidate.

²⁶ C.f. Appendix 8.

²⁷ Some interviewee stated that they found the interview questions used for this report useful in this way.

There was an overall sentiment that content sharing is desirable and that the sector “could do better” with regard to publicly sharing available content (A. Baker, Qualcomm CSR). However, the details of how we share content need to be such that content is curated, discoverable and related to evidence (T. Zebroff, DFID), acknowledging that those most in need may find uncured information unhelpful (E. Gremley, British Council).

In this, it is important to emphasize the value of information sharing, of opening up content. Donors may have the authority to push on this, and to identify this as an ideal to stand behind, including retroactively opening up existing content (J. Strecker, UNHCR).

ACTIONS FOR COMMUNITY CONSIDERATION

- 1 | Trial a projects and global public goods register, that provides information about projects (including their country of operation, funding, etc.) and the global public goods they use, produce or intend to produce.²⁸
- 2 | Develop a scorecard on turning goods into global public goods, starting with content and publishing processes, ensuring goods intended to be public goods actually become public. This would include the use of open licensing and the publishing of editable documents.²⁹
- 3 | Create a list of open source software,³⁰ that includes both general and specialized software with proven effectiveness in the field.³¹
- 4 | Start a web page on digitalprinciples.org with high-value and free tools that solve specific problems of practice, such as Google Apps for Education, which provides a solution to institutional email availability.
- 5 | Provide access to assets within the projects and global public goods register in conjunction with the scorecards as well as through common questions. The platform could trial approaches such as collaborative filtering and text mining in order to provide access to short, relevant, and up-to-date information when it is needed.

Coordination and Cross-sector Learning

It is clear that many donors are keen to pursue partnerships and shared learning in the area of donor digital capacity. This is particularly in response to digital often falling through the cracks between sectors (anonymous), and in order to avoid overlap in activities and duplication of effort (K. Lähde, Saliens Ltd). Collaborative learning across donor organizations is taking place but the Digital Principles can provide a more targeted approach to ensure this is happening consistently, effectively and in a formalized manner.

Respondents noted that it is valuable to have a space in which broader cross-sector conversation can take place. This enables a space for reflection on common challenges and possible solutions, the potential to support one another and build competencies, and the opportunity to engage with guidance like the Digital Principles. In the interviews, there were mixed views about the forum,³² which might suggest that alternative routes for donor communication could be taken, such as quarterly emails, or discussion within a forum that is already used by donors. As part of this coordination, interviewees noted that it might be helpful to engage other communities that do not consider their work to be related to digital development. However, it was also noted that this might present specific challenges, such as how best to engage in conversation with these communities and communicate what has been learned. (M. Wensley, Mastercard Foundation). Similarly, several respondents noted

²⁸ As a design experiment, this could be easily trialed using existing platforms, e.g., <https://www.globalinnovationexchange.org>, or (with focus on document publishing) zenodo.org.

²⁹ Such a ‘publication scorecard’ would enable a non-specialist to identify best-practice aspects in the publishing of global public goods, such as the use of Creative Commons and Digital Object Identifiers (see <http://bjohas.de/go/publishing-gpgs>). Another tool would be a bandwidth check for web pages.

³⁰ Or add to existing pages such as <https://digitalprinciples.org/resource/use-open-data-open-standards-open-source-and-open-innovation-tools/>.

³¹ This could include applications relevant across sectors. For example, OpenOffice / LibreOffice is not as widely known as it could be. Other open source applications are beneficial, but not widely known outside specific sectors, e.g., Zotero for reference management. A list of relevant open source software could be developed in conjunction with the DIAL Open Source Centre. <https://digitalimpactalliance.org/what-we-do/dial-open-source-center/>, <http://www.osc.dial.community/>.

³² <https://forum.digitalprinciples.org>



the importance of engaging the government in countries that receive aid, and the importance of creating local contexts in which dialogue with and across ministry can take place (Anonymous).

As previously noted, it is clear that the Digital Principles are most widely used in certain sectors. There is significant learning that has taken place within those sectors (e.g., health) could now be utilized to instigate positive change in other sectors (A. Waugaman, USAID). Interviewees explained that it might be beneficial to use existing online spaces to facilitate the increased use of the Digital Principles (B. Grubb, UNICEF). Online engagement and discussion should be approached in a structured manner, “oriented around actually creating something, co-developing public good

or options for people to address specific challenges that they have” (J. Strecker, UNHCR). Similarly, others noted the value of producing accessible case studies on how donor organizations have managed to embed the Digital Principles in their work (I. Roy, GAC).

Supportive environments can also be brought about through coordinated advocacy efforts. Interviewees highlighted several areas of support needed with regard to building an environment that enables the active implementation of the Digital Principles. This included the importance of management and political support for the Digital Principles to be able to take root within an organization. Agence Française de Développement, DFID, Enabel and other organizations have each experienced success in incorporating specific digital strategies in wider strategic documents through this approach. Additional factors highlighted include ensuring digital development is embedded across departments and not siloed (M. Trucano, World Bank), assigning an interpreter of the Digital Principles within the organization to work with project managers one-on-one to interpret them for the unique needs of each project (D. Haglund, DFID), ensuring collaboration from the ICT department, if one exists (B. Kumpf, UNDP), and establishing a competency center for digital solutions as shown via the experience of GIZ (L. Gimpel, C. Gmelin, GIZ)

ACTIONS FOR COMMUNITY CONSIDERATION

- 1 | Host a small gathering of thought leaders and explore the nature of future collaboration, which can help those thought leaders to jointly advocate across their own organizations.
- 2 | Facilitate cross-sector community conversations around the Principles for Digital Development, especially between the sector communities that would not otherwise interact.
- 3 | Recognize the widespread use of the Principles for Digital Development in certain sectors (e.g., the health sector) and strategically target new sectors (energy, etc.), building on the good practice which has been established.



2. Recommendations and Conclusions

This study has identified gaps in the knowledge and practice of donors, outlined how the Digital Principles can be adapted to serve as a roadmap and described how donor organizations can improve their outcomes in technology-based development programs. Digital Impact Alliance has a crucial role in supporting the coordination between donors and implementers through a coordinated understanding of the Digital Principles. The present analysis hopes to constructively inform future efforts and resources through the lens of the reality of donor organizations and their approach to and understanding of digital development. We raise the following challenges and opportunities.

Shape and Promote Existing Resource Materials

Recommendation 1: Raise awareness for existing resource materials. This report found that, among the respondents from donor organizations, there is very mixed awareness of Digital Impact Alliance, the Digital Principles, and existing materials (on digitalprinciples.org), even among organizations that have had contact with Digital Impact Alliance or the Digital Principles or are closely aligned with the ideas embodied by the Digital Principles. Donors look to streamline, rather than adopt additional procedures, such as evaluating proposals against new frameworks. This suggests that even if more resources for donors were produced, they would not be immediately taken up by the community. Instead we recommend regular communication with endorsers (including quarterly emails) to draw attention to existing resources and in particular the Digital Principles guidelines.

Recommendation 2: Increase usability and discoverability of existing resources. Respondents also expressed that it is hard to find the right resources at the right time. In order to increase the potential for discovery and reuse of existing documents, good practices for document publication should be followed. For example, all documents should have a suggested citation, including author, title, date and license. Documents should have a Digital Object Identifier (DOI) so that structured metadata can be retrieved. We also recommend that the high-level statement of the Digital Principles and associated guides should be released under Creative Commons Zero or Attribution. For other resources, legal freedom could be increased by dual licensing under adding ShareAlike 3.0/4.0 (for compatibility with Wikipedia and other 3.0 resources). Editable documents (e.g., in Open Document Format) should be published alongside PDF. A public structured library of references should also be maintained

to improve discovery and reuse.³³ Lastly, the Digital Principles community should ensure that all websites meet low-bandwidth design guidelines.³⁴ (C.f. also Design Experiment 5 below.)

Recommendation 3: Adapt key resources to more languages. Donors expressed that core materials in other languages would be useful. We note that Spanish and French are currently being released,³⁵ but were not available before this study. Materials in English are awkward for donors who have other official languages. It is therefore recommended that consultations with the wider community take place to discover what other languages are a priority.³⁶

Iterate and Shape the Principles for Digital Development

Recommendation 4: Assess the positioning of ‘open content’ and ‘open access’. In our discussions, the absence of ‘open content’ from ‘Use Open Standards, Open Data, Open Source, and Open Innovation’ was robustly queried, alongside ‘open access’. Both concepts are highly relevant for specific communities, and in fact, perhaps the most relevant elements for some communities (including education and academia). For example, while the high profile of the Digital Principles in the recent DFID strategy³⁷ is very welcome, the absence of ‘open content’ meant that this high profile appearance was not as helpful to academia as it could have been. We strongly suggest a community discussion to amend the formulation of the Digital Principles.³⁸ If that is not feasible, then we recommend amending the headline description³⁹ of the relevant Digital Principles to include ‘open content’ and ‘open access’.

Recommendation 5: Link to the Sustainable Development Goals. Consider whether existing resources should link better with the Sustainable Development Goals. These are a priority for many funders and highlighting synergies could be helpful, either integrated throughout the current documents for the Digital Principles or as a self-contained document. This may also offer an opportunity to link the idea of monitoring the Principles for Digital Development with the idea of monitoring the Sustainable Development Goals.

Support the Release of Materials, Curate and Develop New Materials Where Needed

Recommendation 6: Work with donors to release more existing internal resources for wider use. While some organizations do have relevant internal materials available or are currently developing them, these are usually not publicly available. The gatekeeper is often an internal center of excellence, and at short notice resources often cannot be made available to users outside the organization. However, some respondents saw no reason why, as part of a longer-term effort, at least some of these resources could not be released for wider use. Respondents also explained that there are many valuable documents within organizations that staff are usually not aware of. A concerted effort, led by the Digital Principles community, could surface such documents as global public goods (see below).

Recommendation 7: Consider development of additional case studies and sectoral guides. It would be helpful to include examples from more sectors, such as financial services and education, in the form of case studies. The Digital Principles community should encourage the sharing of these resources. Also, short ‘sector guides’ from sectors that are currently not well represented would be helpful, e.g., ‘Applying the Principles for Digital Development in Academia’, to ‘unpack’ the Digital Principles more clearly for individuals working in that sector. This would demonstrate the cross-sectoral relevance of the Digital Principles and enable the original promise of cross-sectoral learning.

³³ The open source platform Zotero (www.zotero.org) could be used for this purpose.

³⁴ C.f. Appendix 8.

³⁵ We note that at the time of writing (March 2018), Spanish and French translations are becoming available on digitalprinciples.org.

³⁶ As suggested above, Chinese and Portuguese might be considered as candidates.

³⁷ <https://www.gov.uk/government/publications/dfid-digital-strategy-2018-to-2020-doing-development-in-a-digital-world/dfid-digital-strategy-2018-to-2020-doing-development-in-a-digital-world>

³⁸ This suggestion does also raise the issue of how such amendments are made in agreement with all endorsers.

³⁹ I.e. the opening paragraph on <https://digitalprinciples.org/principle/use-open-standards-open-data-open-source-and-open-innovation/> and <https://digitalprinciples.org/principle/be-collaborative/>. The tenet ‘Document work, results, processes and best practices’ should be amended to include training materials.



Recommendation 8: Curate evidence for the Principles for Digital Development. Evidence for effectiveness is key for donors. While the Digital Principles were derived from real-world implementation, there needs to be ongoing evidence that the Digital Principles are still effective, and highlighting exactly how they are effective. Evidence needs to be brought together, looking at existing projects through the lens of the Digital Principles, and bringing out real-world success stories. Evidence needs to highlight how, and the extent to which, adherence to the Digital Principles is linked to successful results.

Recommendation 9: Determine what specialized resources are needed and support their development. The Digital Principles community has less demand for resources for certain Digital Principles because there has been good progress with implementation already and resources are readily available (e.g., ‘Design with the User’). However, there is a clear need regarding other Digital Principles (e.g., ‘Be Data Driven’, ‘Use Open Standards, Open Data, Open Source, and Open Innovation’). Moreover, some of the Digital Principles require highly specialized (“deep bench”) knowledge, e.g., privacy and open data, or low-bandwidth access to resources. Respondents felt that donor organizations lack such specialized knowledge, but suggested that it would be possible and helpful to develop resources to bridge that gap, such as scorecards and checklists with guidance notes. Such highly specialized resources would be designed to solve specific problems of practice faced by donors and implementers. This could also include the framing of the Digital Principles as probing questions. Such a catalog of probing questions are well evidenced to be effective means of deepening engagement.⁴⁰ Potential resources could be developed for ‘Checking for accessible web design’, ‘Choosing software for monitoring and evaluation’, ‘Licensing my data as open data’, ‘Best practices for sharing documents’ and others.

Recommendation 10: Collaborate with organizations that have shared goals.

It strikes us that there are synergies with selected other organizations, such as

- Creative Commons (on open licensing, ‘Be Collaborative’)
- INASP (reaching out to the High Education community, including both academics, implementers and managers; also on ‘Use Open Standards, Open Data, Open Source, and Open Innovation’)
- Responsible Data⁴¹ (‘Be Data Driven’, ‘Address Privacy and Security’)
- The DIAL Open Source Center⁴² (‘Use Open Standards, Open Data, Open Source, and Open Innovation’)

It would be useful to explore whether closer relations between the Digital Impact Alliance and those organizations could be built, perhaps as ‘stewards of certain Digital Principles’ or as ‘sector stewards’ for certain sectors.

⁴⁰ For examples, see the Index for Inclusion, with some 2,000 questions on inclusive education. Also, see Haßler et al. (2016) for an ICT-focused—albeit much smaller—set of questions.

⁴¹ <https://responsibledata.io/>

⁴² <http://www.osc.dial.community/>

Undertake Design Experiments to Determine What the Community Needs

The recommendations in this section are not for new perpetual activities and services. Instead, they are 'design experiments', which are deliberately designed to trial an activity and service for a limited time enabling conclusions about long-term feasibility to be made.

Design Experiment 1: Facilitate special interest groups. The Digital Principles community and Digital Impact Alliance may be well placed to take on a facilitatory role, bringing communities and special interest groups together around public goods. For example, individuals within large bilateral donors seem to be keen to work together more as a means to reduce overlap and mitigate resource shortages within the organizations. A small exploratory meeting could be facilitated to see whether there is scope for more regular engagement. Conversations should focus on building concrete global public goods rather than remaining general. Such conversations could also consider the creation of enabling environments, guidelines for embedding the Digital Principles in donor strategies, considerations of how to complement internal digital development strategies with an external strategy, and producing shared guidance for procurement processes,⁴³ making decisions around who will support which global public goods, and even exploring joint open data projects or shared indicators. Outside donor organizations, special interest groups could attempt to work across fractions that do not appear to mix, e.g., some sections of the 'open' community. They could also link up different sectors that would not otherwise interact or determine how new sectors can be reached, such as financial technology, environment and gender.

Design Experiment 2: Deliberately seek out specific audiences. It is also clear that there are significant audiences where engagement could be very fruitful, such as Asian donors as well as governments in low-income countries. It may also be helpful to set up spaces within existing forums (such as LinkedIn), to reach audiences that use such platforms but may not have come across digitalprinciples.org.

Design Experiment 3: Trial a shared help desk. As a design experiment, a help desk is set up, through which a team of specialists offers free advice to organizations, by email or phone, and at any stage in their process. The design experiment would also have to determine how such a facility, if deemed helpful, could be funded in the long term.

Design Experiment 4: Trial a professional development program. There are sufficient resources available to construct a professional development program (with e.g., 20-30 study hours). As a design experiment, this could be trialed as a face-to-face program (small group, approximately with 10 to 15 participants), as well as a distance or blended program. This would fit the development program of many organizations well, and further stages could explore how such a program could be integrated with the development programs that already exist (e.g., as part of onboarding).

Design Experiment 5: Trial to steward global public goods through a register of programs and resources. This report⁴⁴ highlights the importance of building the digital development commons and the need for stewards of those global public goods so that they remain available. This report highlighted information about projects as a global good, which needs to be curated and stewarded. This information includes who is doing what, where they are doing it, what digital processes they are using, what resources they are producing, and how public funding results in global public goods. Some of this information is already collected by organizations, but it needs to be shared more widely. Other goods, such as resources, often do not turn into global public goods. As a design experiment, we propose to link existing platforms to produce a "projects and global-goods" register,⁴⁵ which provides information about projects (including countries of operation, funding, etc.), and the global public goods they use or produce (or intend to produce).

⁴³ C.f. recommendations for donors in Waugaman (2016), "From Principle into Practice".

⁴⁴ As well as Waugaman (2016), From Principle into Practice. https://digitalprinciples.org/wp-content/uploads/From_Principle_to_Practice_v5.pdf

⁴⁵ Utilizing existing platforms, such as <https://www.globalinnovationexchange.org>, or (with focus on document publishing) zenodo.org.

Appendices

Appendix 1: Methodology

This section describes the methodology employed in the study.

Guiding Questions

The guiding questions for the landscape assessment are:

Question 1: To what extent have the Digital Principles been successfully implemented? ... in donor organizations (for internal operation)? ... in donor programming?

Question 2: What are the gaps in donor knowledge and practical implementation of the Digital Principles?

Question 3: What are the practice-related barriers to implementing the Digital Principles more broadly within donor organizations and programming (and ensure that the Digital Principles have development impact)?

- a. How effective and efficient are the internal Digital Principles-related processes of donor organizations (within the organization and within programmatic work)?
- b. What are likely effective approaches to implementing the Digital Principles more widely within donors and programming?
- c. What capabilities of the system actors are required to ensure effective and efficient Digital Principles-related processes?

Question 4: How can the capabilities of donors and implementers be supported through engagement around the Digital Principles, ultimately improving development impact?

- a. In regards to the capabilities of the system actors (in donor organizations and donor programming): How can such capabilities be built?
- b. How can this project best support the implementation of such processes and the building of capacity?

Question 5: How can the coordination between donors and implementers/grantees be supported through engagement around the Digital Principles, ultimately improving development impact? How can this project best support this process?

Activities

To address these research questions, the following activities were completed:

Activity 1: Desk-based research and literature review. This review assessed multiple donor organizations to compare similar practices, observe where successes have been achieved, and identify what challenges still exist. This included an analysis of existing publicly available materials already collected by the Digital Impact Alliance and additional desk-based research to identify relevant training and guidance source materials about the use of technology in development programming from organizations across the donor spectrum. The background research comprised over 400 documents plus some 200 course outlines, and was thematically organized in Zotero.⁴⁶

Activity 2: Engagement with 41 individuals drawn from relevant donors and other organizations, incorporating both headquarters and field level perspectives, mainly in the form of semi-structured interviews (36), one pair interview, exploratory conversations (3) and one detailed email response (2 respondents). The interviews reviewed contents of research, tested assumptions, and offered new insights from their experiences.⁴⁷ All interviews were analyzed systematically and incorporated into the report. The list of respondents is included in Appendix 2.

The study recognizes the Digital Principles as guidelines, and itself implements the Digital Principles through feedback loops with participating donors. This is a methodological decision taken to ensure that the work builds on previous research, provides an accurate representation of perspectives, and expands the research team's engagement with the wider ecosystem.

Desk-based Research: Breakdown of Documents

The research team reviewed over 400 documents and over 200 course outlines and analyzed this collection using Zotero. Some documents were discarded as irrelevant. The remaining documents are broken down as follows.

SECTION	NUMBER
Appendix 3: The Principles for Digital Development and Related Approaches	33
Appendix 4: The Principles for Digital Development in Practice – Case Studies	36
Appendix 5: Evidence Assessments	40
Appendix 5: Evidence Assessments – Search Results Google Scholar	52
Appendix 6: Handbooks, Guides and Toolkits	42
Appendix 7: Courses and Professional Development	44
Appendix 7: Courses and Professional Development – Search Results Coursera, edX	236
Introduction: Donor policies and strategic plans	39
TOTAL	522

A full bibliography of the documents consulted can be provided through an open Zotero library upon request.

⁴⁶ zotero.org

⁴⁷ The interview protocol is available separately, short URL: <http://bjohas.de/go/dial-rdp-protocol>.

Desk-based Research: Course Repositories

For searching course repositories (including the World Bank Open Learning Exchange, edX and Coursera), the following search terms were used with the stated capitalization:

- Address Privacy and Security
- Be Collaborative
- Be Data Driven
- Build for Sustainability
- Creative Commons
- Data-Driven
- Design for Scale
- Design with the User
- Digital Principles
- evidence-based
- HCD
- human-centered design
- ICT for development
- ICT4D
- international cooperation
- international development
- mobile data collection
- mobile technology
- open content
- Open Data
- OER
- Open Educational Resources
- Open Innovation
- Open Source
- Open Standards
- open education
- participation
- participatory design
- Principles for Digital Development
- privacy
- Reuse and Improve
- security
- sustainable development goals
- teacher development
- teacher education
- Understand the Existing Ecosystem
- Use Open Standards, Open Data, Open Source, and Open Innovation

For web searches using Google and evidence searches using Google Scholar these terms were used, and included variations, and were used in combination with 'course', 'case study' and 'toolkit'.

Prior Interviews

The interviews conducted by the Digital Impact Alliance (throughout 2017) partially set the scene for the present interviews. While they did not engage in all of the elements of this project scope, they provided a helpful foundation to explore initial conversations that had taken place as many of those donor organizations were included in the list of interviewees. The findings from these interviews fed into the interview protocol and specific questions for relevant donor organizations. In addition, they helped to frame the analysis through highlighting key areas that needed further exploration.

Appendix 2: Semi-structured interviews

A total of 41 respondents contributed to this report in 34 semi-structured individual interviews, one pair-interview, three exploratory conversations and one response by email from two respondents.

Interview participants were selected from the following categories, and efforts were made to provide an equal weighting between headquarters and field-based staff:

- Governmental donors
- Funders who are recipients of multilateral funding themselves:
 - Long-established intergovernmental organizations
 - More recently established intergovernmental organizations and partnerships
- Non-governmental foundations
- Other donors and organizations that are philosophically aligned, but currently non-endorsing
- Smaller foundations
- Non-governmental organizations that disburse funds from other donors

The interview protocol is available separately.⁴⁸

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⁴⁸ Haßler, B., & Brugha, M. (2018). the Digital Impact Alliance Resource Development Program — Interview Protocol (Resource Development Program Asset No. 2). London: Jigsaw Consult. DOI: 10.5281/zenodo.1204699. License: Creative Commons Attribution 4.0 International. Haßler, B., & Brugha, M. (2018). Questions on the Principles for Digital Development (Resource Development Program Asset No. 3). London: Jigsaw Consult. DOI: 10.5281/zenodo.1204693. License: Creative Commons Attribution 4.0 International.

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Learning Equality

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Notes

(1a), (1b), (1c) Exploratory conversations

(2) Interviewed together.

(3) Responded together via email, inserting responses
directly into the interview protocol

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*The Hand-book Of The Modern Development Specialist*⁴⁹

Appendix 3: The Principles for Digital Development and Related Approaches

This section provides some background on the Digital Principles, reviewing related ideas and approaches in order to position the Digital Principles within this wider context.

The Principles for Digital Development and Related Lists

· The Hand-book Of The Modern Development Specialist⁴⁹

The Digital Principles are:

- Design with the User
- Understand the Existing Ecosystem
- Design for Scale
- Build for Sustainability
- Be Data Driven
- Use Open Standards, Open Data, Open Source, and Open Innovation
- Reuse and Improve
- Address Privacy and Security
- Be Collaborative

The primary source for Digital Principles is <http://digitalprinciples.org>, which includes statements of the Digital Principles themselves, Digital Principles guides, Digital Principles How-tos and Digital Principles case studies (see below, and bibliography), as well as the From Principles to Practice report.

The history of the Principles for Digital Development is available on the 'About' page of the website⁵⁰ and also described in the From Principles to Practice report. The UNICEF Innovation Principles, Principles for Innovation and Technology in Development, in which 'Address Privacy and Security' is replaced by 'Do no harm', is available on the UNICEF website.⁵¹

The World Bank Open Development Principles⁵² are closely related and include: user-centered, data-driven, reusable, sustainable, scalable, ecosystems, open, and security and privacy. Finally, the Doing Development Differently Manifesto promotes a user-centric, holistic approach to development⁵³ that shares elements with the above approaches, but formulates those differently.

Approaches that Relate to Individual Principles for Digital Development

There are other approaches that are related to individual Digital Principles. For example, the Digital Principle 'Design with the User' explicitly refers to 'Human Centered Design' that is in turn related to iterative and agile approaches, both for software development,⁵⁴ research⁵⁵ and (agile) management. 'Design with the User' is also related to participatory processes.⁵⁶ Overall participatory processes entail a stronger emphasis on user decision making than user consultation.⁵⁷

⁴⁹ The Hand-book Of The Modern Development Specialist. By: Responsible Data, 2016. <https://responsibledata.io>, produced by the engine room. Licensed under Creative Commons Attribution-ShareAlike 4.0 International License.

⁵⁰ <https://digitalprinciples.org/about/>

⁵¹ https://www.unicef.org/innovation/innovation_73239.html, 31 October 2014

⁵² Chris Vein, Activate Summit 2013, <https://www.theguardian.com/media-network/media-network-blog/video/2013/jul/15/chris-vein-development-world-bank>

⁵³ <http://doingdevelopmentdifferently.com/the-ddd-manifesto/>

⁵⁴ https://en.wikipedia.org/wiki/Agile_software_development

⁵⁵ e.g., <http://learnbbr.org/>

⁵⁶ [https://en.wikipedia.org/wiki/Participation_\(decision_making\)](https://en.wikipedia.org/wiki/Participation_(decision_making)), https://en.wikipedia.org/wiki/Participatory_development

⁵⁷ <http://www.citizenshandbook.org/arnsteinsladder.html>, https://en.wikipedia.org/wiki/Participatory_design

The Digital Principle ‘Use Open Standards, Open Data, Open Source, and Open Innovation’ and the Digital Principle ‘Be Collaborative’, which explicitly mentions Creative Commons, both connect to the wider open movement, and particularly ‘open content’, signaled by Creative Commons licenses, e.g., used on Wikipedia and various media repositories.

Similarly, open data itself is a broad, well-established topic,⁵⁸ perhaps particularly with regard to open geodata, such as the efforts of the Humanitarian OpenStreetMap Team⁵⁹ as well as sharing humanitarian data.⁶⁰

On the intersection of ‘Be Data Driven’ and ‘Address Privacy and Security’, the ‘Responsible Data Community’ has developed the following key elements of Responsible Data:⁶¹

- **Power dynamics:** who are the least powerful actors in any situation, how are they affected by the data, and what do they make of the situation? How powerful are the people making decisions about data and technology in relation to those whose data is being collected and used?
- **Unknown unknowns:** we cannot see into the future, but we can build in checks and balances to alert us if something unexpected is happening
- **Precautionary principle:** just because we can, does not mean we should. If we cannot sufficiently evaluate the risk and understand the harms, then perhaps we should pause for a minute and re-evaluate what we are doing and why.
- **Thoughtful innovation:** for new ideas to have the best possible chance of succeeding – and for everyone to benefit from those new ideas and projects – innovation needs to be approached with care and thought, and not just speed.
- **Holding ourselves high:** in many cases, legal and regulatory frameworks have not yet caught up to the real-world effects of data and technology. How can we push ourselves to have higher standards and to lead by example?
- **Diversity and bias:** who makes the decisions? What perspectives are missing, and how can we include a diversity of thought and approach to ensure that a wide range of approaches are included?
- **Building better behaviors:** there is no one-size-fits-all for Responsible Data. Existing culture, context and behaviors change the implications and ways in which data is used.

The above aspects just illustrate a few related approaches and examples, and there are other similarly aligned organizations and guidelines.

⁵⁸ C.f. the Global Open Data Index, <https://index.okfn.org/>.

⁵⁹ <http://hotosm.org>

⁶⁰ The Humanitarian Data Exchange, <https://data.humdata.org/>.

⁶¹ What is Responsible Data? <https://responsibledata.io/what-is-responsible-data/>; Creative Commons Attribution 3.0 US License; Also see ‘The Responsible Data Handbook, <https://responsibledata.io/resources/handbook/>.

Appendix 4: The Principles for Digital Development in Practice — Case Studies

Having outlined the Digital Principles and related approaches, the report now considers how the Digital Principles have been applied in practice, particularly in the context of donor organizations. The following spotlights case studies of continued application and use of the Digital Principles, and cases where donor agencies are explicitly or implicitly applying them.

Sectors Where Case Studies for the Principles for Digital Development Are Available

We argue that some of the resources reviewed demonstrated a particular sector focus on health, agriculture and education, but a more limited focus on other areas (governance, economy, energy, environment, and gender). This is based on an examination of a selection of case studies, based on relevance criteria in the discovery process. We reviewed 20 individual (typically brief) case studies. This also included the winning case studies from the Digis 2017.⁶² Note that, necessarily, the review was not an in-depth exploration of digital technology in any particular sector, but rather performed an exploratory search of studies that emerged from a broad search (see methodology), and an analysis of key donor resources. In particular, we selected case studies that can be related to the Digital Principles. The table below also presents the distribution of the 125 applications to the Digis 2017.

SECTOR	INDIVIDUAL		DIGIS 2017 (APPLICATIONS)	
	n	%	n	%
Health	14	56%	46	39
Agriculture	4	16%	25	21%
Education	5	20%	13	11%
Governance	1	4%	10	8%
Economic growth	0	0%	10	8%
Environment	1	4%	6	5%
Humanitarian	0	0%	4	3%
Gender	0	0%	3	3%
Energy	0	0%	2	2%
TOTAL	25		119	

Clearly reduced costs of connectivity, increased access to affordable technology, advances in data storage and exchange, and democratization of information have led to a general increase of the use of Information and Communication Technology (ICT) in multiple sectors. However, ICT-related case studies appear to be particularly frequent in the health sector, perhaps because the potential to mitigate operational challenges in resource-constrained environments was realized earlier.⁶³ The above table illustrates a bias towards health, which also seemed apparent in our interviews. Agriculture and education case studies also feature; however, other sectors occur less frequently.

⁶² USAID (2017). Digital Development Awards. https://www.usaid.gov/sites/default/files/documents/15396/Digi_Award_Booklet_2017.pdf

⁶³ e.g., improved service delivery and accountability, the management and analysis of data generated at health facilities, reduce medical errors, and provide a platform for continuous professional development of medical personnel; <https://www.afdb.org/en/topics-and-sectors/sectors/health/>. Case studies covered in the above review include national health management systems, inventory monitoring systems, early outbreak detection and disease surveillance systems, telemedicine and mobile health service provision.

It is worth noting that over the last 10 years, there has been an increasing interest in ICT for Agriculture (ICT4Ag). This is believed to have been triggered by the World Food Crisis of 2009.⁶⁴ The case study includes best price and market information systems to improve efficiency, welfare, and knowledge management. The report acknowledges the importance of participatory and iterative approaches and directly references the Digital Principles.

Case Studies Available on the Digital Principles website

A number of case studies are available on digitalprinciples.org that cover primarily health information sharing, educational content, and civic engagement. These case studies include community contributions and represent both positive engagement with the Digital Principles themselves, and with the community of endorsers. The examples leverage best practices in innovation and collaborative approaches to address challenges including vulnerable populations, endemic health issues and infant mortality (How Solutions Meet Needs, ReMind, Springster, Medic Mobile).

The Human Development Innovation Fund

The Human Development Innovation Fund (HDIF) is a DFID funded initiative that aims to enhance locally led social impact in Tanzania. Managed by Palladium,⁶⁵ the fund serves as a catalyst to scale innovative solutions applied to health, education and water and sanitation hygiene (WASH).⁶⁶ In 2017, the HDIF team captured lessons their grantees had learned while applying digital tools to the Tanzanian development context.⁶⁷ The HDIF-supported projects were examined through the lens of the Digital Principles. The process of capturing lessons was used as a means to measure and raise awareness of the Digital Principles while demonstrating their importance.

This demonstrates that while donor agencies can stipulate that their contractors consider the Digital Principles, intermediaries play a key role in propagating them through the funding chain. For example, HDIF has produced the following case studies that specifically reference the Digital Principles. These could be used to guide projects implemented by grant funding from other donors.⁷

Organization: Ubongo,⁶⁸ Tanzania

Digital Principles applied: Design with the User

Project description: Ubongo is a social enterprise that develops 'edutainment' content for young learners. The initiative incorporates user testing and experimentation with children aged 3-6 and their parents for invaluable input from their user base.

Organization: Shule Direct,⁶⁹ Tanzania

Project: Makini SMS

Digital Principles applied: Understand the Existing Ecosystem

Project description: Makini SMS is a mobile learning platform with locally designed content. Through the use of mobile phones, the project leverages technology that is already accessible to their target market; secondary students and teachers who have limited internet access. Shule Direct has collaborated with MNOs, government agencies and Kenyan education technology NGOs.

Organization: Digital Opportunity Trust⁷⁰

Digital Principles applied: Understand the Existing Ecosystem

Project description: "[Digital Opportunity Trust's] programs use a unique peer-to-peer social learning model to embed change in schools and communities. TeachUp! brings innovative use of technology, new learning methods and digital skills content to the classroom and ReachUp! brings digital skills, workforce skills and entrepreneurial empowerment to out-of-school, out-of-work young people in the community." (p. 10)

⁶⁴ <http://www2.giz.de/wbf/4tDx9kw63gma/GIZ-ICT-study-final-interactive-version.pdf>

⁶⁵ Palladium is working in a consortium with KPMG, Newcastle University (EG West Centre), Loughborough University (WEDC), and the Institute of Development Studies (IDS)

⁶⁶ <http://www.hdif-tz.org/>

⁶⁷ HDIF. (2017). Digital Principles into Practice, Tanzania: HDIF. Retrieved from http://www.hdif-tz.org/wp-content/uploads/sites/11/2017/11/HDIF_PDD_Web7.pdf

⁶⁸ <http://ubongo.co/>

⁶⁹ <https://www.shuledirect.co.tz/makini/faqs>

⁷⁰ http://www.hdif-tz.org/wp-content/uploads/sites/11/2017/11/HDIF_PDD_Web7.pdf

Organization: Camfed Tanzania⁷¹

Digital Principles applied: Be Collaborative

Project description: “Camfed’s ‘Technology Supported Learning’ project brings together the well-established community-led structures of the Camfed model with the innovative use of e-readers to address the change of language of instruction for students transitioning from primary to secondary school.” (p. 2)

Organization: ACDI/VOCA, Ghana

Project: Agricultural Development and Value Chain Enhancement Project (ADVANCE II)⁷²

Digital Principles applied: Understand the Existing Ecosystem; Be Data Driven

Project description: Use of smartcards to track smallholder farmer training participants.

Organization: Chemonics, Philippines

Project: Biodiversity and Watersheds Improved for Stronger Economy and Ecosystem Resilience (B+Wiser)⁷³

Digital Principles applied: Use Open Standards, Open Data, Open Source, and Open Innovation; Be Data Driven; Design with the User; and Design for Scale

Project description: Developed the Lawin Forest and Biodiversity Protection System, which applies data to forest protection.

Digital Development Awards

In 2017, USAID’s Global Development Lab sponsored the Digital Development Awards (the Digis),⁷⁴ in recognition of USAID Missions and partners employing best digital practices in their development initiatives. Applicants responded to the call by sending short case studies that summarized their activities and successes. The submissions were then evaluated through the lens of the Digital Principles and across the following categories: integration, adaptation, analysis and facilitation. The award format raises awareness of the Digital Principles amongst partners through the submission of their projects, and within the donor agency through their inclusion in internal and external publications. Instead of waiting for evaluation reports, it also creates a channel for USAID to collect short stories from the field that can easily be redistributed. The following table illustrates case studies from Digis winners. Further case studies can be found in the Digis Awards booklet.

Other examples of the use of awards to highlight digital best practices include FHI 360’s call for Digital Technology Enhancing Resilience in the Asia and the Pacific,⁷⁵ and the African Development Bank’s Innovative e-Health Solutions in Africa Award.⁷⁶

Synergies Between the Principles for Digital Development and Case Studies

As a final case study, a longer report⁷⁷ focuses on the Digital Principles in education. The report makes the point that education interventions are increasingly turning to technology, and this has the potential to inform national education system strategies by providing an indication of the status of the system. In particular, we need to consider the appropriateness and effectiveness of those digital tools in collecting the data, as well as the way such digital tools are developed and deployed.

The report notes that these considerations fall into the domain of the Digital Principles, and draws on the experience of four organizations (the Aga Khan Foundation, Camfed, the Punjab Information and Technology Board, and the Varkey Foundation), as expressed through four case studies. Each of the case studies raise issues and offer valid approaches in relation to the Digital Principles. In some areas, the Digital Principles are more strongly articulated (‘Design with the User’; ‘Understand the Existing Ecosystem’), while in other areas, alignment with some of the Digital Principles was only partial.

⁷¹ http://www.hdif-tz.org/wp-content/uploads/sites/11/2017/11/PBB_Brief-1_CAMFED_Online.pdf

⁷² Agricultural Development and Value Chain Enhancement II (ADVANCE II) Project. Retrieved from <http://www.acdivoca.org/projects/agricultural-development-and-value-chain-enhancement-ii-advance-ii-project/>

⁷³ Biodiversity and Watersheds Improved for Stronger Economy and Ecosystem Resilience (B+WISER) Program. Retrieved from <https://forestry.denr.gov.ph/b-wiser/index.php/about-b-wiser>

⁷⁴ 2017 Digital Development Awards. (2017). USAID. Retrieved from https://www.usaid.gov/sites/default/files/documents/15396/Digi_Award_Booklet_2017.pdf

⁷⁵ FHI 360. (2017). Inventory of Digital Technologies for Resilience in Asia-Pacific. Retrieved from <https://www.fhi360.org/resource/inventory-digital-technologies-resilience-asia-pacific>

⁷⁶ African Development Bank. (2014). Innovative e-Health Solutions in Africa Award. Retrieved from https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Innovative_e%2E%80%91Healthb_Solutions_in_Africa_Award.pdf

⁷⁷ Synergies Between the Principles for Digital Development and Four Case Studies. (2018). Cambridge, UK: Research for Equitable Access and Learning (REAL) Centre, Faculty of Education, University of Cambridge. Retrieved from <https://www.varkeyfoundation.org/sites/default/files/Synergies%20between%20the%20Principles%20For%20Digital%20Development%20and%20four%20case%20studies.pdf>. Note that the present lead author was also the lead author of this case study.

Appendix 5: Evidence Assessments

This section reviews evidence for the effectiveness of various aspects of the Digital Principles.

Sectors where Evidence for the Principles for Digital Development is Available

A search on Google Scholar for “Principles for Digital Development” was undertaken in order to determine publications that might offer evidence and assessments. This resulted in a number of results in health, followed by more generic assessments of the application of digital tools to development.

SECTOR	NUMBER
Health	28
Digital innovation, ICT for development <i>(general)</i>	13
Other topics <i>(private sector, economic development, rights and governance, gender, blockchain)</i>	11
TOTAL	52

The World Bank’s World Development Report “Digital Dividends” (World Bank, 2016) offers a compelling analysis regarding the impact of digital technologies. In many instances, digital technologies have boosted growth, expanded opportunities, and improved service delivery. Yet the report is clear that their aggregate impact has fallen short and is unevenly distributed. For digital technologies to benefit everyone everywhere it is necessary to work actively to reduce the digital divide, especially in relation to internet access. But greater digital adoption is insufficient on its own. Countries must also work on the associated “analog components” to strengthen regulations that ensures competition among businesses, to adapt workers’ skills to the demands of the new economy, and to ensure that institutions are held accountable. It is clear that effective digital development strategies need to be much broader than ICT strategies. The report also refers to open data, including OpenStreetMap and the work Humanitarian OpenStreetMap team. The value of open data has also been assessed in economic terms.⁷⁸

Another important area of openness is in open content. This is most widely recognized in contexts in which the documents are of high importance, such as art, academia and education. For instance, the use of Open Educational Resources can form an important building block for curricular development in both low- and high-income countries,⁷⁹ promising up to 80% cost savings. The need for Open Educational Resources continues through to higher and tertiary education, providing access to specialist training materials where they might not otherwise be available. The lack of openness in academic publishing and the impact that this has on academic research in low-income countries also contributes to the debate on open content.

Other areas for digital development which make use of open content include health, where open content around public health messages have contributed to positive development outcomes in maternal-child health and hygiene awareness (UNICEF, USAID, World Vision International). Smaller-scale and localized initiatives around open content for agriculture (Access Agriculture, OpenAg) and veterinary care (e.g., Sidai⁸⁰ and the International Livestock Research Institute⁸¹ in Kenya) are also part of the efforts to make more content open for development. We note that there are few Ph.D. or Master’s thesis drawing on the Digital Principles.^{82, 83, 84}

78 Lateral Economics. (2016). Permission granted: The economic value of data assets under alternative policy regimes. A Lateral Economics report for the Open Data Institute. Port Melbourne Victoria. Retrieved from (short link) <http://bjohas.de/go/permission-granted>

79 <http://openupresources.org/>

80 <http://www.sidai.com>

81 <https://www.ilri.org/>

82 Hackett, K. M. (2016). Impact of a Community-based Smartphone Intervention on Maternal Health Service Utilization in Rural Tanzania (Ph.D. Thesis). University of Toronto (Canada). Retrieved from https://tspace.library.utoronto.ca/bitstream/1807/76500/3/Hackett_Kristy_M_201611_PhD_thesis.pdf

83 Hollenhorst, O. (2017). A Rights-Based Evaluation of Humanitarian Information and Communication Technology Policy (Ph.D. Thesis). Retrieved from https://digital.lib.washington.edu/researchworks/bitstream/handle/1773/40590/Hollenhorst_washington_02500_17623.pdf

84 Peter Maina Njuguna. (2017). Principles for Digital Development: A case study evaluation of integration in design and implementation of technology enabled projects by development organisations in Kenya (Master’s Dissertation). Virtual University of Uganda.

Appendix 6: Handbooks, Guides and Toolkits

SDGs by Development Sector

To achieve the SDGs, changes are required in the way public, private and civil society organizations function, the way they partner, the way they engage with individuals and communities and the way government policies influence their operations. The challenge facing organizational leaders is understanding the benefit of ICT in enabling such changes.

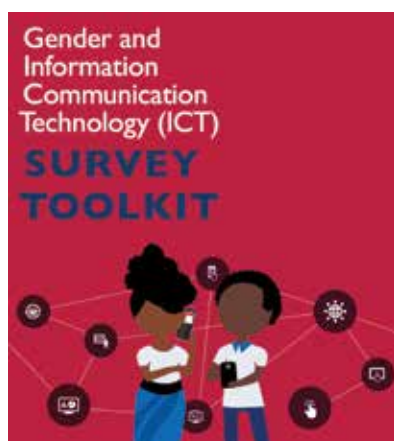
Development Sector	Primary Related Goal
 Livelihoods	G1 End poverty in all its forms everywhere. G8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
 Agriculture	G2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
 Health	G3 Ensure healthy lives and promote well-being for all at all ages.
 Education	G4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
 Water, Sanitation & Power	G6 Ensure availability and sustainable management of water and sanitation for all. G7 Ensure access to affordable, reliable, sustainable and modern energy for all.
 Infrastructure	G9 Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. ⁸⁵ G11 Make cities and human settlements inclusive, safe, resilient and sustainable.
 Disaster Relief	G11 Make cities and human settlements inclusive, safe, resilient and sustainable.
 Governance & Human Rights	G5 Achieve gender equality and empower all women and girls. G10 Reduce inequality within and among countries. G16 Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
 Environmental Protection	G12 Ensure sustainable consumption and production patterns. G13 Take urgent action to combat climate change and its impacts (taking note of agreements made by the UNFCCC forum). G14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development. G15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss.
 Cross Cutting	G17 Strengthen the means of implementation and revitalize the global partnership for sustainable development.

Screenshot from 'SDG ICT Playbook: from Innovation to Impact' (NetHope)

pricing and marketing and promotion tips. The toolkit also offers guidance on monitoring and improving the service. It includes a gender checklist that can be used to assess the general friendliness of an mHealth service.

There are six how-to guides available from the Digital Principles website, covering a range of topics: How to Calculate Total Lifetime Costs of Enterprise Software Solutions, 2017; How to Choose a Mobile Data Collection Platform, 2017; How to Secure Private Data Stored and Accessed in the Cloud, 2017; How to Select Digital Tools to Support Training and Capacity Building, 2017; How to Set up a Technical Working Group, 2017.

The SDG ICT Playbook, developed by NetHope and a series of partners, is one example of a valuable cross-sectoral resource that brings together collaborative thinking and learning from lead organizations in technology, government, education and humanitarian sectors. Although this tool was developed in 2015 and could benefit from further update, many of the key insights and considerations remain valid. The playbook presents ten technology areas and considers how each might be applied in order to support and accelerate progress towards the Sustainable Development Goals. The authors include a critical analysis of the benefits, trends and challenges for each area, and provide targeted and actionable recommendations on how non-profits, governments and the private sector can optimize the impact of such technologies.



Screenshot from 'Gender and ICT Toolkit' (USAID, fhi360)

The Gender and ICT Toolkit, developed by FHI 360 as part of USAID's mSTAR project, serves to address the gap in standardized resources available for developing a comprehensive landscape assessment of gender and ICT for USAID and partner programming. It includes a set of practical, well-researched tools that can be used to obtain data on access and usage of mobile phones and devices that can inform project or intervention study design. The toolkit helps facilitate survey preparation, data collection and analysis; it includes specific survey tools and interview guides, but each section is designed as a stand-alone module. While the primary focus of the toolkit is on gender and mobile technologies, it has implications for wider applications of digital data and covers themes such as ownership, usage, control, behavior, digital financial services, agriculture, and internet connectivity.

⁸⁵ https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2017/09/GSMA_mHealthGenderToolkit_2-08-17.pdf



Screenshot of the World Bank Group Open Learning Campus⁸⁸

Appendix 7: Courses and Professional Development

The following provides an overview of relevant courses and professional development opportunities based on the findings of the desk research.

MOOCs: edX and Coursera

As a starting point, some may question whether general course platforms, such as Massive Open Online Courses (MOOCs) actually offer content appropriate for professional development in these sectors. To answer this, edX and Coursera were searched using the search terms provided above. This resulted in a total of 85 courses from edX and 151 from Coursera. While some of the edX courses are “self-guided” and available at any time, the majority of courses require joining at a specific start date. Moreover, while some courses are free, others are not. We refer the reader to the literature regarding the critical discussion on MOOCs and low-income settings.^{86, 87}

Among the courses, there were a number of courses on data (37; including data ethics, data collection and analysis, as well as Big Data). However, no course focused on “open data” as such. There were a number of courses on security (26; focusing on cyber security, and some more technical topics, like server security) and sustainability (17; including one on the Sustainable Development Goals, as well as courses on ecosystems, cities, and tourism). Innovation was also well represented (10; as strategic or business innovation, with no course focusing on open innovation), as were ideas on user-centered design (10; all of which related to user-interface design), and one course on human-centered design.

Much less frequent were courses on approaches to collaboration (4; focusing on team collaboration), two on privacy, one course on international cooperation, one on open source (for data science), and one on Open Educational Resources. While there were plenty on mobile application development, there were none on mobile data collection. There were no courses on ICT for development or open standards. Overall, while some interesting programs on relevant topics can be found, the offer is far from tailored to the development sector.

⁸⁶ Liyanagunawardena, T. R., Adams, A. A., & Williams, S. A. (2013). MOOCs: A Systematic Study of the Published Literature 2008-2012. *International Review of Research in Open & Distance Learning*, 14(3).

⁸⁷ Patru, M., & Balaji, V. (2016). Making Sense of MOOCs A Guide for Policy-Makers in Developing Countries. UNESCO, Commonwealth of Learning.

⁸⁸ <https://olc.worldbank.org/>



Screenshot from "Introduction to the Open Data for Resilience Initiative (OpenDRI)"

World Bank Open Learning Campus

World Bank Open Learning Campus is a free open access learning platform with content categorized as WBx Talks, WBa Academy and WBc Connect.⁸⁹ WBx Talks provides a repository of podcasts and webinars, and WBc Connect is an online community of practice, where users may join groups of interest. The WBa Academy consists of 13690 online courses that span across key sectors including health, education, energy, gender, agriculture, economics and governance.

The courses have the following characteristics:

- The courses are designed for working professionals and vary in duration from as little as 2 hours to as long as 2 months, with certifications being awarded for selected courses
- Five out of the 136 relate to digital technologies, for example
 - "Introduction to Innovation Policy for Developing Countries"
 - "Introduction to the Open Data for Resilience Initiative (OpenDRI)"
- The courses are either provided on the World Bank's learning platform, or are provided through a partner (such as edX)

For example, the free "Digital Dividends: Strengthening the Analog Foundation of the Digital Revolution"⁹¹ course is delivered on edX, a MOOC provider. However, we note that this course did not surface in our earlier search (see above). If edX is searched for "digital", the course appears about half way through (a progressively loading) list of 126 items that makes it very hard to discover. Moreover, the course is currently not available (the status is 'archived', with future dates not yet announced).

The GIZ Global Campus 21 The Global Campus 21 is a learning portal provided by GIZ, available in German, in English and in Spanish.⁹² It offers a variety of free materials, as well as internal, staff-only materials, including a freely accessible overview of Capacity Works,⁹³ the GIZ management model for sustainable development projects.

Commercially Available Courses Tailored for Development Professionals

TechChange is a social enterprise that develops online courses focused on technology and social change.⁹⁴ The courses are targeted at mid-career professionals and are designed to be highly practical and applicable to various development roles. TechChange's courses explore the application of technology to international development and social good with specific courses in the health, energy, disaster response and agriculture sectors. The technologies covered range from mobile phones to emerging trends, such as blockchain and artificial intelligence.

⁸⁹ <https://olc.worldbank.org/>

⁹⁰ At the time of review, March 2018.

⁹¹ <https://www.edx.org/course/digital-dividends-strengthening-analog-wbqx-wdr01x>

⁹² <https://gc21.giz.de/en>

⁹³ https://gc21.giz.de/ibt/usr/wbt/gc21/public/wbt_capacity_works_en/uk/index.htm

⁹⁴ <https://course.tc/catalog/>



Screenshot of the GIZ Global Campus 21⁹⁵



Screenshot from "The Art of Advocacy",
<https://course.tc/art-of-advocacy>

The courses have the following characteristics:

- Most⁹⁶ of the courses on the platform are paid, and cost an average of USD 400 for a four week course
- Examples include:
 - "Technology for M&E"
 - "Mobile Phones for Public Health"
 - "Mapping for Social Good"
- There are eight free courses available,⁹⁷ that require between one and two hours to complete. The free courses have been developed in collaboration with donor agencies and international NGOs. Examples include:
 - "RapidPro Essentials" (developed with UNICEF)
 - "The Art of Advocacy" (USAID)
 - "Mobile Data Solutions" (USAID and FHI360)
 - "Introduction to Mobile Money" (USAID, QED)

Another example of a bespoke training program is the ICT Innovation Corps program of Development Alternatives Incorporated, an intensive internal staff training program. It equips non-technical staff with the skills required to identify areas in which ICTs can be applied in their interventions. The training also provides an introduction to the Digital Principles. Prior to the development of the ICT Innovation Corps, Development Alternatives Incorporated conducted ICT training through brief, in-person trainings. The ICT Innovation Corps supports long-term embedded training, as an alternative to once off workshop style training. It has been compressed and delivered to teams in Cambodia, Jordan and Liberia, and resulted in participants identifying, engaging with, and leading the integration of ICTs in interventions.

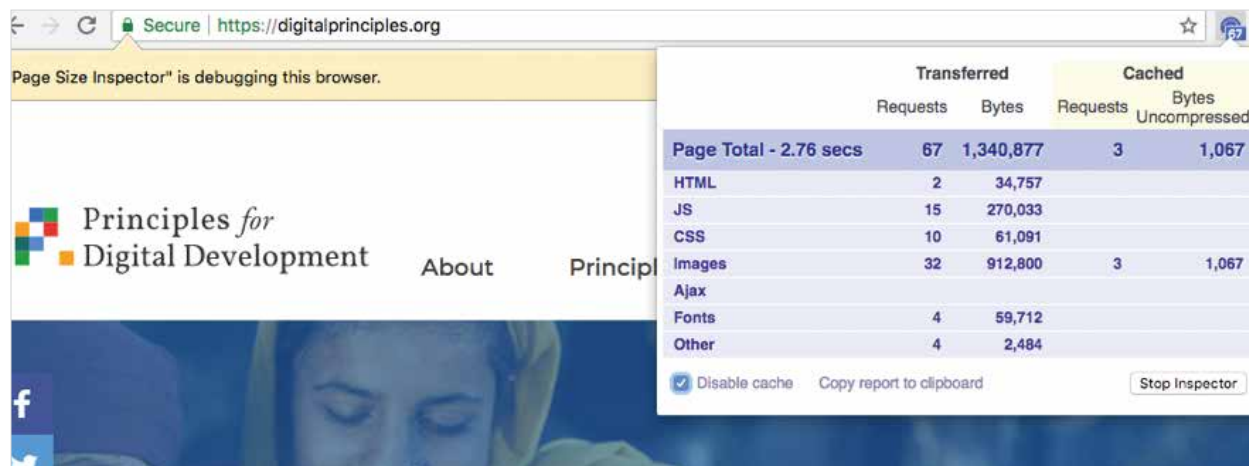
⁹⁵ <https://gc21.giz.de/en>

⁹⁶ 19 out of 27 courses at the time of review.

⁹⁷ At the time of review (March 2018).

Appendix 8: An example for a simple-to-use specialized tool

We recommended that specialized ‘scorecards’ could be utilized to bridge the lack of highly specialized expertise. For example, despite bandwidth issues being well known, many websites are still being designed without low bandwidth⁹⁸ guidance in mind. At the time of writing, the home page of digitalprinciples.org is about 1.3MB in size, causing unnecessary delays and costs for users that have slow or expensive bandwidth. The measured load time on broadband was 2.76 seconds, 3.8 megabits per second; on EDGE connectivity (typically 135 kilobits per second) the full page load time would be about 80 seconds.



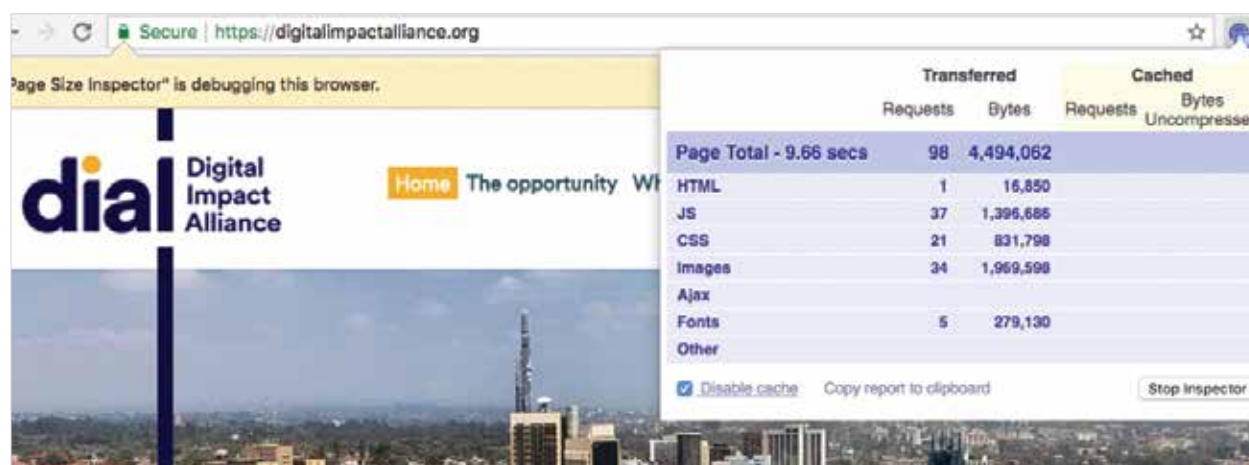
	Transferred		Cached	
	Requests	Bytes	Requests	Bytes Uncompressed
Page Total - 2.76 secs	67	1,340,877	3	1,067
HTML	2	34,757		
JS	15	270,033		
CSS	10	61,091		
Images	32	912,800	3	1,067
Ajax				
Fonts	4	59,712		
Other	4	2,484		

☒ Disable cache Copy report to clipboard Stop Inspector

'Page Size Inspector' for <http://digitalprinciples.org> (size 1.3 MB)

The web designer may have been told that the site should be accessible, but for the non-specialist client, it seems difficult to assess this. However, with the right guidance, it is actually fairly straight forward. For example, in Chrome a page size extension⁹⁹ (see images above and below) can be installed with one click. Our 'tool' would simply show how to install the extension and interpret the figure (1,340,877 bytes in the picture, as 1.3 megabyte), noting that the size should be around 100,000 bytes (0.1 megabyte); the 'tool' thus enables computer-literate non-specialist users to conduct such assessments.

We note that 'Page Size Inspector'¹⁰⁰ is open source, and could easily be adapted by to be more usable (e.g., showing a low bandwidth 'check mark'), rather than the user having to check numbers.



	Transferred		Cached	
	Requests	Bytes	Requests	Bytes Uncompressed
Page Total - 9.66 secs	98	4,494,062		
HTML	1	16,850		
JS	37	1,396,666		
CSS	21	831,798		
Images	34	1,969,598		
Ajax				
Fonts	5	279,130		
Other				

☒ Disable cache Copy report to clipboard Stop Inspector

'Page Size Inspector' for <http://digitalimpactalliance.org> (size 4.5 megabytes, load time ~ 10 sec on broadband, 3.6 megabits per second; load time 4.5 minutes on EDGE connectivity 135 kilobits per second).

⁹⁸ <http://www.apivate.org/webguidelines/Home.html>

⁹⁹ Short URL: <http://bjohas.de/go/page-size-inspector>

¹⁰⁰ <https://github.com/tomimick/chrome-ext-page-size>

Appendix 9: Further Reading

This appendix presents a highly selective list of further reading. It is meant to spike interest rather than be comprehensive.

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