

Building a Foundation for Digital Inclusion

A Coordinated Local Content Ecosystem

We know that the digital economy is a powerful engine of economic growth. As early as 2011, its impact on GDP growth in G8 countries had already surpassed that of other global industries, such as energy and agriculture,¹ and it is rapidly transforming the emerging markets in which we work. In Kenya, for instance, information and communication technologies (ICTs) now contribute an astounding 12.1 percent to the country's GDP.² However, this growth has primarily been fueled by consumption, including online sales and advertising, and private investments in infrastructure and software.³

The Digital Development team at the U.S. Agency for International Development (USAID) works to ensure that the value derived from the digital economy is inclusive, that it not only reaches underserved populations but enables them to be creators and collaborators, thereby maximizing the power of digital technology to drive broad-based benefit. Our investments are guided by two key questions:

1. What tools and capabilities does an individual need to be a full participant in the digital economy?
2. What policies, platforms, and systems must be in place to enable her to act upon those tools and capabilities?

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The opinions expressed are those of the authors and do not necessarily represent the positions of the U.S. Agency for International Development.

The answers to these questions reveal a complex and interconnected set of issues, but at the most basic level they boil down to whether an individual is connected, whether she has the requisite skills to engage online and can afford the products and services that allow her to do so, and whether she derives any value from her participation in the digital economy.

While a fully inclusive digital economy will only be realized through greater efforts to address each of these issues, we see a particular lack of investment and

coordination around programs and policies that would increase the value proposition for underserved populations. There are plenty of exciting and innovative efforts under way to connect the unconnected, but fewer investments in what happens once those networks are in place.

As Steve Song, the founder of Village Telco, put it in a critique of efforts to expand network connectivity, “What barely gets mentioned . . . [are] the people who represent the ecosystem of access . . . There is an implicit assumption that once the technological solution has been

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found, everything else will fall into place.”⁴ What is compelling about Steve’s assessment is that he puts people front and center, not a particular technology or application. When one takes this user-centric view of the digital value proposition, the importance of relevant and accessible digital content becomes readily apparent.

CONTENT IN THE DIGITAL ECONOMY

Imagine for a moment that your web search results for this journal were in Cyrillic rather than Roman script. Or, imagine that you want to use an online tax preparation tool but the software only links to tax codes from a country halfway around the world. Imagine further that your child’s school wants to use computers or tablets to deliver lessons but the country’s educational materials only exist in paper formats. For too many people coming online now, these are not hypothetical scenarios.

The British Council estimates that approximately 25 percent of the world’s population speaks English with some degree of competency (the percentage is closer to 5 percent when only considering those who speak English as a first language),⁵ yet more than 55 percent of the world’s online content is in English.⁶ And



Figure 1. Digital content value chain

while 14 percent of people live in Africa, less than 3 percent of Wikipedia articles are about that continent.⁷

Moreover, even when digital content does exist in appropriate languages, there is no guarantee that it will reach those who have traditionally been excluded from the information economy. With less than 15 percent penetration of smartphones across Africa,⁸ delivering content cannot be done via websites and applications alone.

Ultimately, a strong digital content value chain will weave together these various factors. It will link entities that have strengths in originating content with those that know how to package it effectively and make it relevant and accessible, and with those that know how to distribute digital content across multiple channels, cultures, and contexts (see Figure 1).

Unfortunately, outside of lifestyle and entertainment content—major revenue drivers for mobile and Internet service providers⁹—consistent coordination across this value chain has proven inconsistent and uncommon:

- Government ministries of every country have troves of useful and trustworthy information, such as education curricula and maternal health practices, but they are not yet digitized.
- In the international development sphere, USAID and its partners have been investing in the creation of locally relevant health, agricultural, educational, and other life-enhancing content for decades. Yet its availability has too often been bound by the time and resource constraints of a particular project, and the information is difficult to find once that project has ended, resulting in duplicative efforts to produce similar content.
- Our partners often tell us that they have valuable digitized content, but negotiations with mobile network operators (MNOs) to distribute it through their channels are prohibitively difficult.
- Finally, we see situations where high-quality, relevant content exists but the intended audience does not know about it, or where to find it, or whether they can trust it.

We have come to see such fragmented efforts as a major reason why an increasing number of people living in connected areas are not reaping the full ben-

efits of digital technology. We also are seeing a growing appetite for better coordination of locally relevant content across our programs and among our partners, who want to use technology to strengthen and accelerate their development and commercial objectives.

To that end, in this essay we examine the reasons for this fragmentation, and we explore how greater coordination is key to increasing the value proposition of the digital economy for the two billion users who will be coming online in emerging markets in the next five years.¹⁰ Of particular importance to USAID's work is how a stronger digital content value chain can dramatically increase the delivery of health, educational, agricultural, and other relevant life-enhancing content to the end-user. Finally, we recommend steps the major actors in the ecosystem can take to strengthen the value chain.

A MORE COORDINATED DIGITAL CONTENT VALUE CHAIN

Despite the fragmentation, there are successful examples from which to draw lessons. For instance, since its inception in 1969, *Sesame Street* has developed literacy and numeracy, education, and health and well-being content for children around the world. *Sesame Street* has been adopted and hyper-contextualized in over 20 markets while being broadcast across more than 150 countries. In *Sesame Square*, the Nigerian adaptation of the program, Cookie Monster is Zobi the Yam Monster, who teaches children about malaria prevention and, as his name suggests, has a voracious appetite for yams, which are far more common than cookies in Nigeria.¹¹ In South Africa children learn from Kami, an HIV-positive Muppet on *Takalani Sesame* who encourages her friends to play and laugh closely with her as a way to remove the stigma of the disease.¹²

The efficacy of Zobi the Yam Monster and his friends is derived from *Sesame Street*'s success in (1) creating valuable educational content; (2) identifying the necessary local partners and investing the resources required to adapt their existing characters and content to local market context; and (3) leveraging powerful distribution channels. Just last year, *Sesame Street* in Nigeria partnered with Worldreader, a USAID-supported NGO, through the All Children Reading Grand Challenge, which supports literacy programs by leveraging digital books that deliver Zobi and his friends directly to children and their families through mobile devices.¹³ In a country where smartphones are projected to expand at a compound annual growth rate of 15 percent in the coming years,¹⁴ the Worldreader partnership has the potential to expand *Sesame Square*'s reach exponentially, which is not possible with more traditional distribution methods.

This is a powerful example of a strong value chain for life-enhancing digital content. The question is why this isn't happening more broadly or more systematically, and what can be done about it.

Identifying Shared Value and Building Trust

A strong digital content value chain will require the coordination of efforts by governments and regulators, the private sector (including but not limited to the telecom and finance industries), donors and investors, entrepreneurs, and civil society. Fortunately, these players are starting to align around this issue, but these efforts are too often conflated with the idea that their respective interests are also aligned. While the interests of various stakeholders are certainly not mutually exclusive, they are different, and acknowledging that is the first step in creating the coordination needed to support a productive value chain and provide shared value for all stakeholders.

Achieving this will require user-centric design, as noted earlier and reinforced in the USAID-endorsed Greentree Consensus Principles for Digital Development,¹⁵ whereby the end-user must be seen not only as a consumer but also as a creator and collaborator in the digital economy. When this is done, a more dynamic and expansive digital ecosystem begins to emerge, creating the potential for more commercial opportunities and more channels to drive social change.

There are places where this is happening. At Johnson & Johnson, for example, it is manifested in the company's decision to invest in and create content for pregnant and lactating mothers while turning to the Mobile Alliance for Maternal Action (MAMA) for assistance with efforts to localize and distribute in emerging markets. Meanwhile BuzzFeed has begun a more global effort through its recent partnership with Duolingo to leverage user contributors to translate its most popular articles into less-used languages.¹⁶ These models drive traffic for MNOs, build brands and expand the reach of private companies, leverage existing validated content to reduce liability risks, and augment the availability of digital content for underserved populations.

To find other such opportunities, USAID not only must focus on identifying shared value, it must learn to leverage our comparative advantages while recognizing the vital contributions of others. Only then will we start to see greater coordination across the digital content value chain. For example, there would be no need for USAID or its implementing partners to invest in new distribution channels if it could partner with Facebook's Internet.org and leverage the relationships Facebook is developing with MNOs. Moreover, Internet.org would not need to duplicate the creation of content on a country-by-country basis, given that USAID

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and the broader international development community invest regularly in this stage of the content value chain. In this scenario, we could apply what we individually do best and together identify organizations that are well positioned to translate content into local languages, or help to fulfill other requirements in the packaging stage of the value chain.

KEY STAKEHOLDERS IN THE VALUE CHAIN

To organize the digital content ecosystem around this point, USAID and a diverse group of key partners that represent the entire spectrum of the value chain, have identified the following set of comparative advantages among key stakeholders in the value chain:¹⁷

NGOs

1. Test different approaches when defining proof of concept
2. Understand user behavior, particularly around knowledge transfer
3. Conduct iterative, qualitative research for user design
4. Identify who the users are
5. Leverage existing community engagement programs for research, design, and distribution

Mobile Network Operators

1. Push content to consumers
2. Help determine distribution channels
3. Decide which value-added services (VAS) go through their platforms
4. Embrace bulk price negotiations/reductions and open application programming interfaces (APIs) to help reduce friction for content developers

Aggregators/Technology Third Parties

1. Provide a technical platform to push content in bulk to MNOs
2. Offer technical guidance for adapting content across different delivery channels (SMS, IVR, video, etc.)
3. Negotiate pricing with MNOs on behalf of content developers, including NGOs

Local Governments

1. Partner with local NGOs to supply sector-specific content for consumers
2. Endorse regulatory policies to enable more cost-effective information exchanges, for example, through local Internet exchange points and service providers (IXPs/ISPs)
3. Unlock user-generated content by releasing public data online and encouraging citizens to engage with and manipulate the data for their broader needs

Donor Community

1. Promote enabling policies and legal frameworks
2. Support open data for greater adoption and adaptation of content

3. Support negotiations with MNOs to lower friction costs and reduce liability concerns about the trustworthiness of content
4. Set quality standards, develop context and content criteria for implementing partners and NGOs
5. Incentivize implementers to share content across sectors, regions, and programs
6. Invest in better, faster research to keep up with the fast pace of the industry
7. Connect the development community to the mobile industry, given similar target audiences

Creating Shared Systems and Standards for Content Management

Identifying shared value and building trust is a foundational step, but these partners must also find common understanding across some of the mechanics of the value chain: What content is available in the formats needed? How much of it is relevant globally and how much needs to be adapted for various audiences? What has been validated and is known to be reliable? How does user-generated content fit into the equation?

From the international development perspective, efforts to support life-enhancing content across the digital value chain have been sporadic. They have frequently eschewed investing in platforms and systems that would strengthen or improve coordination across the entire ecosystem in favor of isolated, program-specific investments that only address parts of the value chain. This has led to a replication of content creation on a project-by-project basis, when global repositories of digital content might serve multiple interests, and do so at scale, requiring only minor adjustments to localize for particular markets.

Similar fragmentation occurs across other parts of the content ecosystem. We frequently hear from partners that a lack of mutually agreed-to standards on the format, quality, and validity of content is resulting in laborious market-by-market negotiations with MNOs and a duplication of efforts and costs. Despite the shared value opportunity that collaboration represents, such difficulties erode trust and cause friction in negotiations between content creators (including many of USAID's non-governmental partners) and the MNOs, which understandably want to ensure that the content distributed over their channels poses no reputational or legal risks.

These challenges exist whether the content is user-generated, like that on Wikipedia, or whether information from a globally recognized source, such as the World Health Organization or Centers for Disease Control, has been recently digitized. To overcome these challenges, USAID is focusing on two opportunities for collaboration:

1. Supporting aggregators who provide a middle layer between content producers and MNOs, and who have the technical experience to negotiate and work with the latter:

MNOs are inundated with requests and do not necessarily have the systems in place to respond to calls for bulk-messaging price reductions or free promotions for development-related initiatives. If they want to launch a new development-related value-added service, they want to go to flexible aggregators who can add value to the process and do so across multiple channels, rather than having to

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entertain multiple ideas. Aggregators can also help to reduce costs and friction, which currently prevent small entrepreneurs or NGOs from getting a service up and running, and they can do so in a way that allows content to be distributed across various channels, often simultaneously.

Aggregation platforms can drive down costs on both the supply and demand sides by reducing the need to replicate for every occasion. They also allow content distributors to determine the best delivery channel for end-users, and tailor it appropriately.

As we collectively think about what strong partnerships look like across the digital content value chain, aggregators serve as a critical and often overlooked link between the origination of content and its distribution.

2. Supporting a free, open-source content library that allows content creators to share vetted information across development sectors and channels (SMS, USSD, IVR, video, web) so that others can further localize, augment, and repost in an effort to grow the repository:

Such a public goods service would reduce the transaction costs associated with localizing content for a given sector-specific activity by making it available across organizations, regions, and distribution channels. Moreover, if organized properly, it would ensure that content can be trusted because it will already have been vetted by experts and have strong brand recognition from the content creators before it is uploaded to the repository. This approach is akin to the GitHub model that allows programmers free access to debugged, usable code collected and shared in an online repository. A library focused on life-enhancing content would serve the interests of content creators and distributors across markets, cultures, and development sectors.

Creating such a centralized, common, and expert-led messaging repository would require a set of shared standards, including (1) clear rules for uploading and validating content; (2) the opportunity for everyone to participate in the management and augmentation of the repository and its content; (3) an emphasis on creative commons licensing and the open use and reuse of the content; (4) appropriate technical quality standards predicated on “doing no harm”; (5) privacy standards that would protect users from predatory marketing campaigns and data mining; and (6) a spirit of greater content sharing and collaboration that does not currently exist in the public and private domains.

LOOKING FORWARD

As USAID increasingly looks to leverage digital technologies in our programs, we know that it will be essential to not only invest in particular digital applications but, importantly, we must also invest in the policies, platforms, and systems which will ensure that the digital economy in emerging markets develops in an inclusive way.

Contributing to a well-coordinated digital content value chain will be a critical part of our efforts in this regard. For too long, digital content has been a missing piece in the digital inclusion conversation, but we see that changing, and we are energized by the shared sense of purpose that is emerging. The challenge is to translate this into coordinated action.

This essay offers our recommendations for how such coordination might begin to take root and is intended to provide a common lens through which USAID and its partner organizations can view the opportunities and challenges of future collaboration. However, our recommendations are by no means exhaustive. We hope this essay stimulates both action *and* further discourse on how to strengthen the entire digital content value chain, and we urge new voices to join the conversation.

We believe that together we can create a content ecosystem that dramatically expands the value proposition of digital technology for the next two billion people who will come online. And only then will we realize the full potential of the digital economy to create a more inclusive world.

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1. “Internet Matters: The Net’s Sweeping Impact on Growth, Jobs and Prosperity,” McKinsey and Company, May 2011.
 2. “Breaking the Barriers with Technology: A Special Report on the Kenyan ICT Market,” IDC Government Insights White Paper with sponsorship from the ICT Authority of Kenya, April 2014.
 3. “Internet Matters,” McKinsey.
 4. Song, Steve. “Google, Facebook, and Frickin’ Laser Beams.” Web log post, “Many Possibilities.” WordPress, 28 April 2014. Available at: <https://manypossibilities.net/2014/04/google-facebook-and-frickin-laser-beams/>.
 5. British Council. “Frequently Asked Questions.” Retrieved 29 September 2014. Available at: <http://www.britishcouncil.org/learning-faq-the-english-language.htm>. Source documents:

- Crystal, David. *The Cambridge Encyclopedia of the English Language*. Cambridge: Cambridge UP, 1995. Print; Crystal, David. *English as a Global Language*. Cambridge: Cambridge UP, 1997. Print; Graddol, David. *The Future of English?: A Guide to Forecasting the Popularity of the English Language in the 21st Century*. London: British Council, 1997. Print.
6. W3Techs. "Usage of Content Languages for Websites." Retrieved 29 September 2014. Available at: http://w3techs.com/technologies/overview/content_language/all
 7. George Arnett, "Interactive Map: African Countries Sized by the Number of Wikipedia Articles," *The Guardian*, October 28, 2013. Available at: <http://www.theguardian.com/news/datablog/interactive/2013/oct/28/african-countries-on-wikipedia-map>.
 8. "Africa Telecoms Outlook—2014," Informa Telecoms & Media, November 2013.
 9. "Global Mobile Value-added Services (VAS) Market 2014-2018," Sandler Research, Aug. 2014.
 10. "Cisco Visual Networking Index: Forecast and Methodology, 2013-2018," Cisco White Paper, June 2014.
 11. Drew Toal, "Sesame Street International: 9 Notable Muppets from Around the World," Mental Floss. November 17, 2011. Available at: <http://mentalfloss.com/article/29283/sesame-street-international-9-notable-muppets-around-world>.
 12. "Takalani Sesame - Sesame Workshop." Sesame Workshop. Sesame Workshop, Web. 29 Sept. 2014. Available at: <http://www.sesameworkshop.org/what-we-do/our-initiatives/south-africa/>.
 13. Raznatovic, Perisa. "Can You Tell Me How To Get To Sesame Square? Check Your Mobile Phone." Web log post. The Literacy Ledger. Worldreader, 16 Sept. 2013. Available at: <http://www.worldreader.org/blog/can-you-tell-me-how-to-get-to-sesame-square-check-your-mobile-phone/>
 14. Agbaje, Anne. "Affordable Smartphones Flood Nigeria's Mobile Market." *Businessday Online*. 27 July 2014. Web. Available at: http://businessdayonline.com/2014/07/affordable-smartphones-flood-nigerias-mobile-market/#.VCnJo_ldWga.
 15. ICT4D Working Group. Greentree Consensus. Principles for Digital Development, 2014. Web. Available at: ict4dprinciples.org
 16. "BuzzFeed Expands Internationally in Partnership with Duolingo," BuzzFeed, October 14, 2013. Available at: <http://www.buzzfeed.com/buzzfeedpress/buzzfeed-expands-internationally-in-partnership-with-duoling>.
 17. "The Local Content Ecosystem: How Do We Collaborate to Drive Global Action?" Mobile Solutions Technical Assistance and Research and USAID, 9 June 2014.