Mobile For Development Impact
LOCAL CONTENT, DIGITAL SKILLS AND INTERNATIONAL DEVELOPMENT

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August 2015

Executive summary

Over the last decade, the internet has evolved into a truly global network. In 2005, only 8% of individuals in the developing world were using the internet. Just 10 years later, this number has grown to nearly five times that many, and today, around a third (35%) have access. This is mainly thanks to mobile, which has brought hundreds of millions of people online for the first time.

This trend represents a huge economic opportunity, but there are still several major barriers to access: expanding network infrastructure to enable connectivity, affordable and commercially sustainable services; user capabilities; and a lack of relevant local content to motivate people to come online.

This report focuses on the last two barriers, which to date have received less attention. However, the importance of digital skills and relevant local content should not be underestimated, as they will ultimately determine the social and economic impact of the global expansion of mobile.

The developing world lacks sufficient content in local languages, content that is locally relevant, and locally hosted content or platforms for developers to distribute or monetise it. This is important for economic development for three reasons:

- Relevant local content in particular subject areas (e.g. agriculture) has the potential to make key sectors more efficient.

- Local content can help bring users online and gives them an incentive to improve their digital skills. This will ultimately make areas like digital finance more viable and generate a positive impact.

- Unless sufficient numbers of people are motivated to use the internet beyond basic services like Facebook and WhatsApp, it is unlikely emerging markets will be able to build successful local technology sectors in the near term.

At the same time, those coming online lack the digital skills to have valuable online experiences. These skills are crucial because they ultimately determine what people get out of being on the internet, including accessing local content. An increase in digital skills will help to drive both demand and supply of local content, which will in turn build robust digital ecosystems in emerging markets. It is therefore important that a wide range of actors, including governments, donors, and the wider mobile industry work together to overcome these barriers. This report makes recommendations for each of these groups.

1. INTRODUCTION

Over the last couple of decades, mobile technology has connected hundreds of millions of people for the first time. In a sense, this has brought the world's population slightly closer together, by increasing the number of shared reference points. It is now completely possible that someone in rural India is listening to the same music or following the same sporting event as someone in London or New York. They may even be using similar devices. While many remain excluded, a global mobile network is developing rapidly.

At the same time, local and regional interests are just as important as ever. Across the globe, people have a clear desire for content that reflects and understands their culture, local conditions, and needs. However, at present, there is a demonstrable lack of this kind of content for people living in emerging markets.

This is an issue. We have strong evidence that infrastructure, prices, and local content operate in an interconnected "virtuous circle",[1] and those in the mobile industry increasingly understand that local content is critical to the future of the industry. GSMA Intelligence analysed this issue in a 2014 piece, **"Local world – content for the next wave of growth"**. For mobile network operators (MNOs), more local content would mean an increase in subscriptions, customer loyalty and, eventually, data revenue. Many operators already recognise the important role they have to play in offering more local content, and the **GSMA's Digital Inclusion** team will be exploring this in a series of regionally focused publications.[2]

In this report, we examine why local content matters to those interested in products, services, and content for the underserved in emerging markets, also known as the Mobile for Development (M4D) sector. Relevant local content is one of the key ways individuals in emerging markets will get maximum value from the digital world, especially when combined with digital skills training. This is not simply because delivering content is central to many of these M4D services; local content will be the primary reason why people in emerging markets will get online and participate in mobile internet. This will in turn drive demand and create incentives for services such as digital finance, which will be key drivers of economic development.

Over the last year, GSMA M4D Impact and Mozilla have been researching and investing in new approaches to stimulating local content creation in smartphone-first markets. The findings will be presented in an upcoming paper, 'Approaches to local content creation: realising the smartphone opportunity. This report complements that paper by responding to five key questions:

- What are the trends in the mobile industry in emerging markets? Why do these trends matter?

- Why is there a lack of local content?

- How does this connect to digital skills?

- Why does this matter to the international development community?

- What can they do about this? How can it help to increase local content?

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1   Internet Society, OECD and UNESCO, 2011, **The Relationship between Local Content, Internet Development and Access Prices**
2   The first, focused on Asia, can be found **here.**

WHAT IS LOCAL CONTENT?

Mobile content is any form of electronic media (e.g. text, photos, music, videos, games, maps) that can be viewed or used on a mobile device, such as a mobile phone or tablet. Such content can be divided into content that is distributed via the mobile internet (e.g. apps and web-based services) and content outside the data channel: IVR (interactive voice response), SMS (short messaging services), MMS (multimedia messaging service), and USSD (unstructured supplementary service data).[3]

At present, the majority of content in emerging markets is not delivered via the data channel because most people still use lower-end devices. However, this is changing rapidly as uptake of mobile internet and affordable smartphones rises. Given the pace of change, even those designing M4D services for poorer users will have to start thinking about also designing for smartphones.

'Local' content refers to content that is created and hosted locally, in the local language or relevant to the local population.

2. BACKGROUND: AN EVOLVING INDUSTRY

The rise of mobile in the world's emerging markets has been hugely significant. In wealthier nations, most enjoy access to several forms of communications technology (e.g. landline telephones, fax machines, and the internet), and the introduction of mobile has simply made communication and access to information even more convenient. Conversely, in many developing economies, mobile has allowed people to communicate instantaneously with others outside their physical vicinity for the first time. While some countries in the developing world already had cheap, reliable landline networks, many did not, and the impact of mobile in these countries has been enormous: at the end of 2004, only 13% of the population in emerging markets were mobile subscribers. Ten years later, this had more than tripled to 45%.[4]

These developing markets are now entering a second phase, which has the potential to create an even bigger impact. Mobile internet has begun to take off even in the world's poorest countries, bringing many online for the first time, as Figure 1 (below) illustrates. In Africa, the number of online users grew two and a half times between 2009 and 2014 alone.[5]

Figure 1: % of Individuals Using the Internet Source: ITU

Legend: Africa · Arab states · Asia & Pacific · Europe · The Americas

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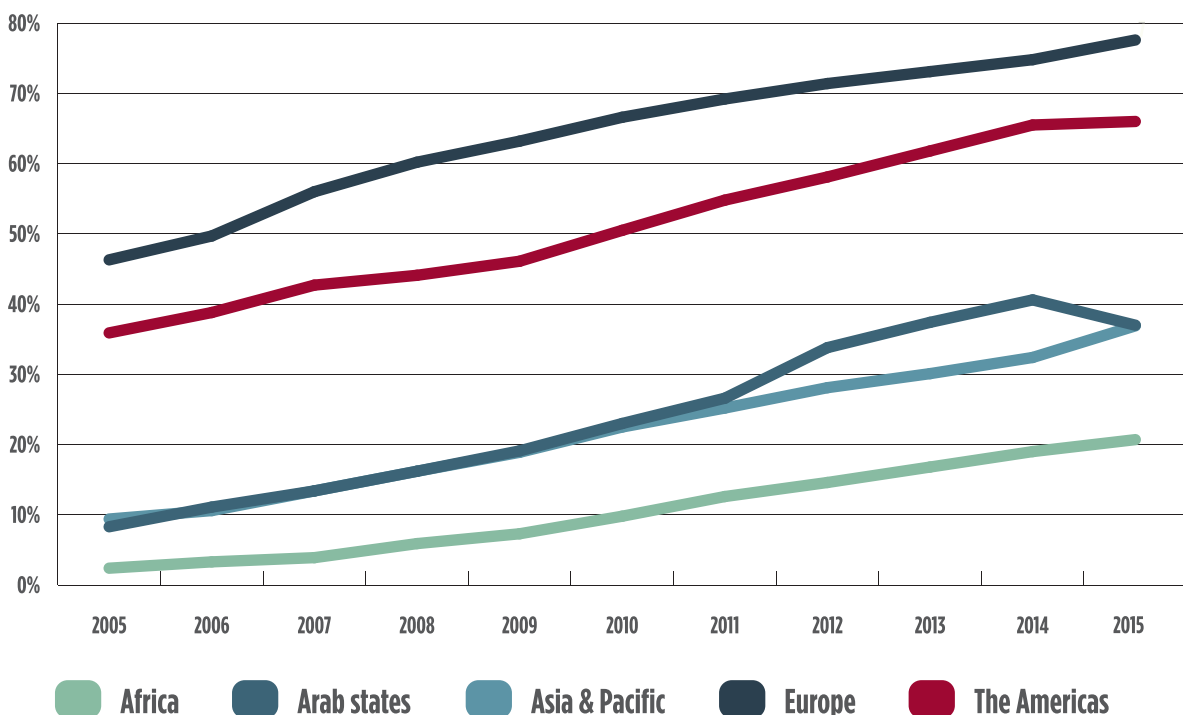
3   A glossary of these terms can be found on our **website.**
4   GSMA Intelligence
5   ITU, I**CT Statistics**

Mobile will soon enable the majority of the world's population to join the internet age. Given what this could allow individuals, organisations, and governments to do, there has been huge enthusiasm for what widespread internet access will mean for economic development.

However, despite recent advances, only a minority of the world's citizens are online. Globally, four billion people are offline, 90% of whom are in the developing world.[6] Moreover, there are clear structural reasons why certain people do not have access to the internet — those who are yet to come online are disproportionately rural, poor, illiterate, elderly, and female.

THE GSMA, ALONG WITH OTHERS,[7] HAVE IDENTIFIED FOUR MAIN BARRIERS FOR THESE GROUPS:

NETWORK INFRASTRUCTURE	AFFORDABILITY	USER CAPABILITY	INCENTIVES TO COME ONLINE.

The first two are supply-side issues, while the last two are demand-side issues.

On the supply side, the mobile internet revolution has been facilitated by unprecedented capital investment from mobile operators. Over the past six years (2008–14), MNOs have made investments totalling over US$ 1 trillion globally.[8] Consequently, much of the world's population now lives within range of a mobile network, and this is only increasing. By 2017, Ericsson predicts 85% of the world's population will live in areas served by 3G networks, the foundation for access to data services and the mobile internet. Towards the end of 2013, mobile broadband connections in the developing world passed 1 billion. By 2017, this will exceed 3 billion, about half of which will be smartphone connections.[9]

Figure 2: Smartphone Penetration (by Region) Source: GSMA Intelligence

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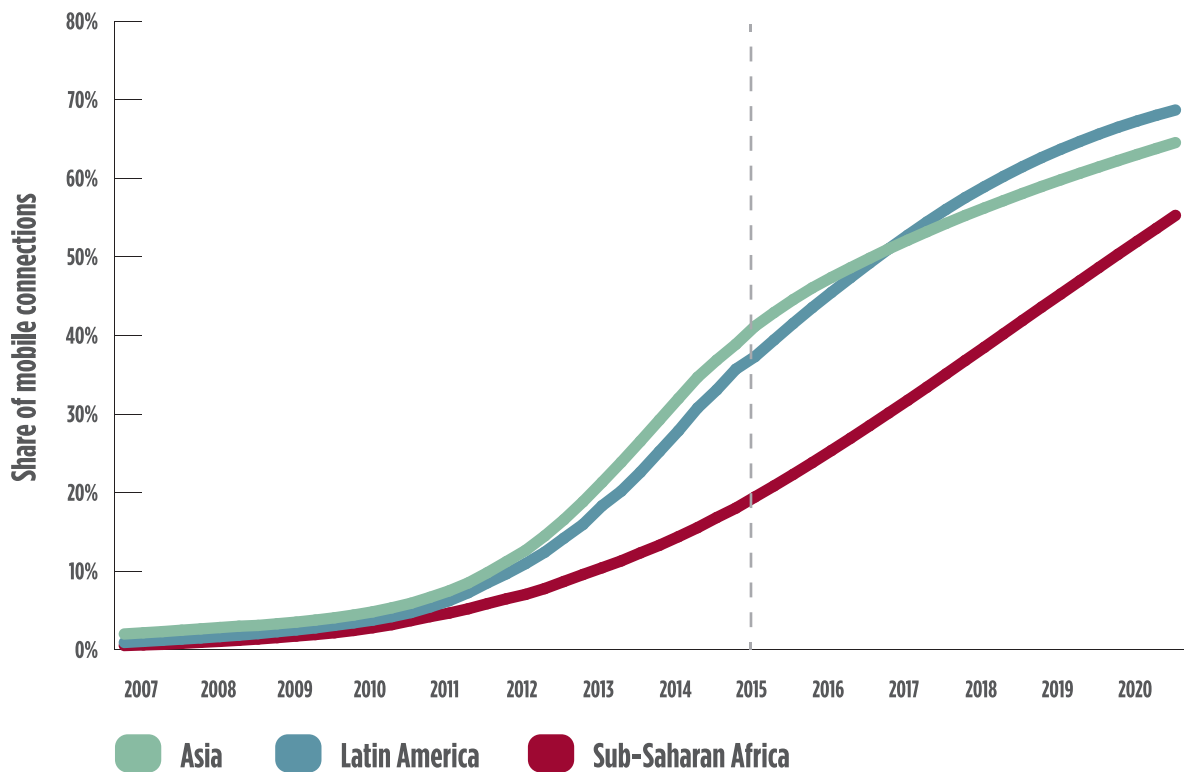
6   ITU, ICT Statistics
7   For example, see McKinsey & Company, September 2014, Offline and falling behind: Barriers to Internet adoption
8   GSMA, 2014, The Mobile Economy 2014
9   GSMA Intelligence

However, approximately 10–15% of the world's population have little or no mobile coverage of any kind, and a large proportion of these individuals live in rural areas of emerging markets. For operators, the business case for expanding into these regions is challenging due to the huge investments required and lower expected revenues. As a result, those in the technology space have begun experimenting with alternative, lower cost solutions such as aerial networks, including high altitude balloons (e.g. Google's Project Loon), unmanned aerial drones (Facebook), or satellite solutions (SpaceX).[10] Although such innovations are welcome in the short term, mobile networks will be the primary way the unconnected will come onto the internet over the next decade.

Table 1: Population covered by mobile signal
Source: ITU

	Africa	Americas	Asia	Europe	Oceania	World
Overall mobile cellular population coverage (%)	88%	99%	92%	99%	96%	93%
Rural population covered (%)	79%	96%	87%	98%	81%	87%
Rural population covered (millions)	498	171	2017	196	0.9	2883
Rural population not covered (millions)	129	9	309	3	0.2	450

Moreover, despite the falling costs, running a mobile is still an expensive luxury for many. The range of taxes levied on the mobile industry, including handset purchases, subscriptions and service consumption, as well as a number of sector-specific levies on operators, all increase the cost for consumers (and therefore indirectly reduce access).[11] Even more importantly, despite huge reductions in global poverty over the past decades, a huge proportion of the world's population continue to live in extreme poverty. Nearly half of Sub-Saharan Africa (46.8%) and a quarter of South Asia (24.5%) are living on less than US$ 1.25 a day.[12] The cost of mobile and mobile internet is therefore still out of the reach of many. The data shows a strong positive correlation between the wealth of a country and the number of people who have access to the internet (see Figure 3 on next page).

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10   This was covered in the M4D Impact report, **Mobile Access: The Last Mile**
11   The GSMA's Digital Inclusion programme is working extensively in this area. See the **Affordability and Taxation work-stream.**
12   World Bank

Figure 3: GDP per capita versus Internet Penetration Source: ITU and World Bank (2014)
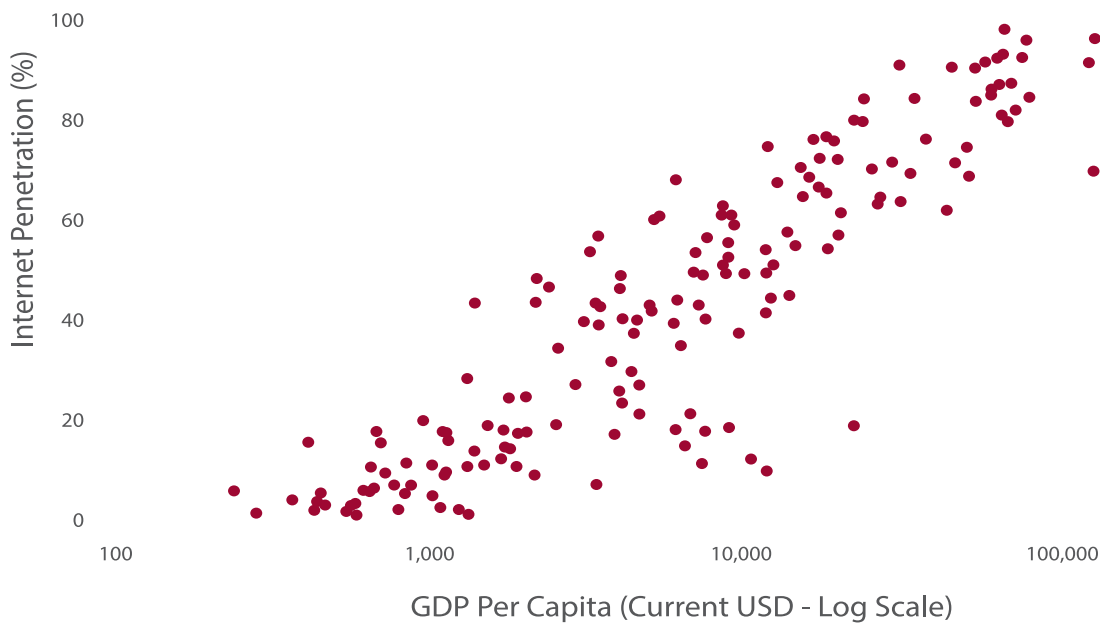
Given this, the growth of mobile internet could be seen as a trend that has little relevance to the lives of the world's poorest. With over 1 billion people living on less than $1.25 per day, and often excluded from basic health, utility, education and financial systems, it is clear that many people around the world have many more immediate, basic needs.

Nonetheless, it would be a mistake to underestimate the potential of mobile internet, even for those at the base of the pyramid (BoP). Even the mobile industry has grossly underestimated the speed at which mobile would take off in emerging markets. In 1999, Safaricom projected that Kenya would have three million mobile subscriptions by 2020,[13] but it had already reached this milestone by 2005. By 2015, the country had 34.2 million connections, 19.75 million unique subscribers and, with mPesa, had demonstrated to the world that mobile money could reach scale.[14] Safaricom was far from alone in underestimating the speed at which mobile would spread, and it would be unwise to be pessimistic about how quickly the unconnected could be brought online through mobile internet and smartphones.

It would also be unwise to underplay the huge challenges that remain in making mobile and the mobile internet accessible to the unconnected. However, we are now in a position to refocus the debate on the ability of individuals, companies, and countries to create and reap the value of greater access.[15] In the 1990s, the term 'digital divide' was widely used to describe the gap in internet access either between or within populations. Thanks to the spread of mobile in emerging markets, the access gap has narrowed dramatically and should continue to close, but the skills people need to maximise the value of being connected will not necessarily develop on their own. Those coming online will need to be given the tools to understand, use, and act on the information and opportunities they now have access to. Ensuring sufficient local content is available will be one of the key ways to motivate mobile internet usage and improve digital skills. Therefore, it is crucially important to pay attention to demand-side factors.

3. THE LACK OF LOCAL MOBILE CONTENT

The spread of the internet across the globe has spurred serious growth in digital content from emerging markets. Domain name registrations in countries around the world have increased markedly, and the number of users creating profiles on social media platforms is growing at a meteoric rate. In June 2014, Facebook hit 100 million users in Africa, 80% of whom were on mobile.[16] The appetite for mobile apps is also clear: between Q3 2013 and Q3 2014 alone, combined downloads on iOS and Android were 100% higher in Brazil, 70% higher in Indonesia, 60% in Mexico and Turkey, and 30% in India.[17]

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13   Internet Society, 2014, **The Global Internet Report 2014: Open and Sustainable Access for All**
14   **GSMA Intelligence**
15   Economist Intelligence Unit, 2013, **Redefining the Digital Divide**
16   Facebook, 18 September 2013, **Connecting 100 Million People in Africa**
17   App Annie & MEF, 2014, **Q13 2014 Report: Emerging Markets and Growth in the Global App Economy**

However, when we look at the content available, there are plenty of indications that participation and representation in mobile internet are extremely uneven. Our understanding of the content landscape as a whole is incomplete — publicly available data on mobile applications is lacking — but the data we do have suggests it is a major issue.

First, there is a dearth of content in local languages (see Figure 3 below). Just over half (56%) of web content is estimated to be in English despite the fact that less than 5% of the world's population speak it as a first language, and only an estimated 21% have some level of understanding. In contrast, some of the world's most widely spoken languages, such as Arabic or Hindi, account for a tiny fraction of the web's content (0.8% and less than 0.1% respectively). This is a particular issue for languages based on a non-Roman alphabet, which have more technical challenges.

Second, there is a massive disparity of content between developed and developing regions. Gazetteers, the databases of geographic place names, are dramatically skewed towards more developed regions. For example, an analysis of Geonames, the world's most widely used Gazetteer, showed that over a quarter of the entire database was devoted to the United States, with more content created about that country than all of Asia combined. This matters, as these locations are the source for the databases, maps, and search engines that form the backbone of the web.[18]

Figure 4: Web content compared to native speakers Source: W3Techs, Ethnologue, M4D Impact Analysis
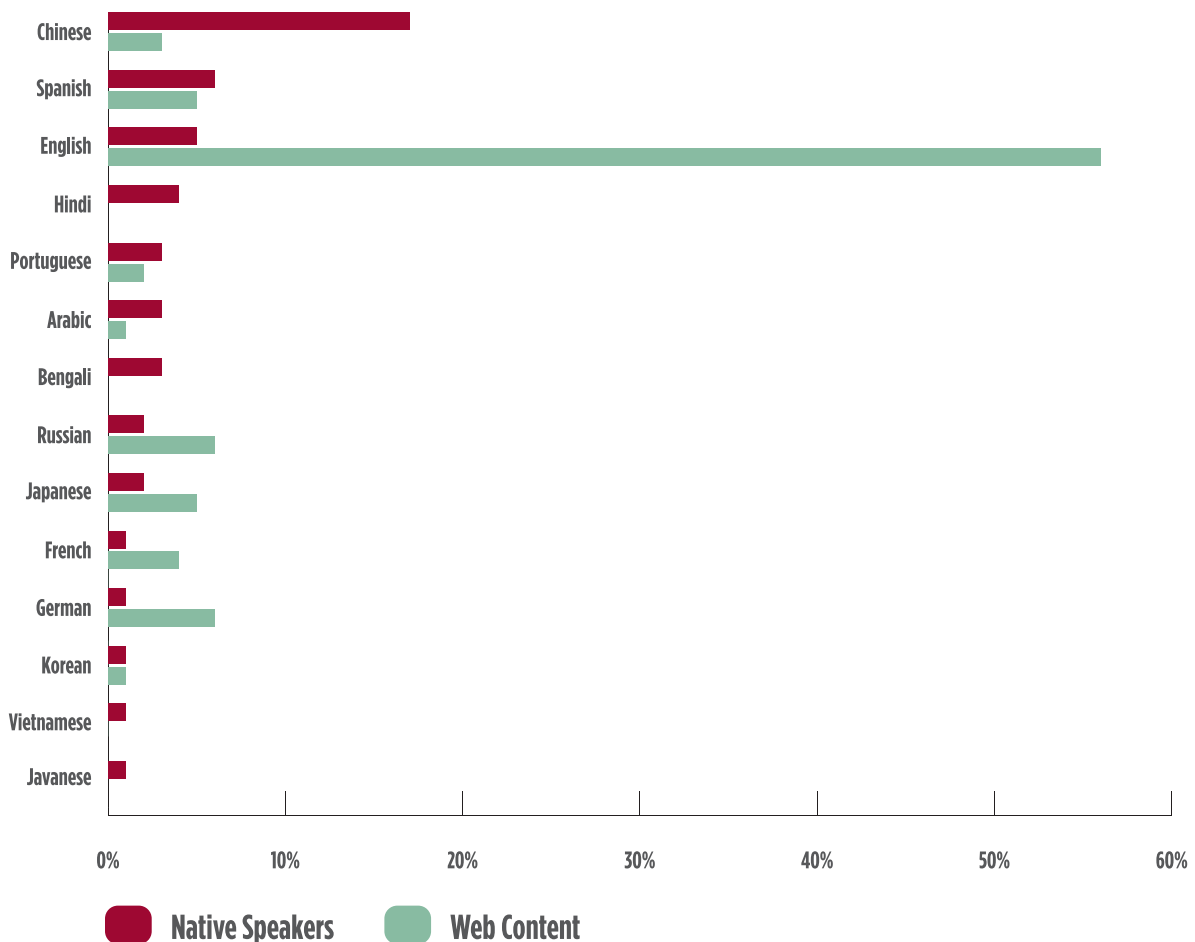
One consequence of this lack of locally relevant and understandable content is that the major international platforms (Google, Facebook, Amazon, and eBay) have become the predominant web destinations in most emerging markets. In most countries, there are few local news, sport and e-commerce websites gaining a foothold. While this is also true in developed markets, these platforms better cater to the needs of users in terms of both language and content.

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18   Mark Graham and Stefano De Sabbata, 2015, **Mapping Information Wealth and Poverty: The Geography of Gazetteers**

Figure 5: Most popular website by type (selected emerging market countries)
Source: Alexa, M4D Impact Analysis
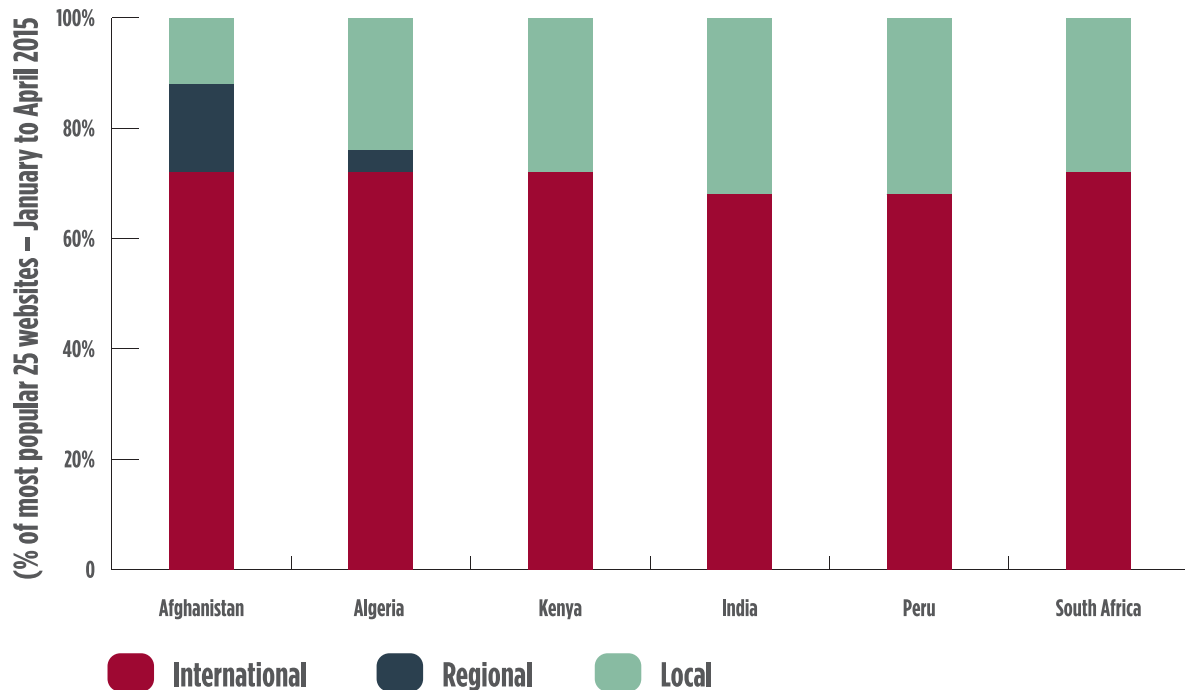
These issues are exacerbated by two factors. First, a great deal of content on the web has not been formatted for mobile, which means the limited amount of content that is available may not even be accessible. One estimate is that less than 10% of the web is mobile-ready — a huge issue given that a majority of users in emerging markets are coming online solely via mobile.

Second, those attempting to distribute content via the major app stores may hit a dead end. A 2014 analysis of the Google Play store by the Internet Society found that applications were not available in 33% of the countries surveyed, all of which were emerging market economies.[19] [20] While some local app stores, such as GidiApps in Nigeria, have begun to emerge, the channels through which local content can be discovered remain limited. Resolving this problem is key; unless there is a clear way for developers of content, services, and applications to monetise what they produce, it is unlikely a sustainable ecosystem will emerge. It is therefore essential to resolve these distribution and payment issues.

4. WHAT DOES A LACK OF MOBILE CONTENT MEAN FOR INTERNATIONAL DEVELOPMENT?

Mobile now represents a significant share of many national economies. The GSMA estimates that in 2014, the mobile industry contributed US$ 3 trillion to the world economy in value-added terms, which is equivalent to about 3.8% of global GDP.[21]

More directly, mobile promotes human and economic development through the opportunities afforded by its core functionality (voice, SMS messaging, and mobile data) and the provision of a host of mobile-enabled products and services. The fact that mobile is the fastest adopted technology in history has meant that people and organisations working in a range of areas, from finance to health and agriculture (often grouped together as **Mobile for Development** services) have seen mobile as a key enabler of social and commercial benefits.

19   Internet Society, 2014, **The Global Internet Report 2014: Open and Sustainable Access for All,** p. 120.
20   Indeed, there are a number of barriers that prevent small businesses and entrepreneurs from using platforms such as eBay, PayPal and Amazon, as well as Google Play. For more, see eNovation4D, April 2015, **Nations forgotten by e-Commerce giants**
21   GSMA, 2015, **The Mobile Economy 2015**, p. 22.

4.1 LOCAL CONTENT AS ENABLER: THE EXAMPLE OF MOBILE AGRICULTURE

Mobile in agriculture is one example of this. While agriculture still accounts for a significant proportion of most developing country economies, the sector continues to suffer from low productivity. For example, World Bank data suggests that cereal yields in low- and middle-income countries are 43% lower than in high-income countries.[22] This is primarily a result of:

- A lack of information about agricultural inputs (seeds, fertilisers, pesticides, etc.), nutrition, prices for crops across markets, and accurate weather information

- Access to markets and a poor match between supply and demand

- The inability to access finance: loans, payment facilities, savings, and insurance

- Limited availability of modern agricultural machinery

Mobile can address some of these issues through mobile services and applications, and a number of services have been developed in emerging markets. GSMA Mobile for Development currently tracks 117 of these products and services, the majority of which attempt to help smallholder farmers improve their access to information.[23]

Figure 6: Mobile agriculture applications
Source: GSMA mAgri, Market size and opportunity for agricultural value-added services
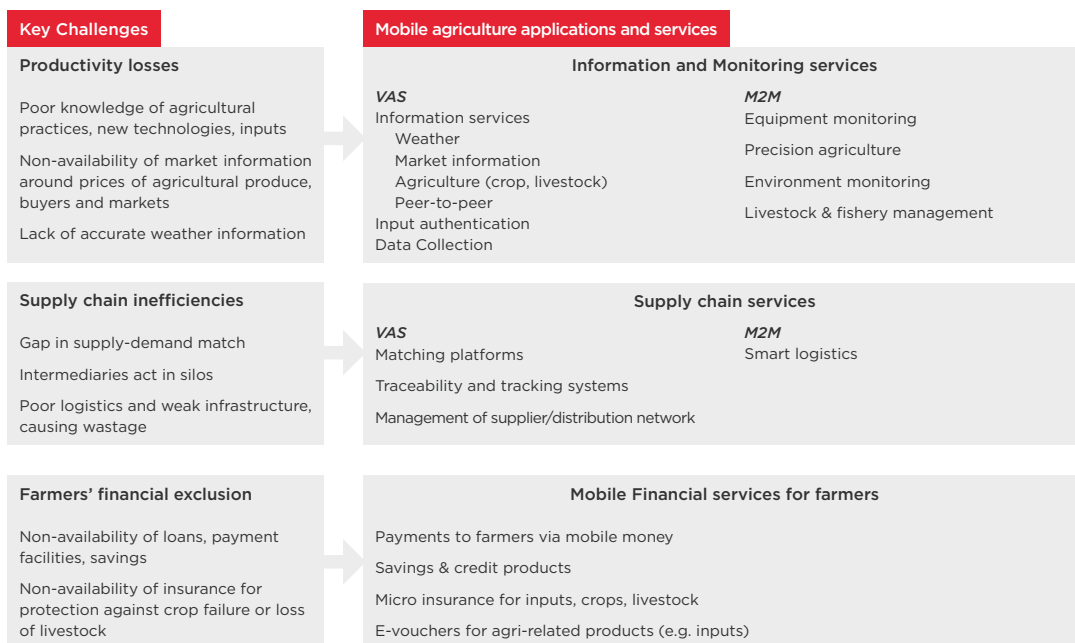
Running through all these issues is the content or information users are accessing. Ensuring content is relevant, localised, and in an appropriate language is critical to generating a positive impact. Unless this occurs, it is highly unlikely that the product or service in question will be able to create any value for its users.

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22   As measured by cereal yield – kilogram per hectare. High income countries: $4,953; low- and middle-income countries: $3,466 (World Bank, 2013)
23   **GSMA M4D Impact, Products and Services Tracker**

4.2 LOCAL CONTENT AS CATALYST: THE CASE OF FINANCIAL INCLUSION

In a mobile agriculture service, the importance of sourcing local content is fairly clear. However, content also has an important but more indirect role to play in other areas. This can be best illustrated by its role in financial inclusion, one the key drivers of socio-economic development.

In the developing world, 2.5 billion people are classified as 'unbanked', having to rely on cash or informal financial services which are typically unsafe, inconvenient and expensive. However, over one billion of these people have access to a mobile phone, facilitating the possibility of delivering convenient and affordable financial services to the underserved.

The importance of creating digital payments systems has been well established, due to the clear reductions in the risk and the cost compared to cash. Benefits accrue at multiple levels:

- For individuals, digital payments reduce costs and increase control, security, and financial inclusion;

- The company or organisation benefits from greater transparency and lower costs; and

- Providers of digital payments services gather more credit information and have fewer non-performing loans.[24]

To date, the majority of mobile money services have been delivered via basic channels like USSD, STK (SIM Application Toolkit), and IVR. However, the GSMA Mobile Money for the Unbanked (MMU) **2014 State of the Industry** report revealed that 61% of mobile money services (tracked by the GSMA) are now available in the form of a smartphone app, a percentage that will grow rapidly over the coming years.[25]

The shift to smartphones will be significant, in that it promises to make digital transactions a more attractive propostion. For both individuals and organisations, it offers a radically improved user experience compared with USSD systems. Graphical menus make navigation far simpler, and issues such as USSD session time out are less of a concern. Even more significantly, smartphones offer a common platform for developers—which will enable integration with other mobile features, broadening the potential for mobile commerce. Finally, it enables powerful and complementary apps that help users keep track of their transactions and generate monthly statements (e.g. for mPesa these include **pesaDroid** and **m-ledger**).[26] For services providers, it has the potential to radically increase the amount of data they can gather on users, who are currently not well understood.

Shifting to a digital financial ecosystem involves overcoming some well understood challenges. Principally, these involve challenges such the reliability of services, a well-trained agent network as well as sufficient investment. These have been seen as cheap and efficient 'on ramps' to enable the poor to enter the digital financial world. These have centred on connection to mobile networks, systems to enable easy cashing in and out, and verification of identity. This is ultimately in the hope that people progress along the kind of 'pathway' towards financial inclusion displayed in Figure 7 (next page).

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24 World Bank Development Research Group, Better Than Cash Alliance, and the Bill & Melinda Gates Foundation to the G20 Global Partnership for Financial Inclusion, 2014, **The Opportunities of Digitizing Payments**
25 GSMA Mobile Money for the Unbanked, 2014, **2014 State of the Industry: Mobile Financial Services for the Unbanked**

Figure 7: A Pathway to Digital Financial Inclusion
Source: Daniel Radcliffe and Roger Voorhies, A Digital Pathway to Financial Inclusion

**Inclusive
Digital Economy**

**Digital in-store
purchases**
Poor people conduct a
majority of transaction
(including small in-store
purchases) digitally

**Full range of digital
financial services**
Poor people adopt and
use digital for savings,
credit, and insurance
services

**Digital remote
payments**
Poor people adopt and
use digital for person-
to-person transfers and
government payments

Basic connectivity
Critical mass of mobile
coverage and penetration
among rural poor

| STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 |

However, there is also a psychological component in pushing people towards digital systems. Increasing financial inclusion through the driving usage of digital money is not simply about bridging the physical and electronic money systems. This only facilitates access. Actual usage of digital money, also requires a shift in the psychology of the user. [27]

For users to move beyond all but the most basic financial functions, they need to become confident operating within tSpecifically, for users to progress beyond all but the most basic financial functions, they also need to have gained the confidence to operate effectively within a digital realm. Many of the barriers holding back digital finance from having an impact, are the same things holding back the impact of digital services as a whole. Through their work with a number of services, the GSMA's Mobile Money programme have found that often, the main issues holding back service are to do with technical competency. [28] These include:

- **Awareness:** women did not know about mobile money services
- **Mental models:** the concept of money on a mobile device was difficult to grasp
- **Literacy and digital literacy** (e.g. * or # symbols were difficult to understand)
- **Security:** a low number of users were able to recall their security code (MPIN)

Consequently, unlocking the economic benefits promised by digital finance actually hinge upon a broader development of digital skills and mental models amongst users. This includes basic ideas (e.g. navigating a menu), as well more complex concepts (e.g. security and credibility). As a result, an increased supply of local content, if accompanied by digital skills development, has the potential to play a catalytic role in making mobile financial services more viable and therefore impactful.

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27   Ignacio Mas, December 2012, **Payments in developing countries: Breaking physical and psychological barriers,** Transaction World Magazine.
28   This is also supported by the GSMA Connected Women's case study: **Snapshot: Swadhaar, Accion & Airtel Money: Mobile Money Training for Female Customers in India**

4.3 THE WEB JOURNEY: TRACKING DIGITAL LITERACY

Moving a sizeable number of users beyond the most basic level of services ultimately depends on having enough people with the skill and inclination to use the internet for more economically productive tasks.

It is therefore useful to think more broadly about the journey people go through when using the web or mobile internet. The GSMA and Mozilla have developed a framework that illustrates what motivates people to strive for higher levels of digital literacy, as well as the barriers that hold them back. We have divided this 'journey' into four stages:

1. **NO USE:**
   A. UNAWARE: Has never heard of the web, or has no understanding of what it is
   B. UNINTERESTED: Is aware of the existence of the web, but does not use it

2. **LIMITED USE:** Is online but mainly uses social media

3. **LEVERAGE**: Understands how to use the web to improve their quality of life

4. **CREATION:** Is able to read and write on the web

Figure 8: GSMA and Mozilla's 'Web Journey'

We have anecdotal evidence that some users, generally younger ones, are able to pick up tools like smartphones or tablet computers quickly, sometimes in sophisticated or innovative ways. However, in general, access is not sufficient to enable widespread adoption of the kinds of services and applications discussed above. Rather, the extent to which individuals use a technology depends on a range of personal, social, and environmental factors. Also, the degree to which someone's personal and economic prospects are enhanced by the web depends on their age, local social customs and location, among many other factors.
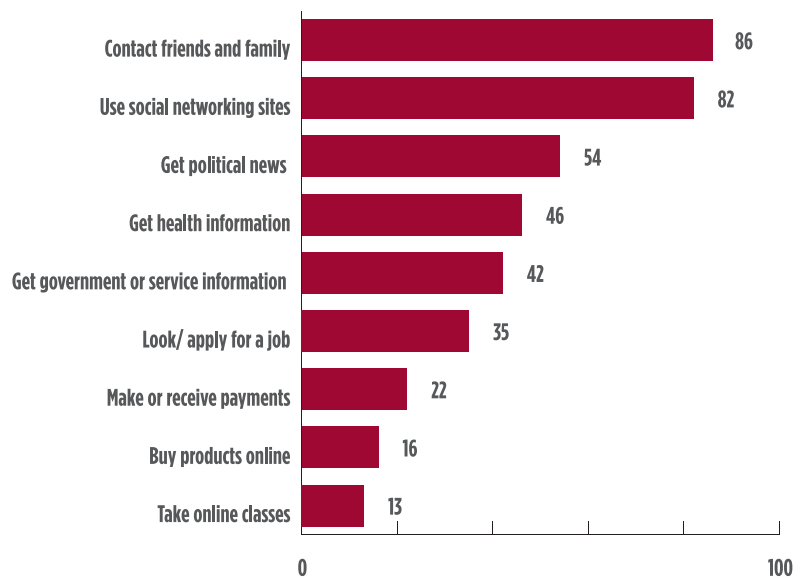
Currently, a large number of people who have recently come online are using the internet solely for social media. LINREasia, Research ICT Africa, and Quartz have all found in surveys across a range of countries that response rates are higher amongst those who report using Facebook than those who say they use the internet.[29] This indicates there is a significant number of people around the world who do not know they are using the internet. Even if this problem is overstated, it is clear that social media and communication services are the entry point to the internet for most people. However, if we are to realise the transformative impact of getting connected devices into the hands of the majority of the world's population for the first time, social media needs to simply be a stepping stone to a wider and deeper engagement with the internet. Here, local content has a major role to play in creating more meaningful and productive online experiences.

Figure 9: Percentage of adult Internet users who have used the internet to do the following task

Source: PEW Research Centre, Global Attitudes Survey, 2014

Task	Value
Contact friends and family	86
Use social networking sites	82
Get political news	54
Get health information	46
Get government or service information	42
Look/ apply for a job	35
Make or receive payments	22
Buy products online	16
Take online classes	13

Median % across 32 developing world and emerging market countries

Progress along the journey outlined in Figure 8 (above) will ultimately create much more value for both the individual and society as a whole. First, more engaged users will demand more locally relevant content. Unless users develop a more sophisticated understanding of the different use cases internet access enables, many will likely be content to stick with a limited range of services (e.g. peer-to-peer communication and social networking services).

Second, in the coming years there will be a wide variety of jobs in emerging markets that will require digital skills, both inside and outside the technology sector.[30] The production of locally relevant digital content is a good example. As Table 2 (below) indicates, producing digital content is part of a multi-step value chain.

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29   LIRNEasia, 13 August 2014, **More Facebook users than Internet users in South East Asia?**; Quartz, 9 February 2015, **Millions of Facebook users have no Idea they're using the internet.**
30   Rockefeller Foundation, 2013, **Digital Jobs in Africa: Catalyzing Inclusive Opportunities for Youth**

Table 2: Content distribution chain[31]

Stage	Origination	Refinement and localisation	Service development	Marketing	Distribution and payment	Evaluation
Description	Collecting, creating, or sourcing content	Adapting content to fit local situation	Delivering content to users over appropriate channel	Making users aware of content	Delivering the service and facilitating sustainable business models	Providing research and intelligence to improve the quality and relevance of the content
Key Question	What content appeals to users?	How much of the content can be translated? How much needs to be localised?	What delivery platform(s) should be used?	What stories resonate with consumers in the market?	What mechanism can be used to collect revenue (e.g. Mobile money? Direct billing?)	Is the abundance of data from the mobile platform being harnessed? Does the analytical capability exist?

In many parts of the world, there is not currently a large enough community of digitally engaged people to make these kinds of value chains possible. One of the best proxy measures of this are the number of people working on local Wikipedias around the world. The number of active Wikipedia editors in many of the world's most widely spoken languages is small; at last count, there were only 72 active editors on the Telugu version of Wikipedia, compared with over 2,000 in the Italian version, despite the fact that the languages are spoken by a similar number of people.[32] Ultimately, this matters, as there is a strong correlation between the amount of content in a given language and the size of the community contributing initiatives like Wikipedia.

Figure 10: Active Wikipedia Editors versus Native language speakers (Number of editors making 5 or more edits a month)
Source: Wikipedia, M4D Impact Analysis
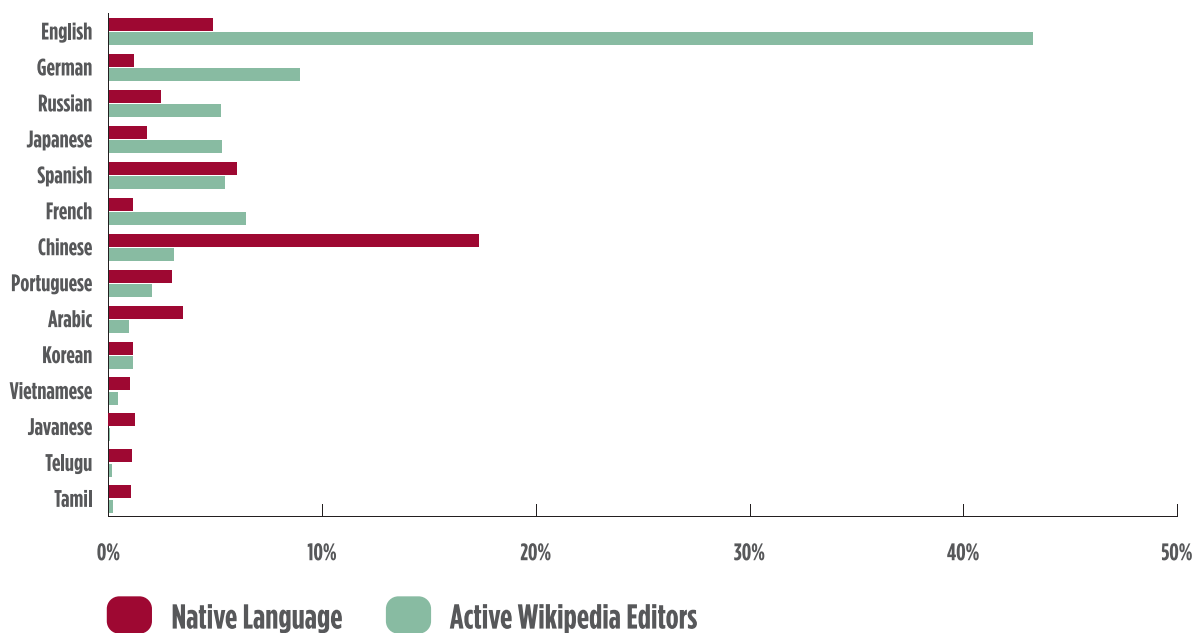
Native Language   Active Wikipedia Editors

5. CONCLUSIONS AND RECOMMENDATIONS FOR KEY STAKEHOLDERS

Governments, donors, and the wider mobile industry all have a major interest in improving digital skills in emerging markets. For the internet to have maximum economic impact, there will need to be a critical mass of people in these countries who can not only develop the services, platforms, and distribution networks to deliver local content, but create the content itself.

However, before this can happen, users will need to develop a range of skills and adopt new mental models to navigate the digital world. At a basic level, this involves understanding concepts now taken for granted by people living in developed markets. Users will also need to be inspired to go online to find (and potentially create) content that is relevant to them and their communities. Local content will therefore need to be in place if the expansion of the internet into emerging markets is to deliver the promised impact.

To achieve this, we propose the following recommendations:

5.1 MOBILE OPERATORS

This report has not focused on the role operators can play in driving the production of local content, as this will be covered in an upcoming series of regionally focused reports by the GSMA's **Digital Inclusion** team.

Nonetheless, it is important to reiterate that operators have a range of important assets that make them a central part of the digital ecosystem and a key partner for other stakeholders. These assets include:

- Channel access: Operators provide access to the channels that allow services to operate without direct data or internet access (e.g. IVR, SMS, MMS, and USSD). Moreover, on mobile internet, operators are increasingly creating portals through which their subscribers enter the web.

- Operators can provide the technical infrastructure developers need to get their content to market. In emerging markets, the direct billing relationship MNOs have with subscribers is particularly valuable given the lack of alternative payment options.

- Their extensive agent networks, marketing displays, supply chains, software push technology, and mobile application stores.

The shift towards mobile internet represents both a huge opportunity and a new challenge for mobile operators. As such, it is important they continue to evaluate how to best leverage their assets. Innovative solutions, such as exposing core capabilities through network APIs to the wider ecosystem, could be a way to expand the content available and develop the industry as a whole.

5.2 DONORS

Digital skills and local content are key enablers in any sector and will be crucially important regardless of location. Donors could help by supporting initiatives to develop digital skills. This would ultimately increase the content and opportunities available to users, and in turn ensure certain key sectors, such as digital finance, are viable.

Second, donors working in the development sector are already sitting on a wealth of relevant content. USAID recently proposed that donors support a free, open-source content library. This would allow content creators to share vetted information across development sectors and channels for others to localise and augment. This is one option to be explored.[33]

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33   **Building a Foundation for Digital Inclusion A Coordinated Local Content Ecosystem,** Christopher Burns and Jonathan Dolan

5.3 INVESTORS

While start-up ecosystems to support mobile entrepreneurs in emerging markets are developing, they lack local expertise in certain areas: marketing, product optimisation, user data analytics, and access to capital funding. Accelerators, incubators, and innovation spaces working in technology in emerging markets can play a significant role in supporting start-ups.[34] If investors provide adequate support to local entrepreneurs, it is likely that a wealth of innovative (and locally relevant) solutions will emerge.

5.4 GOVERNMENT

Greater access to the internet around the world has the potential to dramatically improve interactions between citizens and government (eGovernment). Many countries in emerging markets are beginning to move common functions, such as benefit payments, tax filing, and passport applications online, while also making efforts to digitise education, health, and public services. The gains to be realised are potentially enormous. McKinsey has estimated economic gains to be between $10 billion to $25 billion in Africa alone.[35]

As discussed, local content can create incentives for people to start using mobile internet and keep using it. Governments can support this by:

1. Developing appropriate digital and digital inclusion policies to ensure there is an appropriate framework in place to increase access, improve skills, and help to build a flourishing local content ecosystem.
2. Ensuring the content and data in their control are released to citizens in an appropriate format and language. Across the world, governments are responsible for creating and curating a great deal of digital content and data, but many are not doing enough to make it available to their citizens. The UN E-Government Survey 2014 found that 85% of governments in Asia made their portal available in more than one language, while 66% in the Americas and 61% in Africa did so.[36] Given the linguistic diversity of many countries, it is essential governments offer multilingual public communications. A striking example of this is the e-India initiative, which was launched by India's current government to remedy a lack of diversity. Prior to this initiative, more than 90% of Indian government websites were only available in English, a language that only 10-30% of the population speak with any degree of fluency.[37]
3. Supporting the growth of the digital ecosystem by ensuring taxation policy and levels and spectrum allocation are fair and transparent, and reflect the important role mobile can play in developing a nation's economy.

5.5 PRODUCT AND SERVICE DEVELOPERS

Those designing services of any size need to ensure they have a sharp focus on the needs, wants, and limitations of their users. The GSMA's Mobile for Development team works with a number of products and service developers cross a range of sectors. A key recommendation, which applies to all sectors, is to follow the principles of user-centric design (or UCD).[38] UCD puts the customer at the heart of the design process, which pushes designers to focus on the needs of the target audience and to ask:

- What are users' previous experiences with the devices or platforms they have access to?

- What level of education do prospective users have? What language (and written style) are they most likely to respond to?

- What examples are engaging and relevant to prospective users?

UCD is essential to ensuring services have the best chance of success.

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34   Something we discussed in our December 2014 report **'Emerging Market Entrepreneurs to Silicon Valley'**. A tracker, that will that maps the full range of organisations working in the technology space across emerging markets will soon go live on the **M4D Impact site.**

35   McKinsey & Company, **Lions go digital: The Internet's transformative potential in Africa**

36   **UN E-Government Survey 2014**

37   **Trak.in**

38   This is discussed further in GSMA, August 2013, Scaling Mobile for Development, p. 35-8.

5.6 RESEARCHERS

While the importance of local content has been widely recognised, there is still a limited amount of research on the subject. As a result, there are some important outstanding questions to address, including:

- At the macroeconomic level, what impact would an increase in local mobile content have in emerging markets?

- To what extent does it matter if most of the key platforms used in emerging markets are located elsewhere (e.g. Silicon Valley)?

- What are the sustainable business models that will lead to the creation of greater amounts of local content?

DIGITAL INCLUSION INDICES

Better data is needed on local content (or the lack thereof), but existing digital inclusion indices fall short. This is not to denigrate the work done in this area, particularly in the absence of better alternatives, but better data and metrics are required to advance our understanding in this area.

- The **ITU's ICT Development Index** only captures high-level access indicators (e.g. the number of subscriptions per 100) or usage indicators (e.g. percentage of people using the internet).

- The **Web Index** has a component dedicated to 'Relevant Content'. However, it is too narrowly tied to whether governments have made their data available. While this is important, it does not give a complete picture.

- In terms of skills, there is nothing covering the developing world equivalent to the OECD's Survey of Adult Skills (PIAAC), which measures achievement in "problem solving in a technology-rich environment" (%) or the EU's Digital Agenda Scorecard.[39] We know there are huge differences in digital skills between developed markets of relatively similar economic standing (e.g. between Norway and Italy). It is essential to develop a similar understanding of digital skills in the developing world, rather than relying on assumptions or proxies.

Beyond high-level indicators and data, it is crucial to gain deeper insights on indivual users and the issues they face. For that reason, the GSMA and Mozilla are currently conducting field research to answer the following questions:

1. What is the mind-set of new smartphone users: their attitudes toward the internet, their devices, and creativity?

2. What is the relationship between increased digital skills and content creation?

3. How does interest-driven learning work in practice?

4. How does peer learning amplify knowledge in a community?

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39   European Commission, **Digital Scorecard 2015.**

ABOUT THE AUTHOR

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Front cover photo: Laura de Reynal

ABOUT THE GSMA

The GSMA represents the interests of mobile operators worldwide, uniting nearly 800 operators with more than 250 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and Internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces industry-leading events such as Mobile World Congress, Mobile World Congress Shanghai and the Mobile 360 Series conferences.

For more information, please visit the GSMA corporate website at www.gsma.com. Follow the GSMA on Twitter: @GSMA.

ABOUT MOBILE FOR DEVELOPMENT - SERVING THE UNDERSERVED THROUGH MOBILE

Mobile for Development brings together our mobile operator members, the wider mobile industry and the development community to drive commercial mobile services for underserved people in emerging markets. We identify opportunities for social, economic and environmental impact and stimulate the development of scalable, life-enhancing mobile services.

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