ANALYSIS

Local world — content for the next wave of growth

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Executive summary

1. As mobile expands into new regions and new population segments in emerging markets, digital inclusion — the adoption of the mobile internet and the wider socio-economic benefits associated with this — will grow. However, the pace at which this happens will be dependent on overcoming a number of barriers. Infrastructure and affordability of devices and tariffs are well recognised. Less widely apparent — but of crucial importance — is the availability of locally relevant content. It is this factor and the dynamics driving it that we focus on in this report.

Despite a nearly 20-fold increase in mobile data traffic since 2009, many individuals in emerging markets are yet to fully embrace the mobile and digital revolution because they lack sufficient ‘local content’ that is accessible, useful and relevant to their livelihoods, wants and needs. The availability of locally relevant content, defined for the purpose of this report as content or information that has a direct impact on the everyday lives of people throughout the developing world, is key to bringing the benefits of the internet to a wider user base (particularly mid and low income individuals). Content can be localised — or made locally relevant — in different ways, such as translating international content into local languages, customising it for local relevance, or by the local population contributing directly to content creation. In the end though, the most important criterion that defines localisation is its relevance for local consumers. The local population will best understand what is relevant, and giving the power of content creation into their hands – both individuals as well as developers – will help grow the local content industry.

In emerging markets, customer engagement in the mobile content ecosystem has been dominated by social media services, which rely heavily on user input and user-generated content. These services are an important way to increase communication, engagement and ultimately digital inclusion, acting as another layer to traditional mobile voice and SMS. But making the content and services relevant, accessible, and available to the users in their own language is essential in bringing the full benefits of the mobile internet to the next billion users.

2. There is much more to making content relevant to local people than simply translating it. For one, there are infrastructure challenges including network coverage, content hosting availability and device compatibility. But there are also more nuanced challenges around payment limitations, cultural factors and government or third party support.

Unlike in the developed world, mobile internet penetration has a long way to go in most emerging countries. While 2G coverage extends to about 85% of the population on average, 3G networks currently cover between 50% and 70% compared to over 80% in the developed world. Moreover, the majority of people in emerging markets currently own feature phones, not smartphones. Smartphone penetration will rise (driven by falling handset prices, rising incomes and improved literacy), but we believe it will be another 3-4 years before actual human users surpass the number of people on the ground using feature phones. This makes it essential to balance the focus of local content generation for both smartphone and feature phone users. Language and literacy barriers, as well as other barriers such as lack of local hosting and payment limitations (a high proportion of the population do not have access to formal financial services), make achieving scale with and
monetising content difficult. In addition, challenges such as a lack of understanding of the target market, and government interference in information flow also need to be overcome to drive creation and consumption of local content. It is important to be mindful of these challenges while developing content for emerging market users.

3. Ultimately, these challenges (and the opportunity cost of not addressing them) merit a collection of efforts from key players across the mobile ecosystem. For emerging markets in particular, mobile operators are well placed to effect change given their network assets, local presence and increasing involvement with entrepreneurial hubs, and trusted relationship with consumers. However, there is no one stakeholder at the nexus, with handset makers, content developers, internet players and NGOs also key.

Relevant content gives people added impetus for mobile internet and value added services (VAS) use, and increases digital empowerment of users on all rungs of the socioeconomic ladder — a key objective for industry and government alike. As for the wider mobile ecosystem, we believe an increase in the amount of relevant local content would unfurl a virtuous circle of raised awareness, attracting developers, increasing innovation, and increasing interest in generating more relevant content. Additionally, operators can benefit from an increase in subscriptions, customer loyalty, and revenue through data services.

Realising the benefits of local content, though, is largely dependent on a commitment from the industry as a whole. While operators are best placed to use their own assets such as tools, platforms and hosting technology to help content developers achieve scale without having to reinvent the wheel, developers can improve the local relevance of services by creating specific content where required, adapting existing content where necessary, and ensuring their content is accessible for users across the mobile spectrum by optimising certain content to work on feature phones via slower data connections. Device manufacturers can similarly contribute by ensuring that devices offer the best and most intuitive user experience possible for mobile owners in emerging markets, facilitating the consumption as well as generation of local content. Internet players can build on their existing services and expand into new markets, creating a platform for local content to reach the widest audience possible. The wider ICT industry can look to establish local internet exchange points (IXPs) within the country to cut costs, and expand local hosting to improve visibility for content developers. Finally, regulatory, financial and operational support from government and non-government organisations (NGOs) can help target content towards consumer use cases that market-based approaches would perhaps not — particularly in the areas of financial services, health, agriculture, education and employment.
Defining local content

Across the globe, more and more people are adopting mobile as their primary means of accessing the internet. Low-cost handsets are introducing new population segments to the market, and users are consuming more and more content through apps and the mobile internet via devices with ever increasing speed, processing power and usability. In the developed world, where recent years have seen an explosion in mobile data and usage, content has been key in driving users’ engagement with the mobile internet. People have had access to rich content that has added value to their everyday lives by being accessible, interesting, useful, and most importantly, relevant.

As mobile expands into new regions and new population segments, content will be key in increasing the adoption of the mobile internet. However, at present, the majority of content available to individuals is in English, and is largely focussed on data-heavy smartphone apps. Throughout the developing world, smartphone penetration is low, and English is not the primary language for the majority of the population, thereby limiting the accessibility and usefulness of the content. In addition, mobile internet adoption has been so successful in the US and Europe because of the ubiquitous availability of content that is locally relevant to those populations. There is no reason to expect that people in any other market will demand any less, but to date, content relevant to people in emerging markets has not been widely available. In order to reach the widest audience possible therefore, content needs to be available on as many devices as possible (rather than just smartphones) in a language the user will understand, not just English, and locally relevant to people throughout the developing world, not just focussed on global, European or US affairs.

First, it is important to define content and local relevance so that we may fully understand what is meant by local content, and why it is so important in the drive for mobile internet usage.

What is content?

Mobile content is any form of electronic media (pictures, music, voice, text, videos, games, maps etc.) that can be viewed or used on a mobile device, such as a mobile phone or tablet. Mobile content can be split into content distributed via the mobile internet, such as apps and web based services, and content outside the data channel, such as via IVR (interactive voice response), SMS (short messaging services), MMS (multimedia messaging service) and USSD (unstructured supplementary service data) (see Figure 1).
It is important to make this distinction, as while content via the mobile internet is the most prevalent in the developed world, content outside the data channel is particularly important in emerging markets. In these markets, smartphone adoption is still relatively low - under 25% of total connections on average and under 10% in many African markets (see Figure 2) - and with low literacy and limited affordability of data services, there has been a restricted uptake and usage of the mobile internet.

What is local content?

Referring to content as ‘local’ can mean many things. It can refer to content that is in the local language, content that is created and hosted locally, or content that happens to be relevant to the local population. In terms of local language, much of the content that is currently available is simply translated. This is not always sufficient, and tailoring content to fit the local and cultural context is where the real value lies (see Traditional and digital
Local content creation is an important part of the ecosystem, as local developers will generally understand their target market much better, and be able to generate content to suit local needs. In addition, local hosting can bring speed and cost benefits for both end users and content providers (see Lack of local internet exchange points).

Local relevance can also mean different things, as different people will find different information relevant. Some international content can be seen as relevant because it is interesting to individuals in those markets, such as foreign sports teams, films, music and international brands. However, we see locally relevant content as a way to increase end user engagement in the mobile internet, turning them from passive consumers into active contributors. As such, we define local relevance, and thus local content, as content or information that has a direct impact on the everyday lives of people in the target market. This therefore extends past information that is simply interesting, to content that can specifically address key needs and challenges in the communities where people live and work, be it social networking, news, or information on business, health, agriculture and the weather.

In Figure 3, the three circles represent content that is locally relevant, created locally, or in the local language. We think the majority of ‘local’ content at present is international content simply translated, and hence the local language circle is the largest. There is then a smaller volume of content that is locally created, and even less that is locally relevant. The categories overlap but not completely, as some types of content fall into only some of the areas. Some content and services for example will be simple translations of existing content. Others, such as those focussing on international news (CNN for example) may well be locally relevant, but not necessarily in the local language. Information on sports or entertainment, such as ESPN or IMDb, may well be interesting to people in emerging markets, but not locally relevant as per our definition above. And user-generated content, such as Wikipedia, can be created locally in the local language, but may not necessarily be relevant to the local community as the information can be anything the writers themselves find interesting.

At the centre or all three categories, representing content that is locally generated, in the local language, and locally relevant to users in emerging countries is content that is created within the markets themselves that addresses specific needs. For example, HiviSasa is a free online newspaper that engages the local users, especially youth, to come online and contribute as citizen news reporters. Premise is a service that monitors the price, quality and availability of goods and services from local, on-the-ground sources tracking data points at the point of sale. And Every1Mobile builds and manages online communities that offer young people opportunities to discuss topics related to health, education, jobs and entertainment with their peers and subject matter experts on mobiles, helping users to generate content that matters most to them. In addition, social networking sites such as Facebook can function as platforms for user-generated content specific to the interests, wants and needs of people in emerging markets. For more information on these services and others in Figure 3, please see Table 1 in the Appendix.
We see locally relevant content as the key driver in creating a step change in the usage and engagement of the mobile internet and mobile-enabled services, particularly for mid and low income consumers in emerging markets. This is highly significant for the industry, because this will be the primary growth segment in mobile over the next 3-5 years. However, multiple barriers exist which have prevented this growth so far, and that will need to be overcome to push user engagement and usage of the mobile internet. These are discussed in Barriers to local content uptake, but first we will discuss the current state of the content ecosystem, and the ‘what’ and ‘how’ behind content creation and consumption.
Content ecosystem

The mobile content value chain

The use of mobile is gradually moving from person-to-person (voice calls, SMS etc.) to one-to-many or many-to-one models of communication that are usually facilitated by third party content providers. This has led to increased consumption of, and demand for, mobile content. Generation of mobile content is broadly via three technology types: voice and messaging outside of the data channel (such as IVR, SMS, MMS and USSD services), mobile access to web pages, and apps. Typically, voice and messaging content is distributed via aggregators, web pages are found and accessed via search engines and browsers, and apps are distributed via app stores such as the Apple App Store, Google Play and Windows Phone Store, or local variants such as Baidu, Wandoujia and Tencent App Gem in China. The content from these channels is consumed through the user interface of a mobile device, for example feature phones for voice, messaging and 2G web access, and smartphones or tablets for mobile broadband based web and access to mobile apps.

As the owner and manager of the network, content distribution is generally facilitated and handled by the operator or internet service provider (ISP), generating access and interconnect revenue if via voice and messaging, or data traffic revenue if via the mobile internet. The operator also handles the majority of billing and payments, except for in the case of some content (usually apps) that requires an additional billing relationship directly with the content provider.

In the developed world, the content value chain is heavily skewed towards the mobile internet, with the majority of content centred on web services, internet players and smartphone based apps. In contrast, as discussed in the previous chapter, users in the developing world rely more on content from outside of the data channel due to the limited availability and affordability of smartphones and data services. However, the demand for content is there, and due to the increasingly interactive nature of mobile content, digital inclusion in emerging markets depends on end users not just consuming content that is relevant to them, but also having the ability to create their own, allowing them to engage in all aspects of the mobile internet.
Demand for local content

In the developing world, mobile subscriber penetration has increased steadily over the last 5 years to 44% (from around 25%), with an additional 15-20%¹ having access to a mobile despite not owning one. The widespread lack of fixed line infrastructure and the inherent low level of PC ownership (under 10%) makes mobile the primary communication platform for the majority of the population. Subscriber growth in the developing world will continue to increase, and we estimate that over the 7 year period from 2014 to 2020, an additional 1.1 billion new individuals will acquire a mobile for the first time, or 155 million per year.

In parallel, mobile content consumption has also steadily increased over the past decade. Smartphones have gained popularity in developed markets, leading to a substantial increase in mobile data usage. And while most of the mobile content in developing markets still continues to consist of feature phone based text and voice services, data services are gaining popularity, with Vodafone for example reporting growth in data traffic over the last year in all of its operations worldwide, most notably in India and Egypt, in contrast to a general decline in SMS usage (see Figure 5).

Looking forward, global mobile data traffic is forecast to increase tenfold between 2013 and 2018, led by strong growth in the regions that mainly comprise developing nations — Middle East and Africa, Asia Pacific and Latin America (see Figure 6). As the decline in cost of devices and data services makes mobile content more accessible for low-to-mid income

¹ GSMA Intelligence
consumers, a large proportion of the population in developing markets, particularly in Asia Pacific and Africa, is expected to come online in the next decade, driving substantial growth in data traffic and mobile internet usage.

Mobile ownership is clearly on the rise in emerging markets. However, one of the major challenges in the adoption of content and growing the mobile internet in these markets is language.

English is the language of the internet, with around 55% of websites using English as the primary language. This is in stark contrast to the fact that only 5% of the global population (335 million) speak English as their first language (this increases to 7% if people who speak English as a second language are included). Chinese on the other hand (including all dialects) is the first language of over 1.1 billion people (17% of the global population), yet only 3% of websites are written in Chinese. This trend continues in many non-English speaking countries throughout the developing world, where very little internet content exists in languages such as Arabic, Hindi and Bengali (see Figure 7).

Similarly, aside of the top grossing and popular social networking, gaming or instant messaging apps, most mobile content lacks local language support. The major platforms (iOS, Android and Windows Phone) have features that make translating an app simpler for the developers, but as discussed in Traditional and digital literacy, this is not always a solution, as simply translating an app can often lead to more problems than it solves. There is much more to local content than simple translation, and local context needs to be considered in order to make the content relevant to the target individuals.

2 W3Tech
3 Ethnologue
Social media as a platform for local content

The consumption of content is increasing at a fast pace, both through traditional channels and through the mobile internet; social networking has become one of the most important sources of crowd-sourced content, Facebook and Twitter being the most popular sites serving this purpose (see Figure 8). While the content distributed through these websites is highly influenced both by language limitations and by individual user preferences (making it difficult to manage and curate), they act as very important channels for distributing content due to the large number of users and the potential for more locally relevant content. There is a huge amount of content shared on these websites every day, and sites such as Facebook and services such as WhatsApp, WeChat and Viber are increasingly gaining popularity in emerging markets. In addition to the global social media brands, many local websites have also been successful in increasing community engagement among locals, with individuals sharing content that is most relevant to them, such as Qzone in China (over 600 million users), VK (originally VKontakte, with almost 300 million users) in Russia, and other online community engagement services such as Every1Mobile (in 7 countries across Sub-Saharan Africa).
The social media opportunity in driving local content goes beyond personal use by the consumers - many social media websites are now being actively used by businesses for advertising and marketing purposes. Facebook, for example, has dedicated pages created by businesses, organisations and brands which can be subscribed to or ‘followed’ (in Facebook terminology) by people interested in receiving news and updates about their services. Interestingly, many local businesses across the globe have a presence on Facebook rather than creating a website from scratch, owing to the ease of managing and interacting through a Facebook page, as opposed to developing and maintaining a website of their own. For example, there are about 900,000 small and medium businesses (SMB) in India actively using Facebook for advertising purposes and to communicate directly with their customers. This opportunity will grow with the rise in mobile internet and smartphone adoption in the developing countries, expanding the potential of social networks to be used as a platform for the creation and dissemination of local content.

**Content must strike a balance between feature phones and smartphones**

As a result of growing demand and falling prices, smartphone sales surpassed feature phone sales in developing nations towards the end of 2013. This could be a significant opportunity for scaling the benefits of content – both in terms of content generation as well as consumption. While higher end feature phones such as Nokia Asha support mobile apps, most other feature phones provide access to content through browsers, making it difficult to discover or upload relevant content. Access to mobile app stores brings with it ease of app discovery and monetisation, and an improved user experience owing to better user interfaces and intuitive search options on smartphones. Smartphones thus could open up a big window of opportunity for content hungry users in developing nations in the near future. However, many developing countries still have large sections of their populations in lower income groups (often earning less than $2 a day), and despite a general decline in
price and increasing sales, smartphones are still a relatively niche product in terms of usage, reserved for mid- to high-income individuals. As a share of handset sales, smartphones are now over 50% in emerging markets compared to under 10% in 2009, but sales take time to distil down into the actual user base, which is a more indicative measure of the devices currently in circulation and therefore the range of functionality that consumers have at their disposal. As such, while smartphone sales are expected to see a sharp increase in the next 4–5 years, the rate of increase possibly influenced by the amount of local content on offer, they may not reach parity in the number of people that actually own them for several years to come (see Figure 9).

![Figure 9: Developing world device users and sales](source: GSMA Intelligence, Strategy Analytics)

Despite the predictions that feature phones and smartphones are expected to co-exist in the emerging markets for the foreseeable future, the content generation opportunities remain skewed towards smartphones, excluding the primarily feature phone user base. The application developer community has largely been focussed on developing more apps for iOS or Android smartphones, as opposed to content for mobile browsers which could be accessed equally via feature phones as well as smartphones.

While social media players such as Facebook and Twitter have taken the lead in designing applications specifically for feature phones, most other popular smartphone services are yet to create a suitable feature phone alternative. However, some local companies have been experimenting with solutions to attract users in developing markets towards the mobile internet and expose them to its benefits. Mxit, for example, is a South African social networking app for feature phones with over 7 million users⁴, and offers functionality in areas with a weak 2G signal. SmartWoman⁵, a mobile magazine that provides content from expert writers and uses social networking to help, connect, share and empower women

⁴ Source: *An African messaging app could beat out WhatsApp, ...*, Quartz, January 2014
⁵ *The SmartWoman Project*
has recently adapted its app-based service for SMS, especially for its users in Nigeria and Tanzania. Similarly, txtWeb\(^6\) in India is an open platform for content which enables all mobile users, including those with basic phones without GPRS or data plans, to access locally relevant information. Users can send an SMS containing keywords or search terms (akin to entering domain names into internet browsers) to a national short code and receive back the information requested (a ‘pull’ mobile service). A wide range of apps have already been created, including those offering Wikipedia and Google search, dictionary definitions, election information, health tips and budget tracking.

It is services like these that are helping to address the local content gap in emerging markets, the aim being to introduce feature phone users to the benefits of the mobile internet, and then instil in them a pattern of usage that will continue once they have transferred over to being a smartphone user. However, multiple other barriers exist that will need to be overcome in order to boost digital empowerment for the currently underserved, and allow people in emerging markets to fully embrace the mobile and digital revolution.

\(^6\) Source: Case study — txtWeb, GSMA M4D Impact, August 2014
Barriers to the uptake of local content

Mobile coverage

We estimate that an additional 1.1 billion new individuals will acquire a mobile for the first time by 2020. In order to be able to use these devices, there must be access to the mobile network, and herein lies the first barrier to local content: mobile coverage. 2G will continue to be the main technology used in emerging markets over the coming years, but whilst basic voice and text services can be handled over 2G, the use of data services and access to the mobile internet necessitates further rollout of 3G and 4G equipment. Operators can run these services using 2G/GPRS, but speeds are slower and will deteriorate further as usage increases, so in order to provide a quality of service users will grow to expect, a good level of 3G and 4G population coverage needs to be achieved.

Mobile operators have made significant capital investments of over $1 trillion in the last 6 years, focussing on both improving network coverage and facilitating the growth in people connecting to the mobile internet. There are currently 707 mobile broadband (3G & 4G) operators worldwide, of which 422 are in the developing world, and capital expenditure is expected to continue to increase in order to accommodate the growing demand in global data traffic, with investments totalling $1.7 trillion expected between 2014 and 2020.

The growth in network investment is projected to be highest in emerging markets (most notably in sub-Saharan Africa, Latin America and Asia Pacific), in line with demand both in terms of new mobile users and from existing ones migrating to higher-speed packages (see Figure 10).

![Figure 10: Increasing investment from mobile operators](source: GSMA Intelligence)

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7 GSMA Intelligence
8 Source: The Mobile Economy 2014, GSMA, February 2014
Lack of local internet exchange points

Content delivery and traffic at present is very Europe and US centric, with the majority of internet exchange points (IXPs) and content hosting based out of the developed world. For example, of the 436 global IXPs listed by Telegeography, only 28 (6%) are in Africa, and out of the 86 content delivery network (CDN) locations run by Level 3, one of the world’s largest CDNs, 64 (75%) are based in Europe and the US, with only 3 in Africa (see Figure 11). Moving servers and content hosting within a country can cut costs and improve visibility for content developers, and can improve the user experience for the user by reducing latency. The establishment of an IXP in the country enables local ISPs to connect directly together and exchange domestic traffic, saving cost on international transit while improving performance, and by facilitating the interconnection between operators, content providers and users, these IXPs improve the quality of service and help reduce the transmission costs for internet traffic in their respective country.

In Kenya, for example, the creation of a local IXP has enabled the localization of over 1 Gb/s of peak traffic, dramatically reducing latency (from 200–600ms to 2–10ms on average), while saving ISPs almost $1.5 million per year on international connectivity. The IXP also played a role in increasing mobile data revenues by an estimated $6 million as a result of increased data traffic. Finally, it has improved the visibility of local content through search engine optimisation, contributed to government tax revenues, and increasingly acts as a regional hub for traffic from neighbouring countries.⁹

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Creating a local hub means autonomy in strategic choices, control over national destiny, and progression of technological development. A ‘building not buying’ approach reduces dependence on foreign countries, and can have significant cost saving implications. In Nigeria for example, the Ministry of Communications Technology recently emphasised the importance of engagement between the government and the private sector to ensure the growth of local content participation. Areas of collaboration mentioned included mandating government departments to exclusively purchase locally assembled hardware and devices to support the growth of local OEMs, intervening in the software development ecosystem by investing capital in the development of technology and innovation hubs run by the private sector, and the creation of a government seeded venture capital fund to invest in local content development.

Additionally, hosting websites locally has search engine optimization benefits, as search engines such as Google, Yahoo and Bing will determine and rank search results based on, amongst other criteria, the content’s locale, prioritising content that is in the local language and locally hosted. This means that if content is in the local language, hosted with a local IP address and registered on a top level domain, it will appear higher up on a search result list, providing the content creator with greater visibility and making it easier for end-users to find.

**Device compatibility**

While most of the content activity has so far been focused on mature markets centered on data heavy apps and smartphones, content developers in emerging markets need to widen the net to account for the majority of the population that are feature phone users. Smartphones will play an important role in the developing world due to the growth they will foster, but the opportunity for the simplest feature phone can be just as great as for the most advanced smartphone.

Content that is more feature phone centric, or that is outside of the mobile data channel, will therefore play a big part in the uptake of local content. Content developers can use SMS, USSD and IVR solutions to target low-end device owners, particularly those with low incomes who cannot afford access to mobile internet services. Many emerging services across the developing world are making use of these technologies, and even established global players are seeing the opportunity. Facebook for example offers a range of products such as Facebook for USSD by Fonetwish, Facebook SMS and Facebook for Every Phone (the latter is available for over 3,000 feature phone models and is used by over 100 million people globally[10]) that explicitly target low income feature phone owners and do not require a data connection. In addition, some companies are launching ‘zero-rate’ services in collaboration with operators in emerging markets, offering stripped down text only versions of their mobile sites for which the operator waives all data charges (e.g. Facebook Zero, Wikipedia Zero and Google Free Zone). These types of services allow content providers to engage with low to mid income users who would otherwise not have access to the internet, hopefully establishing a pattern of usage for them to continue and expand upon once they make the transition to regular online usage.

[10] Source: Feature phone milestone: Facebook for every phone reaches 100 million, Facebook, July 2013
More recently, Facebook launched a new Android based internet.org app for Airtel customers in Zambia, providing free access to Facebook and its Messenger service, Wikipedia, Google search, AccuWeather, and information on local health and jobs services including Go Zambia Jobs, Mobile Alliance for Maternal Action and Women’s Rights App. As the app does not incur any data charges over the Airtel network, it targets users who do not want or cannot afford a data plan.

Payment limitations

The GSMA estimates that 2.5 billion people in lower to middle income countries lack access to financial services and cannot adequately invest in their livelihoods, protect their assets nor mitigate shocks that cause them to fall deeper into poverty, and traditional bricks-and-mortar banking infrastructure is too expensive to serve the poor, particularly in rural areas. However, it is estimated that 1.7 billion of these people have a mobile phone, providing existing infrastructure that can be used to sustainably offer financial services such as payments, transfers, insurance, savings, credit and cross-border remittances.

In order for content developers to be able to successfully monetize their services, revenue needs to be generated, whether through advertising, paid-for content or in-app purchasing. However, the approach in emerging markets is likely to be different than what has proved successful in the developed world. An advertising-dependent business model is not (at least initially) going to have the same strength in predominately low-income markets, and it is all well and good for content providers to reach millions of people with their services, but if they hope to generate revenue through paid-for content or in-app purchasing, the effort is made moot if the users have no means of transaction (see Mobile Platform Wars).

In all cases, there needs to be some kind of billing relationship between the content provider and the end-user, and this can prove a challenge when it comes to people without bank accounts. Mobile money services are already gaining popularity in emerging markets, working with mobile operators and the financial industry to accelerate the availability of affordable financial services that provide safety, security and convenience to the unbanked. But mobile operators can play an additional role here, as anyone with a mobile phone will already have a billing relationship with their operator. By partnering with content providers, or offering content through their existing channels, operators can facilitate spending on apps and content through existing billing arrangements. An MEF global study in association with AVG Technologies indicates that trust is the number one barrier to the growth of mobile content and commerce, with 30% of people worldwide considering trust as the single largest obstacle to using mobile to purchase goods and services. This increases in emerging markets: for example, 49% of users in Mexico and China claimed lack of trust prevented them from purchasing via their phone (48% in Saudi Arabia and 46% in Brazil). However, with relationships already in place, operators are a known commodity and therefore, particularly in the developing world where people do not have many formal relationships with businesses, many consumers prefer the security of operator billing to pay for content and services. In China for example, 75% of app payments are done through

11 Source: Global Consumer Trust Report, MEF, 2014
direct operator billing. Collaboration between the content provider and the operator will increase transparency for the end user, building trust in the right places, and facilitate the monetisation of content using pre-existing channels.

Understanding local needs

The challenge with creating locally relevant content in emerging markets is knowing exactly what the target individuals want and need. Very little consumer data exists, and using demographics alone is not enough — the end user needs to be carefully considered in order to create a relevant value proposition with the best chance of success. Mobile allows content developers to connect to end users, presenting them with an opportunity to better collect, understand and utilise end user requirements. The more information can be collected on the behaviours and interests of end users, the more tailored the content can be made to suit their requirements.

The prevalence of social networks in developing countries points towards consumers increasingly acting as content creators. This means that there is a clear need to give power in the hands of individuals to create the content that they like. A good example of this is Every1Mobile, which uses social media to manage online communities where users discuss topics related to health, education, jobs and entertainment with their peers and subject matter experts via their mobiles. The user base of Every1Mobile has expanded since its inception to reach 1.4 million unique visitors on eight different mobile sites, and this has primarily come through successfully engaging audiences by re-purposing internationally relevant content to suit local user needs.

For expert generated content on the other hand, it is essential to put the end user first through a user centric design (UCD) processes. Instead of asking “how can I get more people accessing my content?” the real question developers should be asking themselves is “what type of content should I create through accessible means that end users will find interesting, relevant, and therefore want to access more often?” It is a simple shift in the way of thinking that puts the focus away from the end goal, and more on the steps needed to get there. Content creators may use this approach to determine which device type (feature phone or smartphone) and technology platform (SMS, USSD, IVR, web browsers or apps) to choose when designing a service. UCD not only assists content creators and distributors to determine the most appropriate device and platform given the characteristics of a given locale, but also informs how to effectively maximize reach and uptake.
Traditional and digital literacy

In order for the local content to achieve scale it needs to traverse barriers of language and literacy. In 2011 there were 764 million illiterate adults in developing countries (20% of the population), and it is expected that this will still be around 730 million by 2015 (17%)\(^{13}\). Exacerbated by the fact that English is not the primary language for the majority of people in emerging markets, this makes creating scalable content quite a challenge. While literacy campaigns are ongoing in addressing traditional literacy, voice-based text-to-speech or speech-to-text applications and software provide a solution in a mobile context. For example, the government of India recently introduced Sandesh Pathak (literally meaning ‘message reader’), an application that captures an incoming SMS and reads it aloud to the user, supporting five Indian languages (with more to follow). Graphic or picture based solutions are also a way to overcome traditional literacy barriers.

For non-English speakers, it is not a case of simply translating existing content, as this can frequently cause more problems than it solves. Machine translation is still no match for a competent human translator who can interpret nuances and multiple meanings in a sentence, then render it in the target language. But this is too time consuming and not always viable in the context of mobile content. Optimising and adapting existing content to account for the linguistic and cultural context of the target market requires a great deal of resource to effectively understand the wants and needs of a community. Content created from scratch by native speakers based in the target markets will help ensure that the content has the best chance of achieving scale. ‘On the ground’ developers will understand the context of the market, and will know how best to meet the needs of the users.

In addition to traditional literacy, digital literacy, which we define as the ability to use a mobile phone and its non-voice features such as the mobile internet, is another important factor in the push for local content, as many people will simply not understand how to access and make the most of the content, or how it would benefit them. Being technically savvy enough to find, access and use the content available to them is a big ask in many markets where people are still new to mobile ownership, so steps should be taken to ensure local content is as accessible to as many people as possible. Image based content and simple logical processes can help individuals without advanced technical skills, and basic technologies such as SMS, USSD and IVR (as discussed previously) can provide those with even the most limited technical know-how access to the content they want and need. However, as simplicity and logic are cultural concepts, what may seem simple and logical to a user in the developed world, for example a green and red icon on a mobile handset indicating buttons which begin and end a voice call, may not necessarily be simple or logical to someone who has never seen a phone before, or for whom the colours green and red are not associated with ‘go’ and ‘stop’. Solutions therefore must be carefully designed to keep the end user in mind (see Understanding local needs).

In terms of lowering barriers to entry in an ecosystem that currently favours big players, services from Mozilla and other HTML5 based apps are helping end users in developing countries to make and distribute apps for themselves (see Mobile Platform Wars). Mozilla aim to address the fact that the major platforms have not targeted the non-programmer, and are providing people with little or no programming skills the tools to create content

\(^{13}\) Source: Adult and Youth Literacy: National, Regional and Global Trends, UNESCO, June 2013
of their own using the web as a platform. Through desktop app developer software and phone-based app authoring, Mozilla are lowering the barriers to entry for content generation in emerging markets, helping local non-specialist developers with knowledge of the local market achieve scale with their services. Additionally, operators are becoming more active in this space by providing the necessary tools, platforms and hosting to helping content developers achieve scale without having to reinvent the wheel (see Digital Entrepreneurship in Kenya). This is discussed further in Driving local content.

Government attitudes

Governments can play a crucial role in the scaling of local content, but their role could be a double edged sword. On the one hand, some governments will want to encourage local content, providing and approving content to ensure technical quality and standards, and promoting the development of the mobile industry and ecosystem as described throughout this report. On the other hand, local content could be seen by some governments as a threat to their authority, a medium to incite unrest, or as a source of unfavourable content. And as such, censorship of social media and other content has become increasingly common over recent years.

In terms of what the majority of governments in the developing world can do to promote local content, most approaches involve collaboration and partnership with developers and regulators. Governments can partner with local non-government organisations to supply sector specific non-localised content to users, endorse regulatory policies to enable more cost effective information exchanges, and unlock user-generated content development by releasing public data online and encouraging engagement with and manipulation of the data. Additionally, governments can themselves be the content providers, offering relevant local information, content and services in areas such as health, education, agriculture, taxation, public transportation, business and voting through e-government portals. In this way, governments can provide relevant content to, and communicate directly with, the local population via the mobile internet, providing people with the tools to interact and engage with their local community.
Driving local content

We expect considerable growth in subscriber penetration and increased availability and affordability of smartphones and data services in the developing world over the next five years. Additionally, 3G and 4G penetration is expected to see a two fold increase in the developing markets by 2018 (see Figure 12), with some operators planning to leapfrog 3G technology and launch 4G networks having foreseen an under-tapped potential of mobile data growth in major developing nations. While development of infrastructure and low-cost devices have an opportunity to give more power in the hands of individuals who may or may not be fully or partially literate, this also means that driving local content is largely dependent on a commitment from the industry as a whole.

Figure 12: Favourable outlook for growth in network and device technology in the developing world  
Source: GSMA Intelligence

Strategic implications for key stakeholders

There is an opportunity for the mobile industry to engage, collaborate, and partner with developers and entrepreneurs to build a thriving content ecosystem, aligning their content strategies to meet user needs in the developing markets. We discuss the implications for the operators and other key stakeholders below:

Operators

Operators have not benefitted as much as they could have from the content ecosystem in mature markets which has been dominated by internet players out of Silicon Valley. However, they have the opportunity to be much more involved in emerging markets where the content industry is more nascent. It takes a certain amount of talent and determination to create relevant local content, and operators are becoming increasingly involved in finding, encouraging and partnering with local developers in order to offer new services for their customers and help boost revenues. Most developers don’t have the platform, money or technical capabilities to succeed with their content and services, and operators
are helping to lower the barriers of entry by partnering with these developers to push local content. Similarly, partnering with various subject matter experts, in the field of health and education for instance, is also key to bringing more relevance, and adding assurance that these services are valuable additions to other information channels (see Financing Innovation).

Partnerships fall in a number of different categories:

- **Service delivery platforms:** Operators can share their infrastructure and expose their APIs to allow local developers access to their content delivery platforms and other services such as messaging, authentication and billing.

- **Accelerator programs:** Accelerator programs help start-up companies and services to get off the ground by offering mentorship, access to technology, office space and an innovative community. One such program is Telenor’s ‘Accelerate’ program in Thailand\(^\text{14}\), aiming to encourage the creation of more local content, build better local resources, and to raise awareness of and provide reasons to use the mobile internet.

- **Start-up competitions:** Crowd-sourced start-up competitions like Safaricom’s App Wiz Challenge\(^\text{15}\) and the Orange African Social venture Prize\(^\text{16}\) incentivise local developers to create innovative local mobile services.

- **Innovation scouting:** Operators are becoming more active in trying to find the best developer talent, and initiative such as Swisscom Ventures scout for new technologies and innovative businesses ideas.

- **Corporate venture capital:** Operators including Vodafone, SK Telecom, Telefónica and DOCOMO, as well as industry players like Google, Samsung, Qualcomm and Intel engage in active corporate venture capital activity to bring promising external innovations and content solutions in-house.

In addition to actively searching for local developers, assisting them in getting their services off the ground, and as an incentive for them to enter into partnerships, operators have many relevant assets and capabilities than can greatly assist in the development and distribution of local content, reducing the need for content developers to reinvent the wheel and bring all these assets to the table themselves.

These assets include:

- **Channels access:** Operators can provide channels that allow services to operate without direct data or internet access, such as IVR, SMS, MMS and USSD.

- **Distribution:** Developers could make use of operators’ extensive distribution models, including agent networks, marketing displays, supply chains, software push technology and mobile application stores, increasing their reach and visibility.

- **Hardware, software and physical network:** Operators can provide all of the technical infrastructure that developers need to get their content to market, including hosting

\(^\text{14}\) Source: Helping Thai Startups ‘Accelerate’, Telenor, March 2014
\(^\text{15}\) Safaricom AppWiz
\(^\text{16}\) Orange African Social Venture Prize 2014
hardware and software, international bandwidth, testing facilities, APIs and billing/accounting software. As discussed in the Payment limitations, the latter is particularly important in emerging markets where large proportions of the population do not have bank accounts, and rely on operator billing to facilitate their spending on content.

- **Operations capabilities:** Developers can make use of the operators’ customer support, marketing, accounting, financing, training and mentoring services to allow them to focus on creating their content.

- **Trust:** Developers can leverage the reputation and brand of the operators when distributing their content, which is particularly useful in markets where trust is major barrier (see Payment limitations).

Operators therefore are in a strong position to be highly influential in the drive for local content. Through partnerships and collaboration with local developers, subject matter experts such as healthcare specialists and teachers, as well as through leveraging of their numerous network and business assets, content providers that would otherwise struggle to achieve scale can create and distribute solutions and services that people in emerging markets will find useful, relevant, interesting and engaging. This in turn will serve as a catalyst for increasing their interest in mobile services, and will help grow usage of the mobile internet.

**Content developers**

Creating content that is specific and relevant for emerging markets is a difficult task, but developers can pick their battles. Different categories of content have different needs when it comes to localisation, as for some content, such as games, being localised is less important than, say, information about the weather. People expect news, social networks and information on health services to be highly localised, but are slightly less concerned about the localisation of gaming, music, entertainment content and financial services. Full localisation should therefore focus on the former categories, while for the latter, adaptation to the context of the market in which it is sold as opposed to localising them completely may well be enough. This would mean translating content in countries where English is not the primary language, and also working around the more nuanced factors such as discoverability, cultural factors (important for user interface design), price and in-app purchase plans and payment mechanisms. Further, in addition to focussing on developing apps for top platforms such as iOS and Android, developers should also think about creating more content for mobile browsers, accessible to the large proportion of the population that owns a feature phone, in order to maximise their addressable market.

**Government and non-government organisations**

The role of governments in facilitating local content comes through initiatives such as e-government services, ICT awareness programmes and digital literacy drives. In addition, reducing taxes and trade barriers on handsets and internet services could prove useful in driving interests of handset manufacturers and internet players in designing products and services most suited to local needs. E-government services can act as a bridge between

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17 Source: *The Next Mobile Frontier*, Upstream/Ovum, April 2014
the government and the population, promoting civic engagement on the one hand and
 driving mobile internet uptake on the other. While most governments have introduced
e-government services in the developing countries, optimising the websites for mobile
usage and making them easier, faster and more intuitive to use still remain the key challenges
in increasing their usage. Further, government and non-government organisations could
be key in providing financial support (through government funding, angel investment
or venture capital), as well as technical support by creating technology hubs and local
incubators to stir innovative ideas that align with local consumer requirements.

**Handset and device manufacturers**
Localising device designs is critical in opening up local content generation opportunities
for individuals in emerging markets, most importantly by giving them the ability to type in
their own language. This could come through customising keypad layouts, or by increasing
the number of languages that the handset operating system supports. Other specifications,
such as sturdier handsets, dual-SIM functionalities and improved battery life (especially in
developing markets where electricity supply is unreliable) also become important when
launching mobile phones in emerging markets. Handsets can also aid localisation by
providing pre-loaded local content, such as local news and magazine apps, regional music
and movie content, or locally popular instant messenger programmes.

**Internet players**
Social networking websites and search engines like Google have thus far been most
successful in attracting customised content for people in emerging markets. Similarly,
the growing popularity of instant messaging services such as WhatsApp, Viber, Line and
Kakao Talk points towards an increasing interest in mobile internet usage, and highlights an
opportunity for internet players to be instrumental in the dissemination of locally relevant
content. Additionally, innovative solutions such as providing add-ins related to local content
(such as news, entertainment or sports) or advertisements for local businesses, would not
only provide more relevant content, but also open new channels of monetisation for both
the internet players and local businesses. Further, extensive language support provided
by the key internet players has played an important role in their popularity, and simple,
intuitive designs for the web pages and applications, and localised search results and
advertisements also help maximise revenue generation opportunities in local markets.

**The benefits of local content**
An important factor in the need of local content in developing countries is that approx. 50%
of the population in these markets live in rural areas, rendering the definition of ‘relevant
content’ here slightly different from the developed world. For example, while fitness apps
may be very popular in Europe or the US, or even in some urban/metropolitan cities in
emerging countries, other content, such as health information related to the prevention
of endemic diseases or hygiene awareness, could be more important in rural areas or
in countries which score low on human development outcomes. Localising content is
therefore not only important in making it easier to consume (either through messages and
apps in local languages or local language based voice services), but also more relevant,
and makes the process of content generation and sharing more engaging. Increasing the
amount of local content and other mobile-enabled services targeting core life needs can radically improve lives, and allow individuals to participate fully in the internet, an industry that has benefitted millions in the developed world. Relevant content gives added impetus for mobile internet use, and increases digital empowerment of users on all rungs of the socioeconomic ladder.

As for the wider mobile ecosystem, access to relevant local content has a massive potential to revolutionise the mobile industry in emerging markets. Relevant local content raises awareness and drives uptake of the mobile internet, attracting developers, increasing innovation, creating more value for stakeholders and increasing interest in generating more relevant content. This continuously increases user engagement and pushes the uptake of the mobile internet further, thus creating a win-win situation for players across the entire ecosystem. Additionally, by providing more locally relevant services to their customers, operators can benefit from an increase in subscriptions, customer loyalty, and revenue through data services, and the potential of generating new revenue streams in an industry facing increasing competition and pressure on revenue margins in emerging markets.
Appendix

CNN.com is one of the most popular international news websites in the world, run by the US television company CNN. It reports global as well as local news, so can therefore be locally relevant, but is only available in a limited number of languages (English, Spanish and Arabic).

Code for Africa is a people-driven movement aiming to use the power of relevant, local data on health, education, politics and other sectors to empower active citizenry and help governments shape and improve their services. The program is at present only available in English.

ESPN is a US based TV and media network focussing on sports-related content. The content is translated into 8 languages, but although many people in emerging markets will be interested in global sports news, as it is not generally contextually relevant it does not fall into our locally relevant category.

Every1Mobile uses social media to build and manage online communities for young people to discuss topics related to health, education, jobs and entertainment in 7 countries across Sub-Saharan Africa. Content is locally generated, usually in the local language, and is highly locally relevant.

Facebook is the largest social networking service in the world with over 1 billion active users. As users have the ability to engage in any sort of social interactions they see fit, be it for business or pleasure, it is locally created content, in the local language, and very locally relevant.

Firefox is a free and open source web browser, currently available in 79 languages with regionally specific features. However, as the content is mostly a translation of existing content, it is not locally relevant as per our definition.

Google Translate is a free machine translation service, and is arguably the most well-known attempt to address the issue of localising content for non-English speaking countries. It currently supports 54 languages, but goes no further than offering pre-existing, albeit localised, content in the local language.

HiviSasa is a free online newspaper that engages the local community, especially youth, to come online and contribute as citizen news reporters. Hence it is locally generated content in the local language, and centred on affairs that are relevant to local people.

IMDb is an online database of information related to films, TV, and video games, with versions translated completely or in part into over 10 languages. As with ESPN, although many people in emerging markets will be interested in international film and entertainment, it only falls into our local language category.

The Mobile Alliance for Maternal Action partnership delivers vital health messages to new and expectant mothers in developing countries via their mobile phones. The content is localised to the target market and is highly relevant, but is created by non-local experts in maternal, new-born and child health.

Premise is a service that monitors the price, quality and availability of goods and services from local, on-the-ground sources tracking data points at the point of sale. Locally generated and very relevant for the every-day needs of local businesses and individuals, it sits within all three categories of local content.

txtWeb is a platform enabling all mobile users to access content via SMS. Created by an open community of publishers and developers (which can be anyone), information can include Wikipedia content, local market prices, government programs and financial tips, making it very locally relevant.

Ushahidi is an open-source information collection, visualisation and interactive mapping service enabling observers to submit reports on local events using their mobile phones or the internet, generating a map of locally relevant information, created by locals, usually in the local language.

Wikipedia is a free-access, online encyclopaedia that can, in theory, be edited by anyone in any location. There are 287 language versions of Wikipedia globally, and while local relevance depends on the interests of the people writing or editing the articles, we feel it is not ‘locally relevant’ as per our definition.

Worldreader provides digital books to people in low income countries via e-readers, mobile phones and other digital technology. With over 6,000 book titles in 23 languages in 27 countries, 70% of the library comes from African and Indian publishers to provide the most relevant content for the readers.

Table 1: Examples of local content services
Source: GSMA Intelligence, company websites
About GSMA Intelligence

GSMA Intelligence is the definitive source of mobile operator data, analysis and forecasts, delivering the most accurate and complete set of industry metrics available.

Relied on by a customer base of over 800 of the world’s leading mobile operators, device vendors, equipment manufacturers and financial and consultancy firms, the data set is the most scrutinised in the industry.

With over 22 million individual data points (updated daily), the service provides coverage of the performance of all 1,140 operators and 1,153 MVNOs across 3,505 networks, 65 groups and 236 countries worldwide.

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