

Smartphones and micro-entrepreneurship



In Ghana...



90% of registered businesses are micro-enterprises



30% smartphone penetration at the start of 2016



Only 26% of micro-enterprises survived beyond 42 months



Micro-entrepreneurs with lower levels of education are less likely to access new revenue activities

How can smartphones enhance business survival and sustainability?



Greater access to new ideas, information and tools



Increased opportunities and access to mobile banking



7/10 micro-entrepreneurs would face difficulties continuing their business without a smartphone

What's the impact of smartphones on micro-entrepreneurship in Ghana?



Connect with customers, search for new business ideas and track competitors' prices



95% of micro-entrepreneurs using customer records for marketing see increase in sales



Monthly incomes positively associated with use of the internet to access government information and mobile banking



7/10 consider smartphones to be the most important ICT tool for their business

Smartphones and micro-entrepreneurship: evidence from Ghana

Richard Boateng

Micro-enterprises are a major source of employment in Africa, but often do not survive as long as bigger businesses. Smartphones, the most accessible technology for micro-entrepreneurs, offer them an opportunity to access new information and new revenue, enhancing the chances of business survival and a sustainable livelihood.

Micro-entrepreneurs face a number of challenges in their business operations that large businesses do not. In this chapter, we focus on Ghana, where almost 70% of people are engaged in vulnerable employment such as micro-entrepreneurship, as, for example, own-account workers or contributing family members⁷¹. Poor infrastructure, including a lack of facilities, access roads and consistent electricity supply, constrain business activities and increase operational costs. Legal, financial and regulatory requirements also impose an administrative burden on micro-entrepreneurs, while limited access to credit constrains their ability to expand the business. These challenges greatly disadvantage micro-entrepreneurs compared to larger enterprises⁷².



For this Report, we conducted a survey of micro-entrepreneurs who use smartphones for their business in Ghana. The micro-entrepreneurs are active in a variety of industries, including the manufacture of textiles, motor vehicle repair, wholesale trade, and hair and beauty services. The findings indicate that the new information and tools available through a smartphone are making a significant contribution to the sustainability of their businesses.

It appears, however, that these benefits are not being realised to the extent that they could and not by all micro-entrepreneurs. The smartphone presents a potential equaliser – micro-entrepreneurs who have lower levels of education and monthly income, and whose businesses are unregistered, consider smartphones to be the most essential communication technology for their business. However, some micro-entrepreneurs do not make full use of the smartphone features that present opportunities for them to grow and participate in the formal economy. This is particularly true of those in rural communities and those with low levels of education.

This Report argues that, in order to address the inequalities between micro-entrepreneurs and the larger, formal business sector, there is the need for a coherent policy framework that reduces discrepancies in access to and use of ICT technologies for micro-entrepreneurs⁷³. The framework should also encourage the development of services that directly support micro-entrepreneurship.

This Report calls for a framework that:

- makes government information and services mobile-friendly to stimulate demand;
- enables the development of more localised content and services;
- delivers an attractive value proposition through a combination of services, network quality, smartphone prices and data tariff bundles; and
- educates micro-entrepreneurs to use a wider range of internet and mobile app services.

Prospects and challenges for micro-entrepreneurs

Micro, small and medium enterprises (MSMEs) play a central role in developing economies. Formal MSMEs contribute around a third of employment in these economies⁷⁴. In Ghana, they account for about 90% of registered businesses⁷⁵. Some of these enterprises are or are becoming key players in the value chain, delivering supplies, products and services to large companies.



Micro, small and medium enterprises account for about 90% of registered businesses in Ghana

Despite their importance, these enterprises often do not survive long. In Sub-Saharan Africa, just 15% of enterprises survived beyond 42 months as of 2013. In Ghana alone, the rate was at 26%⁷⁶. Many of these Ghanaian MSMEs consist of one person, an owner-manager, who usually has limited formal education, limited access to and use of new technologies, market information and formal credit⁷⁷. Although there are government institutions available to provide business advisory and support services (such as the National Board for Small Scale Industries), Ghana is struggling in its efforts to foster the development of micro-entrepreneurs.

Mobiles, especially smartphones providing internet access, offer scope to improve the sustainability of these enterprises. In Ghana, there are an estimated 121 mobile subscriptions per 100 inhabitants as of December 2015. The mobile internet penetration rates are growing rapidly, having increased by approximately 30 percentage points in Ghana in the three years between January 2013 and December 2015⁷⁸.

These services are provided by mobile network operators (MNOs) MTN, Vodafone, TiGO, Airtel and Expresso. The mobile internet subscription services provided by the network operators are either 3G or 3.75G services. 4G internet services were introduced in the last quarter of 2014 by Surfline Communications. Yet access to and use of the technology are uneven⁷⁹. This chapter explores some of the barriers to more equal usage by examining specifically how smartphone services – voice and data – contribute to the businesses of different micro-entrepreneurs.

The survey

To explore the extent to which mobile internet access has the potential to increase the opportunities for micro-entrepreneurs, a survey was conducted covering 300 of these businesses from five regions in Ghana – Greater Accra, Ashanti, Eastern, Western and Volta. Out of the 10 regions in the country, these five account for 77% of mobile penetration⁸⁰. The five regions also contribute two-thirds of the economically active population.

The sample within the regions was constructed so that each selected micro-enterprise had these characteristics:

- A maximum of four permanent employees;
- Active operations for a minimum of three years; and
- Mobile internet used by the business for a minimum of 18 months.

Out of 300 questionnaires, 264 were successfully administered. Figure 1 presents a summary of characteristics of the survey respondents. It is interesting to note that 46% of the respondents could be classified as being millennials (aged 18–34), avid users of new technologies or 'digital natives'.

The main industries that the micro-entrepreneurs in the sample are engaged in are: cutting and sewing of apparel, like Alhaji Fuseini whose business is described in the case study below; retail of textiles, clothing, food and beverages; maintenance and repair of motor vehicles; and hair dressing and beauty treatments.

The micro-entrepreneurs in the sample are more heavily located in urban communities compared to the national census, which data found that only 51% of the economically active population are in urban areas⁸¹. The sampled firms are also longer-lived than the national statistics suggest is the norm. Of those in the sample, 63% of firms have existed for six years or more – the oldest having been in business for 29 years and the youngest for three years. The majority of firms in this study (61%) have at least two paid employees, and only 16% have own-account managers (no employees). Nationally, the 2010 census indicates that the economy is dominated by small-scale enterprises with few avenues for employing other people. Two out of every three employed are self-employed without employees⁸². Revenues are low among the micro-entrepreneurs surveyed and labour, rent and taxes are the main costs of the business.

Figure 1: Profile of respondents

| Profile | Measurement | Proportion |
|------------------------|---------------------------------------|------------|
| Gender | Male | 61% |
| | Female | 39% |
| Age | Below 34 | 46% |
| | 34–44 | 38% |
| | 45 and above | 16% |
| Educational level | Junior High | 13% |
| | Senior High, vocational /technical | 59% |
| | Tertiary (university and polytechnic) | 28% |
| Position of respondent | Owner but not manager | 8% |
| | Owner-manager | 74% |
| | Manager but not owner | 18% |

Figure 2: Profile of micro-enterprises

| Profile | Measurement | Proportion |
|--|------------------------------|------------|
| Locality | Urban | 78% |
| | Rural | 22% |
| Industry | Manufacturing | 25% |
| | Service | 28% |
| | Wholesale and retail trade | 47% |
| Age of the enterprise | Young firm (5 years or less) | 37% |
| | Old firm (6 years and above) | 63% |
| Paid employees – temporary, apprentice and family (2015) | At least one | 34% |
| | None | 66% |
| Average monthly income (2015) | \$150 or less | 30% |
| | \$151 – \$300 | 36% |
| | More than \$300 | 34% |
| Average monthly labour costs (2015) | \$150 or less | 61% |
| | \$151 – \$300 | 20% |
| | More than \$300 | 19% |
| Main costs of running a business in 2015 (not labour) | Rent | 80% |
| | Energy | 23% |
| | Materials | 8% |
| | Taxes | 70% |
| Average monthly sales revenue (2015) | \$500 or less | 57% |
| | More than \$500 | 43% |
| Proportion of 2015 monthly sales made locally | 50% or less | 19% |
| | More than 50% | 81% |
| Bank account ownership | Have a personal account | 95% |
| | Have a firm account | 52% |
| | Have a mobile money account | 35% |
| Average monthly sales variation between 2014 and 2015 | More than 50% decrease | 4% |
| | 50% decrease or less | 54% |
| | No change | 15% |
| | 50% increase or less | 27% |



CASE STUDY

Alhaji Fuseini is a tailor in a market in Accra. The name of his enterprise is Alhaji Fuseini Fashion. He has a junior high-level education and has been working as a tailor since 2012. He currently works with one permanent employee and an apprentice. Customers in the local community contribute up to 50% of monthly sales. Mr Fuseini subscribed to Airtel in 2010 for voice services, and in 2011 for internet services. He spends an average of US\$10.35 per month on voice calls and US\$8 per

month on mobile internet. To put this in perspective, 56% of Ghanaian micro-entrepreneurs surveyed for this Report spend less than US\$10 on voice every month and 83% of entrepreneurs spend US\$10 or less on internet services. Before Mr Fuseini had access to these services, 90% of monthly sales resulted from face-to-face interaction. His customers had to come personally to his shop to check for new designs and order dresses. The use of a smartphone has changed this. In a day, he sends an average of 30 messages and receives 40 messages using WhatsApp. He says:

“I can’t do without this application ... when I sew a new design, I use it as my profile picture. Then, my suppliers and customers see it when they chat with me. It brings me closer to them.”

As a result, mobile voice and internet communications now contribute 50% of his monthly sales (20% and 30% respectively). Mr Fuseini is able to track prices of raw materials and of competing products. He looks for new business ideas online, and accesses training and other professional development information using his smartphone. He says:

“Most of my customers subscribe to mobile internet services, so I keep mobile records of my customers and I use this information to plan my production. As the name implies, I’m always smarter than my competitors. I now know what’s up in the world of fashion. I’m able to get new ideas.”

He reports that the usage of mobile services is frequently affected by network failure and dropped calls.

To address such challenges, he, like other users, subscribes to multiple mobile networks.

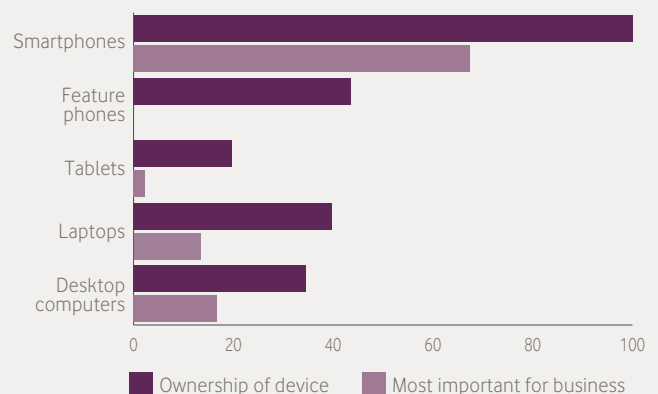
Importance of a smartphone to micro-entrepreneurs

Smartphones are of primary importance for the micro-entrepreneurs surveyed. All own a smartphone and about seven out of 10 consider it to be the most important ICT tool for their business, far ahead of other devices such as laptops or feature phones. Looking at the reasons given for selecting the most important technology, having only junior high education, lower income, being in manufacturing and having an unregistered business involved greater reliance on smartphones as opposed to tablets, laptops or desktops.



7/10 consider a smartphone to be the most important ICT tool for their business

Figure 3: Ownership of devices and most important ICT device for business



Source: Richard Boateng

Figure 4: Factors which influence the choice of smartphone as most important ICT for business (statistically significant factors)

| | Which is the most important ICT device for your business? | Desktop, laptop or table proportion | Smartphone proportion |
|--|---|-------------------------------------|-----------------------|
| Registration status of micro-enterprise | Unregistered | 11% | 89% |
| | Registered | 42% | 58% |
| Level of education | Junior High | 8% | 92% |
| | Senior High, vocational or technical | 32% | 68% |
| | Tertiary | 47% | 53% |
| Industry | Manufacturing | 17% | 83% |
| | Wholesale and retail trade | 31% | 69% |
| | Service | 49% | 51% |
| Monthly income | US\$150 or less | 21% | 79% |
| | US\$151 – \$300 | 27% | 73% |
| | More than US\$300 | 48% | 52% |

Use of smartphone for business

Extent of smartphone use

A majority of the micro-entrepreneurs sampled spend US\$10 or less each month on voice. The same is true for data. The survey explored the factors influencing a micro-entrepreneur's expenditure on voice and data. Respondents with a relatively high level of education, those with relatively high incomes, and those who run registered businesses, tend to spend more than their peers on voice and on data. Rural entrepreneurs also spend more on voice and data. More registered firms are in the higher spend category.

The average monthly expenditure is US\$14.4 for voice and US\$7.1 for internet. The expenditure with highest frequency is US\$6 for both voice (16.3%) and internet (17.8%). Seven out of 10 micro-entrepreneurs reportedly spend more than half of their monthly voice expenditure on business activities. Just under five out of 10 spend more than half of their monthly data expenditure on business activities.

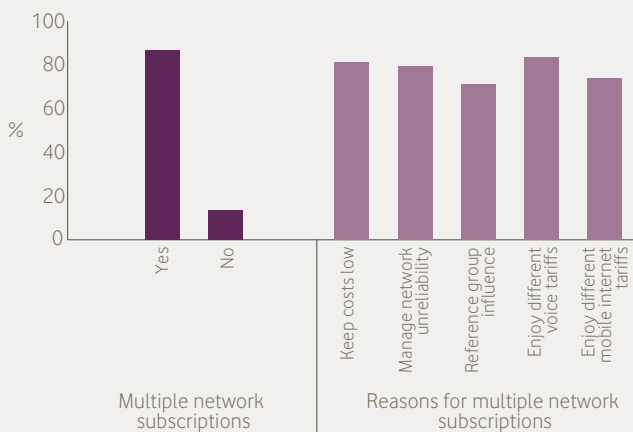
Almost nine in 10 of the surveyed micro-entrepreneurs subscribe to multiple mobile networks to access different tariffs, keep costs low and manage network unreliability. The main challenges in using mobile services are network quality and power outages/lack of electricity. Approximately eight out of 10 entrepreneurs said they would pay more for faster or more reliable mobile voice and faster internet services. Registered businesses are more likely to say they would pay more for reliable services than unregistered ones. Urban businesses are more likely to complain about electricity supply.



Figure 5: Factors which influence mobile expenditure (shaded = statistically significant)

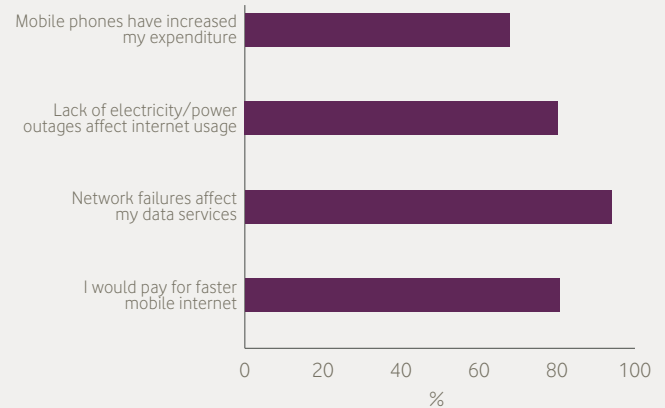
| | | Voice expenditure | | Internet expenditure | |
|----------------------------|--|-------------------|----------------|----------------------|----------------|
| | | \$10 or less | More than \$10 | \$10 or less | More than \$10 |
| Enterprise location | Urban | 61% | 39% | 86% | 14% |
| | Rural | 41% | 59% | 71% | 29% |
| Gender | Male | 52% | 48% | 83% | 17% |
| | Female | 63% | 37% | 83% | 17% |
| Registration status | Registered | 52% | 48% | 78% | 22% |
| | Unregistered | 66% | 34% | 93% | 7% |
| Monthly income | \$150 or less | 60% | 40% | 88% | 12% |
| | \$151 – \$300 | 63% | 37% | 84% | 16% |
| | More than \$300 | 46% | 54% | 76% | 24% |
| Level of education | Junior High | 67% | 33% | 86% | 14% |
| | Senior High, Vocational or technical | 63% | 37% | 87% | 13% |
| | Tertiary | 37% | 63% | 71% | 29% |
| Industry | Manufacturing | 74% | 26% | 82% | 18% |
| | Service | 50% | 50% | 80% | 20% |
| | Wholesale and retail trade | 51% | 49% | 85% | 15% |
| | | | | | |

Figure 6: Mobile subscriptions



Source: Richard Boateng

Figure 7: Mobile network challenges for micro-entrepreneurs using smartphones



Source: Richard Boateng



Almost all of the surveyed entrepreneurs said they accessed the mobile internet in some way each day

Depth of use for business activities

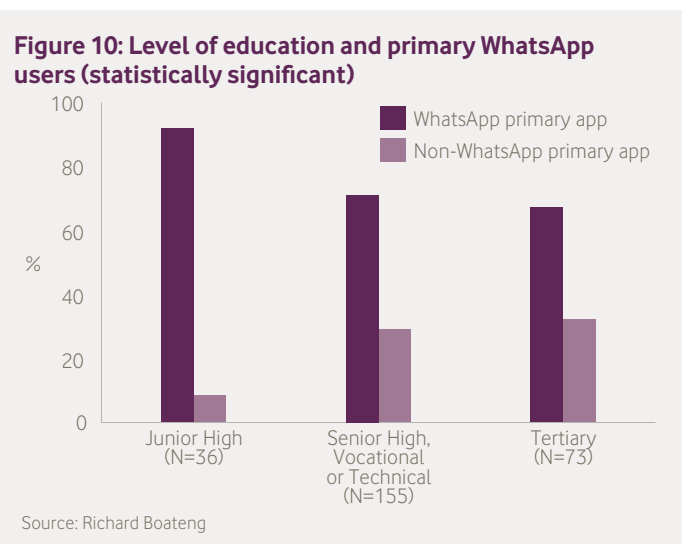
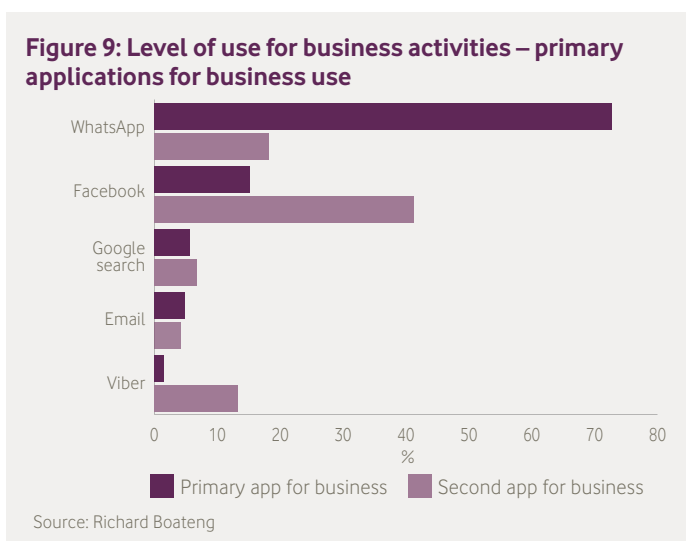
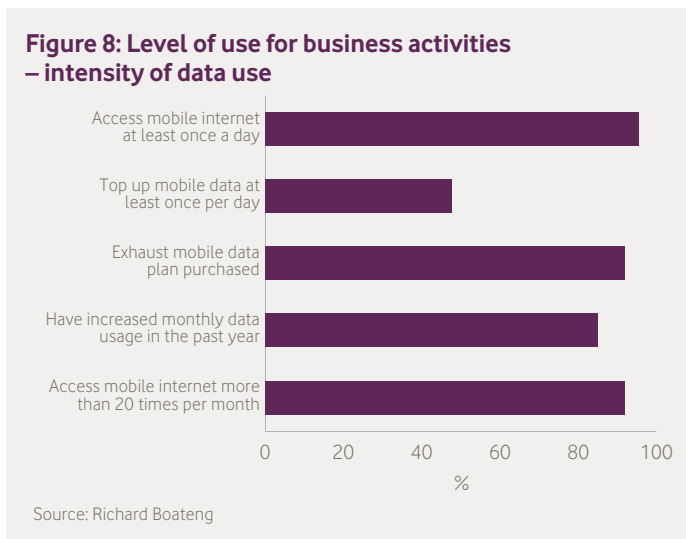
Almost all of the surveyed entrepreneurs (96%) said they accessed the mobile internet in some way each day. For seven out of 10, WhatsApp is their primary mobile application for business, while four out of 10 identify Facebook as the second most important application for their business.

“From my perspective, the only app on my phone which I can’t do without is WhatsApp messenger. God bless the creators of this app. It’s very easy to use. And it requires little assistance in knowing how to use it. Most of my customers send me messages through WhatsApp. It’s economical too. I’m able to send pictures of new hair styles to my customers. The cost of buying credit is high but what can I do about it? I’ll gladly pay more if the telcos provide improved and better services for us in this part of the country.”

Hair beautician, Eastern Region

WhatsApp users spend less on mobile data than their peers. They also make and receive fewer voice calls. Nine out of 10 entrepreneurs with a junior high education prefer WhatsApp as their primary mobile internet application. A typical comment from a WhatsApp user is that it is “Local and it does not take away their units as quick as Facebook”. In a culture where there is a preference for rich interpersonal communication (face-to-face), micro-entrepreneurs surveyed also appreciate the ability to visually depict their products or services to customers who are not physically present.

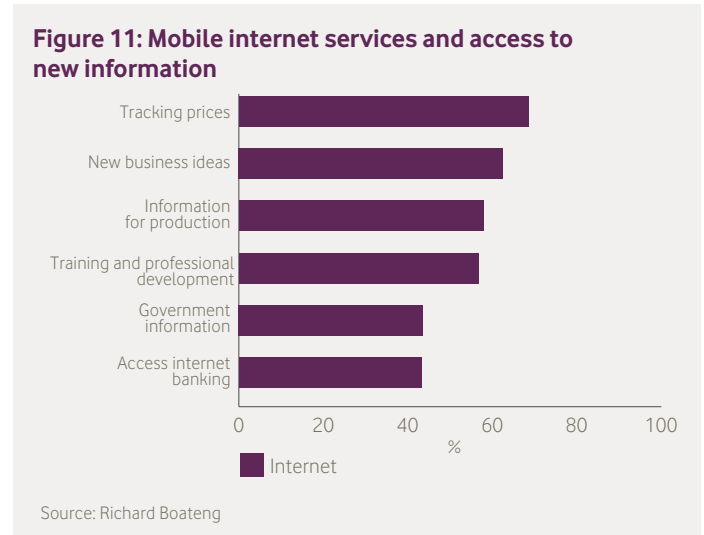
The use of Facebook, email, Viber and Google search is almost absent among micro-entrepreneurs with just junior high education. Those with greater levels of education tend to use a wider range of internet applications than their peers. There is also a network effect as more people sign up to WhatsApp, so the value of the application to each user increases. These users could also be drawn to WhatsApp through the social networks developed around it.



Education therefore seems to enable the use of more knowledge-intensive applications, as micro-entrepreneurs with relatively high levels of education take advantage of a wider range of applications to advance their business.

How smartphones are being used by micro-entrepreneurs to sustain their business

Mobile services are most frequently used for tracking prices of competing products and of raw materials, followed by searching for new business ideas. However, not all micro-entrepreneurs are using these routes to new information.



The results show that, despite the fact that rural entrepreneurs spend more on voice and data, urban entrepreneurs are making more use of their smartphones to access new business ideas, search for information on production, keep track of their competitors and use internet banking on their smartphones. It could be that rural entrepreneurs are missing out on the benefits of the more sophisticated applications for smartphones, despite spending more on them on a day-to-day basis.

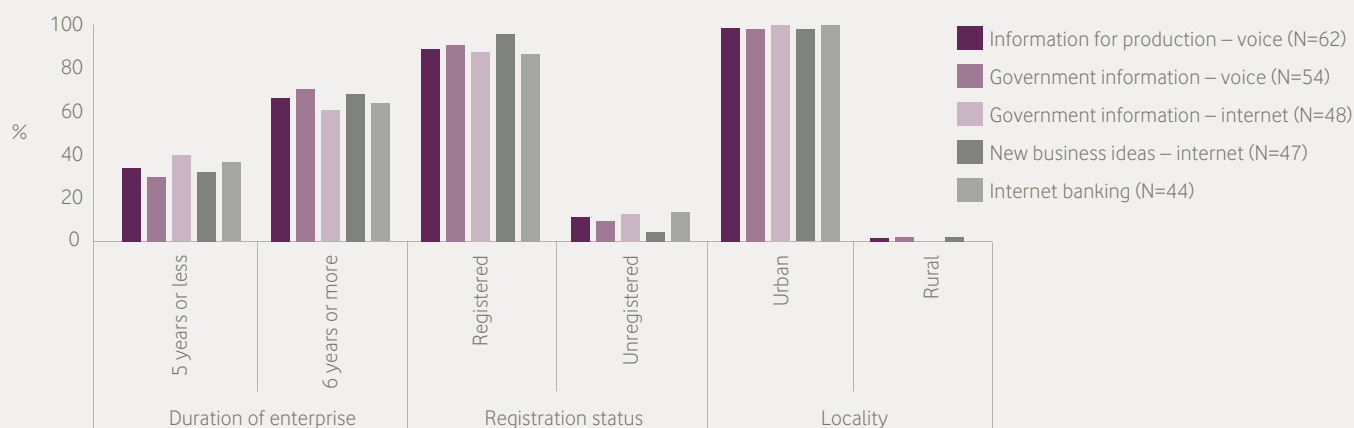
Figures 12–14: Certain factors that influence access to information via smartphone (statistically significant)

| Enterprise location | | | |
|--|-------|-------|--|
| | Urban | Rural | |
| New business ideas; search for competitor information – voice | 73% | 27% | |
| Information for production – internet | 70% | 30% | |
| Access internet banking | 69% | 31% | |
| New business ideas; search for competitor information – internet | 70% | 30% | |

| Registration status | | |
|-----------------------------------|------------|--------------|
| | Registered | Unregistered |
| Government information – voice | 80% | 20% |
| Government information – internet | 80% | 20% |

| Monthly income | | | |
|--|---------------|-------------|-----------------|
| | \$150 or less | \$151–\$300 | More than \$300 |
| Information for production – voice | 31% | 30% | 39% |
| Government information – voice | 19% | 31% | 51% |
| Government information – internet | 30% | 28% | 42% |
| Access internet banking | 36% | 25% | 39% |
| New business ideas; search for competitor information – internet | 35% | 36% | 29% |

Figure 15: Characteristics of micro-entrepreneurs earning more than US\$300 per month and making use of their smartphones for various business activities (statistically significant)



Source: Richard Boateng

There is an encouragingly high rate of use of government services via smartphone among micro-entrepreneurs with a registered business. Of these micro-entrepreneurs, eight out of 10 use their smartphone to access government information, such as taxes and business regulations. This suggests that if government services are accessible via mobile services, registered micro-entrepreneurs will access them. There is still more that government agencies can do. Respondents noted that access to government websites via mobile is limited. A recent study of websites of 75 Ghanaian public agencies, using Google's tests on mobile responsiveness, reported that over 90% of the websites of the government and of other public institutions are not mobile-friendly⁸³. Addressing this could help to stimulate demand for mobile services and facilitate greater civic engagement by micro-entrepreneurs.



Micro-entrepreneurs with lower levels of education are less likely to access new revenue activities and may fail to experience the related benefits

Monthly income is positively associated with use of the internet to access government information, internet banking and new business ideas. High monthly income earners are predominantly running registered businesses that have been in operation for six years or more and are located in an urban area. These micro-entrepreneurs consider access to government information via mobile internet as critical to their sustainability.

The impact of smartphones on micro-enterprise sustainability

The evidence that mobile services can contribute to the development of new revenue is highly encouraging. The micro-entrepreneurs surveyed for this Report use their smartphones in critical business operations, such as improving the use of customer records for production planning and marketing campaigns. The story of one auto mechanic illustrates how mobile internet applications are used in a way that is now central to business. By keeping and using records on his smartphone he has enhanced the timeliness of communication and the delivery of services between him and his clients. Indeed, well over half of the micro-entrepreneurs said that without voice or data services, they would face difficulties in continuing their business (74% and 60% respectively).

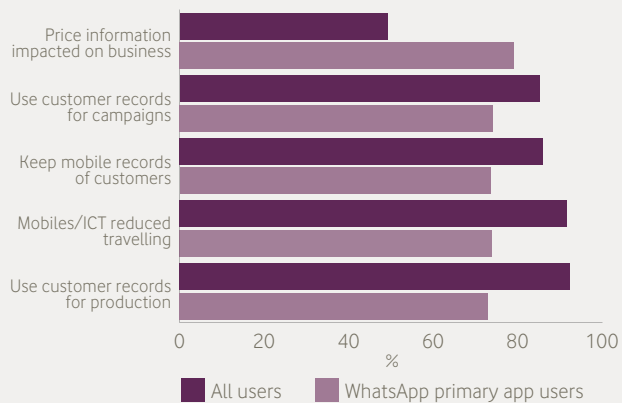
"I can actually chat with my friend and customers through the use of WhatsApp messenger. It is really helping me in managing my business. My customers can call me and send me messages any time their cars break down. For instance, last week one madam, WhatsApped me that her car has broken down along the high street, I quickly sent 'one of my boys' to fix it for her. The only problem I face now is with buying the credit, because any time I load my credit it seems to finish earlier."

Auto mechanic, Western Region

There is also evidence that using customer records stored on a smartphone to enhance marketing campaigns improves revenues. More than half of the micro-entrepreneurs surveyed (58%) experienced a decrease in monthly sales between 2014 and 2015. However, approximately 95% of those who experienced an increase in sales used mobile records of customers to inform marketing campaigns.

Consistent with other findings in this Report, micro-entrepreneurs in urban communities are doing more with their smartphone and its resources than their rural-based counterparts. Some seven out of 10 micro-entrepreneurs who use mobile services to find market prices in their sector, keep mobile records of customers, and use customer records for campaigns are in urban communities. Micro-entrepreneurs with lower levels of education are also less likely to access new revenue activities and may also fail to experience the related benefits.

Figure 16: Smartphone use and access to new revenue



Source: Richard Boateng

The importance of being local to micro-entrepreneurs

The final, important finding of the survey is that, of those micro-entrepreneurs using smartphones to access information for production, the vast majority (eight out of 10) source most of their sales locally. This is as true of the longer-established micro-enterprises as of the newer ones.

Given the emphasis often placed on external links, it is important to appreciate that micro-entrepreneurs might not seek growth beyond their local community. Some might be micro-entrepreneurs out of necessity or simply desire enough income to sustain their lifestyle; some might be owned by micro-entrepreneurs who wish to avoid regulation or the loss of control. These micro-entrepreneurs seek income security and not primarily income maximisation⁸⁴. They typically seek to grow by diversifying income sources within the local market. This growth is just as important to the economy as outward-oriented growth, as it builds demand and creates supply chains for bigger enterprises. The local orientation of micro-enterprise owners and managers will affect where they see value in the use of mobile services for their business. Local information and contacts will be the most valuable to them.

Policy recommendations

The findings of this Report suggest a number of elements are needed to enable the use of mobile voice and internet by micro-entrepreneurs looking to increase their opportunities in the local market and their revenues, and overcome some of their disadvantages of cost and opportunity compared to bigger businesses.

Mobile-friendly public services

The phenomenal adoption of WhatsApp suggests that the transition to smartphones and mobile internet services can be strongly driven by demand for certain applications. Governments are arguably the largest provider of services to both businesses and citizens. These services include business registration, health insurance, security, payment of taxes, issuing of passports, etc. Getting these essential services mobile-ready could help to both improve the quality and consistency of government services and to encourage smartphone adoption among micro-entrepreneurs⁸⁵.

Our study suggests that for micro-entrepreneurs, being registered matters. It gives micro-enterprises more access to government information, production information and new business ideas via voice and internet. Entrepreneurs who access government information, keep mobile records of customers, and use them in campaigns tend to earn more and have stayed in business longer. When registered firms earn more, government subsequently benefits through taxes and sustained employment. Making government information accessible via mobiles would encourage this virtuous cycle.

Local information

The survey shows that, for micro-entrepreneurs, deepening their reach within a local market is the preferred route to gaining customers and improving revenues. Services therefore need to be contextually relevant.

This requires consideration of communication and usage barriers such as language, culture, digital literacy and accessibility over a mobile device. Services that address these issues have a greater potential of attracting a critical mass of micro-entrepreneurs. In Ghana, the community of mobile service and application developers is quite fragmented and disaggregated. The provision of contextually relevant services will require effective partnerships between government and these developers. Mobile money services have already attracted the interest of the Bank of Ghana, leading to the development of operational guidelines and the deployment of such services by banks and mobile operators. A few public sector organisations have also launched web portals to their services, including business registration and driver's licence application. To be sure, these services still lack mobile-friendly sites and mobile applications. Targeted governance mechanisms and incentives may be needed to establish the necessary cohesion and integration in the mobile application development community, with a view to facilitating the emergence of mobile-friendly public service applications. In effect, Ghana, like many other developing countries, has successfully established the basic communications infrastructure to connect with citizens and facilitate connections between them. There is now a need for government to leverage this infrastructure to provide user-centric services to its constituents.

Digital literacy and affordability

Mobile internet access via smartphones needs to deliver sufficient value to make the cost worthwhile. There is a 20% tax on the importation of smartphones into Ghana, which is impeding the accessibility of smartphones. The Government of Ghana is yet to enforce its 2015 national budget plan to remove this tax and has announced that, even when the tax is removed, it will be replaced with the ECOWAS Common External Tariff of 10%. The Communication and Service Tax Act, 2008 (Act 754) imposes a further 6% charge for a communication service payable by consumers of the service. The government argues that communication is shifting from voice to data. As of December 2015, smartphone penetration in Ghana was 30%⁸⁶. There is opportunity to increase the use of smartphones through government interventions such as tax breaks for companies who wish to set up assembling plants for smartphones and devices in rural areas of the country.

This study indicates that smartphones enable entrepreneurs to access new information relevant to their businesses. An increase in smartphone penetration also provides the opportunity for mobile network operators to increase revenues from data and thus generate more in taxes for government. Moreover, the spread of smartphones has the potential to drive new forms of employment including through the development of mobile applications and services for the devices. Accordingly, the Government of Ghana's commitment to remove the 20% tax on devices is critical to bridging the digital divide and facilitating economic activity in the country, thereby increasing other sources of government revenue.



Smartphone penetration in Ghana at the start of 2016 was 30%

On average, Ghanaians pay 3 cents (0.114 GHS) per minute for calls on the same mobile network and 4 cents (0.134 GHS) per minute for calls to other networks. Similarly, on average, they pay 4 cents (0.134 GHS) per 1MB for mobile data. As the current daily minimum wage is approximately US\$2.00 (7 GHS), five minutes of mobile usage of 1MB of mobile data is almost 10% of the minimum wage.

There has been a range of promotions on voice and data bundles at various prices. For example, Vodafone ran a promotion offering 100 minutes on Vodafone, 100 free SMS, five minutes to other networks and 20MB of data for approximately 40 cents ('1Ghana for your Pocket'). TiGO's 'Drop That Yam' offer is aimed at encouraging customers who use feature phones to transition to smartphones. Customers who sign up for a subsidised smartphone enjoy 1GB data, plus one month unlimited music and six months double data. MTN offers a special data bundle for social media, which provides 400MB to access WhatsApp, Facebook and Twitter only for 30 days at the cost of US\$1.4 (5 GHS).

However, users often find it difficult to understand data bundles and their implications in terms of size and usage patterns. This is not the case with voice bundles, whose names and slogans are easy to remember and understand. Data bundles such as MTN Social are yet to be popularised and understood by subscribers like those surveyed in this study. Only one entrepreneur had subscribed to this bundle in our survey. Responses echo the need for internet services to become marketed for the average Ghanaian to understand. In this respect, respondents mentioned the 'Vodafone 1 Ghana for your Pocket' and 'Airtel Browse Chaw' as promotions that have attempted to do this. Mobile data bundles need innovative marketing strategies that are local.

That said, these marketing strategies should be targeted. The findings in this study suggest that more mobile services are needed for enterprise development. Not all micro-entrepreneurs seek vertical growth. Many may prefer to remain local, rather than to diversify their income sources. The use of mobile services in such enterprises may therefore not be growth-oriented but, instead, focused on deepening existing relationships with trading partners and customers. As a result, the social dimension of mobile services will be of concern to many micro-entrepreneurs.

There is an opportunity to develop special business packages for micro-entrepreneurs, perhaps made accessible through formal associations or groups such as the National Board for Small Scale Industries.

Summary

Among other objectives, the Government of Ghana in its national broadband policy sought to facilitate the provision of affordable access to broadband infrastructure to all, by 2020; and to promote the usage and uptake of broadband via suitable content and applications or services. The government has achieved its target of total broadband penetration of 50% by 2015. The next step is to ensure that mobile broadband via smartphone access can help address inequalities, including the one discussed here – the gap between small entrepreneurs and bigger, more established businesses.

The findings and recommendations discussed in this chapter are stepping stones towards reducing inequalities in mobile access and enhancing usage by micro-entrepreneurs, who play such an important role in the economy. Governments, regulators and the industry need between them to create an environment that provides access to relevant information and delivers value.

Stepping stones

- **making government information and services mobile-friendly to help stimulate demand;**
- **making available other relevant and local market information;**
- **enhancing digital literacy so that people learn how to make the best use of their smartphones and internet access;**
- **facilitating an attractive value proposition across a combination of services, network quality, smartphone prices and data tariff bundles.**

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