

# Transforming Women's Livelihoods Through Mobile Broadband

A study on the value of mobile broadband for working women in the developing world

EVERYBODY WAITING FOR  
**OMNISPHERE**



## CONTENTS

02	Definitions
04	Sponsor & Author Notes
10	Executive Summary
<b>20</b>	<b>Recommendations and Next Steps</b>
26	Case Study: Indonesia
<b>28</b>	<b>Mobile Broadband: Transforming Women's Livelihoods</b>
38	Case Study: Malaysia
<b>40</b>	<b>Segments of Working Women in the Developing World</b>
52	Case Study: Brazil
<b>54</b>	<b>Mobile Services for Women at the Base of the Pyramid</b>
58	Case Study: Nigeria
60	Conclusion
62	Endnotes

## DEFINITIONS

### Working women

Women who earn an income working for themselves or others in any occupational category, including services, agriculture, manufacturing, and small crafts.

### Fixed-line Internet

Internet connections and services delivered over ordinary phone lines, fiber optic cable, or cable television lines.

### Mobile broadband

Wireless Internet connections and services designed for access by mobile devices such as smartphones, tablet computers, and laptop computers.

### Feature phone

For the purposes of this study, a feature phone is defined as a mobile phone without wireless Internet connectivity.

### Smartphone

A mobile phone with Internet connectivity, often coupled with a graphical interface and touchscreen controls.

### Mobile phone owner or user

A mobile phone owner is a person who owns a mobile handset and a mobile network services subscription. Because most individual subscribers also have a mobile handset, the terms feature phone owner and feature phone user are used interchangeably in this report, as are the terms smartphone owner and smartphone user.

### Mobile applications (or apps)

Application software designed to run on smartphones, tablet computers and other mobile devices. Examples include email, mobile games, and social networking applications such as Twitter and Facebook.

### Base of the Pyramid (BoP)

In this report, consistent with The World Bank classification, BoP is used to describe women who earn less than \$2.50 USD per day.

### Global market potential

The number of working women in the developing world who do not own smartphones based on population estimates obtained from the World Bank and the United Nations.





As a company that firmly believes in the transformational power of mobile technology, Qualcomm is pleased to be a part of this insightful research effort on mobile technology's impact on women in emerging regions. The research comes at a critical time. Nearly 1 billion women<sup>1</sup> will enter the global economy during the coming decade, and their participation can lead to dramatic economic and social benefits.

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## Mobile broadband enables women to participate in the robust, flourishing, mobile economy.

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The impact of mobile technology transcends geographies and socioeconomic classes, and we see unprecedented opportunity to advance the lives of women. Many women in emerging regions have the ideas and ambitions needed to succeed, but they are held back by many factors including a lack of access to professional development, education, technology, networks, and capital. Mobile broadband provides a way to address these needs, and as you will see in this report, mobile broadband enables women to participate in the robust, flourishing, mobile economy.

I have had the opportunity to witness firsthand how mobile technology can positively impact women in emerging regions. I've seen how women in Indonesia are using mobile technology to access unique business opportunities and gain the skills needed to lift themselves out of poverty. With an innovative mobile microfranchising model, women are becoming successful entrepreneurs and the results are life changing.

We look forward to the discussions this report will spark and to focusing our attention on how to accelerate mobile adoption and use its power to improve opportunities for women across the globe.

Sincerely,

A handwritten signature in black ink that reads "Shawn A. Covell". The signature is fluid and cursive.

**Shawn A. Covell**  
Vice President of Government Affairs  
Qualcomm, Inc.  
@Qualcomm\_GA

Since its launch by U.S. Secretary of State Hillary Rodham Clinton in October 2010, the GSMA mWomen Programme has been committed to improving the lives of resource-poor women through mobile technology. Our 2010 study, *Women and Mobile: A Global Opportunity*, published in collaboration with the Cherie Blair Foundation for Women and Vital Wave, highlighted that women were 21% less likely to own a mobile phone than men in low to middle-income countries. As technology advances and important resources like mobile broadband become more widely available, women must not be left behind.

The GSMA is proud to collaborate with Qualcomm Wireless Reach and Vital Wave on this new, important research that explores how mobile broadband access can improve the lives of working women around the world. Access to the Internet improves connectivity to friends and family, offers improved employment and income opportunities and is a critical tool to improve the lives of women around the world.

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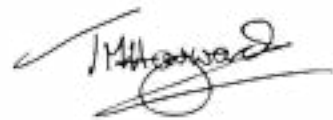
**Mobile broadband access can improve the lives of working women around the world.**

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But the barriers to adoption are significant. Many women living at the base of the economic pyramid find mobile broadband devices and data plans unaffordable. For others, who have little experience using the Internet, digital literacy education is needed to illustrate the benefits of mobile broadband over basic feature-phone service.

GSMA Mobile for Development and the GSMA mWomen Programme are committed to supporting solutions that address these barriers, and this research is an important step in that process.

Sincerely,



**Tim Hayward**

Acting Managing Director  
GSMA Mobile for Development  
@GSMAm4d  
@GSMAmWomen





Vital Wave is pleased to have been a driver of the mWomen movement since authoring *Women and Mobile: A Global Opportunity* in collaboration with the GSMA and The Cherie Blair Foundation for Women in 2010.

Advancing women's use of mobile technology is at the heart of Vital Wave's mission. The firm is dedicated to realizing socioeconomic growth through the scale of profitable business and social programs in emerging markets.

Worldwide, women are a catalytic force in the development and wellbeing of families. At the same time, working women are important stakeholders in every economy as productive contributors and consumers. The use of mobile broadband by working women in the developing world benefits society, local business environments, and the global economy.

Investments from all sectors are warranted to accelerate adoption and application of mobile broadband by women in their work lives. To inform such efforts, this study provides a holistic, data-backed view of working women's needs in the developing world as well as targeted solutions that resonate with the diverse segments of women who earn their own livelihood.

We are proud to share this new study, *Transforming Women's Livelihoods Through Mobile Broadband*. Through it, we aim to stimulate alignment and collaboration across government, industry, and the development community to scale the use of mobile broadband by women everywhere.

Sincerely,

A handwritten signature in black ink that reads "Brooke Partridge".

**Brooke Partridge**  
Chief Executive Officer  
Vital Wave, Inc.  
@Vital\_Wave

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**The use of mobile broadband by working women in the developing world benefits society, local business environments, and the global economy.**

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# EXECUTIVE SUMMARY



## EXECUTIVE SUMMARY

### Introduction

Mobile communication is undergoing a rapid transformation in developing countries where an estimated two-thirds of the world's population lives and works. Mobile broadband coverage in these regions is continually improving, bringing the power of the Internet to people when and where they need it. The International Telecommunication Union (ITU) estimates that half of the world's population was covered by a 3G network at the end of 2012.<sup>ii</sup> Further, Ericsson forecasts that by 2018 there will be over 6 billion mobile-broadband connections, which is roughly equal to the number of mobile-cellular telephone connections in 2013.<sup>iii</sup>

Mobile handsets are also evolving. Smartphones are increasingly available at lower price tiers and therefore more affordable. Users are replacing their basic feature phones – an essential part of life in the developing world – with smarter, Internet-enabled devices. According to IDC, over the past three years there has been a 4x increase in smartphone unit shipments below \$200 USD and a 25x increase in smartphone unit shipments below \$100 USD, with additional large increases in smartphones unit shipments below \$75 USD.<sup>iv</sup> The combination of better networks and Internet-enabled devices has caused a global surge in Internet adoption.

The shift to mobile broadband and smartphones or tablets will be most profound for working women in the developing world. Gaining ubiquitous Internet access, previously unavailable with basic feature phones, empowers women to find new work-related opportunities, stay connected with colleagues and customers, and access educational resources to enhance their livelihoods and further their careers.

Women's empowerment is vital for economic growth in developing countries. Mobile broadband has the potential to extend that impact, contributing to important development goals, macro-economic gains, and mobile industry growth. The World Bank estimates that every 10% increase in access to broadband is correlated with a 1.38% growth in Gross Domestic Product (GDP) for developing countries.<sup>v</sup> Other industry research has estimated that bringing 600 million additional women and girls online could boost global GDP by up to \$13-18 billion USD.<sup>vi</sup>

But, accelerating women's use of mobile broadband will depend on a deeper understanding of the value they place on mobile services and the barriers they face in acquiring them. Gaining that understanding is the focus of this study, combining in-depth interviews, segmentation analysis, and case studies to establish the value that mobile broadband brings to working women in the developing world.



### A Note on Methodology:

The study is based on more than 1,000 structured interviews with working women across five countries: Brazil, China, India, Indonesia, and Nigeria. This research was designed to uncover and characterize the various forms of value that mobile broadband provides to working women in the developing world and identify the barriers that block feature phone owners from upgrading to smartphone use. To participate in the study, women had to own a mobile phone — either a feature phone or smartphone — and work for themselves or someone else. Women who work in the home or for their families without pay were excluded. For this research, a smartphone was defined as a device that can access the Internet, while a feature phone cannot.<sup>vii</sup> Due to these sampling criteria, the results of this study apply primarily to working women who already own a mobile phone. Readers are cautioned not to generalize or apply the findings and recommendations in this report to other populations, such as women who do not own a mobile device. A complete description of the study's methodology is included in the Endnotes.<sup>viii</sup>



## The Value of Mobile Broadband

**Mobile phones of all types are now an integral part of women’s work lives.** The vast majority (80%) of working women in the study use their feature phone or smartphone for work and consider their phone an important tool for their work lives.

Many working women recognize that smartphones and mobile broadband can make them more productive in their daily lives. Across the different segments of working women identified in the research, five distinct categories emerged of work-related needs that could potentially be addressed by mobile broadband, although priorities differ somewhat by segment:

- Connecting co-workers, friends, and family
- Accessing content and goods
- Finding new income or professional opportunities
- Improving productivity and well-being
- Obtaining educational content and entertainment

**Mobile broadband offers unique value to working women by improving access to information and education and by linking their work and personal lives.** A large majority of working women (92%) initially acquired their smartphones to communicate with friends and family. However, for many women, work and family lives are highly interconnected. As they came to rely on smartphones in their personal lives, women soon recognized the value of






mobile broadband services for work. Now, they are considered indispensable; three-quarters of smartphone users interviewed for this study said that they could not go back to using a phone without mobile broadband.

**While all segments value real-time connectivity to the Internet available through mobile broadband, different priorities can be seen across segments of working women.**

- **Urban Entrepreneurs** are most focused on using mobile broadband to enhance the productivity of their businesses.
- **Young Urban Careerists** seek educational and employment content as they build their careers.
- **Work & Family Warriors** look to manage their household responsibilities while staying ahead in their jobs.
- **Young Rurals** want to access social networks and educational content to gain greater independence from their families and build new job skills.
- **Rural Traditionalists** need mobile applications to improve communication and productivity to stay in contact with family and improve their well-being.

For organizations that promote mobile broadband to working women, it will be key to demonstrate how smartphone features and functionality address the different priorities of each user segment. Figure A provides a summary of the segments identified in *Transforming Women’s Livelihoods Through Mobile Broadband*.

 **Figure A: Working Women User Segments**<sup>ix</sup>

Urban Entrepreneurs	Young Urban Careerists	Work & Family Warriors	Young Rurals	Rural Traditionalists
				
<p><b>Profile:</b> Small business owners focused on strengthening their businesses while managing family commitments</p> <p><b>Demographic Parameters:</b> Self-employed urban woman between ages of 15 — 64</p> <p><b>Global Market Potential*:</b> ~100 million women globally</p> <p><b>Mobile Broadband Likelihood**:</b> 15% more likely to own a smartphone</p> <p><b>Value of Mobile Broadband:</b> Enhanced business communication, market information and mobile productivity tools</p>	<p><b>Profile:</b> Young, urban women working to better their lives</p> <p><b>Demographic Parameters:</b> Urban woman between ages of 15 — 24 who works in wage &amp; salary jobs</p> <p><b>Global Market Potential*:</b> ~80 million women globally</p> <p><b>Mobile Broadband Likelihood**:</b> 23% more likely to own a smartphone</p> <p><b>Value of Mobile Broadband:</b> Access to social networks, online education, and employment content</p>	<p><b>Profile:</b> Urban career women working to support their families</p> <p><b>Demographic Parameters:</b> Urban woman between ages of 25 — 64 who works in wage &amp; salary jobs</p> <p><b>Global Market Potential*:</b> ~200 million women globally</p> <p><b>Mobile Broadband Likelihood**:</b> 13% more likely to own a smartphone</p> <p><b>Value of Mobile Broadband:</b> Mobile productivity tools (e.g., email, doc sharing) and enhanced business communication</p>	<p><b>Profile:</b> Young rural workers hoping to gain independence from family and achieve upward mobility</p> <p><b>Demographic Parameters:</b> Rural woman between ages of 15 — 24</p> <p><b>Global Market Potential*:</b> ~120 million women globally</p> <p><b>Mobile Broadband Likelihood**:</b> 12% less likely to own a smartphone</p> <p><b>Value of Mobile Broadband:</b> Access to online education, employment content, and social networks</p>	<p><b>Profile:</b> Older, more traditional agricultural and service workers trying to maintain a stable work life while supporting their families</p> <p><b>Demographic Parameters:</b> Rural woman between ages of 25 — 64</p> <p><b>Global Market Potential*:</b> ~300 million women globally</p> <p><b>Mobile Broadband Likelihood**:</b> 21% less likely to own a smartphone</p> <p><b>Value of Mobile Broadband:</b> Enhanced communication with family while at work</p>

\* Estimated size and market potential were calculated using population data from the World Bank and International Labour Organization.

\*\* Likelihood of owning mobile broadband is reported relative to the global average of all other women included in this study.



**Feature phone owners demonstrate a strong interest in mobile broadband and a willingness to pay for mobile broadband.**

Two-thirds of feature phone owners interviewed for this study say they are interested in owning a smartphone with mobile broadband and would be willing to pay for a mobile data plan. Half said they are making plans to purchase a smartphone in the next two years, which could represent a significant growth opportunity for handset makers and mobile operators in these regions.

**Working women who have already used the Internet at home or at work indicate greater interest in acquiring mobile broadband.**

Women who have accessed the Internet on fixed-line devices and experienced its many benefits are far more likely to want these same benefits on their mobile phone. The study shows that women are 40% more interested in acquiring mobile broadband if they use the Internet at work. In addition, the data suggests that even women who have not had much exposure to the Internet through fixed-line devices report work-related needs that could benefit from Internet access. For these women, going directly to mobile broadband may be preferable because it bypasses the cost and complexity of owning multiple devices.

**Opportunities for the Mobile industry**

**A shift toward broadband-enabled phones is gaining momentum among women in the developing world.**

In the study, smartphone owners are more likely than feature phone owners to have purchased their current phone in the last 12 months. Overall, two-thirds of feature phone owners express interest in owning a smartphone, and half say they have plans to convert to smartphones within the next two years.

**Women are making their own purchase decisions.**

Most women purchase their mobile phones and pay for their mobile service plans themselves reflecting a high degree of purchasing independence. All women included in the survey are working and own mobile phones. Therefore, this finding may not be applicable to the unemployed or to those who do not own a mobile phone.

**The mobile industry has the opportunity to introduce approximately 800 million working women to smartphone ownership.**

Analysis of data sourced from the World Bank estimates that there are roughly 950 million working women in developing countries in Asia, Africa, and Latin America. Of these women, approximately 800 million have yet to subscribe to mobile broadband.

### Barriers to Mobile Broadband Adoption

Of working women without smartphones included in the study, half are making plans to purchase one within the next two years. Whereas, the remainder cite **lack of perceived benefit, handset cost, and smartphone complexity** as primary concerns.

Many of the women surveyed have limited familiarity with the benefits of mobile broadband, since three-quarters of feature phone owners in the study do not use the Internet. To increase awareness of the benefits of smartphone ownership, additional commitment and investment in digital literacy and Internet access programs are needed. The concern of handset costs will diminish on its own as smartphones are increasingly available at lower price tiers and therefore more affordable. Meanwhile, financing options in collaboration with non-governmental organizations (NGOs) can enable consumers to upgrade sooner through smaller, incremental

cash outlays that are more consistent with income flows in developing countries. Collaboration between industry, NGOs, and government is another powerful tool to promote availability, affordability, and accessibility.

Though **limited coverage and low bandwidth, unreliable power sources,** and an absence of **local-language content** are common barriers to the expansion of mobile broadband usage, these factors were seldom mentioned by women in this study. This may be due to a lack of respondents' personal awareness about the benefits of better networks and services.

Not surprisingly, women at the base of the economic pyramid (BoP) are less likely than higher-income women to say they are planning a smartphone purchase in the next two years. This is discussed in detail in the "Mobile Services for Women at the Base of the Pyramid" section of the report.

### Tablet Ownership and Mobile Broadband

Smartphone owners are more likely than feature phone owners to own a tablet, as well. Among respondents interviewed in this study, only 1% of feature phone owners mentioned owning a tablet, compared to 12% of smartphone owners. Among smartphone owners who own a tablet, 42% are using their tablet both at home and work. The market potential for tablets among working women in the developing world mirrors the global market potential, with global tablet penetration rates estimated at 6%.





# RECOMMENDATIONS AND NEXT STEPS



## RECOMMENDATIONS AND NEXT STEPS

### An Agenda for Action

The shift from feature phones to smartphones among working women in developing countries represents a significant opportunity for mobile industry players to find new market segments, for government agencies to achieve economic targets, and for NGOs to meet development goals. The findings from this research suggest mobile broadband uptake could be accelerated through the following targeted initiatives, summarized in Figure B.

### Expand Internet Use to Show the Value of Mobile Broadband

Given the strong link between awareness of the value of the Internet and smartphone ownership, operators, equipment manufacturers, governments, and NGOs will benefit from fortifying their commitment to existing Internet access and digital literacy programs, especially those targeted to women. Sponsored data schemes, in which content owners assume the cost of access to their sites, have the potential to reduce costs and invite smartphone users into new service areas.

Time-bound collaborations — supported by industry players, governments, and donors — could be tapped for the specific purpose to fund NGOs that develop and implement eServices programs. In many countries access initiatives already exist, but must be amended

to directly fund gender based digital inclusion or broadband expansion efforts that are shaped in consultation with industry and are implemented in a transparent, competitive and technically neutral way.<sup>x</sup> With the growing evidence of economic and social benefits generated by broadband expansion, the case for government responsiveness to this issue is compelling.

Governments can also expand Internet use by ensuring a transparent and stable regulatory environment (particularly relating to sector-specific taxation). This will also enable industry players to make investments in extending mobile broadband network coverage. Greater coverage is needed to keep pace with growing demand, particularly in low-income or marginalized populations. To expand Internet use and deliver such widespread, quality services, operators need access to both the appropriate spectrum and a market-based regulatory regime that encourages competition, transparency, and long-term investment.

The strategic use of high-level champions is another way to illustrate the value of mobile broadband to potential consumers. Mobile industry leaders, policy makers, and development organizations can enlist well-respected individuals — celebrities, political or business leaders — to promote national broadband initiatives and highlight working women as an important mobile broadband market.

 **Figure B: Summary of Recommendations and Next Steps**

	Operators & Equipment Manufacturers	Government	NGOs
<b>Expand Internet use to show the value of broadband connectivity</b>	<ul style="list-style-type: none"> <li>Accelerate commitment to digital literacy and Internet access programs</li> <li>Industry to forge public/private collaborations that promote availability, affordability and accessibility</li> <li>Illustrate how mobile broadband supports entrepreneurship and income generation</li> <li>Empower high-level champions to communicate the benefits</li> </ul>	<ul style="list-style-type: none"> <li>Provide transparent and stable regulatory environment to fuel mobile industry growth and investment</li> <li>Accelerate commitment to digital literacy and Internet access programs</li> <li>Empower high-level champions to communicate the benefits</li> </ul>	<ul style="list-style-type: none"> <li>Work with industry and the public sector to promote availability, affordability and accessibility of mobile services</li> <li>Develop and implement digital literacy and Internet access programs</li> <li>Incorporate digital literacy and technical skills into existing women's employment or entrepreneurial programs</li> <li>Empower high-level champions to communicate the benefits</li> </ul>
<b>Address cash-flow implications of handset purchase</b>	<ul style="list-style-type: none"> <li>Continue to develop and market ultra-low-cost and entry-level smartphone devices</li> <li>Lower cash-flow impact of handset purchase through creative financing and bundling</li> </ul>	<ul style="list-style-type: none"> <li>Support spectrum harmonization to lower costs for consumers</li> <li>Include gender considerations and a gender perspective in government policy based on a multi-stakeholder consultation process</li> </ul>	<ul style="list-style-type: none"> <li>Work with industry and the public sector to promote availability, affordability and accessibility of mobile services</li> <li>Provide creative financing models</li> <li>Secure discounts through bulk purchases</li> </ul>
<b>Customize messaging and offerings</b>	<ul style="list-style-type: none"> <li>Tailor mobile broadband services along with product and marketing promotions to meet the unique needs of women in each user segment group</li> <li>Directly address women's stated wants and needs through eServices, which include sponsored data</li> </ul>	<ul style="list-style-type: none"> <li>Create flexible eServices delivery models for varied constituents (e.g., eGovernment, eHealth, eEducation, eInclusion), which include sponsored data and directly address women's stated wants and needs</li> </ul>	<ul style="list-style-type: none"> <li>Develop targeted and localized education and Internet awareness programs</li> <li>Directly address women's stated wants and needs through eServices, which include sponsored data</li> </ul>

### Address Cash-flow Implications of Handset Purchase

As smartphones are increasingly available at lower price tiers and therefore more affordable, creative financing options in collaboration with NGOs can accelerate adoption. These options may include: bulk purchases, microfinance, or used device exchanges.

Further, growth in mobile users and expanding mobile networks will positively impact costs. Policymakers can support these ongoing industry efforts by ensuring that key frequency bands required to roll out 3G and 4G LTE networks are harmonized on a regional basis. Transparent and stable regulatory environments also fuel long-term industry investment and supports expansion into new markets and consumer segments.

### Tailor Goods and Services to Specific Segments

Despite the high level of income independence for working women identified in the research, they are not always the sole decision makers in their families. Conventional wisdom suggests that working women enjoy greater independence than their unemployed counterparts. In many developing countries, men still have significant influence over their wives' and daughters' purchases, regardless of income or employment status. Catering to the preferences of women — while remaining aware of local cultural dynamics between men and women — is a critical success factor for increasing uptake.

A woman's need for (and use of) mobile broadband will vary from segment to segment and across cultures. Tailoring goods and services to the unique needs of working women will require attention to variables such as age, location, and job type. As uptake accelerates, there will be opportunities to introduce products and services for working women at each level of the economy in the developing world.

For low-income segments, a continued focus on feature-phone offerings and lower data access costs will bring more women to smartphone adoption. In some countries, feature phone users upgrade quickly to smartphones, and it is conceivable that low-income women with financing or shared-use options will jump directly to smartphone ownership as their circumstances allow.





# INDONESIA

## NEXT-GENERATION COMMERCE

Like many teenagers from Indonesia's emerging middle class, 18-year-old Safira, a young urban entrepreneur, uses her smartphone and mobile broadband service to connect with friends, download music, and surf the Internet. But for Safira, her mobile phone is also her source of income. Using the technical knowledge she gained in high school, Safira has launched her own online shop selling clothing, shoes, and accessories. Her goal: to earn her own spending money and help pay for college tuition.

Her mother sells similar goods from the family's warung, a traditional parlor shop in West Bekasi, which relies mostly on foot traffic to generate business. But with her virtual storefront, Safira can reach thousands more customers from all around West and Central Java and operate her business from almost any location. "Selling online is easier, more profitable, and faster," she says. "I can do anything — promotion, selling, and getting payment directly to my account."

Twitter is her preferred application for conducting business. "First they follow my Twitter feed and then they pick an item. I tweet them a quote and they order directly from me." Buyers must first pay for items directly through wire transfer before shipping.

Working just four hours a day, Safira's online store is processing an average of 10 to 20 transactions each month and generating a profit of 1,000,000 IDR (\$85 USD). The flexibility of selling online allows Safira to work around her school schedule. Besides the money, she says her success has provided a sense of personal accomplishment and independence.

Going forward, Safira wants to find a less expensive broadband service (she currently pre-pays 50,000 IDR per month, or \$4.20 USD) and have access to online banking, because she still must use an ATM to withdraw money to pay her suppliers. She also has plans to create her own e-commerce website to make it easier for customers to buy her goods.





MOBILE  
BROADBAND:  
TRANSFORMING  
WOMEN'S  
LIVELIHOODS





## MOBILE BROADBAND: TRANSFORMING WOMEN'S LIVELIHOODS

### EXTENDED STUDY RESULTS

Mobile broadband has the power to transform the lives of working women in developing countries by offering unique forms of value over feature phones and fixed-line Internet. By providing anytime-anywhere access to information and services, mobile broadband empowers working women to improve communications with co-workers and customers. It enables them to locate and capture new work opportunities and integrate the power of real-time information to improve job performance and support entrepreneurship. Mobile broadband also helps women and their families access educational

content and entertainment. Ultimately, mobile broadband helps working women better manage the demands of work and family in ways that feature phones and fixed-line Internet services do not.

### Mobile Phones Are Integral to Women's Work Lives

The vast majority of working women interviewed use their feature phone or smartphone for work and consider their phone important for their work lives.

 **Figure C:** Work-related Needs that Mobile Broadband can Address

Connection	Content & Goods	New Income or Professional Opportunities	Productivity & Well-being	Education & Entertainment*
				
<ul style="list-style-type: none"> <li>• Reduce costs of work-related communication</li> <li>• Be in better contact with people for work</li> <li>• Stay in better contact with friends and family while at work</li> </ul>	<ul style="list-style-type: none"> <li>• Stream audio and video content</li> <li>• Get market information</li> <li>• Buy and sell goods electronically</li> <li>• Transfer and receive money electronically</li> <li>• Share photo and video content</li> </ul>	<ul style="list-style-type: none"> <li>• Generate more income</li> <li>• Find new job opportunities</li> <li>• Find new employees</li> </ul>	<ul style="list-style-type: none"> <li>• Improve safety and security</li> <li>• Improve productivity</li> <li>• Get traffic and emergency information</li> <li>• Improve quality of life</li> <li>• Improve management of household finances</li> </ul>	<ul style="list-style-type: none"> <li>• Access entertainment and games</li> <li>• Improve education</li> </ul>

As detailed in Figure C, across the different segments of working women identified in the research, five distinct categories emerged of work-related needs that could potentially be addressed by mobile broadband, although priorities differ somewhat by segment:

- Connecting co-workers, friends, and family
- Accessing content and goods
- Finding new income or professional opportunities
- Improving productivity and well-being
- Obtaining educational content and entertainment

\* For highly-repetitive tasks and in job categories with a high degree of idle time, these may be important work-related needs

**77% of women currently using smartphones say they could not go back to using a phone without mobile broadband**

### Smartphone Ownership and Work-related Features

Smartphone ownership is associated with women who highly value staying in touch with work and personal contacts as well as finding new income or professional opportunities.

A variety of smartphone features are being used to deliver this value. For example, women who value connection are more likely to use email and broadband texting applications on their smartphones. Women who value new opportunities are likely to use mobile broadband to access employment and social networking applications to find customers, suppliers, and new employees.

### Connection with Friends and Family Is Initial Aim

While the overwhelming majority of working women (92%) initially acquired their smartphones to communicate with friends and family, over time these women increasingly use their phones to manage the demands of both work and home lives.

For many women, work and family lives are highly interconnected. Therefore, as women come to rely on smartphones in their personal lives, they are likely to recognize the value of mobile broadband services in their work lives.

### Exposure to the Internet Underscores the Value of Mobile Broadband

Women are 40% more interested in acquiring mobile broadband if they use the Internet at work. Exposure to the Internet, in any setting or mode of access, is important in driving women's appreciation of the value that smartphones can bring to their lives. In many developing countries, however, fixed-line infrastructure is unavailable, unreliable, or prohibitively expensive, discouraging Internet usage among low-income segments of the population.

### A Changing Mobile Landscape

Many smartphone owners in the study have recently acquired their phones. Of the women interviewed in the study, 63% of smartphone owners acquired their current phone in the last 12 months, compared to 36% of feature phone owners. This reflects, in part, the growth of the smartphone market, which was projected to grow by 32.7% in 2013 alone, fueled largely by emerging-market demand.<sup>xi</sup>

### Independence Characterizes Women's Purchase Habits

Most working women (70%) purchase their mobile phones for themselves, reflecting a high degree of purchasing independence. The majority (88%) of women in the study pay for their mobile plan themselves, usually in the form of pre-paid cards. Conventional wisdom suggests that working women enjoy greater financial autonomy than their unemployed counterparts, particularly those in more traditional, poor, or rural areas. This is an important consideration when tailoring mobile products and services to specific segments.





### Working Women Eager to Acquire Smartphones

Many feature phone owners in the study are interested in or planning to convert to smartphone ownership. Among the feature phone owners interviewed, over half (64%) express some interest in owning a smartphone with mobile broadband. Roughly half of feature phone owners (49%) surveyed are planning on purchasing a smartphone in the next two years (see Figure D).

### Barriers to Mobile Broadband Adoption

Of working women without smartphones included in the study, roughly half are making plans to purchase one within the next two years. Whereas, the remainder cite **lack of perceived benefit**, **handset cost**, and **smartphone complexity** as primary concerns.

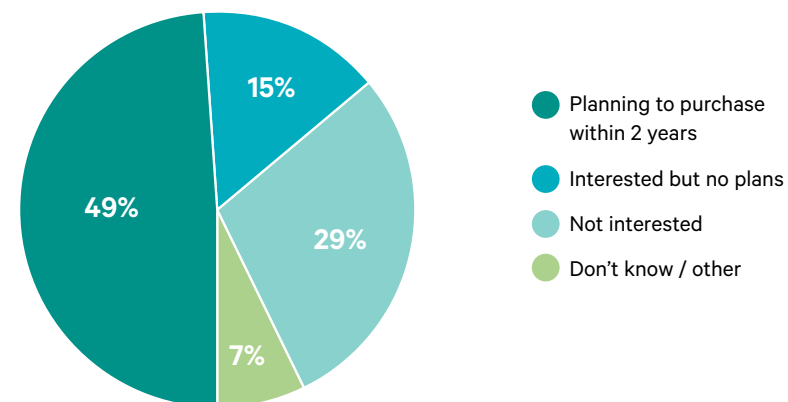
Many of the women surveyed have limited familiarity with the benefits of mobile broadband, since three-quarters of feature phone owners in the study do not use the Internet. To increase awareness of the benefits of smartphone ownership, additional commitment and investment in digital literacy and Internet access programs are needed. The concern of handset costs will diminish on its own as

smartphones are increasingly available at lower price tiers and therefore more affordable. Meanwhile, financing options in collaboration with NGOs can enable consumers to upgrade sooner through smaller, incremental cash outlays that are more consistent with income flows in developing countries.

Though **limited coverage** and **low bandwidth**, **unreliable power sources**, and an absence of **local-language content** are common barriers to the expansion of mobile broadband usage, these factors were seldom mentioned by women in this study. This may be due to a lack of respondents' personal awareness about the benefits of better networks and services.

Surprisingly, interviewees did not identify data costs as significant barriers. In fact, feature phone owners demonstrate a clear willingness to pay more for mobile broadband data. On average, feature phone owners reported that they would be willing to pay almost double (83% over their current phone plans) for mobile broadband data. However, as explored in the subsequent section of this report, "Mobile Services for Women at the Base of the Pyramid," a disconnect may exist between willingness and ability to pay for women in lower income groups.

Figure D: Likelihood of Transition from Feature Phone to Smartphone



## Interest in Mobile Broadband Varies by Country

The 1,000 women who participated in the study are not a homogeneous group. Though they can be identified as part of distinct user segments, their concerns, aspirations and interests vary considerably by geography, as well. Some country-specific observations can be made about the women surveyed:

### BRAZIL

#### **Brazilian women are focused on income and productivity.**

Being productive and successful in their work is a priority for Brazilian women. Living in a rapidly developing economy, Brazilian women lead busy lives and want to get ahead in their careers. These women show a strong interest in managing their finances and finding ways to earn additional income. Among smartphone owners interviewed, mobile applications that help with planning and productivity — such as maps, weather, and financial planning — are very popular.

### CHINA

#### **Chinese women have diverse needs that can be addressed by mobile broadband.**

Chinese women cite a broader range of work-related needs than women in other countries and clearly recognize the value of mobile broadband in addressing these needs. While they clearly value the importance of staying connected to friends, family, and people at work, they also report a strong interest in improving productivity, accessing real-time information, and obtaining educational content and entertainment.

### INDONESIA

#### **Indonesian women place the highest value on using their phones for work.**

Indonesian women are more likely than women from other countries included in the study to use their phones for work (97%), and consider their phones important for their work lives (91%). Half of Indonesian smartphone owners use broadband texting and social networking applications to connect with co-workers, friends, and family.

### INDIA

#### **Indian women are eager to purchase smartphones.**

Relative to women in other countries, working women in India appear to be slower in adopting new technologies. 57% of the Indian women interviewed had bought their phone more than two years ago. Momentum for smartphone acquisition is building among Indian women, however; 64% of feature phone owners say they plan to purchase a smartphone in the next 6-24 months, making India a particularly fertile marketplace for smartphone adoption.

### NIGERIA

#### **Nigerian women aspire to find consistent work and increase earnings.**

As a result, they value mobile broadband for a wide variety of work-related applications. Of the working women who own smartphones, 52% use them to find new customers and suppliers, 52% to browse the Internet, 65% to access some type of educational content, and 51% to find new job opportunities. In Nigeria, women who own smartphones report using email and social media more frequently on their mobile devices than on fixed-line devices such as personal computers or laptops.





# MALAYSIA

## BUSINESS MENTORSHIP ENABLED BY MOBILE BROADBAND

From an early age, Aini Othman has been passionate about maintaining her health and appearance and helping others do the same. But Aini, an urban entrepreneur who lives in Shah Alam, Malaysia, near Kuala Lumpur, found most of the products available to her contained high levels of artificial ingredients.

She saw the opportunity to offer an alternative. “I was eager to develop my own health products and cosmetics that are chemical-free and affordable to everyone.” Aini worked with local dermatologists and pharmacists to develop a line of all-natural products. But having failed at a previous business venture, she realized that she would need better business skills to make her dream a reality.

Then, in June 2012, through Yayasan Pendidikan dan Vokasional Wanita Malaysia (YPVWM), a local vocational training agency, she was invited to take part in the Mentoring Women in Business Program developed by the Cherie Blair Foundation for Women. In Malaysia, the program is supported by the local 3G operator Maxis, which offers a year of mobile broadband service, and Qualcomm Wireless Reach, which provides the women with 3G-enabled tablets.

Besides intensive in-person training in business, English, and technology skills, the program matches promising entrepreneurs with mentors. Aini was surprised to learn that her mentor, Audra Shallal, a business consultant, was based in France. But communicating through video chat sessions over a mobile broadband connection soon became a regular part of her routine, one she describes as “an amazing experience.” Aini has remained in regular contact with her mentor, who continues to provide encouragement along with practical business advice.

Now at 51, Aini is slowly building her business with her children’s help, selling her Neugens products online and through local agents. She uses her tablet for online banking, to connect with business associates, and to promote her products through Facebook and Twitter. Gaining proficiency with the Internet has not only improved her business but also her personal life, she says, as she can now communicate with friends and family wherever they are.





# SEGMENTS OF WORKING WOMEN IN THE DEVELOPING WORLD

## SEGMENTS OF WORKING WOMEN IN THE DEVELOPING WORLD

### EXTENDED STUDY RESULTS

Through the analysis of primary research data collected for this report, five segments of working women emerged. Each segment is distinctive in terms of demographic characteristics, work and family lives, and self-described needs that could be addressed by mobile broadband. In addition, each segment contains a mix of feature phone and smartphone owners.

The analysis determined that the need for and value of mobile broadband to working women varies according to her age (15-24 vs. 25-64), her location (rural vs. urban), and her

employment status (wage and salaried work vs. self-employed). While income is also a factor, it is not as pronounced as age, location, and type of employment.

By examining these segments, one can understand how working women's needs and priorities differ and what this means for the perceived value of mobile broadband in their lives. The five distinct segments of working women identified in the research, covering the majority of working women ages 15-64 in the developing world, are represented in Figure E.

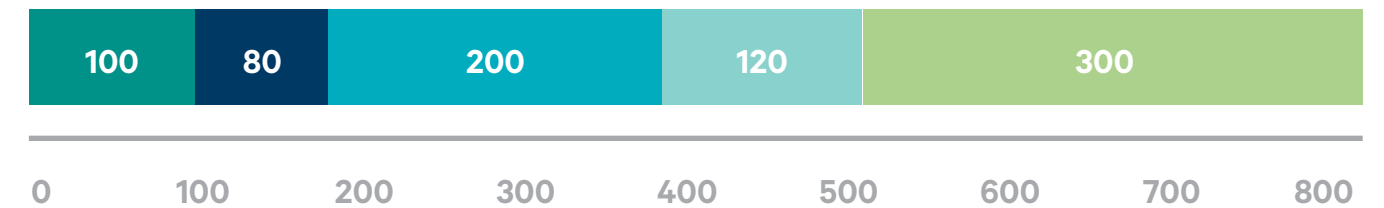
**Figure E:** Segments of Working Women in the Developing World

Geography	Age	Wage and Salaried	Self-Employed
Urban	15 - 24	Young Urban Careerists	Urban Entrepreneurs
	25 - 64	Work & Family Warriors	
Rural	15 - 24	Young Rurals	
	25 - 64	Rural Traditionalists	



**Figure F:** Potential Market Size\* by Segment

\*Market size expressed in millions of people



### A Smartphone Market of 800 Million Women

There are roughly 950 million working women in the developing countries of Asia, Africa, and Latin America.<sup>xii</sup> Of these women, approximately 800 million have yet to subscribe to mobile

broadband, representing a significant market opportunity if current barriers and constraints are addressed.<sup>xiii</sup>

The potential market size for each segment identified in this analysis, as described in Figure F, ranges from 80 to 300 million women.

 **Figure G: Working Women User Segments**<sup>xiv</sup>

Urban Entrepreneurs	Young Urban Careerists	Work & Family Warriors	Young Rurals	Rural Traditionalists
				
<p><b>Profile:</b> Small business owners focused on strengthening their businesses while managing family commitments</p>	<p><b>Profile:</b> Young, urban women working to better their lives</p>	<p><b>Profile:</b> Urban career women working to support their families</p>	<p><b>Profile:</b> Young rural workers hoping to gain independence from family and achieve upward mobility</p>	<p><b>Profile:</b> Older, more traditional agricultural and service workers trying to maintain a stable work life while supporting their families</p>
<p><b>Demographic Parameters:</b> Self-employed urban woman between ages of 15 — 64</p>	<p><b>Demographic Parameters:</b> Urban woman between ages of 15 — 24 who works in wage &amp; salary jobs</p>	<p><b>Demographic Parameters:</b> Urban woman between ages of 25 — 64 who works in wage &amp; salary jobs</p>	<p><b>Demographic Parameters:</b> Rural woman between ages of 15 — 24</p>	<p><b>Demographic Parameters:</b> Rural woman between ages of 25 — 64</p>
<p><b>Global Market Potential*:</b> ~100 million women globally</p>	<p><b>Global Market Potential*:</b> ~80 million women globally</p>	<p><b>Global Market Potential*:</b> ~200 million women globally</p>	<p><b>Global Market Potential*:</b> ~120 million women globally</p>	<p><b>Global Market Potential*:</b> ~300 million women globally</p>
<p><b>Mobile Broadband Likelihood**:</b> 15% more likely to own a smartphone</p>	<p><b>Mobile Broadband Likelihood**:</b> 23% more likely to own a smartphone</p>	<p><b>Mobile Broadband Likelihood**:</b> 13% more likely to own a smartphone</p>	<p><b>Mobile Broadband Likelihood**:</b> 12% less likely to own a smartphone</p>	<p><b>Mobile Broadband Likelihood**:</b> 21% less likely to own a smartphone</p>
<p><b>Value of Mobile Broadband:</b> Enhanced business communication, market information and mobile productivity tools</p>	<p><b>Value of Mobile Broadband:</b> Access to social networks, online education, and employment content</p>	<p><b>Value of Mobile Broadband:</b> Mobile productivity tools (e.g., email, doc sharing) and enhanced business communication</p>	<p><b>Value of Mobile Broadband:</b> Access to online education, employment content, and social networks</p>	<p><b>Value of Mobile Broadband:</b> Enhanced communication with family while at work</p>



### Summary of the Segment Personas

Figure G summarizes the profile, demographic parameters, and smartphone adoption patterns of the five user segments identified in the segmentation analysis.

### Value of Mobile Broadband by Segment

Across all segments, women share many of the same needs. For example, all women reported that they value real-time connectivity and access to information. But the segments differ in the needs and priorities that make mobile broadband especially valuable to their livelihoods, as follows:

**Urban Entrepreneur:** Access to **enhanced business communication**, market information, and business tools to keep their businesses productive (e.g., email, social networking apps, document sharing, mCommerce, and mobile payment apps).

**Young Urban Careerist:** Access to **social networks**, employment content, and education to build their careers and get ahead in the world (e.g., online courses and certification, social networking apps, online job boards, GPS).

**Work & Family Warrior:** Access to **mobile productivity tools** to manage their household responsibilities while staying ahead in their jobs (e.g., email, free texting apps, photo and video sharing, GPS, Google Latitude, Life360, and other safety apps).

**Young Rurals:** Access to **education**, employment content, and social networks to gain greater independence from their families and build skills to find better jobs (e.g., online courses and certification, social networking apps, online job boards, GPS).

**Rural Traditionalists:** Access to **enhanced communication** to keep them in contact with family while at work and mobile productivity tools to help improve the well-being of their families (e.g., free texting apps, weather apps, Internet access to pricing information, mobile payment apps).

\* Estimated size and market potential were calculated using population data from the World Bank and International Labour Organization.

\*\* Likelihood of owning mobile broadband is reported relative to the global average of all other women included in this study.



## Urban Entrepreneurs



### Small business owners focused on strengthening their businesses while managing family commitments

This segment consists of women in urban areas who own their businesses — mostly sole proprietorships and micro businesses. These women work longer hours, on average, than women in other segments. The majority of these women are married (60%), and have one or two children on average. They are more likely to use their phone for work than any other segment (93%) as well as use the full range of functionality on their phones (e.g., two-way calling and texting via free Internet applications, photo sharing, personal organization). Their needs for

connection span both work and family. Although 63% acquired their phone to communicate with business contacts, 94% also use it to communicate with friends and family.

### Urban Entrepreneurs use mobile broadband services more than any other segment.

Smartphone owners in this segment use mobile broadband more frequently than smartphone owners in other segments. Yet feature phone owners in this segment anticipate using mobile broadband less than feature phone owners in the other segments. This may be attributed to a lack of awareness among feature phone owners of the role that mobile broadband could play in helping them access the content and information needed to help their businesses grow.

## Young Urban Careerists



### Young, urban women working to better their lives

Young Urban Careerists are just starting their careers and looking to move up. Most (77%) are unmarried, have few or no children, and are still living with their families. While most of these women rely on family members to make their financial decisions, a quarter of Young Urban Careerists are starting to make financial decisions themselves. Like women in other segments, they would like to make more money. However, more than women in the other segments, this group is hoping to gain recognition at work, get promoted, and change jobs.

**Young Urban Careerists are most likely to use their smartphones for work.** Some 82% of smartphone owners in this segment use their phone for work, compared to 55% of feature phone owners, the largest difference of all segments. Women in this segment expressed an interest in improving their productivity, finding new work opportunities, and improving their skills through education or online classes. Safety and security are also important to this segment.

## Work and Family Warriors



### Urban career women working to support their families

This segment consists of older career women working in large urban areas. These women work predominately in customer service or in skilled-labor positions in service industries. They tend to work for larger companies compared to women in the other segments. Two-thirds of these women are married and have an average of one or two children.

**Work and Family Warriors see managing the demands of both work and family as a key work-related challenge.** These women want to get ahead in their jobs and recognize that they need to improve their skills and productivity to

stay competitive. At the same time, they have household responsibilities to maintain. Not surprisingly, more so than any other segment, these women view productivity as one of their biggest challenges.

**Women in this segment are more likely to connect with people at work than women in other segments.** With a strong focus on their careers, these women tend to communicate more with co-workers, supervisors, direct reports, and business partners for their work compared to other women in the study. Despite their career orientation, these women are the most likely of all segments to have acquired their phone for safety and security.

## Young Rurals



### Young rural workers hoping to gain independence from family and achieve upward mobility

This segment consists of young rural women interested in gaining greater independence from their families and building skills that will allow them to find better jobs. A significant percentage of these women work in service or agriculture roles, many doing manual labor. Only a third of the women in this segment are married. These women are the least satisfied with their current work and most likely to want a new job.

**Women in this segment show the greatest interest in mobile broadband.** Young Rurals are less likely to own a smartphone than women in urban segments, yet they show the greatest

interest (79%) in acquiring mobile broadband. Although expressing strong interest, because of generally lower incomes in rural areas, these women may be unable to acquire a smartphone. They place the highest value on staying connected with friends and family of all the segments in this study. This connection also has economic implications, as 70% of Young Rurals found their current job through a friend or family member, which is the highest of all segments.

Feature phone owners in this segment express the highest interest in mobile broadband if they could receive lessons on smartphone use. These women would be well served by programs that promote mobile broadband training and digital literacy.

## Rural Traditionalists



**Older, more traditional agricultural and service workers trying to maintain a stable work life while supporting their families**

Settled in their work and family lives, these women are challenged to manage household responsibilities while also working. They place a premium on improving connection with family while at work. They tend to use mobile broadband less than the other sectors and are the least interested in acquiring the service, despite having needs that mobile broadband could address.

**Rural Traditionalists are far less likely to recognize the value of the Internet and mobile broadband than women in other segments.** Because they see less value in the Internet and mobile broadband, they are less likely than other women to own a smartphone. Yet, these women have clear needs that can be addressed by mobile broadband. For example, Rural Traditionalists are more likely than most other segments to express a need for improving connection with family and people at work. They want to improve productivity and find new work opportunities. Women in this segment are also more likely to cite managing household responsibilities as a daily challenge.

Urban Entrepreneurs are the heaviest users of mobile broadband.

Young Urban Careerists want to build their careers and get ahead in the world.

Work and Family Warriors see productivity as one of the biggest daily challenges.

Young Rurals show the greatest interest in mobile broadband.

Rural Traditionalists highly value staying connected with family while at work.



## CASE STUDY

# BRAZIL

## OPTIMIZING NEW BUSINESS PERFORMANCE WITH MOBILE BROADBAND

In Santa Cruz Cabralia, a remote coastal area in the Brazilian state of Bahia, fishing has been the primary source of income for generations. But poverty, overfishing and outdated infrastructure are threatening this way of life, especially as the community's young people are leaving the area, seeking better jobs and opportunities elsewhere.

*The Pescando com Redes 3G (Fishing with 3G Nets) project is hoping to turn this trend around. Launched in 2010, the project marks a collaboration between Qualcomm Wireless Reach and the Telefónica Vivo Foundation, a development group from one of Brazil's largest telecommunication companies.*

Through the project, a tower has been installed in the community to provide a 3G mobile broadband connection. Participants were given smartphones and tablets equipped with applications that provide tide tables, weather forecasts, and market price information. Specialized e-commerce apps allow them to connect from their boats with potential buyers back on shore.

The project has emphasized sustainable fishing practices and introduced mariculture (oyster cultivation) to the community, which has allowed many more traditional rural women, like Girlandia Pires Pereira, to take part in the local fishing economy. The mother-of-two teaches reading at the community school, earning about 800 Brazilian Reales per month (\$340 USD) — half of the average salary for Brazilians.

Although she has almost no experience using a mobile phone or the Internet, she saw the opportunity to supplement her income through the mariculture program and attended courses for six months to learn the new technology.

She now works in a group of eight, using the mariculture apps to track the oyster population, local water conditions, and opportunities for selling the oysters to local restaurants. Because the project is in the initial phases, most of Girlandia's income continues to come from her teaching. Yet she remains optimistic about the future now that her community has access to mobile broadband. "We are seeing results now and have faith we can increase our business a great deal."



# MOBILE SERVICES FOR WOMEN AT THE BASE OF THE PYRAMID



## MOBILE SERVICES FOR WOMEN AT THE BASE OF THE PYRAMID

### EXTENDED STUDY RESULTS

Women at all socioeconomic levels were interviewed in the study, as long as they met the survey criteria: employed mobile phone owners. Although income was not found to be a significant variable in the segmentation process, low wages are a fact of life for the most resource-poor women in developing regions. Therefore, this special section focuses on the dynamics of mobile services for women at the BoP, those living on less than \$2.50 USD a day.<sup>xv</sup>

#### Interested, but No Plans to Upgrade

Regardless of income, roughly two-thirds of all women who own feature phones are interested in owning a smartphone. Yet, women at the BoP are less likely to have plans to buy a smartphone in the next two years than women from higher income groups.

#### Looking for New Income or Job Opportunities

Women at the BoP express a greater interest in finding new income or job opportunities compared to women in higher-income groups, suggesting mobile broadband services could provide real value for these purposes. These findings echo an earlier GSMA and USAID study, *Striving and Surviving — Exploring the Lives of BoP Women*. In this study, 73% of BoP women expressed an interest in entrepreneurship to help support their families.<sup>xvi</sup>

At the same time, women at the BoP seem to place less value on using their phones to access content and information, improve productivity, or to view educational content and entertainment compared to higher-income women. BoP women, however, express the same level of interest as higher-income groups in using their phones to stay in better contact with friends and family.

#### Disconnect between Willingness and Ability — Addressable by Cross-sector Solutions

Feature phone owners at the BoP report both an interest in smartphone ownership and a willingness to pay for mobile broadband data; however, their ability to pay for mobile broadband is quite limited.

For example, women at the BoP state they are willing to pay almost double (83% more) for mobile broadband data than what they currently pay for their existing mobile service. Yet, the Alliance for Affordable Internet has shown that mobile broadband access is currently not possible for most people at the BoP.<sup>xvii</sup> In many countries the cost of mobile broadband services can range from 19% to almost 50% of monthly income.

The cost of mobile broadband data, as a percentage of monthly income, can vary greatly by country depending on local market conditions.

The income gap between men and women, with women consistently earning less than men in most countries, makes mobile broadband even less attainable for working women at the BoP under current market conditions.

Looking beyond the cost of the broadband data services plan, the most immediate hurdle for mobile broadband uptake at the BoP is the cost

of a smartphone handset (or tablet). As seen in Figure H, the current average smartphone price ranges from 106% to 283% of monthly income for women at the BoP in the countries examined. This constitutes a major purchase that warrants alternative payment models like financing, bundling with monthly mobile data fees, or shared usage models that would reduce the cash flow implications of purchasing a smartphone.

 **Figure H: Smartphone and Mobile Broadband Costs as a Percentage of Monthly Income**<sup>xviii</sup>

Country	Average Smartphone Cost as % of Monthly Income		Monthly Mobile Broadband Prepaid Prices (500 MB) as % of Monthly Income	
	BoP	Average Per Capita GDP	BoP	Average Per Capita GDP
<b>Brazil</b>	106%	28%	15%	4%
<b>China</b>	259%	41%	26%	4%
<b>India</b>	266%	74%	11%	3%
<b>Indonesia</b>	283%	64%	10%	2%
<b>Nigeria</b>	167%	106%	20%	13%

A more detailed discussion of possible solutions is presented in the “Recommendations and Next Steps” section.



## CASE STUDY

# NIGERIA

## MOBILE BROADBAND AS AN ENABLER OF BUSINESS GROWTH

Wine made from palm tree sap is a staple throughout Africa. The drink is consumed on a daily basis and also plays an important role in traditional celebrations and holidays. Palm wine is called “Mmanya Nku” in the rural areas of southern Nigeria where many traditional families, like the Okoye family, make their living as “tappers,” practicing a centuries-old method of tapping trees and fermenting the sap.

Mrs. Okoye joined her husband in the family business five years ago to earn additional income to support their four children. The work is physically demanding, but modern communication methods have helped. While still on the tree, Mrs. Okoye can use her basic feature phone to call her customers to come and buy fresh product. Having the customers come to her saves money, she says, and she doesn’t spend as much time transporting her wine.

On a good day, she can connect with 20 customers, and in a good month, she can earn 20,000 Nigerian Naira (\$125 USD), or roughly half of a typical month’s salary for most people in her area. But having learned about mobile broadband services, she knows she could do better. “If I had a phone that could access the Internet and I had the resources to activate the service, I could triple my monthly earnings by using Facebook and Twitter and other websites to market my wine.”

Technology is not the problem, she says. Smartphones and mobile broadband are available in her area. Rather, it is the cost. “We can barely afford to pay for our children’s school fees and have enough left over to survive, so owning a smartphone is something I cannot afford now.”

So she waits for prices to continue to come down, and in the meantime, considers what the future will be like. “With access to the Internet, nothing is limited. I could read the news, learn about the latest technologies for improving my business, and maybe even find better ways to store my wine. Information is the key to living a good life.”

## CONCLUSION

The importance of the global rise in smartphones and mobile broadband services cannot be overstated. Only a few years ago, governments and the development community pooled vast resources into “bridging the digital divide” through computer centers, Internet hotspots, and charging stations. Meanwhile, many developing-country residents simply bypassed these efforts, adopting mobile Internet-enabled smartphones at an exponential rate.

The impact of this transformation for women is still in the early stage — 800 of the 950 million working women in developing countries still use feature phones or do not own mobile phones at all. But better communication with friends and family along with the steadily decreasing cost of handsets and services will inevitably bring these women into the world of mobile broadband. This study suggests that women will become mobile broadband users for different reasons, and once connected, they will value different services depending on their age, location, and type of work.

All those vested in the well-being of women and their families have a stake in the speed, depth, and breadth of this transition. The mobile industry, local and national governments, the development community, and others can work together to reduce barriers and increase awareness of the benefits of the Internet while creating useful, relevant content and services for working women.

As smartphone penetration increases, working women present a significant opportunity for the mobile industry to find new market segments, for government agencies to achieve economic and social developmental targets, and for NGOs to meet development goals.

For mobile operators and equipment manufacturers, targeted promotion to women can help establish competitive advantage to capture healthy, new markets across Asia, Africa, Latin America, and the Middle East.

Governments can benefit from economic development and activity, as mobile broadband enables improved job opportunities, professional growth, and entrepreneurship.

The most critical stakeholders, however, are working women themselves. Mobile broadband supports the empowerment and independence of working women as it improves their ability to balance work and personal lives, and yields other work and educational opportunities.



## Acknowledgements

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## ENDNOTES

- i. Booz & Company. *Empowering-the-Third-Billion: Women and the World of Work in 2012*. Report, 2012.
- ii. International Telecommunication Union. *Measuring the Information Society*. Report, 2013.
- iii. Ibid.
- iv. IDC Worldwide Quarterly Mobile Phone Tracker, Q4, January 2014.
- v. The World Bank. *Information and Communication for Development*. Report, 2009. See also Qiang & Rossotto, 2009.
- vi. Intel. *Women and the Web*. Report, January 2013.
- vii. According to recent research from GSMA's Mobile for Development Intelligence (MDI), mobile phones can be divided into three categories: basic phone, feature phone, and smartphone, where basic phones have no Internet access and feature phones can have rudimentary Internet access. For the purposes of this research, a smartphone was defined as a mobile phone that can access mobile broadband, while a feature phone cannot.
- viii. *Transforming Women's Livelihoods Through Mobile Broadband* was designed to identify and describe the value of mobile broadband services for working women when compared to their use of feature phones and fixed-line Internet services.
- The findings in this report are based on over 1,000 structured interviews with working women in the developing world who own either feature phones or smartphones. (For the purposes of this research, a smartphone was defined as a mobile phone that can access mobile broadband, while a feature phone cannot.) This enabled the authors to determine the value of mobile broadband by comparing groups of women who have access to it with those who do not.
- The interviews mixed quantitative and qualitative questions and covered working women across five lower- and upper-middle income countries: Brazil, China, India, Indonesia, and Nigeria.

To survey a broad cross-section of working women across the developing world, the sample was equally distributed across five demographic variables — age, income level, location (urban vs. rural), employment structure (wage and salaried worker vs. self-employed), and industry type.

The survey data was analyzed using Data Mining and Ensemble Learning. This involved using a set of statistical methods to identify the different forms of value that mobile broadband brings over feature phones. These analyses included multiple and logistic regressions, ANOVA, factor analysis, and log-linear analysis. Summary statistics were calculated to identify how working women in the developing world are similar or different in the value they place on mobile broadband.

A comprehensive analysis of both the quantitative and qualitative data yielded five mutually exclusive, distinct segments of working women. Over 150 descriptive statistics were analyzed for each segment to identify variations in the value they placed on mobile broadband, measuring aspects of women's work and family lives, phone and Internet usage, self-described needs related to mobile broadband, and barriers to adoption.

The estimated size and market potential of each segment were calculated using population data from the World Bank and the International Labour Organization.

- ix. The potential global market opportunity for each segment was calculated by multiplying the overall potential global market opportunity (800 million) by the estimated segment size, in percentage terms. The estimated segment size was calculated using population statistics obtained from the World Bank and the United Nations.
- x. International Telecommunication Union and United Nations Educational, Scientific and Cultural Organization. *Doubling Digital Opportunities: Enhancing the Inclusion of Women & Girls in the Information Society*. Report, September 2013.

- xi. IDC Worldwide Quarterly Mobile Phone Tracker, Q4, January 2014.
- xii. According to population data sourced from the World Bank for women aged 15 and older, in the following countries:  
**Asia:** (East Asia) China, Democratic Republic of Korea, Hong Kong SAR, Macao SAR, Republic of Korea, Mongolia, (Southeast Asia) Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, Timor-Leste, Vietnam, (South Asia) Afghanistan, Bangladesh, Bhutan, India, Islamic Republic of Iran, Maldives, Nepal, Pakistan, and Sri Lanka.  
**Africa:** (North Africa) Algeria, Arab Republic of Egypt, Libya, Morocco, Tunisia, (Sub-Saharan Africa) Burundi, Comoros, Eritrea, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, Somalia, Sudan, Tanzania, Uganda, Zambia, Zimbabwe, Angola, Cameroon, Central African Republic, Democratic Republic of Congo, Republic of Congo, Equatorial Guinea, Gabon, Sao Tome and Principe, Botswana, Lesotho, Namibia, South Africa, Swaziland, Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo.  
**Latin America and the Caribbean:** (Central America) Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, (South America) Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela, (Caribbean) The Bahamas, Barbados, Cuba, Dominican Republic, Haiti, Jamaica, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago.
- xiii. This figure is based on an estimated smartphone penetration rate of 8% in Africa and 17% in Asia, sourced from: The Mobile Economy 2013 — GSMA, and 11% in Latin America, sourced from: 2013 Insight: Key Trends for Smartphones and Mobile Devices in Latin America — LATAM TELECOM.
- xiv. The potential global market opportunity for each segment was calculated by multiplying the overall potential global market opportunity (800 million) by the estimated segment size, in percentage terms. The estimated segment size was calculated using population statistics obtained from the World Bank and the United Nations.

xv. The World Bank. *Mobile Usage at the Base of the Pyramid in Kenya*. Report, December 2012.

xvi. GSMA mWomen. *Striving & Surviving: Exploring the Lives of Women at the Base of the Pyramid*. Report, February 2012.

xvii. Alliance for Affordable Internet. *Affordability Report 2013*. Report, 2013

xviii. Average smartphone cost for Nigeria is NRN 30,000 (\$188 USD), according to data retrieved from: <http://www.punchng.com>.

Average smartphone cost for China is RMB 1,423 (\$235 USD), according to data retrieved from: <http://www.techinasia.com>.

Average smartphone cost for India is INR 12,400 (\$200 USD), according to data retrieved from: <http://www.idc.com>.

Average smartphone cost for Brazil is R\$ 570 (\$237 USD) according to data retrieved from: <http://www.bnamericas.com>.

Average smartphone cost for Indonesia is IDR 2,600,000 (\$213 USD), according to data retrieved from: <http://thenextweb.com>.

Average monthly income for BoP is \$2.50 USD/day, or \$75 USD/month for India and Indonesia.

Average monthly income for BoP is the local minimum wage for Nigeria, China, and Brazil, which stands at NRN 18,000 (\$112 USD), RMB 550 (\$90 USD), and R\$ 540 (\$226 USD), respectively.

Researchers in these countries noted that few working women in these countries make below these amounts.

Average per capita GDP is for the year 2010 in GDP per capita, PPP (constant 2005 international USD), converted to local currencies and sourced from World Bank WDI.

Monthly mobile broadband prices were sourced from: International Telecommunication Union. *Measuring the Information Society*. Report, 2012.



