

Executive Summary

Accelerating affordable smartphone ownership in emerging markets

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GSMA Connected Society & Connected Women
Dalberg Global Development Advisors

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GSMA's Connected Women works with mobile operators and their partners to address the barriers to women accessing and using mobile internet and mobile money services. Together we can unlock this substantial market opportunity for the mobile industry, deliver significant socio-economic benefits, and transform women's lives.

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Connected Society

The Connected Society programme works with the mobile industry and key stakeholders to improve network coverage, affordability, digital skills and locally relevant content, in pursuit of the wider adoption of the mobile internet.

For more information, please visit
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Executive Summary

Global adoption of smartphones has grown at an extraordinary pace: today's circa 4 billion smartphone connections are nearly double the figure of three years ago.[1] This increase in smartphone ownership[2] has been fundamental for enabling many people's first internet experiences, and has offered them a gateway to enter the digital economy and benefit from life-enhancing opportunities. We have seen rapid mobile internet adoption particularly in emerging markets, where an internet-enabled handset can signify the only form of internet access, and the number of mobile internet connections is approximately three times higher than fixed-line internet.[3]

Smartphone uptake across and within regions and markets is not balanced, risking leaving large population groups without the means to come online. Eastern Africa and South Asia are the regions lagging behind the most, with smartphone adoption levels as of mid-2017 at 25% and 30% respectively - much lower compared to the global average of over 50%.[4] A major contributing factor to this inequality is the high rate of poverty. South Asia and Sub-Saharan Africa are home to the majority of the world's poor people. Consumer research shows how the cost of an internet enabled handset is a critical barrier to using mobile internet for low and middle income consumers in emerging markets.[5,6] India is a clear example of this, where over half of the population live in multidimensional poverty[7] and where an average priced smartphone can cost up to 16% of income for poor and low income groups.[8] We estimate that over 134 million people in India are unable to afford one of the cheapest internet-enabled handsets on the market, because it exceeds an affordability threshold at 5% of income.[9] Although smartphone prices are projected to decrease in emerging markets, prices will not drop low enough to accelerate ownership among the underserved, including low-income groups, women, and rural populations in the near future. For example, the 2017 average smartphone prices in Kenya and India of circa $118 and $115 respectively, are only expected to drop to $109 and $97 by 2020.[10]

Beyond income levels, there are multiple supply and demand side factors influencing smartphone affordability. On the supply side, the manufacturing costs of the device itself are largely dictated by prices of key components including: the screen, chipset, memory and battery all of which fluctuate in line with higher spec requirements, limited availability, and regulations.[11] In the inbound supply chain, import duties and taxes imposed on smartphones are significant contributors to total costs, as well as transportation charges that can be particularly high in emerging markets. Inefficiencies in the outbound supply chain drive up costs, as devices often pass through a number of supply chain players before reaching end consumers. Distribution channels, particularly to rural consumers, are often inadequate, either not providing easy access to smartphone retailers due to location (distance from urban centres), or forcing consumers to pay a high marginal premium to a local independent dealer who is incurring high transport and inventory costs as well as benefiting from a captive market.

There are a large variety of demand side factors influencing smartphone affordability and people's willingness to pay. Consumers' disposable income, combined with their value perception of the device and the internet are particularly influential. These elements, coupled with levels of awareness of what smartphone and internet usage entails and can deliver, and whether use cases are convincing enough to justify the expenditure hugely impact upon demand. Limited knowledge about smartphones can further be manifested in gaps between perception and reality around device prices. Consumers commonly have an exaggerated view of smartphone costs, which leads to the belief that such handsets are unobtainable, even in cases where the consumer would in fact be able to afford the device.

The ability to purchase a smartphone varies widely within low-middle income groups. The research suggests four primary customer segments related to people's level of affordability:[12]

1. **Beyond their means:** primarily comprising of the extremely poor, often with no reliable income source, this group needs to make major trade-offs in household expenditure to afford even a basic internet-enabled handset. Smartphones are not affordable for this group.
2. **Cannot afford to pay for a smartphone upfront, but could afford paying in instalments:** comprising of the working poor, this group finds it difficult to adjust household expenditure to purchase smartphones through upfront payments.
3. **Can save to pay for a smartphone:** this group consists mainly of people at the higher end of the low-income segment. Individuals have the ability to save over time to purchase a smartphone.
4. **Can afford lower priced smartphones through a lump sum payment:** this group comprises of middle income customers, typically with a reliable source of income. Members of this group are usually price conscious but have some flexibility to pick and choose among devices.

There is ample opportunity for the mobile industry and ecosystem players to improve smartphone affordability among these consumer segments. Through investigating 30+ business models across Sub-Saharan Africa, South Asia, and Latin America, three overarching models with different approaches to reducing consumers' smartphone ownership barriers, with a focus on affordability, were identified.

1. GSMA Intelligence. 2017
2. Although consumers can gain access to the internet also on feature phones, such models are not offering the ability to use more sophisticated mobile applications and have a limited browsing experience, as compared to using smartphones with more advanced operating systems. With this in mind, the end-goal should be to bring people online via smartphones, in order for them to reap the full benefits of connectivity.
3. ITU. "Global ICT Statistics". 2014
4. GSMA Intelligence. 2017
5. It is important to note that smartphone affordability is one barrier to ownership amongst several. Additional barriers include: lack of digital skills, cultural values/social norms, safety concerns, mobile data costs, among others. Efforts of making smartphones affordable on their own will not solve all access issues.
6. GSMA Intelligence Consumer Survey. 2016.
7. UNDP. Human Development Report 2016. 2016
8. Strategy Analytics. "Global Handset ASP & Revenue Forecasts by 88 Countries: 2012 to 2022". 2017
9. GSMA analysis based on Tarifica 2017 data.
10. Strategy Analytics. "Global smartphone ASP & Revenue Forecasts by 88 countries: 2012 – 2022". 2017. It is important to acknowledge that the entry price point for some lower-end smartphones is now at $40 for the mass market. However, average smartphone prices are driven up by higher-end models.
11. Stakeholder interviews.
12. Based on analysis from limited sampled primary research in three markets - India, Kenya and Rwanda. Findings and insights were extrapolated to build an understanding of low and middle income consumers more broadly.

Business model types that address affordability barriers faced by low and middle income consumers in accessing smartphones

	01 Direct payment	02 Asset Financing	03 3rd Party Payment
ARCHETYPES / BUSINESS MODELS THAT ADDRESS BARRIERS TO AFFORDABILITY	• Consumers use their own income / savings to purchase new or second-hand devices. • Providers offer low cost devices, driving down costs through highly efficient supply chains and/or device subsidies. • Devices are often offered as part of a data/free content bundle	• Consumers access financing through financial institutions or MNOs • Or benefit from alternative approaches to asset financing and /or credit assessments • This allows customers to obtain devices even when they cannot afford the device upfront	• Third party actors who derive value from increased access subsidize or offset device costs. • Third parties can include private companies, governments, or non-profit organizations
BARRIERS TO SMARTPHONE ACCESS ADDRESSED UNDER THIS ARCHETYPE	• Offers the opportunity to buy a low-cost handset • Typically bundled with other services to address data costs, distribution and/or customer know-how	• Provides access to finance for those who cannot afford the upfront cost of a handset • May address ongoing costs (via a contract), distribution, and/or customer know-how	• Most aggressively reduces the cost of the handset • May address data costs, distribution / access and customer know-how
LIMITATIONS TO THIS ARCHETYPE	• Customers may still not be able to afford the upfront cost of the device	• Risk of customers defaulting on payments • Only available to individuals with sufficient credit / data history • Still a challenge to afford the total cost of the device	• Sustainability and value to the third party are not yet proven • Requires a large upfront investment • The ongoing costs are often still high and remain the responsibility of the consumer

Several actors across the industry have implemented initiatives to address affordability barriers to smartphone ownership. Three noteworthy case study examples include Vodafone, Copia and Mobisol:

Vodafone, India – Working with an established NGO to expand women's smartphone access

Launched in 2017, the Smart Snehidi programme seeks to improve access to smartphones among low and middle income female micro-entrepreneurs. The programme is led by Vodafone and the non-profit organization Hand in Hand (HiH). HiH assists women to build microenterprises, access finance through self-help groups (SHGs), and to learn digital skills. As a partner in Smart Snehidi, HiH facilitates microfinance loans for smartphone purchase among members of its SHGs and trains women to use these devices in their businesses. Loans are offered at an interest rate of 24% per annum. Vodafone works with HiH to ease financial barriers through attractive talk time and data plans. As of April 2017, the programme has enabled 2,000 women to acquire smartphones in three districts across Tamil Nadu, India, with an ambition of enrolling 50,000 women across 19 districts of Tamil Nadu within the next three years.

"Hand in Hand is a trusted bank (organization) so we bought a phone from them. I am happy when they give it for monthly installments. We ourselves [the SHG] decided to take a loan for 10 monthly installments.... Now we are paying it."

– Smart Snehidi customer

Copia, Kenya – Mobile catalogue shopping for the rural base of the pyramid

Copia is a mobile retail platform launched in 2013. It is operational in Kenya and one of the only catalogue/e-commerce models targeting the rural and peri-urban bottom of the pyramid-demographic in Africa. Agents sell by means of a catalogue or tablet through a Copia mobile application and are the ordering and delivery point for customers. Copia has a rapidly growing network of agents in Central Kenya (currently standing at 1,200+). The platform sells smartphones, feature and basic phones, including devices by Tecno, Samsung and Huawei, as well as Airtel and Safaricom branded phones. Device prices are comparable to those in Nairobi and typically lower than those offered by independent grey market vendors in rural and peri-urban areas. Thereby, the model reduces the direct price paid by customers and eliminates time and transport costs associated with purchasing goods in rural areas.

"I tell people not to rush to town to buy a smartphone but instead order through Copia... the fare adds to the cost of buying the phone [and] the prices in town are higher"

– Copia customer

Mobisol, Rwanda - Alternative credit assessment and rent-to-own models for smartphones

Established in 2010, Mobisol is a solar energy company that leverages alternative approaches to credit assessment and pay-as-you-go technology to expand access to low income and peri-urban populations in East Africa. Currently operating in Kenya, Tanzania and Rwanda, Mobisol has installed over 78,000 solar home systems (SHSs) in households and businesses with a reach of ~350,000 customers. Mobisol has partnered with MTN Rwanda and Tecno Mobile in a pilot that allows existing customers the option of purchasing a Tecno W2 smartphone. New customers can purchase the smartphone as part of a bundle when buying a SHS. MTN supports acquisition of new customers by providing free data bundles over the period of the loan (18 or 36 months) to customers that are registered on their network through Mobisol. Existing customers that have been with Mobisol for a minimum of 6 months and already own a SHS must meet the criteria which considers past payment behaviour to be eligible for the loan. They are required to pay a down payment of RWF 6,900 (~$8) to access the smartphone offering, and then continue with a monthly repayment of RWF 3,550 (~$4) for 36 months. New Mobisol customers that are purchasing the smartphone as part of their SHS pay RWF 2,015 (~$2.50) monthly over an 18-month loan term for the smartphone in addition to a new solar system loan.

"I heard ... that [the Mobisol phone] had an internet bundle of three years. It pleased me so much because I use the internet to search for information and keep in touch with family and friends."

– Mobisol customer

In exploring the dynamics of the smartphone ecosystem landscape, and initiatives aimed to facilitate handset ownership, **we see a pattern of common challenges that consumers face across different regions and strategies that could be adopted to help tackle them.**

Three strategies stand out:

1	**Making the purchase price more manageable through financing:** potentially the most meaningful support that can be provided is to break up the upfront cost of the device into more manageable sums, supporting the consumer through offering affordable loans, alternative forms of credit scoring and savings schemes.
2	A key area for ecosystem collaboration would be to ensure **efficient distribution channels** are in place for handsets to reach people, especially in locations with limited retail presence where prices are often inflated due to low supply.
3	**Localising devices, reflecting market demands:** Beyond access channels, offering affordable smartphones that respond to the handset needs and value perceptions of the local consumers, ensuring that they are not paying for features that they will not use, could be an equally important area to focus industry efforts.

13. Mobisol. "Mobisol". 2017

14. New customers pay a down payment on the solar home system and not the smartphone.

Facilitating affordable smartphone ownership for low and middle income consumers in emerging markets should be made a key priority. Market pressures alone will not bring down prices to a level that makes smartphones affordable for low income groups in the near future. Mobile industry actors, financial institutions, NGOs, governments, community organisations and policy makers have the opportunity to support consumers' improved device access, and stand to benefit from increased smartphone penetration and the ensuing socio-economic benefits.

The GSMA is dedicated to supporting ecosystem collaboration aimed at accelerating smartphone ownership, and strives to inspire players in the space to explore new routes and opportunities for partnerships.

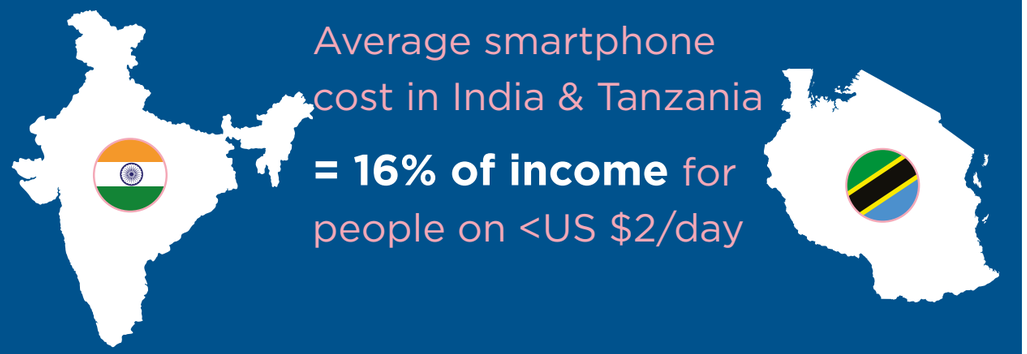


Key Findings

There are circa **4bn smartphone connections globally**

A median of **37%** own **smartphones in emerging markets**

The average smartphone costs **US $100-200** **in many emerging markets*****



134m people in India **can't afford the cheapest available internet-enabled handset***

Instalment plans & device savings schemes help people minimise upfront costs

Selling smartphones via **rural agent networks** helps people save on travel

Women lag behind **Men in smartphone ownership**

Affordable smartphone initiatives are **commercially sound**

30% ARPU from growth in data use**

Localise smartphone design and offers to cut **costs** and drive local uptake

* Assuming device unaffordable when the price exceeds a 5% affordability threshold. Tarifica 2017 pricing data for cheapest available internet-enabled handset sourced through MNO retail channels.

** Case study finding from MNO smartphone loan initiative for female micro-entrepreneurs in India. When provided with a smartphone, ARPU increased by 30% for the enrolled women entrepreneurs due to increased data usage.

*** It is important to acknowledge that the entry price point for some lower-end smartphones is now at $40 for the mass market. However, average smartphone prices are driven up by higher-end models.

To download the full report please visit the GSMA website at **www.gsma.com**



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