MOBILE TECHNOLOGY FOR THE SDGs

Reaching further with low tech:
How start-ups are leveraging basic
mobile channels to unlock socio-
economic impact in emerging markets

Basic and feature phone technologies have single-handedly revolutionised how people in emerging markets interact. Nearly five decades after they first appeared, the power and pervasiveness of these technologies remain undeniable. In Africa and Asia Pacific, basic and feature phones continue to make headway despite growing smartphone penetration and shipments. According to the International Data Corporation (IDC), India clocked 181.3 million-unit feature phone shipments in 2018.[1] IDC data also shows that while Africa's mobile phone shipments were down 1.9 per cent year-on-year in 2018, basic and feature phones accounted for 59 per cent of all mobile phone shipments (215.3 million units), compared to 41 per cent for smartphones.[2] Similarly, GSMA Intelligence revealed that Africa had 524 million basic and feature phones at the end of 2018, slightly tipping the balance as smartphones stood at 523 million.[3] These statistics explain Google's 2018 move to invest $22 million in KaiOS, an operating system designed for basic and feature phones.

Why are basic and feature phones still so relevant and widely used today? First, feature phones are simple, cheap and functional, making them the technology of choice for many consumers at the bottom of the pyramid. People with higher incomes are much more likely to own smartphones than those with lower incomes.[4] Second, since electricity is still inaccessible to a sizable population, particularly in rural areas, in several African and Asia Pacific countries, mobile users are more likely to own basic and feature phones since they have long-lasting battery life. For this reason, some smartphone users also own basic and features phones.[5]

Finally, **feature phones enable all mobile users to access what we refer to as "low-tech" offline channels, such as voice, IVR, SMS, USSD and mobile money services**. Despite the growth of social messaging apps, in 2019 there is still no text-based or voice-based channel that has been adopted more than voice and SMS. In Tanzania, almost 25.7 billion local and international SMS messages were sent in the last quarter of 2018, a 63 per cent increase from Q4 2016. USSD also still holds weight in many emerging markets: over 90 per cent of mobile money transactions in Africa in 2018 were completed using USSD.[6]

Start-ups, low tech and the Sustainable Development Goals (SDGs)

Reaching those at the bottom of the pyramid at scale requires easily accessible and cost-effective technologies. Low-tech mobile tools meet this need and beyond. Several mobile innovations reaching scale today in Africa and Asia Pacific that are driving impact on the lives of low-income mobile users are driven by low tech offline solutions. Even in the age of smartphones, low-tech solutions are indispensable for addressing the United Nations Sustainable Development Goals (SDGs). Low-tech mobile tools enable start-ups to reach a larger pool of addressable users and maximise their socio-economic impact. The following are examples of start-ups that have been leveraging low-tech mobile solutions in a wide range of sectors to address some of the SDGs.
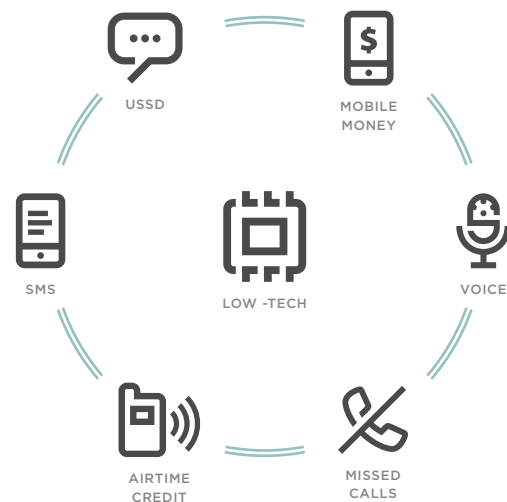
1.   IDC, 11 February 2019, "India Smartphone Market Exits 2018 with Highest Ever Shipments of 142.3 million, IDC India Reports", https://www.idc.com/getdoc.jsp?containerId=prAP44856419

2.   IDC, 12 March 2019, "Africa's Smartphone Market Sees First Growth Since 2015 Despite Downturn in Global Market", https://www.idc.com/getdoc.jsp?containerId=prCEMA44905119

3.   GSMA Intelligence: https://www.gsmaintelligence.com/

4.   Pew Research Center, 9 October 2018, "Internet Connectivity Seen as Having Positive Impact on Life in Sub-Saharan Africa", https://www.pewglobal.org/wp-content/uploads/sites/2/2018/10/Pew-Research-Center_Technology-use-in-Sub-Saharan-Africa_2018-10-09.pdf

5.   Technext.ng, 20 February 2019, "As KaiOS Extends its Products into Nigeria, are Feature Phones Still Popular in Africa?", https://technext.ng/2019/02/20/as-kaios-extends-its-products-into-nigeria-are-feature-phones-still-popular-in-africa/

6.   GSMA, 2018, "State of the Industry Report on Mobile Money", https://www.gsma.com/r/state-of-the-industry-report/

Start-ups	Summary	SDGs
Hishab (Bangladesh)	A voice-based enterprise resource planning (ERP) mobile solution, backed by a Bengali speech recognition system, that uses verbal instructions to allow illiterate users to perform financial transactions and keep digital records. Users call 16513 on a feature phone or smartphone to activate Hishab's voice-based ERP, which records their entire transaction without requiring an internet connection. Hishab then sends an **SMS** to parties involved in the transaction to confirm details. Details of Hishab's solution can be found here.	1 NO POVERTY
Ricult (Pakistan)	A mobile-based platform that gives smallholder farmers access to farm inputs on credit, as well as agronomy services and market access. Ricult's platform can be accessed via **SMS** or through a mobile app.	2 ZERO HUNGER
GiftedMom* (Cameroon)	An m-health information and monitoring platform for pregnant women and nursing mothers. GiftedMom can be accessed via **USSD**, **SMS**, an assistant app and the web. In the second half of 2018, GiftedMom reached over 170,000 active users with its solution. The start-up integrated Orange's SMS, USSD and **airtime billings** APIs on its platform. GiftedMom is one of the start-ups funded by the GSMA Ecosystem Accelerator programme.	3 GOOD HEALTH AND WELL-BEING
Eneza Education* (Africa)	A mobile subscription service that offers educational content to students in Kenya, Ghana and Côte d'Ivoire. Students can access lessons and assessments on any mobile phone via **SMS** or **USSD** with a daily, weekly or monthly subscription. Eneza Education is one of the start-ups funded by the GSMA Ecosystem Accelerator programme.	4 QUALITY EDUCATION
Kasha (Rwanda)	An e-commerce platform that sells health and personal care products, such as contraceptives and tampons. Customers can access Kasha via USSD or a mobile or web app. Customers using **USSD** can type in a short code to access Kasha's menu and place orders.	5 GENDER EQUALITY
Wonderkid (Kenya)	A complaint management and tracking system that allows customers to report maintenance and upkeep issues. Wonderkid's solution comes with a self-meter reading and payment system allows users to send their meter reading via **SMS** and receive a preliminary bill with instructions for paying via **mobile money** using Safaricom's M-Pesa. This solution was funded by the GSMA M4D Utilities Innovation Fund in May 2015. More information can be found in the Mobile for Development Utilities Annual Report.	6 CLEAN WATER AND SANITATION
Sheba.xyz (Bangladesh)	An on-demand service marketplace that connects verified service providers with their target customers. Users without the Sheba.xyz app can access the services through **USSD**. In June 2018, Sheba.xyz signed a partnership with Robi Axiata that would allow the start-up to onboard service providers easily through Robi's Walk-In Centres or Robi Sheba Points.	8 DECENT WORK AND ECONOMIC GROWTH

Start-ups	Summary	SDGs
Ensibuuko* (Uganda)	A mobile platform that enables savings and credit cooperative society (SACCO) members to withdraw cash, make deposits or repay loans using **USSD** and **mobile money**. Ensibuuko is one of the start-ups funded by the GSMA Ecosystem Accelerator programme. A case study on Ensibuuko can be found here.	10 REDUCED INEQUALITIES
Orbuy (India)	An online portal for fresh fruits and vegetables. Orbuy sources fruits and vegetables directly from farmers in and around Jaipur, India. Orbuy allows customers to place orders through **voice calls**, **missed calls**, WhatsApp messages and through its website.	
Online Cabs (Sri Lanka)	A mobile-based taxi booking service that allows users to book taxis through either **USSD or SMS** on a basic phone. To extend its reach, Online Cabs has partnered with Dialog Sri Lanka's Ideamart to integrate its USSD, SMS and location APIs.	11 SUSTAINABLE CITIES AND COMMUNITIES
Illuminum Greenhouses (Kenya)	A greenhouse and drip irrigation kits solution that are equipped with **SMS**-controlled solar-powered sensors. Illuminum Greenhouses' system allows smallholder farmers and farm owners to monitor and regulate conditions remotely via SMS. By controlling water via irrigation schedules, the start-up claims farmers using their greenhouses can reduce water usage by up to 60 per cent.	13 CLIMATE ACTION
Gravity (Kenya)	A platform that uses blockchain technology to allow anyone to create a sovereign, data-based digital ID to access essential services. While Gravity's end-to-end solution uses backend blockchain technology to certify KYC-related information, users do not need to know what blockchain is to use the platform. The service works on any mobile device via **USSD** menu or smartphone app. Details on Gravity can be found at Blockchain for Development: Emerging Opportunities for Mobile, Identity and Aid.	16 PEACE, JUSTICE AND STRONG INSTITUTIONS

* GSMA Ecosystem Accelerator's start-up portfolio

Mobile operators and low tech in emerging markets

Mobile operators play an important role in granting start-ups and third parties access to low-tech mobile channels. As documented in our *USSD for Socio-Economic Impact* insights report, mobile operators in emerging markets are increasingly realising the economic potential of providing start-ups and third parties with access to APIs. Increasingly API initiatives are being launched as a result, with some examples highlighted below.

○ **DIALOG AXIATA (SRI LANKA):** Dialog launched a business unit in 2012 to power its API platform. The result was Ideamart . Dialog has since partnered with three other mobile operators in Sri Lanka (Airtel, Etisalat and Hutchinson Telecommunication), enabling developers to seamlessly connect to the mobile operators' APIs via Ideamart's platform. There are currently nearly 2,000 USSD-powered apps on the platform. Ideamart's success compelled the Axiata Group to launch Apigate,[7] an API subsidiary of its own.

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7.   Apigate is a strategic business unit of the Axiata Group that has expanded beyond its regional footprint to a global business offering scalable solutions.

- **MTN (UGANDA):** In November 2018, MTN Uganda launched its mobile money API and granted developers online access through http://momodeveloper.mtn.com/. The open API platform enables developers access to MTN Mobile Money's proprietary software platform. Developers can access the platform, create products to improve their customers' payment options and leverage MTN Uganda's 10 million registered mobile money users. MTN Uganda enables payment collections, disbursements, remittances and a widget that users can download to enable mobile money payments on e-commerce websites. The API endpoints can be accessed via USSD, app and web.

- **ORANGE (AFRICA):** The mobile operator runs the platform #303# My Store that enables developers to plug into a standardised USSD API. #303# My Store is active in Côte d'Ivoire, Cameroon and DRC, with around 50 third-party services accessible on the platform. There are approximately 200,000 unique average monthly users on #303# My Store.

- **SAFARICOM (KENYA):** The Kenyan mobile operator launched its open API portal Daraja in August 2017 for businesses to integrate their services with its mobile money solution, M-PESA. The portal hosts a number of APIs, including business-to-business (B2B) and business-to-consumer (B2C), allowing a fast and simplified on-boarding process. Developers can access the APIs by signing up to https://developer.safaricom.co.ke/. Through Daraja, businesses can now integrate both Lipa Na M-PESA Buy Goods and PayBill cashless payments in mobile apps, websites, point of sale (POS) terminals and other business solutions.

For more information on the potential of open mobile operator APIs, see our research report, *APIs: A bridge between mobile operators and start-ups in emerging markets* and video, *The Power of Mobile Operator APIs*.

Looking ahead: Calling emerging markets' start-ups to consider the low tech opportunity and mobile operators to deploy developer-friendly APIs

In emerging markets, mobile operators serve as gatekeepers to the hidden treasures of low tech, and with this power comes a responsibility to unlock innovation to reach users throughout the economic pyramid. While GSMA is seeing growing interest from mobile operators to open their APIs to create opportunities for themselves, for start-ups and other third parties, more can be done.

The business case for low tech in emerging markets and its potential social impact are stronger than ever. The GSMA Ecosystem Accelerator programme calls on mobile operators in emerging markets to consider working with experienced developers to build a digital interface for start-ups and third parties to access developer-friendly APIs. Beyond the open API platforms, mobile operators have a role to play in building a developer community and providing support, such as a developer forum, community chat and live chats.