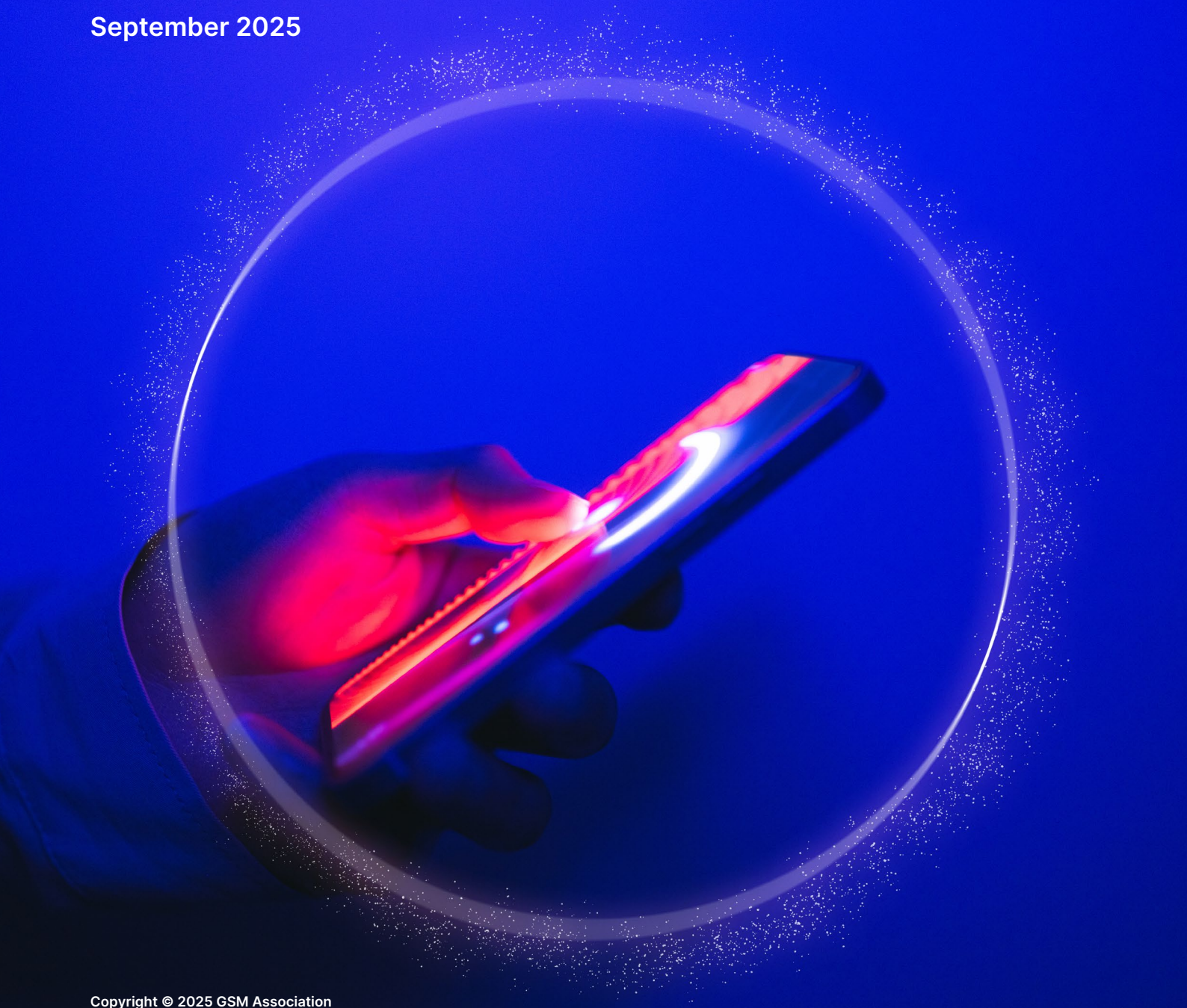
GSMA

The impact of financing schemes on handset access

Introducing an Evaluation Framework for Handset Financing Schemes

September 2025



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The GSMA Handset Affordability Coalition is a global coalition which brings together key stakeholders to advance innovative solutions to enhance handset affordability for low- and middle-income countries (LMICs) in Africa and Asia. This global coalition brings together: Mobile Operators, Device Original Equipment Manufacturers (OEMs), Device Ecosystem, International Organisations and Financing Institutions. Some members include Airtel Africa, Axian Telecom, Ethio Telecom, MTN, Orange, Vodafone, Huawei, MobiWire, ZTE, Intelligra, KaiOS, Kistpay, M-Kopa, TBTM (Take Back the Media), BBVA Microfinance Foundation, IDB Invest, International Finance Corporation (IFC), World Bank (WB), Edison Alliance, ITU and Smart Africa.

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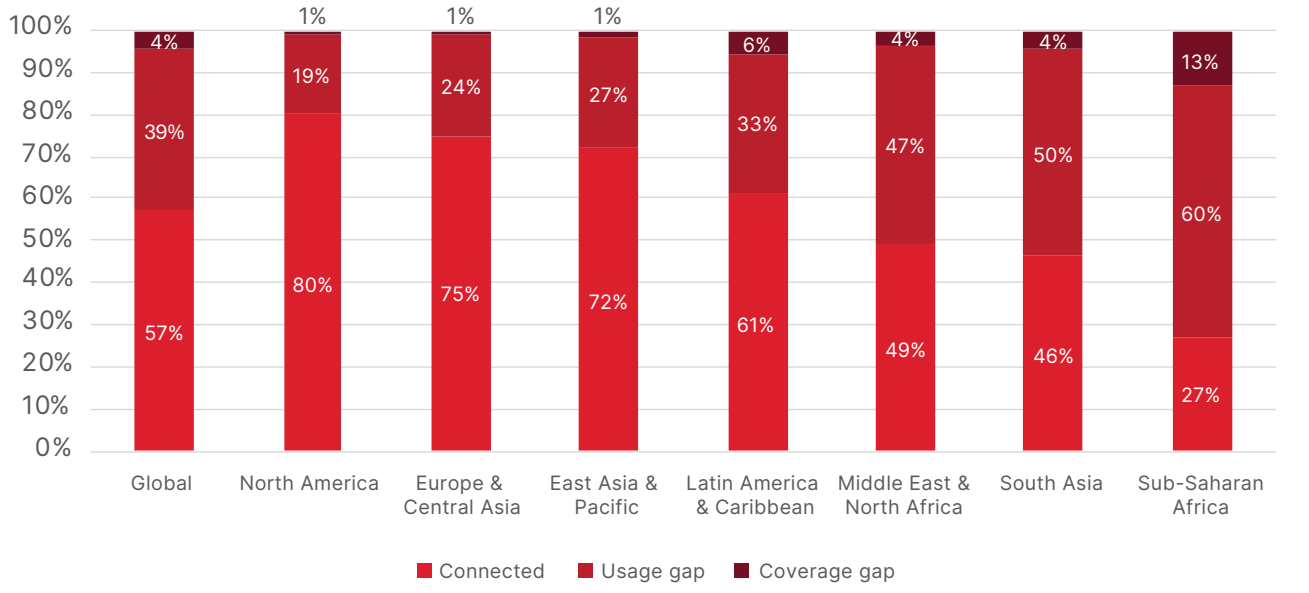
1 Introduction

Financing schemes and subsidies key to improve handset and mobile internet adoption

In today's interconnected world, digital inclusion is increasingly recognised as a crucial driver of economic and social development. Access to mobile internet connectivity and digital services is essential for participation in the modern economy, providing individuals with opportunities for education, healthcare and economic engagement. Despite a significant expansion of network coverage, a persistent usage gap remains a critical challenge, where ownership of a device or handset constitutes one of the main barriers for people who are not using mobile internet services. The latest GSMA Consumer Survey data shows that affordability of internet-enabled handsets, literacy and digital skills remain the top barriers to mobile internet adoption. In Sub-Saharan Africa, handset affordability is consistently cited as the leading barrier[1] to mobile internet adoption.

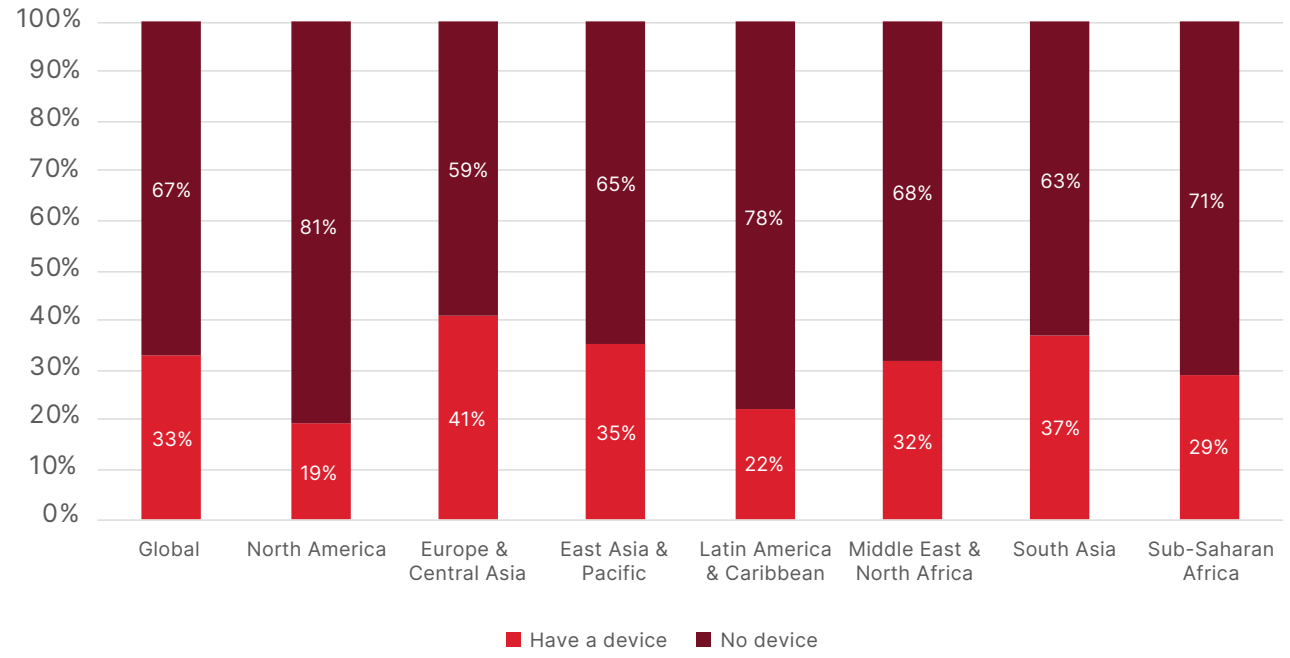
Figure 1a | Mobile internet connectivity by region, 2023



Source: GSMA Intelligence- SOMIC 2024

1 GSMA (2024). The State of Mobile Internet Connectivity Report 2024.

Figure 1b | Distribution of usage gap based on those who have a device and those who do not, 2023



Source: GSMA Intelligence- SOMIC 2024

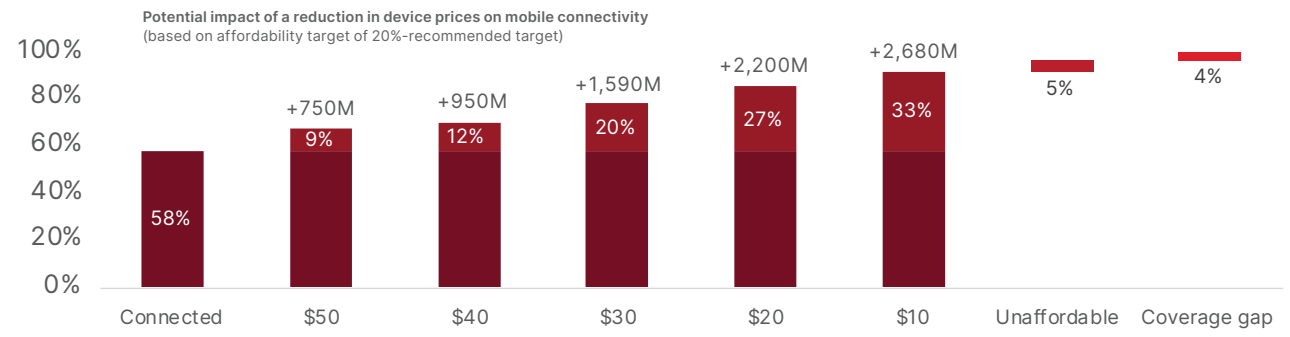
Although the cost of internet-enabled devices has decreased, most remain prohibitively expensive for underserved populations. Low- and ultra-low-cost devices help but are not a universal solution, as financial barriers persist as well as other barriers such as lack of digital skills and literacy. For many individuals, particularly those in low-income or underserved regions, this ongoing affordability challenge necessitates alternative approaches to ensure broader access to technology. Device financing and subsidy schemes have emerged as one of the viable solutions to bridge this gap and make digital inclusion more achievable.

A recent GSMA study found that improving affordability – measured as the device price relative to monthly income – could increase global mobile internet connectivity by up to 27 percentage points if devices were priced at $20, with affordability thresholds of 20% of average monthly income. This would represent more than 2.2 billion people worldwide.[2] Achieving these price targets involves alternative mechanisms for consumers, such as financing or subsidies.

Handset affordability and adoption depend on two key factors: a customer's ability to pay (ATP) and willingness to pay (WTP). Operators can influence ATP by reducing device costs, expanding access to financing, and addressing additional costs beyond ownership, while recognising that women and rural populations often face lower ability to pay. WTP, though often overlooked, is equally important and shaped by factors such as consumer needs, perceptions, confidence, digital skills, safety concerns, social norms, and practical challenges. These barriers are often more pronounced for female, rural, and low-income consumers. By designing and marketing device offerings with these realities in mind, handset providers can expand adoption, unlock new customer segments, and grow sales of internet-enabled phones and services.

[2] GSMA (2024), Analysis to improve handset affordability

Figure 2 | Impact of affordability improvements on global mobile connectivity (2024)



Source: GSMA Intelligence

In this context, the private digital and mobile ecosystem has collectively offered new alternatives to improve device access for underserved consumers. Private sector models, particularly device financing, play a significant role in enhancing device affordability and accessibility. By capitalising private sector resources and innovation, these models can complement public efforts and expand access to mobile technology.

Device financing offerings enable consumers to acquire devices immediately with minimal upfront cost and pay for them over time through manageable instalments. Additionally, leasing models, which offer device use for a fixed period with maintenance and upgrade options, appeal to users who prefer not to commit to full ownership.

As highlighted by GSMA (2022)[3] these private financing schemes can involve the following elements:

- Asset financing for handsets, offering extended payment periods to make devices more affordable.
- Utilising alternative data sources for credit assessments to broaden access to financial services.
- Implementing remote locking technologies on handsets to mitigate default risks.
- Tailoring payment terms to align with customers' income patterns for greater flexibility.
- Enhancing customer access to financing through adaptable payment options.
- Taking into account context-specific factors to ensure inclusive handset financing solutions.
- There is no one-size-fits-all approach. Solutions must be tailored to local conditions, including infrastructure, regulation, culture and socioeconomic realities.

  Implementers should consider who they aim to reach and adapt accordingly.
- Providing targeted subsidies to increase handset ownership among specific user groups.
- Promoting public-private partnerships to reduce credit risks in handset financing.

[3] GSMA (2022). Making internet-enabled phones more affordable in low- and middle income countries.

Governments are also increasingly recognising the role of digital inclusion in their policy frameworks, incorporating measures to address affordability through public subsidies. These subsidies can take various forms, including direct financial support, tax incentives, or public-private partnerships. The involvement of public subsidies is particularly important in areas where market forces alone may not be sufficient to drive access to technology. However, careful design and implementation are essential to ensure these subsidies are effective, and that devices not only reach the intended users but also remain in their hands over the long term.

Despite the progress made, there is a lack of broad evidence on the impact and success factors of device financing and subsidy schemes, in part because many initiatives are still at an early stage. Understanding the effectiveness of these approaches and identifying the key factors that contribute to their success is crucial for designing more effective financing and subsidy schemes. This study, driven by the GSMA Handset Affordability Coalition, aims to address this by evaluating a selection of financing and subsidy schemes.

The objective of this report is to present examples of device financing and subsidy scheme evaluations using an established and consistent methodology and criteria, helping policymakers and firms make informed decisions about their own initiatives. By examining three applied case studies, this report seeks to provide insights and recommendations that can guide the development of more effective and impactful financing and subsidy schemes. Ultimately, the goal is to contribute to a more inclusive digital economy where technology access is not limited by affordability constraints.

2 Evaluation considerations for financing schemes analysis

When evaluating financing schemes, it is essential to consider several critical factors to ensure their effectiveness and sustainability. This chapter addresses the most relevant considerations, including the scheme's design and funding mechanisms, implementation strategies, impact assessment and a thorough analysis of strengths and weaknesses. These components provide a framework for evaluating the success of financing initiatives, guiding policymakers and stakeholders in refining and improving future schemes to achieve their intended outcomes.

Design and funding

The following diagram outlines the main components related to the design and funding of a financing or subsidy scheme for mobile devices. It includes defining clear objectives, identifying the target audience and device and ensuring sustainable funding mechanisms. Each component is relevant to ensure the scheme operates efficiently and achieves its intended impact.

Figure 3 | Design and funding components of a financing scheme

	Defining scheme objectives	Defining the target audience and device eligibility	Exploring optimal funding mechanisms
Definition	Clarifying the primary goals of the scheme, such as boosting smartphone adoption, expanding mobile internet access, or driving investment returns. Setting clear, measurable objectives ensures that the scheme aligns with broader digital inclusion strategies and delivers tangible outcomes.	Identifying beneficiaries and ensuring suitable, affordable devices that align with the audience's expectations and needs. The devices should be accessible in terms of functionality and cost, while considering specific conditions, such as income levels or geographical constraints, to effectively meet the requirements of the target population.	Identifying and securing funding sources, which can include government subsidies, private sector contributions, or a combination of both. In terms of financing, exploring partnerships with banks or financial institutions is key. Different models such as Buy Now, Pay Later (BNPL), Pay-As-You-Go (PAYG), device leasing, or direct subsidies should be evaluated based on the target audience's needs and the scheme's sustainability.
Example	A scheme focused on increasing smartphone adoption among rural populations by offering affordable devices and financing options.	Targeting low-income households and rural farms with affordable smartphones.	A hybrid model where public funds are combined with contributions from mobile operators and banks through BNPL schemes.

Source: GSMA Intelligence

Implementation

The following diagram illustrates the key aspects of successfully implementing a financing or subsidy scheme, including logistical rollout, awareness campaigns, customer support and stakeholder collaboration, each essential for driving digital inclusion and ensuring the scheme's effectiveness.

Figure 4 | Key aspects in the implementation of financing schemes

Logistical rollout

- Planning and coordinating the distribution and retailing of devices
- Establish partnerships with retailers and service providers
- Ensure efficient supply chain management
- Example: Collaborate with local mobile shops for effective device access.

Awareness campaigns

- Informing potential beneficiaries about the scheme
- Implement targeted marketing and outreach efforts
- Highlight the benefits of mobile device ownership to increase demand
- Use SMS campaigns or local radio ads to reach underserved populations.

Customer support

- Providing assistance and service channels for users
- Offer technical support and handle inquiries
- Create user-friendly resources (e.g., FAQs, chatbots)
- Set up a dedicated helpline for users needing assistance.

Stakeholder collaboration

- Working with various partners to ensure successful implementation
- Engage mobile operators, device manufacturers and financial institutions.
- Collaborate with NGOs and community organisations to promote digital inclusion
- Partner with local NGOs to advocate for the scheme and reach target audiences.

Source: GSMA Intelligence

Impact assessment

Impact evaluation in policies and programmes is oriented towards determining the causal effects of a specific intervention, programme, or policy. The main objective of impact evaluation is to establish whether the changes observed in outcomes can be attributed directly to the intervention, rather than to other external factors. This typically involves comparing the outcomes of those who participated in the intervention (treatment group) with those who did not (control group) to assess the intervention's true impact, that is, the changes directly attributable to a programme, modality and innovation.[4]

A critical question in the context of smartphone adoption turns on whether users are realising the benefits, particularly in relation to government subsidies and private sector returns. For governments that provide subsidies to make smartphones more affordable, it is essential to measure whether these efforts lead to tangible outcomes – such as increased access to digital services, mobile internet adoption, improved educational opportunities and better labour market results. During assessments, governments should also consider how other initiatives to support mobile internet adoption may complement financing schemes and support their longer-term impact, including for example, digital literacy and skills programmes alongside devices.

For instance, a recent study from Roessler, et al., (2023)[5] in Malawi showed that increasing women's smartphone ownership significantly increases mobile connectivity, financial inclusion and intra-household cooperation in mobile technology, translated into broader economic gains – at least in the short term.[6] Another study evaluated the effect of the Mobile Phone and Livelihoods of Women Program, which was a randomised controlled policy in Tanzania that distributed smartphones to 380 women.[7] This study found that the programme significantly increased household consumption, especially for women who received smartphones.[8] Households with smartphones saw an average increase in annual per capita consumption by 20%. These gains extended beyond mobile-related expenses to areas such as education, transportation and healthcare. However, the study also highlights a relevant challenge related to these types of programmes: handset retention. In particular, the authors found that only 34% of smartphone recipients still had the device after 13 months, with many either selling or trading down the handsets.[9] This issue points to the financial and social barriers women face in retaining such valuable assets, even though keeping the phones could have brought more long-term economic benefits.

For the private sector, the focus is on whether smartphone financing is driving additional mobile services consumption and returns. Among others, metrics for measuring this include subscriptions, mobile usage (e.g. minutes, SMS and data consumption) and service revenues, which can give insights into whether users are engaging with mobile services in ways that generate sustainable business models. By examining smartphone and mobile data usage patterns, we can assess whether smartphone adoption is translating into meaningful economic returns for private companies.

It is also important to distinguish between the direct and indirect impact of device financing schemes on mobile internet adoption and usage. The direct impact consists of users who participate in the financing scheme to access a device, while the indirect impact could include an increase in users driven by network effects (i.e. people more willing to upgrade or access a 4G device when they know someone else that has one) or via competition (e.g. one operator's device financing scheme could lead to competitors to innovate and offer new devices or products).

[4] See for example, Bernal & Peña (2011). Practical Guide for Impact Evaluation or Gertler, Paul J.; Martinez, Sebastian; Premand, Patrick; Rawlings, Laura B.; Vermeersch, Christel (2016). Impact Evaluation in Practice

[5] Roessler, P., Kumar, T., Bhattacharya, S., Carroll, P., Dulani, B., & Nielson, D. (2023). Smartphone Ownership, Economic Empowerment and Women's Property Rights: Experimental Evidence from Malawi

[6] The study also sheds light on community support for women's digital rights. One key takeaway is that smartphone recipients experienced heightened awareness of social resistance to women's digital rights

[7] In addition to smartphones (Huawei Y3C valued at $186 USD PPP), other women received the following items: 411 received a SIM card and were placed on a waitlist for a basic phone in the second year, 177 received a SIM card and $5 USD PPP in cash and 384 received a SIM card and a basic phone (Samsung B110 valued at $64 USD PPP).

[8] Roessler, P., Carroll, P., Myamba, F., Jahari, C., Kilama, B., & Nielson, D. (2021). The Economic Impact of Mobile Phone Ownership: Results from a Randomized Controlled Trial in Tanzania. Centre for the Study of African Economies, University of Oxford. CSAE Working Paper WPS/2021-05.

[9] Ibid.

Different methods and methodologies can be used to identify the impact of these types of initiatives, ensuring that the evaluation accurately reflects the causal relationship between the intervention and the outcomes. Data availability determines which methodology is more suitable depending on the case. The most common strategies for impact assessment of this type are the following:

1. **Trends Analysis (Before and After):** This method involves comparing key metrics before and after the implementation of the scheme. By analysing data on smartphone sales and mobile internet usage over time, researchers can identify changes and assess the scheme's effectiveness. For instance, time series graphs can illustrate trends in adoption and usage, while bar charts can compare pre- and post-scheme metrics. Such trends can also include other operators (or countries) that did not have financing schemes, as a way of comparing the potential impact.

2. **Causal effect:** As noted by the World Bank and IDB (2016)[10], causal inference involves establishing the extent to which a programme and that programme only, caused a change in a particular outcome. To establish this, impact evaluations compare the outcomes of a programme, with what would have occurred without the programme. This comparison, known as the counterfactual, isolates the effect of the programme by controlling for other variables that might influence the outcome. The basic causal inference approach calculates the difference between the outcome with the intervention and the outcome without, thereby determining the programme's true impact on the desired outcome. Methods to estimate this include Difference-in-Differences, Propensity Score Matching, Regression Discontinuity Design and Synthetic Control Methods.

[10] Gertler, Paul J.; Martinez, Sebastian; Premand, Patrick; Rawlings, Laura B.; Vermeersch, Christel (2016). Impact Evaluation in Practice

Sustainability

Sustainability refers to the ability of a programme to have a lasting positive impact beyond the duration of the handset financing or subsidy programme. It is crucial to consider and plan for sustainability during the design and implementation phases, as well as identifying and mitigating risks that could prevent the programme from achieving its objectives. The most significant risks involve:

- **Default payments:** One of the most common risks is the failure of customers to meet their financial obligations, such as defaults on instalment payments for devices leading to significant financial losses for mobile service and financing providers.

- **Fraud risks:** Fraud could arise through misrepresentation and abuse of eligibility, duplicated claims, or improper verification processes.

- **Operational and management challenges:** Efficiently managing financing schemes requires strong internal controls to prevent abuse and oversight to detect fraudulent claims or overuse of benefits.

Governments and firms can assess these risks and implement strategies to mitigate them, thereby increasing both the impact and sustainability of the project, ensuring that the programme continues to benefit users and markets even after the subsidy period ends.[11]

Likewise, financial sustainability is a critical factor in determining the durability and scalability of a policy intervention or financing scheme. For instance, subsidisation policies may struggle to maintain financial sustainability if there is no revenue stream to offset the upfront ongoing costs.[12] In this regard, non-traditional financial institutions, such as mobile operators or non-bank financial institutions (NBFIs), can play a significant role.[13] Besides lending fees, these institutions can also profit from complementary revenue streams, such as the sale or usage of smartphones, service contracts, mobile usage and other services related to device ownership, such as device insurance, cloud storage, mobile money, digital content bundles and value-added applications that improve user engagement and retention.

The success of these schemes depends on key metrics, including the ability of financed users to successfully repay their loans and the ability of operators to capitalise on their device financing schemes through their core mobile services. With this, fintech companies have emerged as key enablers in this ecosystem. Some firms have initiated innovative models that combine digital credit scoring, flexible pay-as-you-go structures and last-mile distribution to expand access to smartphones among underserved populations. Their ability to leverage complementary data for credit assessment, manage repayment risk through additional usage-based controls and integrate financing with device and service delivery makes them particularly effective in contexts where traditional financial resources are limited.[14]

Strengths and weaknesses

Evaluating the strengths and weaknesses of a scheme involves identifying both successful elements and challenges. Strong points may include effective design features, successful stakeholder collaboration and positive impacts on connectivity and device adoption. Challenges might involve implementation issues, funding constraints and barriers to reaching the target audience (or vice versa).

Drawing lessons from the evaluation can provide valuable insights for future schemes. Recommendations may include design improvements, better targeting strategies, optimised funding models and effective implementation practices. These insights aim to guide policymakers in refining and enhancing device financing and subsidy programmes to achieve greater success and impact.

[11] GSMA (2023). Handset Subsidy Toolkit for Governments

[12] As noted by the World Bank (2023), these involve, for example Operating costs, which include loan origination (such as marketing, application processing, borrower evaluation and device sale), payment processing and debt collection, are often high, particularly due to the lack of digitisation and consumer credit information, while non-operating costs encompass taxes and payments to creditors and owners, which are typically elevated in low- and middle-income markets due to higher commercial and political risks.

[13] World Bank (2023). Affordable devices for all. Innovative financing solutions and policy options to bridge global digital divides.

[14] Ibid.

3 Case studies

In order to demonstrate how the methods and considerations in Chapter 2 can be applied in practice, this report includes three evaluation case studies. The selected schemes reflect the innovative solutions being integrated into the digital ecosystem by financing institutions, mobile network operators (MNOs) and device manufacturers, as well as a targeted public subsidy scheme designed to promote affordability and increase internet access. The case studies are:

1. **Affordable Connectivity Program (United States):** A public initiative aimed at increasing access to affordable broadband services for low-income households across the United States.

2. **Lipa Mdogo Mdogo (Kenya):** A private-sector-driven scheme by Safaricom that allows customers to purchase smartphones on a pay-as-you-go basis, making devices more accessible to low-income users.

3. **Easy2Own (South Africa):** Easy2Own is a financing scheme for affordable smartphone ownership developed by Vodacom to support the transition of customers still using 2G or 3G technology to more advanced 4G and 5G networks

To assess the selected financing schemes, data was gathered from public sources (for example, Government and operator reports), GSMA Intelligence data and interviews with key stakeholders for each scheme. The data collection process combined both qualitative and quantitative information. Ideally, a scheme evaluation should address the following research questions:

1. **How was the scheme designed, funded and implemented?**
   This involves examining the initial planning stages of the schemes, identifying the funding sources (whether public, private, or a combination) and understanding the implementation strategies.

2. **What was the impact of the scheme on adoption and usage in the short-term and long-term?**
   To assess the impact, quantitative data on smartphone adoption rates, mobile internet usage and other relevant metrics should be analysed. Our analysis was also supported by qualitative insights from interviews. Additionally, metrics not directly related to mobile connectivity, such as employment and socio-economic benefits, are important to explore given the broad advantages that connectivity can provide.

3. **Is the financing scheme for handset subsidy programmes sustainable in terms of its long-term effects and financial considerations?**
   When data permits, analytical comparisons should be conducted to determine whether the effects of the intervention were durable after its implementation. Additionally, in terms of financial considerations, the analysis should explore how financing schemes were associated with changes in revenue, customer acquisition/retention and profitability, to determine whether it was financially viable.

4. **What were the strengths and weaknesses of the scheme and what lessons can be learned?**
   The evaluation should identify the key strengths and weaknesses of each scheme, drawing on both qualitative interviews and quantitative performance data.

The data that was available for the selected case studies did not permit the use of more advanced causal inference techniques. However, such techniques have been effectively applied in the case of ACP, demonstrating their causal inference relevance when appropriate data is available. Other similar approaches could be utilised in other contexts such as the implementation of randomised natural experiments as the one developed in Blantyre, Malawi[15] and the Mobile Phone and Livelihoods of Women Program in Tanzania.[16]

[15] Roessler, P., Kumar, T., Bhattacharya, S., Carroll, P., Dulani, B., & Nielson, D. (2023). Smartphone Ownership, Economic Empowerment and Women's Property Rights: Experimental Evidence from Malawi

[16] Roessler, P., Carroll, P., Myamba, F., Jahari, C., Kilama, B., & Nielson, D. (2021). The Economic Impact of Mobile Phone Ownership: Results from a Randomized Controlled Trial in Tanzania. Centre for the Study of African Economies, University of Oxford. CSAE Working Paper WPS/2021-05.

Table 1 | Evaluation of financing schemes based on key assessment criteria.

Criteria	Elements	Affordable Connectivity Program (United States):	Lipa Mdogo Mdogo (Kenya):	Easy2Own (South Africa)
Design	**Scheme objectives**	Tackle the ongoing challenge of digital inequality, especially in the COVID-19 pandemic	Increase smartphone ownership	Increase smartphone ownership and accelerate the transition to 4G and 5G mobile services
	Target audience and device eligibility	Households can qualify for the programme by meeting specific low-income criteria or participating in certain government assistance programs	Focus on customers with 2G/3G phones, encouraging their transition to 4G technology	Focused on low- and middle-income segment prepaid customers with 2G/3G phones, encouraging their transition to 4G/5G technology
	Funding mechanisms	Eligible households received a discount of up to $30 per month toward their internet service, with households on qualifying Tribal Lands receiving up to $75 per month	Customers finance 90% of device cost through daily, weekly, or monthly payments over 12 months	Customers make a deposit of either 25% or 30% of the recommended retail price (RRP), with the remaining balance being financed through the scheme
Implementation	**Logistical rollout**	Participants needed to contact a participating provider to select a broadband service plan	Employment of additional tools such as mobile money and the LMM app for repayments	Deployment of additional app-based tools that incentivise mobile service activation and facilitate communication with beneficiaries. This is complemented by in-store activations and customer assistance
	Awareness campaigns	Flyers, fact sheets and public service announcements	Marketing to customers with regular SMS reminders, encouraging timely payments and engagement	A multi-channel awareness strategy includes radio ads, digital screens at busy commuter hubs and static billboards near shopping centres. These are complemented by regional activations such as leaflet drops, bus branding and live radio reads focused on high-density townships
	Customer support	Participating telecom providers and the FCC serve as the main points of contact	Regular SMS payment reminders and device locking in case of default to encourage repayments	Regular payment reminders and device locking in case of default to encourage repayments

Source: GSMA Intelligence

> continued

Table 1 | Evaluation of financing schemes based on key assessment criteria.

Criteria	Elements	Affordable Connectivity Program (United States):	Lipa Mdogo Mdogo (Kenya):	Easy2Own (South Africa)
Implementation	**Stakeholder collaboration**	Outreach partnerships with state, local and tribal entities to expand programme visibility	Partnership with Google to provide 4G devices pre-installed with optimised Google Go apps	Operator's autonomous initiative
Impact assessment	**Causal effects**	Increased internet adoption by 2.6 percentage points and high-speed broadband usage by 1.6 percentage points	Not yet identified	The 2022 spectrum auction, followed by the introduction of handset financing schemes like Easy2Own, contributed to an increase in 4G/5G penetration by 6 percentage points
Sustainability	**Financial returns**	Total benefits estimated as $105 billion USD per year	20% of the operator's recurring revenues	18% of the operator's recurring revenues
	Short term effects	Served around 23 million households	1.1 million 4G smartphones financed	84,000 4G and 5G smartphones financed
	Long term effects	To be defined due to the recent closure of the programme	Scheme in progress.	Easy2Own users generate 2–4x more ARPU compared to the overall customer base

Source: GSMA Intelligence

Affordable Connectivity Program (ACP) - United States of America, 2021-2024

The Affordable Connectivity Program (ACP) was a federal initiative that provided low-income households with financial assistance for broadband services and devices in the United States. Developed and maintained by the Federal Communications Commission (FCC) under the "Bipartisan Infrastructure Law," the ACP represented a USD $14.2 billion investment in bridging the digital divide.[17]

Launched in December 2021, the ACP aimed to address the persistent issue of digital inequality, particularly in the wake of the COVID-19 pandemic, which highlighted the essential nature of internet connectivity for participation in modern society. It succeeded the Emergency Broadband Benefit (EBB) Program, which provided USD $3.2 billion in support for broadband services and certain devices to help low-income households stay connected during the COVID-19 pandemic.[18]

According to the FCC, by early 2024, the ACP served around 23 million households (representing almost 20% of the total residential fixed connections in the country), providing them with critical access to affordable broadband services. However, due to the exhaustion of the funds initially allocated by Congress, the programme ended on June 1, 2024.[19]

Design

The Affordable Connectivity Program was designed to reduce the financial barriers that prevent low-income households from accessing essential broadband services. The programme's implementation involved extensive collaboration with a wide range of ISPs across the country, ensuring broad availability of discounted services and devices to eligible households. This collaborative effort between the FCC and ISPs was crucial in reaching millions of Americans who might otherwise have been excluded from the digital economy.

The ACP offered eligible households a discount of up to $30 per month toward their internet service, with households on qualifying Tribal Lands receiving up to $75 per month. Additionally, the programme provided a one-time discount of up to $100 for the purchase of a laptop, desktop computer or tablet from participating internet service providers (ISPs). To qualify for this device benefit, households had to contribute more than $10, but less than $50 toward the device's cost, ensuring that participants had a stake in the purchase and encouraging responsible usage.

To be eligible, a household had to meet the eligibility criteria for a participating provider's own low-income broadband assistance programme or one of the following conditions:[20]

- Have total income at or below 200% of the Federal Poverty Guidelines[16]
- Participate in Lifeline or certain other government assistance programs[17]
- Participate in certain government assistance programs and live on qualifying tribal land
- Have received a Federal Pell Grant during the current award year.

[17] See FCC- Affordable Connectivity Program Consumer
[18] See https://www.fcc.gov/emergency-broadband-benefit-program
[19] FCC (2024). FCC brings affordable connectivity program to a close.
[20] GAO (2023). Report to Congressional Requesters. Affordable Broadband. FCC could improve performance goals and measures, consumer outreach and fraud risk management.

Implementation

Generally, once applicants were considered eligible for the ACP, they had to reach out to a participating provider to choose a broadband service plan and have the provider enrol them in the programme to apply the discount. Subscribers could select any broadband plan offered by the provider, including mobile and bundled plans, although the discount could not be used for video services. The provider enrolled the subscriber in the programme through the National Lifeline Accountability Database - the same system used for the Lifeline programme.

In the implementation phase, the FCC engaged in numerous outreach activities to raise programme awareness, including creating consumer outreach materials, such as flyers, fact sheets and public service announcements, which were distributed across the country. By September 2022, nearly 200,000 printed items were mailed to outreach partners, including posters and a letter inviting eligible households to participate. Outreach partnerships with state, local and tribal entities were also used to expand programme visibility, along with engagement with community leaders (for example, representatives of schools, libraries, churches, non-profit organisations, social services organisations, chambers of commerce and other civic groups).

Participating telecom providers also played a relevant role in raising awareness of the ACP. The ACP required these providers to publicise the programme's availability and engage in public awareness campaigns. Providers were given flexibility in how they carried these out, applying a variety of methods, including the distribution of flyers in utility bills, radio and television advertisements and online advertising. Some providers also added information about the ACP on their websites and on other forms of outreach like customer service calls and direct mailings.

Impact assessment

To evaluate the impact of the ACP, Galperin, Bar and Chavez (2024) published a recent paper that conducted empirical research using data from the American Community Survey (ACS) and the Current Population Survey (CPS).[21] The study employed an econometric strategy, utilising impact evaluation models such as DiD, logit regression, inverse probability weighting (IPW) and PSM. These methods allowed for a detailed analysis of the ACP's effects not only on broadband adoption rates, but also on labour force participation and employment outcomes. The study found that the ACP had the following impacts:

Impact on broadband adoption

- ACP increased internet adoption by 2.6 percentage points and high-speed broadband usage by 1.6 percentage points, particularly through mobile data plans.
- At the aggregate level, eligibility led to a 2.9 percentage point increase in broadband adoption, but this effect dropped to 1.1 percentage points due to actual participation rates.
- The effectiveness of ACP is closely tied to participation, with only about 40% of eligible households enrolled by the end of 2022.

Labour market impacts

- ACP increased labour force participation (LFP) and employment among women in eligible households by 1.2 and 1.4 percentage points, respectively.
- No significant impact was observed for men, highlighting the program's gender-specific benefits, likely due to enhanced remote work flexibility.
- Event study analysis confirmed that the ACP had a positive impact on women's employment post-implementation, especially in facilitating remote work.

Impact mechanisms: the expansion of remote work

- ACP recipients, particularly women, were more likely to engage in remote work, with a 2.4 percentage point increase in remote work participation among female recipients.
- ACP also increased remote work hours, with women seeing a 22% rise and men a 28% rise in remote work hours.
- The program's support for remote work opportunities significantly contributed to improved labour market outcomes, particularly for women, aligning with post-pandemic labour market trends.

[21] Galperin, H., Bar, F., & Chavez, P. (2024). Preliminary Evaluation of the ACP Program. University of Southern California.

The impact on overall broadband adoption may seem modest but, as noted by the study authors, use of the internet in the US was already high prior to the ACP at around 80% in 2021. Where the programme was particularly effective was in alleviating the connectivity cost burden for vulnerable households that were more likely to experience instability in internet access. A survey carried out by the FCC of ACP recipients found that over two-thirds reported inconsistent internet service or no internet service at all prior to ACP, with affordability being the main reason. Almost half of ACP recipients subsequently used their internet service to apply for jobs or work, while around three quarters used it to schedule or attend healthcare appointments and do schoolwork.[22]

The ACP therefore enabled individuals in many households to work remotely, particularly women and the wider economic impact this had in terms of increased labour force participation is important. Policymakers may only consider the direct benefits of broadband device subsidy schemes in terms of adoption when deciding how much to invest, but it is critical that the indirect economic benefits are also taken into account. For example, the authors suggest that the total economic benefits of the ACP (including higher female labour force participation) were around $105 billion per year, far exceeding the ACP annual programme costs of around $8.5 billion.[23] Another study also found that the ACP programme generated significantly higher economic benefits than the costs.[24]

Strengths, weaknesses and lessons learned

The ACP programme demonstrated notable strengths, particularly in enhancing employment opportunities through remote work. This impact was especially significant for women, who benefited from the increased flexibility that remote work offers. Additionally, as reported by GAO (2023)[25], the FCC undertook various outreach efforts to raise awareness of the ACP, including creating consumer outreach materials, collaborating with federal agencies and engaging outreach partners. However, these outreach efforts, especially the translated materials for non-English speakers, were not always aligned with leading practices for consumer communication, with issues such as varying translation quality and lack of clarity. A comprehensive outreach plan would help ensure that funds are used effectively to reach eligible households, particularly those with limited-English proficiency.[26]

Despite its positive outcomes, the ACP also faced challenges that highlighted areas for improvement. One issue to consider is that the modest broadband adoption increase must be viewed in the context of high adoption rates. The programme's primary impact was in helping to keep people connected, which was crucial during the pandemic. However, a major challenge was the financial sustainability of the programme. The ACP was dependent on Congressional funding and without further allocations, the programme could not continue. A key lesson is therefore the need for sustainable, long-term financing to ensure the continuity of large-scale initiatives like the ACP.

Additionally, the programme faced operational challenges, particularly in managing fraud risks. According to the GAO (2023), the FCC's efforts to manage fraud risks in the ACP were not fully aligned with leading practices. The fraud risk assessment did not adequately account for how existing controls mitigated identified risks, especially concerning duplicate subscriber checks, identity verification and address validation. As a result, there were issues with duplicate subscribers and questionable service locations, raising concerns about the effectiveness of the controls in place to prevent and detect fraud. A key lesson from the ACP is the importance of stronger fraud prevention strategies and improved monitoring systems to ensure programme integrity.

[22] See https://www.fcc.gov/acp-survey
[23] It is worth noting that these estimates are rough approximations, but they give an idea of the order of magnitude that the benefits might be.
[24] Horrigan, J. (2023). The affordable connectivity program creates benefits that far outweigh the program's costs.
[26] Ibid.

Safaricom Kenya's Lipa Mdogo Mdogo Programme

Safaricom's Lipa Mdogo Mdogo (LMM) smartphone financing programme is designed to make smartphone ownership more accessible to its customers. The service mainly targets prepaid customers who meet certain eligibility criteria, allowing them to purchase a smartphone through affordable daily, weekly, or monthly payments over a 12-month period, financing up to 90% of the handset.

This programme was created in partnership with Google and aims to bridge the gap for customers who have been unable to afford smartphones due to high upfront costs. By offering manageable daily instalments, LMM is helping its customers gain access to the internet.

Design

Safaricom has structured the repayment process to be highly flexible, allowing customers (mainly in peri-urban and rural areas) to choose between daily, weekly, or monthly payment options based on their financial capacity. Payments are made through the mobile money channel (MPESA) or via the LMM App. Once the deposit is paid, the device is activated through the LMM app and device insurance is activated, covering out-of-warranty claims, including broken screens, liquid damage and theft. Customers make payments based on their selected plan (daily or weekly). Additionally, customers receive 1GB of free data, valid for 24 hours, at the point of purchase and 150MB of YouTube data daily for a month. The strategy facilitates a risk-free introduction to internet services, particularly for low-income users and those accessing the internet for the first time. By removing the financial barrier, it enables users to trial the service, gain digital confidence and gradually develop consistent internet usage habits.

The smartphones offered under the LMM programme are all 4G enabled and come pre-installed with Google Go apps and the provider's own apps (Mysafaricom App, Mpesa App and Lipa Mdogo Mdogo app which are zero-rated and optimised for devices with limited storage and lower processing power. The available devices – Neon Smarta, Neon Ultra, Itel A24, Itel A60 and Tecno POP 7 – are all budget 4G smartphones provided with essential features like internet access, social media and basic apps through 4G connectivity. The prices of these range between 90 USD and 180 USD. They typically include touchscreens, basic cameras and run Android, or sometimes the lightweight version Android Go, which requires less data consumption.

Furthermore, since August 2024, the devices are insured against theft, loss and damage, ensuring customer satisfaction and continued payments. This insurance is included in the cost, meaning customers don't have to make an additional decision or payment for it. This is particularly important for those who would benefit the most from insurance but are least likely to opt for extra coverage.

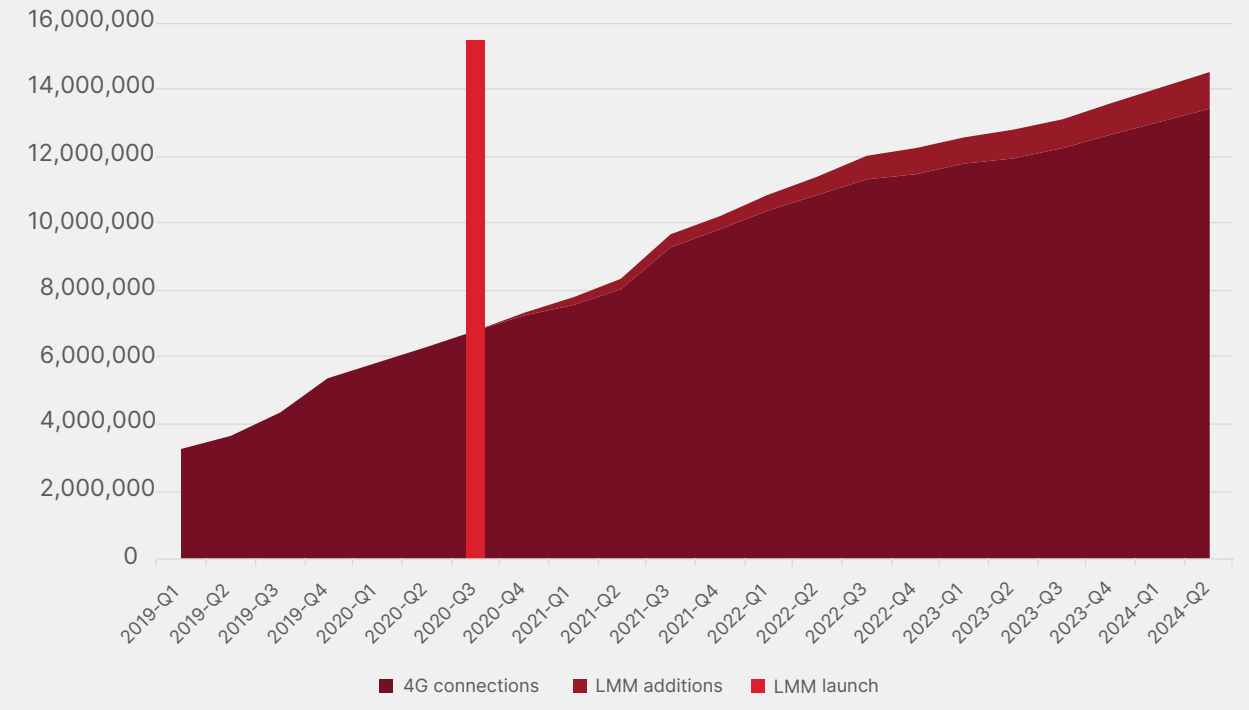
Implementation

The LMM programme is available to all eligible customers following a credit scoring criteria. To qualify, a customer must have been a Safaricom subscriber for at least one year, own a 2G or 3G smartphone and have no negative listing on the Credit Reference Bureau (CRB). Upon qualifying, customers are required to make a down payment on the selected device and have the option to pay off the remaining balance over a 12-month period.

The LMM programme is structured to encourage sustainable borrowing and repayment. Once a customer makes their down payment and selects their preferred repayment schedule, they can start using their new smartphone immediately. Customers who miss payments experience limited access to certain device features, which can be restored upon payment. To support customers in staying on track with their repayment schedules, Safaricom sends regular SMS reminders. These messages are intended to promote timely payments and help reduce the likelihood of missed instalments.

In addition to promoting smartphone ownership, the programme provides value-added services such as free data bundles and services upon purchase and during consistent repayments. This not only incentivises repayment but also ensures that customers can continue to enjoy internet access while paying off their devices.

Figure 5 | Safaricom Kenya 4G connections



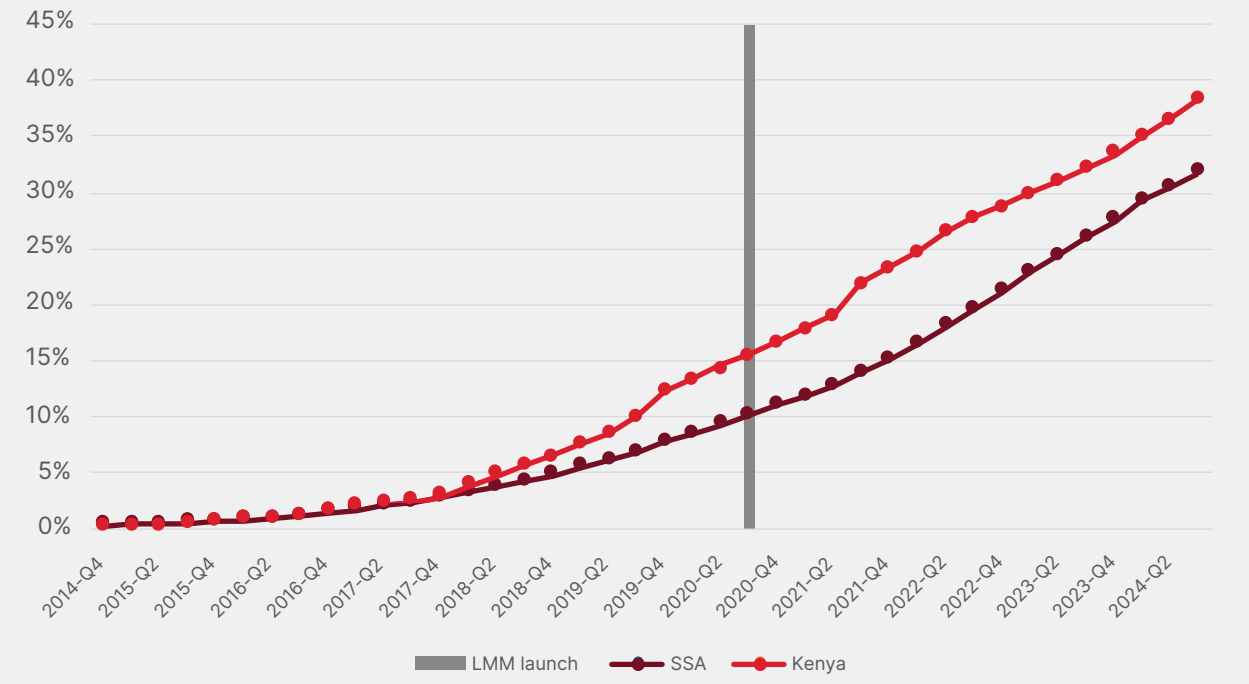
Source: GSMA Intelligence and Safaricom Kenya

Impact assessment

As of the latest figures, around 1.1 million 4G smartphones have been financed under this model, which represents around 14% of Safaricom's net additions in 4G connections between 2020-Q3 and 2024-Q2 (see Figure 5).

Figure 6 shows that following the launch of LMM, 4G penetration in Kenya has increased more than other countries in the Sub-Saharan African region.

Figure 6 | 4G Market Penetration in Sub-Saharan Africa and Kenya



Source: GSMA Intelligence

Sustainability

The sustainability of Safaricom's LMM programme is highlighted by its substantial contribution to the operator's recurring revenues, with beneficiaries (past and present) accounting for about 20% in the first half of 2024 (see Figure 7).

By making smartphones more accessible, LMM promotes digital inclusion, demonstrating how financing schemes can achieve both commercial viability and significant social impact, ensuring their long-term sustainability.

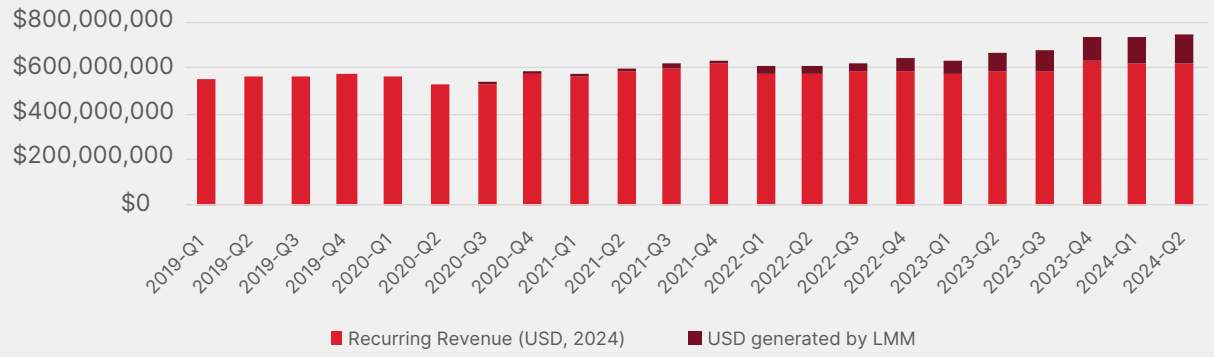
Strengths, weaknesses and lessons learned

LMM has helped to bridge the digital divide by making smartphones more affordable through flexible, small-scale financing options, particularly for low-income, prepaid customers. The partnership with Google enhances accessibility with affordable, 4G-enabled devices optimised for lower data usage. The use of mobile money for repayments offers convenience and the programme's contribution to digital inclusion in Kenya is evident in the growth of 4G penetration.

In addition, Safaricom made a strategic shift in its marketing approach, ensuring stronger representation of women in their advertisements. This shift was crucial to the campaign's success in reaching women customers. Safaricom's marketing for LMM now includes strong representation of women, ensuring better engagement with this key demographic. In addition, the scheme has also recognised the need to broaden its partnership network to improve its market opportunity. By collaborating with M-Kopa, PAY-GO providers and working with retailers, Safaricom has positioned the LMM programme to reach a wider customer base. This expansion in partnerships has been key to increasing access and adoption of the programme.[27]

One challenge is the risk of default and the potential penalisation of customers, especially those with unstable incomes. The credit scoring requirement limits participation for some users, excluding customers with past credit issues. Also, the programme is reliant on a limited range of budget smartphones, which may prevent customers seeking better device options. Another difficulty is securing sufficient funding from financial institutions to grow the credit portfolio and onboard more customers. Furthermore, high taxes have impacted the affordability of high-end devices within the LMM proposition, making them more expensive for customers.[28]

Figure 7 | Safaricom Kenya recurring revenue and LMM revenue generated



Source: GSMA Intelligence and Safaricom Kenya

[27] The marketing elements related to the campaign are detailed in GSMA(2021) Safaricom's Maisha Ni Digital Campaign
[28] GSMA (2024). Driving digital transformation of the economy in Kenya. Opportunities, policy reforms and the role of the mobile.

Vodacom South Africa's Easy2Own

Vodacom South Africa's Easy2Own is a financing scheme developed to support the transition of customers still using 2G or 3G technology to more advanced 4G and 5G networks. By offering affordable smartphone ownership options, Easy2Own aims to bridge the digital divide and enable better connectivity for prepaid users. The programme provides eligible customers with the opportunity to acquire a smartphone by paying an upfront deposit and financing up to 70% of the device's cost through daily, weekly, or monthly payments. This is done mainly on a prepaid model, with no requirement for traditional credit assessments.

Design

The Easy2Own scheme is designed to be flexible and customer-focused, aligning the repayment structure with the actual usage of the device. Customers repay the cost of their smartphones through the purchase of mobile services called "Unlock Bundles", which are available in 1-day, 7-day, or 30-day options. These bundles must be purchased using airtime and serve two purposes: they unlock the device for the purchased duration and provide daily voice and data benefits. If a customer does not purchase an Unlock Bundle, the device will remain locked until a new bundle is activated.

The cost of each bundle contributes to the repayment of the device and partially covers the value of the daily data and voice services. The financing term is based on a 12- and 24-month model, during which customers are required to purchase an Unlock Bundle every one and two months respectively. In terms of flexibility, the users can purchase multiple bundles at once, effectively allowing them to cover the full cost of the device earlier than planned if they choose.

Implementation

In terms of implementation, the customer can choose from a selection of eligible 4G and 5G smartphones available under the programme. This group of mobile devices includes a wide range of entry-level to mid-range smartphones from brands like Samsung, Huawei, Honor, Oppo, Realme, TCL and Vivo. They are all 4G or 5G capable, offering storage options from 32GB to 256GB. The devices are suited for everyday tasks such as browsing, messaging, streaming and social media, while remaining affordable as they are priced between 0.5% and 5% of GDP per capita.

From this selection, a deposit of either 25% or 30% is required at the time of purchase, which reduces the amount to be financed over time. The rest of the payments are made through Unlock Bundles, which are bought using airtime via the Easy2Own app. These bundles keep the device unlocked for the selected period but also offer a set amount of data and call minutes per day, effectively combining device repayment with mobile service in one package.

The scheme serves a varied range of customers by offering different bundle options. For instance, a standard daily Unlock Bundle might include 100MB of data and 10 voice minutes. More advanced or basic options are also available, ensuring that users can match their bundles to their needs and budget. The repayment term is flexible, ranging from as short as one year to a maximum of two years, depending on how frequently the user purchases Unlock Bundles. If a customer fails to purchase a new bundle when the previous one expires, the device becomes temporarily locked until a new bundle is bought.

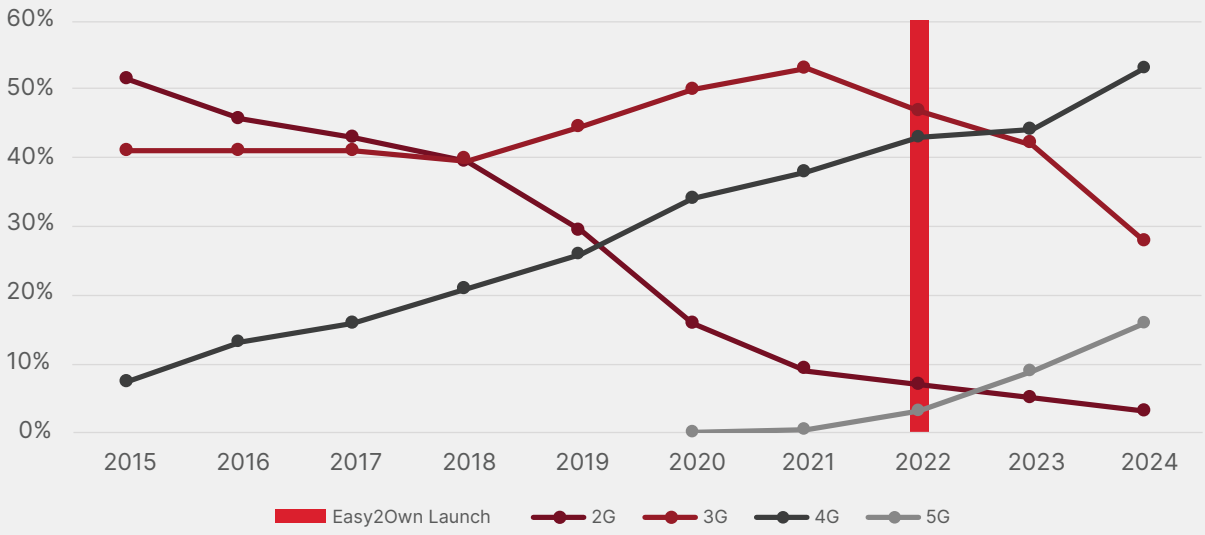
Enrolment in Easy2Own requires a valid South African ID, proof of residence and a Vodacom prepaid SIM card, as the device is linked to the prepaid number throughout the repayment period. Customers who do not yet have a Vodacom SIM can obtain one during the application process. Bundles can be purchased through the Easy2Own app. After opening the app, the user selects the desired bundle duration, confirms the purchase and receives a confirmation SMS. The process is automatic, provided there is sufficient airtime available, ensuring the phone remains active.

Impact assessment

Following the 2022 national multiband spectrum auction – and the subsequent launch of the Easy2Own handset financing scheme in Q4 2023 – the proportion of 4G and 5G connections on Vodacom's network in South Africa increased significantly, as shown in Figure 8. Prior to 2023, fewer than 40% of Vodacom's mobile connections were on 4G or 5G. However, by the end of 2024, this figure had reached nearly 70%, reflecting a rapid shift toward enhanced mobile broadband technologies.

More broadly, the national share of 4G and 5G connections in South Africa has risen since early 2022, supported by a combination of public and private sector efforts. A key factor in this significant increase was the multi-band auction of mobile spectrum, which released substantial capacity in low and mid-bands.[29] This was followed by the launch of the Easy2Own financing scheme, which further supported uptake. A principal component analysis (PCA) was conducted to identify a control group of countries globally with similar baseline conditions. The results show that South Africa is outperforming its global peers in the proportion of 4G and 5G connections relative to total mobile connections following the national spectrum auction and the launch of the scheme. While this growth is mainly driven by the 2022 spectrum auction, the contribution of targeted programmes to improve handset affordability – such as Easy2Own – and other operator-led efforts is also important.

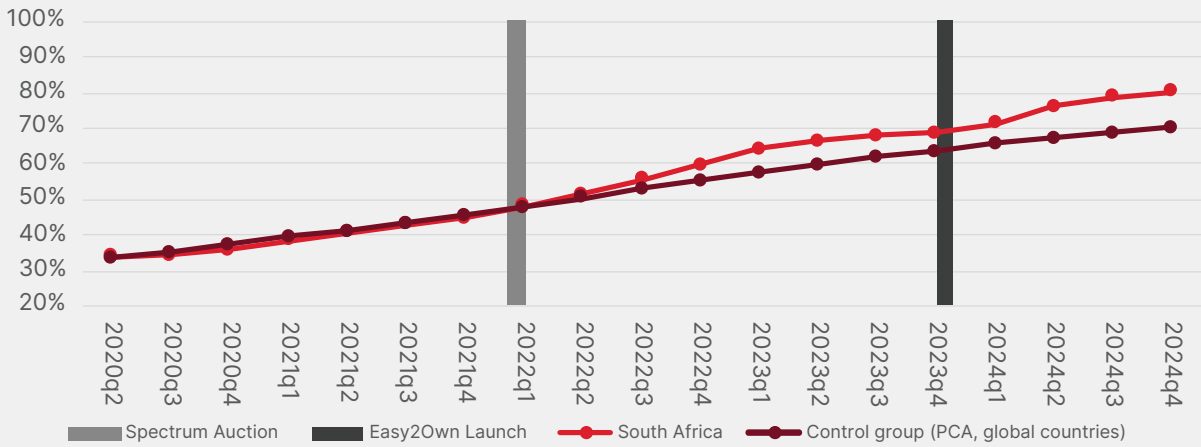
Figure 8 | Vodacom South Africa: Percentage of 2G, 3G, 4G and 5G connections



Source: GSMA Intelligence and Vodacom South Africa

[29] See GSMA (2022). South Africa auction supercharges African 5G.

Figure 9 | Proportion of 4G and 5G connections in South Africa and average comparable group of countries



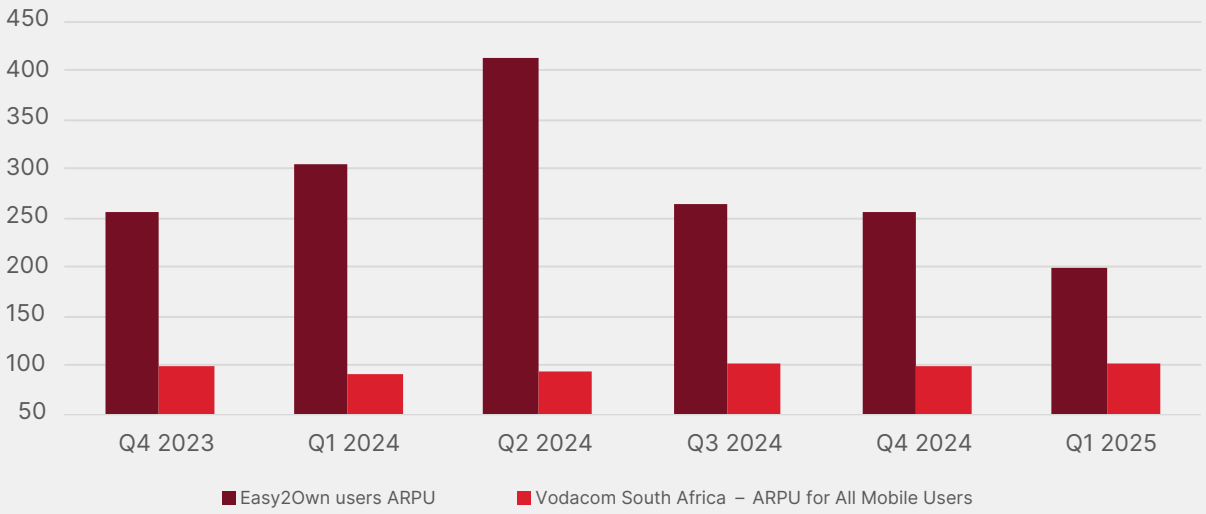
Source: GSMA Intelligence

In fact, an average increase of over 6 percentage points in 4G and 5G adoption is observed in South Africa compared to similar countries before and after the spectrum auction and the launch of the scheme. This difference becomes especially notable in Q4 2024, when South Africa exceeded 80% of total mobile connections on 4G and 5G – nearly 10 percentage points higher than in comparable countries. Also, considering the scheme's specific focus on low- and middle-income segments, the overall figures suggest that Easy2Own may have contributed to an increase of around 2 percentage points in mobile internet adoption among the country's lowest adult income groups.

Sustainability

Beyond the consumer benefits of an improved user experience – such as faster speeds, lower latencies and higher data allowances – handset financing schemes like Easy2Own also deliver meaningful returns for mobile operators. These initiatives can support revenue growth by increasing customer engagement, extending device lifecycles and boosting ARPU. For such schemes to be sustainable, they must generate sufficient returns on investment for the operator. While comprehensive figures are not publicly available, Figure 10 illustrates an upward trend in ARPU among Easy2Own users compared to the overall customer base, showing that revenue generated by these users is between two and more than four times higher than the average ARPU at the start of the scheme. This highlights the dual value of such initiatives – not only in helping to close the gender and digital divides, but also in strengthening the operator's financial performance at a time when traditional mobile monetisation strategies are reaching maturity. Notably, more than 3% of total incremental revenues in 2024 were attributed to this particular and nascent scheme.

Figure 10 | Quarterly ARPU Comparison: Easy2Own Users vs. All Customers (Q4 2023 Baseline = 100)



Source: GSMA Intelligence and Vodacom South Africa

Strengths, weaknesses, and lessons learned

Easy2Own's main strength lies in its flexibility, as it has very low requirements for both enrolment and repayment of the financed device. This design makes the programme inclusive and accessible, particularly for low- to middle-income users. It also ensures its financial sustainability by bundling device financing with mobile services activation, offering a range of options tailored to the customers' needs. This is made possible through the operator's ability to closely monitor customer behaviour using daily reports from network systems, customer relationship management (CRM) and charging platforms. These tools allow for continuous tracking of key performance metrics such as connection and adoption rates, ARPUs, outstanding instalment trends and bad debt. Additionally, the inclusion of 5G devices in the programme is a strategic step to encourage the transition to newer technologies, particularly among underserved populations.

A key challenge is that the scheme operates independently, without partnerships with other digital or financial institutions, which may limit its full potential. Moreover, the programme is currently focused on the operator's prepaid customer base. While this approach aligns with its goal of targeting lower-income segments, it also restricts the scheme's scalability and may lead to rapid maturity, considering the fast initial expansion it has already experienced.

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