GSMA

Breaking Barriers: Improving Handset Affordability For Greater Inclusion And Economic Growth

Contents

Background and Context

In 2024, the GSMA released the policy brief Improving Handset Affordability In Low- And Middle-Income Countries, which examined how addressing handset affordability can help expand digital inclusion in low- and middle-income countries (LMICs).

Building on that foundation, this complementary report - Advancing Handset Affordability for Greater Inclusion and Economic Growth - serves as a guide, translating the recommendations set out in the policy brief into practical insights and real-world examples from across regions. The report is designed to help policymakers, governments and telecom regulators turn strategy into action by illustrating how these recommendations are being implemented in diverse global contexts.

To support policy development and implementation, this report presents a structured framework, reorganising the eight recommendations from the original brief into two thematic areas which our research has shown contribute to handset affordability: **Ability to Pay and Willingness to Pay**.

Policy Recommendations To Advance Handset Affordability: Framework For Action

Ability to pay

Reducing Handset Cost

1. Remove sector-specific taxes and fees.
2. Refrain from imposing barriers to incentivise local production.

Increasing Access to Financing

3. Enable innovative financing mechanisms for handsets.
4. Carefully consider remote locking for handsets while protecting consumers.
5. Engage in public-private partnerships to de-risk handset financing.
6. Partner with the industry to provide device subsidies for targeted user groups.

Willingness to pay

7. Address barriers to willingness to pay.
8. Implement effective strategies to tackle handset theft and the trading of counterfeit devices.

Handset Affordability: One of the biggest barriers to mobile internet adoption in LMICs, but less so in developed markets

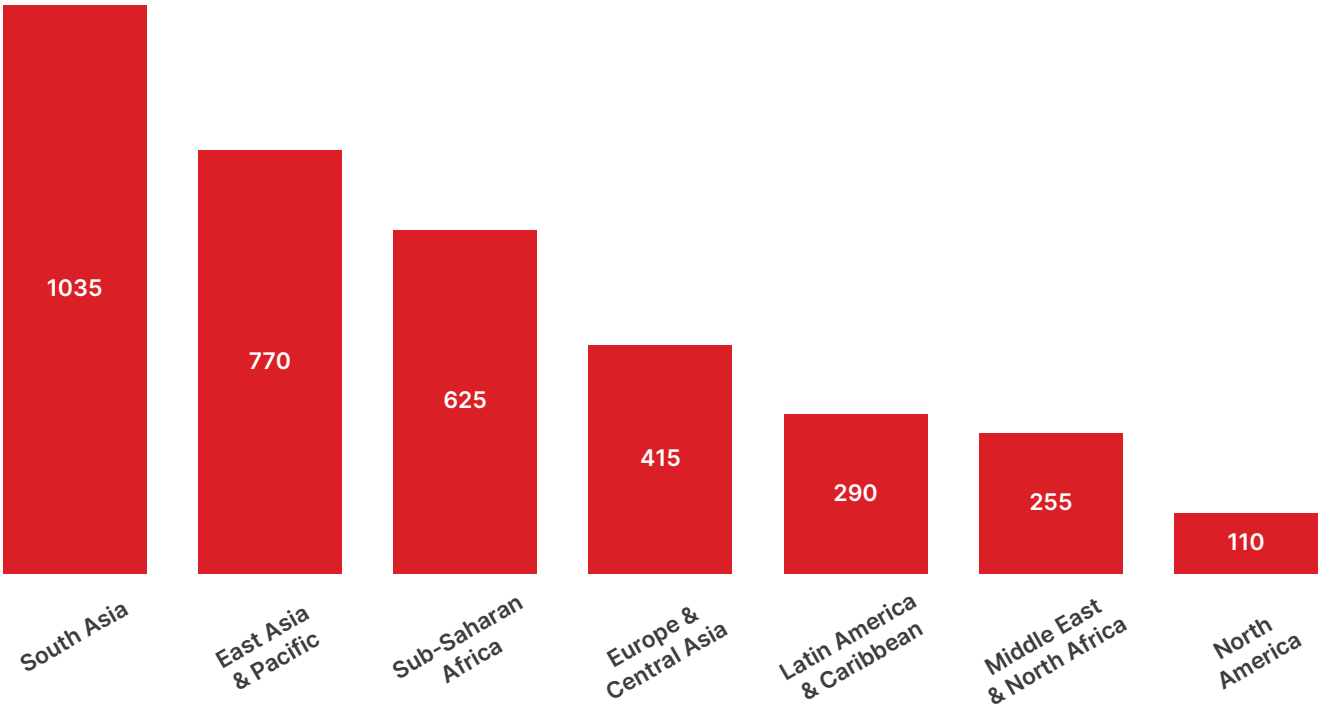
Over half of the world is now using a smartphone, and more than a billion people have started using one in the past five years – many connecting to the internet for the first time through these devices[1]. Smartphones often serve as a gateway to mobile internet use. However, despite their growing reach, mobile internet adoption remains uneven: while 75% of people in Europe and Central Asia are mobile internet subscribers, this falls to 27% in Sub-Saharan Africa[2]. In high-income markets, only a small minority remain without internet-enabled handsets – primarily older individuals. For example, in the US, 98% of adults own a mobile phone, and 91% own a smartphone[3].

In low- and middle-income countries (LMICs), where overall smartphone adoption remains limited. Women usually experience the affordability barrier more acutely than men, due to lower average incomes, lower access to external sources of finance and less financial independence. Women in LMICs are 14% less likely than men to own a smartphone, translating to 230 million fewer women with access. In total, 945 million women in LMICs still do not own a smartphone, significantly limiting their ability to access mobile internet and the essential services it enables[4].

Access to internet-enabled devices is a key step towards mobile internet adoption and use. Mobile internet adoption has been shown to reduce poverty and increase GDP. For instance, according to a study by ITU, a 10% increase in mobile broadband penetration in Africa could result in a 2.5% rise in GDP per capita.[5] The impact of connectivity on GDP rises by around 15% when networks are upgraded to 3G, and by about 25% when moving from 2G to 4G[6]. Moreover, closing the usage gap could add an estimated $3.5 trillion in additional GDP from 2023-2030, most of which would be in LMICs where the vast majority of the unconnected live. More than $1.3 trillion in additional GDP would come from closing the gender gap in mobile internet adoption alone[7].

1 57% of global population: GSMA, State of Mobile Internet Connectivity 2024
2 GSMA, State of Mobile Internet Connectivity 2024
3 PEW Research Centre, Mobile Fact Sheet, 2024
4 GSMA, The Mobile Gender Gap Report 2025, 2025
5 GSMA and World Bank, The poverty reduction effects of mobile broadband in Africa: Evidence from Nigeria, December 2020
6 GSMA Intelligence, Mobile technology: two decades driving economic growth, 2020
7 GSMA, State of Mobile Internet Connectivity 2024

Figure 1 Breakdown of additional global GDP by region ($bn) per region



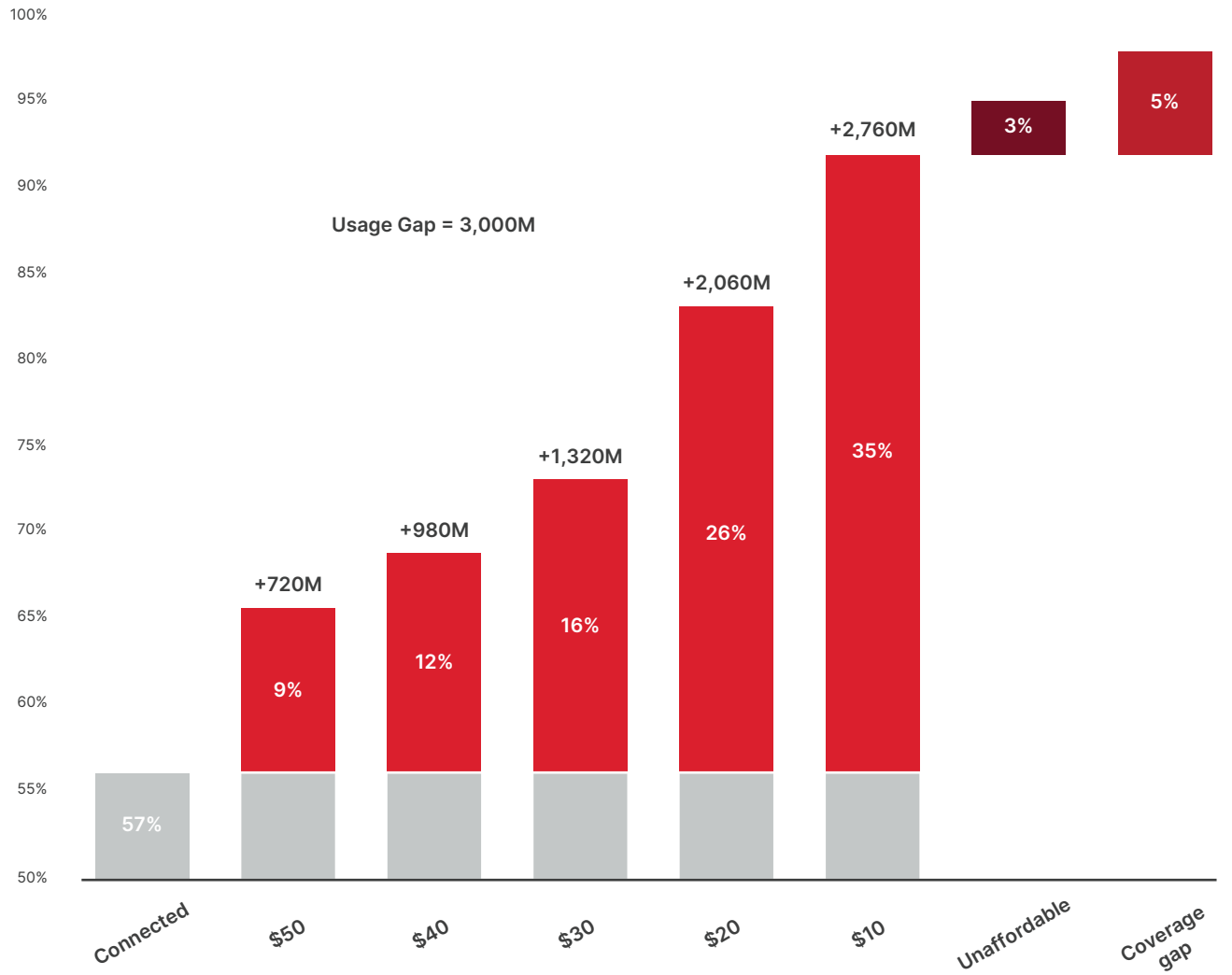
Closing the usage gap by 2030 in SSA could add around $625 billion in additional GDP of which $170 billion would come from closing the gender gap.

Source: SOMIC 2024 & GSMAi

Affordability of handsets remains the single most cited barrier to mobile internet adoption among mobile users aware of it but do not use it in LMICs[1]. A recent GSMA study found that if devices were priced at $20, it could increase mobile internet adoption by up to 26% (2.06bn new mobile internet users)[2].

[8] GSMA, Improving Handset Affordability In Low- And Middle-Income Countries, 2024
[9] GSMA, Analysis to improve handset affordability, GSMA Handset Affordability Coalition, 2024

Figure 2 Potential impacts of a reduction in device prices on mobile connectivity (affordability target at 20%)



Source: Analysis to improve handset affordability, GSMA Handset Affordability Coalition

International efforts are already underway to address handset affordability. These include initiatives from the World Bank's Digital Development Global Practice, the Broadband Commission Working Group on Smartphone Access and the GSMA Handset Affordability Coalition.

Among users who have adopted mobile internet, many want to use the internet more, but face barriers to further use, including safety and security concerns, affordability and the connectivity experience. The World Bank defines this as the 'consumption gap', where people adopt the internet, but their usage remains low which is in part because they are not using a smartphone or high-speed (4G/5G) networks [1]. This is critical because properly realising the opportunities related to business, education and government services requires a internet-enabled handset. In high-income countries, handset affordability primarily enhances the quality of internet use, while in LMICs, it both improves quality and enables access in the first place.

[10] Broadband Commission, Strategies Towards Universal Smartphone Usage, 2022

What do we mean by ‘handsets’?

The focus of this report is on devices that are ‘internet-enabled.’ This broadly breaks down into two categories:

- Smartphones: a mobile handset enabling advanced access to internet-based services and other digital functions, through platforms, such as Android and iOS, and supports a broad range of applications created by third-party developers.
- Smart feature phones: A phone that has an operating system that supports a range of applications created by third-party developers, formatted to work on a smaller screen, and accessed via a nine-key layout, not a touchscreen.

This report presents some notable and innovative policy examples from around the world aimed at strengthening handset affordability. It includes lessons from industry-led initiatives and an overview of GSMA tools and resources to support implementation and scaling. While examples span both high-income and LMICs, the insights are designed to be broadly applicable and adaptable.

Addressing handset affordability is critical, not only for digital inclusion but also for unlocking significant economic and social impact. Achieving this will require coordinated action across governments, industry and development partners.

Improving Handset Affordability Requires Addressing Both People's Ability and Willingness to Pay Across LMICs And Developed Markets

Improving handset affordability is more complex than simply focusing on the total cost of an internet-enabled device. Addressing the issue requires addressing two distinct but complementary concepts: consumers' 'ability to pay' and their 'willingness to pay'.

'Ability to pay' refers to whether a consumer has sufficient resources to purchase a device, shaped by factors such as income, wealth and access to credit. 'Willingness to pay', by contrast, reflects the value a consumer places on owning a smartphone or smart-feature phone, based on their preferences, perceived value and available alternatives. As a result, effective strategies must address both affordability constraints and the perceived relevance and usefulness of mobile internet.

Low-cost devices are available in many LMIC countries, yet affordability remains a challenge due to high levels of poverty and limited room for further price reductions (see next section). As such, policies in these contexts often focus heavily on addressing the ability to pay through cost reduction, subsidies or financing mechanisms that aim to spread out the cost of a device.

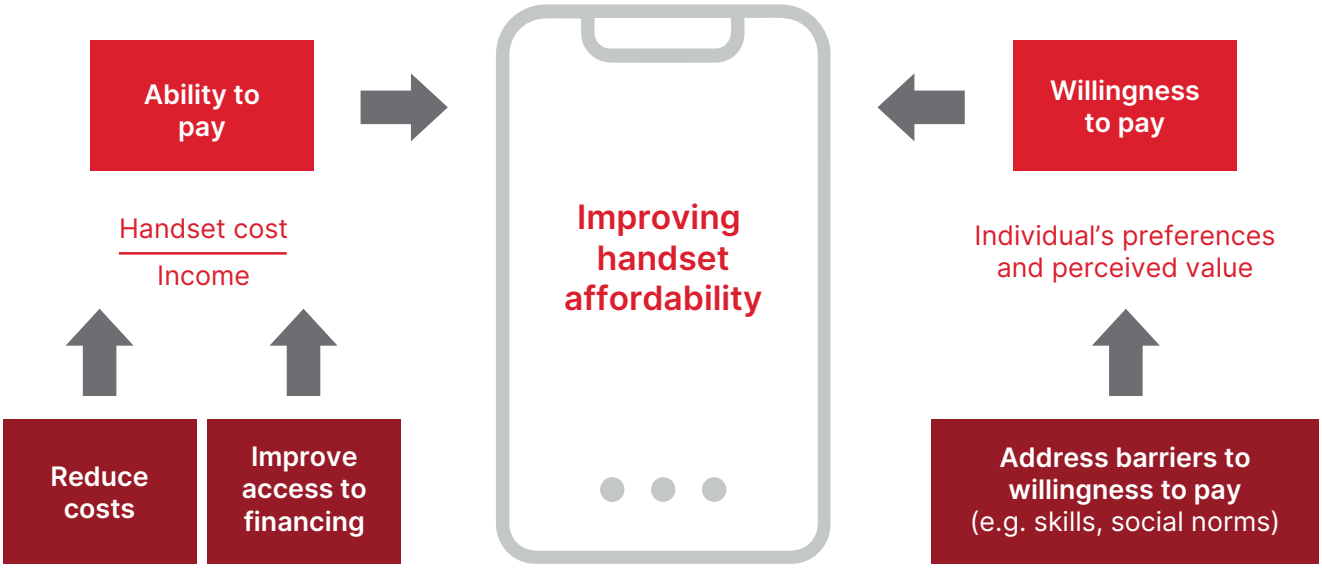
In high-income countries, where device financing is more accessible and cost tends to be less of an obstacle, willingness to pay can become a more prominent factor influencing smartphone adoption. This includes digital skills gaps among older populations or a lack of perceived relevance among certain groups. This highlights that beyond handset affordability – including access to financing – addressing other barriers is essential to driving broader adoption. Simultaneously, consumers in these markets may be willing to pay a premium when they perceive added value, such as environmental benefits or enhanced performance. For example, a study in South Korea found that users were willing to pay more for smartphones produced using renewable energy, reflecting how social and environmental values can influence purchasing decisions[1].

In LMICs, willingness to pay is also significant and is influenced by several overlapping factors, particularly social norms, perceived quality of the device and the value they place on connectivity. For example, someone may be able to afford a device thanks to financing (ability) but may not go on to purchase it due to low digital literacy or limited perceived benefit (willingness).

In rural India, ethnographic research revealed that young women's smartphone ownership and autonomy were significantly influenced by local cultural norms and gender expectations.[2] Therefore, a balanced approach is essential: one that focuses on lowering the effective cost of devices while also building demand and perceived value.

[11] Ju-Hee Kim, Hyo-Jin Kim and Seung-Hoon Yoo, Willingness to Pay Price Premium for Smartphones Produced Using Renewable Energy, 2019
[12] Erasmus University, Gendering of Smartphone Ownership and Autonomy among Youth: Narratives from Rural India, 2021

Figure 3 Framework for addressing handset affordability



Source: SOMIC 2024 & GSMAi

Advancing Handset Affordability: Examples

This table summarises the eight policy recommendations outlined in the policy brief Improving Handset Affordability In Low- And Middle-Income Countries, and provides a selection of real-world examples contained in this report, illustrating how different countries and stakeholders are working to advance handset affordability. While not presented as formal 'best practices', these examples aim to offer practical insights and inspiration for those designing or scaling similar initiatives.

Policy Recommendation	Countries	Organisation(s)	Example(s)
Ability to pay			
1. Remove import duties and other sector-specific taxes and fees on handsets.	South Africa	Government of South Africa	9% 'ad valorem' tax removed from lower-cost smartphones
	Kenya	Government of Kenya	Policy Shifts and Negative Impacts
	Colombia	Government of Colombia	VAT exemption for smartphones priced under USD 245
2. Refrain from imposing barriers to incentivise local production.	Bangladesh	Government of Bangladesh	Promotion of local handset production
	Rwanda	Mara Phones	Domestic smartphone production in Africa
	Argentina	Government of Argentina	Promotion of local handset production
	India	Government of India	'Make in India' initiative
	Ethiopia	Transsion	Smartphone manufacturing in Ethiopia
3. Enable innovative financing mechanisms for handsets.	Global	M-Kopa	Device Financing
	Africa	Baobab+	Device Financing
	Africa	Intelligra	Credit Scoring
	Kenya	Safaricom	Lipa Mdogo Mdogo
4. Carefully consider remote locking for handsets while protecting consumers.	South Africa	Vodacom South Africa	Easy to Own
	Global	PayJoy	Smartphone locking technology
5. Engage in public-private partnerships to de-risk handset financing.	Global	World Bank Group IDB Invest African Development Bank	De-risking products
6. Partner with the industry to provide device subsidies for targeted user groups.	Rwanda	Rwanda Digital Acceleration Project	RISA Device Access Fund
	India	Government of Gujarat	Gujarat Farmer Free Smartphone Scheme
	Dominican Republic	Dominican Telecommunications Institute (INDOTEL)	Canasta Digital Social
	Malaysia	Government of Malaysia	Jaringan Prihatin

> continued

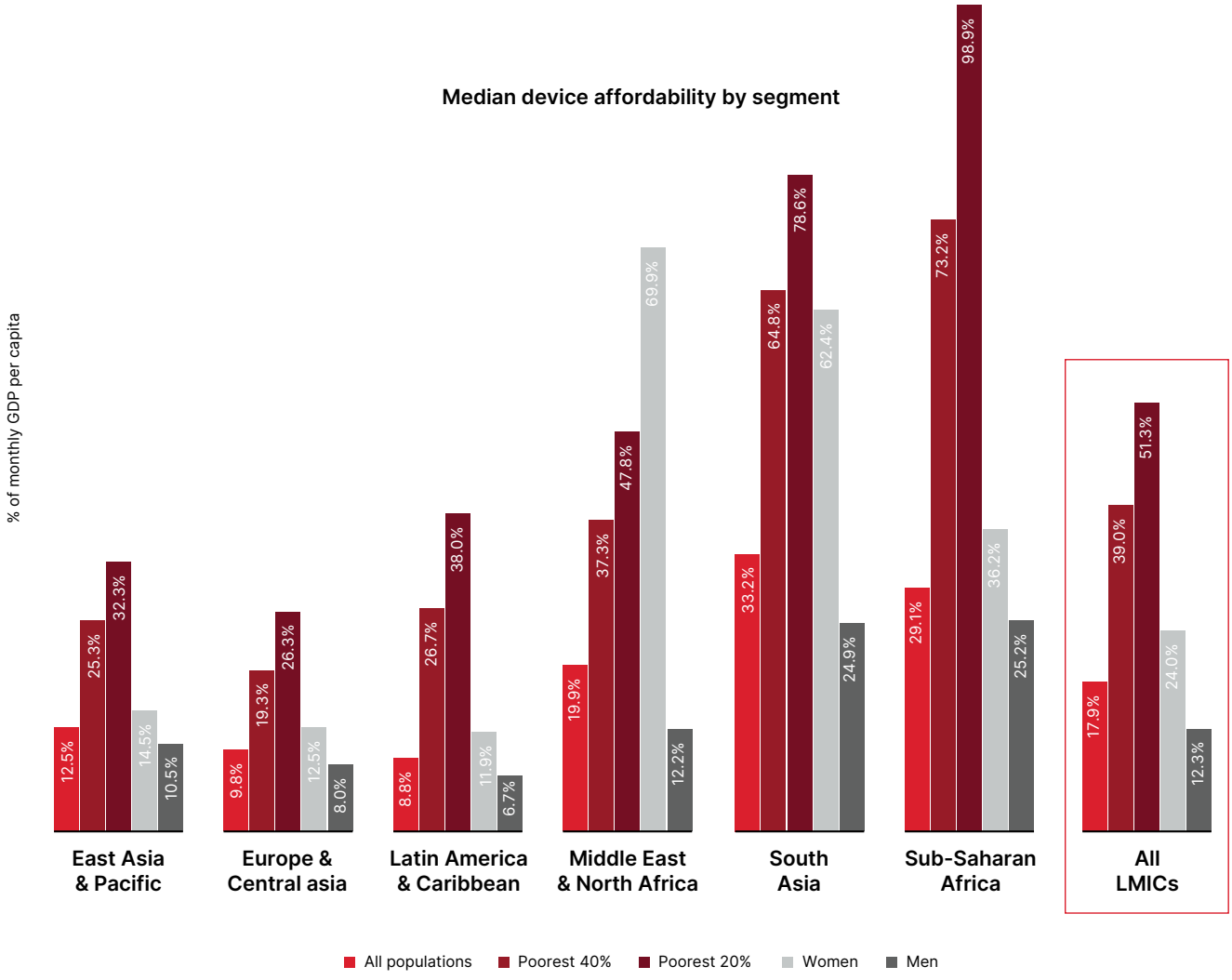
Policy Recommendation	Countries	Organisation(s)	Example(s)
6. Partner with the industry to provide device subsidies for targeted user groups.	Colombia	Government of Colombia	Internet Movil Social para la Gente
	Pakistan	Universal Service Fund	Benazir Income Support Program (BISP)
	Canada	Government of Canada	Connecting Families initiative
	USA	Government	Affordable Connectivity Program
Willingness to pay			
7. Address barriers to willingness to pay.	Brazil	Anatel	#FiqueEsperto Movement
	Kenya	Safaricom	M-PESA-related fraud
	Europe	EU	GDPR
	Singapore	Government of Singapore	PDPC regulations
	Kenya	Government of Kenya	Data Protection Act
	Global	Google	Family Link
	Global	Apple	Family Sharing
	Global	GSMA	Online Safety – MISTT
	USA	AT&T	Anti-cyberbullying Initiative
	Estonia	Government of Estonia	e-Government Services
	Benin	Government of Benin	e-Government Services
8. Implement effective strategies to tackle handset theft and the trading of counterfeit devices.	Pakistan	Telecom Authority of Pakistan	Blocking illegal handsets
	Malawi	Malawi Communications Regulatory Authority (MACRA)	Central Equipment Identity Register (CEIR)
	Ecuador	Telecommunications Ministry (MINTEL)	Type Allocation Code (TAC) list
	Tanzania	Tanzania Communications Regulatory Authority (TCRA)	CEIR (Central Equipment Identity Register)
	UK	UK Government	Mobile Telephones (Re-programming) Act

Ability To Pay

Affordability of mobile phones remains a persistent barrier to mobile internet adoption, as highlighted in several surveys by the GSMA, and it continues to disproportionately affect underserved populations in particular. As shown in Figure 4 below, the affordability of devices shows significant variation by region and population segment. In LMICs, the average cost of an internet-enabled handset is equivalent to 18% of monthly income. However, this figure rises sharply among low-income groups – reaching 39% for the poorest 40% and 51% for the bottom 20%. In Sub-Saharan Africa, where a quarter of the global unconnected population resides, the poorest 20% would need to spend 99% of their monthly income to purchase an entry-level device.

This section focuses on making handsets more attainable financially by lowering the cost of devices and easing the financial burden of purchasing them. It is subdivided into: reducing handset costs and increasing access to financing.

Figure 4 Affordability of entry-level internet-enabled device for poorest 20% and 40%, and men and women, by region in 2023



Source: GSMA, The State of Mobile Internet Connectivity Report, 2024

Reducing Handset Costs

Over the last couple of decades, competition and innovation have brought forth a wide range of low-cost internet-enabled handsets. The handset market is hugely competitive, with narrow margins across the entire value chain. As a result, there are now limited opportunities to further reduce the material and manufacturing costs of entry-level devices, which have already been significantly optimised.

The Bill of Materials (BoM) accounts for 50-70% of handset costs, meaning that any further reduction in device prices would require cuts to BoM. However, no single component makes up a large enough share to significantly lower the final retail price when optimised in isolation. Moreover, aggressive cost-cutting on key components can compromise functionality and degrade the user experience.

Figure 5 Bill of Materials (BoM) analysis

	Overall			Low-Cost 4G	Low-Cost 5G
	AVG	Low (Range)	High (Range)		
Display	~20%	15%	35%	~20%	~15%
Processor	~15%	10%	20%	10% to 15%	~20%
PCB/Casing	~15%	10%	20%	10% to 15%	~10%
Memory	~15%	10%	20%	20% to 25%	~20%
Camera	~10%	5%	20%	~10%	~15%
RF-Cellular	~10%	5%	15%	~10%	~5%
RF-Other	sub-5%	1%	5%	sub-5%	sub-5%
Sensors	sub-5%	2%	5%	sub-5%	sub-5%
Battery	sub-5%	1%	7%	~5%	~5%

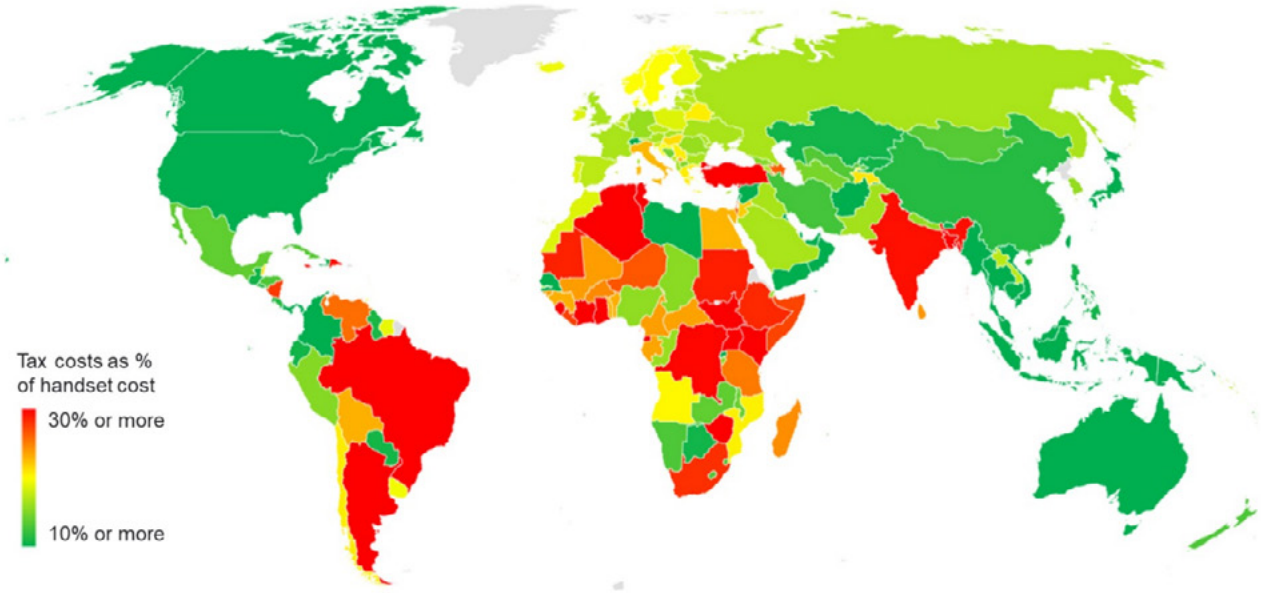
Source: GSMA, Analysis to improve handset affordability, 2024

Adding to this challenge is the evolution of operating systems, especially in LMICs. As OS updates continually increase RAM and storage requirements, BoM costs for entry-level devices are rising accordingly, forcing manufacturers to incorporate higher-specification components even in their budget offerings. This trend is likely to intensify with the introduction of AI-powered features that demand even more sophisticated hardware. Consequently, the delicate balance between affordability and meeting the evolving system requirements has become increasingly difficult to maintain. Left unaddressed, this could further widen the digital divide by limiting the availability of affordable internet-enabled handsets in emerging markets.In response, some manufacturers have introduced lower-end alternatives to smartphones for users in LMICs who cannot afford them. Smart-feature phones like those running KaiOS offer an alternative to smartphones, with non-touch screens, app support, GPS, 4G and WiFi capabilities. A notable example of the traction smart-feature phones are seeing is in India with the partnership between KaiOS and Reliance Jio to create the JioPhone. This affordable 4G device launched in 2017 and supports 22 Indian languages and includes popular apps through partnerships with local content creators[1]. Reliance followed this in 2021 with the JioPhone Next running a modified Android version. More recently, Vodacom South Africa launched the Cloud Phone, a $14 cloud-based device manufactured by Mobicel that functions as a 'smartphone lite', allowing access to popular applications like YouTube, TikTok and Facebook through cloud technology.

Devices like smart-feature phones and cloud-based handsets play a valuable role in addressing handset affordability, particularly for first-time internet users. However, achieving long-term digital inclusion will require large-scale and systemic measures. These include reducing handset taxation, supporting local manufacturing where feasible, and scaling innovative financing models to make smartphones more accessible to low-income populations.

[13] GSMA, Making internet-enabled phones more affordable in low and middle-income countries, April 2022

Figure 6 Tax costs as % of handset cost



Source: GSMA, Analysis to improve handset affordability, 2024

1. Remove sector-specific taxes and fees

Tax represents a significant share of the total cost of buying a handset (see Figure 6 below). In certain countries – particularly in Sub-Saharan Africa, South Asia and South America – taxes can increase the handset cost by more than 30%. In addition tostandard value-added tax or sales tax (levied in most jurisdictions), many governments also impose import duties and other sector-specific taxes on mobile devices[1].

While taxes on mobile devices may offer short-term revenue, they often limit digital inclusion. Reducing or removing these taxes makes handsets more affordable –especially for low-income users – and promotes mobile internet adoption. In the long term, broader internet access drives economic growth, job creation, and increased tax revenue. For instance, a GSMA study found that eliminating import duties on handsets in Madagascar could reduce handset price and boost mobile internet adoption by 1.6%. This increase in internet adoption would raise productivity across the economy and expand GDP by $71 million annually and create 5,500 jobs. The resulting economic growth would, in turn, generate an additional $9 million in annual tax revenue[2].

A recent example of forward-thinking policy comes from South Africa, where, in 2025, the government removed the additional 9% 'ad valorem' tax from lower-cost smartphones. This targeted measure explicitly recognised the vital role of affordable devices in expanding internet access and use, particularly among the underserved population, and their importance for inclusive economic development[3].

This illustrates one of several policy approaches governments are using to address handset affordability. While some apply tax reductions across all device categories to stimulate widespread adoption, others opt for targeted exemptions focused on specific market segments. In South Africa, the threshold was set at ZAR 2,500 (approx. USD $136). In Colombia, VAT was removed for devices priced under USD $245 (see sidebar 'Colombia's 2017 VAT exemption on smartphone penetration rates'), while in Pakistan,

[14] GSMA, Analysis to improve handset affordability, June 2024
[15] GSMA, Reforming Mobile Sector Taxation in Madagascar, 2019
[16] Reuters, South Africa to remove luxury duty on lower value smartphones, March 2025

import taxes are tiered based on handset value, offering lower rates for more affordable models[4].

While this kind of targeted approach can help channel public support, broader tax relief, such as that adopted by Kenya, can also be effective in rapidly expanding access. In 2009, the government eliminated the 16% VAT rate on mobile phones, acknowledging that mobile phones were a necessity, not a luxury. The impact was immediate: handset sales surged by 200%, and mobile penetration rose from 50% to over 70% in just a year [5]. However, Kenya's experience also provides a cautionary tale. In 2013, the 16% VAT rate was reinstated as part of a broader tax law revision, resulting in handset prices rising by 16% overnight, with consumers turning en masse to the grey market to seek cheaper devices, often smuggled, counterfeit or lacking warranties. Nokia reported that grey-market handset sales in Kenya jumped from 20% to 60% of the total. This undermined legitimate retailers, eroded tax revenue and exposed consumers to low-quality or unsupported devices[6] .

This case underscores the importance of policy consistency: once consumers gain access to affordable handsets, reintroducing taxes can reverse progress, harm trust and fuel illicit trade. Mobile devices should be treated as essential digital infrastructure, not as luxury goods to be taxed opportunistically.

Most developed countries typically apply only standard VAT or sales tax to mobile devices, with no additional levies. This reflects a general recognition that mobile phones are everydayconsumer essentials, treating connectivity as a public good. In the European Union, the United States and other high-income markets, smartphones are taxed at standard rates, without any sector-specific excise duties. Some governments in these markets go a step further, offering subsidy programmes or voucher schemes to reduce handset costs for low-income households, further supporting digital access (see section: 'Partner with the industry to provide device subsidies for targeted user groups').

Developing countries could benefit significantly by aligning with the approach adopted in developed countries. Removing excessive device taxation is often one of the most immediate and impactful steps governments can take to improve affordability and advance their digital inclusion agendas.

[17] GSMA, Reforming mobile sector taxation in Pakistan, 2019
[18] GSMA, Mobile telephony and taxation in Kenya, 2011
[19] ITweb, Tax causes Kenya's grey phone market to balloon, 2014

Colombia's 2017 VAT exemption on smartphones under USD $245

In 2017, the government of Colombia removed the sales tax (VAT) on mobile devices under USD $245 to increase smartphone ownership among ordinary citizens. Following this decision, smartphone adoption increased, with strong anecdotal evidence that this was a result of the tax cut.

A 2024 paper tried to estimate this in the Colombian context using the Synthetic Control Method (SCM) applied to country-level panel data from 2009 to 2021[1]. This involved constructing a 'synthetic' version of Colombia – an estimate of what would have happened without the tax intervention – by combining data from 14 comparable Latin American countries.

The key findings were:

- In 2021, smartphone penetration in Colombia reached 66.8% in 2021, compared to 59.2% in the synthetic version. A 7.6 percentage point increase, representing a 12.8% relative gain attributable to the tax policy.
- The policy appears to have substantially accelerated smartphone adoption, validating the government's strategy of treating mobile access as a public good rather than a luxury.
- Importantly, the paper also included a macroeconomic assessment: although the VAT exemption led to an estimated USD $640 million in forgone tax revenue over five years, this was projected to be offset by a USD $3.79 billion increase in GDP, suggesting that for every dollar in tax revenue forgone, the economy gained nearly six dollars in GDP.

This case provides rigorous evidence that handset tax policy can be a powerful tool for promoting digital inclusion, especially when targeted at the most price-sensitive segment of the population. It also shows that the economic benefits of connectivity can far outweigh the short-term fiscal loss, making a strong case for similar reforms in other LMICs.

2. Refrain from imposing barriers to incentivise local production

Most smartphones are manufactured in a few countries. Despite a slight decline in recent years, China still manufactures 70-80% of smartphones. Other Asian nations, including Vietnam and India, also account for a significant share, benefiting from well-established supply chains, skilled labour and industrial capacity [1].

By contrast, most LMICs face significant challenges in developing local manufacturing capacity. These include limited economies of scale, high capital requirements and a heavy reliance on imported components – often from China. Still, a few countries have pursued local production to create jobs, enhance supply chain resilience and stimulate exports. Bangladesh adopted a 'carrot and stick' approach: lowering taxes on components while significantly increasing import duties on fully built devices. In 2023, imported handsets faced a total tax burden of 58.6%[2], while locally assembled phones were taxed at 20% to 25% [3]. This spurred the growth of a local assembly industry, as locally assembled models became notably cheaper. However, high import duties also led to higher costs for certain models and encouraged illegal imports, raising concerns about smuggling and

[20] Sindhura, Gwaka & Yoo, Estimating the Impact of Value Added Tax Exemptions on Smartphone Penetration in Colombia Using the Synthetic Control Method, July 2024
[21] Asia Pacific Foundation of Canada, Despite De-risking, China's Role in Global Smartphone Supply Chains Remains Resilient, March 2024
[22] GSMA, Review of mobile taxes and fees in Bangladesh, 2023. In addition to customs duties, imported mobile handsets are subject to other taxes: advance income tax (5%), advance tax (5%), regulatory duty (3%), and VAT (15%). As a result, the total tax incidence on imported mobile handsets is 58.6% as reported by Bangladesh customs. Source: National Board of Revenue - Bangladesh customs, duty calculator, visited on 21 March 2023
[23] Invest Bangladesh, Bangladesh's Smartphone Production Surges Amid Market Challenges and Growth Potential, 2024

reduced competition [4] . While incentives can successfully stimulate local production, over-reliance on import restrictions risks harming affordability and market diversity.

Bangladesh's partial success contrasts with more difficult experiences elsewhere. For example, Mara Phones – launched in Rwanda in 2019 as a product of Africa's first smartphone manufacturing plant – received government backing and set ambitious goals. Yet the company has struggled to scale, gain market share or launch a diverse product range, largely due to cost disadvantages and competition from global players [5].

A recent policy shift in Argentina demonstrates a nuanced approach. In 2025, the government announced a phased elimination of the 16% import tariff on mobile phones, cutting it to 8% immediately, with full removal scheduled for January 2026. It simultaneously reduced internal taxes on electronic goods from 19% to 9.5% for imported devices, and from 9.5% to 0% for those manufactured domestically in the Tierra del Fuego region. This dual strategy aims to lower handset prices for consumers, addressing affordability, while still incentivising local production through targeted tax relief. The reform seeks to curb smuggling, align local prices with regional standards and support industrial activity without relying solely on protectionist measures [6].

These examples show that there is no one-size-fits-all approach. Governments must weigh the trade-offs between affordability and local industrial development through careful cost-benefit analysis. Instead of relying on protectionist measures, they can attract manufacturing investment through low-interest loans, targeted tax incentives and supportive regulation, ensuring that incentives are transparent and accessible to both domestic and international investors.

'Make in India' initiative

The 'Make in India' initiative, launched in 2014, aims to turn the country into a global manufacturing hub by attracting investment and fostering innovation through incentives such as tax benefits and production-linked subsidies. Spearheaded by the Department for Promotion of Industry and Internal Trade (DPIIT), this initiative seeks to boost industrial growth, generate employment and attract foreign direct investment (FDI).

The growth of smartphone manufacturing over the last decade represents a standout success. Fiscal incentives, such as the Production Linked Incentive Scheme, and accompanying regulatory reforms have attracted investments from major corporations like Apple, Samsung, Xiaomi, Oppo and Vivo, who have established or expanded operations domestically. According to the industry association ICEA, India has gone from importing 78% of its mobiles in 2014 to only 3% a decade later [1].

However, over this period, the government has also brought in protectionist measures such as increasing import duties on smartphones and key components. For example, in 2018, they increased the duty on mobile phones from 15% to 20% with the explicit goal of promoting domestic manufacture. [2] India's huge market size made this viable; smaller countries might not see the same success and could increase prices without achieving viable local production.

[24] Counterpoint, Impact of Rising Import Duties on Bangladesh's Handset Market, 2019
[25] WeeTracker, The Report Card Of Africa's Most Eminent Smartphone Ambition, March 2022
[26] Buenos Aires Times, Argentina to scrap mobile phone import tariffs and cut tech taxes, 2025
[27] India Cellular & Electronics Association, India's Mobile Phone Production Nears INR 20 Lakh Crore in a Decade of Unprecedented Growth, March 2023
[28] Government of India, To Incentivise Domestic Value Addition And Make In India, Customs Duty Increased On Mobile Phones And Tv Parts, Feb 2018

Transsion manufacturing plant in Ethiopia

Transsion – a Chinese mobile phone manufacturer behind popular brands such as Tecno, Itel and Infinix – holds a leading share of the smartphone market across Africa [1].

In 2011, the company invested in Ethiopia by establishing a manufacturing plant in the Eastern Industrial Zone near Addis Ababa. This decision was supported by Ethiopia's favourable policies, including tax incentives, access to industrial parks and a growing consumer market [2].

The factory, which produces millions of devices annually, aligns with Ethiopia's goal of becoming a manufacturing hub in Africa and has created thousands of jobs while boosting local production. Since its launch, every Transsion phone sold in Ethiopia has been assembled locally [3].

Increasing Access To Financing

In high-income markets, consumers rarely pay full price for a smartphone upfront. Financing is ubiquitous, whether through carrier contracts (12/24-month instalment plans bundled with service), credit card purchases or device leasing programmes. These financing mechanisms (often with zero or low interest) spread out the cost, making even expensive smartphones affordable on a monthly budget. Moreover, these countries have extensive consumer credit infrastructure: most people have bank accounts, credit history or access to instalment plans, and telecom operators can safely offer postpaid contracts knowing credit bureaus and incomes are in place. In LMICs, by contrast, most are prepaid users and either unbanked or lacking a formal credit history [1].

Traditional bank loans or credit cards for buying a phone are out of reach for most. Mobile operators historically sold service on a prepaid (pay-as-you-go) basis, and selling handsets on credit was viewed as too risky (customers might default and disappear). Consequently, financing options for handsets in LMICs have been limited: consumers have had to save up and pay cash, which is a huge hurdle when a phone costs several months' income. Women, for example, are much less likely to own a smartphone than men as they often have more limited financial independence, lower incomes, and less access to external sources of financing. In recent years, however, innovative models and approaches have emerged: 'Buy Now, Pay Later' (BNPL) and Pay-As-You-Go (PAYG) instalment schemes, de-risking instruments such as locking systems and alternative credit scoring using telecom data. These innovations aim to bridge the financing gap for the unbanked and underbanked populations in LMICs.

29 IDC, Africa's Smartphone Market Surpasses Feature Phones for the First Time in Q1 2024, June 2024
30 EIC, Industrial Parks in Ethiopia: Incentives Package
31 CNN, The Chinese phone giant that beat Apple to Africa, October 2018
32 Canalys, Device financing – a catalyst for smartphone growth in Africa, 2024

Figure 7 Buy Now, Pay Later (BNPL) and Pay-As-You-Go (PAYGO) models

	Buy Now, Pay Later (BNPL)	Pay-As-You-Go (PAYGO)
Credit assessment	Heavy reliance and focus on robust, formal credit assessment checks using customer KYC data	Negligible focus on credit assessment
KYC Journey	MNOs often have pre-existing information of eligible users partially fulfilling KYC requirements. They often require extra official documentation (bank account statements, workplace details etc.)	KYC journeys are often very short and typically do not require more than a phone number and official ID
Instalments	Fixed, equal, monthly instalments	Flexible payment plans with users able to pay variable amounts on a daily, weekly, or monthly basis depending on usage
Late payment penalties	Can lead to late payment penalties in the form of extra charges	Device gets locked until payment is cleared but no additional financial penalties
Target user	High KYC and credit assessment checks result in a focus on those with formal credit histories, digitally and/or financially active. MNOs focus on their own customers	Caters to unbanked, underserved individuals due to little focus on formal credit history checks

Source: GSMA, Smartphone device financing: A catalyst for mobile money growth in an era of fintech apps, 2024

3. Enable innovative financing mechanisms for handsets

In many LMICs, smartphone adoption is critically hindered by consumers' lack of formal credit histories, limiting access to traditional lending needed for smartphone purchases. This financial exclusion creates a barrier to digital inclusion, even where mobile networks are widely available. In response, a range of alternative financing models has emerged to bridge the affordability gap. These fall broadly into two categories: fintech-led solutions and telco-led schemes:

Fintech-led model: open to all

These approaches typically use device-locking technology and flexible payment models to provide smartphones to anyone who can afford the initial down payment, regardless of mobile operator:

- M-Kopa, originally established in 2011 to finance solar home systems, has adapted its flexible payment model to smartphones. It allows customers to purchase handsets through small daily, weekly or monthly instalments, with the device serving as collateral. [1]
- Baobab+ has demonstrated the effectiveness of pay-as-you-go smartphone financing across multiple African markets. Its model links energy solutions with digital access, expanding device ownership in underserved areas.
- Intelligra is another African platform connecting OEMs, financiers and mobile operators. It enables affordable device access by combining proprietary credit scoring, device-locking technology and in-store onboarding, offering an ecosystem-wide solution tailored to the realities in SSA.

[33] GSMA, M-KOPA: Applying the pay-as-you-go model to smartphones in Africa, May 2022

Telco-led model: Safaricom Lipa Mdogo Mdogo

In 2020, Safaricom launched an innovative smartphone financing programme in Kenya to expand access to mobile internet among low-income, prepaid users. To qualify, customers must be 18-75 years old, have been active on the Safaricom network for at least one year and pass a creditworthiness threshold based on Safaricom's proprietary credit scoring model – an alternative assessment built on mobile usage and M-PESA transaction history.

The programme enables eligible customers to acquire smartphones through affordable daily, weekly, or monthly instalments over 12 months, starting from just KSh 20 per day (approximately USD $0.20), making smartphones financially accessible to a wider customer base. Safaricom partnered with Google to supply low-cost Android smartphones tailored to this market.

The flexible payment structure is built on M-PESA's ubiquitous mobile money platform. Customers only pay a small initial deposit and then make regular micropayments. Instead of requiring collateral, Safaricom uses a non-intrusive device locking system: if a user misses payments, the handset is temporarily disabled until they catch up, offering a respectful and flexible enforcement mechanism.

Since its launch, the programme has financed over two million smartphones (as of 2024), significantly contributing to digital inclusion by helping bridge the device affordability gap [1].

This case illustrates the powerful role of telco-led financing models to scale device access by leveraging existing mobile money platforms, data-driven risk assessments and ecosystem partnerships without relying on formal banking systems.

These fintech solutions are vital in contexts where traditional financial systems fail to serve large segments of the population. They also show that context-sensitive financing innovations, grounded in behavioural insights and mobile money, are essential to narrowing the digital divide. -By contrast, in developed markets, most people have formal banking and established credit histories. As a result, innovative financing mechanisms are less necessary due to the plethora of traditional consumer finance options, such as bank loans, instalment payments, long-term 0% financing, etc. For example, in the United States, T-Mobile's Smartphone Equality Project gives pre-paid customers access to device financing – with no credit check or down payment – after 12 consecutive months of on-time bill payments.

Innovative handset financing models are proving essential to closing the digital divide in LMICs. By leveraging mobile money, behavioural credit scoring and device-locking technology, these solutions offer viable alternatives to traditional lending, empowering millions to afford smartphones. To reach the most underserved populations, sustained innovation, government support and cross-sector collaboration are essential. Alternative credit assessments – such as those based on mobile usage data – can significantly expand access to financing where formal credit histories are lacking. Governments should lift sector-specific restrictions that hinder mobile operators from responsibly developing credit scores while putting safeguards in place to protect user privacy and prevent over-indebtedness. Recognising these alternative credit scoring methods – such as through integration with central credit bureaus – would also allow a wider range of providers to scale inclusive device financing solutions across markets [2].

[35] GSMA, Improving Handset Affordability In Low- And Middle-Income Countries, 2024
[34] ITWeb, Safaricom device financing scheme hits new milestone, 2025

4. Carefully consider remote locking for handsets while protecting consumers

Remote handset locking refers to the ability to remotely disable or limit a mobile device if certain conditions are not met. It is commonly used in device financing schemes as a way to secure the asset and ensure repayment.

Regulatory frameworks should recognise the dual nature of remote locking technology, balancing financial inclusion benefits against necessary consumer protections. In LMICs, remote locking has become instrumental in expanding device financing initiatives, through models like PAYGO, which allows devices to be temporarily disabled when payments are overdue. This risk management approach enables providers to extend financing options to previously underserved low-income customers.

For example, Vodacom South Africa's Easy to Own programme leverages device-locking technology to offer entry-level smartphones bundled with data allowance for minimal recurring payments after an initial deposit. PayJoy also uses locking technology to secure financed smartphones until payment is completed. This model effectively provides collateral for loans and has helped connect more than 13 million unbanked and underbanked individuals across APAC, LATAM and SSA to smartphones, while also helping them to build credit histories [3] .

However, regulatory approaches to device locking vary widely across markets. In many developed economies, it is common for subsidised or financed devices to be temporarily restricted, such as SIM-locking to a specific carrier. Yet, some jurisdictions have moved to ban these practices in the name of consumer rights and market competition. For example, the UK prohibits device locking by mobile operators, prioritising user freedom and portability [4].

While well-intentioned, such bans may limit the viability of smartphone financing models, especially for cost-conscious consumers or those with limited credit histories, by removing a key risk-mitigation tool. Policymakers must carefully weigh these trade-offs to ensure that consumer protection measures do not undermine financial inclusion objectives in digital device access, particularly in underserved populations.

[36] Payjoy, Impact Report 2024: Impact Report, 2024
[37] Ofcom, Mobile companies now banned from selling locked handsets, December 2021

FCC and handset unlocking

In 2024, the US Federal Communications Commission (FCC) proposed new rules requiring mobile service providers to unlock customers' mobile phones within 60 days of activation. This initiative aims to standardise unlocking policies across the industry, thereby enhancing consumer choice and flexibility. However, operators like AT&T and T-Mobile have expressed opposition to this proposal, arguing that the ability to lock devices is essential for offering financing options and promotions, a practice that supports device affordability for low-income and credit-limited customers [1].

Figure 8 How the device locking mechanism works

Source: AfricAccess Group, 2025

Device locking mechanisms are remote disablement systems used by lenders to enforce payment compliance. When borrowers miss payments on financed devices, the system can disable the device entirely or apply graduated restrictions (e.g. blocking internet access but allowing emergency calls). Proponents argue that such systems reduce default risk and expand financing options, although consumer protection and privacy remain concerns.

[38] Phoenix Centre, FCC Overreach In Mobile Device Regulation? A Legal and Economic Analysis, 2024

5. Engage in public-private partnerships to de-risk handset financing

In developed economies, large-scale government involvement in handset financing is uncommon. The private sector, including mobile operators, banks and retailers, generally handles device financing since most consumers have credit or payment capacity.

In LMICs, lenders may hesitate to offer financing to low-income or first-time buyers because of the risk of default. The customer might not pay back the full amount, leaving the financier with a loss (even with device locking, some risk remains, e.g. the device might be lost, or the customer disappears). In markets with limited credit data, the perceived risk is even higher.

Governments and public partners, particularly in LMICs, can play a critical role in de-risking handset financing by sharing financial risks with private credit providers. Governments and Development Finance Institutions (DFIs) can step in to share or assume part of the credit risk, thereby incentivising private lenders to offer handset financing to unbanked or underserved populations.

For example, a government could provide a second-loss guarantee on a portfolio of handset loans, meaning if a certain percentage of loans default beyond a threshold, the government covers those losses up to a cap. This kind of guarantee or insurance gives private lenders the confidence to lend to demographics they would otherwise consider too risky. Essentially, the public sector absorbs the tail risk, enabling the private sector to unlock credit for more people.

Organisations such as the World Bank Group, IDB Invest and the African Development Bank (ADB) offer de-risking products as part of their portfolio. While financing is generally more accessible in developed markets, certain low-income groups still face barriers, suggesting that similar risk-sharing mechanisms could also be beneficial in those contexts.

Financial instruments from DFIs that could be adapted to support smartphone affordability

DFIs offer a range of financial tools that could be adapted to support smartphone affordability. By reducing the risk for lenders and encouraging private investment, these instruments could help expand access to devices in underserved markets:

- **Risk Sharing Facility (RSF):** A type of guarantee in which the DFI shares part of the losses if a borrower defaults. This reduces the risk for banks and lenders, making them more willing to offer loans, such as for smartphone purchases [1].
- **Blended Finance:** This approach combines public or donor funds with private capital to make investments more attractive in underserved areas. In this context, blended finance could be used to cover first/second losses or subsidise interest rates, reducing the effective cost of devices for end users [2] [3].
- **Non-Banking Financial Institution (NBFI) asset financing:** DFIs can offer direct loans or credit lines to NBFIs, enabling them to expand lending to underserved individuals or small enterprises, for example, providing smartphone financing to customers without formal credit histories. [4] [5]

[39] IFC, Structured and Securitised Products: Risk Sharing Facility
[40] OECD, Blended finance
[41] World Bank, The Why And How Of Blended Finance, 2020
[42] World Bank, Global Financial Development Report 2019/20, 2020
[43] World Bank, The Role of Non-Bank Financial Intermediaries, 1998

6. Partner with the industry to provide device subsidies for targeted user groups

For the poorest and most marginalised populations, the most direct way to overcome the affordability barrier is through device subsidies, reducing the price the end-user pays, using public or donor funding to cover the difference. In this context, partnering with the industry means governments working closely with operators and manufacturers – who bring critical insights into distribution, targeting and user needs – to ensure subsidy programmes are efficient and impactful [1].

In LMICs, such subsidies are particularly relevant as a last-resort option for individuals who remain unable to access smartphones, even when device financing mechanisms are available. While not a long-term solution, targeted subsidies can help specific groups [2] (e.g., farmers, women, persons with disabilities, rural communities) overcome the upfront cost barrier and gain access to smartphones (see below sidebar: Snapshot of government-led device subsidy programmes across SSA, LATAM and APAC).

Access to digital tools enables greater economic participation, supports small entrepreneurs and improves access to essential services like education and e-government. However, designing subsidy programmes well is critical: poorly implemented schemes can be expensive, distort market dynamics or even result in the resale of subsidised devices.

[44] GSMA, Improving Handset Affordability In Low- And Middle-Income Countries, 2024
[45] GSMA, Empowering governments to design effective handset subsidy programmes with the GSMA's new toolkit, 2023

Country	Launch Date	Scheme	Target Audience	Description
Rwanda	2025	RISA Device Access Fund	University students with disabilities and community-based volunteers supporting government programmes.	The Device Access Fund is part of the Rwanda Digital Acceleration Project, supported by the World Bank and the Asian Infrastructure Investment Bank (AIIB). It aims to increase smart device ownership by offering targeted subsidies of 50-95% on smartphones and tablets, bundled with mobile data and after-sales support. The programme expects to serve at least 100,000 people nationwide. It combines subsidy and financing options to improve affordability while helping beneficiaries build a digital credit history.
India	2023	Gujarat Farmer Free Smartphone Scheme	Farmers	The Gujarat Farmer Free Smartphone Scheme subsidises 40% of the cost of a smartphone up to Rs 6,000 (about USD $70) for devices priced at or below Rs 15,000 (about USD $175). The scheme targets 25,000 farmers across Gujarat.
Dominican Republic	2022	Canasta Digital Social	Female heads of low-income households	The Canasta Digital Social is a government initiative by the Dominican Telecommunications Institute (INDOTEL) to provide smartphones and a data/voice bundle to 2,000 low-income women, aiming to bridge the digital divide. The scheme continued beyond the initial subsidy and, in 2024, INDOTEL reported that it impacted more than 5,000 women across different provinces in the Dominican Republic .[1]
Malaysia	2021	Jaringan Prihatin	Low-income households (threshold of RM5,000 or less) are qualified for the BPR programme. [2]	Jaringan Prihatin was a Malaysian government initiative providing subsidies to 8.4 million low-income households receiving Bantuan Prihatin Rakyat (BPR) financial aid. The programme offered RM180-300 (about USD $43-72) for device purchases and an additional RM180 for data plans. The government allocated RM2 billion (about USD $480 million) in subsidies, complemented by RM1.5 billion in contributions from telecom operators, bringing the total programme value to RM3.5 billion (about USD $844 million). [3]
Colombia	2016	Internet Movil Social para la Gente	Low-income citizens	Internet Movil Social para la Gente is a 260 billion pesos (about USD $85 million) government programme providing subsidies for mobile data plans (three to four gigabytes of mobile internet access at around 6,000 pesos) and smartphones to low-income citizens across 788 municipalities.
Pakistan	2016	Benazir Income Support Program (BISP)	Low-income Pakistanis	Under the BISP, Pakistan distributed 30,000 smartphones with 3G subscriptions to low-income citizens, funded through the Universal Service Fund (USF).

Even in developed markets, a small percentage of the population remains unconnected due to affordability barriers. Subsidy programmes can help bridge this last-mile gap, supporting low-income groups, elderly populations and marginalised communities (see sidebar: Government-led subsidy programmes in the US and Canada).

[46] INDOTEL, Cientos de mujeres reciben Canasta Digital Social por parte del INDOTEL, 2024
[47] Malaysian Ministry of Communications, Claim RM300 Telco Subsidy Under The Jaringan Prihatin Programme With Maxis, 2021
[48] Malaysian Ministry of Finance, Jaringan Prihatin: Digital Access Worth RM3.5 Billion for B40 to Bridge Society's Digital Divide, 2021

Government-led subsidy programmes in the US and Canada

Canada's Connecting Families initiative
Launched in 2018, the Connecting Families Initiative is a government-led programme launched by Innovation, Science and Economic Development Canada (ISED) to bridge the digital divide by offering affordable internet access to low-income households across the country.

The initiative works in partnership with Canadian internet service providers (ISPs), who voluntarily offer high-speed home internet plans at reduced prices to eligible households. In Phase Two, launched in 2022, participating ISPs provide internet service with speeds of at least 50/10 Mbps download/upload speed and a minimum 200GB of data per month, for just CAD $20 monthly [1].

Eligible households include families receiving the Canada Child Benefit (CCB) and seniors receiving the Guaranteed Income Supplement, identified via federal government databases. Households receive a personalised letter with an access code inviting them to apply [2].

Canada's Connecting Families Initiative illustrates how targeted affordability measures, combined with industry partnerships, can make high-speed internet more accessible for underserved populations, contributing to national digital inclusion goals.

US's Affordable Connectivity Program
Launched in December 2021, the Affordable Connectivity Program (ACP) was a $14.2 billion federal initiative aimed at closing the digital divide in the United States, particularly in the aftermath of the COVID-19 pandemic. It replaced the Emergency Broadband Benefit (EBB), which had allocated $3.2 billion to help low-income households stay connected during the pandemic [3].

The ACP provided eligible households with a monthly discount of up to $30 on internet service, or up to $75 for those on qualifying Tribal Lands. It also offered a one-time discount of up to $100 for the purchase of a laptop, desktop or tablet from participating internet service providers, requiring households to contribute between $10 and $50 to ensure shared investment [4].

By early 2024, the ACP had supported approximately 23 million households (including 330,000 Tribal households), representing nearly 20% of U.S. residential fixed broadband connections, according to the FCC. However, due to depletion of congressional funding, the programme officially ended on June 1, 2024 [5].

These two programmes illustrate how government-industry collaboration can expand digital access for underserved populations in high-income countries.

49 Government of Canada, Connecting Families Initiative
50 Government of Canada, Eligibility
51 FCC, Emergency Broadband Benefit Program
52 FCC, Affordable Connectivity Program
53 FCC, Brings Affordable Connectivity Program to a Close

To assist governments in this area, the GSMA's Connected Society team has developed a comprehensive handset subsidy toolkit (see Figure 9 below). This toolkit provides governments with a clear framework with key considerations for the implementation of successful subsidy schemes.

Figure 9 GSMA Handset Subsidy Toolkit Framework

1. Purpose, Duration, Resourcing And Evaluation

Objectives, timeframe, resourcing, stakeholder management, evaluation factors and external factors that could impact the subsidy programme

2. Beneficiaries	3. Devices		4. Financing Model
• Target population and eligibility criteria • Awareness and visibility of the subsidy programme • Application Process • Support for beneficiaries to enroll and benefit from the subsidy programme	• Device type • Technical specifications • Manufacturing location • Device distribution	• Environmental sustainability • Data bundle to explore mobile internet • Pre-installed applications	• Subsidy format • Financing structure • Financing partners • Funding sources

5. Sustainability & Mitigation of Risk

Risk to beneficiaries	Risk to devices	Risk to financing model	Risks to overall project

Finally, a number of MNOs subsidise smartphones independently, often bundling them with service plans. For instance:

- Reliance Jio's JioPhone (see above) offers 4G connectivity and basic smartphone-like features at a significantly lower price point than traditional smartphones
- Orange's Sanza Touch smartphone, a low-cost 4G smartphone sold in multiple African markets.
- In South Africa, MTN recently launched an initiative to offer over 1.2 million prepaid users 4G smartphones for just R99 (~$5 USD) to accelerate migration from 2G/3G to 4G [1].

[54] Connecting Africa, MTN SA offers 4G smartphones at $5 ahead of 2G, 3G sunset, 2025

Willingness To Pay

6. Address measures to improve willingness to pay

Handset affordability is not only determined by cost but also by perceived value. Consumers are more likely to invest in a mobile phone when they understand its benefits and know how to use it effectively [1]. For example, a Yale Economic Growth Center study conducted in India found that a short digital literacy training for women increased their smartphone adoption and usage even two years after the class [2]. In other words, exposure drives demand.

However, willingness to pay remains uneven, particularly in less developed regions and among women, who often face additional socioeconomic and cultural barriers. While the private sector can help demonstrate handset value through targeted marketing, digital education and pricing strategies, governments must address broader structural barriers through infrastructure development, regulatory frameworks and digital inclusion policies.

In developed markets, where device ownership is near universal, limited willingness to pay can become a more prominent factor influencing smartphone adoption. With device ownership no longer growing significantly, some consumers remain unconvinced of the added value of upgrading to or maintaining internet-enabled devices.

Tackling these challenges requires multifaceted, context-specific approaches engaging a broad set of stakeholders. Public awareness campaigns play a critical role in boosting consumer confidence.

For example, Brazil's #FiqueEsperto Movement led by Anatel and Safaricom's initiatives to combat M-PESA-related fraud in Kenya, build trust by addressing digital risk directly and therefore improve consumer confidence [3].

Safety and security concerns must also be met with strong consumer protection frameworks, such as Europe's General Data Protection Regulation (GDPR), Singapore's PDPC regulations, and Kenya's Data Protection Act [4]. These can be further supported by industry-led initiatives like Telstra's Scam Protect programme [5].

Promoting safe and responsible use, especially among young people, is equally important. Tools like Google Family Link and Apple Family Sharing combined with educational campaigns such as AT&T's anti-cyberbullying initiative in the United States and Turkcell's partnership with the DQ Institute and Turkey's Ministry of Education, help strengthen digital literacy from an early age [6]. The GSMA has also developed an Online Safety module as part of its MISTT toolkit.

Finally, governments must expand the utility of mobile devices by digitising essential public services across health, education and social benefits, and fostering local digital ecosystems. This increases the relevance of smartphones, especially for lower-income populations (see sidebar: 'E-government services in Estonia and Benin').

55 Such as provided by the GSMA's Mobile Internet Skills Training Toolkit
56 Yale Economic Growth Center, Accelerating Indian Women's Use of Mobile Phones through Low-Cost Training in Digital Skills Improves Their Mental Health, 2023
57 GSMA, Safety, privacy and security across the mobile ecosystem, 2017
58 Government of Kenya, Data Protection Act, 2019
59 NewsWire, Huge update coming to millions of Aussies in scam crisis, 2025
60 GSMA, Enhancing Children's Lives through Mobile, May 2019

E-government services in Estonia and Benin

Estonia is globally recognised as a pioneer in e-government services. Since launching its e-Estonia initiative in 2000, the country has digitalised 99% of government services [1], enabling online tax filing, e-voting, secure digital ID and even e-residency. According to the United Nations' E-Government Development Index, Estonia ranks as having the second-best performance in Europe in this domain. [2]

Estonia's X-Road platform enables seamless, secure data exchange across government agencies, linking systems in health, police and tax systems, for instance, to create a fully interoperable digital government. This digital transformation has led to significant efficiencies and positive spillover effects into the broader ICT industry, which now accounts for a larger share of Estonia's economy than in most European countries: ICT specialists already make up 6.7% of the population, compared to an EU average of 4.8% [3].

In 2018, the Government of Benin partnered with Estonia to adapt aspects of this model. This first phase involved developing a national data exchange system for public authorities based on X-Road. In the second phase, a comprehensive e-gov portal was developed and launched. Despite facing challenges common across Sub-Saharan Africa, such as limited technological infrastructure, digital literacy gaps and resources constraints, Benin is now ranked by the UN as having a "high" level e-government development, demonstrating the potential for scalable digital transformation in LMICs [4].

7. Implement effective strategies to tackle handset theft and the trading of counterfeit devices

Stolen, fraudulent and counterfeit handsets pose a global challenge, affecting both high-income and LMICs. These devices not only compromise user experience but are often linked to broader criminal networks and undermine trust in the mobile ecosystem. In response, policymakers around the world are increasingly collaborating with industry players to strengthen mobile security and safeguard consumers.

Several countries have taken proactive steps:

- In Pakistan, the Telecom Authority blocked over 5,000 fraudulent phone numbers and IMEIs in 2024, highlighting ongoing efforts to tackle mobile-related fraud [1].
- In Malawi, the Malawi Communications Regulatory Authority (MACRA) introduced a Central Equipment Identity Register (CEIR) in partnership with TNM and Airtel Malawi to curb handset fraud [2].
- In Ecuador, the regulator implemented a positive Type Allocation Code (TAC) list, blocking devices with invalid IMEIs. Although the policy was relaxed during the COVID-19 pandemic, it has since resumed, with a 30-day grace period for users to replace non-compliant handsets [3].

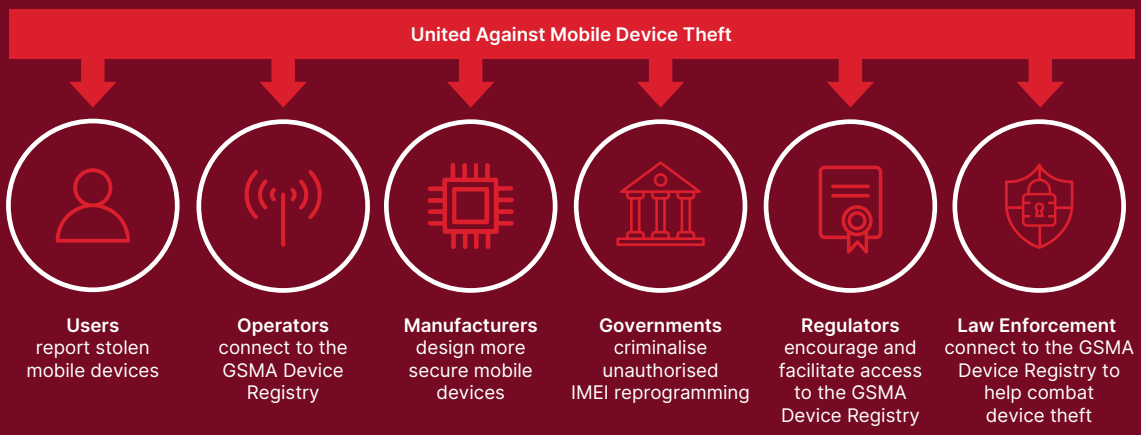
61 E-Estonia, Estonia is at the top of the United Nations e-government ranking, October 2024
62 UN, E-Government Survey 2024
63 EU, Estonia - National Digital Decade strategic roadmap, October 2024
64 UN, E-Government Survey 2024

65 Mobile ID World, Pakistan Telecom Authority Blocks Over 5,000 Fraudulent Phone Numbers and IMEIs in 2024, 2024
66 ITWeb, Malawi takes action to combat mobile fraud and theft, November 23
67 GSMA, Safety, Privacy and Security Across the Mobile Ecosystem, 2022

The GSMA's Device Registry

The GSMA's Device Registry is a global platform that helps mobile network operators, regulators and other stakeholders combat device-related fraud, theft and counterfeiting. It provides a centralised, secure database of device identity information, particularly International Mobile Equipment Identity (IMEI) numbers, which uniquely identify mobile devices.

Figure 10 United Against Mobile Device Theft



Source: GSMA, Safety, privacy and security across the mobile ecosystem, 2022

Combating counterfeit mobile devices requires coordinated international efforts involving manufacturers, customs agencies and regulators. Key measures include tracking device-related issues, criminalising unauthorised IMEI changes and promoting global data sharing.

For example:

- The UK's Mobile Telephones (Re-programming) Act criminalises altering a device's IMEI or possessing related equipment, helping to curb the counterfeit market.
- In Tanzania, the national CEIR disconnected 630,000 counterfeit handsets in 2023 alone [1].
- At the global level, the GSMA partnership with the World Customs Organisation (WCO) since 2016 has strengthened international collaboration to combat counterfeiting and illicit trade through shared intelligence [2].

[68] CGTN, Thousands of counterfeit mobile phones shut down in Tanzania, 2023
[69] GSMA, Safety, privacy and security across the mobile ecosystem, 2017

The GSMA is supporting governments, the industry and other partners to improve handset affordability

Recognising the importance of handset affordability as well as increased demand for support from a variety of stakeholders, the GSMA has strengthened its efforts on addressing this important issue.

The GSMA's Connected Society and Connected Women programmes support governments, mobile operators, the wider mobile ecosystem as well as other partners to address handset affordability through collecting data and disseminating insights, providing guidance and technical assistance, resources for project implementation, as well as through facilitating collaboration and knowledge exchange.

The GSMA has also established the Handset Affordability Coalition, a global coalition which brings together key stakeholders to unlock partnerships and advance innovative solutions to enhance handset affordability in LMICs. The 24 members include major global mobile operators, vendors, device ecosystem players, international organisations and financing institutions, such as the World Bank, the ITU and the WEF Edison Alliance. The coalition helps to assess multiple levers to reduce the cost of handsets and explore new solutions to de-risk financing mechanisms.

GSMA Head Office
1 Angel Lane
London
EC4R 3AB
United Kingdom