IFC International Finance Corporation
WORLD BANK GROUP

EMERGING MARKET INSIGHTS

IFC's Economics and Market Research Department

The Undersea Catalyst *to* Bring More People Online *in* Emerging Markets

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Submarine internet cables stretch over the sea floor. The trick is getting more of them to lower-income countries.

Over the past three decades, an invisible infrastructure revolution has been unfolding far beneath the seas. Since roughly 1995, the world has added almost a million miles of deep-sea submarine cables, enough to wrap around the equator 40 times.

These cables carry thin strands of fibers not much wider than a human hair which ferry internet traffic as light signals across continents, spanning ocean floors and connecting people all over the world. They allow you to send text messages to relatives on the other side of the planet or watch a video filmed thousands of miles away.

More subsea cables are coming (**Figure 1**). The rise of artificial intelligence will only increase the world's insatiable demand for data. Right now, about half the world's data centers—which are essential for AI—are in North America and Western Europe, drawing much of the world's internet traffic. Telegeography, a telecommunications data provider, anticipates[1] that investment in subsea cable infrastructure will exceed $13 billion in the 2025-2027 period, roughly twice the level of investment in 2022-2024.

JULY 2025

So far, however, much of that investment has focused on strengthening existing links between already well-connected areas, particularly between North America, Europe and East Asia. Africa and Latin America, although better connected than in the past, still have far fewer direct links to major data hubs. In most cases, a group of telecom companies such as Orange, Sparkle, or Axiata or major players such as Google or Meta will own the cable and sign leases with local internet providers for access.

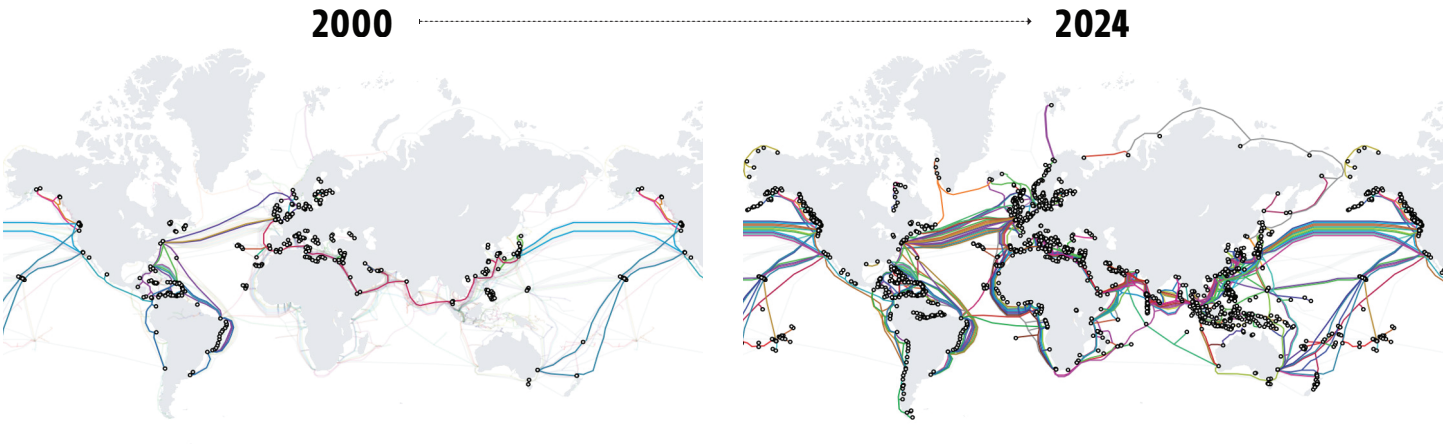
This matters because of the widening gap in online access, not because broadband connections aren't available, but because they are still an expensive luxury. Subscriptions in wealthier countries typically cost less than 1 percent of an average monthly income (in terms of GNI per capita) for both mobile internet services and fixed-line service, according to the International Telecommunications Union (ITU), a United Nations agency. In low-income countries, those figures jump to 6 percent and nearly 26 percent respectively, levels that only a small share of users can afford and which lie well above the ITU's 2 percent affordability target (**Figure 2**). Sub-Saharan Africa has some of the highest internet prices of any region in the world. A fixed internet subscription there costs nearly a fifth of an average monthly income.

And although mobile phones have become widespread in low- and middle-income countries, many of those phones are not connected to the internet.[2] For instance, roughly 56 percent of the population in low-income countries has a mobile phone but only 27 percent have mobile broadband subscriptions. Roughly one out of three people globally still have no internet subscription.

That can have broader economic consequences. Banking services, government aid, health information or civic participation increasingly rely on the internet. Being online helps businesses reach customers or get access to market prices or other critical information. A 10 percent increase in internet use in a country is associated with a rise in average per-capita GDP of 0.8 percent for fixed-line, home internet services and 1.6 percent for mobile internet services, according to a recent study.[3]

FIGURE 1

The Spread of Submarine Cables



Source: Telegeography (2025).

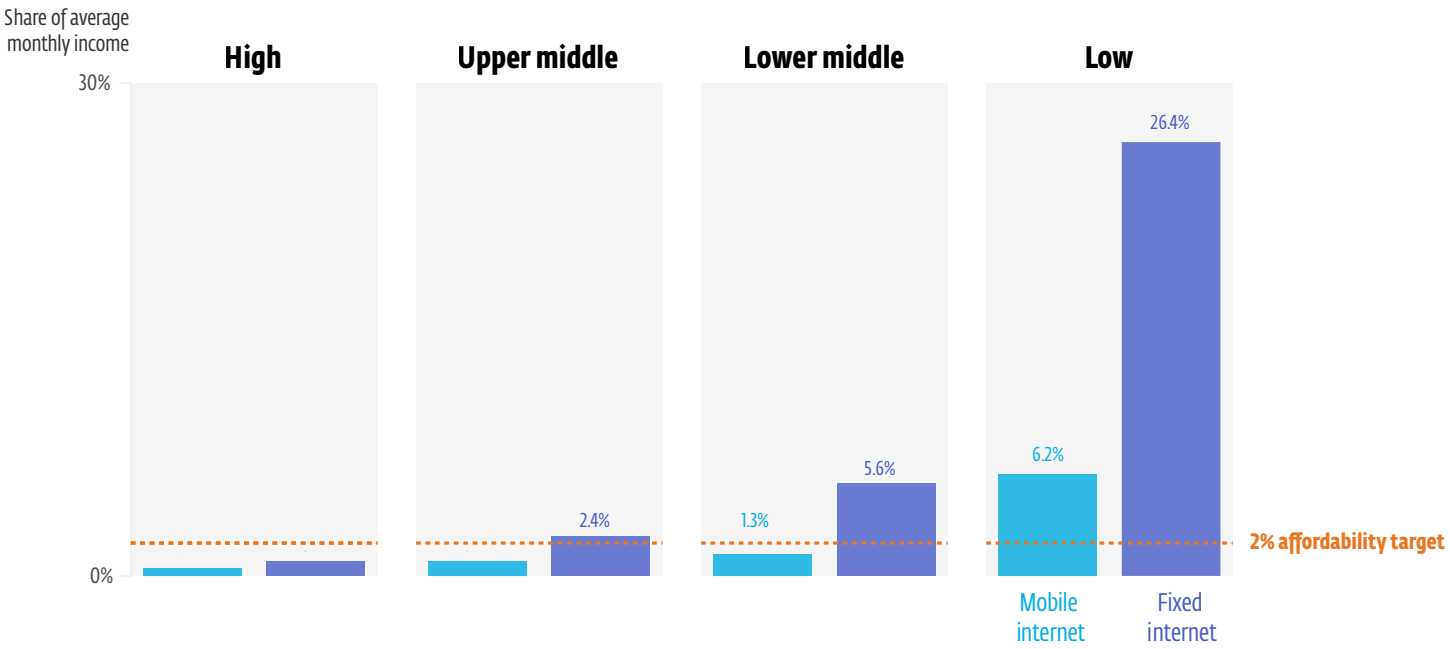
Expanding the reach of subsea cables can help bring the internet to more people. Doubling the capacity of these cables can lower internet prices in a country by as much as 30 to 50 percent, according to recent IFC research[4] (**Figure 3**). More cables mean more internet traffic can be carried simultaneously, or more capacity is available per person, improving user experience while also lowering costs for telecom operators and their customers.

New undersea cable connections also make it possible for traffic to move between noncontiguous countries, without having to rely on more expensive underground cables, some of which may travel through multiple countries incurring fees along the way. For landlocked countries, this dependency on neighboring coastal nations often results in higher costs and limited access to international bandwidth. Strengthening cross-border fiber networks and ensuring open access to submarine cable landing stations could help reduce these barriers, making connectivity more affordable and inclusive. And having multiple subsea cables connect to a country makes that country's network connections more stable and resilient, which lowers maintenance costs. If one cable breaks, others pick up the slack, avoiding the need for costly emergency repairs.

FIGURE 2

The High Cost of Fast Internet

Internet service cost by country income group

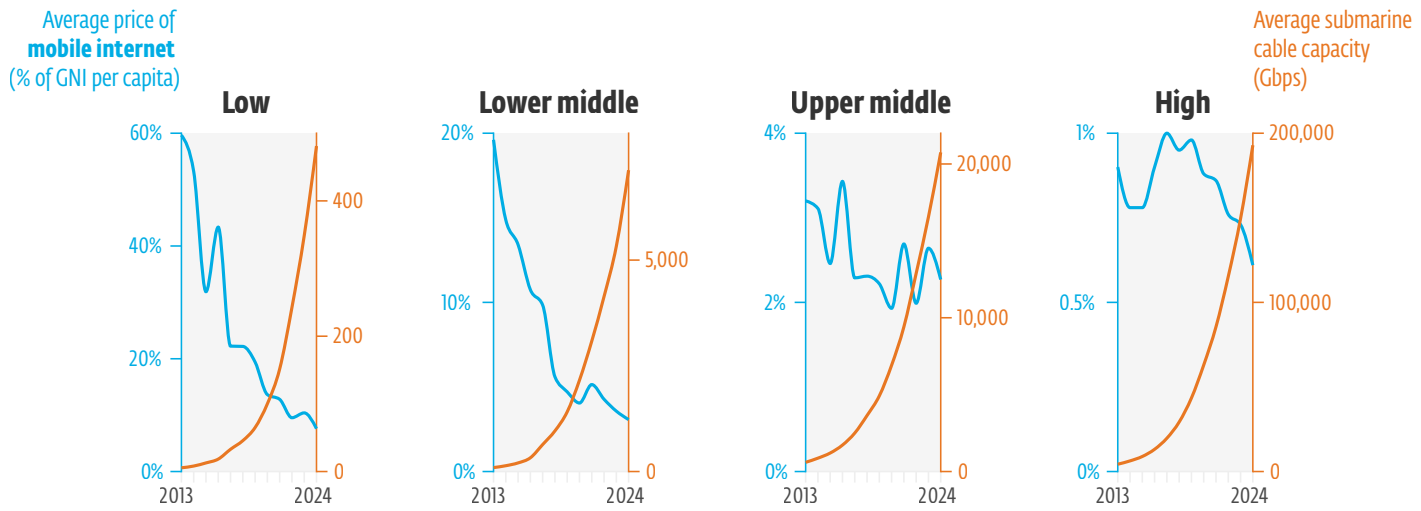


Source: IFC research using International Telecommunications Union (2025). **Note**: The 2% affordability target, established by the International Telecommunications Union (ITU), suggests that the cost of internet services should ideally not exceed 2% of average monthly income. This benchmark is used to assess whether broadband access is financially sustainable.

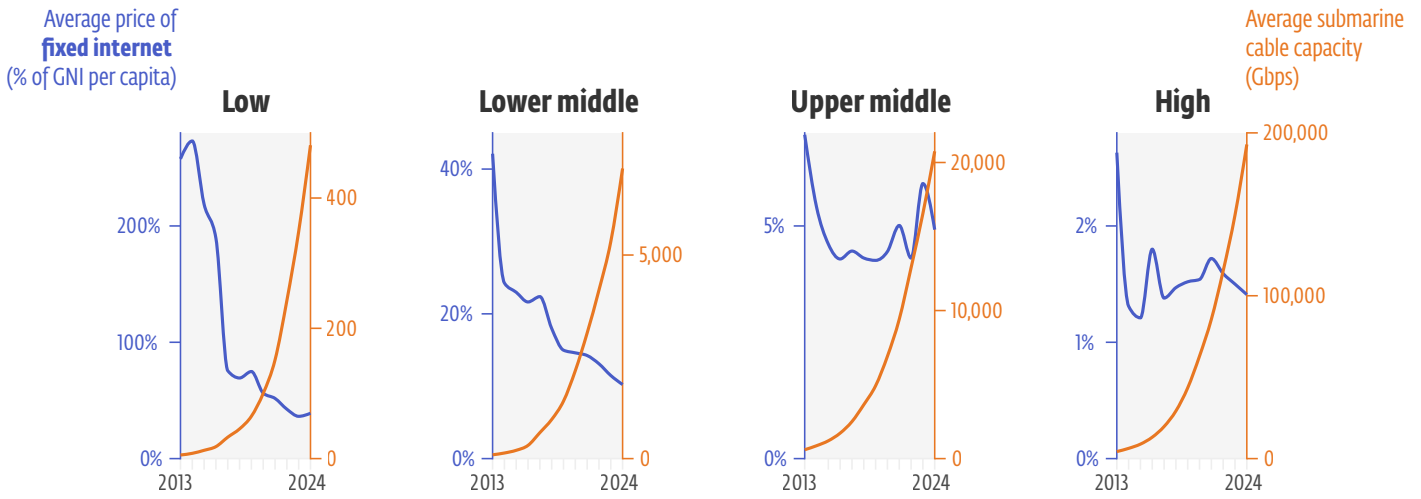
FIGURE 3

More Cables, Lower Costs

Panel A: Mobile internet price vs. submarine cable capacity



Panel B: Fixed internet price vs. submarine cable capacity



Source: IFC research using Telegeography (2025), ITU (2025)

There's also evidence[5] that having more undersea cable capacity encourages governments and private operators to invest in the rest of the internet supply chain, such as by expanding underground fiber-optic networks between cities or building more transmission towers or Wi-Fi hubs in remote villages. Other studies found that firm innovation and entrepreneurship rises[6] following the arrival of subsea cables through the substantial additional capacity they deliver, and that higher internet penetration thanks to the cables boosts[7] real per-capita GDP and productivity. Evidence[8] from Africa shows that the arrival of fast internet due to the first submarine connections increased employment rates by up to 13 percent and improved firm productivity by 13 percent in manufacturing sectors. It also supported shifts toward higher-skill occupations and reduced job inequality.

In Kenya[9], the launch of SEACOM, TEAMS and EASSy cables in 2009 and 2010 boosted international bandwidth capacity, making internet services faster and more reliable. The impact was almost immediate: Broadband prices dropped by more than 90 percent within a few years, data from Kenya Education Network (KENET) and the Communications Authority of Kenya show. The share of Kenyans who now use the internet regularly grew five-fold between 2010 and 2023, according to World Bank data. Kenya has since become a hub for digital innovation, with thriving tech startups and mobile money services such as M-Pesa.

But there's a catch: In countries where the provision of subsea capacity is inappropriately regulated or limited to single players, adding more undersea cables can make the fixed and mobile broadband markets more concentrated, according to IFC research.[10] This happens because dominant providers can gain control over the new infrastructure, allowing them to block competitors and tighten their grip on the market. As a result, over time, the effect of adding more capacity on prices weakens. Prices may experience a slight drop but over time they stabilize or even creep upward as the market becomes less competitive.

For governments, therefore, it makes sense to use the regulatory system to keep the local internet market competitive. That would give providers an incentive to offer better quality service at lower prices and thereby bring more customers online. An expanding market, in turn, would likely draw more investment towards undersea cables, although those decisions are also heavily influenced by global connectivity needs and strategic considerations.

In practice, that means putting rules in place that allow multiple providers to access submarine cable landing stations, terrestrial fiber networks, as well as transparent spectrum allocation. For landlocked countries, fostering regional partnerships to co-finance cross-border infrastructure and ensuring equitable access to international bandwidth are critical steps to bridge the connectivity gap.

India,[11] for instance, has been expanding its submarine cable capacity since the late 1990's. At the same time, the country overhauled its telecommunications sector to encourage more competition among private providers, including by mandating infrastructure

Photo: Entrepreneurs at wennovation Hub Lagos Nigeria. © IFC

sharing and lowering regulatory entry barriers for new internet service providers. Prices fell, driven by intense competition, to the point that India now boasts one of the most affordable broadband markets globally. More than half the population uses the internet, enabling the rise of online commerce, e-government services and online education.

Brazil[12] has had a similar trajectory. In the early 2000's, a few players dominated the country's telecommunications market, limiting competition and keeping prices high. In response, the government enforced pro-competition policies such as infrastructure sharing, wholesale price regulation, and consumer protection. Brazil also expanded its submarine cable network, including the Monet cable connecting Brazil to the United States completed in 2017. Between 2010 and 2020, fixed broadband penetration more than doubled, and internet prices dropped significantly.

These examples underscore how smart regulation and infrastructure investment can work hand in hand to enable millions of people and businesses to gain[13] access to affordable, high-quality connectivity. This allows them to access new opportunities, improve productivity and transform markets. For underserved communities, including those in landlocked regions, better connectivity reduces barriers, fosters inclusion, and creates pathways to economic growth. By driving innovation and strengthening resilience, digital infrastructure enables firms to compete, expand, and thrive in an increasingly interconnected world.

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Cover Photo: Workers install an undersea cable in South Africa, February 7, 2023. REUTERS/Rogan Ward

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