

Executive Summary

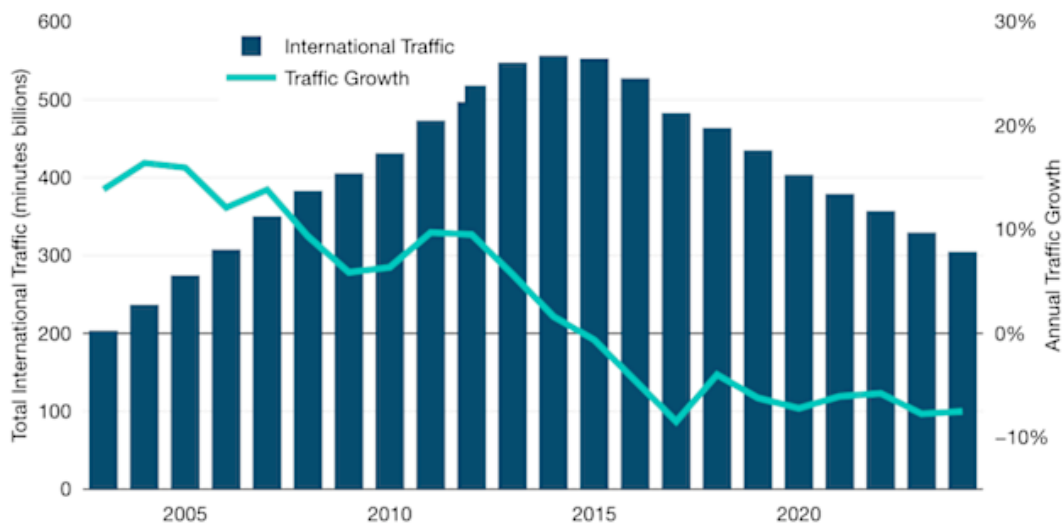
International Voice Report



Findings

The downward slide continues. The year 2014 represents the peak for international voice traffic. International call minutes declined the following year, for first time since the Great Depression—and it's been downhill ever since. The slump in voice traffic has turned into a rout, as carriers' traffic fell by 6.2% in 2019 and by a further 7.2% in 2020. The COVID-19 pandemic spurred a short-term rally in international call volumes in early 2020, but things pretty much returned to the new normal. Traffic fell a further 6.1% in 2021, by 5.8% in 2022, and by an astonishing 7.8% in 2023.

FIGURE 1
Down We Go...



Notes: Data for 2024 are projections.

Source: TeleGeography

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The OTT Effect

The new-ish market dynamic—social calling that replaced business communications as the primary

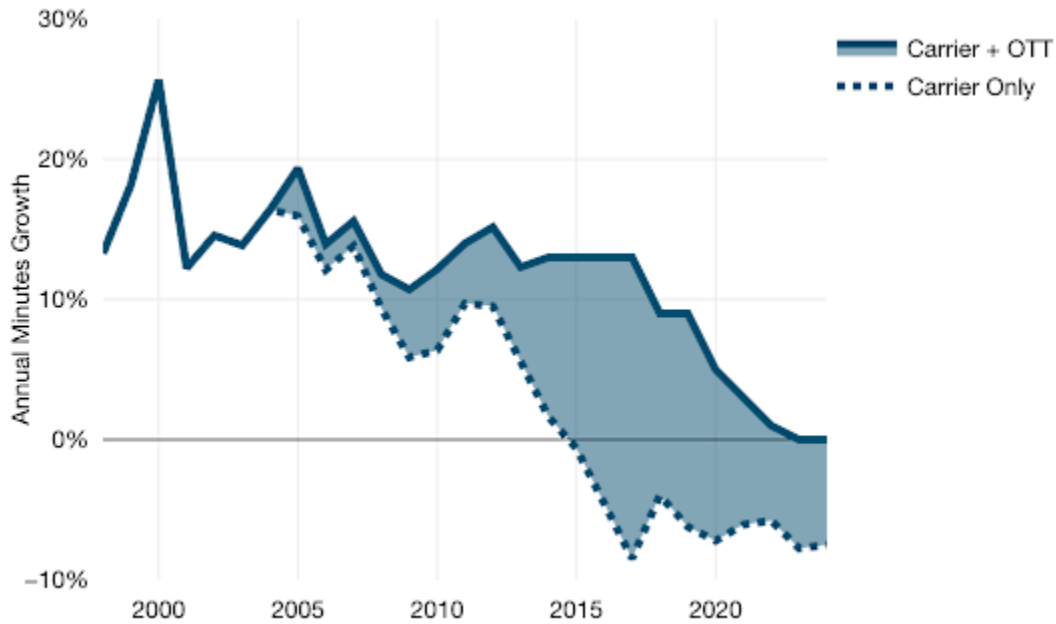
driver of ILD usage—fueled a long era of international call traffic growth that began in the 1990s. In 1990, U.S. international call prices averaged over one dollar per minute(!) and business users accounted for 67% of ILD revenue. A wave of market liberalization in the subsequent decade brought new market entrants, causing prices to tumble, and making international calling ever more affordable to consumers. In the early 2000s, the introduction of low-cost prepaid phones made it possible for billions of people in developing countries to obtain their own telephones, and to keep in touch with friends and family abroad easily. Call volumes soared, and by 2015, calls to mobile phones in developing countries accounted for 48% of global ILD traffic.

The transition to mobile and social calling drove a 20-year boom in voice traffic, but has also left the industry uniquely vulnerable to the rise of mobile social media. While Skype was the dominant communications application for computers, a veritable menagerie of smartphone-based communications applications, such as WhatsApp, Facebook Messenger, WeChat (Weixin), Viber, Line, KakaoTalk, and Apple's FaceTime, now pose a greater threat. We believe that WhatsApp had about 2.5 billion monthly active users in 2024, with Facebook Messenger topping 1.3 billion. WeChat had about 1.3 billion active users at the same time. TeleGeography estimates that seven OTT communications applications—WhatsApp, Facebook Messenger, WeChat, QQ, Viber, Line, and KakaoTalk—combined had roughly 6 billion monthly users in September 2024. These estimates exclude other apps, such as Apple's FaceTime, Google Hangouts, and Skype (the latter two of which have over 1 billion downloads from Google's App Store).

It's hard to pin precise numbers on the volume of international OTT communications. However, a simple thought experiment helps to illuminate its likely scale. Between 1983 and 2007, international phone traffic grew at a compounded annual growth rate (CAGR) of 15%, and traffic grew an even faster 21% CAGR between 1927 and 1983. It's hard to believe then that the recent decline in traffic means that people have lost interest in communicating with friends and family abroad. Rather, it suggests that they are turning to other means of keeping in touch.

TeleGeography has fairly reliable estimates of Skype's traffic through 2013, when the company carried 214 billion minutes of on-net (Skype-to-Skype) international traffic. Telcos terminated 547 billion minutes of international traffic in 2013, and OTT plus carrier traffic totaled 761 billion minutes. We had been assuming that total (carrier plus OTT) demand for international communications was growing at a relatively modest 13% annually since 2013. For this analysis we further assume that texting, video, and email have quite recently eaten into overall voice growth, and that this annual growth gradually glided down to 0% by 2023. A bit of arithmetic would tell us that the combined volume of carrier and OTT international traffic would have expanded to 1.6 trillion minutes in 2023. (The figure *Where Did the Minutes Go?: The OTT Effect* illustrates this nicely). Traditional carrier traffic has slumped, but OTT traffic has risen to fill the void. This calculation suggests that cross-border OTT traffic overtook international carrier traffic in 2016, and would exceed 1.3 trillion minutes in 2024, dwarfing the 305 billion minutes of carrier traffic projected by TeleGeography.

FIGURE 2
Where Did the Minutes Go?: The OTT Effect



Notes: OTT traffic reflects in-app cross-border traffic only, and excludes calls originated on apps but terminated to the PSTN.

Source: TeleGeography

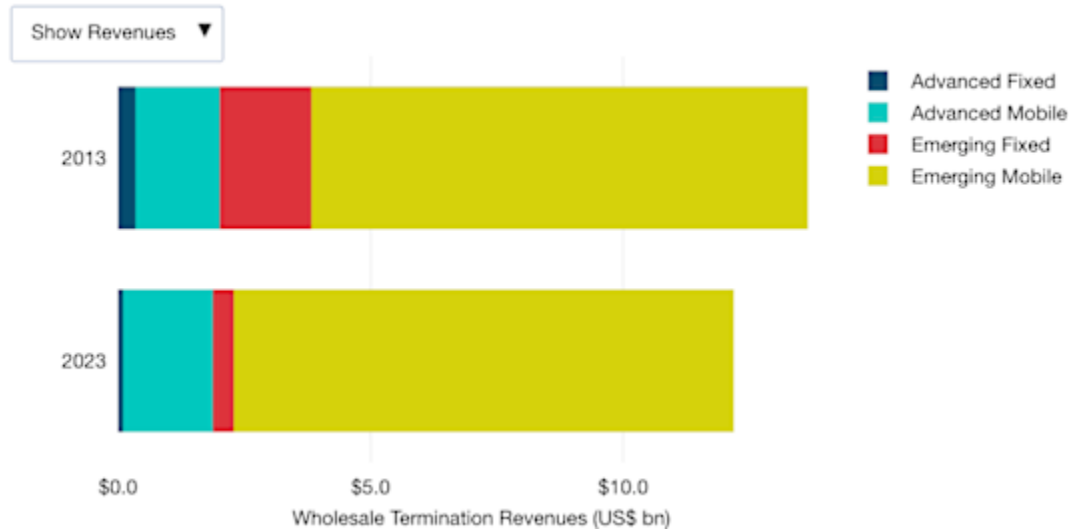
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International Wholesale Services

Many retail service providers, such as mobile operators, MVNOs, and cable broadband providers, rely heavily on wholesale carriers to transport and terminate their customers' international calls. Wholesale carriers terminated approximately 236 billion minutes of traffic in 2023, down 8% from 2022. Wholesale traffic declined at an average rate of 1% per year over the past ten years, compared to a -2% CAGR for overall traffic. Wholesale carriers terminated nearly three-fourths (72%) of international traffic in 2023, the same as the year before.

Traffic to mobile phones in emerging markets has spurred expansion in wholesalers' share of the overall market. In 2022, wholesale carriers terminated over 87% of traffic to South America. In contrast, wholesale carriers terminated only 56% of traffic to western Europe.

FIGURE 3
Wholesale Revenues and Traffic by Market Type, 2013 and 2023



Notes: Advanced markets are defined as those of the upper 30th percentile of countries as ranked by GDP per capita in 2023. Emerging markets are those of countries in the lower 70th percentile. World and regional totals exclude countries with extremely low traffic volumes.

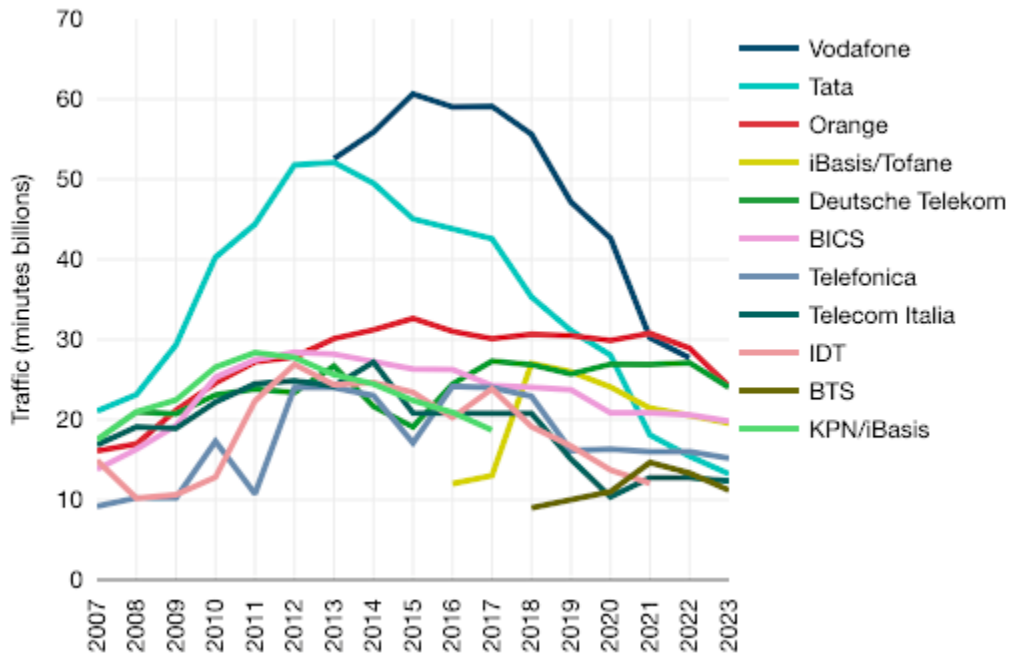
Source: TeleGeography

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Wholesale revenues are down 11% from ten years ago. Let's take a moment to dive in a bit and see what's going on. A few years ago, one could say that traffic to mobile phones in emerging markets had driven international wholesale market growth. No longer. Toggle between the "Show Revenues" and "Show Traffic" options in the "Wholesale Revenues and Traffic by Market Type, 2013 and 2023" figure. It's plain as day that revenues to fixed lines in both advanced and emerging economies has collapsed. At the same time, you'll see that revenues from calls to mobiles in all markets have stagnated over the past ten years, at around \$11.5 billion.

Who's carrying this traffic? Take a look at the figure "Comparison of Top International Carriers." It shows a ranking of some of the world's largest international carriers. The top 8 operators in the figure carried 42% of all global traffic in 2023, about 139 billion minutes. None of the eight largest carriers in the world terminated more traffic in 2023 than in 2022. Chew on that for a bit.

FIGURE 4
Traffic Volumes of Major Carriers



Notes: Pre-2013 data for Vodafone, which reflect the combined traffic of Vodafone and the former Cable & Wireless Communications, are not available. In 2021 Vodafone Idea India and Vodafone Australia traffic is no longer reported under Vodafone structure due to ownership changes in 2020.

Source: TeleGeography

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Prices & Revenues

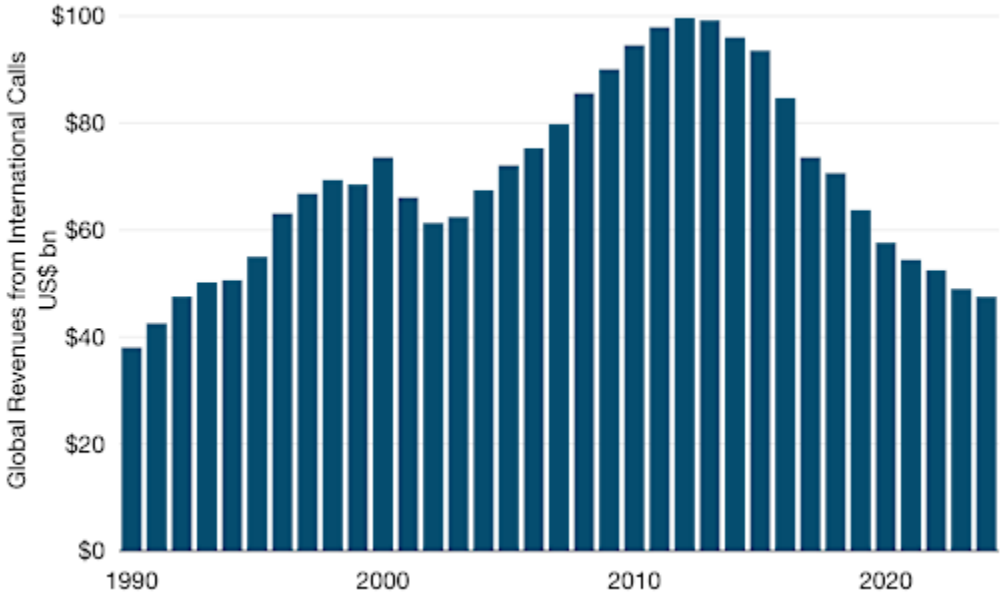
Retail ILD call revenues have slowly withered in recent years. So, too, has ILD's contribution to overall carrier revenues.

Let's look back a few years. In 2014, retail international call revenues (revenues that exclude wholesale revenues and termination payments) generated \$96 billion. During that year, wireline, broadband, and wireless services, in total, generated \$1.4 trillion. Thus, ILD accounted for 7.1% of total revenues in 2014.

In 2023, ILD accounts for only 3.1% of total carrier revenues.

For the mobile market, outgoing ILD revenues as a share of overall wireless revenues had remained relatively static; they had even increased from 2010 to 2012. Since then, international mobile revenues have followed the same downward trajectory as fixed ILD revenue trends. In both the fixed and mobile sectors, ILD calls account for a noticeably smaller share of overall carrier revenues than they did a few years ago.

FIGURE 5
Global Retail Revenues from International Calls



Notes: Data measure retail revenues on outgoing international calls; totals do not include revenue from wholesale services or incoming international traffic termination. Data for 2024 are projections.

Source: TeleGeography

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