

# When Voice Technology Moves On and Customers Follow: Connecting PSTN and IP Calls



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In the early days of VoIP (voice over IP), the limited bandwidth of internet telephony led to low-quality calls that frequently got dropped. But VoIP quality has since improved with the increase in available bandwidth and enhancements in the technology. Today, VoIP is capable of higher call quality than the Public Switched Telephone Network (PSTN), the legacy circuit-switched telephony system that connected callers for years before VoIP came along.



In fact, PSTN has been losing voice traffic to the IP protocol despite being a stable and reliable global telephone network that connects callers all over the world. But how did IP get to be a reliable voice protocol when the Internet wasn't really designed for the real-time communication requirements of a phone call? And how should businesses think about the two protocols in their voice communications with customers?

A quick history lesson will provide a better understanding.

## The Transition from PSTN to VoIP

The PSTN works by establishing a dedicated circuit between two parties for the duration of a call. The analog voice data is carried over the dedicated circuits via copper wires. In contrast, VoIP uses packet-switched telephony where the voice data is transmitted in multiple individual network packets across the Internet.

A series of related technology advancements have culminated in a robust IP voice channel. First, the ubiquitous availability of high-speed internet has provided the bandwidth for stable connections. Next, IP voice calls have become richer with the support of technologies such as high-definition encoding through codecs and HD processors for mobile phones, which deliver superior audio fidelity.

And all this easily accessible voice quality is delivered at a lower cost than consumers and businesses were paying carriers and telcos for PSTN calls. Pioneering companies brought VoIP products to market such as a software-based VoIP phone (NetFone, 1991), peer-to-peer internet calling (Skype, 2003), a residential VoIP service (Vonage, 2004), and mobile VoIP apps for smartphones (Truphone, 2006). Consumers and businesses, lured by the quality and cost benefits, flocked to VoIP. Persistence Market Research anticipates strong growth in the global market for VoIP services during the next several years, projecting the market will surpass US\$190B in revenue by 2024.

## What IP Voice Means for Customer Communications

Callers likely don't give a second thought to which protocol is transferring their voice to the person—or people—on the other end. Whether it's a traditional PSTN call or an IP voice call via WebRTC or a mobile app, they care most about the quality and—perhaps too often forgotten—the utility of the call interface.

For brands, it's imperative to offer that utility by delivering contextual call experiences in the ways customers have grown accustomed to during the PSTN-to-IP transition. Rather than viewing VoIP as a replacement for PSTN, they should see it as an additional voice channel that will provide the broadest reach to customers—not everyone has a smartphone or access to a reliable internet connection; PSTN still has its place.

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The smart approach is simply adding the VoIP channel to the existing channels already supported. Again, users likely aren't making the choice between PSTN and IP for their voice interactions but rather choosing the most convenient interface in the given use case. Brands should support whichever protocol allows customers to make calls within the context of their given interaction.

For example, an online marketplace where a buyer needs to resolve an issue with the seller and can't wait for an email response, he or she may opt for the immediacy of a phone call. Which protocol connects the call (suppose it's an in-app voice call via IP for the buyer and an inbound PSTN call for the seller) is not as important a consideration as having a simple click-to-call button within the marketplace app for convenient calling.

That feature saves the user from having to jot down or memorize the seller's number, open the phone app, manually dial the number, and then quickly explain who they are and why they're calling when the seller answers. Having the ability to terminate the call in the protocol that best meets the user's needs in that moment—as well as provide context for the call—should be the priority.

The same principle applies when calling a company's contact center for service or support. A phone call is often the last step in an escalation of communication modes that may have begun with an email or a website or mobile chat. By the time a customer calls, they

are expecting to resolve their issue or complete their transaction in a timely manner. But too often customers have to call multiple times and repeat the reason for their call each time they connect because context doesn't always flow from one interaction to the next.

All the audio fidelity advancements in the world won't help alleviate a customer's frustration when their experience is that poor.

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