

Understanding Internet Options and What's Right for Your Business



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Introduction

As a business owner or the head of an IT department, the workdays are filled with major and minor decisions that ultimately affect the business in both positive and potentially negative ways.

One of the key decisions is choosing the right internet service provider (ISP). An ISP not only helps launch your business operations, but also keeps it running smoothly. Internet access is no longer the luxury it used to be. Instead, it is essential in today's interconnected world. Businesses need access to the proper capacity, bandwidth and speed. Ultimately, choosing an ISP often comes down to cost, but it's important to consider the technology, uptime and other factors.

With internet services, there are a variety of business connections to consider that will determine which type of connection that's best for the business. In this paper, we will review the different types of internet connections and the benefits of each.

What Is the Internet?

The internet is a globally connected network facilitating worldwide communication and access to data resources through a vast collection of private, public, business, academic and government networks.

The terms "internet" and "world wide web" are often used interchangeably, but they are not exactly the same thing. "Internet" refers to the global communication system, including hardware and infrastructure, whereas "web" is one of the services communicated over the internet.

The internet originated with the U.S. government, which began building a computer network in the 1960s known as ARPANET. In 1985, the U.S. National Science Foundation (NSF) commissioned the development of a university network backbone called NSFNET.

The system was replaced by new networks operated by commercial internet service providers in 1995. The internet was brought to the public on a larger scale around this time.

Since then, the internet has grown and evolved to facilitate services such as:

Email	Instant messaging
Web-enabled audio/video conferencing services	Internet forums
Online movies and gaming	Social networking
Data transfer and file-sharing, often through file transfer protocol	Online shopping
	Financial services

Internet Connectivity Options

Depending on the coverage area, there may be options to access a full slate of connectivity options or only a few. Since the beginning of widespread connectivity to the internet, ISPs can provide a variety of different connectivity options for business customers. In this section we will elaborate on the technologies that keep businesses connected.

Coaxial Cable Internet

1 Coaxial — more commonly referred to as “coax” — is a type of cable that transmits data, the internet, and various types of media. A coax cable consists of:

- An aluminum and copper shield.
- An outer plastic jacket.
- A dielectric insulator to minimize signal loss.

Coax is a common cable connection many providers use. Hundreds of megahertz are carried over coax. Data is transmitted through the center wire, while the outer braided layer serves as a line to the ground. Both of these conductors are parallel and share the same axis. This is why the wire is called coaxial.

Coaxial cable differs from other shielded cables used for carrying lower-frequency signals because its dimensions are controlled to give a precise, constant conductor spacing, which is necessary to function efficiently as a transmission line.

The connection is created by data signals going through the coax cable that are transmitted to the modem. From there, the modem can be connected to the computer with an ethernet cable, switch or router to transmit data, giving the user high-speed internet access.



Fixed Wireless Internet

2 Fixed wireless internet (FWA) is a wireless broadband service that enables broadband access and connectivity through mobile networks. Connectivity is delivered through radio frequency signal transmission via the mobile network from cell towers.

Unlike wired broadband services that require extensive installation, FWA can be set up relatively quickly and easily. FWA typically requires minimal infrastructure, making it a cost-effective alternative to traditional broadband services. In addition, FWA can provide internet access to mobile devices and be set up as a temporary solution in areas that require connectivity for a short period of time, such as construction sites or entertainment events.

FWA can provide internet access to areas where traditional wired broadband services are not available or are cost-prohibitive, bridging the digital divide in rural or remote areas.

Fixed wireless internet can also supplement fixed wired services, providing a redundant internet option in the event the fixed network goes down.



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Point-to-Point and Point-to-Multi-Point

Point-to-point (P2P) and point-to-multi-point (P2MP) are two types of wireless communication technologies that are commonly used to connect devices and networks.

PTP

Point-to-point is a wireless communication technology that allows two devices or networks to connect without any intermediate infrastructure. P2P wireless communication is typically used to transfer data between two devices or establish a dedicated wireless link between two locations. This technology is often used for video surveillance, backhaul links, and remote monitoring.

PTMP

Point-to-multi-point is a wireless communication technology that allows one wireless device or network to communicate with multiple devices or networks simultaneously. P2MP wireless communication is typically used for distributing data from a single source to multiple destinations, such as broadcasting a wireless signal to multiple Wi-Fi clients or providing internet access to multiple homes or businesses in a single area. This technology is often used for Wi-Fi hotspots, wireless mesh networks, and broadband access networks.

P2P and P2MP are both wireless communication technologies, but they differ in their applications and uses. P2P is typically used to establish a dedicated link between two locations, whereas P2MP is used to distribute data from a single source to multiple destinations.



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Fiber to the Premise

Fiber-to-the-premises (FTTP) is an internet connection that uses fiber-optic cables to deliver high-speed internet access directly to homes or businesses.

In an FTTP network, fiber-optic cables are used to connect the internet service provider's network to a distribution point, which is typically located in a neighborhood or on a street corner close to a cluster of businesses. From there, individual fiber-optic cables are run to each home or business, providing a dedicated fiber-optic connection to the premises.

FTTP offers several benefits over traditional broadband services, including faster and more reliable internet speeds, lower latency, and greater bandwidth. This makes it ideal for high-bandwidth applications such as streaming video, gaming, and video conferencing.

FTTP is also scalable, meaning that it can be easily upgraded to provide faster speeds as technology advances. However, it can be more expensive to install and maintain than traditional broadband services and may not be available in all areas.

Overall, FTTP provides a superior internet experience compared to traditional broadband services and is becoming increasingly popular as demand for high-speed internet access continues to grow.



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Dedicated Fiber Internet

Dedicated fiber is internet access reserved solely for the customer. Data is transported from point to point using glass, which uses light pulses that aren't susceptible to noises. Conversely, non-fiber connections use copper, which creates electrical pulses that can be susceptible to the elements. This connectivity solution guarantees a certain level of bandwidth, meaning the speed won't jump depending on usage, regardless of the number of downloads and uploads happening simultaneously. With dedicated fiber, bandwidth is guaranteed for downloads and uploads.

Symmetrical

Symmetrical fiber is an internet service that provides equal upload and download speeds. This means that data can be transmitted at the same rate in both directions, allowing for faster and more efficient communication.

Traditional broadband services typically provide faster download speeds than upload speeds, which can be limiting for activities like video conferencing, online gaming, and large file uploads. Symmetrical fiber, on the other hand, provides equal upload and download speeds, improving the performance of these activities and providing a more seamless online experience.



Asymmetrical

Asymmetrical fiber is an internet service that provides different upload and download speeds using fiber-optic cables. Unlike traditional broadband services that provide faster download speeds than upload speeds, asymmetrical fiber typically offers faster download speeds and slower upload speeds.

Asymmetrical fiber is similar to traditional broadband services, offering faster download speeds and lower latency due to its use of fiber-optic cables. This can be beneficial for activities such as streaming video, gaming, and browsing the web, as these activities typically require faster download speeds than upload speeds.

Choosing the Best-Fit Internet Connectivity Solution

Although one connectivity option might be faster than another, an option like dedicated fiber isn't the best for every business. In some situations, it's much less economical to choose this option over others. For a small or mid-sized business, a less expensive option can still provide a fast, reliable enough connection.

Although most people consider speed the most important factor in a solution, the choice shouldn't only be based on that. Instead, select a solution based on the following factors:

✓ Speed

It can be confusing choosing the right connection speed. One may think a small business doesn't require more than 15-25 Mbps. However, if you frequently transfer large files and have frequent video conferences, you may need more than that.

The same goes for larger businesses. If your work only requires emails and internet access, 500 Mbps of bandwidth is not necessary.

The minimum internet speed you need

15-25 Mbps

1-2 employees

Browsing the web, sending emails, transferring light files

25-50 Mbps

5 or more employees

Transferring large files, making point-of-sale transactions, and video conferencing

50-75 Mbps

7 or more employees

Browsing content-rich websites, quick processing of point-of-sale transactions, and video conferencing

75-100 Mbps

Low double digit employee count

Heavy audio and video streaming communications and crowded Wi-Fi usage

100-150 Mbps

Growing business with more personnel

High internet demand, including web hosting, e-commerce and increased data usage

150-500 Mbps

Large employee count

Significant data demands. If fiber is available in your area, you can choose plans with speeds between 500 Mbps and 1 Gbps

✔ Data Caps

Downtime equals lost revenue. No one wants to work around the clock, but if anything happens to the connection, someone will want to know when the support team is available to help.

Choose an ISP with tech support available for a phone call or chat assistance 24/7 and technicians on standby if an on-site visit is necessary.

✔ SLAs

A superior provider will outline a comprehensive view of the terms and conditions regarding the agreement a business will have when choosing Internet solutions.

✔ Flexibility

As your business grows, you'll eventually require increased connectivity. Only enter a contract if it's flexible and scalable when you're ready to upgrade.

✔ Security

Security is becoming more important as businesses undergo digital transformations and cyber threats increase. Select solutions with anti-spam, antivirus, anti-spyware, anti-malware and backup service protection in case of a system crash.

DOCOMO PACIFIC's Fiber Connection

At DOCOMO PACIFIC, we're dedicated to providing fast, reliable, and accessible Fiber internet for everyone. When you choose a connection from DOCOMO PACIFIC, the backbone of your internet connection is Fiber. Regardless of the type of connection selected, the connection from node to customer in the last mile is via Hybrid Fiber Coax (HFC) or true Fiber.

Solutions from DOCOMO PACIFIC are speedy, reliable and secure. All data is transported from point to point through glass, which uses light pulses that aren't susceptible to noises that can degrade serviceability. Conversely, non-fiber connections use copper, which creates electrical pulses that can be susceptible to the elements.

At DOCOMO PACIFIC, we're committed to providing Fiber solutions that fit everyone's needs. Whether you're a small business needing reliable connectivity or a large enterprise requiring high-speed internet, our Fiber options are designed to meet your demands. With us, you're not just getting a connection; you're getting a reliable, future-proof solution that keeps you connected to what matters most. ***-Fiber For Everyone***

A glowing lightbulb hangs from a cord in the center of the frame. Below it, a group of people are seated around a long table in a meeting room, but they are out of focus. The background shows some green plants and a modern office setting.

Let's talk business



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