

# Is IT in synch?

How to distinguish among Internet connections **Interviewed by Chelan David**

**W**hen we click “send” to deliver an e-mail, little thought is given to its mode of transportation. We just want to make sure it reaches its destination — quickly. The same is true for other Internet functions like e-commerce, voice communication and video files. Most of the World Wide Web is linked by fiber-optic lines that carry enormous amounts of data at very high speeds to ensure brisk exchanges.

Sometimes, however, businesses experience a bottleneck which is known as the “last mile.” According to Hormazd Dalal, president of Castellán Inc., “A business’s Internet experience is only as good as its slowest point, which is normally where it connects to the business.”

*Smart Business* spoke with Dalal about the suitable broadband connections for a business, the importance of having a synchronous connection and how an inefficient connection can negatively impact productivity.

## What are the different types of broadband connections that are available?

Traditionally, we used to use T1, which was very expensive before the price came down. T1 is typically what larger businesses use because it is the most secure and the most stable. However, a lot of businesses use only a fraction of the capacity because the rest of it tends to be used for voice data. The phone companies deploy DSL, which stands for ‘digital subscriber line,’ and it sends the broadband over the same copper that your phone lines run on.

DSL has two different flavors: SDSL (‘synchronous digital subscriber line’) and ADSL (‘asynchronous digital subscriber line’). SDSL uses two separate pipes, and the upload speed and the download speed is exactly the same. Asynchronous is the cheapest form, which is used in homes. This is a single pipe, and the download speeds are typically higher than the upload speeds. Finally, there is cable, which is a large coaxial pipe, the same that goes into your television.



**Hormazd Dalal**  
President  
Castellán Inc.

## What is the best option for a business?

Businesses should be using a minimum of a synchronous connection because they have multiple users creating traffic going outbound and inbound. Some traffic is not initiated by a user. For example, mail coming in is inbound traffic that you can’t control. A pipe should be available for it — it can’t wait for somebody to finish doing an upload. Even though we are talking about milliseconds, it does make a difference to the performance.

A cable modem is synchronous; a fairly cost-effective way for a business to get a stable, adequate connection to the Internet.

## How much bandwidth should a business have?

They should have a minimum of a 768 Kbps synchronous connection, but it also depends on the business’s needs. If you have a business that is connecting to remote offices, it is extremely essential that all remote offices have the fastest speed. If you have people who are working from home and accessing the office via the Internet, it is very important that you have a high bandwidth. So the higher the speed,

the better. In these instances I would recommend a minimum of a 1.5 megabyte connection, which is the same as a T1.

## Why is a synchronous and fast connection so important?

It is important because it has two separate pipes: one for incoming traffic and one for outgoing traffic. If you don’t have a synchronous connection and someone is browsing the Web and bringing down a lot of data while someone else is trying to send an outgoing e-mail, then the e-mail won’t go out until the traffic coming in is finished. In other words, you can only use one pipe at a time. A lot of people think that working remotely they can use a virtual private network (VPN) to connect to the office. Broadband speeds, however, are still not fast enough to give a user the ability to pull even a Microsoft Word document in a timely manner. Obviously, this experience is greatly improved the faster the connection is on both ends.

## How does a slower or less efficient connection impact the productivity of a business?

If the business is at all dependent on communicating with the outside world and having its employees or its vendors communicate with each other, it is extremely essential. A slow connection affects time and productivity because applications won’t work over a slow connection.

## As technology evolves, what future advances do you envision in the distribution of online data?

The ability to send more and more data. Currently the bottlenecks do not make working remotely 100 percent seamless. As fiberoptics comes into our homes, you’ll be able to move data at lightning speeds. In effect, you’ll be able to download an entire movie in a split second, and you will be able to have a fast VPN connection.

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