2013 Broadband Internet Connection Upgrade Buyer's Guide

Published by Telecom Association at BusinessPhoneNews.com

About This Checklist: This guide is produced by Telecom Association ("TA"), a membership organization of 3,800 independent telecom solution partners and their technology vendors. It is published for business owners and managers to help them understand what kind of options they will see in the marketplace when looking to upgrade their broadband internet connection.

How to Use This Guide: Read about the different broadband internet connections and evaluate which types are most suitable for your business. After identifying your major options start looking for a vendor-neutral solution provider. If you need a referreal to a recommended broadband upgrade consultant, or broker please check our "partner" directory at BusinessPhoneNews.com or ask for a customized referal for you specific needs by sending a detailed email to Dan@BusinessPhonenews.com.

Overview

Remember about 15 years ago when the only way to upgrade a business internet connection was to switch out an original 9,600 baud dial-up modem for a 14,400 baud modem? That's right, a 50% speed improvement - and it was still only one-tenth ternet T-1of a modern in with a speed of 1.4 megs.

While I say "modern", many businesses today that only have a T-1 as their internet connection feel like it's as slow as the old dial-up 14.4 modem.

Remember this bandwidth upgrade?

Why? Internet T-1s were great 10 years ago when internet traffic was mostly just test emails, spreadsheets and then a Word DOC with a photo now and then. Today businesses are passing huge media files, voice and even video over their internet connections and their little 1.4 meg T-1 which once seemed like an information super-highway is now an information bottle-neck. What to do? Following are seven economical ways to upgrade your internet connection at a reasonable price.

Seven Cost Effective Internet Bandwidth Upgrades

The following are seven different types of business internet connections. You should add at least one of these to your existing connection so that your business has at least two or more separate internet connections. Once you have two or more internet connections in place, you can designate one as your premium "toll lane" that can only be used for high priority data traffic.
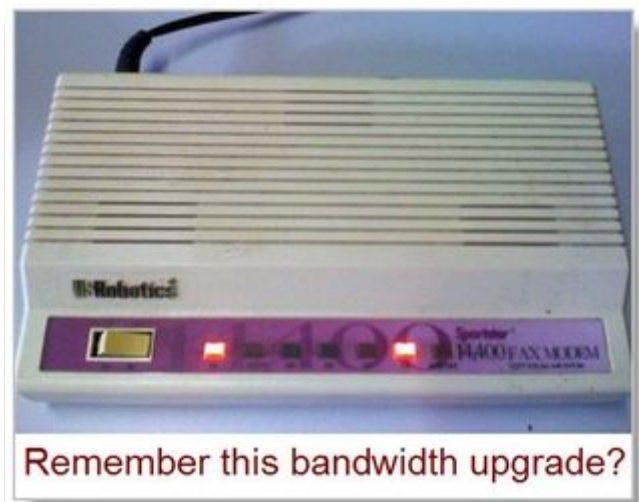
The other connections should be designated as your "everything else lanes" for data traffic that can "get through when it gets through".

If you've got extra money to spend on IT consulting and [fancy data load balancing routers](#) you can actually sandwich your multiple data connections together with special routing tables to get the best of both worlds - separate connections and/or one really big connection. (See the list of recommended TA[solution partner members](#) and vendors at the end of this article for help aggregating multiple internet connections and carrier networks.)

1. Ethernet - Also known as "fiber", "Fast E", "Metro E" or "Gig E", classic Ethernet is a service that is available to businesses in a "lit building" which means the commercial building literally touches the downtown fiber network of a commercial telecommunications company. Bandwidth connectivity costs via Ethernet fiber can be as low as $5 per meg. These giant pipes usually start at 100 megs and $2,000 per month for dedicated service. Very small businesses though can get terrific deals on smaller Ethernet pipes if their building owner has decided to "co-op" a large 100+ meg Ethernet connection into small 10 meg or smaller pipes.

2. Ethernet over Copper - Also known as "EoC", this type of business internet connection is today's number one small business choice for "integrated broadband" - a big pipe from the phone company that can provide multiple combinations of voice, internet and wide area data network connectivity. [Click here](#) to view different "pipe sizes" along with normal distance limits. EoC normally starts at 3.0 megs (double the bandwidth of a T-1) and goes up to 10.0 megs. EoC generally costs under $1,000 per month and is targeted to businesses in a normal city within 10,000 feet or so from a phone company "central office" but not on any "downtown fiber rings".

3. Fixed Wireless - Unlike "cellular wireless" that pulls a data signal into your cell phone from any direction (and around corners) while you're on the move, [fixed wireless](#) "beams" an internet connection to the roof of your business in a straight line from a transmitter placed on a high point up to ten miles away. Fixed wireless generally costs less than a phone company T-1 line and can be installed in about a week where a phone company connection can take a month or more. The best selling point for fixed wireless is the idea of "airborne redundancy" meaning that all other internet connections come through the ground while a fixed wireless internet connection comes "from above". If the basement of your building gets flooded, likely all T-1s, Ethernet connections and any other terrestrial connection will be lost while the fixed wireless connection from the roof will still be working. Prices for fixed wireless generally start around $150 for half a T-1 and then go up to how ever much money you have to spend. Fixed wireless is very popular for powering high bandwidth WiFi demands to temporary outdoor "events" like concerts or conventions.

4. Coax Cable - Previously seen as a low-end phone and internet solution for very small businesses that couldn't afford "grown up phone company solutions", the coax cable companies have significantly altered the internet bandwidth marketplace with very high download bandwidth at very low prices. For businesses that don't really need high QoS (quality of service) for ultra sensitive data transmissions like voice and video or don't need really high upload speeds, meg for meg, cable generally can't be beat on price which starts around $150 per month and can go up to several hundred dollars a month for their bigger small business internet pipes. Coax cable's biggest drawback is that because of their small and separated geographic footprints, many multi-location businesses with locations outside of the the cable companies restricted footprint will prefer a [national data network reseller](#) to provide for a single aggregated

network billed on a single invoice rather than deal with multiple cable carriers.

5. DSL - The original broadband connection after dial-up internet, DSL is still the lowest cost, quickest installed broadband internet service and it is ideally suited for any small business with light internet bandwidth demands or who want the absolute cheapest price on a redundant connection to their main internet connection. Pricing starts a bit lower than cable - close to $100 a month - and like cable is generally "asynchronous" meaning the download speed is higher than the upload speed which is usually very low. Like cable, DSL is also considered a "best effort" solution in that the service is not "guaranteed" to perform as advertised. The best thing about DSL is the availability of getting it on a month-to-month basis from the phone company where almost all other internet connections require a minimum one-year commitment.

6. 3G/4G Wireless - This is the same wireless data service that connects our smartphones and tablets to the internet. Like fixed wireless, 3G/4G provides a redundant "through the air" connection that's likely to survive small disasters that take out your building's basement and all your terrestrial internet connections. The big advantage of 3G/4G over fixed wireless is that it's mobile and can "see through walls". IT directors that want a very simple and very flexible redundant internet connection really like 3G/4G mostly because the cost is under $80 per month and can be moved around from one application to another whereas other internet connections are generally bolted onto a permanent application. Bandwidth speeds for 3G start around 400k down and 100k up and 4G speeds are many times higher with a strong wireless connection. The downside of 3G/4G is that while it can indeed "see through walls and around corners" (whereas fixed wireless is completely "line of sight" - save a cloud here and there) 3G/4G loses bandwidth throughput at an almost exponential rate with every extra wall and corner the signal must go through. There are [some seasoned companies though](#) that specialize in optimizing business class 3G/4G wireless and then managing network performance for the most demanding IT environments.

7. Satellite - Ever wonder how an ATM machine at a gas station in the middle of a desert knows how much money is in your checking account? That's right, a [satellite internet connection](#). Satellite data works the exact same way as fixed wireless. The only different is that the other end of the line of sight data signal from the satellite dish on your building is 22,000 miles up in space. The other big difference is the "two Mississippi" delay that goes with every transmission (as in counting "one Mississippi, two Mississippi, etc.) request. Even the speed of light takes a while for a 44,000 mile round trip. Satellite internet is primarily targeted for rural and remote business internet needs that can't be accommodated by any other method. Throughput (after the delay) is about the same as 3G/4G and costs about the same as fixed wireless but with lower speeds.

How to Choose the Right Internet Connection Upgrades for Your Business

I've pretty much listed the seven connections above in the order you want to try them - all things being equal. Please keep in mind that these solutions are what most budget minded small businesses are going to want to look at to upgrade or augment a simple existing internet connection that's plugged into a simple local area network or LAN for a single location business. Multi-location businesses that are tied together on a private MPLS network or VPN (virtual private network) may or may not want to start plugging in any of the different internet connections listed above without first carefully considering the security ramifications with whomever manages their wide area network or WAN.

Most any of the connections listed above will work just fine for "dumb data" where transmission speed is not critical. This is why many businesses "go cheap" by off-loading all their "dumb data" applications (big files, midnight remote network backups, employees watching ESPN, etc.) onto a second "cheap but big internet" connection while they preserve their smaller but expensive QoS data network for time sensitive data like voice and video.

Step one for choosing the right connection for your business is to sort all your applications that need an internet connection into "fast lane only" and "slow is OK". If you have a lot of "slow is OK" data to move around, start with cable or DSL and see what you can get away with. If you're trying to minimize the number of vendors you're working with or you're migrating into any sort of VoIP phone or voice solutions then you should start with Ethernet over Copper from your phone company.

A Vendor Neutral Telecom Consultant/Broker/Agent Can Minimize Selection Time
It used to be that choosing the right internet or phone connection was just about choosing the lowest price from whichever company was available in your area. In today's business environment though with critical voice and data business applications migrating freely between office work stations, smart phones and tablet computers, choosing the right internet connection can be a lot more tricky.

A vendor neutral telecom agent, consultant or broker can help you quickly sort through every vendor that's geographically available to your business and help you pinpoint the right vendor at the right price that has experience with your specific business applications.

To find a recommended solution partner in your area that can help, click here or contact me directly for a personalized referral to a recommended Telecom Association solution partner.

Recommended Broadband Internet Upgrade Solution Vendors
The following TA vendor members received positive reviews from both customers and recommended TA solution partners in the category of Broadband Internet Upgrades.

ShopForEthernet.com - Published by Telarus a broadband connectivity master agency. Through this portal you get get a wide range of price quotes from multiple broadband carriers, local phone company CLECs and national broadband network resellers.

Bandwave Systems - A national broadband internet connection aggregator of all bandwidth speeds including coax cable, DSL, 3G/4G, Ethernet, T-1s and more that also provides a single invoice and integrated network systems management.

Accel Networks - Accel Networks is the leading 3G/4G business grade wireless network solution vendor. A repeat year award winner among TA solution partners in wide area business wireless networking, Accel leads their competitors with their patent-pending, smart "Maestro" antenna system.

MegaPath - A nationwide converged voice and data wide area network service solution vendor with an expertise in application security and network management, MegaPath's award winning WAN managed services are recommended by some of the largest multi-location retail and quick service companies and their solution partners in the US and beyond.

Vocal IP Networx - Also a nationwide multilocation integrated voice and data vendor, Vocal IP specializes in detail oriented project management of both the most complicated voice and data network equipment migrations and nationwide bandwidth aggregation of the largest tier-one data carriers.

XRoads Networks - A unified bandwidth management company, XRoads is an award winning vendor that specializes in vendor-neutral, equipment based VPN virtualization appliance solution that is both a bandwidth manager and network server load balancer.

Get Listed Here - If you're a TA vendor or solution partner that specializes in broadband internet upgrades for large single and medium-sized multi-location commercial businesses, please submit a customer or partner TA review be be eligible to be listed on this page.

Copyright © 2012, Telecom Association, Last updated 11/13/2012
Edited by Dan Baldwin, 951-251-5155, Dan@BusinessPhoneNews.com