Telecom Survival Guide News

Voice, Data & Internet Service, Price and Product News for Small and Medium-Sized Business Decision Makers
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Add a 2nd Internet Connection to Your Company Network to Increase Speed, Redundancy & Employee Productivity!

Overview - Because of the cheap broadband Internet pipes they have in their home offices (cable, fiber and high-end DSL); employees have discovered & implemented "high bandwidth" applications that make their job easier and increase their productivity. To adapt these applications and associated productivity increased in their main offices, business owners and managers will need to double or triple their main office Internet speeds as well as provide for a secondary Internet connection to fall back on in case the primary Internet connection fails.

Many businesses today have a just single broadband Internet connection plugged into their company network. Because of the prevalence of three years contacts in the industry, these companies have had the same broadband connection for a while (meaning they're not likely getting the best rate anymore) and will have it a while longer before their current contract expires. These businesses have found that the cheapest way to increase their current Internet speed, take advantage of today's lower broadband Internet contract prices and increase redundancy is to bring in a second broadband Internet connection from a separate broadband Internet provider and use it together with the first Internet connection through the use of a "dual WAN, load balancing router". This solution provides increased Internet speeds, lower overall per Meg pricing and redundancy in case one Internet connection fails.

Because most businesses have a "wired" terrestrial circuit as their first Internet connection, many are choosing a "fixed wireless" provider to bring in their second Internet connection. While fixed wireless requires that a radio dish be installed on the roof of their building, business users are finding that fixed wireless can be installed three times faster than a wired Internet T1 and is usually up to 30% less expensive than a wired Internet T1 with the same amount of bandwidth.

Action Plan -

1. Confirm the contract terms of your current Internet connection & ask current Internet provider for terms to increase Internet speed through a redundant, separate connection
2. Ask IT provider for terms to upgrade to "dual-WAN, load balancing" Internet router
3. Ask telecom broker/consultant for terms of second, alternate broadband Internet connection
4. Budget to accommodate adding second, redundant high-speed Internet connection

Background - Just a couple years ago, when many people still had dial-up Internet connections in their homes, working out of a home office was somewhat problematic due to slow Internet speeds. Employees had to work out of the main offices because that's where they had access to the fastest Internet connections. Now just the opposite seems to be true. Where many business have a synchronous (same speed up and down) office Internet T1 speed of 1.5 Mbps, the Internet speed many people have at their home is 3.0 Mbps down and 768 kbps up or even higher. (Some phone companies with "fiber to the curb" offer residential customers Internet speeds of 12.0 Mbps down & 2.0 Mbps up for less than $100 per month.)

Why do home office workers do with all that speed? Well just as a gas will expand to fill the container it occupies, so too will Internet applications expand to use up the bandwidth they can get. What business applications are expanding to sop up all the bandwidth available?

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A. **Voice** - Many businesses have come to the conclusion that they don't want to buy one T1 for voice traffic and one T1 for Internet traffic. To save money many want to put their voice phone calls over their Internet T1 and then cancel their voice T1. When experimenting with this, IT managers are finding that uncompressed voice traffic is pretty fat, 80 kbps for a single call. Ten simultaneous phone calls take up half a T1. Compressed to 32 kbps or less, a data T1 can accommodate 48 simultaneous talk paths.

B. **Video** - While video conferencing may or may not ever become indispensable to the average business, on-demand (watch it whenever you want to) video will. What kind of on-demand video will become indispensable? Training videos, webinar playbacks, and audio playbacks to name just three. Over the next year or so, anything that can be read will be converted to something that can be watched. Even small mom and pop businesses will have "infomercials" on their websites to separate themselves from their competitors, "it slices, it dices, it makes Julian fries!" YouTube, the company that set the standard for Internet video, advises that it takes 500 kbps per simultaneous viewer to have a decent video experience.

C. **Email Attachments** - This is the real bandwidth killer. Ten years ago when a company needed to get a contract out immediately they sent it via overnight mail. Now employees just scan and email it. Ten years ago, sending an email with any kind of attachment was considered rocket science. Today, people can't understand what the big deal is over attaching a 10 Meg document to an email and sending it to every employee across the country.

D. **Online Applications** - As businesses migrate their critical applications off their local servers onto remote, web-based servers they find that their small Internet portal is creating a log jam. An "online application" may not be a service many businesses are currently familiar with, but they will soon find that they can't run their businesses without them. Online "apps" most people already know about include Ebay.com (selling your stuff), YouTube.com (sharing videos) & Flickr.com (organizing & sharing photos). For a list of online business apps visit http://bizsolutions.google.com. One of the most successful online business apps is SalesForce.com. Many if not most of today's business software providers are in the process of offering their solution as an online application. This model of online delivery of a software solution is also known as SaaS ("software as a service") or ASP ("application services provider"). Call it whatever you like but it means more employees using Internet access as the same time and demanding more bandwidth.

E. **Multi-media Publishing** – Remember secretaries? Before the Internet and before everyone had a computer on their desk, business executives needed secretaries to “publish” all their letters and correspondence. Today, not only do employees not need secretaries to send letters, they don’t need advertising agencies to do the majority of their marketing or publishing. It’s not ad agencies that are uploading all those videos to YouTube. And practically everyone with a camera has figured out how to email their photos to their friends or post them to their MySpace or FaceBook web pages. Whatever content a business needs to distribute about itself can now be created and distributed from the office assuming the Internet bandwidth is available.

These are just five business applications sucking up Internet bandwidth. As employees find cool web-based productivity applications to use in their home offices you can be sure they'll bring them to the main office. Business owners and IT managers will discover that increasing a company’s Internet bandwidth is the cheapest option available to them to increase the productivity of their employees.

Business Class T1 vs. Cable, DSL & Fiber - Business broadband Internet providers are quick to point out that the non-synchronous fiber, cable & DSL Internet offerings they learn about at home and see offered to businesses are good for residential and small-office use only because the speeds are not guaranteed the way business-class T1 Internet service is guaranteed by a SLA or “service level agreement”. Most all cable, DSL & fiber services operate as a “shared commodity”, take a rather lengthy route to the provider’s Internet portal from the business user’s office, and get desperately slower as more residential and business customers use the cable, DSL & fiber service during hours of peak usage. Business-class T1s directly connect a business

customer to the service provider's portal. Other customers on the service provider's network do not affect the "guaranteed-in-writing" Internet performance of a business-class T1 customer.

Business-class Internet service is more expensive because the speed is guaranteed by the SLA and that guaranteed speed cost more to provide. While some businesses will start out on cable or DSL service, when the business grows to the point of needing dependable and consistent Internet bandwidth throughout the business day they turn to business-class T1 service. Many ex-cable & DSL users report that their new synchronous 1.5 business class T1 Internet service far outperforms even the fastest shared cable & DSL service they used to have.

Most businesses who "need to go faster" know that their cable or DSL isn't making the grade because of all the broadband Internet testing websites available. "My upload speed is supposed to be 1.0 Mbps but when I measure it during slow mornings it's only 200 kbps."

Businesses that can't decide between business-class Internet T1 and cable or DSL should defer to their IT consultant and/or application vendor. If one or more of your business process applications absolutely demands a specific level of broadband Internet service (throughput, latency, packet-loss, etc.) get it in writing from the Internet service provider that that's the service level you'll get. Few IT consultants and IT application vendors want the headache of having a business customer that's trying to run a critical business application on a non-guaranteed Internet connection. (Of course some IT consultants will be more than happy to charge you $300 per hour to figure out exactly why your DSL or cable Internet connection is not performing to your satisfaction.)

Business-Class T1 Internet Getting Bigger (and Cheaper) - Over the past several years, 1.5 Mbps has been the standard size for a business-class Internet T1. Beginning in 2008, 3.0 Mbps will increasingly be seen as the minimum sized Internet portal businesses will see as sufficient. To entice early adopter businesses to migrate to the 3.0 Mbps pipe, many Internet providers are offering their best discounts and router promotions on 3.0 Mbps Internet pipes. New routers are now able to seamlessly bond up to four 1.5 Meg T1s together to provide a fully bonded 6.0 synchronous Internet pipe. Businesses that have an Internet connection on an older contract will be surprised to learn how much prices have come down.

Unfettered by the restrictions of wire and wired routers, fixed wireless providers can easily scale broadband Internet up and down from 768 kbps to 6.0 Mbps. With a slightly different receiver, fixed wireless providers can offer 8.0 Mbps all the way up to 155.0 Mbps – all within a matter of days (not months)!

Dual-WAN, Load Balancing Router Search Case Study – In searching the Internet for evidence that the concept of "dual-WAN, load balancing" actually works I found Joe Mehaffey of GPS Information.net. From his 2006 web published review I learned that Joe spent five years looking for the dual-WAN router of his dreams. To that end he came up with 24 router features he was looking for and went through six router products before settling on a $995 PePLink router that met his reasonably demanding requirements.

In March 2006 Joe wrote, "I am using a PePLink Load Balance 300 triple WAN router on my WISP system to provide access to multiple WAN lines for redundancy. PePLink is a relatively new company producing a Linux router appliance that has turned out to be the most reliable unit I have tested. With the latest version 3.7.0 firmware, all of my needs have been satisfied and problems corrected."

I contacted Joe in January or 2008 to see if the PePLink product was still working for him and he replied as follows. "It is still generally current (as far as I know). PePLink and others have some new gear, but I am 'delightfully content' with my PePLink unit after trying a half a dozen others on the way. It performs flawlessly, never crashes and I actually forget it is there. And.. The PePLink folks seem to add new features before I need them."

Dual-WAN, Load Balancing Vendors –

PePLink – "Our multi-WAN routers combine Internet connections, such as DSL/Cable/Wi-Fi, from multiple ISPs easily. The addition of a PePLink multi-WAN router to your network will instantly increase bandwidth, uptime, reliability, and accelerate speed while reducing the cost of having a T1."

Astrocom – "Powerlink is Astrocom's family of award-winning WAN failover and ISP load balancing appliances that provide both outbound and inbound ISP failover and load balancing for 100% uptime at one-third the TCO of other products."

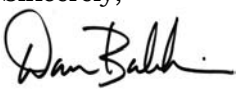
Alvaco Networks, Inc. – "We offer a free 45 Day trial unit with no obligation. We will ship the unit and provide tech support with the initial setup for free."

XiNCOM, LLC – The X16-R allows businesses to utilize multiple broadband connections for their Local Area Networks, giving them redundant connectivity to the Internet and other remote networks, providing better service availability and improved security."

Fatpipe Networks, Inc. – "FatPipe® XTREME is a high-speed router clustering device from FatPipe Networks. It is the ultimate solution for companies that want the highest levels of WAN redundancy, reliability, load balancing, and speed for data traffic directed from the network to the Internet."

"Telecom Survival Guide News" is written for the network service clients and prospective clients of ATEL Communications, Inc. To discuss the specifics of this newsletter and how they impact your business please contact ATEL broker & consultant Dan Baldwin at 858-646-4655 or Dan@ATELbroker.com.

Sincerely,



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