DSL VS. CABLE HIGH-SPEED INTERNET

Today's businesses are rapidly changing the way they work. On-site servers are being replaced by cloud-based services. Videoconferencing is putting a new spin on face-to-face meetings. More employees are working remotely, relying on mobile devices to get their job done. These trends can – and do – bring great gains to a business. But they also require bandwidth. And plenty of it.

Just a decade ago, an Internet connection of 1.5 megabits per second (Mbps) would have sufficed for many businesses. Today, the benchmark is closer to 50 Mbps – and a 100 Mbps standard isn't far off. Comcast Business Internet customers, for example, are finding their bandwidth requirements increasing, on average, by nearly 25 percent a year.

To meet this need for speed, most small- and medium-size businesses will choose between two technologies: DSL (Digital Subscriber Line) and high-speed cable. Both have made big advances in recent years. And to be sure, both promise faster Internet access than ever before. But these technologies are decidedly not equal. Indeed, they have crucial differences, and outlooks, that businesses need to understand if they are to make a choice that helps their future – not hinder it.

Small- and medium-size businesses need a broadband technology that can support the way they work, not hold it back.

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THE FACE OFF

So how exactly do DSL and high-speed cable compare? A look at their core characteristics – and what each technology can or soon will provide – is instructive.

Speed. DSL may transmit data, but it is based on a technology developed for voice: traditional twisted-pair copper wires. Twisted-pair was a breakthrough when it was invented by Alexander Graham Bell in 1881, and subsequent advances have let it support more modern digital communications. Yet DSL bandwidth hasn't quite kept pace with businesses' needs. While major DSL providers can today offer speeds exceeding 20 megabits per second – and at least one company has announced speeds of 45 Mbps coming soon – this is still below the 50 Mbps threshold has become the de facto standard for businesses.

Cable high-speed Internet, on the other hand, was developed specifically to transmit data. It's been able to deliver that 50 Mbps benchmark for the past couple of years, and today, top-tier providers are providing 100 Mbps service. That number will grow, too, with speeds reaching 250 Mbps expected in the near future – as early, perhaps, as 2014.

Distance. For many businesses, speed, it turns out, isn't DSL's most limiting factor. The bigger issue is distance. While voice calls can be carried vast distances over twisted-pair wires, data does not fare as well. In fact, if subscribers are located more than a couple of miles from a phone company's central office, DSL performance degrades markedly.

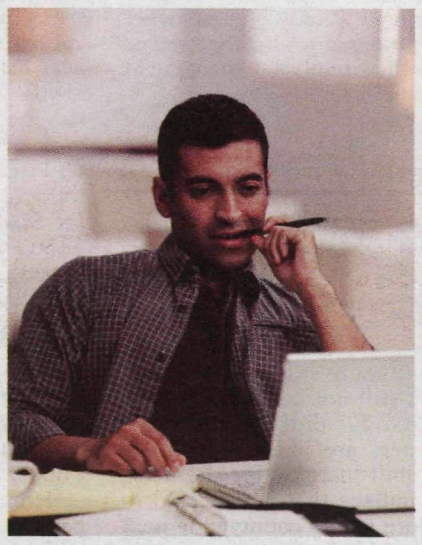
For today's most common type of DSL technology – Asymmetric Digital Subscriber Line, or ADSL – service is technically possible over a range of about 18,000 feet (about 3.4 miles). But because of performance degradation, providers generally limit service to an even shorter distance – and even then, top speeds may be hard to obtain.

Designed from the ground up for transmitting data, high-speed cable is not distance sensitive. Whether subscribers are located next door to the cable company or many miles away, they can enjoy the same broadband speeds.

Consistency. When the Internet speeds businesses get are not the speeds they expect, unpleasant surprises result – such as poor voice and video quality, sluggish downloads, and slow connections to critical applications in the cloud. Consistency is critical, and the real test for it comes during peak usage hours, those times of the day when Internet traffic – and stress on networks – is at its highest. A February 2013 study by the Federal Communications Commission's Measuring Broadband America initiative found that DSL-based services delivered, on average, 85 percent of advertised speeds during peak periods. Cable-based services, on the other hand, delivered 99 percent of advertised speeds.

Availability. The distance limitations of DSL mean that for a large percentage of a phone company's footprint, the service will not be available. This is especially true in rural areas, where the cost of installing DSL infrastructure, combined with low population density, means that DSL is rarely economically viable for providers.

Since high-speed cable Internet doesn't degrade over distance, and runs over the same infrastructure that brings cable TV to both densely and sparsely populated areas, it is available to a far wider customer base; in cities and rural areas alike.



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Roadmap for the future. Both DSL and high-speed cable will continue to improve, but in different ways, with different results. Emerging DSL technologies like ADSL2 and VDSL (Very high bit rate Digital Subscriber Line) and VDSL2 will offer higher maximum speeds than today's DSL, but even the highest rates now envisioned will just barely meet the 100 Mbps standard most businesses will require in the very near future. And none of these technologies get around the distance and availability issues inherent with all DSL service. Those top speeds will be achievable by just a fraction of a phone company's footprint.

Cable, on the other hand, has a far more ambitious roadmap, one that goes even beyond the 250 Mbps rates that the backbone for cable-based high-speed data transfer – known as DOCSIS 3.0 – will hit in the very near future. Its successor – the forthcoming DOCSIS 3.1 – will mean speeds of 500 Mbps to 1 gigabit per second (Gbps), and more. And unlike DSL, cable will bring its blistering bandwidth to a coverage area far and wide.

THE PERFECT FIT

Small- and medium-size businesses need a broadband technology that can support the way they work, not hold it back. At the same time, they need a technology that can take them even further, because their needs – and the opportunities awaiting them – will evolve. The most successful businesses have always been the ones that look ahead. The tools they rely on need to look ahead, too. That requires a network built for the next century – not built around the last one.