magine Yourself...

Imagine yourself sitting at your Mac as you are right now. You're working on an important presentation for work tomorrow and you need to find some reference material to back up your opinions, or maybe you just need that special image to bring it to life. Without a thought, you fire up your browser and pop over to your favorite search engine, and within seconds, you're browsing through material to put that finishing touch on your work. You find a great color image on a public domain clip art site, but it's over a megabyte. No worries, you click on the link to download it, and in an instant it's there on your hard disk, and you drop it into your presentation. Your email program, running in the background, notifies you of new mail, so you bring it to the foreground, and you find a note from your colleague informing you that your important meeting has been postponed and you have another few days to prepare. Time for a break! You click on over to the Weather Channel to check out the latest satellite photos. In a few seconds, you're watching a time lapse satellite view of your area, just like you see on TV. No clouds in sight! It's off to the garage to prepare the bike for that long-overdue bike ride.

ow Stop Imagining and Get It

This has long been the promise of the Internet — instant access to an unlimited wealth of information. But the reality of current technology restricts the potential of its use for most people. To get to the information, we're accustomed to dialing our ISP, waiting (and praying) for a connection, then waiting some more while we watch each web page slowly build itself on screen. Sound familiar?

For the lucky few whose local cable company offers Internet service, it

seems like a distant memory, and the promise of the Internet has largely become a reality. Cable Internet service promises not only fast access — up to 50 times as fast as a 28.8 modem — but a permanent 24-hour connection. No more dialing... no more horrible screeching that we've all become so strangely fond of as the modem connects... no more waiting! Well, for the most part, anyway.

Cable service has removed the bottleneck of slow modem access, but exposes the current limitations of the Internet itself. Slow servers and overloaded Internet backbones still limit access speeds, especially for web users. For their part, my cable service, MediaOne, has implemented "proxy" servers. These local servers automatically cache frequently accessed web traffic, and send it directly to users rather than over the Internet at large. This does help somewhat, but only if the sites you visit happen to be stored on the local server at the time. Otherwise the local server has to pass the request on to the Internet, which theoretically introduces a delay over accessing the site directly (proxy servers, thankfully, can be disabled in your browser).

Unfortunately, implementation of cable Internet services at this time is not standardized, and differs among cable companies. Some offer cable access in the download direction only (from them to you), while uploading takes the old slow route through the phone lines. This unfortunately requires a dial up connection, and takes away the major advantage of permanent access. This is only a temporary stop-gap solution as these companies upgrade their cable networks to support two-way communication. Cable modem manufacturers have also vowed to introduce a standard off-the-shelf modem sometime later this year. This should help to standardize the industry and entice more cable companies to upgrade their services.

Thankfully, MediaOne has chosen to upgrade beforehand, so their service has been totally cable-based, through an upgraded fiber-optic network, from the start. Their system provides up to 1.5 megabit (1,500,000 bit) per second download speeds, and 150 kilobit (150,000 bit) uploads (upload speed is intentionally limited because most web traffic is in the download direction, as in web page viewing). For comparison, the old trusty 28.8 modem offers only 28.8 kilobit (28,800 bit) per second transfer speeds!

This allows file download speeds on the order of 150-170 Kilobytes per second, or 9-10 MB per minute! Typical modem rates are 3-4 Kilobytes per second, 200 KB per minute at best. In real use, however, this speed is rarely attained for file downloads, and never even comes close for web access. Again this is the fault of Internet and web bottlenecks, not the cable modem. In fact MediaOne provides a large test file on the local server for testing file download speed. I always get the maximum rate with this file of 160-170 KB per second. Also, when downloading at off-peak times, such as

early in the morning, I do attain this speed from many remote sites as well. I only wish web http protocols could be improved to take advantage of this speed. Unfortunately, web browsing frequently involves the transfer of many small files, rather than one large one as is the case with file downloads, involving a lot of handshaking (back and forth communication) between the remote server and your browser, which slows transfers considerably.

Few Concerns

There have been a few concerns in the media in recent months about cable modem usage. One is the security concern of being attached 24 hours a day to what amounts to a shared network. My cable company downplays this, and in a notice they have you sign on set-up, they basically say that file security is your responsibility. They do recommend you do not enable file sharing on computers attached to a cable modem, or at least make sure you set passwords if you do enable it (good advice in any case). I do not know if Macs are susceptible to such problems, but I do not use file sharing, so it's not a concern for me.

Another concern is the possible degradation of access speed as more users sign on to the service. Bandwidth on the cable is limited, and as more users are added to the system, more and more people would be competing for the use of that bandwidth. In practice, MediaOne techs have told me that they strictly limit the number of users on each node or branch of the system, and they closely monitor the loads on each branch to keep access at the advertised rates. Each branch is, in effect, a self-contained local area network, with a limited number of users. They can also tweak the system to grant more of the total cable bandwidth to the Internet service if necessary. So far I have seen no degradation in service in the 3+ months I have been subscribed, and I use it heavily.

MediaOne asks $39 a month for "MediaOne Express" service (if you're not subscribed to their TV cable service, it's $10 more). The cable modem, similar to a TV cable box, is included in the monthly fee. They also charge a one-time $100 installation fee. Other cable companies' services are similarly priced. Is it worth it? To my mind, a resounding *yes*. You can dump your old ISP, as MediaOne provides email service, newsgroups, and web space. They also maintain their own newsgroup for service announcements. Their service has been excellent. The connection has not gone down once, there have been virtually no 'growing pains' that most Internet service providers go through in starting up a new service, and their installer was very knowledgeable about the Mac and the Express service in general. They had

some trouble with their email services for a short time, apparently due to spam attacks, but they were quick to repair it. If your town is lucky enough to have MediaOne as their cable company, or another company that offers two-way Internet service, look into it. You'll never want to go back to that old box gathering dust on your desk. What's it called...? Oh yeah — a modem...

One final note... I came across an article (thanks to a link on MacCentral) on Wired News about a cable conference recently held in California. The cable companies present noted that cable modem installations take anywhere from 1-2 hours, and one of the main hurdles is installing and configuring the ethernet card required for cable modem connections in the computer. I had to laugh at this one, as it was obvious they were talking about PC installations. I installed my ethernet card myself before the tech arrived, and it took me all of five minutes to open up my Mac, plug the card into the CommSlot II port, and put it back together. Another 5 minutes tops was spent copying the ethernet driver from the provided disk into the System folder and restarting. All the tech needed to do when he arrived was plug the cable modem into the wall, connect the cable wire and run the ethernet cable to the card, then set up Open Transport with my new network numbers — 10 minutes tops. He then fired up my browser and showed me the MediaOne home page blasting onto the screen! Don't let anyone tell you the PC is "plug and play" — Windows 95 or not — IT ISN'T! The original Wired article can be found at http://www.wired.com/news/news/technology/story/9153.html .

MediaOne, formerly known as Continental Cablevision, was formed when the latter was bought out by US West, and is currently the nation's third largest cable service. For more information on MediaOne, visit their website at http://www.mediaone.com/ .

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