

SMART PLANET

The incredible shrinking Internet

By [Mari Silbey](#) | June 29, 2012, 4:17 AM PDT

Many people made fun of Alaska Senator Ted Stevens when, in 2006, he famously described the Internet as a “series of tubes.” But how many people really understand it better, or are aware of [how much Internet infrastructure has changed](#) over the last five years?

A study presented last month shows that more than a third of all Internet traffic - and at times, nearly half of traffic - is being ferried around by a small group of companies. That finding could prove significant because the companies that control Internet traffic also have the ability to decide how traffic is managed. At issue are variables such as quality of service, transport speeds and pricing, and whether and how subsets of content may be prioritized for delivery.

Study co-author Craig Labovitz, who is CEO of [DeepField Networks](#), and Internet networking consultancy, says the latest research is new evidence that the world’s web infrastructure has undergone massive consolidation in recent years. In 2009, [Labovitz helped conduct another study](#) which concluded that roughly a third of all Internet traffic was being delivered by only 30 companies designated as “hyper giants.” These companies included Limelight Networks, Facebook, Google, Microsoft, and YouTube, among others.

However, his recent research goes even a step further.

Labovitz showed in May [at the Content Delivery Summit](#) how content delivery networks (CDNs) alone now represent between 35% and 45% of web traffic on average. That’s up from the 20% to 30% range in 2010. And for context, consider that less than half a dozen providers control the vast majority of the CDN market. Following the trail to its logical conclusion, that means a small handful of companies, maybe four or five, control probably a third of Internet traffic today.

Just like we have a finite number of companies with the scale to maintain large airlines, railroad networks, or utilities, we also have a small defined group with the ability to power web traffic. Some of these are content delivery networks - companies that optimize delivery of bits and bytes to speed up the performance of many different websites and web services. Others are big content companies like Netflix, or hosting companies like Rackspace.

Adam Thierer, a senior research fellow at [George Mason University’s Mercatus Center](#), and the former director of telecommunications studies at the Cato Institute, says this kind of consolidation is inevitable.

The economics of network industries are not those of the corner lemonade stand. We're never going to have hundreds or even dozens of companies competing to provide the sort of sophisticated and secure digital infrastructures we all increasingly demand.

However, just because consolidation may be inevitable doesn't mean we shouldn't monitor its program. From a network neutrality perspective, there could be cause for concern in the future if there is increasing overlap between CDN companies and Internet backbone providers, or between network providers and content companies. In those cases there is the potential for conflict of interest because of the economic incentive to prioritize one type of Internet traffic over another. That's where consolidation could become a problem.

As for today, the Internet is already far denser in structure than it was originally conceived to be, or than it was a few short years ago. What will the Internet look like in another five years? If the trend persists, it will be concentrated into even fewer hands than it is today.