

Comcast vs. Level Three vs. the Rest of Us

I just posted my essay on [Demystifying Networking](#) arguing that we need to fund infrastructure as infrastructure rather than as billable paths.

As if on cue there were a series of Comcast “events”:

- There was a network [outage](#). Apparently Comcast’s users lost access to the DNS for a few hours. Comcast acted opaquely and there is no mention of the outage on their site.
- Then we have [Comcast](#) vs. [Level Three](#). Each is pointing fingers at the other but the Comcast subscribers (end users) are not parties to the dispute.
- And Zoom telephonic is filing a [complaint](#) about Comcast’s policy for certifying devices connected to the network – shades of [Carterfone](#)?

All of these are centered on the idea that the service providers own and protect their own facilities.

We need to be very careful about the word “network” here. Much of the confusion arises because the word has so many meanings. NBC is a television network in one sense. Here I am using the term “network” to refer the facilities used to carry traffic (content).

It’s not a coincidence to have Comcast at the center of all three events. They see themselves as operating a CDN or Content Delivery Network which is something very different from providing us with the ability to communicate by exchanging bits. To Comcast it is a world in which services are [baked](#) into to the network. They create value using their network. In that world Netflix would buy a particular service to transport their content. Since the value is in the network facilities the parties exchanging traffic (peering) settle their claims and share the value.

Today the value is created outside of the network. We have just bits. We need a different approach.

The power of the Internet comes when the carriers can’t decide how valuable a service is. It’s up to the users to [discover](#) what works. As you add more capacity you can do more with the network. You don’t buy special bits just for Netflix. But that is, in effect, what Comcast is insisting on.

Fortunately capacity has grown very rapidly and supply been able to stay ahead of demand and this process has worked. And it has done so in the absence of a direct relationship, as exemplified by the Netflix streaming model.

Comcast is in the middle of the relationship between Netflix and their customers. But the Netflix’ customer doesn’t (and can’t!) own the wires so the customer can’t just pay for more capacity. And why should Netflix be treated differently from YouTube or other sources of content?

The other wrinkle is that Comcast’s business is threatened by competition from Netflix. If they add capacity not only don’t they get more money from Netflix they also get less revenue from their own services!

The idea of asking a transport company that is also in the content business to play fair has failed as witnessed by the attempt to have “[CLECs](#)” or Competitive Local Exchange Carriers.

The only way to assure even-handed treatment is to decouple the transport business from the content business. If Comcast wants to be in the content business (as with XFINITY and NBCU) then the only way to assure even-handed treatment is to decouple the two.

We could then pay for infrastructure as common infrastructure. This allows the users to pay for as much capacity as they want. And with a very competitive market for gear and operational services the prices will follow the rest of computing with million to one price/performance improvements. Cost would fall dramatically by collapsing redundant infrastructure into a commons.

It removes the conflict of interest and aligns incentives.

The Comcast outage is relevant too because it’s a reminder that the current carriers aren’t necessarily the best candidates for operating the infrastructure. The providers are answerable to shareholders and not their customers. No wonder the carriers only have to service their customers enough to keep them from unsubscribing and no more.

Cities may not be great at fixing potholes but they do keep the streets safe. Connectivity operations are far simpler than operating streets and everyone can contribute capacity. Let’s not be prisoners of naïve aphorisms about city hall.

The Telcos had trouble explaining why they didn’t allow people to connect equipment (like [Carterfone](#)) to their network when they had a simple interface using wires.

There is a very competitive consumer market for Ethernet routers within the home. But once we leave the house the

market is limited by service providers who do whole-system design for their delivery networks

An infrastructure approach would encourage more arms-length relationships for infrastructure providers. We don't require that individuals certify gear, like a PC, to connect to the network. We need to move to open interfaces suitable for a large competitive market. It may take a while to wind down retrofit approaches like Comcast's DISOSS. The first step will be to make the network resilient so we don't need to certify everything and instead let gear that works best win over the market.

One can sympathize with Comcast. They started a company built around a shared antenna and now find themselves in an entirely different business. But that's not reason for our limiting our economy to their narrow vision.