

The Information not-so-super Highway

The Information Superhighway is indeed cliché but it resonates with the idea of easily exchanging bits across vast distances. Highways are not like railroad tracks. If one lane is full you quickly change lanes to bypass the congestion.

Sometimes you find you're in an HOV (High Occupancy Vehicle) lane stuck behind a slow driver while cars on the main roadway are passing you? Unlike the single HOV lane one slow car doesn't slow down all traffic in the main road where there you just easily change lanes.



**No Lane Changing
Even if another lane is empty**

The Information not-so-super highway
Twisting, winding, billing paths

Creating Scarcity from Abundance

Imagine we changed our highway policies and wanted to encourage competition by auctioning off lanes to providers. You could then choose any provider you wanted to.

The catch is that each provider needs to build its own infrastructure for the whole city because you can't change lanes and are limited to that provider's lane. Of course there's the chance of being stuck in congestion even if the other "lanes" are idle.

Of course bits aren't cars so this is not an exact analogy. But even if we didn't have congestion what sense does it make to have multiple providers if all the lanes are identical?

With "wireless" we went so far as to create fictional lanes using bands of "frequencies". That might have made sense a century ago but today we know [better](#). It makes little sense to have separate infrastructures for wired and wireless bits¹.

We create scarcity with other policies such having separate copper, fiber, coax and wireless networks. When we do use more than one technology we make a big deal out of "hybrid" networks when such mixing and matching should be the norm.

The Federal Communications Commission (the FCC) has policies which create artificial distinctions by treating each medium with a different policy. Companies that are told to share their copper (DSL) lines may spend billions simply to escape such "must share" requirements.

The carriers themselves benefit from scarcity because it creates "value" in that they can charge more. But it greatly reduces the value to society.

We are victims of bad metaphors and policies based on those metaphors. Yet instead of escaping or thinking outside the metaphor we have a debate that is firmly within lines. We fight over whether to regulate each line or require fair or neutral treatment.

We should, instead, be asking why we are forced to confine ourselves to artificial lanes when we have so much capacity all around us.

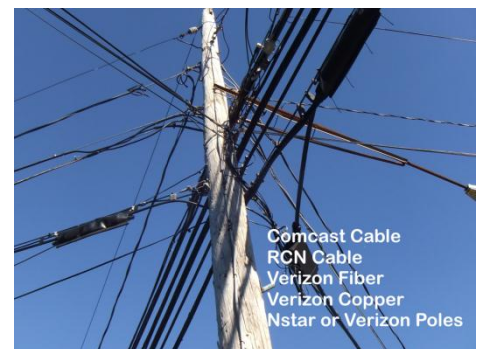
For that matter why even think about highways? Remember we created roads to facilitate travel.

The Internet shows that we can simply exchange bits without worry about the path. Wires and radios can facilitate the exchange of bits. We should question policies that force us to confine these exchanges to narrow paths. It's even worse when we limit the path to a single wire. As a result a single failure leaves us disconnected.

Why do we go to extremes to limit our ability to communicate by accepting metaphors based on 19th century telegraph and rail lines?

We see these "lanes" in the myriad of wires from different carriers and the multiple strands that connect each home all the way back to the central office.

If you have three broadband "lanes" that means you are paying three times what you have to. That's a lot of money spent without creating value. Add the costs of more "lanes" for separate cellular systems and all existing copper lying fallow we see more opportunity lost.



While some might argue that the providers can differentiate by offering better “quality” we need to remember the lesson of the past. In the 1990’s the carriers offered digital connections at much higher than modem speedsⁱⁱ but the market went with the slower analog lines because there wasn’t a surcharge. Eventually those lines become nearly



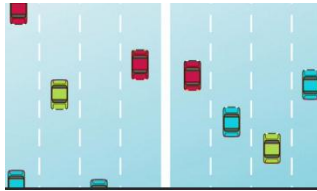
as fast as the digital lines. Any attempt to add value to differentiate will run into the same problem.

We haven’t come very far since the blizzard of wires in 1889. We just hide the wires inside bundles and wavelengths.

Fortunately the solution is simple: just don’t do that. We [can](#) communicate without providers.

Update (April 18, 2012):

The NY Times posted a video about spectrum policy. Overall the piece accepts the spectrum framing which is problematic but the highway illustration can be used to help debunk the channel metaphor.



The more you think about it the more artificial the lane metaphor is, especially when policy doesn’t permit changing lanes, presumes we have very few lanes and treats bits as if they were physical objects.

ⁱ Of course terms like “wired bits” are really metaphors. We’re actually talking about bits carried over segments using copper or fiber or whatever to facilitate exchange of information encoded as bits. Metaphors are convenient shorthand or placeholders but aren’t a substitute for deeper understanding.

ⁱⁱ In <http://rmf.vc/Capacity> I explain why speed isn’t the right term even though it is the one we continue to use.