

Zero Marginal Cost!

We want more generative opportunity of the kind we associated with the Internet. Imagine the economic impact of having zero marginal cost for communicating. We've long ago paid for the copper wires – we do we pay a premium every month forever just to use it as DSL vs letting the lines lie fallow. And once we're paying for the data bits why do we pay extra if use them as voice bits.

We have abundant capacity latent in the existing infrastructure but it is kept “off the table” by a funding model that dates back to telegraphy in the 1800's or the private turnpikes of the 1700's. We need to address the conflict of interest inherent these funding models now that digital signaling has given us the ability to create our own solutions. Unlike the days of analog signaling when each telegraph company had to own its own wires, today all bits are the same.

The idea that we can create our own solutions using raw, unreliable bits is at the heart of the Internet's generativity. It's not entirely new – we've seen this before when IBM had to make its hardware available so third parties could develop software that found new value in the existing hardware. The Internet has allowed us to discover the value latent in our existing wires, fibers and radios.

We've already seen the power of zero marginal cost. It was the availability of unmeasured local phone service that gave the United States the lead in adopting the Internet in the 1990's. We rejected digital phone service because the phone companies chose to charge a premium for that service. We just worked around it using modems because there was *zero marginal cost* for using the existing infrastructure.

This was a result of a policy decisions that dates back to the days when the phone companies recognized that they could forgo the cost of billing for local calls in favor a monthly fee.

We're at a crossroads – do we continue a business model that made sense in the 1800's or do we embrace the digital technologies that allow us to take advantage of the abundance in what we've already paid for?

Today the entire telecom industry is architected around the billing policy rather than the needs of customers. With a different funding model we can greatly reduce the costs while creating opportunity and abundance.

We have a single local electricity distribution system in most communities. In the days of analog phone services

and TV it made sense to have a system for each but now that we can delivery services of the one Internet they are essentially dumb pipes. Unlike electricity we aren't even consuming a resource – we're just talking among ourselves.

Paradigms only shift when forced. The very success of the Internet in giving us the ability to emulate telecom services has allowed policymakers to continue business as usual and misinterpret the signs of that the market is out of kilter.

For example why has the price/performance of DSL been relatively stagnant for 20 years while everything else in computing has improved by factors or thousands or even millions? We did get a price collapse when we had a glut in fiber capacity – should we applaud the industry's ability to stave off another price collapse.

I found myself in the middle of these issues when I was at Microsoft and decided to network computers within a home. It was a match for the first broadband offerings. But there was a difference in philosophy. In the tradition of offering services the carriers' triple-play plan we were supposed to pay the carrier each PC that was connected. They were unable to force us to pay for services within our homes but were able to use their control to force us to pay for services like phone calls outside our homes.

We own wires in our homes and we do get the benefits of zero marginal cost and thus we went from dial-up speeds to gigabits while the price declined.

As a technology, broadband is wonderful – it allowed us to repurpose existing cable and phone wires for Internet connectivity. But just as we use “radio” to describe a business model “broadband” is associated with a business model that denies us the benefits of ownership. We see the problems in the redundant expensive infrastructure. The small portion of the capacity we do get to use is enough to give us full video over the Internet.

It turns out that broadband is indeed good for video – but let's not confuse that application for the real value which is 24x7 connectivity. We become full participants not visitors.

What if we could assume connectivity everywhere – not just where we have our broadband connection. What if we can assume that every device is connected no matter where we are? Think of the possibilities. Any device can be connected. We get a hint with today's smart phones and Amazon's kindle but each device and service requires a separate negotiation – you don't get the generative dynamics of the Internet in which we could rapidly try out new ideas.

Digital technology allows us to change our perspective and make the physical infrastructure available as a basic resource – one that we don't consume and is very inexpensive.

Today our incentives are perfectly out of alignment – the service-funding model suffers if there is abundant capacity thus making the empowered user a competitor.

If we shift the funding model to one that rewards those who do a better job in providing capacity to the local community then we have the positive dynamic that gives us the Moore's law style hypergrowth we've seen in computing and the rest of the Internet. We have a lot of catching up to do.

Today's demand for more broadband is a symptom of a problem – we aren't getting access to the existing capacity. Paying more money won't change the basic dynamic. Shifting the funding model would.

And it would come at a savings – not a cost. Without having to pay extra for voice and other bits we'd save the cost of billable events. With aligned incentives we'll see major reduction in the costs of operating the network and we already have high capacity paths everywhere and millions of access points that become public transit points. The savings go much deeper than that as we discover how to implement services using the abundant capacity.

It would be a shame if we chose to continue to tie ourselves to the rails of the 18th century framing of today's telecom and deny ourselves the abundance already at hand.

We need only realize the opportunity and act as the owners we are.