

How to Beat Comcast

Dave Burstein

Who am I?

A geek.

Write DSL Prime since 1999

Did a book on DSL and another on web video

Did 2 workshops for the broadband plan and infinite other stuff

Who pays me?

Anyone who doesn't tell you that should be treated as a disguised lobbyist. Never believe anything from a lobbyist (from either side) that you can't check independently.

Ads from chipmakers, Calix, etc.

Conferences, commercial speeches, etc. - not paid for this except expenses

Occasional consulting for modest money. I'm doing a consulting job for Vermont Tel that will be the first in five figures.

Ready to discuss new Big Telco Plan

Spent 30 hours on the 159 page proposal before flying here

Really, really intended to clobber rurals

Also totally unacceptable by my standards.

Cuts all service to 1M homes, including wired or wireless voice

Doesn't actually build much or even any broadband

Big cost to consumers

Would obviously fail except for \$300M+ per year lobbying

Fastnetnews.com click on Latest on right or individual articles

Have much more if you ask

Vermont's Wonderful New Network

State of the Art LTE to virtually every rural Vermont home. The rough design was well over 90% of all rural residents, including the most isolated. The final design will be better.

Anything less extreme than a \$50,000 tower for 5 homes is under consideration.

Possible because of
\$100M in stimulus
loans and grants

You don't have
\$100M to spend
but what
can you learn

New Tech That will Make a Difference

Original presentation for Montana
before I got called in to work
on VTEL project

LTE Advanced can be a darn good broadband network

In **rural areas where you have plenty of spectrum**, better in some ways than most DSL.

First deployments in Verizon coming in 2013

Not practical for small outfits until 2014-2016

20+ Meg down, 5-10 meg up easily and pretty reliably

100 meg peaks

Decent latency and other characteristics

Will cost less than what Verizon has built past more than half the United States already because electronics prices will keep coming down

Shared gigabit in Ericsson demonstration today, but far from practical.

Works mostly by using 60-100 MHz rather than 20 MHz

Downsides

Doesn't yet exist, although the standard is set and first gear in the labs. We all know products can be late, although the theory on this is now well-understood

Will probably be expensive the first few years, especially at the highest speeds. 8x8 MIMO for the home unit will be hard to produce at a decent price

Urban results, where there isn't enough spectrum, will be less impressive. Manufacturers design gear for the higher volume urban market and may not produce a good rural product

New DSL Networks will be twice as fast as AT&T's U-Verse, maybe 4x with bonding

50 and even 100 megabits will be practical in networks like AT&T's U-Verse or the FTTN that Qwest is building in other states.

Bonding two lines works well today, costs \$75-150/home if efficiently done, and doubles speeds.

"Vectoring" will New networks, with field terminals like U-Verse, can double speeds again over modest distances - perhaps half a mile. May or may not be possible to upgrade existing networks.

Takeaway: Any new gear should be bought with vectoring capability in the near future, perhaps this year.

DSM can dramatically reduce trouble calls and improve performance on DSL networks

ASSIA DSM is running most of the DSL at the biggest networks whose names you know.

President is Stanford Professor John Cioffi who also invented vectoring

Available as a service from ASSIA's computers in California.

Needs no hardware.

Works, proven on 30M lines

Tests daily or even more often each line

Adjusts the power levels on each line and other factors automatically

Problem: Looking for 10K lines or more to include network

Huge conflict of interest. I'm a paid member of advisory board.

Much better WiFi with 2x2 and 3x3 MIMO. Modest chip and antenna upgrade

John Malone's Liberty Global intends to use to run TV across the house with wires. Unproven for that. Part of the "beat Comcast" agenda later on.

Note crucial role of near-ubiquitous WiFi for offloading wireless data. Major strategy at AT&T. Cablevision cloud on long island

If you do wireless, look at femtocells

Multiscreen & iPad video demand
exploding at CableVision.
About to turn on at Comcast

Microsoft Mediaroom claims they are ready. I haven't seen it
yet.

Big competitive problem for other IPTV. Sorry

HD Voice is ready. Comcast and Verizon will do it

Better, although not that great.

Tricky, because not interoperable

Look at CAT-IQ cordless phones

Back to
"How to beat Comcast"
Lessons from VTEL

Requirement definition for the whole project: Fight Comcast across 22,000 homes through 2015

Cable has great things coming and Comcast will be in the lead.

DOCSIS 3.0 really does 50 meg down 95+% of the time. 20 meg upstream coming soon.

No one is paying \$99 for 50 meg today, but Cablevision and all the Europeans are bring it down to \$10-15 more any regular cable broadband

Currently, cable is beating telcos 56-44% across the country. Recent quarters 65-35%. Yochai and Susan think all telcos will lose to cable and die. I disagree.

AT&T/Verizon getting killed where they don't have U-Verse or FiOS. Significantly losing customers

Better Local Service

You already know that. You have strong community ties and that helps.

Obviously, not enough.

But everything you do for better customer experience pays off.

VTEL DSL beat cable 2:1.

BT is gaining on Virgin cable in UK even though Virgin is selling 50 meg for \$45 or less in a bundle

What can we do better?

Every bit counts.

HD Voice works on Metaswitch

Gateways with 2x2 MIMO

Local game servers

...

Local video content matters. Stoplight and local court

Underlying strengths

Absolute must: Get plenty of cheap bandwidth by whatever means necessary.

Denver or Chicago price \$4/megabit. Comcast, Century have effect costs much less. Huge strategic advantage.

Poll audience on what actually paying.

Must find solution, which may be a state co-op buying dark fiber.

some more ideas

Ask me what I know that regulators should know

All broadband on existing networks is cheap. \$8/month/customer at the big carriers. More at the small ones, but not close to \$80.

Best way to help rural areas is to bring backhaul down. Easiest way to get better offering for consumers is to require bonding on request for a fair fee. Sonic.net in California is selling it successfully.

All towers going LTE Verizon 98+% of country, AT&T 90+% even if they don't get T-Mobile. Probably will do 96-97% because they have to keep up with Verizon. Look at underlying structure

Ask me what we should learn from other countries.

Ask why rural service is so darn expensive. Broadband plan 1%, backhaul bigger than distance/density as problem, minimum economic size

Ask who in DC cares about rural telcos.