



After the Triple Play A ten-year plan

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April, 2010

Why this topic? Why that title?

- This talk is focused on the broadband ISP industry and its future.
 - A lot of what any company does is short/medium term.
 - Some small group of strategists needs to look long term.
 - This is a long term talk.
 - Over (say) 10 years, the nature of the broadband access business is going to shift.
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Disclaimers and warnings

- This is a U.S. centric talk.
 - You will have to map it into your context.
 - This is a very young talk.
 - It contains a lot of speculation.

 - We will discuss in our members' session tomorrow, when you can object...
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Ten years ago

- Residential broadband was just heating up.
 - In the U.S., there were about 7,000 dialup ISPs.
 - They essentially all died, or turned into web hosting/design firms.
 - Current ISPs, which own facilities, will have greater staying power.
 - But they will change.
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Ten years from now?

- Broadband to the home will be critical. No way society is going to let this capability erode.
 - Continuing pressure for improved performance.
 - Broadband costs significant amounts of money to provision.
 - There are those who think about an “infrastructure-less” future, and I welcome their comments here.
 - Mobility will have grown in importance.
 - Anything else we should take as sure?
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The video experience

- Perfect storm: money, usage, tectonic collisions
 - Not just the movement of the “traditional TV experience” onto the Internet.
 - Rather, the evolution, perhaps beyond recognition, of what the “video experience” is.
 - Interactive, not a one-way experience.
 - A social, not an isolated experience.
 - An any time, anywhere experience.
 - And much more, as I will describe.
 - The value chain blows up.
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A social science perspective

- “Technology is society made durable”
--Bruno Latour 1991
 - His hypothesis is that technology tends to lock in and define behavior that would otherwise evolve.
 - Phone, music, TV emerged in the “pre-computer” era of rigid technology.
 - Once we enter the computer era of plastic technology, things go crazy.
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The centrality of the “triple play”

- The idea of the “triple play” as a revenue model is not that old. It arises from the movement of three traditional revenue streams into a single firm.
 - But plastic technology overthrows tradition.
 - The idea emerged, and it will erode over time.
 - “Over the top everything” (OTTE).
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My thesis

- The erosion of the triple play is inevitable.
 - Current trends make this clear.
 - This change will be slow.
 - No current business models are going to implode suddenly in a cloud of losses.
 - No need to panic.
 - There are still lots of ways to make money and be profitable.
 - But do look ahead.
 - ISPs should expect to change (or die).
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Two halves to my story

- Cost and cost structure.
 - How do firms make and spend money today?
 - How might that change?
 - New business options 10 years out.
 - I have 8 options to explore with you.
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Pick a candidate company

- I picked Comcast, a U.S. cable-based triple play provider.
 - About 25% of the U.S. market.
 - Essentially in one business: residential access.
 - No enterprise.
 - No software services.
 - No mobile (except for investment in Clearwire.)
 - I think I can understand their annual report.
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How they make their money

■ Video:	24.2 M customers	\$18.85B
■ Internet:	14.9M customers	\$7.23B
■ Phone:	6.5M customers	\$2.65B
■ Advertising		\$1.53B
■ Other		\$2.2B
■ Total		\$32.44B

Costs allocated to video

■ Revenue:

■ Customers	\$18.85B	\$64/m
■ Advertising	\$1.53B	\$5.25/m

■ Costs

■ Programming	\$6.48B	\$22.3/m
■ CPE	\$2.0B (?)	\$6.9/m

■ Net	\$11.9B	\$41/m
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Costs allocated to Internet

- Revenues

- Customers: \$7.23B \$40.5/m

- Costs

- Allocated \$.52B \$2.9/m

- Net: \$7.0B \$39.3/m

Conclusion

- Video is not this wonderful, high margin product, compared to commodity Internet.
 - They both have about the same net ARPU.
 - ISPs should not favor one over the other.
 - They just are depending on the total average ARPU.
 - The question is “how best to get it”?
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Costs allocated to phone

- Revenues

- Customer \$2.69B \$34.5/m

- Costs:

- Allocated \$.73B \$9.5/m

- Net: \$1.96 \$25.1/m

Conclusions about phone

- Providing phone service is expensive.
 - Compared to Internet: \$2.9/m vs.\$9.5/m
 - That cost is not just termination charges. It is not minutes.
 - So do not ask “will minutes go away”? Ask “will the need for the service go away”?
 - Skype drains minutes away from the product, but they don't really replace the service.
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The cost of video

- If all video were to go over the top, who is harmed?
 - ISPs fear the loss of that cable revenue and all the usage. (Or do they?)
 - But what about the programmers?
 - Comcast is about 25% of the US market, so programmer are getting about \$26B/y.
 - Why would they want to go over the top?
 - Answer—not all content is the same.
 - Advertising revenues? Not a chance. Later...
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Aside: video and wireless

- Over the top video is the friend of wireline.
 - An HD video feed might go 10-12 mb/s.
 - That will blow out wireless. Even tomorrow's wireless.
 - Over the top video will ensure that wireless is a complement, not a substitute for residential broadband.
 - But usage is not free (come back to that.)
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My 8 stories

- The bit pipe commodity story
 - The content-caching story
 - The phone story
 - The “selling content” story.
 - The advertizing story.
 - The monopoly/public sector story.
 - The “related services” story—security, etc.
 - Total disruption story.
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The bit pipe commodity story

- Imagine that all the content did move “over the top”, and the revenues from video and voice went away (to other actors).
 - Could a facilities-based provider still make money from selling Internet access?
 - We get to other sources of revenues in my other stories...
 - Again, use Comcast as an example.
 - What would they look like?
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After the triple play

- Comcast would lose about \$8.5B in revenues that they pass through today.
 - Programming and CPE.
 - Since they would be selling a more simple suite of services, imagine they could cut another \$2B out of their expenses.
 - They become a \$22B company, not a \$32.5B company.
 - Must prepare the investors for this shock.
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The price point?

- If they have 24M customers, they must charge \$76/m.
 - Today, if you buy *only* Internet access, they charge \$60/m.
 - Shifting the price point to \$75-\$80/m over a number of years can be done.
 - This outcome would result in a highly profitable company.
 - So what is wrong with this?
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The content-caching story—cost

- Usage is not free. Just cheap.
 - Figuring out what it costs is tricky.
 - The true cost driver is total busy-hour load.
 - Off peak costs nothing, since you provision for the peak.
 - Pricing has not gone there yet.
 - Cost depends on how far it goes.
 - We use approximations, such as average cost per GB, because it is inaccurate but easier to grasp.
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Some estimates

- U.S. metro-centric numbers.
 - Bulk transit costs \$4/m for a mb/s.
 - That might imply about \$.025/GB.
 - Internal network costs might be the same magnitude.
 - One estimate puts total cost at under \$.10/GB.
 - A typical U.S customer today, pre-video, uses perhaps 3 or 4 GB/month, or less than a dollar in usage.
 - Getting real data—ask me this summer.
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Costing video

- For transit (alone) \$1/month buys .25 mb/s.
 - Assuming a transit price of \$4/m for 1 mb/s.
 - If total cost is twice that, then \$1 buys .125 mb/s average rate.
 - If you watch an HD video (10 mb/s) 50% of the busy hours, you should pay \$40/month.
 - A bit pricy. But these are today's costs, not future.
 - Is there a "Moore's law" effect that will save us?
 - Can we reduce cost by system design?
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But—usage costs are variable

- They are *highly* variable.
 - Traffic over a transit link is most expensive
 - Traffic from a distant part of the net is expensive.
 - Traffic that originates at the head end is essentially free.
 - So hosting high-volume content at the head end is critical.
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Interests are aligned

- ISPs like the content close to the consumer.
 - Lowers costs.
 - Providers like the content close.
 - Improves the experience, e.g. lowers latency.
 - That is what companies like Akamai do, as well as ISPs themselves.
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Finding your enemies

- Is Akamai and its competitors the ISP's friend and partner, or enemy?
 - Friend because they help lower ISP usage costs. This improvement will really start to matter when we look at video.
 - But perhaps they are ISP's enemy because ISPs might like to be in that business.
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Akamai profile

- Revenues: \$791M
 - Operating income: \$212M

 - Revenues, about 2.5% of Comcast, and Akamai is a global company.
 - Why bother to be in that business? (\$.75/m.)
 - Two reasons (see below) but not because it is a great money-maker. CDNs are a commodity business today.
 - A small part of programmer costs.
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The phone story

- Do not think about “minutes”. That is old-think.
 - Ask what the “experience” is, and how that might change over the next ten years.
 - The major barrier to innovation has been the rigidity of the “old” phone system.
 - Folks will work around that and redefine the experience.
 - Look for hints.
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Voice: is OTT a killer?

- Vonage?
 - \$900M revenue; 2.61M subs.
 - 40% the subs of Comcast, and 33% of the revenues. Comcast makes more.
 - Cost of service is \$226M, or about \$7.27/m.
 - 3% churn/month.
 - Losing money.
 - Not a fearsome competitor...
 - Why do people use them?
 - Highly cost sensitive, portable numbers (e.g. specialized features).
 - Facilities providers could match those.
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Who is the voice competitor?

- Not Skype.
 - A complement, not a substitute.
 - Not teleconferencing tools.
 - Not Vonage.
 - It is the mobile service.
 - Nothing to do with “over the top” worries.
 - But ask, how will the service mutate?
 - Regulator has an important role here.
 - Emergency service, wiretap, disaster availability...
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Heretical question

- Why would anyone want to be in “old phone” business?
 - Not like paid content, with fees flowing through.
 - No advertising.
 - It is a commodity, just like the Internet, but with much less generality and opportunity.
 - Why would someone want to be Vonage?
 - I think ISPs will keep it, and get bored with it.
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The “selling content” story

- Go back to that \$26B now flowing into the programmers from the “cable” providers.
 - All content is *not* going to become free.
 - The producers of premium content are going to collect that fee somehow.
 - Who will provide that service?
 - That is the coming battle—get in and fight.
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Today?

- iTunes sells mostly music, but video is coming. Apple sells video through their Apple TV device.
 - They make more or less \$4B a year selling content.
 - \$8B selling iPods, \$32B total in 2008.
 - A better business than Akamai. This is where some money is.
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Tivo

- Tivo is:
 - A device for delivery. An approach to caching.
 - A channel for selling.
 - Today resell Amazon video on demand, Netflix, etc.
 - Today, 29M U.S. households have a DVR.
 - SNL Kagan predicts 57M by 2012. That is over half of U.S households.
 - A big deal.
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Friend or enemy or partner?

- What is the essence of Tivo?
- It is *not* simple time-shifting.
- It is controlling, and thus creating, a new user experience.
 - Control the screen, control the experience.
 - Watching TV is no longer what you do, but just one option in a larger menu.
- Tivo got a lead here.
 - Comcast, Direct TV, Cox etc license Tivo.

A basic lesson

- The most important change occurs not when we do old things using a new tool, but when the new tool redefines what we do.
 - That which we call “watching TV” is going to morph beyond recognition.
 - The video experience will always be with us.
 - Watch and understand this change, and you have a chance to control your future.
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The advertizing story

- The other “follow the money” story.
 - Today:
 - \$58B annual US spend on TV ads.
 - Cable seems to get about 10%.
 - \$23B annual US spend on Internet.
 - 70m BB homes would imply \$27/m.
 - Where will that \$58B go and who will get a share of it?
 - This is clearly the next battlefield.
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Who is fighting?

- Google
 - Search ads and behavior-driven ads.
 - Ad networks.
 - Ad exchanges.
 - Aggregates of web publishers
 - Tivo
 - ISPs
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Ads for over the top video?

- The approach, format, control, etc. are undefined and up for grabs.
 - Do we need standards?
 - He who controls the experience controls the money.
 - Imagine a free DVR that will not skip over ads but only shows you ads you want to see.
 - There is enough ad money to give away the DVR.
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To be continued...

- Tomorrow.
 - Other options, and what I would suggest.
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What I would do...licensing

- Set up an independent entity (perhaps owned by an aggregate of ISPs) to be the licensing and payment agent for distribution of premium (fee-based) content.
 - Competitors will include Amazon, iTunes, etc.
 - Big guys. Tough fight.
 - So count your advantages or find your partner.
 - What you want is a bit of flow-through in revenues.
 - For those who serve premium content today, the programmers know you.
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What I would do...advertising

- Make the consumer your partner.
 - The behavior and demographics of the consumer are valuable information.
 - Advertisers pay a lot for that info today.
 - Make the consumer a partner in gathering and exploiting that information.
 - Give the consumer a much improved experience, perhaps cost savings (watch for fraud), and a sense of control.
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The “related services” story

- ISPs have this high-capacity pipe to the consumer.
 - But usage is not free across your network.
 - Think: what can ISPs offer the consumer.
 - A few ideas:
 - Tools and services related to security.
 - Backup
 - Applications (especially “two server” apps)
 - Emergency/disaster mitigation
 - Compare consumer fees with Akamai.
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The monopoly/public sector story

- The story that the private sector deflects.
 - But there is a lot of frustration here and there with what the private sector is doing.
 - Australia, rural areas, ...
- It seems that private sector investment will drive the deployment and upgrade of broadband in some places, but not others.
 - Option 1: this outcome shifts.
 - Option 2: we have regions served by a public-private partnership, or one provider at best.
 - For this product, competition does not make costs go down.

Total disruption story

- My friends at the MIT Media Lab ask: “What meteor will next kill our current dinosaurs?”
 - Wireless?
 - My answer, not if HD takes off.
 - Mobile (and other) cameras
 - Cameras are full resolution, in contrast to displays.
 - Disks
 - How much can the consumer store in 10 years?
 - Niche real-time video
 - What is the analog to web site hosting? Justin.tv?
 - Cars
 - LEOS
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Good news/bad news

- This talk does not fully capture the extent of the disruption.
 - User behavior—social networks, Twitter, virtual worlds, other collective experiences, e-commerce, who knows?
 - Technology—sensors, cars, cyborgs
 - ISPs do not need to be in all these businesses.
 - Let others experiment, fail, make the pie bigger.
 - Once ISPs provision for video, they will not notice any of this traffic.
 - Focus on the places where there is real money.
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