

CANARIE

The challenges of the first mile

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The role of broadband Internet?

- > **There are opposing views of broadband Internet:**
 - A useful technology but no more important than cellular telephone, cable TV, etc; **OR**
 - A fundamental platform for innovation and societal transformation like roads and electricity
- > **If the former view is correct then market is best place to enable the ongoing evolution of the technology and we should all go home**
- > **If the latter view is correct than society as a whole, in addition to industry, have an important role in its evolution**



What will drive broadband?


Applications or Competition

- > August 1993, Scientific American
- > Once a technology is perceived as having broad utilitarian value, **price**, as opposed to features or applications drive penetration
- > But application examples such as eHealth and eLearning are important to demonstrate to policy makers of the broader social impact of broadband Internet
- > Every year the PC has new applications
- > But the biggest driver for widespread PC in the home is low cost
- > And what is the driver for low cost? **Competition**
- > ITU (2005) in their latest broadband rankings also says that “Competition is the primary driver for broadband penetration”



Policy approaches to competition in broadband

- > **Generally accepted that open competitive market with level playing field is the best way of stimulating broadband deployment and new applications**
 - But what is an open competitive market and level playing field?
- > **To date telecom regulators have focused on “facilities based” competition and “open access or unbundling”**
- > **Facilities based competition is ultimately the best solution**
 - Has been very successful in the long haul
 - But so far difficult to achieve in the first mile
- > **Open access and unbundling has been the alternative solution for the last mile**
 - But has had poor track record with incumbents and now eliminated with Brand X decision
- > **Some municipalities have been proposing that they provide basic infrastructure and competition should occur at the application layer**



How did we end up with a duopoly?

- > **In USA and Canada, government protected cable industry from telcos from 1970-1995**
 - Telcos could not offer video and could not take over cable companies
- > **This allowed strong cable industry to develop that could stand up to telcos (and hire equal number of lawyers and lobbyists)**
 - It also forced regulators to set clear rules on pole and conduit access
 - This made it much easier for smaller players at a later date to use same facilities
- > **In Canada, government actively encouraged fiber build out by cablecos by only allowing CAPEX and very small OPEX rate increase**
 - To increase revenues cablecos had to build out more fiber plant, which increased revenues through economies of scale



Today's Problem

- > **Telephone companies are in a desperate race to catch up to cableco**
 - They need to build fiber infrastructure in order to offer same capabilities
- > **Cablecos are holding all the aces with DOCSIS 3.0 (100 Mbps-> Gbps) and cable TV franchises**
- > **To pay for fiber, telecom companies are talking about building a two tiered Internet**
 - A high speed un-congested channel for the telco traffic particularly aimed at carrying video
 - Charging service and application providers such as Google, MSN, Yahoo etc for premium access
- > **Teleco and cablecos could end up squeezing out ASPs and ISPs from providing effective service to their customers**



Issues facing telcos (and others)

- > **If cable (or other high speed services) already in place, very difficult for a new entrant – even the telephone company**
- > **Any network whether wireless or FTTx, overbuilders, or municipal, requires huge capital outlay with a big risk of slow take-up. In addition:**
 - subject to intense competitive and political pressure from incumbents
 - no obvious consumer demand for “another” network carrying identical services
- > **Need a new business model**
- > **Critical leadership role for university research networks**



What if the customer owned the last mile?

- > **Increasingly popular strategy at universities, schools, hospitals, businesses, etc**
- > **Various companies are specializing in deploying “condominium” fiber to institutions and enterprises**
 - Each institutions purchase one or more fiber pairs in the fiber cable
 - Customer responsible for lighting their own fiber strands
- > **Fiber cables terminate a carrier neutral colo facilities where customer can cross connect to service provider(s) of their choice**
- > **Since customer owns the last mile they are not restricted to a choice of service provider who has deployed last mile infrastructure i.e. telco**
- > **ROI is typically 2-3 years versus purchasing managed service**



Long term strategy

- > **In discussions with several communities and groups about possible pilots**
- > **Intent is NOT to do a national roll out of FTTh**
- > **Hopefully a few showcase demos of customer owned FTTh will stimulate RBOCs and municipalities to adopt the concept of customer owned fiber**
 - Especially for telcos who need strong business case to build out fiber
- > **Advantage to incumbent is that they can get faster return on investment if they sell some strands of fiber to customers and regulatory relief from pressure to be “network neutral”**