Broadband Changes Everything

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CCTA

- Canadian Cable Telecommunications Association (CCTA)
  - Represents 78 cable companies
- CCTA's primary role is to communicate the industry views to regulatory bodies, governments, and other stakeholders
- CCTA helps members to promote standards of excellence, assess new technology and business opportunities and advance the development of services to Canadian consumers
- CCTA recently changed its name to reflect shift from broadcasting to broadband

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Industry Background

- Structure
  - 4 large companies
  - Over 80 smaller companies
  - $4.5 billion in revenues
  - Over 11.6 million homes passed
  - Over 7.5 million cable television customers
  - Over 1.6 million digital cable subscribers
  - Over 3.1million high-speed internet customers
  - Digital telephone launched 2005

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Cable Industry Services

- Regulated under both Broadcasting & Telecommunications Acts
- Program distribution remains cable's core service
  - Basic cable accounts for less than half of all cable revenues
  - Growth in distribution revenues driven by digital cable
- Broadband internet is cable's fastest growing segment
- Cable telephony represents a new opportunity

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More than TV

- Cable industry engaged in 5 year/$7.5 billion digital transformation
- Grown from simply video distributors to suppliers of advanced media and communications on demand
- IP is the most recent stage in a communications revolution that began 25 years ago
- Transformation accelerating from VoIP today to IPTV tomorrow

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"Broadband by Cable"

- The Goal:
  - Accelerating the transition to fully digital broadband cable networks to be the preferred choice of consumers for all their entertainment, information and communications needs.

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Canadian Internet Facts

- Canada has one of the highest adoption rates of broadband internet in the world
  - 5.7 million subscribers in total
  - 44% of all households and two-thirds of internet homes
- Cable companies provide broadband internet to more than 3 million Canadian homes
- Nearly 11 million Canadian homes have access to cable high-speed
- Universal broadband a challenge in remote areas

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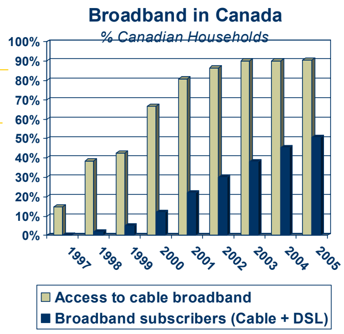
Digital Divide is Disappearing



- Since its introduction in 1996, cable broadband subscription has grown to over 3 million and is accessible to nearly 11 million homes
- Broadband prices range from $20 to $45 per month (13 to 30 Euros)
- Deployment of satellite-based initiatives will extend broadband coverage to all homes

Sources: Statistics Canada, CCTA
2005 figures are estimates

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Digital / IP Changing Everything

- Telecom is…
  - Death of distance
  - Commodity voice
  - Integration with IT
  - Mobility
- Broadcasting is…
  - Content on demand
  - Personalization (PVR)
  - Integration (IPTV)
  - Portability
- Retail is…
  - Digital appliances/ networking
  - Hardware to software
  - Accelerated product cycle
  - Low margin
  - Personalization
  - Portability

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Changes in 10 Years

Video
- DTH
- Digital cable
- VOD
- HDTV
- PVR

Internet
- Broadband
- Music downloading
- IPTV

Telephony
- Digital cellular (PCS)
- IP telephony
- VDSL

- IP will accelerate change

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Cable Convergence

- Super fast "big broadband" internet with real-time DVD quality
  - Faster internet and more capacity than competitors
- Sophisticated HD video experiences and thousands of virtual channels on-demand/in any language
  - Emphasis on personalization and on-demand service
- Full service communications alternative that adds video and mobile functionality to voice and data services
  - Bundles, choice and flexibility
- Cable has made significant investments to make transformation to suppliers of video, internet and phone services

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Convergence is Disruptive

- Content and services can be delivered over multiple platforms
  - Telco/cable competition
  - Satellite/wireless
  - Applications-based services (VoIP/IPTV)
- Software versus networks
  - VoIP (changes cost structure)
  - IPTV (movies online)
  - Desktop media centres

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Convergence Disrupts Regulation

- Consumers use technologies to bypass controls
  - Satellite signal theft (black market)
  - Ad avoidance through PVR
  - Impact of peer-to-peer networks on intellectual property rights
- Networks can be broadcast, internet or telecom on demand

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Barriers to Convergence

- Digital cable (Packaging flexibility, more services, digital migration)
- Video-on-demand (Rights)
- HDTV (Need content)
- Digital video recorders (Marketing)
- Broadband internet (Investment)
- Telephony (ILEC market power)
- Interactive TV (Standards)

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The Crux of the Debate

- Rolling out advanced services from broadband to HDTV requires significant investment
- Need an environment that stimulates revenue growth and investment
- Public policy must place more emphasis on competition and consumer demand to produce innovative services

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What Government Can Do To Accelerate the Digital Transition

- Create the proper incentives to invest in digital capacity (foreign ownership, tax credits, regional grants, access to rights of way/support structures)
- Reduce regulatory constraints on use of capacity to facilitate digital migration and allow for the internal generation of funds (new services) to finance transition
- Create the right environment to compete (rules for IP telephony, packaging flexibility)

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Policy Challenges

- Stimulating investment in broadband
  - Does unbundling reduce investment?
    - Do application independent services reduce bottleneck issues?
    - Do we need to reconsider essential facilities test?
  - Ownership/investment control
    - Canadian ownership restrictions may promote culture at cost of competitiveness

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Policy Challenges

- Minimizing regulation of the internet
  - Can solutions to spam be legislated?
  - Conflict between privacy/security
  - Responsibility for restricting hate/porn
  - Costs of compliance with internet regulation

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Policy Challenges

- Maintaining content protections in broadcasting
  - Emergence of black/grey market
  - IPTV
- Resolving intellectual property issues
  - Copy protection standards
    - Impact of DRM on rollout of HDTV, PVR, VOD
  - ISP liability
    - Notice and takedown in peer to peer environment

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Policy Challenges

- Promoting facilities-based competition
  - Regulation of ILECs/CLECs
    - Does VoIP technology change nature of market power test?
    - Application dependent/independent
    - Targeted pricing

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Regulation of Voice Services That Use Internet Protocol

Process

- CRTC initiated public process in April 2004 and offered preliminary views:
  - P2P/Skype–type services not touching the public telephone network need not be regulated
  - Services provided and used as local service and that rely on North American numbering plan resources and connectivity to PSTN should be regulated in same manner as other local services.

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Regulation of Voice Services That Use Internet Protocol

Decisions 2005

- With respect to 911 issues, CRTC ordered that fixed, non-nomadic services must provide 911 service and that industry committee convene to address technical implementation issues
- With respect to other matters, the CRTC held to its preliminary view on the basis that IP-based local voice services were in all material ways being packaged, promoted and sold as local voice services

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Regulation of Voice Services That Use Internet Protocol

- All new entrants are free from economic regulation.
- Incumbent telephone companies are free to provide VoIP services
- Incumbents (who, collectively, hold between 91% of business and 98% of residential lines) must seek prior approval of pricing and cannot price below cost
- Resellers can price as they see fit and without prior approval and with the exception of 911 and contribution to universal service
- Broadband network providers cannot block or degrade access to competitive VoIP services

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Regulation of Voice Services That Use Internet Protocol

- More significantly, the CRTC had initiated a process that would set the stage for the reduction and ultimate removal of incumbent price regulation
- The CRTC has committed to delivering this framework as early as March 2006
- On evidence of sustainable competition (including from IP-based local services), incumbents would be relieved of pricing obligations for local services, regardless of technology

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Regulation of Voice Services That Use Internet Protocol

Cable Industry View

- Local voice is the last remaining monopoly in the Canadian telecommunication market
- The Decision provides for a light handed approach and balances the requirement for innovation and consumer choice with the need to safeguard emerging competition
- The CRTC has set out a roadmap to reduce or remove incumbent regulatory burdens
- The right decision for the right time

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Government Telecommunications Policy Review

- To develop modern telecommunications framework for Canada
  - New regulatory framework adaptive to technological change
  - Access to modern and affordable services
  - Expanded use of ICT to drive economic growth

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Telecom Review – Cable Position

- Promote sustainable competition and convergence in all markets
- Deployment of broadband networks on a competitive basis key to growth and connectedness agenda
- Investment in facilities should be encouraged
- Resale of incumbent facilities based on commercial negotiation
- Efficient interconnection critical for the development of advanced network services
- Access for end users

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The Benefits of Fully Digital, Interactive, Broadband Cable Networks in All Communities Across Canada

- A competitive alternative for all a consumers entertainment, information and communications needs (digital home)
- Gateway to regional/economic growth bringing e-commerce and access to global markets to large and small communities across Canada
- Community access to government and social services, tele-health and education on-line
- Abundant channel capacity and new interactive applications to serve Canada's cultural objectives

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