IPTV.2: The Second Generation of TV Over The Broadband Internet

Companies in Transition: The Biggest Telco Transition Since Deregulation

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Leveraging the Power of Network-Centric Information Industries™

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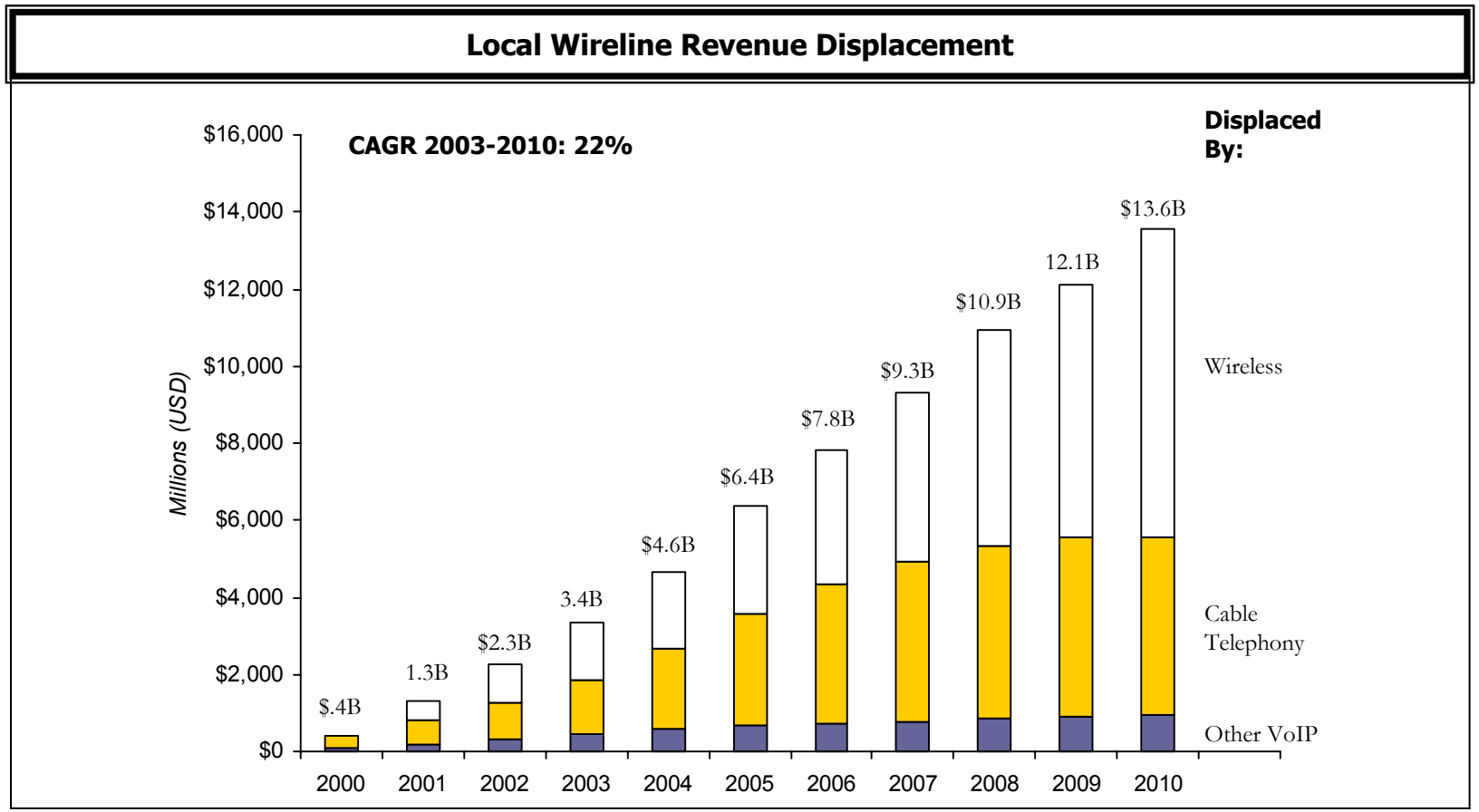
Telcos Are Fighting For Their Core Market Survival – Wireless and Cable Players Are Taking Voice Share From Fixed Line Operators



At Current Course and Speed, US Wireline Revenue Loss Could Be $14B-$18B by 2010

Source: Forrester, FCC, UBS Warburg, Merrill Lynch, Morgan Stanley, US Census Bureau, ADVENTIS Analysis

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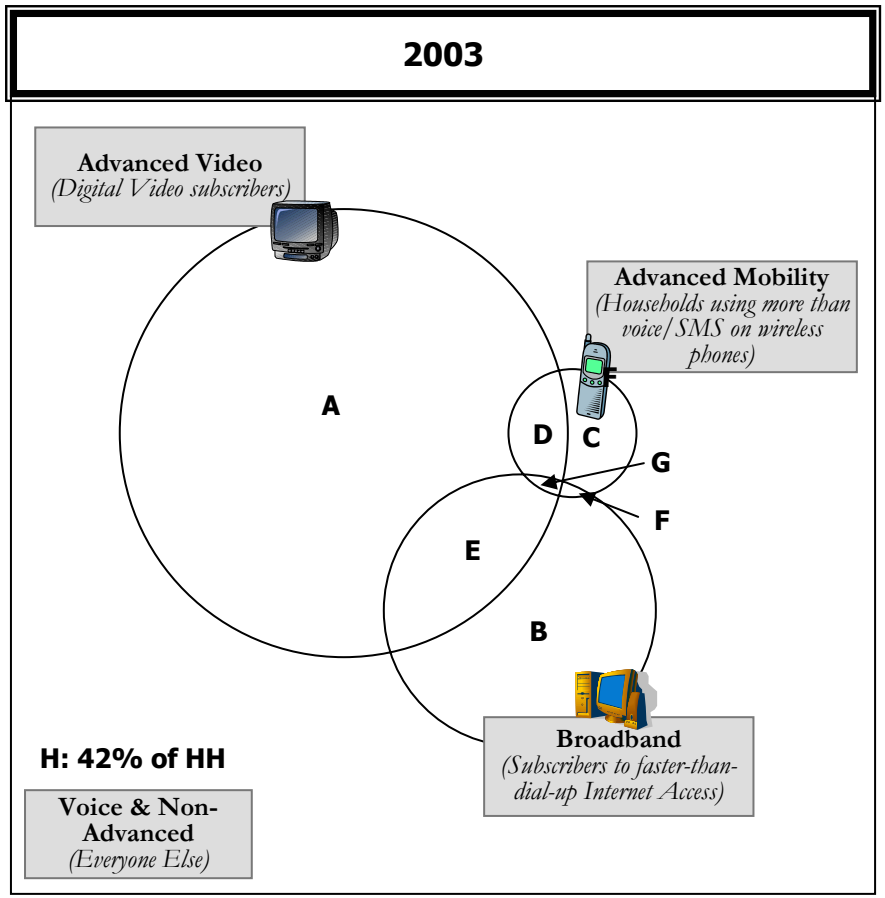
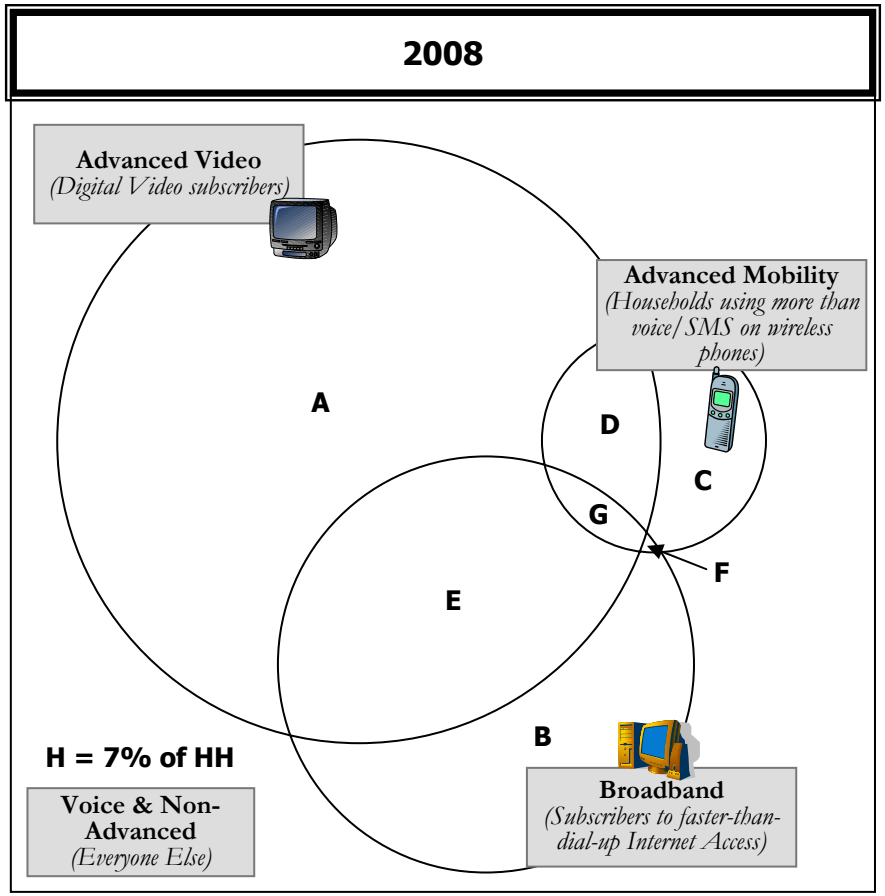
Voice Is Increasingly Being Viewed As a "Bundle" Element By Consumers – And Bundle Purchasing Is Expected to Increase Significantly





Note: Bubble areas proportional to advanced segment sizes. Overlay areas roughly indicative of households purchasing more than one service.

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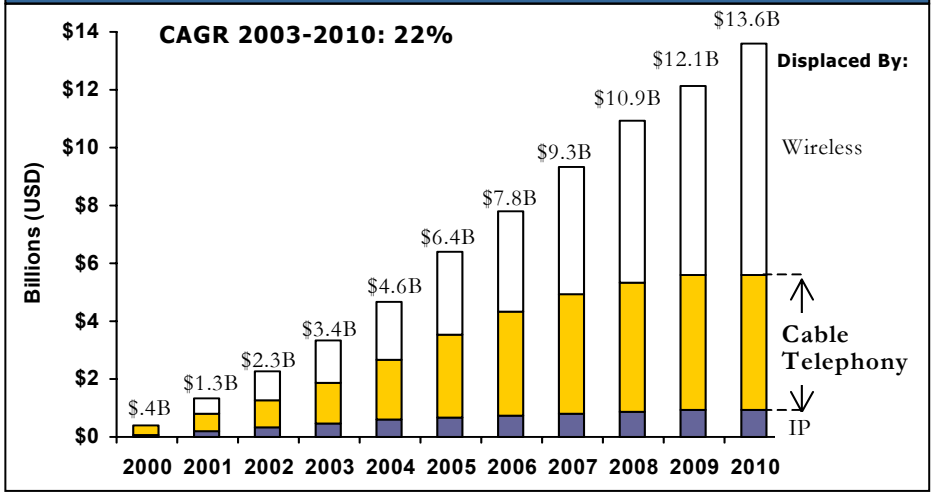
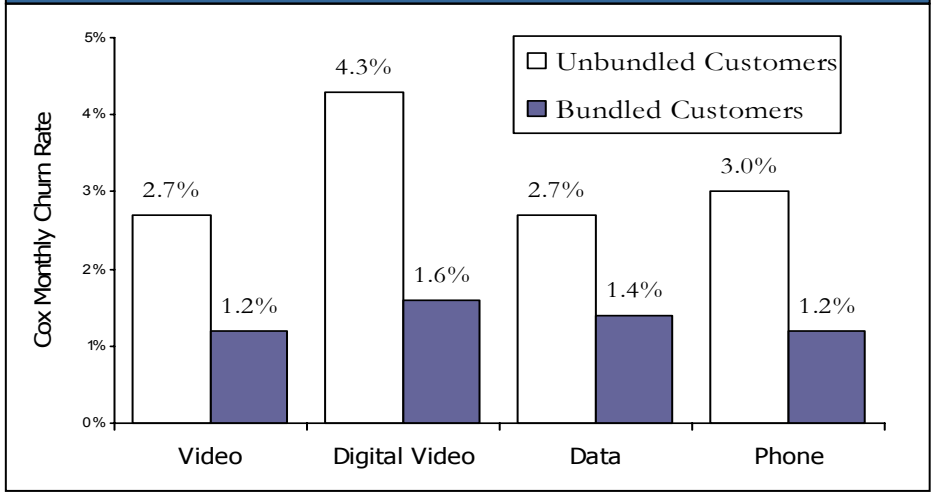
1. Telcos Are Engaged in A Critical Battle For The Home

Four Imperatives Are Driving Traditional Telcos Into Their Most Important Transition Since Deregulation – Requiring Them To Compete in A New Market

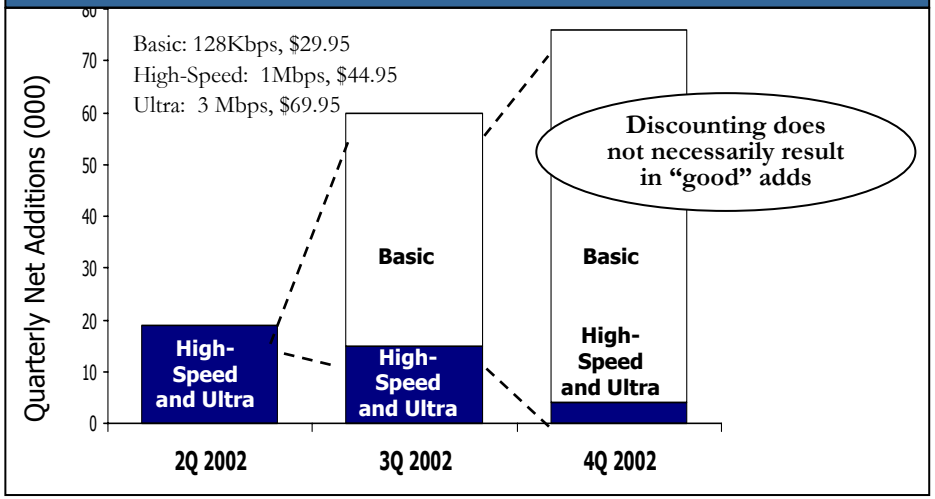
1. Repel Competitive Threat & Associated Financial Risk



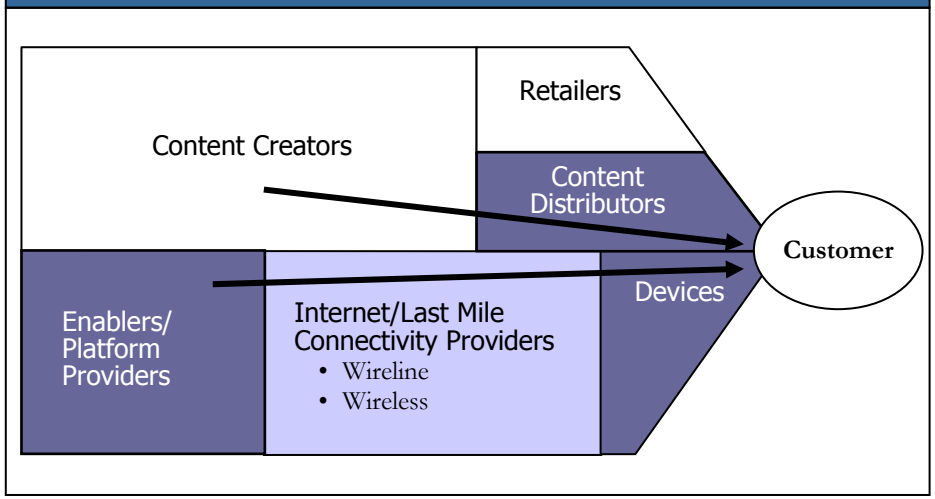
2. Reduce Churn Through Improved Bundles



3. Re-ignite Eroding DSL ARPU



4. Preempt "Insurgent" Moves



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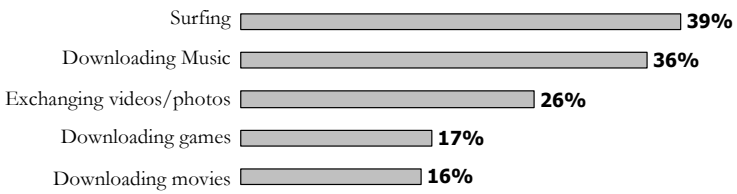
Consumers Are Reallocating the Time They Spend Consuming Entertainment Content, Aided By Broadband and a New Generation of Digital Technology

Consumer Behavior Changes After Upgrading to DSL

	Dial-Up	Cable	DSL
Average Time Spent Online Per Week	11 Hrs	15 Hrs	16 Hrs

Broadband users spend approximately 5 more hours online than dial-up users

After upgrading to high-speed consumers spend more time online doing the following activities:



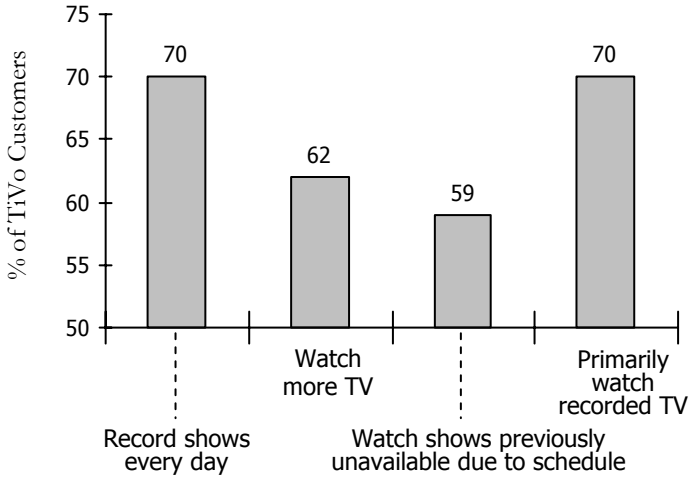
On average they also spend approximately 5 hours less per week watching TV

Source: ADVENTIS Survey of 400 consumers

The PVR Responds to How People Want to Watch TV

Consumers with TiVo show high usage levels and loyalty

- TiVo users spend only ~26% of total time watching "live" TV
- 70% of TiVo users record shows every day rather than watch them live
- Among TiVo customers, 90% claim their propensity to channel surf fell considerably



Source: TiVo Customer Survey

Broadband availability and new devices like TiVo are starting to fulfill consumer's preference for ***"What I Want, When I Want"***

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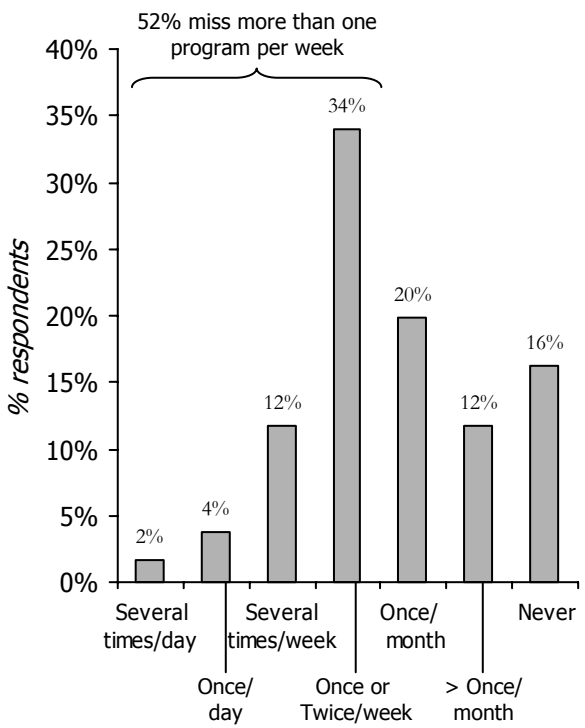
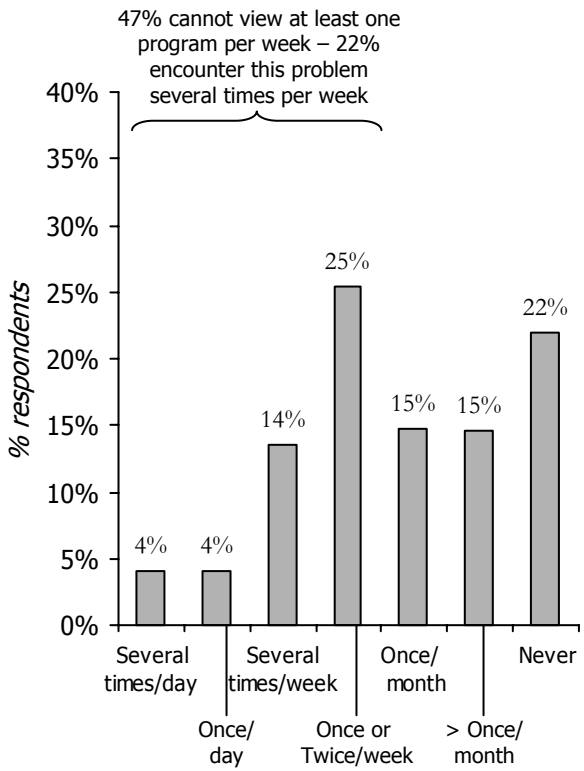
Research Shows That Consumers Are Increasingly Dissatisfied With The Current Broadcast/Linear Model

Potential for Basic Time-Shifting of TV Programs

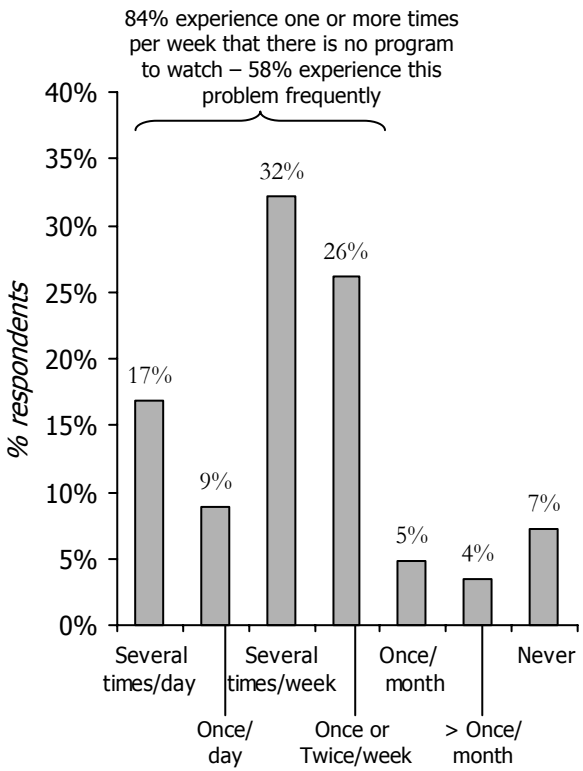
Frequency a Program Is Missed



Frequency a Program Is Broadcast at Inconvenient Time



Frequency There Is Nothing on Television to Watch



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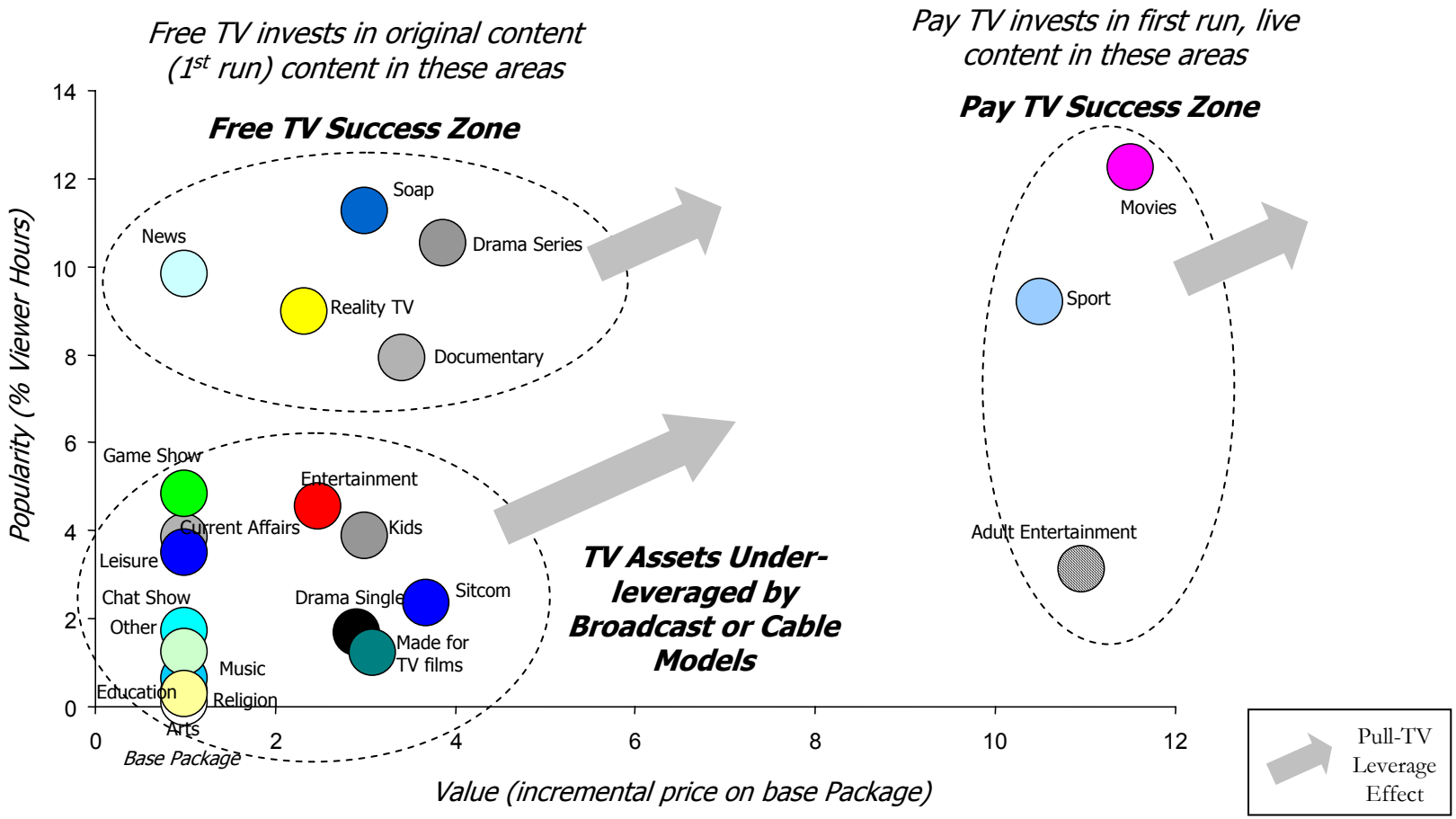
Consumer Viewing and Spending Habits on TV Suggest an Alternate "Pull" Model for Content Distribution



Telcos have the opportunity to enable this Pull TV offer

Source: Broadcasters Audience Research Board, ADVENTIS Analysis

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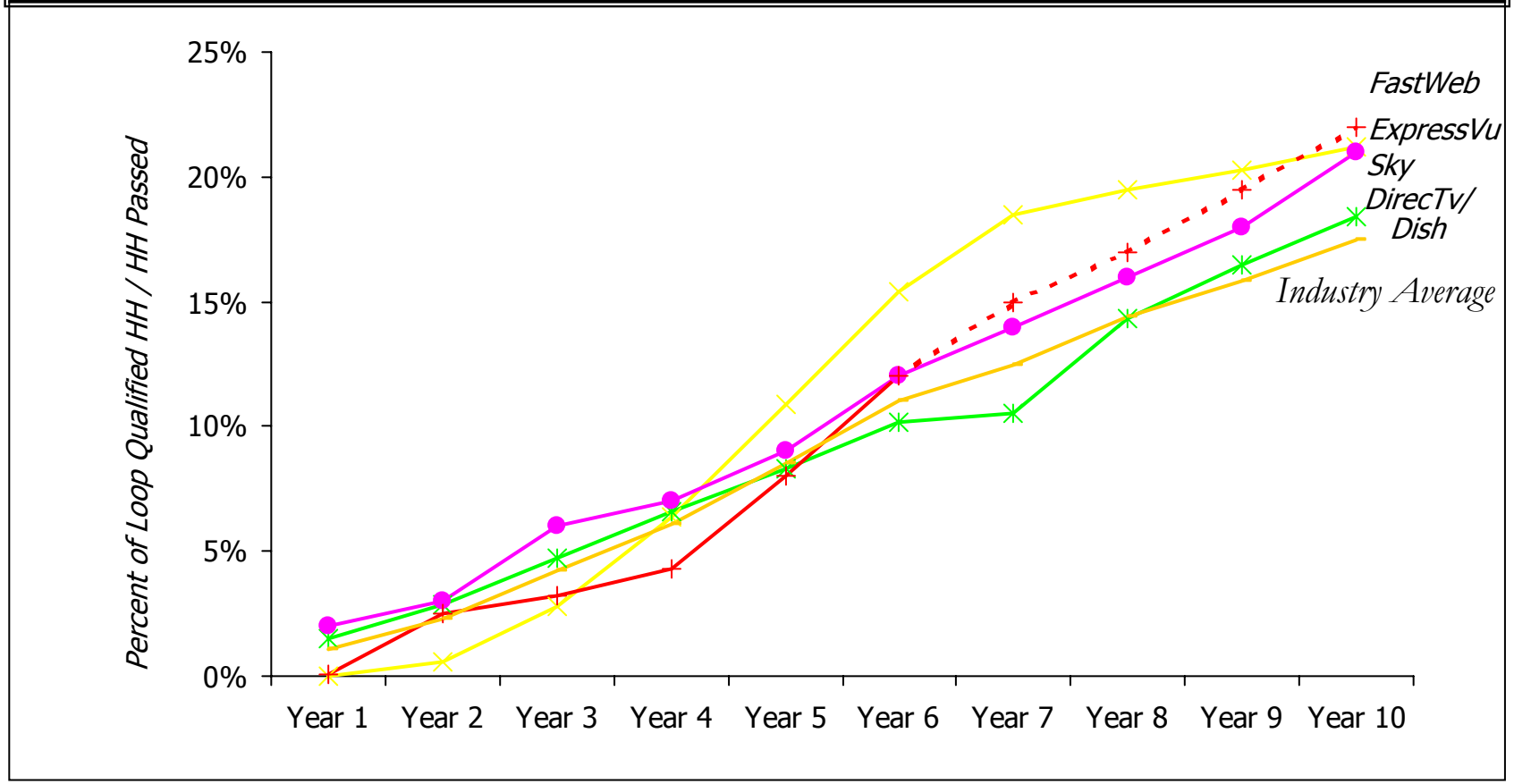
The Uphill Linear TV Battle: Penetration For Second and Third Linear Video Entrants Has Been Limited Historically, Reaching On Average Only 15% In 10 Years

Video Penetration Rate Analogs



Sources: BLS, Strategy Analytics, OfCom, UBS Warbug, RCN company reports, Bell Canada company reports, ADVENTIS Analysis

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Sky's Success Was Assisted Significantly By its Exclusive Control of Key Content

Key Success Factors

1. Limited Competition
2. Regulatory Freedom
3. Exclusive Content
4. Aggressive Sales & Marketing
5. Sticky Platform

Exogenous Factors

1. Cable operators were not permitted to serve geographies reached by terrestrial broadcast systems (1984 Cable and Broadcasting Act), thus competition from cable was historically very limited
2. BSB, a competing satellite service launched in Apr 1990, encountered financial difficulties and merged with Sky in Oct of that year, creating a satellite monopoly
3. The Broadcasting Act of 1990 mandated strict regulation of terrestrial and high-powered satellite broadcasters, but not medium-powered broadcasters such as Sky

Endogenous Factors

1. Negotiated exclusive control of highly sought-after content
   - Cricket World Cup (1992) – sales of dishes doubled
   - Premier League Football (1992) – subscribers grew 30%
   - Movie rights (1991)– 90% of Hollywood's movies
2. Invested in aggressive subsidy and promotion of platform
   - Door-to-door sales – package included free installation and maintenance, and free movie channel subscription
3. Developed proprietary platform for conditional access
   - Sophisticated encryption platform prevented piracy and allowed for tiered pricing of premium channels
   - STB receives only Sky signal – switching costs to subscribers is be very high (second STB)

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FastWeb Benefited Greatly from Government Intervention and Access to MDUs in Dense Metro Areas

Key Success Factors

1. Pro-Competition Regulation
2. Government Subsidies
3. Limited Video Competition
4. Geographic/ Segment Selectivity
5. Popular Content

Exogenous Factors

1. Italian regulators have intervened to restrain Telecom Italia's dominance and encourage competition in the broadband market, primarily through LLU decisions
   - Mandated price decreases in Telecom Italia's wholesale DSL service encouraged FastWeb to build a hybrid FTTH/DSL network (50%/50%)
2. Video offer has benefited from €150-per-STB government subsidies for digital terrestrial TV STBs, available to new and existing customers
3. Very little competition from cable operators

Endogenous Factors

1. Geographic and and segment selectivity
   - FastWeb has targeted only dense metro areas populated primarily with MDUs, and has been successful in obtaining the necessary property rights
2. Obtained rights to broadcast Italian football from Sky Italy
   - Began offering football programming free to all subscribers as of Aug 2003

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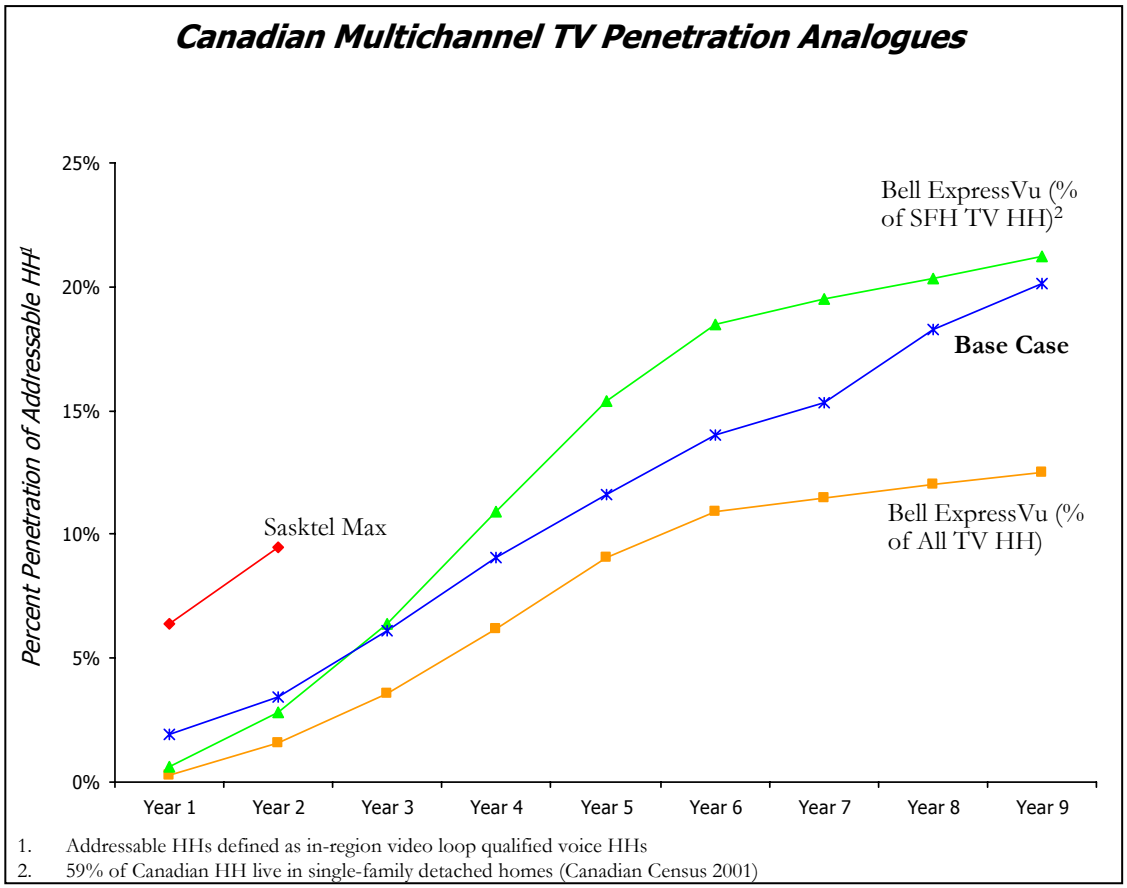
Canadian Penetration Was Boosted By Weak Competition and Government Subsidy



Comments

Bell ExpressVu

- For the first 5 years of Bell ExpressVu's deployment, BCE did not face competition from digital cable
  - Bell ExpressVu effectively one of two choices for HH seeking large channel selection

Sasktel Max

- Invested C$75M in 1990s to build out fiber-optic network, and $C44M developing the Max TV service
- Launched Max TV in Sep 2002:
  - Serving 9 metro areas
  - Delivering 2 standard definition TV streams over 6-8 Mbps connection
- Issues with signal quality of local cable service provided opportunity to provide superior service
- As of May 2004, Max TV service had achieved 20% penetration of Sasktel's DSL subscribers

Sources: Company reports, ADVENTIS Analysis

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VOD *Seems* Pervasive – Yet MSOs Like Comcast Use VOD Primarily To Upgrade Customers to Digital Tier Service And To Reduce Churn

Comcast On Demand Offer

Comcast On Demand

1. VOD

- Primarily movies on demand
- Comcast believes that this is essentially **close to Satellite's NVOD offer**
- MGM/Sony deal gives them access to 400 movies per month

5% of content

2. SVOD

- All premium channels (e.g. HBO, Starz) have an on demand subscription option that allows you to watch programs whenever you want
- Allows **some differentiation** over satellite
- 15M downloads of HBO to date

30% of content

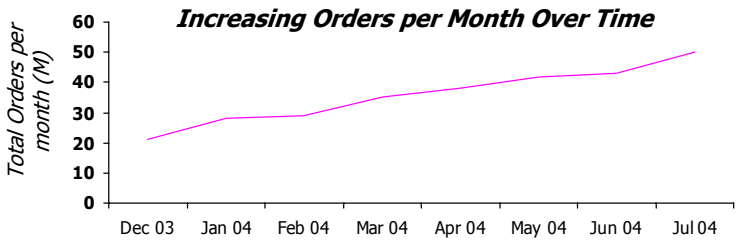
3. Free VOD

- Comcast believes this is the **largest opportunity and greatest differentiator**
- Shows best of broadcast, cable and niche content
- 600,000 NFL network downloads in the first week

65% of content

Usage of On Demand

- In most established on demand markets:
  - 23 orders per customer per month
  - 60% usage every month, 80% usage over 3 months



Impact of On Demand

Impact of on demand services

- Churn
  - **20 – 30% reduction in churn**
- Customer Satisfaction
  - **72% increase in customer satisfaction** among on demand users

The Telco SVOD offer could be used in the same way to help Improve the DSL customer satisfaction and retain customers

Source: Comcast

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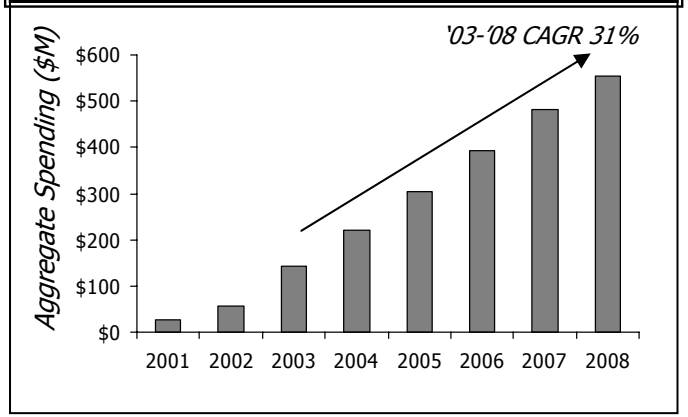
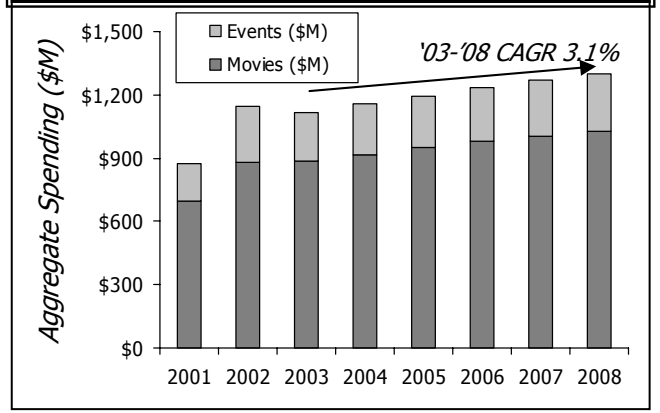
Beyond Linear Programming, Consumers View TV Content At Home In Four Ways – 96% Of the Spend Is In "Traditional" Video Purchase and Rental

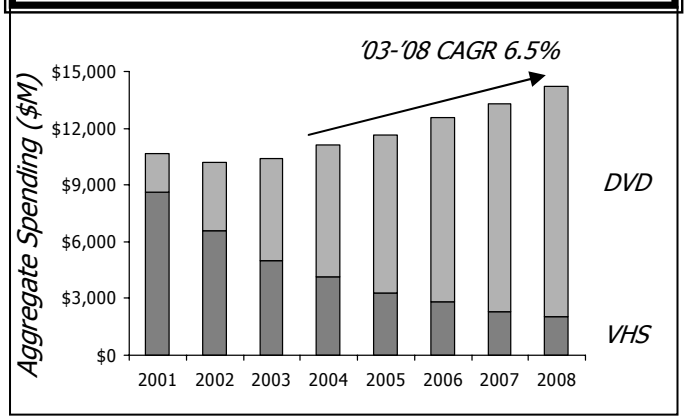
1. VOD



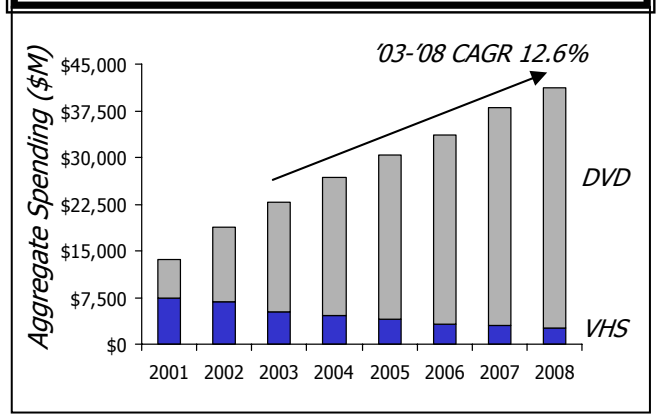
2. PPV For Cable HHs



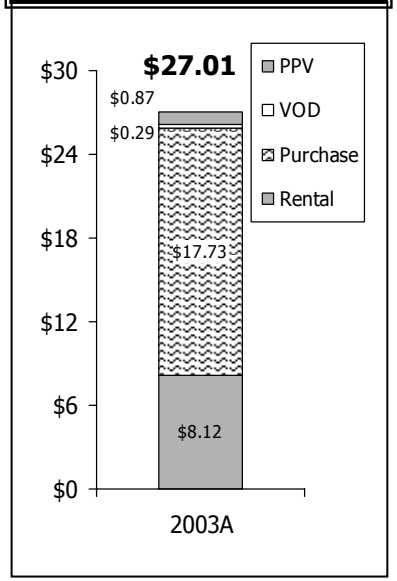
3. VHS and DVD Rentals



4. VHS and DVD Purchases



Average Monthly US HH Spend on Movie Content



Source: Veronis Suhler Stevenson, 2004

Converting the $60B+ DVD/VHS market into VoD is a large opportunity that MSOs may be more reluctant than telcos to grasp

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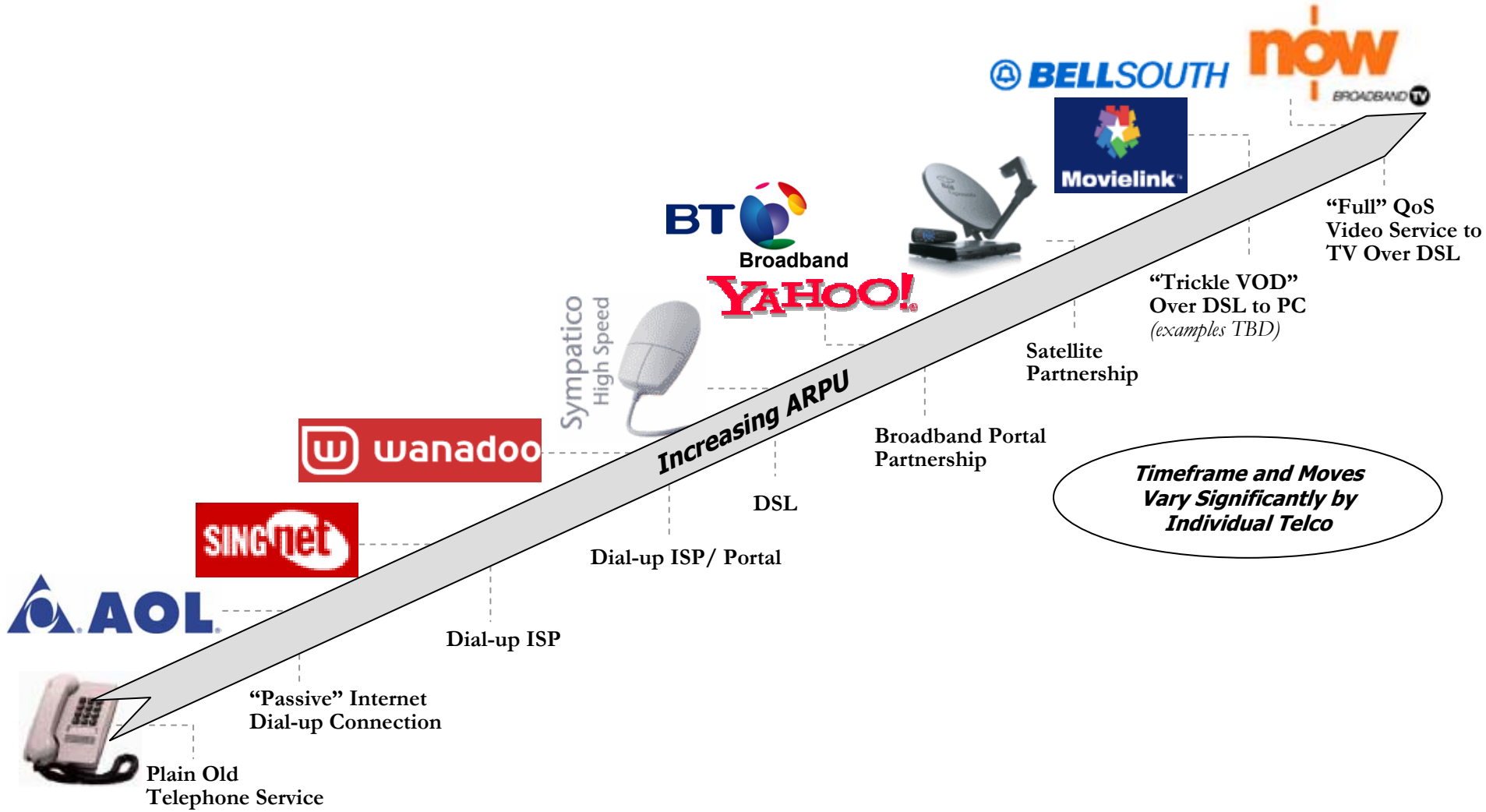
Telcos Around the World Are Leveraging Many Different Models To Manage Their Transition – Those Which Have Acted Like *Insurgents* Have Done the Best



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Solving the Device Explosion Is Critical to Meeting the Needs of the "Bundle" Customer

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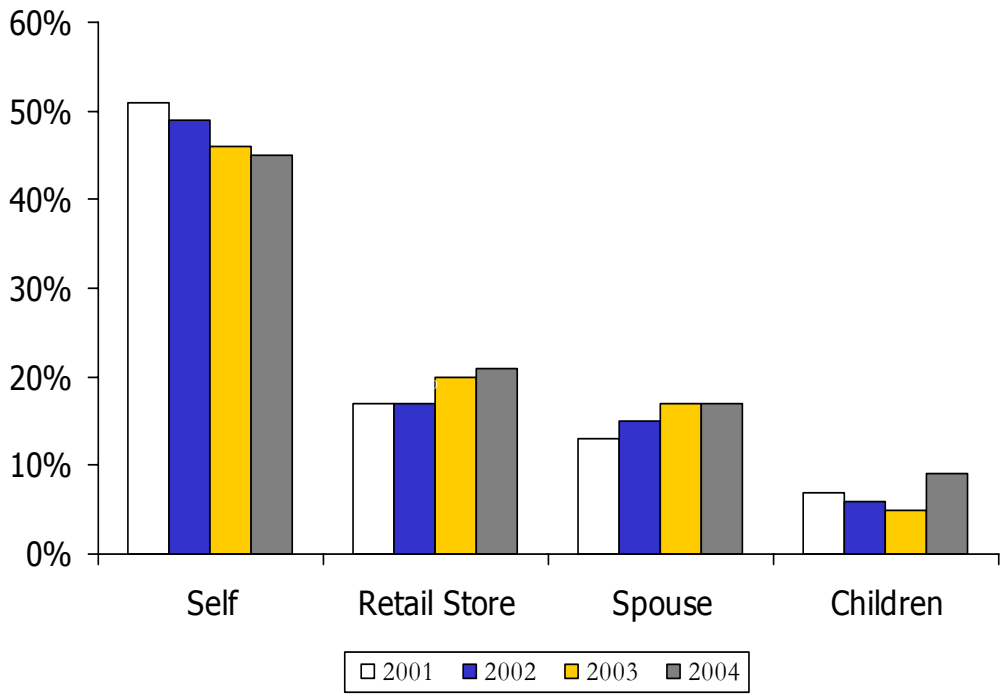
Consumers Are Increasingly Relying On Others To Help Solve Their Complex Technical Needs – Retail Stores Have Become Important In This Mix

Example: Entertainment Equipment Installations



Base: Total households

Key Observations

- Only 45% of respondents are themselves responsible for equipment set-up (down from 51% in 2001)
- Consumers are depending more on the retail store or a family member for installation

Source: CTAM

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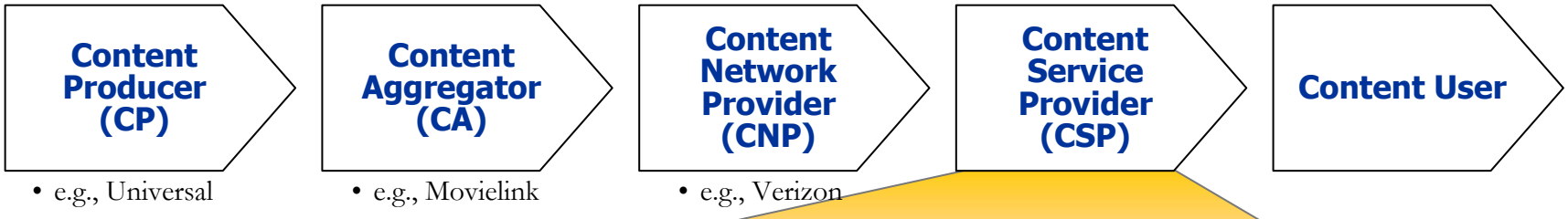
Telcos Have An Opportunity To Embrace Innovative Business Models To Gain Advantage Over Pay TV Competitors



Potential Network Provider Roles

Option 1 **Network Provider as CSP: "Content Pipe"**	CA/CP ← $ — CNP ← $ — User	• Network Provider takes direct distribution role • Users pay for combined bandwidth/content services
Option 2 **Network Provider as "Dumb Pipe"**	CA/CP ← $ — User CNP ← $ — User	• Network Provider is a "passive" conduit of Internet content services • Incremental revenue to CNP is limited and commoditized
Option 3 **Network Provider as "Smart Pipe"**	CA/CP ← $ — User CA/CP → $ → CNP	• Network Provider offers platform services to content providers • Bandwidth is variable and content services-driven

Key
$ = Content Service Revenues
$ = Bandwidth Revenues

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Summary

Why Telcos Can Win At Video

- Massive customer base
- Interactive, broadband infrastructure
- Accustomed to high capex projects
- Not wedded to existing video business models
- As new entrant, opportunity to create *differentiated* video experience

Challenges and Obstacles

- Little experience in video business
- Little scale for acquiring content
- Uneven track record at innovating at most telcos
- "Upgrade conundrum" from DBS to IPTV
- Difficult to gain full support required from boards and senior management

The Telco IPTV Transition is Not Just A Choice – And Failure Is Not An Option

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