Moving Toward Usage-Based Pricing
A Connected Life Market Watch Perspective

Cisco Internet Business Solutions Group
March 2012
Agenda

- Overview
- Usage-based pricing in the United States and Canada
- Potential benefits of usage-based pricing
- Examining usage-based pricing offers
- Usage-based pricing and video
- Lessons learned from mobile
- Considerations for service providers
Current Situation for Service Providers

- Consumer use and Internet traffic are skyrocketing
- Fixed broadband ARPU has stagnated
- Usage-based pricing may provide SPs with a tool to manage traffic and spur new revenue
- However, SPs must proceed carefully

**Monthly Internet Consumption per U.S. User (in GB)**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GB</td>
<td>2.8</td>
<td>4.2</td>
<td>6.2</td>
<td>8.7</td>
<td>12.2</td>
<td>15.9</td>
<td>22.1</td>
<td>27.6</td>
<td>33.4</td>
<td>38.9</td>
<td>47.3</td>
</tr>
</tbody>
</table>

Source: Cisco Visual Networking Index (VNI) Global Forecast, 2011

**North American Cable Broadband ARPU**

- Q2 2006: $41.1
- Q2 2007: $41.4
- Q2 2008: $41.0
- Q2 2009: $41.0
- Q2 2010: $41.9

Base: Range between 8 and 13 companies reporting
Source: Infonetics, Worldwide Service Provider Update, September 2010
Usage-Based Pricing Can Be a Tool To Catalyze New Revenue

Consumers are using the Internet more and are protective of their broadband access

Usage-based pricing ties pricing to the value consumers receive—their use of the Internet

Which services would you cut first if you had to reduce expenses?

- Mobile Data: 64% dropping last or second to last, 16% dropping first or second
- Landline Phone: 55% dropping last or second to last, 29% dropping first or second
- Mobile Voice: 33% dropping last or second to last, 43% dropping first or second
- Pay TV: 30% dropping last or second to last, 46% dropping first or second
- Broadband: 17% dropping last or second to last, 65% dropping first or second

“Data revenue growth was 3.8% for our residential services business. . . driven through an increase in Internet ARPU of 3.3%—almost all of that increase now coming from usage-based billing as the demand for Internet use explodes.”

George Cope
CEO, Bell Canada Enterprises
August 2010

Source: Cisco IBSG, 2011  Base: U.S. broadband consumers
Consumer Spending for Fixed Broadband Access Has Stagnated

- SPs’ focus on bundling and speed has molded consumers’ perception of broadband value
  - 92% of fixed broadband in U.S. is provided as part of a bundle
  - Speed is second in importance only to price as a purchase consideration when choosing a broadband provider
- However, speed is no longer a factor that can drive ARPU growth

Attitude Toward Speed of Home Internet Connection
Percent agreeing with each statement

- Unsatisfied with speed; WILL pay to increase speed: 11%
- Unsatisfied with speed; will NOT pay to increase speed: 26%
- Satisfied with speed: 55%

Consumers could select all that apply. Total does not equal 100%.


Base: U.K. online consumers
Proceed Carefully: Consumers and Regulators Are Wary

- Public outcry has resulted in significant regulatory and market actions:
  - **2008**: U.S. FCC orders Comcast to halt throttling
  - **2009**: Time Warner Cable revokes its experimental usage caps
  - **2011**: Canadian Radio-television and Telecommunications Commission (CRTC) is re-examining all usage-based policies in response to consumer outrage sparked by January 2011 CRTC decision

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**Consumer Perception of Usage-Based Pricing**

**United States**

- **Unfair**: 71%
- **No Strong Opinion**: 13%
- **Fair**: 16%

Base: Broadband consumers

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**Canada**

- **Unfair**: 72%
- **No Strong Opinion**: 9%
- **Fair**: 19%

Base: Broadband consumers

Source: Cisco IBSG Connected Life Market Watch, 2011
Proceed Carefully: Consumers in Western Europe Are Also Wary

While broadband consumers in the United Kingdom are more likely to accept usage-based pricing, the majority of Western Europeans still consider it unfair.

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: Broadband consumers
### Usage-Based Pricing Can Support Both SP and Consumer Objectives

#### Broadband Consumer Segments by Usage

<table>
<thead>
<tr>
<th>Non-Users</th>
<th>Low-Volume Users</th>
<th>Average</th>
<th>High-Volume Users</th>
<th>BB Cap Abusers</th>
</tr>
</thead>
</table>

**Consumer Concerns**

<table>
<thead>
<tr>
<th>Impact to Consumer</th>
<th>Lower barriers to adoption</th>
<th>Some consumers will save money</th>
<th>No disruption for most users</th>
<th>Some consumers will spend more</th>
<th>Preserve experience for whole and enable access for largest users</th>
</tr>
</thead>
</table>

**Service Provider Concerns**

<table>
<thead>
<tr>
<th>Impact to Revenue</th>
<th>Gain new adopters</th>
<th>Initially some revenue increase due to highest tiers</th>
<th>Greatest impact over time as consumers self-migrate to higher tiers</th>
</tr>
</thead>
</table>

Source: Cisco IBSG, 2012
Usage-Based Pricing Strategies Support SPs’ Overall Strategies

- SPs must tie consumer value to consumer broadband use or risk commoditization

- Usage-based pricing can be a flexible tool in every SP’s toolkit, supporting varied SP strategies:
  - For SPs focused on maximizing revenue from existing assets, usage-based pricing optimizes ARPU as consumers move to higher-priced tiers
  - For SPs who see OTTs as potential partners, usage based-pricing creates a need for third parties to partner with SPs to eliminate usage concerns for their end users
  - For SPs who see OTTs as direct competition, usage-based pricing provides SPs with a lever they can use to curtail OTT activity

- Usage-based pricing enables SPs to align their customers’ perception of value more closely with the underlying broadband service delivered

Source: Cisco IBSG, 2012
2 Usage-Based Pricing in the United States & Canada
# U.S. Broadband Providers Move Toward Usage-Based Pricing

<table>
<thead>
<tr>
<th>Timeline</th>
<th>Throttling</th>
<th>Usage Caps</th>
<th>Usage Tiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumers’ experience degraded if they overused the service</td>
<td>Customers’ service terminated for using too much of the service; revenue opportunity lost</td>
<td>Matches price paid to most valued factor—volume of usage—providing reasonable options for heavy- to low-volume users</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Market Activity</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Comcast began throttling heavy P2P users</td>
<td>• Majority of U.S. ISPs have usage caps. Comcast instituted 250-GB cap in 2008. Other ISPs followed suit, including AT&amp;T, with 150-GB cap for DSL and 250-GB cap for U-verse. 56% of consumers covered by a cap.</td>
<td>• Time Warner Cable has invested in capability to enable usage-based price and is considering it</td>
</tr>
<tr>
<td>• Following public outcry, FCC investigated and ordered Comcast to cease throttling</td>
<td></td>
<td>• FCC chairman supports usage-based pricing, but FCC is divided on the issue and there are questions about its legal authority here</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Key Lessons Learned</th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>• Stay clear of practices that discriminate against users or Internet destinations; can violate net neutrality.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Minimize consumer disruption and confusion. Avoid rollouts that differ by territory, or consumption caps that vary significantly from consumers’ usage behavior.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Consumers will need tools to accurately estimate consumption.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Cisco IBSG, 2012
Lack of Understanding Likely Fuels Poor Consumer Perception

- Consumption is a sophisticated calculation; it will take time, education, and tools for consumers to feel comfortable estimating consumption.
- Actual consumption will vary based on many factors (mostly technical), fueling consumer distrust and frustration:
  - File type (email vs. video)
  - File format (HD vs. SD)
  - Time x Network Throughput (time alone will not provide clear estimate)
  - Compression standards (such as Codec)

Source: Cisco IBSG, 2012; Public Knowledge, 2011
U.S. Broadband Providers Inch Toward Tiered Pricing

Example

- Introducing consumption tiers with speed-tier pricing
- Positioned to drive consumers toward bundle
- Fair-use policy sets “excessive usage” limits on economy / standard packages
- Users who exceed their plan’s data allocation will be charged $0.50 per additional gigabyte
- Provides tools to estimate data usage, as well as ability to monitor consumption each month

<table>
<thead>
<tr>
<th></th>
<th>Economy</th>
<th>Standard</th>
<th>Preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>$20</td>
<td>$50</td>
<td>Bundle pricing</td>
</tr>
<tr>
<td>Download Speed</td>
<td>1.5 Mbps</td>
<td>5 Mbps</td>
<td>50 Mbps</td>
</tr>
<tr>
<td>Consumption</td>
<td>1 GB</td>
<td>3 GB*</td>
<td>50 GB</td>
</tr>
</tbody>
</table>

Source: [www.cableone.net/FYH/Pages/packagebundles.aspx](http://www.cableone.net/FYH/Pages/packagebundles.aspx), December 2011
Usage-Based Pricing in Canada

Timeline of Usage-Based Pricing Developments

1999 - CRTC refrains from regulating retail Internet
2000 - Shaw introduces usage caps and overage charges
2006 - Bell introduces broadband tiers tied to both speed and usage
2009 - CRTC reviewing SP options to manage Internet traffic
2011 - CRTC rules that carriers can charge usage-based overage pricing to resellers on a per-end-user basis

Lessons Learned

- Despite consumer attitude, new revenue can be gained
- Usage can provide a better link to consumer value than speed
- Match consumers’ expectations and allow them to self-upgrade
- To minimize regulatory scrutiny, avoid cost-based arguments

Source: Cisco IBSG, 2012
72% of Canadians See Usage-Based Pricing as Unfair, Yet....

- 58% of consumers never think about usage, and they don’t incur additional charges
- One-third reduce their use to avoid additional fees
- Only 10% pay additional fees

Source: Cisco IBSG Connected Life Market Watch, 2011
Base: Canada broadband consumers
Example from Canadian Market: Rogers Tiered Pricing

<table>
<thead>
<tr>
<th>Package</th>
<th>Download / Upload Speed</th>
<th>Email Addresses</th>
<th>Additional Usage Charge</th>
<th>Monthly Fee</th>
<th>Monthly Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultra-Lite</td>
<td>500 kbps / 254 kbps</td>
<td>3</td>
<td>$5.00 / GB</td>
<td>$27.99</td>
<td>2 GB</td>
</tr>
<tr>
<td>Lite</td>
<td>3 Mbps / 254 kbps</td>
<td>5</td>
<td>$4.00 / GB</td>
<td>$35.99</td>
<td>15 GB</td>
</tr>
<tr>
<td>Express</td>
<td>10 Mbps / 512 kbps</td>
<td>9</td>
<td>$2.00 / GB</td>
<td>$46.99</td>
<td>60 GB</td>
</tr>
<tr>
<td>Extreme</td>
<td>15 Mbps / 512 kbps</td>
<td>9</td>
<td>$1.50 / GB</td>
<td>$59.99</td>
<td>80 GB</td>
</tr>
<tr>
<td>Extreme Plus</td>
<td>25 Mbps / 1 Mbps</td>
<td>9</td>
<td>$1.25 / GB</td>
<td>$69.99</td>
<td>125 GB</td>
</tr>
<tr>
<td>Ultimate</td>
<td>50 Mbps / 2 Mbps</td>
<td>9</td>
<td>$0.50 / GB</td>
<td>$99.99</td>
<td>175 GB</td>
</tr>
</tbody>
</table>

- Consumption tiers tied to existing speed tier
- Matches consumers’ expectation & existing behavior
- No unlimited plan currently available
- Consumers can self-migrate to higher-tier plans as their consumption increases

Source: Rogers company website, 2011
# Usage-Based Pricing Varies Widely Among Canadian SPs

## Summary of Fixed Broadband Packages at Major Canadian SPs

<table>
<thead>
<tr>
<th>Carrier</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Carrier Low</td>
<td>Carrier Medium</td>
<td>Carrier High</td>
</tr>
<tr>
<td></td>
<td>$27.95 / month 1 GB / month 500 kbps / 500 kbps $2.50 / GB over</td>
<td>$47.95 / month 60 GB / month 7 Mbps / 1 Mbps $2.50 / GB over</td>
<td>$72.95 / month 100 GB / month 25 Mbps / 7 Mbps $2.50 / GB over</td>
</tr>
<tr>
<td>Bell (QC)</td>
<td>$36.95 / month 2 GB / month 2 Mbps / 800 kbps $2.50 / GB over</td>
<td>$46.95 / month 25 GB / month 6 Mbps / 1 Mbps $2 / GB over</td>
<td>$76.95 / month 75 GB / month 25 Mbps / 7 Mbps $1 / GB over</td>
</tr>
<tr>
<td>Bell (ON)</td>
<td>$27.99 / month 2 GB / month 500 kbps / 256 kbps $5 / GB over</td>
<td>$46.99 / month 60 GB / month 12 Mbps / 512 kbps $2 / GB over</td>
<td>$99.99 / month 250 GB / month 50 Mbps / 2 Mbps $0.50 / GB over</td>
</tr>
<tr>
<td>Rogers (ON)</td>
<td>$30 / month 30 GB / month 1 Mbps / 256 kbps $2 / GB over</td>
<td>$49 / month 250 GB / month 15 Mbps / 1 Mbps $2 / GB over</td>
<td>$54 / month 500 GB / month 25 Mbps / 2.5 Mbps $2 / GB over</td>
</tr>
<tr>
<td>Telus (West)</td>
<td>$37 / month 30 GB / month 1 Mbps / 256 kbps</td>
<td>$49 / month 125 GB / month 7.5 Mbps / 512 kbps</td>
<td>$74.90 / month Unlimited 7.5 Mbps / 512 Mbps</td>
</tr>
</tbody>
</table>

- Consumers and regulators are re-examining SP approach to usage-based pricing
- SPs introduced usage tiers for each speed tier
- Wide variance in pricing per GB has driven CRTC and public skepticism
- CRTC is questioning the relationship between the cost to carry traffic and usage-based pricing

Source: Company websites, 2011  
Note: All prices are quoted as unbundled, without any promotion pricing
# Usage-Based Pricing Around the World: Sample Pricing, Telstra (Australia)

**Telstra Home Broadband Plans, November 2011**

<table>
<thead>
<tr>
<th>Plan</th>
<th>Usage Allowance</th>
<th>Cost per Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADSL / Cable Elite: Up to 20 / 1 Mbps ADSL, 30 Mbps / 1 Mbps Cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BigPond Elite® 5 GB Liberty</td>
<td>5 GB (then slowed to 64 kbps)</td>
<td>From $29.95</td>
</tr>
<tr>
<td>BigPond Elite® 50 GB Liberty</td>
<td>50 GB (then slowed to 64 kbps)</td>
<td>From $49.95</td>
</tr>
<tr>
<td>BigPond Elite® 200 GB Liberty</td>
<td>200 GB (then slowed to 256 kbps)</td>
<td>From $69.95</td>
</tr>
<tr>
<td>BigPond Elite® 500 GB Liberty</td>
<td>500 GB (then slowed to 256 kbps)</td>
<td>From $89.95</td>
</tr>
</tbody>
</table>

### Tiered pricing
- From 5 GB to 500 GB
- When users exceed consumption limit, Telstra throttles the speed

### App-based differentiation
- Selected content, including games, movies, news, music and sports, is **exempt from bandwidth limit**

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Source: Telstra website, 2011 (http://go.bigpond.com/broadband/)
# Usage-Based Pricing Around the World: Sample Pricing, BT, O₂ (United Kingdom)

## BT

<table>
<thead>
<tr>
<th>Plan</th>
<th>Speed</th>
<th>Usage</th>
<th>Included Calling</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadband &amp; Evening/Weekend</td>
<td>20 MB</td>
<td>10 GB</td>
<td>Weekend &amp; Evening</td>
<td>£13</td>
</tr>
<tr>
<td>More Broadband</td>
<td>20 MB</td>
<td>40 GB</td>
<td>Weekend</td>
<td>£18</td>
</tr>
<tr>
<td>Unlimited Broadband</td>
<td>20 MB</td>
<td>Unlimited</td>
<td>Anytime</td>
<td>£28</td>
</tr>
</tbody>
</table>

**Exceeding the limit?**

- Consumers receive email notice when they reach 80 percent of usage allowance
- After second month of excess consumption, additional usage is charged at £5 per 5 GB
- BT provides a monitoring tool, online support, and ability to self-upgrade to higher tiers

## O₂

<table>
<thead>
<tr>
<th>Plan</th>
<th>Download Speed</th>
<th>Upload Speed</th>
<th>Usage</th>
<th>Web Texts</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basics</td>
<td>20 MB</td>
<td>1.3 MB</td>
<td>20 GB</td>
<td>200</td>
<td>£13.50</td>
</tr>
<tr>
<td>All Rounder</td>
<td>20 MB</td>
<td>1.3 MB</td>
<td>Unlimited</td>
<td>200</td>
<td>£17.50</td>
</tr>
<tr>
<td>The Works</td>
<td>20 MB</td>
<td>2.5 MB</td>
<td>Unlimited</td>
<td>500</td>
<td>£26</td>
</tr>
</tbody>
</table>

**O₂ Exceeding the limit?**

- Emphasize that fair-use policy exists, even for unlimited
- Consumers will be notified if they approach or exceed limit
- O₂ may terminate service

Source: Company websites, 2011
3 Potential Benefits of Usage-Based Pricing
When usage-based pricing is introduced, one-third of customers will reduce their Internet usage – Actual behavior maps closely to anticipated reaction

About half of consumers will reduce their online video watching in response to usage-based pricing – In Canada, where online video is well-established and where usage-based pricing is already implemented, consumers are likely to cut use

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: U.S. and Canada broadband consumers
Usage-Based Pricing Can Guide Core Segments Away from Online Video

In Canada, impact of usage-based pricing on online video reduction is...

**Not correlated with income**
- 0% 10% 20% 30% 40% 50% 60%
- Reduce Online Video Usage
- Keep Internet Plan, No Change in Usage
- Sign up for Higher-Priced Unlimited Plan
- Unsubscribe

**Correlated with age**
- Only 36% of 25- to 29-year-olds would reduce online video usage

**Correlated with technology-related behavior**

<table>
<thead>
<tr>
<th>Segment</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>57%</td>
</tr>
<tr>
<td>Early Adopter</td>
<td>40%</td>
</tr>
<tr>
<td>Heavy Mobile Video User</td>
<td>40%</td>
</tr>
<tr>
<td>Internet Video Subscriber / Owner</td>
<td>38%</td>
</tr>
</tbody>
</table>

**Correlated with strong SP preference**

<table>
<thead>
<tr>
<th>Preference</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong Retail - Online</td>
<td>45%</td>
</tr>
<tr>
<td>Preference</td>
<td>65%</td>
</tr>
<tr>
<td>Average</td>
<td>57%</td>
</tr>
<tr>
<td>Strong SP Preference</td>
<td>65%</td>
</tr>
</tbody>
</table>

To maximize broadband revenue, SPs should target young, tech-savvy users

Source: Cisco IBSG Connected Life Market Watch, 2011
Usage-Based Pricing Can Guide Core Segments Away from Online Video

In the United States, impact of usage-based pricing on online video reduction is...

- Only slightly correlated with income
- Correlated with age: Only 37% of 18- to 24-year-olds would reduce online video usage
- Correlated with technology-related behavior
  - Average: 46%
  - Early Adopter: 34%
  - Heavy Mobile Video User: 31%
  - Internet Video Subscriber / Owner: 34%
- Correlated with strong SP preference: 51% of consumers who prefer the SP channel would reduce online video use

Source: Cisco IBSG Connected Life Market Watch, 2011
Usage-Based Pricing Could Unlock Additional Spending

- 41% say they would pay more for unlimited broadband access if usage-based pricing is introduced in the United States.

- However, only 10% are actually spending more since the introduction of usage-based pricing in Canada.

- Similar percentages of consumers in the United States (26%) and Canada (22%) would pay more for broadband in order to support their online video use.

Source: Cisco IBSG Connected Life Market Watch, 2011
Heavy User Segments Are More Likely To Consider Usage-Based Billing Fair

Potential to Monetize Increased Traffic—Canada

<table>
<thead>
<tr>
<th>Technology Adoption</th>
<th>Internet Video Device Ownership</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Adopters</td>
<td>35%</td>
<td>22%</td>
</tr>
<tr>
<td>Early Majority</td>
<td>18%</td>
<td>14%</td>
</tr>
<tr>
<td>Late Majority</td>
<td>16%</td>
<td>17%</td>
</tr>
<tr>
<td>Laggards</td>
<td>16%</td>
<td></td>
</tr>
</tbody>
</table>

- Early adopters and Internet video device owners are **more likely** to consider usage-based billing fair
- Consumers aged 40-54 are **less likely** to consider usage-based billing fair

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: Respondents who view usage-based billing as fair
Heavy User Segments Are More Likely To Consider Usage-Based Billing Fair

Potential to Monetize Increased Traffic—United States

Percentage of Consumers that Perceive Usage-Based Billing as Fair
By customer segment

- Early adopters and Internet video device owners are more likely to consider usage-based billing fair
- Consumers aged 40-54 are less likely to consider usage-based billing fair

Source: Cisco IBSG Connected Life Market Watch, 2011
Base: Respondents who view usage-based billing as fair
Internet video device owners are evenly split across getting unlimited plans, keeping plans and reducing usage, and keeping plans and same usage.

Internet video device owners are more likely than average to adopt unlimited plans and are less likely than average to reduce usage.
Internet video device owners are evenly split across getting unlimited plans, keeping plans and reducing usage, and keeping plans and same usage.

Internet video device owners are more likely than average to adopt unlimited plans and are less likely than average to reduce usage.

**Source:** Cisco IBSG Connected Life Market Watch, 2011  
**Base:** U.S. broadband consumers
Examining Usage-Based Offers
## Package Ideation: Nine Potential Options for Usage-Based Plans

<table>
<thead>
<tr>
<th>Service Option</th>
<th>Description</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Usage-Based Tiers</td>
<td>Provide several levels of increasing GB usage for increasing prices, with overage fees</td>
<td>Capture increasing ARPU as users graduate to next tier and usage increases</td>
</tr>
<tr>
<td>2 Unlimited-Bandwidth Tier</td>
<td>Create top-tier expensive unlimited plan</td>
<td>Monetize top users of data rather than cutting them off</td>
</tr>
<tr>
<td>3 SP OTT Video Offer</td>
<td>Offer OTT VoD managed service along with pay-TV offering for video service</td>
<td>Avoid cost of OTT delivery by providing SP OTT service, allowing revenue capture</td>
</tr>
<tr>
<td>4 Per-Bit Metered Plan</td>
<td>Users pay on a flat per-bit plan</td>
<td>High users churn away due to higher costs; low users pay less, eliminating subsidization</td>
</tr>
<tr>
<td>5 Cross-Device Data Plan</td>
<td>Consumers buy one bucket of data and can use for home, mobile, any device</td>
<td>Lost ARPU difficult to replace with churn improvements, market share gains, and fees</td>
</tr>
<tr>
<td>6 Time-Based Usage</td>
<td>Consumer pay flat per-minute fee for usage of Internet</td>
<td>High users churn away due to higher costs; low users pay less, eliminating subsidization</td>
</tr>
<tr>
<td>7 Time-of-Day Usage Fees</td>
<td>Consumers pay more per bit at peak use times, and less off-peak</td>
<td>Reduce peak traffic, attract users with time-of-day unlimited offers</td>
</tr>
<tr>
<td>8 SP / OTT Partnerships</td>
<td>Partner with OTT to offer unlimited bandwidth for certain sites; must be made available to all OTTs</td>
<td>Defend against OTT threat, replace some lost revenues</td>
</tr>
<tr>
<td>9 Activity-Specific Usage Plans</td>
<td>Consumers purchase unlimited usage for specific applications, gaming, backup, music, etc. Offerings must cover all types.</td>
<td>Strong partnering ability with third parties, improved customer loyalty and market share</td>
</tr>
</tbody>
</table>

Source: Cisco IBSG, 2012  
List is illustrative. Not intended to be comprehensive.
Evaluation Methodology: Assessing SP Options for Usage-Based Pricing

This process tested individual pricing strategies in isolation. In reality, most strategies will be implemented simultaneously in combination with other strategies.

- Brainstorm on usage-based pricing offer options for SPs
- Model hypothetical business cases for each usage-based offer for an SP with 2 million broadband subscribers
- Determine key benefits and detriments of each usage-based offer, based on hypothetical business cases

Using the model to test various approaches with each usage-based strategy, the team identified pros & cons for each

Source: Cisco IBSG, 2012
Usage-Based Broadband Tiers

- Pricing increases by tier, as do gigabyte allowance and speed
- Overage fees charged per GB until user has paid enough to graduate to next usage tier
- ARPU increases as users consume more data and graduate to higher tiers

Example: Broadband Consumer Tiers by Usage

- 0 – 2 GB: $25
- 2 GB – 20 GB: $30
- 20 GB – 50 GB: $45
- 50 GB – 100 GB: $55
- 100 GB – 150 GB: $75

As usage increases, so does potential for higher ARPU

Pros
- Opportunity to grow ARPU from broadband as use increases, driving users to next tier
- Ability to manage costs of increased capacity and network investments

Cons
- Potential consumer backlash from usage-based pricing
- Potential for competitors to steal share by offering unlimited plans

Source: Cisco IBSG, 2012
Unlimited Broadband Tier

- Provide unlimited tier above last usage tier to capture revenue from heavy users at a price that results in positive economics for entire group of heavy users.

Example: Broadband Consumer Tiers by Usage

<table>
<thead>
<tr>
<th>Current Use</th>
<th>Future Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 2 GB: $25</td>
<td>2 GB – 20 GB: $30</td>
</tr>
<tr>
<td>20 GB – 50 GB: $45</td>
<td>50 GB – 100 GB: $55</td>
</tr>
<tr>
<td>100 GB – 150 GB: $75</td>
<td>Unlimited: $150</td>
</tr>
</tbody>
</table>

An unlimited tier with optimal pricing can monetize heavy users profitably.

Pros
- Capture revenue from small group of customers who have highest traffic
- Focus niche offering at high price to capture revenue or drive costly users to other carriers
- Customers understand value and have better experience; heavy users are no longer penalized

Cons
- Potential for abuse; need to consistently monitor for price effectiveness
- Potential to catalyze online video usage, resulting in increased churn from pay-TV and VoD services

Source: Cisco IBSG, 2012
Service Provider OTT Video Offer

- SP offers OTT video package, discrete and separate from broadband packages
- Includes access to online video that is competitive with market offers such as Netflix
- OTT video-related broadband usage will not count against customer’s broadband cap

Source: Cisco IBSG, 2012

### Pros
- Cross-product benefit for SPs with TV services
- Keeps customers, who might have churned to Netflix, loyal to the SP video offering
- Monetization based on content and value, not just broadband use

### Cons
- Potential for abuse among customers with free broadband usage for video content; may allow users to take lowest tier and drive costs higher through video usage; pricing should cover this scenario
- May cannibalize traditional SP video services
Per-Bit Metered Plan

- SP charges flat connection fee to each subscriber
- SP charges flat per-gigabyte fee

Example: Price paid on a flat-price, per-bit metering method—$3 / GB

<table>
<thead>
<tr>
<th>Range</th>
<th>Price Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 2 GB</td>
<td>$0 – $6</td>
</tr>
<tr>
<td>2 GB – 20 GB</td>
<td>$6 – $60</td>
</tr>
<tr>
<td>20 GB – 50 GB</td>
<td>$60 – $150</td>
</tr>
<tr>
<td>50 GB – 100 GB</td>
<td>$150 – $300</td>
</tr>
<tr>
<td>100 GB +</td>
<td>$300+</td>
</tr>
</tbody>
</table>

Paying less. No longer subsidizing other users: $0 - $50
Lower volume users will not churn, but overall they will spend less

Paying more. Churn to competitor: $50 - $300+
Paying per GB drives costs too high, resulting in churn of medium-to-heavy users

Pros
- Simplifies management of revenues-to-costs
- Simplifies usage billing
- Ties revenue directly to increase in usage, eliminating concern regarding cost impacts of data traffic forecasts
- Will curtail usage among high-GB users

Source: Cisco IBSG, 2012

Cons
- Average users will churn to competitor due to high costs
- Low users will pay less, no longer subsidizing other users
- If competitors don’t follow with per-bit metered plan, they will be able to steal share
5. Cross-Device Data Plan

- Data bucket is shared across consumer’s broadband and mobile services
- SP charges flat data-sharing fee to compensate for lost ARPU from mobile data plan

### Pros
- Simplifies customer experience and allows users to buy one plan for all their data use
- Prevents churn and ties separate offerings together, particularly for SPs with both broadband and mobile assets
- Increases market share
  
  **Source:** Cisco IBSG, 2012

### Cons
- May reduce total revenue as lucrative mobile broadband and home broadband ARPU decrease for each adopter of shared plan
- Benefits of churn improvement and added market-share gains may not offset losses from reducing combined data ARPU

### Potential loss from cross-device data plan
Difficult to cover loss of mobile data plan from data-sharing fee, churn improvement, and market-share gains
**Time-Metered Plan**

- SP charges flat connection fee and flat per-minute usage fee
- By combining per-minute pricing with time-of-day and/or unlimited pricing options, SPs could potentially improve monetization

### Price paid on a flat-price-per-minute metering method: $0.01 / minute

<table>
<thead>
<tr>
<th>Time Range</th>
<th>Cost Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 900 min</td>
<td>$0 – $9</td>
</tr>
<tr>
<td>900 min – 2,700 min</td>
<td>$9 – $27</td>
</tr>
<tr>
<td>2,700 min – 5,400 min</td>
<td>$27 – $54</td>
</tr>
<tr>
<td>5,400 min – 9,000 min</td>
<td>$54 – $90</td>
</tr>
<tr>
<td>9,000 min+</td>
<td>$90+</td>
</tr>
</tbody>
</table>

### Pros
- Simplifies management of revenues-to-costs
- Simplifies usage billing
- As use of Internet increases, so will revenue
- Will cause high time users to reduce use

### Cons
- Heavy users will churn to competitor due to high costs
- Low users will pay less, no longer subsidizing other users
- If competitors don’t follow with a time-metered plan, they will be able to steal share

**Source:** Cisco IBSG, 2012
Time-of-Day Usage Plan

- SP charges flat connection fee to each subscriber
- SP charges per-gigabyte usage fee, with pricing varying by time of day (peak times more expensive)

### Time-of-Day Traffic Online

**Pros**

- Reduces impact on network by reducing peak usage and maximizing non-peak times
- As consumers use more Internet, SP revenue will increase
- Will cause high-bandwidth users to reduce use, lessening demand on network

**Cons**

- Many heavy users will see massive increase to bill, driving churn to other providers
- If competitors don’t switch to a similar plan, they could steal share, increasing competitive threat

Source: Cisco IBSG, 2012
Service Provider / OTT Partner Offer

- SP partners with OTT provider to enable video service usage without counting toward cap
- Partner subsidizes SP for access to customer base

**Pros**
- Allows monetization of additional usage on broadband network by partnering with Netflix
- Makes SP offer more relevant to consumers
- Increases functionality of SP offer
- Creates new revenue stream by selling access to base

**Cons**
- Potential for abuse
- May cannibalize traditional SP video services
- May allow users to take lowest tier and drive costs higher through video usage; pricing should cover this scenario
- Regulatory concern

Source: Cisco IBSG, 2012
Activity-Specific Usage Plan

- SP partners with third-party provider to enable social, backup, gaming, or music service without counting toward cap
- Partner subsidizes SP for access to customer base

Pros
- Allows monetization of additional network use by partnering with third parties
- Makes SP offer more relevant to consumers in danger of churning
- Increases functionality of SP offer
- Creates new revenue stream by selling access to base

Source: Cisco IBSG, 2012

Cons
- Potential for abuse
- May cannibalize competitive SP services
- May allow users to take lowest tier and drive costs higher through video usage; pricing should cover this scenario
- Regulatory concern
5 Usage-Based Pricing & Video
SP OTT Video Offer: A Deeper Look

- With OTT video, SP captures video revenues from OTT video use vs. capturing only usage-based broadband revenues.
- Offers that bundle unlimited broadband with video usage will appeal to particular user segments.

Source: Cisco IBSG, 2012
**Online Video / Data Plan Preference**

**Percentage of respondents**

**United States**

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>$16 / month unlimited video, unlimited data</td>
<td>49%</td>
</tr>
<tr>
<td>$8 / month unlimited video, limited data</td>
<td>51%</td>
</tr>
</tbody>
</table>

**Canada**

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>$16 / month unlimited video, unlimited data</td>
<td>51%</td>
</tr>
<tr>
<td>$8 / month unlimited video, limited data</td>
<td>51%</td>
</tr>
</tbody>
</table>

**Question:**
Imagine you wanted to subscribe to an online video service, such as Netflix, to watch movies on your computer and on your TV. Which option would you select:

- **$16** per month, with unlimited access to video library, unlimited video streaming or downloading; **would not count against data limits** set by Internet service provider. OR . . .

- **$8** per month for unlimited access to video library, unlimited video streaming or downloading; **would count against data limits** set by Internet service provider, and could be subject to additional data fees.

**Source:** Cisco IBSG Connected Life Market Watch, 2011

**Base:** Broadband consumers
In Both U.S. and Canada, Younger Users Prefer Unlimited Data Option

Online Video / Data Plan Preference
Percentage of Respondents

$16 Plan with Unlimited Video / Unlimited Data

United States

United States

Canada

Canada

Younger consumers skew heavily toward unlimited video / data plan, while older consumers skew heavily toward unlimited video with limited data

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: Broadband consumers
Most Internet Video Device and Service Owners Prefer Unlimited Data Option

- Internet video device owners show increased preference for $16/month unlimited video and data plan.
- Internet video device ownership is likely correlated with higher online video use, indicating that those with significant online video use are more likely to pay to continue that behavior.

Source: Cisco IBSG Connected Life Market Watch, 2011
Base: Canadian broadband consumers
Integrated SPs Face Many Threats to Traditional Video Revenue

**Online Video (U.S. Impact in 3-5 Years)**

- Combination of online video and other video options meeting customers’ video needs

- Cheaper alternative; more competition

- Increasing viewership and interactive capability

- Per-use “a la carte” pricing model

**Drivers**

- Cord-Cutting / Downgrade

- Price Erosion

- Ad Revenue Decline

- Pricing Model Disruption

**Traditional Pay TV**

- Replacement of pay-TV service or downgrade premium channel, paid VoD, and / or DVR / HD

- Perceived value of and demand for pay TV decreases

- Advertising revenue decline from ad money shifting to online

- Consumer demand, regulation, and / or competitive pressure impose “a la carte” model on pay TV

Source: Cisco IBSG, 2010-2011
## Usage-Based Billing Strategies Can Minimize ARPU Loss Due to OTT Video

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Cut pay TV and VoD, replace with OTT Video</th>
<th>Cut VoD, replace with OTT video</th>
<th>Cut pay TV, replace with OTA; cut VoD, replace with OTT video</th>
<th>Cut pay TV and VoD, replace with SP OTT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service</td>
<td>Revenue</td>
<td>Margin</td>
<td>Revenue</td>
<td>Margin</td>
</tr>
<tr>
<td>Original Pay-TV Usage</td>
<td>$54.80</td>
<td>$13.70</td>
<td>$54.80</td>
<td>$13.70</td>
</tr>
<tr>
<td>Switch to Hulu</td>
<td>($54.80)</td>
<td>($13.70)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch to HD Antenna</td>
<td></td>
<td></td>
<td>($54.80)</td>
<td>($13.70)</td>
</tr>
<tr>
<td>VoD Usage</td>
<td>$20</td>
<td>$5</td>
<td>$20</td>
<td>$5</td>
</tr>
<tr>
<td>Switch to Netflix</td>
<td>($20)</td>
<td>($5)</td>
<td>($20)</td>
<td>($5)</td>
</tr>
<tr>
<td>Total Video Revenue Loss</td>
<td>($74.80)</td>
<td>($18.70)</td>
<td>($20)</td>
<td>($5)</td>
</tr>
<tr>
<td>Switch to SP OTT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upgrade to Higher-Tier BB</td>
<td>$23</td>
<td>$12.65</td>
<td>$13</td>
<td>$7.15</td>
</tr>
<tr>
<td>SP Net Impact</td>
<td>($51.80)</td>
<td>($6.05)</td>
<td>($7)</td>
<td>+$2.15</td>
</tr>
</tbody>
</table>

As online video takes users away from pay-TV services, usage-based pricing may replace lost revenues and margin.

Source: Cisco IBSG, 2012; Strategy Analytics, 2010
Lessons Learned from Mobile
More Than a Third of Mobile Operators Have Moved to Value-Based Pricing

Usage-Based Pricing Plans Are Commonplace for Mobile

Survey of Mobile Data Pricing Plans Across 100 Global Mobile Operators
Percentage of operators offering plan

<table>
<thead>
<tr>
<th>Plan Type</th>
<th>Percentage of Operators Offering</th>
</tr>
</thead>
<tbody>
<tr>
<td>True Unlimited</td>
<td>13%</td>
</tr>
<tr>
<td>Unlimited (with Cap)</td>
<td>25%</td>
</tr>
<tr>
<td>Speed-Tiered</td>
<td>25%</td>
</tr>
<tr>
<td>Time-Based</td>
<td>29%</td>
</tr>
<tr>
<td>Value-Based</td>
<td>35%</td>
</tr>
<tr>
<td>Pay as You Go (MB)</td>
<td>41%</td>
</tr>
<tr>
<td>Usage Tiers</td>
<td>83%</td>
</tr>
</tbody>
</table>

Value-Based Mobile Broadband Pricing, by Plan Type
Percentage of operators offering plan

- Turbo Boost: 6%
- Happy Hour: 11%
- Tethering: 15%
- Multiple Device: 23%
- Application-Based: 29%

Also, 26% of mobile operators have revenue-sharing models in place

Source: Allot Mobile Data Pricing Study, 2011

Base: 100 mobile operators worldwide
Consumers View Usage-Based Billing for Mobile Broadband as Unfair

- Most consumers consider usage-based billing for mobile data to be unfair
- Consumers in the United Kingdom are more likely than their Western European counterparts to consider mobile usage-based billing fair

Source: Cisco IBSG Connected Life Market Watch, 2011
Base: Broadband consumers
W. Europe: Usage-Based Billing Viewed More Positively for Mobile than for Fixed

- French consumers show the greatest disparity in their view of mobile vs. fixed usage-based billing
- British consumers are most consistent in their views of usage-based billing for mobile and fixed broadband

Perception of Usage-Based Billing Fairness: Mobile vs. Fixed Broadband

- **Germany**
  - Fair: Mobile broadband: 20%
  - Fair: Fixed broadband: 17%
- **U.K.**
  - Fair: Mobile broadband: 26%
  - Fair: Fixed broadband: 25%
- **Italy**
  - Fair: Mobile broadband: 23%
  - Fair: Fixed broadband: 17%
- **France**
  - Fair: Mobile broadband: 17%
  - Fair: Fixed broadband: 9%

Source: Cisco IBSG Connected Life Market Watch, 2011

Base: Broadband consumers
Mobile Data Users Are Unprepared To Make Buying Decisions Based on Use

- 3 out of 4 mobile data card users do not know how much data they consume
- Most don’t know their usage cap limit; nearly half are concerned about exceeding it

Consumption Awareness Among Mobile Data Card Users

- 62% don't know their usage cap limit
- 76% don't know how much data they consume
- 39% don't know what happens if they exceed their limit
- 45% are concerned about exceeding the cap

Source: Cisco IBSG, Heavy Reading, 2009
Base: 263 European mobile broadband dongle users
Reports of Average Usage Will Lead Consumers to Overpay for Data Plans

A small percentage of data hogs skew average consumption statistics

Most consumers are well covered by providers’ minimum plans, but many will pay for predictability

—Minimum plan for most companies is 200 MB per month
—60% of users use less than 200 MB per month

Source: Validas, 2011
Base: 23,000 U.S. wireless subscribers
Consumers Need Better Understanding of Data Consumption

FCC Has Asked SPs To Provide Better Information

1. Send alerts to notify consumers when they approach and reach monthly plan limits that would result in overage charges
2. Send alerts when consumers are about to incur international roaming charges
3. Clearly disclose tools to let consumers set their own usage limits and monitor their usage balances

1 out of 5 U.S. wireless subscribers received unexpected charges on their wireless bill in 2010

Source: FCC, 2011; Consumers Union Survey, 2010; Verizon website, 2011
Value-Based Pricing: Sample Plans

Application-Based
Telus Mobility in Canada offers social pages for BlackBerry handsets that allow unlimited access to Facebook, Twitter, MySpace, BBM, and Windows Live.

Time-Based
Usage Pattern over Day
As part of Orange U.K.’s Dolphin plan, customers select one of two “Happy Hour” options for an hour of unlimited data per day.
Considerations for Service Providers
SP Considerations:
Moving Toward Usage-Based Pricing

Questions to ask:

- Will consumption be a more viable value lever for pricing than speed?
- What can SPs do to steer clear of regulator concerns?
- What can SPs do to make usage-based pricing consumer-friendly?
- What can SPs do to make the migration from unlimited to usage-based pricing as pain-free for their customers as possible?
- How can usage-based pricing be implemented to drive the greatest revenue impact?
- How can usage-based pricing be implemented to provide the strongest control over Internet traffic patterns?

Source: Cisco IBSG, 2012