

Why You Shouldn't Be Afraid of Implementing Fair Access Policies

Could Usage-Based Pricing be the Future for Cable?

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Abstract

Worldwide, the broadband industry is changing and cable MSOs are facing shrinking profit margins. Subscribers are migrating to data-only plans, leaving MSOs with a clear revenue gap while subscriber bandwidth usage and network upkeep costs exponentially increase. Without some kind of change, MSOs risk bandwidth congestion, lower service quality, higher subscriber churn, and worst of all, a loss of profitability. What can be done to ensure the future of cable?

Policy enforcement may be the solution. North American MSOs are adopting usage-based pricing and other fair access initiatives to increase average revenue per user (ARPU) amid falling video subscriptions. Far from being restrictive, fair access policies — including usage-based pricing — offer subscribers a wide range of choices in a competitive market. However, transparency, education, and compliance with regional regulations is essential for success. MSOs must be able to accurately measure per-subscription bandwidth usage and notify subscribers to avoid bill shock.

Without a new revenue model, MSOs risk failure.

This report details options for MSOs looking to recover revenue streams lost to changing user habits. The major challenges, benefits, and best practices of policy enforcement will be examined, with a focus on examples in the North American cable market. Without a new revenue model, MSOs risk failure. However, there is no one-size-fits-all solution. Introducing usage-based pricing and enforcing quota-based policies may be the solution, but it will take careful planning, education, creativity, and most of all, accurate data, to ensure success.

MSO Challenges

Customer Expectations vs. Financial Reality

It has never been more important to offer subscribers a high quality of experience (QoE). With Internet penetration exceeding 80% in the United States and Western Europe,¹ consumers can afford to be choosy and MSOs are focusing more on subscriber retention and increasing revenue per subscriber than growth.

Escalating subscriber bandwidth usage is making it more difficult to offer customers a high QoE without drastically increasing prices.

However, escalating subscriber bandwidth usage is making it more difficult for MSOs to offer customers a high QoE without drastically increasing prices. Increasingly popular IPTV and over-the-top (OTT) services like Netflix are bandwidth-intensive, placing greater strain on existing infrastructure and increasing traffic congestion. This trend is likely to increase, with forecasts estimating that global OTT video revenue will reach \$51.1 billion USD in 2020 — nearly double the expected revenue from 2015². Internet traffic is expected to skyrocket to 168 exabytes per month by 2019 — nearly a threefold increase from 59.9 exabytes per month in 2014³ — while the number of devices connected to IP networks will be more than three times the global population by 2019⁴.

Increased Internet traffic creates bandwidth congestion and can negatively affect service quality, but for many MSOs, the funds required to make necessary network upgrades and node splits is disappearing. Traditionally, these investments could be offset by bundled subscriptions, for example video, data, and voice packages⁵.

Today, as more subscribers migrate to data-only plans, MSOs need to be more creative to recoup revenue. Otherwise, they risk moving into the red to keep up with the infrastructure replacements required to meet customer quality expectations.

¹ Mobile Industry Review January 26, 2015
www.mobileindustryreview.com/2015/01/3-billion-internet-users-2015.html

² Digital TV Research *Global OTT TV & Video Forecasts* June 2015
www.digitaltvresearch.com/products/product?id=122

³ Cisco Visual Networking Index *The Zettabyte Era: Trends and Analysis* May 2015
www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/VNI_Hyperconnectivity_WP.html

⁴ Cisco VNI May 2015

⁵ The Broadband Report *Why Broadband Caps are a Sign You'll be Paying More for Broadband in the Future* 15 October 2015 <http://broadbandnow.com/report/data-caps/#note-436-2>

For example, industry estimates indicate that the average subscriber currently uses 30GB of bandwidth on a data/TV/voice bundle, whereas IP-only users use more like 200GB a month⁶ due to the higher bandwidth requirements of streaming video. Clearly, more subscribers taking on IP-only plans will affect service quality unless there are pipe upgrades.

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Changing Technology and Viewing Habits

Subscribers are changing the way they watch video, with streaming services becoming more popular than ever. Does this affect cable subscriptions?

In the United States, it appears that it does. Public records from major cable and satellite video providers Comcast and DirectTV indicate a steady drop in video subscribers. Comcast reported an increase in revenue for 2014 and 2015 despite a drop in video subscriber numbers, about 1% each year⁷:

Year	Comcast Video Subscribers
2012	43.0%
2013	41.9%
2014	40.9%

Likewise, satellite TV provider DirectTV reported 133,000 lost satellite TV customers in the second quarter of 2015⁸.

There is also another factor at play: the introduction of higher-bandwidth applications. Ultra high definition 4K TVs are already on the market and with four times the pixel requirements, this technology requires four times the data usage and could contribute to a significant hike in subscriber broadband use within the next five years.

⁶ Sandvine *Global Internet Phenomena Report 2014* www.sandvine.com/downloads/general/global-internet-phenomena/2014/1h-2014-global-internet-phenomena-report.pdf

⁷ Comcast financial statements <http://quicktake.morningstar.com/stocknet/secdocuments.aspx?symbol=CMCSA>

⁸ Frankel, Daniel. *Fierce Cable DirectTV Lost 133K Subs in Q2* August 7 2015 www.fiercecable.com/story/directv-lost-133k-subs-q2-pushes-pay-tvs-total-quarterly-cord-cutting-carna/2015-08-07

Reluctance and Fear of Bill Shock

In an environment where revenue growth is stagnating, subscriber retention is essential. As a result, providers may be hesitant to roll out new policies aimed at charging more for increased or excessive bandwidth use — even though in many cases only a small percentage of subscribers will be affected. In some cases, a usage limit contract may already exist but the provider has not taken steps to enforce it due to an inability to accurately measure usage or fear of public backlash from subscribers experiencing bill shock.

MSOs are left with few attractive options:

Option	Result
Keep pricing the same and avoid network investments	Risk customer churn as subscribers seek better service quality
Keep pricing the same and make network investments	Face escalating costs and slimmer margins as traffic further increases
Make network investments and recoup revenue through bandwidth quotas	Risk subscriber dissatisfaction, bill shock, and potentially regulatory infringements if the policy is rolled out unfairly or without warning

Is this a no-win situation? Or is there a way to keep your business profitable without alienating customers?

Solution: Measuring and Managing Subscriber Bandwidth Usage

Usage-based pricing could be the answer. Increasingly, MSOs in the North American pay TV market are exploring creative ways to keep both customers and company executives happy. It all comes down to understanding bandwidth utilization — where, when, and how bandwidth is being used on the network.

Solving the bandwidth vs. billing debate requires a three-step process:

1. Accurately measure per-subscriber bandwidth
2. Notify subscribers of their utilization
3. Create and enforce policies

Usage-based pricing could be the answer.

The North American broadband market highlights the variety of options available to generate revenue even amid falling video subscriptions.

North American Examples

How and when policies are enforced will depend on the market and the associated regulatory considerations. Examples of major North American pay TV operators below highlight some of the possibilities for recouping revenue.

INTX 2015 panelists suggested that usage-based pricing was “inevitable” in the cable industry.

United States

U.S. cable industry leader Comcast has arguably been the most high-profile company to offer various forms of usage-based pricing, beginning with a regional roll-out in 2015. However, Comcast is not alone, with more providers moving towards creative packaging and usage-based pricing. In fact, INTX 2015 panelists suggested that usage-based pricing was “inevitable” in the cable industry⁹. Current providers offering versions of usage-based pricing (or trials) include¹⁰:

- Comcast
- Cox
- Cable ONE
- Suddenlink
- Mediacom

Variations in use include offering unlimited or high bandwidth plans at a premium to target high users and enforcing overage charges for quotas. In many cases, subscribers can self-migrate to higher-tier plans as their consumption increases and some providers (such as Cox) are offering simple upgrades, such as a \$10 fee for extra buckets of gigabytes. At the same time, paid proprietary OTT video subscriptions (such as Sling from DishTV) are expanding.

Although these policies are relatively new, they appear to have been successful in mitigating the loss of video subscription revenue.

Although these policies are relatively new, they appear to have been successful in mitigating the loss of video subscription revenue. For example, Comcast public records for Q3 2015 highlight a 6.3% overall revenue increase and a 4.3% increase in total revenue per customer in the company's cable communications division, despite a loss of 48,000 video subscribers¹¹. Furthermore, the introduction of usage-based billing has not affected overall customer numbers, with high-speed Internet customers increasing by 320,000 and business services revenue increasing by 19.5% in the quarter.

Controversy surrounding the company's policy roll-out suggests more education prior to implementation may have been necessary, although arguably as the largest cable provider in the United States, the company is open to more public backlash than smaller operators.

⁹ Farrel, Mike *MultiChannel News* “INTX: Usage-Based Pricing Inevitable” May 2015 www.multichannel.com/news/cable-tv-conventions/intx-2015-usage-based-pricing-inevitable/390417

¹⁰ Farrel, Mike *MultiChannel News* “Cox Testing Usage-Based Pricing in Cleveland” May 2015 www.multichannel.com/news/broadband/cox-testing-usage-based-pricing-cleveland/390626

¹¹ Comcast Reports 3rd Quarter 2015 Results, Comcast Investor Relations, www.cmcsa.com/releasedetail.cfm?ReleaseID=938550

Canada

All major Canadian Internet service providers now use data caps when billing customers¹². These include tiered pricing agreements as well as the option for subscribers to pay an extra monthly fee for higher caps or unlimited usage. Several providers also offer their own OTT video subscription services, such as:

- Telus
- Rogers
- Bell
- Shaw

Policy implementation may prove to be essential in the Canadian cable broadband market, where 21% of households did not have cable TV subscription in the end of 2014¹³.

Keys to Success: Accurate Measurement and Communication

The first step to regaining revenue in a shrinking video subscription market is to understand how bandwidth is currently being used on your network. There are various methods available for measuring bytes sent and received on a network, including Internet Protocol Detail Record (IPDR), Deep Packet Inspection (DPI), and Simple Network Management Protocol (SNMP), with IPDR putting the least amount of strain on the network.

The IPDR standard is integrated with the CableLabs DOCSIS protocol and instructs a CMTS to collect information about IP-based service usage on a per subscription basis. IPDR data therefore contains information about every flow inside a CMTS, as well as consumption usage information about every subscriber device on your network. Unlike SNMP, IPDR does not cause network performance issues, as data is collected out-of-band and does not require continual polling of the CMTS. This also increases accuracy, as there is less likelihood of dropped data. IPDR also avoids the controversies of DPI by simply reporting on the bandwidth used, rather than disclosing the actual contents of subscriber traffic.

The IPDR standard is integrated with the CableLabs DOCSIS protocol and instructs a CMTS to collect information about IP-based service usage on a per subscription basis.

Once collected, raw IPDR data must be aggregated and organized into a readable format. This involves working with multiple data streams and collecting into a database for analysis. The next step is to share this information with subscribers to help them understand their usage habits and avoid bill shock.

Research from Analysys Mason shows that 50% of interactions between customers and communication service providers occur in the billing phase

¹² Oboum, Erin via CBC.ca February 24, 2014 *Telus bails on unlimited Internet, bandwidth plays on for a price* www.cbc.ca/news/business/telus-bails-on-unlimited-internet-bandwidth-plays-on-for-a-price-1.2965470

¹³ Friend, David. CTV News. "More Canadians scrap cable packages or never sign up: report." April 13, 2015 www.ctvnews.ca/business/more-canadians-scrap-cable-packages-or-never-sign-up-report-1.2325386

and these were greatly a result of customers failing to understand how services were billed¹⁴. Clearly, a lack of transparency about data utilization can increase support costs and subscriber frustration, highlighting the importance of customer education.

Options for Notification

How might this customer education look in practice? Depending on resources, options for notifications may include:

- Subscriber self-service portal with an easy-to-understand interface detailing usage balances and monthly limits
- Email or mobile alerts notifying customers when they approach or reach monthly limits
- Email or mobile alerts when customers are about to incur any penalties or charges
- Options to easily purchase either additional data or move into a different pricing tier if nearing limit

Regional trials and courtesy periods are useful for introducing usage-based pricing.

The goal here should be communication to avoid surprising customers with overage charges. Regional trials and courtesy periods are useful for introducing usage-based pricing. For example, when introducing usage-based pricing cable provider Comcast did not charge for the first three times subscribers exceeded the 300GB cap in an effort to avoid bill shock. The company notifies subscribers when 90%, 100% and 110% of data is exceeded, with users able to configure notifications at lower amounts (e.g. 50%, 60% etc.)¹⁵.

It is essential to ensure subscriber self-monitoring is as simple as possible. Even if an MSO does not set usage limits or enforce metering, giving customers the tools to understand their own usage and peak periods may help foster an understanding of bandwidth congestion and service quality issues.

Create and Enforce Policies

This final step is essential for any provider needing revenue for necessary network investments. Bandwidth is a shared resource and the consumption practices of excessive users often hurts the quality of service for other subscribers, not to mention costing MSOs in terms of network investments, yet some providers are hesitant to enforce quota-based policies due to perceived subscriber backlash.

However, as already outlined, it is clear that a shift towards quota-based fair access policies is necessary for MSOs to stay profitable. There is no one-

¹⁴ Analysys Mason 2014 *Customer Experience Management: Value-based Delivery and Service Support* www.analysismason.com/About-Us/News/Insight/Customer-experience-insight-Jan2014-RMA15/

¹⁵ Comcast XFINITY FAQ December 2015 <http://customer.xfinity.com/help-and-support/internet/data-usage-trials-exceed-usage>

size-fits-all policy for success. By considering the various options available, MSOs can creatively come up with a policy that works best for their business.

Options for Policy Implementation

Below are just some variations currently in use by service providers across the globe. These are not mutually exclusive; in fact, it may be beneficial to offer a combination of packages to appeal to different demographics:

Type	Description
Tiered pricing plans	One of the most common policy formats where pricing increases by tier, allowing for higher data and speed allowances as prices increase. Depending on policy, there may be overage fees charged per GB unless the subscriber moves to the next usage tier
Unlimited data plan	Offer subscribers all-you-can-eat data plans at a higher price than the capped plans to capture heavy users
Cross-device metered plan	Data shared across a consumer's broadband and mobile services, or across multiple subscriber devices for a flat-fee
Time-based metering plans	Options for off-peak or limited periods of unlimited data per day in addition to a bandwidth quota
Proprietary OTT video package	Offer subscribers access to online video service as part of a broadband package that does not count towards the quota at a competitive price

Clearly, there is room to be creative in the broadband policy space. This is not carte blanche to simply raise prices — MSOs need to strike a balance where a subscriber with two or more services (i.e. Internet and TV) is not penalized but those that solely use broadband Internet to access video pay more to accommodate increased bandwidth usage.

Research from Analysys Mason shows that speed is the second-most important criteria for fixed broadband customers (price is first).

Increasing average revenue per user (ARPU) in a competitive market is a challenge, but offering value-added services, bundles, and tiered pricing levels gives MSOs the opportunity to cater to the different needs of subscribers and do what the mobile industry has done for years — charge subscribers for the services used.

Research from Analysys Mason shows that speed is the second-most important criteria for fixed broadband customers (price is first)¹⁶. The same study found that younger demographics, including families with children, are more likely to pay more for faster speeds to support OTT services.

¹⁶ Analysys Mason *Multi Play Pricing Benchmark Q4 2014: superfast broadband pricing and marketing strategies* April 1, 2015 www.analysismason.com/Research/Content/Reports/Multi-play-pricing-benchmark-4Q-2014-Apr2015-RDMB0/

Other research shows that 41% of U.S. subscribers would be willing to pay for unlimited broadband access if it was offered¹⁷, while recent statistics indicate that value-added services (like proprietary OTT) may have helped increase ARPU for some providers in the United States even while pay TV subscriptions fall¹⁸.

By offering a “fair-use policy”, customers who use more bandwidth pay for more, with the potential to enforce fees for excessive usage. However, for this kind of tiered pricing to be effective, transparency is essential. This includes the accurate collection and dissemination of per-subscription usage data, as well the ability for subscribers to monitor their own monthly usage, as outlined earlier in this document.

Benefits of Policy Enforcement

Policy is no longer a dirty word — rather, it is an essential revenue stream for business profitability and consistent service quality as worldwide subscriber IP traffic continues to escalate. This is why it is essential to enforce policies once created.

In most cases, only the highest users will be affected by overage charges.

It is worth noting that in many cases, only the highest users will be affected by overage charges. For example, Comcast's 300GB cap is well within the 200GB average usage of IP-only traffic subscribers¹⁹, although the introduction of 4K TV could require MSOs to revisit current caps in the future, and could be why the same company is trialing unlimited data plans in some states²⁰. It may be appropriate for providers to offer some incentives for subscribers. This may involve creating attractive offerings and packages that cater for high users and charge less for subscribers with lower bandwidth requirements, rather than only creating and enforcing overage charges for existing plans.

Tiered pricing gives subscribers the option to migrate higher speeds or greater bandwidth quotas if they are willing to pay more. Flexibility of bandwidth caps is already a fixture of mobile telecommunication providers and the shift from unlimited to capped data plans in that industry has enabled greater competition and more choices for consumers.

¹⁷ Cisco Internet Business Solutions Group, March 2012, *Moving Towards Usage-Based Pricing: A Connected Life Market Watch Perspective* www.cisco.com/web/about/ac79/docs/clmw/Usage-Based-Pricing-Strategies.pdf

¹⁸ Strategy Analytics *Digital Television Operator Performance Benchmarking: North America* Aug 19, 2015 www.strategyanalytics.com/strategy-analytics/news/strategy-analytics-press-releases/strategy-analytics-press-release/2015/08/19/us-pay-tv-subscribers-decline-by-479-000-in-2q15-but-average-revenue-per-user-is-up-says-strategy-analytics-.VI3

¹⁹ Sandvine *Global Internet Phenomena Report 2014* www.sandvine.com/downloads/general/global-internet-phenomena/2014/1h-2014-global-internet-phenomena-report.pdf

²⁰ Fung, Brian *The Washington Post* “Comcast rolls out trial of new plan: Unlimited data for an extra \$35” November 2, 2015 www.washingtonpost.com/news/the-switch/wp/2015/11/02/your-phone-company-already-limits-your-data-your-cable-company-could-be-next/

Service-Based Strategies: The Future of Cable

The future of cable can go two ways: either MSOs make changes to monetize shifting subscriber habits, or else become unprofitable. MSOs focused on new service offerings, improving service quality, and making smarter network investments will succeed — and those that do not risk failure.

With accurate utilization data on hand, providers can monitor subscriber usage patterns, identify excessive users, and where necessary, charge for overconsumption. Already, North American providers are moving towards usage-based pricing and proving that there is room for creativity in this space.

Incognito offers solutions for subscriber bandwidth management.

Internet Protocol Detail Record (IPDR) offers a way of measuring subscriber bandwidth utilization but to be useful, MSOs need to adopt a solution that automates the organization and normalization of collected data. With this network intelligence, providers can then recoup lost revenue, optimize networks, and provide a better overall subscriber experience. It is only then that the future of cable will continue to look bright.

Interested in learning more? Incognito Software Systems Inc. offers solutions for subscriber bandwidth management.

Schedule a consultation today to find out more.

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