

SOLUTIONS BRIEF

Mobile Broadband Management

How to Intelligently Manage Mobile Broadband Usage & Boost Customer Satisfaction

SUMMARY

Mobile Broadband Providers (MBPs) struggle with profitably selling services when there are limited controls on data consumption. Today, website filtering and setpoint throttling are the key tools available to manage mobile data consumption. This solution brief proposes using real-time application throttling of streaming video to manage consumption. The real-world example in this solution brief shows a 26% decrease in bandwidth consumption using this method.

PROBLEM

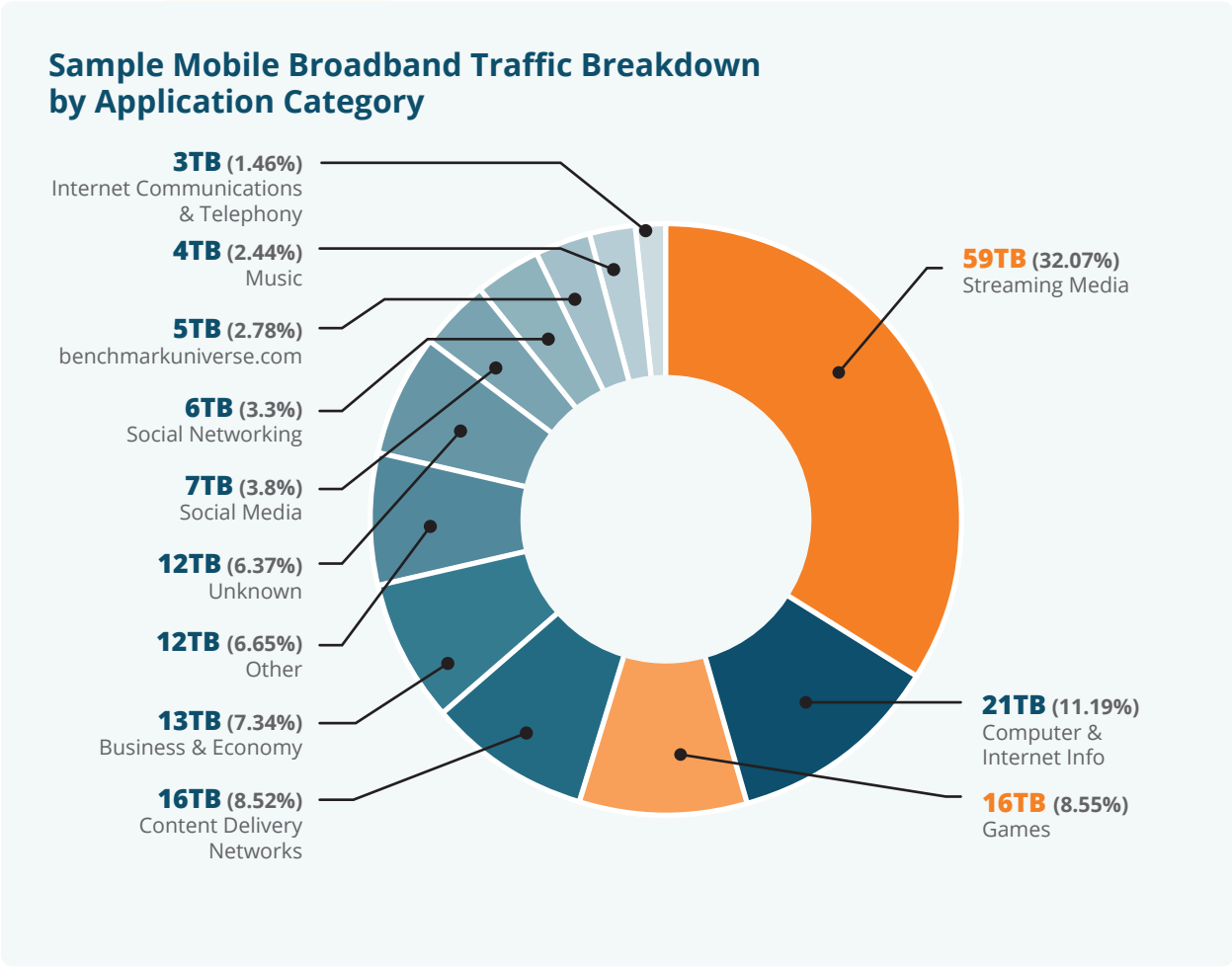
Broad adoption of mobile broadband services is hampered by the cost and coverage of 4G and 5G mobile networks. Mobile operators can throttle traffic to limit consumption, but as an ISP, they can't block access to websites. Throttling is an effective tool, but you end up throttling *all* traffic and not the specific traffic driving data overages. Could application throttling be the answer to this problem?

BACKGROUND

Mobile broadband uses the existing 4G and 5G cellular networks to deliver high-speed data connectivity. Given the shared nature and associated costs of building and operating a cellular data network, most network operators cap usage, throttle traffic or charge high overage fees to manage these costs and balance usage across all customers.

However, these strategies cause customer dissatisfaction. Capping and throttling can happen anytime during the month, resulting in low speed or no access to the Internet and, of course, no one wants to get an unexpected bill.

The graph below shows an example of how a sample of 1,500 mobile broadband users' traffic is broken out by application category.



As you can see, nearly 40% of the traffic is streaming media and games, which is very typical of all traffic on the Internet.

That raises the question of whether there's a better way for MBPs to manage data consumption with less brute force than blocking or throttling all traffic or charging high data overage fees.

SOLUTION

A more intelligent approach to the mobile broadband data management problem is for MBPs to continuously throttle the applications driving most of the data use, namely streaming media and gaming. The tables below show the minimum bandwidth requirements for both categories of traffic.

Minimum Internet Requirement by Game Type

| GAME TYPE | UPLOAD SPEED | DOWNLOAD SPEED | PING |
|------------------------------|--------------|----------------|--------|
| Real-Time Strategy | 1 Mbps | 3 Mbps | 150 ms |
| Massively Multiplayer Online | 1 Mbps | 5 Mbps | 150 ms |
| First-Person Shooter | 1 Mbps | 30 Mbps | 15 ms |

Source: IPS News Agency, December 2020

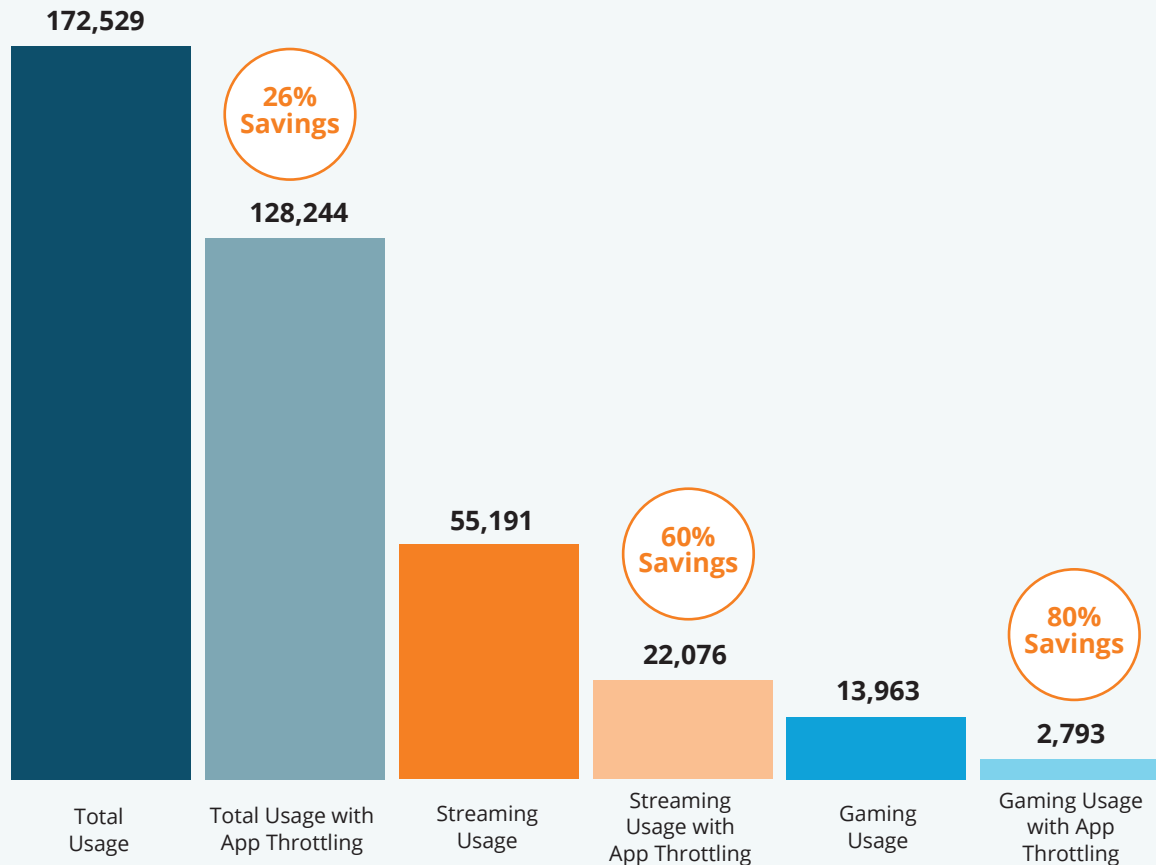
Recommended Internet Download Speeds for Streaming Video

| | Recommended |
|--------------------------|--------------------|
| Broadband Connection | 1.5 Mbps or higher |
| Standard Definition (SD) | 3 Mbps |
| High Definition (HD) | 5 Mbps |
| 4K/Ultra HD (UHD) | 25 Mbps |

Source: Netflix

Using the earlier example noted in the Background section, what would be the impact on 1,500 mobile broadband users' traffic if we throttled streaming media from 5 Mbps (HD) to 2 Mbps (SD) and gaming from 25 Mbps to 5 Mbps, as shown below:

The Impact of App Throttling on Mobile Broadband Traffic



This example shows an overall 26% decrease in data usage through the use of application throttling. Moreover, streaming usage is reduced by 60% and gaming usage by 80%. MBPs should anticipate similar results on their networks if intelligent application throttling is implemented.

CONCLUSION

Application throttling is a new tool for MBPs to continuously manage nearly half of the data traffic on their networks, namely streaming media and gaming. Deploying application throttling will improve customer satisfaction by keeping data use within contracted levels and reducing or eliminating the costs of overages.