# Not all Bytes are the Same: Focusing on Value not Speed.

Increasing Telco profitability by enhancing user experience.



## CANOPUS
### NETWORKS

# Contents.

# Executive Summary.

Telcos have spent billions of dollars on wireline and wireless broadband networks. Understandably, the emphasis to-date has been on increased coverage, higher speeds, and larger traffic volumes. However, this has led to commoditization and low return on capital. We argue that in the next phase of broadband, Telcos should focus on profit and there is an ideal opportunity to do so. It requires that Telcos understand the different application types, their relative value to users, and the relevant network metrics that determine user experience. This will allow Telcos to make the next phase of broadband more profitable by optimising their networks for high-value applications and pricing services according to value and user experience.

To illustrate the point, we consider five major categories of applications - subscription video, free video, social media, conferencing, and gaming. Using publicly available data on the industry revenue generated by each of these application types in Australia, combined with data measured by Canopus Networks on broadband traffic volume attributable to these per household, we estimate the "value-per-GB" of each application type.

**Our study reveals that gaming is a startling 167x more valuable than subscription video, and 42x more valuable than social media, on a per-GB basis.**

The implications are profound - Telcos can begin to increase their profits immediately. But to do so, they need to de-emphasise speed, which benefits low-value applications (e.g. downloads), and instead tune their networks to maximise user experience on high-value applications (e.g. gaming) that demand low latency, jitter, and loss . Monitoring and enhancing user experience is vital to increasing customer satisfaction, loyalty, and retention, while creating opportunities for new revenues from premium services for high-value applications. With anticipated explosion in traffic from cloud gaming, virtual reality, and the Metaverse, Telcos can begin to claw back some profit.

**CANOPUS**
NETWORKS

# Value versus Volume.

*Broadband profitability is under threat as household traffic increases 26% year-on-year, while average revenue remains stagnant. Telcos therefore need to shift focus from speed and volume to **value**, which is not the same for all network bytes. We illustrate this by quantifying the "value per GB" of five key types of network traffic, by combining per-application traffic volumes measured by Canopus Networks across 100,000 Australian households, with publicly available data on industry revenues across the 9.84M households in the country.*

**Subscription Video:** Subscriptions to Netflix, Disney+, Stan, Foxtel, Amazon Prime, Apple, Binge, Paramount+, Optus and Kayo Sports have been growing steadily during the pandemic [1], with Deloitte's annual media consumer survey revealing that 80% of Australian households subscribe to at least one streaming video service, paying $55 each month [2]. Subscription video therefore generates on average $44 per month per Australian household, while comprising 184.88 GB (37.7%) of monthly average household broadband traffic.

**Free Video:** YouTube and Twitch generate most of their revenues from advertising and merchandise sale. Google's Australian revenues of $5.2B in 2020 [3] constitute roughly 2.06% of their US$182.53B ($252.73B) global revenue [4]. Attributing this fraction of Youtube's US$19.77B ($27.35B) global revenue to Australia yields $563.41M, or $4.77 per Australian household per month. Twitch's Australian traffic is reported to be 1.75% of its global traffic [5]; applying this fraction to its global revenue in 2020 of US$2.3B ($3.22B) [6] yields an annual estimate of $56.35M for Australia, namely $0.48 per household per month. Canopus measures average monthly household consumption of free video in Australia to be 64.18 GB (13.1%).

**Social Media:** Advertising on social media in Australia yielded $3.2B in 2020 per Statista [7], dominated by Meta (85%), LinkedIn (5%), TikTok (5%), and others (5%) including Twitter and SnapChat. This translates to $27.10 per month per Australian household. Canopus measures social media to account for 28.71 GB (5.9%) of broadband data consumption per household per month.

**Conferencing:** Platforms like Zoom, Teams, Google Meet, and Webex have surged since the pandemic. Zoom is estimated to have a 50% market share [8], with Australia generating about 10% of its annual APAC revenue of $465.27M for 2020 [9]. This suggests that conferencing generates about $9.46 annually per household (though it is largely paid for by employers with corporate licences), equating to $0.79 per month. Conferencing traffic constitutes 11.19GB (2.3%) of household traffic per month.

**Gaming:** PwC estimates that Australian interactive games and eSports revenues in 2020 reached $3.41B [10], much of it from in-game micro-transactions, expected to grow at 7.5% CAGR over the next 5 years. This yields an average monthly spend of $28.87 per household on gaming. Canopus measures gameplay traffic to account for a meagre 0.73GB (0.15%) per month per household on average.

## Revenue Per Household
### Avg. industry revenue for each application type

| Application | Revenue |
|---|---|
| Subscription Video | $44.0 |
| Gameplay | $28.9 |
| Social Media | $27.1 |
| Free Video | $5.2 |
| Conferencing | $0.8 |

## Traffic Volume Per Household
### % traffic for each application type

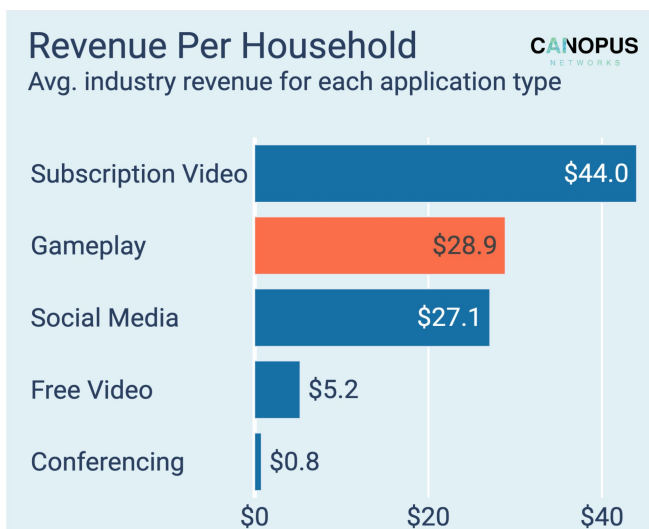| Application | Traffic |
|---|---|
| Subscription Video | 37.7% |
| Free Video | 13.1% |
| Social Media | 5.9% |
| Conferencing | 2.3% |
| Gameplay | 0.1% |

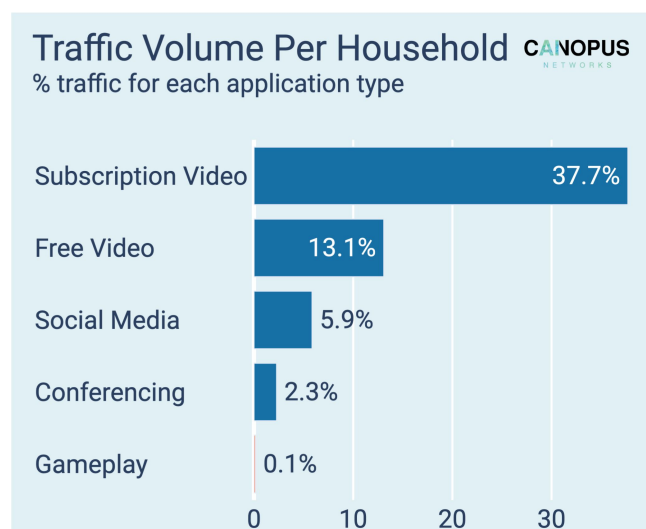Fig. 1(a) Average monthly spend/value per Australian household. Gaming is next only to subscription video, and above social media.

Fig. 1(b) Average monthly broadband traffic per Australian household. Subscription and free video dominate; gaming is extremely low.

CANOPUS
NETWORKS

# How Valuable is a GB?

| Traffic type | Value per household | Volume per household | Value* per Broadband GB |
|---|---|---|---|
| Subscription Video | $44.00 | 184.88 GB | $0.21 |
| Free Video | $5.25 | 64.18 GB | $0.07 |
| Social Media | $27.10 | 28.71 GB | $0.84 |
| Conferencing | $0.79 | 11.19 GB | $0.06 |
| Gaming | $28.87 | 0.73 GB | $35.37 |
| *Aggregate*** | *$72* | *502.63 GB* | *$0.14* |

\* Value adjusted to reflect the fact that broadband traffic comprises 89% of total traffic in Australia [11].
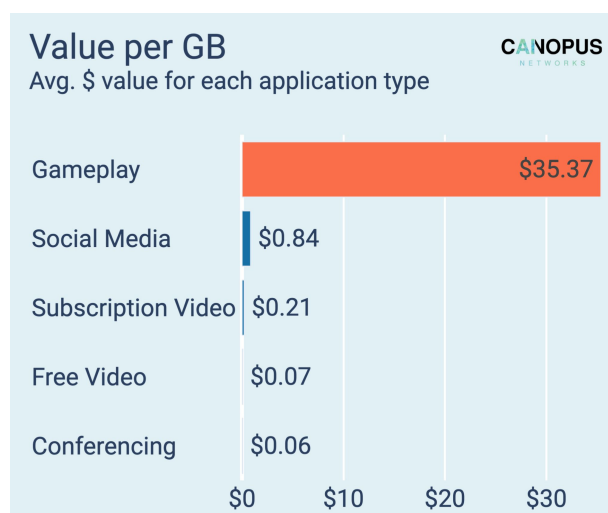
\** Pertains to Telco broadband revenues & volumes



Fig. 3 Value per GB of each traffic type.

*"Gaming is 167x more valuable per GB than Subscription Video"*

# What can Telcos do?

Though video is culpable for putting the highest volumetric stress on the network, it is worth noting that consumers pay Telcos almost as much in carriage ($0.14) as they pay OTTs for subscription content ($0.21) per GB. With gaming though, Telcos are recouping only a very small fraction (0.4%) of what a GB is worth to the industry. The misalignment between value and volume has profound implications for Telcos, and necessitates a major rethink from both an engineering and a business perspective. We provide some recommendations below:

- **Optimise for high-value applications:** Beyond 50 Mbps, an increase in broadband speed benefits low-value applications (like downloads), with no perceptible benefits for well-behaved high-value applications (video, gaming, conferencing). Network engineering (routing, buffering, etc.) needs to focus on optimising metrics like latency, jitter, and loss that directly impact high-value applications.
- **Monitor experience and engage users:** Telcos that can demonstrate superior network tuning to avoid poor user experience events on high-value applications, and engage with users to pinpoint and rectify experience issues, will be able to increase their brand value, customer retention, and revenues.
- **Create premium offerings:** The market is ripe for creating paid premium services for gaming, cloud gaming, and the emerging Metaverse. Telcos have an opportunity to partner with content providers of high-value GigaBytes on new business models to unlock revenue aligned with value, not volume.

Focusing on application value and user experience can make broadband much more profitable than it is today.

## References
[1] Telsyte, 20 Sep 2021, https://www.telsyte.com.au/announcements/2021/9/20/subscription-entertainment-lifts-in-lockdown
[2] Business Insider, 20 Sep 2021, https://www.businessinsider.com.au/80-australian-households-streaming-service
[3] Google Australian revenues 2020, https://www.smh.com.au/business/companies/google-s-australian-business-tops-5-billion-despite-covid-19-pandemic-20210429-p57nk0.html
[4] Google revenues 2020, https://www.sec.gov/cgi-bin/viewer?action=view&cik=1652044&accession_number=0001652044-22-000019&xbrl_type=v#
[5] Twitch Australian traffic, https://pro.similarweb.com/#/companyresearch/websiteanalysis/audience-geography/twitch.tv/*/36/2021.01-2021.03
[6] Twitch Revenues 2020, https://www.businessofapps.com/data/twitch-statistics/
[7] Statista social media advertising, https://www.statista.com/outlook/dmo/digital-advertising/social-media-advertising/australia?currency=AUD
[8] Video conferencing market share 2020, https://www.emailtooltester.com/en/blog/video-conferencing-market-share/
[9] Zoom revenues 2020, https://investors.zoom.us/static-files/a17fd391-13ae-429b-8cb3-bfd95b61b007
[10] PwC Interactive Games, https://www.pwc.com.au/industry/entertainment-and-media-trends-analysis/outlook/interactive-games.html#chart-data
[11] ACCC Internet Activity Report, Dec 2021, https://www.accc.gov.au/system/files/Internet%20Activity%20Report%20%28June%202021%29.pdf

CANOPUS
NETWORKS