



# Streaming Media

Into the online future - movies music and more

# What do we mean by Streaming?

- ▶ **Streaming media** is video or audio content sent in compressed form over the Internet and played immediately, rather than being saved to the hard drive. With **streaming media**, a user does not have to wait to download a file to play it.

Because the **media** is sent in a continuous **stream** of data it can play as it arrives.

<https://whatis.techtarget.com> > definition > streaming-media

# What can we stream

Any media can be streamed:- Movies, LiveTV, Live Video, Music etc

Apps are available on most platforms to allow us to do this:-

- ▶ Movies - Apps include:- Netflix, Stan, YouTube, Kanopy etc.
- ▶ LiveTV - Apps include:- Freeview, ABC iView, TenPlay, 9Now, SBS on Demand, 7Plus.
- ▶ Live Video - Apps include:- Facebook Live, YouTube, Periscope.
- ▶ Music - Apps include:- Spotify, Apple Music, Freegal, YouTube Music etc.

# Early problems

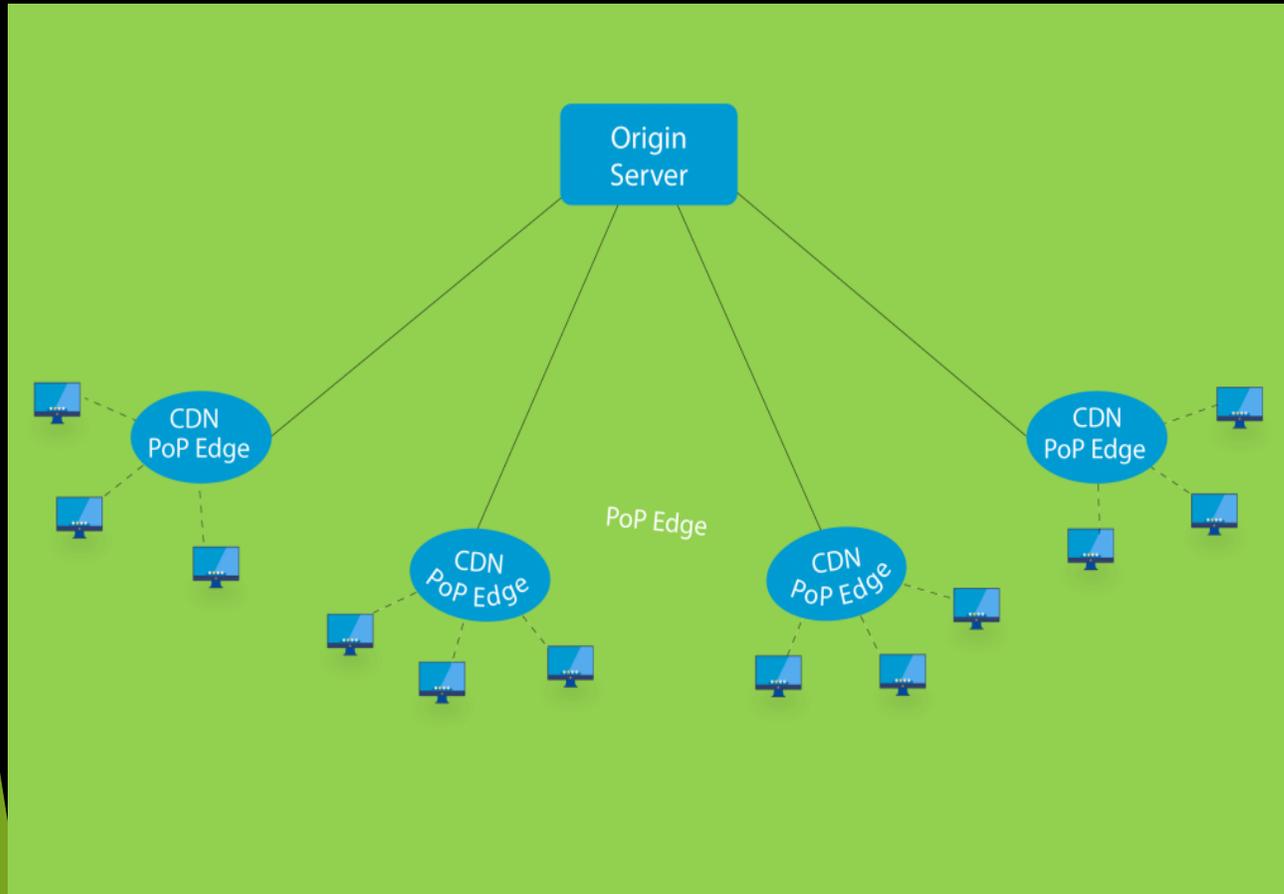
- ▶ Download speeds were limited and cable was expensive for many users.
- ▶ Insufficient Content providers. Little competition meant increased expense.
- ▶ Early service providers eg Youtube and Netflix used only one or two servers to host their content, and it didn't work well. Users that were far away from the servers experienced lag, and high-traffic days (Saturday night, for example) would slow streaming servers to a crawl.



# How to solve the problems?

- ▶ Servers
- ▶ Broadband
- ▶ Devices

# Servers



## Improve Infrastructure.

<https://www.howtogeek.com/404447/internet-streaming-what-is-it-and-how-does-it-work/>

- ▶ Companies offering online content have spent an enormous amount of money to solve these problems. This has meant the creation of **Content Delivery Networks (CDNs)**. A CDN is a Dense global network of servers with the same content.

# Broadband Solutions

- ▶ The NBN has improved broadband options across the country.
- ▶ Put simply, the biggest **difference** between **NBN** and **ADSL** connections is speed. **NBN** plans are available with download speeds of up to 100Mbps, while ADSL2+ has a maximum potential download speed of 20Mbps. Most ADSL2+ connections are much slower: the average Australian **ADSL** speed is just 8Mbps.

<https://www.whistleout.com.au/Broadband/Guides/How-the-NBN-Differs-from-ADSL2-Cable-and-Wireless>

- ▶ Wireless options - 4G and soon 5G.

<https://www.canstarblue.com.au/internet/5g-vs-nbn/>

# Hardware

- ▶ Smart TV (TV with Internet access)
- ▶ “... While the convenience of watching on your phone can never be understated, if [you want 4K Netflix](#), is it better to get a **Smart TV** with integrated support, or a Chromecast Ultra dongle?”  
<https://www.finder.com.au/internet-tv/streaming-hardware>
- ▶ Other Devices to use in addition to a Smart TV
  - ▶ AppleTV 4K
  - ▶ Google Chromecast
  - ▶ TelstraTV 3
  - ▶ Foxtel Now
  - ▶ xBox
  - ▶ Playstation
  - ▶ Amazon TV Fire Stick
  - ▶ Fetch TV

Note: **You do not need a TV antenna to stream from the internet.** The minimum **internet** bandwidth required for streaming **TV** is around 4Mbps. Almost any **internet** connection delivers that speed.”

<https://www.comparetv.com.au/compare/compare-streaming-tv-media-devices-australia/>

# Considerations and Decisions

3 important considerations need to be addressed:-

## ▶ Internet Speed

## ▶ Bandwidth

Bandwidth use depends on the quality of the media being downloaded.

Approximate requirements for eg Netflix video are:-

300MB per hour on the lowest video quality

700MB per hour for SD video quality

3GB per hour for HD video quality

7GB per hour for UHD (4K) video quality

<https://www.nbnco.com.au/blog/entertainment/how-much-data-does-streaming-video-movies-and-tv-use>

When **multiple** people use a single connection, more devices consume the finite **bandwidth** of the connection. Therefore, each device is allocated a smaller portion of the available **bandwidth**. As a result, all devices may experience a slower data transfer.

<https://www.howtogeek.com/338306/how-to-avoid-going-over-your-home-internets-data-cap/>

## ▶ Download Limit(Cost)

Unlimited data is the safest option but at e.g. \$90/month may be unnecessary depending on your usage requirements.

<https://www.canstarblue.com.au/internet/compare-australias-top-nbn-plans/>

# Music Streaming

There are many Music Streaming Services in Australia. Some offer a free service with ads e.g. Spotify Free.

Others eg Freegal offers Free streaming organised through the BCC Library.

With most of the others the cost is approx.\$12/month. Some of the most popular include:-

Spotify

Apple Music

Google Play Music

Amazon Music

YouTube Music

<https://www.finder.com.au/music-streaming>

When deciding on a Music Streaming Service you should consider the Music Library, Audio quality, Family plans, Device compatibility, Unmetered access.

# Movie and Video Streaming

## ► Movies

The main subscription providers for Movie Streaming are:-

Netflix

Stan

Amazon Prime

YouTube Premium

Foxtel

Cost is approximately \$10 -\$15/month

Kanopy offers Free Movies through the BCC Library.

<https://www.techradar.com/au/news/television/netflix-vs-presto-vs-stan-vs-quickflix-1283055>

<https://www.finder.com.au/internet-tv/streaming-providers>

(Movies can also be rented or purchased online but these are downloaded not streamed.)

# TV Live and Catchup TV

- ▶ TV can be watched Live or if a show was missed it can be watched later through Catchup TV. This service is offered by most channels. Apps such as FreeView (Live TV) and AppleTV (Catchup TV) work well.

Name	Service type	4K/UHD?	Simultaneous streams	Free trial?	Price
7PLUS	Catch-up	No	Unlimited	No	Free
9NOW	Catch-up	No	1	No	Free
ABC iview	Catch-up	No	Unlimited	No	Free
SBS On Demand	Catch-up	No	1	No	Free
Tenplay	Catch-up	No	Unlimited	No	Free

<https://www.comparetv.com.au/compare/free-to-air-streaming-apps/>

<https://manlyelectronics.com.au/blog/how-to-watch-free-to-air-tv-on-the-internet/>

# Positives of Streaming

- ▶ Instant playback
- ▶ Huge choice of material both Movie, Music Video and TV
- ▶ Piracy Protection (Cannot be downloaded)
- ▶ Can be watched or listened to when convenient
- ▶ An entire series can be watched at a sitting. (Binge viewing) No need to wait for next week.
- ▶ No storage or backup problems to be considered

# Negatives of Streaming

- Bandwidth use and cost. Favourites will use bandwidth every time they are downloaded.
- Online only
- Offerings are at the whim of the provider. You may mark a Movie as “Watch Later” only to find it has been removed.
- Not always possible to find specific Movies or Songs
- Nothing owned and therefore not necessarily available.
- With a growing number of streaming services, customers often have to subscribe to many different companies to have access to all of the top shows.

# What is the Future

DVDs and CDs are finished. We will no longer “own” media.

Some predicted that offerings will be designed to meet our tastes.

This might include:-

- ▶ Highly personalized, niche content delivered straight to the people who really want to watch it.
- ▶ Interactive content that allows viewers to choose their own adventures.
- ▶ Original content.

Many predicted that the future was Streaming Media with no ads but monthly subscriptions. However recently there appears to be a move back to ad supported services with no monthly charge.

A mix seems likely.

We'll have to wait and see.

<https://www.forbes.com/sites/blakemorgan/2019/07/05/what-is-the-future-of-television/#476ec78259de>