

Mankato Computer Technology University

Streaming and Online Media Solutions



Cable TV Numbers Drop to 1992 Levels as Cord Cutting Grows, Spectrum Not Worried, & More

- ▶ `<iframe width="560" height="315" src="https://www.youtube.com/embed/6KF6_OcRBTA" title="YouTube video player" frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-media; gyroscope; picture-in-picture; web-share" allowfullscreen></iframe>`
- ▶ https://www.youtube.com/watch?v=6KF6_OcRBTA



YouTube TV Is Adding Unskippable 30-Second Ads, Are You Still Cutting The Cord?

- ▶ <https://hothardware.com/news/youtube-tv-is-adding-unskippable-30-second-ads-are-you-still-cutting-the-cord>
- ▶ In a [blog post](#) this week, YouTube announced a shift in how ads will be pushed to non-Premium viewers who watch YouTube videos on their TVs at home. The main changes are new 30-second non-skippable ads in lieu of the previous two consecutive 15-second ads.
- ▶ So what do you think? Would these changes affect your viewing habits? Would you pay for YouTube Premium to skip the (ever-increasing number of) ads?

Another Cable TV Company is Shutting Down Its TV Service, Joining a Growing List of Cable TV Companies Getting Out of TV

- ▶ <https://cordcuttersnews.com/another-cable-tv-company-is-shutting-down-its-tv-service-joining-a-growing-list-of-cable-tv-companies-getting-out-of-tv/>
- ▶ This news comes as multiple cable TV companies, including Frontier, have stopped offering traditional cable TV and gone streaming online. Frontier has, for some time now, offered YouTube TV instead of its traditional TV service.
- ▶ Increasingly a growing number of cable TV companies are deciding TV is just not profitable enough. Now they are turning to streaming options so they can focus on internet and other services.

Cord Cutting Hits Record Highs As Cable Companies See TV Numbers Drop to 1992 Levels

- ▶ Cord Cutting Hits Record Highs As Cable Companies See TV Numbers Drop to 1992 Levels
- ▶ People are cutting the cord to cable at impressively high rates, setting a new record for those severing ties with cable providers. Streaming services are growing alongside this trend, although even some popular television streaming platforms are seeing a decline in subscribers. Pay television subscribers fell 7 percent on an annual basis by the end of this year's first quarter.
- ▶ The biggest cable providers lost around 2,215,000 subscribers, up significantly from the 1,850,000 members who canceled services in the first quarter of 2022. The losses are a result of a combination of an increased number of customers disconnected and a decline in the number of new subscribers.

One More Cable TV Company is Shutting Down Its TV Service & Replacing it With YouTube TV

- ▶ <https://cordcuttersnews.com/one-more-cable-tv-company-is-shutting-down-its-tv-service-replacing-it-with-youtube-tv/>

customers will get with YouTube TV:

- Access to YouTube TV's industry-leading live TV streaming service
- More than 100 channels, Spanish-language packages and add-on packages such as NFL Sunday Ticket
- Innovative features such as multiview, the ability to hide spoilers, view real-time stats and watch key plays
- Special promotional offers with the potential for significant savings
- The convenience of bundled Internet and YouTube TV on one bill
- No long-term contracts and hidden fees

ESPN plans to go streaming-only as uncertainty surrounds cable TV

- ▶ As the streaming wars continue to heat up with various platforms jostling for position, ESPN is preparing a move that could significantly bolster its direct-to-consumer (DTC) offering, [according to the Wall Street Journal](#).
- ▶ The WSJ reports that ESPN is “laying the groundwork” to sell its channel directly to cord-cutters as a subscription-streaming service in the coming years.
- ▶ Live sports remains as one of the kingpins of television offerings, with diehard fans willing to tune in to see their teams compete in real time. Having that content eventually make it over to streaming in a DTC format seemed inevitable, though how soon the shift would occur was anyone’s guess.
- ▶ As of Dec. 31, 2022, Disney+ had 161.8 million subscribers, while ESPN+ had 24.9 million.

What is The Future of Cord Cutting As Sling TV & Fubo Lose Subscribers? Is Cable TV Winning? – Ask Luke

- ▶ <https://cordcuttersnews.com/what-is-the-future-of-cord-cutting-as-sling-tv-fubo-lose-subscribers-is-cable-tv-winning-ask-luke/>
- ▶ **So what is the future of Cord Cutting?**
- ▶ From our surveys of Cord Cutters News readers, many cord cutters cancel cable TV with a live TV service like [Fubo](#), [Sling TV](#), or DIRECTV STREAM. Later many cord cutters, especially non-sports fans, find themselves switching to on-demand-only services like [Paramount+](#) or [HBO Max](#). Even sports fans are often only subscribing to live TV streaming services when their favorite sport is on TV.
- ▶ This willingness by cord cutters to skip live TV service has left many cable TV executives struggling to come up with a way to counter the trend.
- ▶ So what does this mean for the future of cord cutting? Increasingly companies are focusing on growing their on-demand services like [Paramount+](#), [HBO Max](#), [Peacock](#), and more.
- ▶ Live TV streaming services like [Fubo](#), [Sling TV](#), and DIRECTV STREAM are not going away as sports fans alone will likely keep demand for these services.

YouTube TV is Reportedly The Only Live TV Provider To Add Subscribers This Year (Cable TV or Streaming)

- ▶ <https://cordcuttersnews.com/youtube-tv-is-reportedly-the-only-live-tv-provider-to-add-subscribers-this-year-cable-tv-or-streaming/>
- ▶ Cord Cutting is growing faster than ever as the number of Americans paying for cable TV has dropped to its lowest levels since 1992. Now its not just cable TV companies losing TV customers live TV streaming services like Hulu, Fubo, and Sling TV have all reported losing subscribers. This comes as increasingly cord cutters are switching to on-demand-only services and are happily not watching shows live.
- ▶ During that same period, Hulu with Live TV lost about 100,000 subscribers. [Sling TV lost about 200,000](#), and [Fubo lost about 160,000 subscribers](#).

AMC Lost 300,000 Subscribers to Its Streaming Services As It Struggles to Handle The Growth of Cord Cutting

- ▶ <https://cordcuttersnews.com/amc-lost-300000-subscribers-to-its-streaming-services-as-it-struggles-to-handle-the-growth-of-cord-cutting/>
- ▶ Today AMC **announced** its 1st quarter 2023 earnings and reported that it lost 300,000 subscribers to its streaming, including AMC+, Shudder, and SundanceNow. In total, AMC has 11.5 million subscribers to its streaming services as of March 31st, 2023.
- ▶ AMC did report revenues up 1% to \$717 year-over-year, even though ad revenue was down 20%.

Cord-Cutting Hits All-Time High in Q1, as U.S. Pay-TV Subscriptions Fall to Lowest Levels Since 1992

- ▶ <https://variety.com/2023/tv/news/cord-cutting-all-time-high-q1-2023-pay-tv-losses-1235610939/>
- ▶ As streaming video continues its ascendancy, cable, satellite and internet TV providers in the U.S. turned in their worst subscriber losses to date in the first quarter of 2023 – collectively shedding 2.3 million customers in the period, according to analyst estimates.
- ▶ “We are watching the sun beginning to set” on the pay-TV business, SVB MoffettNathanson senior analyst Craig Moffett wrote in a report Friday.
- ▶ With the Q1 decline, total pay-TV penetration of occupied U.S. households (including for internet services like YouTube TV and Hulu) dropped to 58.5% – its lowest point since 1992, two years before [DirecTV](#) launched as a new rival to cable TV, according to Moffett’s calculations. As of the end of Q1, U.S. pay-TV services had 75.5 million customers, down nearly 7% on an annual basis.

Streaming Media

Streaming media is multimedia that is constantly received by and presented to an end-user while being delivered by a provider.



The verb "to stream" refers to the process of delivering or obtaining media in this manner;



the term refers to the delivery method of the medium, rather than the medium itself, and is an alternative to file downloading, a process in which the end-user obtains the entire file for the content before watching or listening to it.

Cord Cutting Hits Epic Levels (Goodbye Cable, Hello Streaming)

- ▶ *The cable industry clearly has taken its time dying.*
- ▶ *Unlike the record business or print newspapers, which seemingly fell off a cliff, people have slowly abandoned their cable TV subscriptions.*
- ▶ *Known as cord-cutting, it's a process where people drop a traditional paid television subscription for a variety of streaming services.*
- ▶ *It's a phenomenon that has been happening for years, but it's accelerating.*

Cable Loses Even More Subscribers

- ▶ *Cable's numbers began declining in 2014 when the industry lost just over 100,000 customers.*
- ▶ *The numbers accelerated steadily climbing over 1 million in 2017, before doubling in 2018, then again in 2019, before settling in at the current rate of around 4.6 to 4.9 million subscribers per year.*

What Is the Impact of Cable's Cord-Cutting Disaster?

- ▶ *Cord-cutting does not just impact Comcast, Charter, AT&T, and other big cable companies. It also has a ripple effect across the entire cable television industry. Essentially the traditional cable bundle serves as a sort of TV socialism. You pay for the channels you watch and the ones you don't.*
- ▶ *Content companies/channel owners get everywhere from a few cents to around \$9 per subscriber for Disney's ESPN family of channels. When people cut the cord, those channel owners get less money leading to things like ESPN laying off hundreds of people, including some big-name on-air talents and channel closures like ESPN Classic and Comcast's NBC Sports Network.*
- ▶ *As cable shrinks, niche channels become less viable. Some will support themselves via streaming services, while others will either cut their budgets or go dark altogether.*
- ▶ *That creates a cycle where your cable subscription becomes even less valuable, leading to more people cutting the cord. It's a cable death cycle, although, like print newspapers and physical records and CDs, the total will likely not hit zero (at least for a few more years).*

What is Streaming on the internet?

- ▶ Streaming video is content sent in compressed form over the Internet and displayed by the viewer in real time. With streaming video or streaming media, a Web user does not have to wait to download a file to play it. Instead, the media is sent in a continuous stream of data and is played as it arrives.
- ▶ [What is streaming video? - Definition from WhatIs.com](https://searchunifiedcommunications.techtarget.com/definition/streaming-video)
- ▶ <https://searchunifiedcommunications.techtarget.com/definition/streaming-video>
- ▶ Search for: [What is streaming on the Internet?](#)



History



In the early 1920s, [George O. Squier](#) was granted [patents](#) for a system for the transmission and distribution of signals over electrical lines which was the technical basis for what later became [Muzak](#), a technology streaming continuous music to commercial customers without the use of [radio](#).



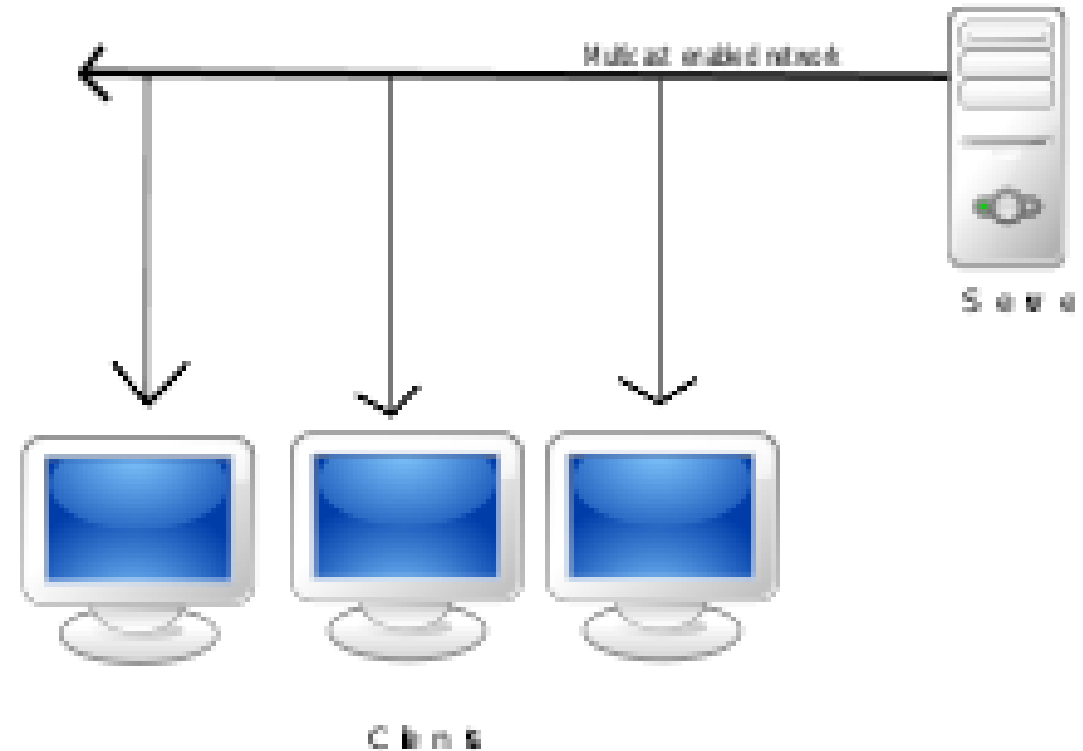
Attempts to display media on computers date back to the earliest days of computing in the mid-20th century.



However, little progress was made for several decades, primarily due to the high cost and limited capabilities of computer hardware.

History Continued

- ▶ From the late 1980s through the 1990s, consumer-grade personal computers became powerful enough to display various media.
- ▶ The primary technical issues related to streaming were: having enough **CPU** power and **bus bandwidth** to support the required data rates and creating **low-latency** interrupt paths in the **operating system** to prevent **buffer underrun** and thus enable skip-free streaming of the content.
- ▶ However, computer networks were still limited in the mid-1990s, and audio and video media were usually delivered over non-streaming channels, such as by **downloading** a digital file from a remote server and then saving it to a local drive on the end user's computer or storing it as a digital file and playing it back from **CD-ROMs**.



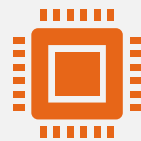
Late 90's and early 2000s



Users had increased access to computer networks, especially the [Internet](#), and especially during the early 2000s, users had access to increased network [bandwidth](#)



These technological improvements facilitated the streaming of audio and video content to computer users in their homes and workplaces.

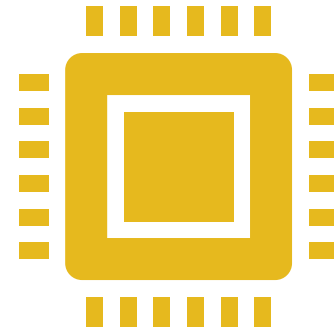


As well, there was an increasing use of standard protocols and formats, such as [TCP/IP](#), [HTTP](#), [HTML](#) and the Internet became increasingly commercialized, which led to an infusion of investment into the sector.

The Basics continued

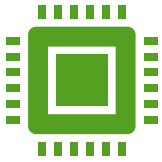


For example, in the 1930s, [elevator music](#) was among the earliest popularly available streaming media; nowadays [Internet television](#) is a common form of streamed media.



The term "streaming media" can apply to media other than video and audio such as live [closed captioning](#), [ticker tape](#), and [real-time text](#), which are all considered "streaming text".

10,000 foot view



"Streaming" was applied in the early 1990s as a better description for [video on demand](#) and later live video on IP networks first by [Starlight Networks](#) for video streaming and [Real Networks](#) for audio streaming; at the time such video was usually referred to as "store and forward video", which was misleading nomenclature.



[Live streaming](#) is the delivery of [Internet](#) content in real-time, as events happen, much as [live television](#) broadcasts its contents over the airwaves via a television signal.



Live internet streaming requires a form of source media (e.g. a video camera, an audio interface, screen capture software), an encoder to digitize the content, a media publisher, and a [content delivery network](#) to distribute and deliver the content.



Live streaming does not need to be recorded at the origination point, although it frequently is.

Basically...

- ▶ *Streaming* generally refers to the situation where a user watches digital video content or listens to digital audio content on a computer screen and speakers (ranging from a smartphone, through a desktop computer to a large-screen home entertainment system) over the Internet.
- ▶ With streaming content, the user does not have to download the entire digital video or digital audio file before they start to play it.



What are examples of Streaming?



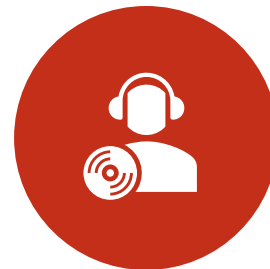
Streaming media is video and/or audio data transmitted over a computer network for immediate playback rather than for file download and later (offline) playback. **Examples of streaming** video and audio include internet radio and television broadcasts, and corporate webcasts.



[What Is Streaming Video and Media? - Lifewire](#)



<https://www.lifewire.com/streaming-video-media-817482>

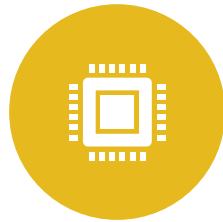


Search for: [What are examples of streaming?](#)

How does online Streaming Work?



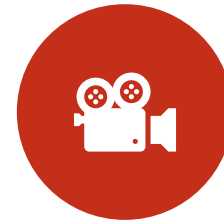
IN **STREAMING** VIDEO AND AUDIO, THE TRAVELING INFORMATION IS A STREAM OF DATA FROM A SERVER.



THE DECODER IS A STAND-ALONE PLAYER OR A PLUGIN THAT WORKS AS PART OF A WEB BROWSER.



THE SERVER, INFORMATION STREAM AND DECODER **WORK TOGETHER** TO LET PEOPLE WATCH LIVE OR PRERECORDED BROADCASTS.



[HOW STREAMING VIDEO AND AUDIO WORK | HOWSTUFFWORKS](#)



[HTTPS://COMPUTER.HOWSTUFFWORKS.COM/INTERNET/BASICS/STREAMING-VIDEO-AND-AUDIO.HTM](https://computer.howstuffworks.com/internet/basics/streaming-video-and-audio.htm)

What is a Video Streaming Service?

an on demand online entertainment source for TV shows, movies and other **streaming media**. ...

Examples of pay video streaming services include:

- ▶ Netflix,
- ▶ iTunes,
- ▶ Hulu,
- ▶ YouTube,
- ▶ Vudu,
- ▶ Amazon Instant,
- ▶ LoveFilm,
- ▶ Baidu,
- ▶ NowTV and
- ▶ Vimeo.

IS STREAMING JUST BECOMING CABLE AGAIN?

[HTTPS://WWW.THEVERGE.COM/23010559/DECODER-STREAMING-PLATFORMS-CABLE-NETFLIX-DISNEY-APPLE](https://www.theverge.com/23010559/decoder-streaming-platforms-cable-netflix-disney-apple)

- ▶ Since we are a couple years into a huge shift to streaming entertainment in Hollywood. It's clear the streamers are here to stay, while the legacy media companies are in the middle of huge transformations.
- ▶ On the one side, Apple just won the Oscar for Best Picture for a film it bought out of Sundance called CODA. Amazon now owns MGM. Netflix is investing in games and hinting at advertising for the first time.

IS STREAMING JUST BECOMING CABLE AGAIN?

- ▶ On the other side is Disney: a company with a new CEO in Bob Chapek, who is reorganizing the company around streaming — in the process, irritating big stars like Scarlett Johansson and its own major studios like Pixar by sending movies directly to Disney Plus instead of the theaters.
- ▶ But on the flip side, Encanto became a sensation only after it left theaters and hit the app.
- ▶ Quick disclosures: NBCUniversal is an investor in Vox Media, Vox Media has shows on some of these streaming platforms

What is the Best Streaming Service

In no particular order, here is a list of the pros, cons, and what to watch for each of the most popular streaming services:

Hulu...

Netflix. ...

Sling TV. ...

HBO Now. ...

Amazon Prime Video. ...

YouTube TV

<https://www.inc.com/sarah-jackson/best-tv-streaming-services.html>

Top 13 Free (And Legal) Movie Download Websites:



YouTube: ...



Crackle. ...



PopcornFlix:



<https://fossbytes.com/top-10-free-movie-download-websites-watch-legal/>



Is streaming legal

- ▶ Cable channels like HBO have their own legal **streaming** services. But beyond that, it's pretty much going to be **illegal** to stream a video. Downloading is almost always **illegal**. ... It is not **illegal** to stream a movie online.
- ▶ [Is streaming TV shows and movies online illegal? - Quora](https://www.quora.com/Is-streaming-TV-shows-and-movies-online-illegal)
- ▶ <https://www.quora.com/Is-streaming-TV-shows-and-movies-online-illegal>
- ▶ Is streaming **movies illegal**? ... Basically, the advice from legal experts is that any service offering **free** streaming, or downloading, or to **watch movies online for free**, is probably **illegal**. The same legal situation applying to copyright material shown via TV streaming sites applies to video streaming sites.

Is it illegal to watch a movie online for free?



THE LAW, BY FAR, IS STILL UNCLEAR WHEN IT COMES TO STREAMING **FREE MOVIES ONLINE**, OR FOR VISITING **POSSIBLY ILLEGAL MOVIE WEBSITES**. WHEN YOU STREAM A **MOVIE**, YOUR COMPUTER MAKES A TEMPORARY COPY OF THE FILE ON YOUR COMPUTER. SO TECHNICALLY, YOU ARE BRIEFLY IN POSSESSION OF A **POSSIBLY ILLEGAL COPYRIGHT MATERIAL**.



[IS IT ILLEGAL TO WATCH MOVIES WITHOUT DOWNLOADING? - COMPUTER REALM](#)



WWW.COMPUTER-REALM.NET/ILLEGAL-MOVIES-ONLINE/



SEARCH FOR: [IS IT ILLEGAL TO WATCH A MOVIE ONLINE FOR FREE?](#)



Are Streaming Sites legal?

- ▶ However, if you're not downloading, or sharing the copyrighted material, accessing **streamed** content is generally **legal** for you, the user. ... Basically, the **streaming sites** are providing an avenue for accessing the illegal, copyrighted material.
- ▶ [Streaming Sites: Are They Illegal? How Do They Make Money? - Zippia](#)
- ▶ <https://www.zippia.com/.../streaming-sites-are-they-illegal-how-do-they-make-money/>

And the winners are:



SOME POPULAR
STREAMING SERVICES
INCLUDE:



THE VIDEO SHARING
WEBSITE YOUTUBE,



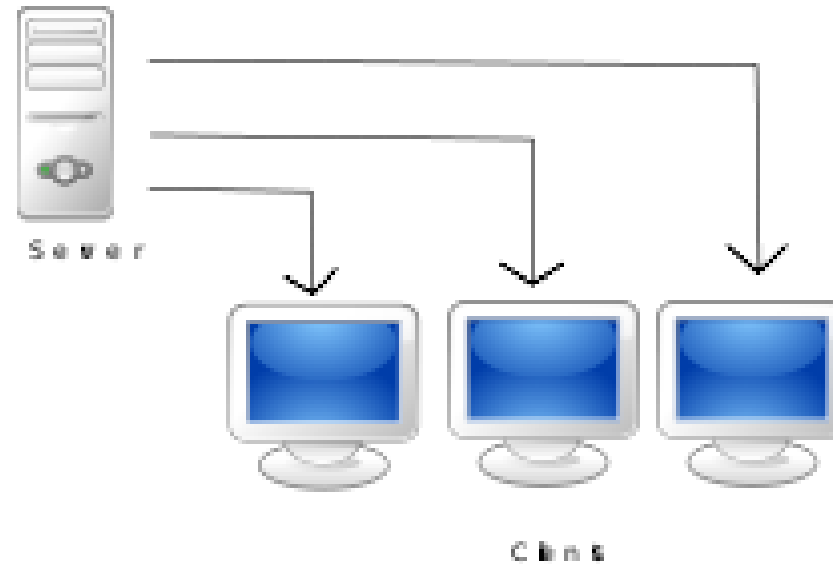
NETFLIX AND AMAZON
VIDEO, WHICH
STREAM MOVIES AND TV
SHOWS;



SPOTIFY, APPLE
MUSIC AND TIDAL,
WHICH STREAM MUSIC.

Challenges

- ▶ If the user does not have enough bandwidth in their Internet connection, they may experience stops in the content and some users may not be able to stream certain content due to not having compatible computer or software systems.



As of 2020,



a media stream can be streamed either "live" or "on demand".



Live streams are generally provided by a means called "true streaming".



True streaming sends the information straight to the computer or device without saving the file to a hard disk.



On-demand streaming is provided by a means called *progressive streaming* or *progressive download*.

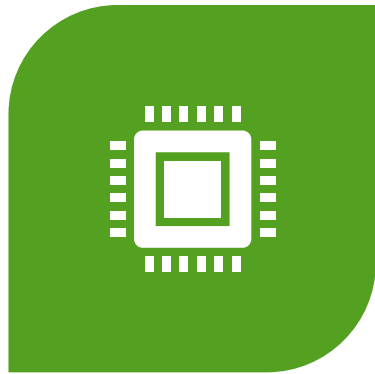


Progressive streaming saves the file to a hard disk and then is played from that location.



On-demand streams are often saved to hard disks and servers for extended amounts of time; while the live streams are only available at one time only (e.g., during the football game).

Other Applications



USEFUL - AND TYPICAL - APPLICATIONS OF THE "STREAMING" CONCEPT ARE, FOR EXAMPLE, LONG **VIDEO LECTURES** PERFORMED "ONLINE" ON THE INTERNET.



AN ADVANTAGE OF THIS PRESENTATION IS THAT THESE LECTURES CAN BE VERY LONG, INDEED, ALTHOUGH THEY CAN ALWAYS BE INTERRUPTED OR REPEATED AT ARBITRARY PLACES.

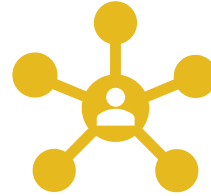


CLASSES, SEMINARS, CERTIFICATION COURSES

Streaming and Social Media



For example, sites such as [YouTube](#) encourage social interaction in webcasts through features such as [live chat](#), [online surveys](#), user posting of comments online and more.



Furthermore, streaming media is increasingly being used for [social business](#) and [e-learning](#).



Due the popularity of the streaming medias, many developers have introduced free HD movie streaming apps for the people who use smaller devices such as tablets and smartphones for everyday purposes.

Other Applications

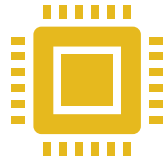


- ▶ There are also new marketing concepts. For example, the [Berlin Philharmonic Orchestra](#) sells Internet live streams of whole concerts, instead of several [CDs](#) or similar fixed media, by their so-called "[Digital Concert Hall](#)" ^[30] using [YouTube](#) for "[trailing](#)" purposes only.
- ▶ These "online concerts" are also spread over a lot of different places - cinemas - at various places on the globe. A similar concept is used by the [Metropolitan Opera](#) in New York.
- ▶ Many successful [startup](#) ventures have based their business on streaming media.
- ▶ There also is a [livestream](#) from the [International Space Station](#).
- ▶ A still from a [live stream](#) of a fish tank, Schou FishCam

Some Fun Facts



The band [Severe Tire Damage](#) was the first group to perform live on the Internet.



On June 24, 1993, the band was playing a gig at [Xerox PARC](#) while elsewhere in the building, scientists were discussing new technology (the [Mbone](#)) for broadcasting on the Internet using [multicasting](#).



As proof of PARC's technology, the band's performance was broadcast and could be seen live in Australia and elsewhere.



In a March 2017 interview, band member Russ Haines stated that the band had used approximately "half of the total bandwidth of the internet" to stream the performance, which was a 152-by-76 pixel video, updated eight to twelve times per second, with audio quality that was "at best, a bad telephone connection".

More quick facts



Microsoft Research developed a Microsoft TV application which was compiled under MS Windows Studio Suite and tested in conjunction with Connectix QuickCam.



RealNetworks was also a pioneer in the streaming media markets, when it broadcast a baseball game between the New York Yankees and the Seattle Mariners over the Internet in 1995.



The first symphonic concert on the Internet took place at the Paramount Theater in Seattle, Washington on November 10, 1995.



The concert was a collaboration between The Seattle Symphony and various guest musicians such as Slash (Guns 'n Roses, Velvet Revolver), Matt Cameron (Soundgarden, Pearl Jam), and Barrett Martin (Screaming Trees).



When Word Magazine launched in 1995, they featured the first-ever streaming soundtracks on the Internet.



<https://blog.chaddickerson.com/2005/08/29/wilco-ken-wagner-and-the-future-of-music/>