

## Why I Switched from Cable TV to Streaming TV

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[Neilson statistics](#) indicate that streaming TV viewing has doubled in the last 2 years and is now 19% of total TV usage. Currently all medium to high end TV's being produced support streaming over the Internet with Wi-Fi or Ethernet connectivity options. There are hundreds of streaming TV services to choose from and most cable TV providers are offering streaming TV services in addition to cable TV services. In 2017 [YouTube TV](#) was launched streaming popular TV channels live over the Internet and has 31% of market. [Netflix](#) currently has 21% of the streaming market and has 182 million subscribers.

The main reasons I switched from [Spectrum](#) cable TV service to Spectrum streaming TV service over the Internet are as follows:

1. Saved about \$120 per month with breakeven point in less than 3 months for first old TV requiring adaptor (See [Appendix 1 Cost Benefit Analysis](#)).
2. Added additional streaming channels to get TV shows and music I could not get on TV's before (See [Appendix 3 Selected Streaming TV Channels](#)).
3. Replaced physical DVR with cloud DVR that can record up to 50 different shows for 9 months.
4. Eliminated requirement for cable to each TV location by using wireless Wi-Fi network.
5. All the streaming channels and recordings can be viewed on all TV's plus our laptops, desktops, and cell phones.
6. Chose Spectrum streaming live TV service over YouTube TV service for the same price because Spectrum offered my favorite local news and weather channel [Bay News 9](#).

The steps required to convert from cable TV to streaming TV service were as follows:

1. Added hardware adaptor to older existing TV's to enable them to function like newer smart TV's connected to the Internet via wireless Wi-Fi network.
2. Upgraded Internet service speed and extend wireless Wi-Fi network (See [Appendix 2 Hardware Diagram of Streaming TV Wi-Fi Network](#)).
3. Subscribed to several streaming TV services and cloud DVR (See [Appendix 3 Selected Streaming TV Channels](#)).
4. Cancelled Spectrum cable TV service and removed previous TV cables and Spectrum physical DVR connected to family room TV.

The conversion from cable TV to streaming TV was a multi-step process requiring some research and some trial and error. The first thing I learned was that if I wanted to directly connect a TV to streaming service via Wi-Fi, the TV had to be a [smart TV](#) built in 2016 or later. For older TV's, an adaptor is required to connect the TV to Wi-Fi. After some research I ordered the least expensive [Roku Express](#) adaptor for \$30 to see if it worked. I connected the oldest 35" TV in the bedroom via HDMI cable to the Roku adaptor which connected to the existing Spectrum 200 Mbps cable modem in the study via Wi-Fi. It worked but two problems occurred. The Wi-Fi signal strength was poor, and the Roku remote that came with the Roku Express adaptor had no buttons to turn TV on or off or control the volume. I had to use the TV remote or go to the TV. For the family room 55" TV, I later bought the [Roku Ultra](#) device for \$100 which includes remote with buttons to control TV power and volume.

The next step was to upgrade my existing Spectrum cable 200 Mbps modem/router/phone to newer [Spectrum cable 400 Mbps modem/router/phone](#). I was hoping the newer modem/router would have stronger Wi-Fi network signal throughout the house, but it did not. The next step was to research Wi-Fi network extenders. I ended up buying a [Google Nest](#) mesh Wi-Fi network which connects to the modem/router via Ethernet and can support multiple mesh network points which extend the Wi-Fi throughout the house. See [Appendix 2: Hardware Diagram of Streaming TV Wi-Fi Network](#) and also [Appendix 4: Internet Download Speeds](#) for Wi-Fi network performance. The Google Nest network also provides the added benefit of optional [Google Assistant](#) by turning on microphone on each Google Nest point so you can ask Google questions such as "Hey Google what's the local weather".

The next step was to research streaming TV channels available and try one. None of the streaming services require contracts and can be cancelled at any time. My first choice was [YouTube TV](#) for \$50/month which included unlimited cloud DVR recording of shows. This service included all the basic TV channels we watched on Spectrum Cable TV except [Bay News 9](#) for local news and weather every 10 minutes. After more research, I found I could replace YouTube TV with [Spectrum Select streaming TV](#) service plus an optional [Spectrum cloud DVR](#) service to record up to 50 shows for the same price, so I switched to Spectrum TV streaming service. These basic streaming services all have the usual TV channels with ads which cannot be skipped while watching live TV. The ads can be skipped when watching the cloud recordings.

The final step was to research additional streaming TV channels to add TV shows and movies that we previously could not get with our cable TV service. We ended up adding the following additional streaming services: PBS, History Vault, Netflix, Sirius XM, Amazon Prime Music, and Amazon Prime Video. See [Appendix 3: Selected Streaming TV Channels](#) for more details.

The user interface for controlling each streaming service consists of TV screen and remote. When TV is turned on, a screen displays the available streaming channels to choose from by using left/right/up/down arrows to select icon and press enter. If the remote supports

voice commands, you can say the name of the channel. There is also option to add new channel. Once a channel is selected, the display screen is different for each one. Spectrum TV defaults to bring up Bay News 9 live TV. To change to another live TV channel, press left arrow and then scroll up or down to desired channel and press enter. To switch to guide or library with recorded shows, press back button. Other streaming channels use different interfaces. When characters or numbers are required, a grid will be displayed on screen which you can use to enter characters.

The story would not be complete without mentioning a few detractors. With the Roku adaptors for older TV's, there are occasional momentary pauses where the TV's display the text "HDMI/DVI" for no more than a second or two. Research suggests these can be caused by faulty HDMI cables, adaptors not keeping up with conversion from Internet download format to TV format, or Internet slowdowns. I suspect upgrading to smart TV's which eliminates need for Roku adaptors will help. Additionally, a onetime setup detractor is the requirement to register each new streaming TV service for each TV using a computer to go to specified website and enter unique registration code displayed on TV and any required payment information.

In summary, I am glad I finally took the time to learn about streaming TV and convert from cable TV. Between news, weather, and some favorite shows, we watch 1-2 hours of TV each day. And during the current pandemic, we watch a few more movies. We are particularly enjoying more TV shows from PBS, History Vault, Netflix, and Amazon Prime Video. We also enjoy listening to our favorite music from Sirius XM and Amazon Prime Music. When the pandemic is over, we look forward to watching sports on TV again. It is worth noting that YouTube TV has a nice option for recording all the games for a specific team regardless of when or what channel they are on. As for the future of streaming TV, I believe it will continue to evolve rapidly and we will see more interactive options such as options to rate shows and surveys on what viewers would like to see. And perhaps a more standard [Graphical User Interface \(GUI\)](#) will be adopted.

Appendixes:

1. [Cost Benefit Analysis](#)
2. [Hardware Diagram of Streaming TV Wi-Fi Network](#)
3. [Selected Streaming TV Channels](#)
4. [Internet Download Speeds](#)

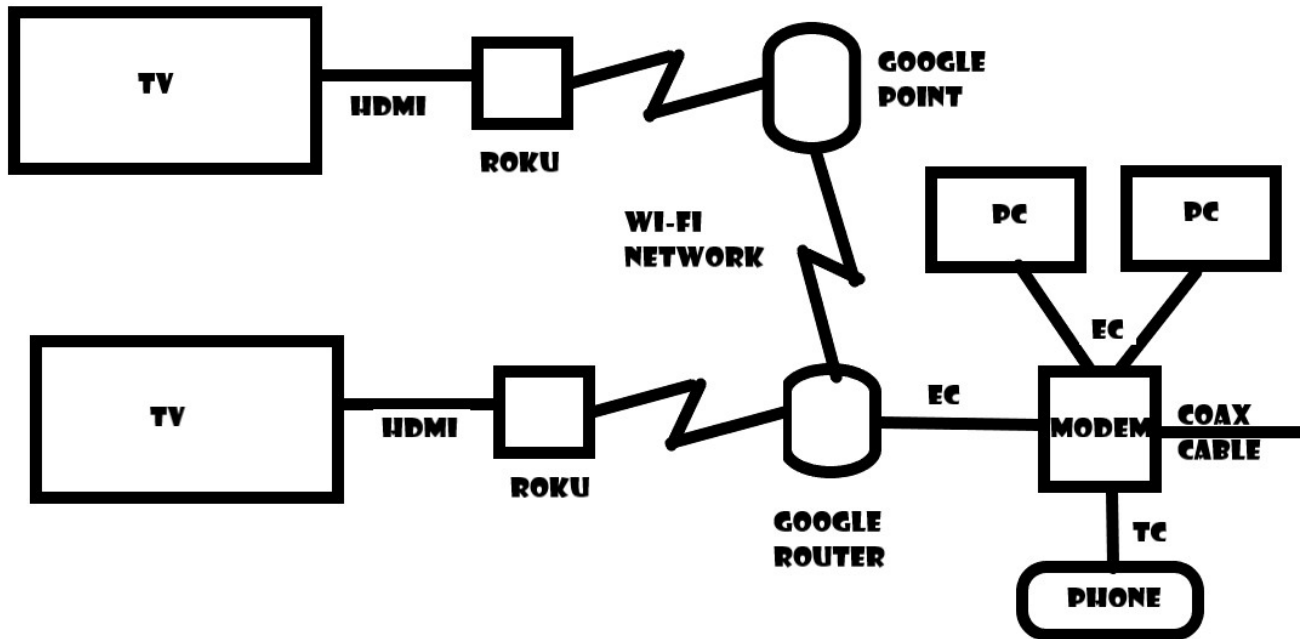
## Appendix 1: Cost Benefit Analysis

<b>Cost analysis of Spectrum cable TV service versus Spectrum streaming TV service</b>	
<b>Cost</b>	<b>Description</b>
<b>260</b>	<b>Previous Spectrum Internet 200 Mbps modem/router/phone, Spectrum cable TV, and DVR</b>
<b>140</b>	<b>New Spectrum Internet 400 Mbps model/router/phone, Spectrum streaming TV Select service, Spectrum cloud DVR</b>
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<b>120</b>	<b>Monthly savings for streaming TV versus cable TV service</b>
<b>Additional onetime costs for first TV (Roku only required if TV is older than 2016 or not smart)</b>	
<b>Cost</b>	<b>Description</b>
<b>100</b>	<b>Roku Ultra TV adaptor to connect TV via HDMI to Wi-Fi network with remote including TV on/off and volume controls</b>
<b>250</b>	<b>Google Nest mesh Wi-Fi network including router with Ethernet connection plus first point for family room</b>
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<b>350</b>	<b>Total onetime costs for first TV</b>

The break-even point is less than 3 months for first TV using Roku adaptor.

Note the Roku adaptor can be eliminated for newer [smart TV's](#) after 2016 which start at about \$400.

## Appendix 2: Hardware Diagram of Streaming TV Network



Spectrum fiber network coax cable connects to [Spectrum 400 Mbps modem/router/phone](#) which has 4 device connections:

Ethernet cables connect modem to 2 PC's and one [Google Nest](#) mesh Wi-Fi network router.

Telephone cable connects modem to home landline phone wireless system.

The [Google Nest](#) mesh Wi-Fi network can have multiple points to cover up to 5,000 square foot house connecting TV's, laptops, and other devices.

Note each device in diagram also has separate 110-volt power cable.

### Appendix 3: Selected Streaming TV Channels

Streaming Channel	Monthly Cost	Channels	Description	Notes
<a href="#">Spectrum Select TV</a>	45	125	ABC, Baynews9, CBS, CNN, ESPN, FOX, History, MSNBC, NBC, SEC, WEDU	Menu: Live TV, Guide, Library, Search. Use left arrow, then scroll to select live channels easily.
<a href="#">Spectrum Cloud DVR</a>	5		Recorded shows	Allows recording of up to 50 TV shows for 90 days. Select shows to record using guide. Use library to select recorded shows to play.
<a href="#">PBS</a>			Documentaries including Downton Abby and Victoria	Minimum \$60 donation for PBS passport option to watch all episodes. Limited ads.
<a href="#">History Vault</a>	5		130 documentaries including "The Men Who Made America"	Scroll alphabetical list of documents forward or backwards to select video. No ads.
<a href="#">Netflix</a>	15		Movies and TV series including West Wing, The Crown	
<a href="#">Sirius XM Radio</a>		300	Y2K Country music (no videos)	Streaming included with auto radio subscription. No ads.
<a href="#">Amazon Prime Music</a>			Make playlists via PC	Included with Amazon Prime. No ads.
<a href="#">Amazon Prime Video</a>			Free and on demand movies	Included with Amazon Prime. No ads.
<b>Other Streaming Channels Evaluated</b>				
<a href="#">YouTube TV</a>	50	70	ABC, CBS, CNN, ESPN, FOX, History, MSNBC, NBC, SEC, WEDU	Includes unlimited cloud DVR with recordings for 9 months

**Appendix 4: Internet Download Speed for devices connected to Internet via Spectrum 400 Mbps modem**

<b>Device</b>	<b>Connection</b>	<b>Signal Strength</b>	<b>Download Mbps</b>	<b>Notes</b>
<b>Family Room TV</b>	<b>Wi-Fi Network</b>	<b>Excellent</b>	<b>30</b>	<b>15 feet from Google Nest Point 1 in Family Room</b>
<b>Bedroom TV</b>	<b>Wi-Fi Network</b>	<b>Good</b>	<b>14</b>	<b>30 feet from Google Next Router in Study</b>
<b>iPad-Pro Laptop</b>	<b>Wi-Fi Network</b>		<b>60</b>	<b>15 feet from Google Nest Point 1 in Family Room</b>
<b>Dell Windows 10 PC</b>	<b>Ethernet</b>		<b>457</b>	<b>Ethernet connected to modem in Study</b>

Internet speed for TV's are based on [Roku Connection test option in settings](#)

Internet speed for laptop and pc's are based on [Spectrum Speed Test](#) Upload speed is 23 Mbps.

[The Google Nest point 1 in family room is separated from the Google Nest router in study by a curved hallway past living room and kitchen.](#)

[The recommended minimum speed for streaming HD video is 5 Mbps. At least 25 Mbps is recommended for 4k \(Ultra HD\) streaming TV. Before I upgrade bedroom TV, I will need to add another Google Nest point to improve Wi-Fi speed.](#)