

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA**

PROMPTU SYSTEMS CORPORATION

Plaintiff,

v.

COMCAST CORPORATION and COMCAST
CABLE COMMUNICATIONS, LLC

Defendants.

CIVIL ACTION

2:16-cv-06516-JS

**PLAINTIFF PROMPTU SYSTEMS CORPORATION'S DISCLOSURE OF ASSERTED
CLAIMS AND PRELIMINARY INFRINGEMENT CONTENTIONS**

Plaintiff Promptu Systems Corporation ("Promptu") serves its Disclosure of Asserted Claims and Preliminary Infringement Contentions ("Disclosure") regarding Infringement of U.S. Patent No. 7,280,538 ("the '538 Patent"), U.S. Patent No. 7,047,196 ("the '196 Patent"), and U.S. Patent No. RE44,326 ("the '326 Patent"). Promptu's Disclosure is based on its current knowledge, understanding, and beliefs. Discovery is in its early stages and Promptu has not yet completed its investigation, collection of information, or analysis of Defendants' conduct relevant to the '538 Patent, the '196 Patent, and the '326 Patent. Promptu reserves its right to amend, revise and/or supplement any part of this Disclosure and/or any accompanying exhibits in accordance with this Court's Scheduling Order and/or Federal Rules of Civil Procedure, as additional documents and information become available and as discovery and investigation proceed. This Disclosure does not represent, and should not be understood as describing, Promptu's position regarding the construction of any claim language in the Asserted Claims of the '538 Patent, the '196 Patent, and the '326 Patent. Moreover, this Disclosure is made without

prejudice to any position that Promptu may take with respect to claim construction and Promptu reserves the right to assert claim constructions different from what may be inferred from this Disclosure. Promptu further reserves the right to supplement this Disclosure (i) based on claim-construction positions taken by Defendants and/or (ii) following any claim-construction Order from this Court, and reserves the right to introduce and use such supplemental materials at trial. This document represents Promptu's preliminary infringement contentions. Promptu will serve its final contentions within a reasonable time after the Court construes the terms and phrases the parties will propose in a later-served document.

I. ASSERTED CLAIMS

Promptu identifies Claims 1-4, 6, 17-21, 23, 33-35, and 40-41 of the '538 Patent, Claims 1-2, 4-6, 12-15, 17-19, 25-28, 30-32, 38-42, 53-55, 61-62, and 64-66 of the '196 Patent, and Claims 1-9, 11-19, and 21 of the '326 Patent (the "Asserted Claims") as being infringed by Defendants under at least 35 U.S.C. §§ 217 (a)-(c).

II. ACCUSED INSTRUMENTALITIES

Promptu identifies the following apparatus, products, devices, processes, methods, acts, or other instrumentalities (collective, "Accused Instrumentality" or "Accused Instrumentalities") that Plaintiff believes infringe the Asserted Claims:

- A. Versions of Defendants' Voice Recognition capabilities in most instances advertised as XFINITY[®] and the X1 Entertainment Operating System[®] made, used, offered for sale, imported, and or sold, including, but not limited to: the X1 Entertainment Operating System[®];
- B. Versions of the remote controls incorporated into Defendants' Voice Recognition capabilities in most instances advertised as XFINITY[®] and the X1 Entertainment

Operating System[®] made, used, offered for sale, imported, and or sold, including, but not limited to: the XR11 and the XR15;

- C. Versions of the remote applications incorporated into Defendants' Voice Recognition capabilities in most instances advertised as XFINITY[®] and the X1 Entertainment Operating System[®] made, used, offered for sale, imported, or sold, including, but not limited to: the XFINITY[®] X1 Remote App and the XFINITY[®] TV Remote App;
- D. Versions of TV Boxes incorporated into Defendants' Voice Recognition capabilities in most instances advertised as XFINITY[®] and the X1 Entertainment Operating System[®] made, used, offered for sale, imported, and or sold, including, but not limited to: XG1, XG2, XiD, and other X1 equipment; and
- E. Defendants' methods, systems, and devices as they relate to voice recognition technology implemented in services and content offered by the Defendants in their XFINITY[®] and their X1 Entertainment Operating System[®].

Promptu's identification of the Accused Instrumentalities is based on its current knowledge, understanding, and beliefs as to the facts and information available as of the date of this Disclosure. Promptu reserves the right to amend, revise, and/or supplement this identification as additional information becomes available as discovery and investigation proceed.

III. INFRINGEMENT CLAIM CHARTS

Promptu provides the attached Exhibit A, Exhibit B, and Exhibit C, which includes detailed infringement claim charts. For each Asserted Claim, the charts identify specifically where each element of each Asserted Claim is found in the Accused Instrumentalities.

IV. THEORIES OF INFRINGEMENT

Promptu asserts that, in addition to direct infringement, Defendants indirectly infringe the Asserted Claims through contributory infringement and/or induced infringement.

V. LITERAL AND EQUIVALENT INFRINGEMENT

Promptu asserts that the Accused Instrumentalities literally infringe the Asserted Claims of the '538 Patent, the '196 Patent, and the '326 Patent. To the extent that any of the Accused Instrumentalities do not literally infringe, Promptu asserts infringement under the doctrine of equivalents.

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VI. PRIORITY DATE

The Asserted Claims of the '538 Patent are entitled to a priority date at least as early as January 8, 2002, as reflected on the face of the patent. The Asserted Claims of the '196 Patent and the '326 Patent are entitled to a priority date at least as early as June 8, 2000, as reflected on the face of the patent.

Respectfully submitted

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Dated: December 11, 2017

CERTIFICATE OF SERVICE

I, Julie F. Burillo, hereby certify that on December 11, 2017, a true and correct copy of Plaintiff Promptu Systems Corporation's Disclosure of Asserted Claims and Preliminary Infringement Contentions, along with the accompanying Exhibits, is served upon the following counsel of record via electronic mail. I further certify that I communicated instructions to the following individuals that will enable them to download Promptu's Initial Production files related to this pleading.

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EXHIBIT A


Initial Claim Charts Against Accused Instrumentalities

Claim Language from U.S. Patent No. 7,260,538	
<p>[1] A method for providing voice recognition processing at a cable television head-end unit for a plurality of voice controlled television cable set-top boxes in a cable television network, comprising the steps of:</p>	<p>Comcast performs the method for providing voice recognition processing at a head-end unit for voice-controlled set-top boxes in a cable television network as per the claim elements below.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ ("The voice remote (XR11) from XFINITY is a remote control that allows XFINITY X1 customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR.")</p> <p>See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments ("Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.")</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("The headend is the aggregation point for most signals that are transmitted to, and received from, subscribers in the NSCC area, and indeed the entire Twin Cities area that is served by Comcast. From the headend, Comcast uses fiber optic infrastructure to send signals to its hub location in Shoreview, MN. From the headend and hub, Comcast uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the NSCC area, where forward (or downstream) signals are transformed from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node. Forward (or downstream) services include all analog, standard definition (SD) digital and high definition (HD) digital channels including Video-On-Demand (VOD) and 3DTV channels. Additionally, Internet data, traveling from Comcast's headend or hub to subscribers, and telephone or voice service to subscribers is carried on the forward/downstream portion of the network. In addition, the nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.")</p>

Claim Language from U.S. Patent No. 7,260,538	
<p>[1A] a television remote control receiving user-activated indication of a voice command;</p>	<div> <p>Introduction</p> <p>Introducing the voice remote. Only from XFINITY.</p> <p>The voice remote (XR11) from XFINITY is a remote control that allows XFINITY on the X1 Entertainment Operating System customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR. Benefits include:</p> <ul style="list-style-type: none"> • Voice control • Backlit keypad • Aim Anywhere feature • Easy access to accessibility features like Closed Captioning and voice guidance • TV input control </div> <div>  </div> <p>In the figure above, the Comcast XR11 is a television remote control that receives a user-activated indication of a voice command when a user presses the Microphone button and speaks into the remote. See https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (“How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.”)</p>
<p>[1B] receiving said voice command through a microphone associated with said television remote control;</p>	<p>Comcast receives voice commands through a microphone within the XR11 remote. See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (“How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.”) See, e.g., https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ (“Microphone: Activates voice control.”)</p>
<p>[1C] said television remote control wirelessly transmitting a signal representing said voice command to a cable set-top box;</p>	<p>The Comcast XR11 remote transmits voice signals to a set-top box via at least RF. See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote (“From a technology perspective, the remote records sound from a microphone when the Mic button is held down and then uses voice-over-RF4CE™ ZigBee® technology to compress and transmit that recording over a low bandwidth link to the X1 platform.”) See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)</p>
<p>[1D] said cable set-top box</p>	<p>Return signals from the Comcast set-top box can be transmitted to a remotely located head-end unit.</p>


Claim Language from U.S. Patent No. 7,260,538	
transmitting a signal representing said voice command via cable television link to a remotely located head-end unit;	<p>See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments ("Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.")</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("In addition, the nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.")</p>
[1E] processing said voice command at said head-end unit;	<p>Comcast processes voice commands at servers at at least one Comcast head-end unit.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ ("What happens to my voice commands after I speak them into the remote? After you speak into the remote, the voice commands are sent to Comcast and its contracted service provider for processing.")</p> <p>See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download (The automated speech recognition, natural language processing, and action recognition modules of Comcast's Voice Relevance Engine (V-REX) are "server-side components".)</p>
[1F] the head-end unit deriving a set-top-box-compatible command function corresponding to said voice command;	<p>Comcast processes a voice command at a head-end unit and then sends a corresponding command function to the set-top box where the command is then performed.</p> <p>See, e.g., http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b ("To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: 'ESPN.' 'Watch Disney Junior.' Watch channel 810.' 'Turn on Discovery Channel.'")</p>
[1G] the head-end unit transmitting said command function to said cable set-top box via the cable television link;	<p>The Comcast head-end unit transmits the command function to the set-top box via a cable television link.</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("From the headend, Comcast uses fiber optic infrastructure to send signals to its hub location in Shoreview, MN. From the headend and hub, Comcast uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the NSCC area, where forward (or downstream) signals are transformed from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node. Forward (or downstream) services include all analog, standard definition (SD) digital and</p>

Claim Language from U.S. Patent No. 7,260,538	
	high definition (HD) digital channels including Video-On-Demand (VOD) and 3DTV channels.”)
[1H] performing said command function at said cable set-top box.	<p>Command functions, such as tuning the channel, are performed at the Comcast set-top box. See, e.g., http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b (“To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: ‘ESPN.’ ‘Watch Disney Junior.’ Watch channel 810.’ ‘Turn on Discovery Channel.’”)</p>
[2] A method for providing voice recognition processing at a cable television head-end unit for a plurality of television controllers in a cable television network, comprising the steps of:	<p>Comcast performs the method for providing voice recognition processing at a head-end unit for television controllers (set-top boxes) in a cable television network as per the claim elements below. See, e.g., https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ (“The voice remote (XR11) from XFINITY is a remote control that allows XFINITY X1 customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR.”)</p> <p>See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“The headend is the aggregation point for most signals that are transmitted to, and received from, subscribers in the NSCC area, and indeed the entire Twin Cities area that is served by Comcast. From the headend, Comcast uses fiber optic infrastructure to send signals to its hub location in Shoreview, MN. From the headend and hub, Comcast uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the NSCC area, where forward (or downstream) signals are transformed from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node. Forward (or downstream) services include all analog, standard definition (SD) digital and high definition (HD) digital channels including Video-On-Demand (VOD) and 3DTV channels. Additionally, Internet data, traveling from Comcast’s headend or hub to subscribers, and telephone or voice service to subscribers is carried on the forward/downstream portion of the network. In addition, the nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node</p>


<p>Claim Language from U.S. Patent No. 7,260,538</p>	
	<p>converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.")</p>
<p>[2A] a television remote control receiving indication of a voice command by user operation of an activation feature associated with the television remote control;</p>	<div> <p>Introduction</p> <p>Introducing the voice remote. Only from XFINITY.</p> <p>The voice remote (XR11) from XFINITY is a remote control that allows XFINITY on the X1 Entertainment Operating System customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR. Benefits include:</p> <ul style="list-style-type: none"> • Voice control • Backlit keypad • Aim Anywhere feature • Easy access to accessibility features like Closed Captioning and voice guidance • TV input control </div> <div>  </div> <p>In the figure above, the Comcast XR11 is a television remote control that receives a voice command when a user presses the Microphone button on the remote control and speaks into the remote. See https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faq/ ("How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.")</p>
<p>[2B] receiving said voice command through a microphone associated with said television remote control;</p>	<p>Comcast receives voice commands through a microphone within the XR11 remote. See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faq/ ("How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.") See, e.g., https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ ("Microphone: Activates voice control.")</p>
<p>[2C] said television remote control wirelessly transmitting a signal representing said voice command to a television controller;</p>	<p>The Comcast XR11 remote transmits voice signals to a set-top box via at least RF. See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote ("From a technology perspective, the remote records sound from a microphone when the Mic button is held down and then uses voice-over-RF4CE™ ZigBee® technology to compress and transmit that recording over a low bandwidth link to the X1 platform.") See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments</p>

<p>Claim Language from U.S. Patent No. 7,260,538</p>	
	<p>("Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.")</p>
<p>[2D] said television controller transmitting a signal representing said voice command via cable television link to a remotely located cable head-end unit;</p>	<p>Return signals from the Comcast set-top box can be transmitted to a remotely located head-end unit. See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments ("Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.") See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("In addition, the nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.")</p>
<p>[2E] the head-end unit deriving a controller-compatible command function corresponding to said voice command;</p>	<p>Comcast processes a voice command at a head-end unit and then sends a corresponding command function to the set-top box where the command is then performed. See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ ("What happens to my voice commands after I speak them into the remote? After you speak into the remote, the voice commands are sent to Comcast and its contracted service provider for processing.") See, e.g., http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b ("To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: 'ESPN.' 'Watch Disney Junior.' Watch channel 810.' 'Turn on Discovery Channel.'")</p>
<p>[2F] the head-end unit transmitting said command function to said controller via the cable television link;</p>	<p>The Comcast head-end unit transmits the command function to the set-top box via a cable television link. See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("From the headend, Comcast uses fiber optic infrastructure to send signals to its hub location in Shoreview, MN. From the headend and hub, Comcast uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the NSCC area, where forward (or downstream) signals are transformed from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node. Forward (or downstream) services include all analog, standard definition (SD) digital and high definition (HD) digital channels including Video-On-Demand (VOD) and 3DTV channels.")</p>

Claim Language from U.S. Patent No. 7,260,538	
[2G] and the controller performing said command function.	<p>Command functions, such as tuning the channel, are performed at the Comcast set-top box. See, e.g., http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b ("To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: 'ESPN.' 'Watch Disney Junior.' Watch channel 810.' 'Turn on Discovery Channel.'")</p>
[3] The method of claim 2,	<p>See Claim 2 above.</p>
[3A] wherein the activation feature comprises a push-to-talk switch and activation of said push-to-talk switch comprises any of:	<div> <p>Introduction</p> <p>Introducing the voice remote. Only from XFINITY.</p> <p>The voice remote (XR11) from XFINITY is a remote control that allows XFINITY on the X1 Entertainment Operating System customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR. Benefits include:</p> <ul style="list-style-type: none"> • Voice control • Backlit keypad • Aim Anywhere feature • Easy access to accessibility features like Closed Captioning and voice guidance • TV input control </div> <div> </div> <p>In the figure above, the Comcast XR11 is a television remote control that receives a voice command when a user presses the Microphone button (a push-to-talk switch) on the remote control and speaks into the remote.</p> <p>See https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faq/ ("How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.")</p>
[3A(i)] pressing said push-to-talk switch, double pressing said push-to-talk switch, turning said push-to-talk switch clockwise and/or counterclockwise, and toggling said push-to-talk switch.	<p>The push-to-talk switch of the XR11 Remote is activated when a user presses and holds the Microphone button.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faq/ ("How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.")</p>

Claim Language from U.S. Patent No. 7,260,538	
[4] The method of claim 2,	See Claim 2 above.
[4A] where the activation feature comprises a push-to-talk switch, and the steps further comprise, responsive to operation of the push-to-talk switch, performing functions including any of:	<div> <p>Introduction</p> <p>Introducing the voice remote. Only from XFINITY.</p> <p>The voice remote (XR11) from XFINITY is a remote control that allows XFINITY on the X1 Entertainment Operating System customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR. Benefits include:</p> <ul style="list-style-type: none"> • Voice control • Backlit keypad • Aim Anywhere feature • Easy access to accessibility features like Closed Captioning and voice guidance • TV input control </div> <div>  </div> <p>In the figure above, the Comcast XR11 is a television remote control that receives a voice command when a user presses the Microphone button (a push-to-talk switch) on the remote control and speaks into the remote.</p> <p>See https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ ("How do I use voice control?" Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.")</p>
[4A(i)] activating said microphone, deactivating said microphone, activating a help menu, deactivating a help menu, activating a telephone, deactivating said telephone, adjusting the gain on said microphone, muting said microphone and performing a shift function.	<p>Pressing the Microphone button on the XR11 remote control activates the microphone of the remote control until the Microphone button is released.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ ("How do I use voice control?" Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.")</p>
[6] The method of claim 2,	See Claim 2 above.
[6A] wherein said remote control comprises a wireless transmitter employing any of the following	<p>Comcast's XR11 remote control comprises a wireless transmitter.</p> <p>See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote ("From a technology perspective, the remote records sound from a microphone</p>


Claim Language from U.S. Patent No. 7,260,538	
wireless communication formats:	when the Mic button is held down and then uses voice-over-RF4CE™ ZigBee® technology to compress and transmit that recording over a low bandwidth link to the X1 platform.”)
[6A(i)] infrared, ultrasonic, radio frequency transmission, burst transmission, a multiplexed signal, a transmission device that conforms to a Bluetooth Specification, and an infrared repeater.	Comcast’s XR11 remote control can transmit information at least over radio frequency. See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote (“In addition to voice search, the new remote is backlit for nighttime viewing and uses radio frequency (RF4CE) transmission that lets users point anywhere when channel surfing and store their X1 set-top box in a cabinet or another room.”)
[17] The method of claim 2,	See Claim 2 above.
[17A] where the step of deriving the controller-compatible command function includes any of: word recognition, semantic analysis.	Comcast derives the controller-compatible command function from the voice command at least using word recognition. See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download (“Once the ASR module processes the user’s request, the output (i.e. the request in text form) is sent on to the NLP module. NLP starts by parsing the text, using the same grammar used by ASR . . . The NLP module uses the resulting parse tree to interpret the utterance, inferring the semantics from the rules used and the tags assigned in the parsing process. . . . Once it has identified all the pieces of the request, the NLP module assembles them into a request structure that is passed on to the AR module.”)
[18] An apparatus for providing voice recognition processing at a cable television head-end unit for a plurality of voice controlled television cable set-top boxes in a cable television network, comprising:	Comcast’s apparatus provides voice recognition processing at a head-end unit for set-top boxes in a cable television network as per the claim elements below. See, e.g., https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ (“The voice remote (XR11) from XFINITY is a remote control that allows XFINITY X1 customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR.”) See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”) See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“The headend is the

<p>Claim Language from U.S. Patent No. 7,260,538</p>	
	<p>aggregation point for most signals that are transmitted to, and received from, subscribers in the NSCC area, and indeed the entire Twin Cities area that is served by Comcast. From the headend, Comcast uses fiber optic infrastructure to send signals to its hub location in Shoreview, MN. From the headend and hub, Comcast uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the NSCC area, where forward (or downstream) signals are transformed from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node. Forward (or downstream) services include all analog, standard definition (SD) digital and high definition (HD) digital channels including Video-On-Demand (VOD) and 3DTV channels. Additionally, Internet data, traveling from Comcast's headend or hub to subscribers, and telephone or voice service to subscribers is carried on the forward/downstream portion of the network. In addition, the nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.")</p>
<p>[18A] a television remote control including: activation means for receiving user-activated indication of a voice command, microphone means for receiving the voice command, and transmission means for wirelessly transmitting a signal representing the voice command to a cable television controller;</p>	<p>The Comcast XR11 remote control comprises a microphone, a Microphone button to activate the microphone, and a transmitter to wireless transmit voice signals to a cable-set top box.</p> <div> <p>Introduction</p> <p>Introducing the voice remote. Only from XFINITY.</p> <p>The voice remote (XR11) from XFINITY is a remote control that allows XFINITY on the X1 Entertainment Operating System customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR. Benefits include:</p> <ul style="list-style-type: none"> • Voice control • Backlit keypad • Aim Anywhere feature • Easy access to accessibility features like Closed Captioning and voice guidance • TV input control </div>  <p>In the figure above, the Comcast XR11 is a television remote control that receives a voice command when a user presses the Microphone button on the remote control and speaks into the remote. See https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ ("How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the</p>

Claim Language from U.S. Patent No. 7,260,538	
	<p>Microphone (Mic) button when you have finished the command.”)</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ (“Microphone: Activates voice control.”)</p> <p>See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote (“From a technology perspective, the remote records sound from a microphone when the Mic button is held down and then uses voice-over-RF4CE™ ZigBee® technology to compress and transmit that recording over a low bandwidth link to the X1 platform.”)</p> <p>See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)</p>
<p>[18B] a cable television controller including receiver means for receiving the signal representing the voice command from the television remote control and transmitter means for transmitting a signal representing the voice command via cable television link to a remotely located head-end unit;</p>	<p>Comcast TV boxes include a receiver to receive voice commands from the Comcast XR11 remote control and a transmitter to transmit the voice signal to a head-end unit.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (“What Comcast TV boxes support the voice remote? The voice remote is supported by all X1 TV box models (except the RNG150N). The remote must be paired with the appropriate model TV box to enable the voice control functionality.”)</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/remote-program-the-xr2-or-xr5-to-aim-anywhere/ (“Your XFINITY remote can be paired with XFINITY X1 TV boxes, allowing you to control the TV box even when it is placed out of sight, such as in an entertainment center or in another room (up to 50 feet away). XFINITY remotes can be identified by the model number on the back panel or within the battery compartment of the remote. Note: Once your remote is successfully paired with a TV box, it will not control any other TV box until paired with the other TV box. XFINITY remotes can only be paired with one TV box at a time.”)</p> <p>See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“In addition, the nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast’s headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.”)</p>

Claim Language from U.S. Patent No. 7,260,538	
	<p>See, e.g., http://ctcnet.us/SeattleCATVTechnologyReport.pdf (“With the introduction of the X1 and X2 set-top devices, Comcast can begin to migrate its VoD service to the IP network, essentially streaming it to the set-top box from the headend or hub DOCSIS CMTS.”)</p> <p>See, e.g., http://ctcnet.us/SeattleCATVTechnologyReport.pdf (“New STBs recently introduced by cable operators can deliver video content from cable operators both to televisions and IP-based user electronics (such as tablet computers or PCs) by converting encrypted QAM cable channels to IP video provided through Wi-Fi or Ethernet^{26,27}—indicating that a strategy of collaboration is being pursued between cable operators and independent retailers. Also, the latest STBs offered by Comcast (the X1 and X2) have cloud-based²⁸ user interfaces and remote video storage mechanisms that move much of the complex computational processing and data caching space from the consumers’ hardware to the network—potentially reducing consumer power consumption from approximately 25 watts to approximately 15 watts.”)</p>
<p>[18C] a head-end unit including processing means for deriving cable-television-controller-compatible command functions corresponding to signals representing the voice commands received from the cable television controllers, and transmission means for transmitting signals representing the command functions back to respective cable television controllers;</p>	<p>Comcast processes a voice command from a set-top box at a head-end unit and then sends a corresponding command function back to the set-top box where the command is then performed.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (“What happens to my voice commands after I speak them into the remote? After you speak into the remote, the voice commands are sent to Comcast and its contracted service provider for processing.”)</p> <p>See, e.g., http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b (“To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: ‘ESPN.’ ‘Watch Disney Junior.’ Watch channel 810.’ ‘Turn on Discovery Channel.’”)</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“From the headend, Comcast uses fiber optic infrastructure to send signals to its hub location in Shoreview, MN. From the headend and hub, Comcast uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the NSCC area, where forward (or downstream) signals are transformed from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node. Forward (or downstream) services include all analog, standard definition (SD) digital and high definition (HD) digital channels including Video-On-Demand (VOD) and 3DTV channels.”)</p> <p>See, e.g., http://ctcnet.us/SeattleCATVTechnologyReport.pdf</p>


<p>Claim Language from U.S. Patent No. 7,260,538</p>	
	<p>(“In Comcast’s current system, the backbone network delivers the requested content from a central server (or, potentially from a cached location in the headend or hub) and sends it to a QAM modulator to reach a specific user’s set-top box.”)</p>
<p>[18D] where the cable television controller additionally includes second receiver means for receiving the signals representing the command functions from the head-end unit via the cable television link, and where the cable television controller includes means responsive to receipt of the command functions for executing the command functions.</p>	<div> </div> <p>In the figure above, the XFINITY set-top box includes a second receiver (“Cable In/RF In” Connection connected to the Comcast network via coaxial cable) to receive instructions or commands from the head-end unit.</p> <p>See https://www.xfinity.com/~media/00BDB153BBF34E17B5C2B541D1EB0CA1.ashx Command functions, such as tuning the channel, are performed at the Comcast set-top box.</p> <p>See, e.g., http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b (“To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: ‘ESPN.’ ‘Watch Disney Junior.’ Watch channel 810.’ ‘Turn on Discovery Channel.’”)</p>
<p>[19] An apparatus for providing voice recognition processing at a cable television head-end unit for a plurality of television controllers in a cable television network, comprising:</p>	<p>Comcast’s apparatus provides voice recognition processing at a head-end unit for television controllers (set-top boxes) in a cable television network as per the claim elements below.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ (“The voice remote (XR11) from XFINITY is a remote control that allows XFINITY X1 customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control</p>


Claim Language from U.S. Patent No. 7,260,538	
	<p>their DVR.”)</p> <p>See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“The headend is the aggregation point for most signals that are transmitted to, and received from, subscribers in the NSCC area, and indeed the entire Twin Cities area that is served by Comcast. From the headend, Comcast uses fiber optic infrastructure to send signals to its hub location in Shoreview, MN. From the headend and hub, Comcast uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the NSCC area, where forward (or downstream) signals are transformed from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node. Forward (or downstream) services include all analog, standard definition (SD) digital and high definition (HD) digital channels including Video-On-Demand (VOD) and 3DTV channels. Additionally, Internet data, traveling from Comcast’s headend or hub to subscribers, and telephone or voice service to subscribers is carried on the forward/downstream portion of the network. In addition, the nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast’s headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.”)</p>
<p>[19A] activation feature to receive user indication of a voice command, a microphone to receive the voice command, and a transmitter to wirelessly transmit a signal representing the voice command to a cable set-top box;</p>	<p>The Comcast XR11 remote control comprises a microphone, a Microphone button to activate the microphone, and a transmitter to wireless transmit voice signals to a cable-set top box.</p> <div> <p>Introduction</p> <p>Introducing the voice remote. Only from XFINITY.</p> <p>The voice remote (XR11) from XFINITY is a remote control that allows XFINITY on the X1 Entertainment Operating System customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR. Benefits include:</p> <ul style="list-style-type: none"> • Voice control • Backlit keypad • Aim Anywhere feature • Easy access to accessibility features like Closed Captioning and voice guidance • TV input control </div>  <p>In the figure above, the Comcast XR11 is a television remote control that receives a voice command</p>

Claim Language from U.S. Patent No. 7,260,538	
	<p>when a user presses the Microphone button on the remote control and speaks into the remote. See https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (“How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.”) See, e.g., https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ (“Microphone: Activates voice control.”) See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote (“From a technology perspective, the remote records sound from a microphone when the Mic button is held down and then uses voice-over-RF4CE™ ZigBee® technology to compress and transmit that recording over a low bandwidth link to the X1 platform.”) See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)</p>
<p>[19B] a cable set-top box including a receiver to receive the signal representing the voice command from the television remote control and a transmitter to transmit a signal representing the voice command via cable television link to a remotely located head-end unit;</p>	<p>Comcast TV boxes include a receiver to receive voice commands from the Comcast XR11 remote control and a transmitter to transmit the voice signal to a head-end unit. See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (“What Comcast TV boxes support the voice remote? The voice remote is supported by all X1 TV box models (except the RNG150N). The remote must be paired with the appropriate model TV box to enable the voice control functionality.”) See, e.g., https://www.xfinity.com/support/cable-tv/remote-program-the-xr2-or-xr5-to-aim-anywhere/ (“Your XFINITY remote can be paired with XFINITY X1 TV boxes, allowing you to control the TV box even when it is placed out of sight, such as in an entertainment center or in another room (up to 50 feet away). XFINITY remotes can be identified by the model number on the back panel or within the battery compartment of the remote. Note: Once your remote is successfully paired with a TV box, it will not control any other TV box until paired with the other TV box. XFINITY remotes can only be paired with one TV box at a time.”) See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)</p>

Claim Language from U.S. Patent No. 7,260,538	
	<p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("In addition, the nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.")</p> <p>See, e.g., http://ctcnet.us/SeattleCATVTechnologyReport.pdf ("With the introduction of the X1 and X2 set-top devices, Comcast can begin to migrate its VoD service to the IP network, essentially streaming it to the set-top box from the headend or hub DOCSIS CMTS.")</p> <p>See, e.g., http://ctcnet.us/SeattleCATVTechnologyReport.pdf ("New STBs recently introduced by cable operators can deliver video content from cable operators both to televisions and IP-based user electronics (such as tablet computers or PCs) by converting encrypted QAM cable channels to IP video provided through Wi-Fi or Ethernet^{26,27}—indicating that a strategy of collaboration is being pursued between cable operators and independent retailers. Also, the latest STBs offered by Comcast (the X1 and X2) have cloud-based²⁸ user interfaces and remote video storage mechanisms that move much of the complex computational processing and data caching space from the consumers' hardware to the network—potentially reducing consumer power consumption from approximately 25 watts to approximately 15 watts.")</p>
<p>[19C] a head-end unit to derive set-top-box-compatible command functions corresponding to signals representing voice commands received from the cable set-top-boxes and transmit signals representing the command functions back to respective cable set-top boxes;</p>	<p>Comcast processes a voice command from a set-top box at a head-end unit and then sends a corresponding command function back to the set-top box where the command is then performed.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faq/ ("What happens to my voice commands after I speak them into the remote? After you speak into the remote, the voice commands are sent to Comcast and its contracted service provider for processing.")</p> <p>See, e.g., http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b ("To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: 'ESPN.' 'Watch Disney Junior.' 'Watch channel 810.' 'Turn on Discovery Channel.'")</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("From the headend, Comcast uses fiber optic infrastructure to send signals to its hub location in Shoreview, MN. From the headend and hub, Comcast uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the NSCC area, where forward (or downstream) signals are transformed</p>

<p>Claim Language from U.S. Patent No. 7,260,538</p>	
	<p>from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node. Forward (or downstream) services include all analog, standard definition (SD) digital and high definition (HD) digital channels including Video-On-Demand (VOD) and 3DTV channels.”)</p>
<p>[19D] where the cable set-top box additionally includes a second receiver to receive signals representing the command functions from the head-end unit via the cable television link, the cable set-top box responsive to receipt of the signals representing the command functions to execute the command functions.</p>	<div> <p>The diagram shows the back of an XFINITY Set-Top Box with four ports. From left to right: 'Cable In/RF In' connected to a 'Cable Wall Outlet' via a 'Coax' cable; 'HDMI/HD To TV' connected to an 'HDTV' via an 'HDMI' cable; 'To TV/RF Out' connected to a 'Non-HDTV' via a 'Coax' cable; and 'Power' connected to an 'Electrical Outlet' via a 'Power' cable. A red '-Or-' is placed between the HDTV and Non-HDTV boxes. The title is 'XFINITY Set-Top Box (Back)' and a note says 'Actual device may vary.'</p> </div> <p>In the figure above, the XFINITY set-top box includes a second receiver (“Cable In/RF In” Connection connected to the Comcast network via coaxial cable) to receive instructions or commands from the head-end unit.</p> <p>See https://www.xfinity.com/~media/00BDB153BBF34E17B5C2B541D1EB0CA1.ashx</p> <p>Command functions, such as tuning the channel, are performed at the Comcast set-top box.</p> <p>See, e.g., http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b (“To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: ‘ESPN.’ ‘Watch Disney Junior.’ Watch channel 810.’ ‘Turn on Discovery Channel.’”)</p>
<p>[20] The apparatus of claim 19,</p>	<p>See Claim 19 above.</p>

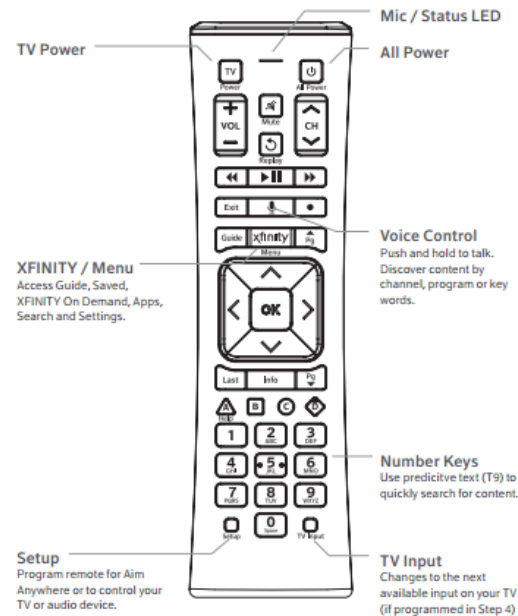
Claim Language from U.S. Patent No. 7,260,538	
<p>[20A] wherein said activation feature comprises a push-to-talk switch activated by any of:</p>	<div style="border: 1px solid black; padding: 5px;"> <p>Introduction</p> <p>Introducing the voice remote. Only from XFINITY.</p> <p>The voice remote (XR11) from XFINITY is a remote control that allows XFINITY on the X1 Entertainment Operating System customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR. Benefits include:</p> <ul style="list-style-type: none"> • Voice control • Backlit keypad • Aim Anywhere feature • Easy access to accessibility features like Closed Captioning and voice guidance • TV input control </div> <div style="text-align: center;">  </div> <p>In the figure above, the Comcast XR11 is a television remote control that receives a voice command when a user presses the Microphone button (a push-to-talk switch) on the remote control and speaks into the remote.</p> <p>See https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ ("How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.")</p>
<p>[20A(i)] pressing said push-to-talk switch, double pressing said push-to-talk switch, turning said push-to-talk switch clockwise and counterclockwise, and toggling said push-to-talk switch.</p>	<p>The push-to-talk switch of the XR11 Remote is activated when a user presses and holds the Microphone button.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ ("How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.")</p>
<p>[21] The apparatus of claim 19,</p>	<p>See Claim 19 above.</p>

<p>Claim Language from U.S. Patent No. 7,260,538</p>	
<p>[21A] where the activation feature comprises a push-to-talk switch with functions comprising any of:</p>	<div style="border: 1px solid black; padding: 5px;"> <p>Introduction</p> <p>Introducing the voice remote. Only from XFINITY.</p> <p>The voice remote (XR11) from XFINITY is a remote control that allows XFINITY on the X1 Entertainment Operating System customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR. Benefits include:</p> <ul style="list-style-type: none"> • Voice control • Backlit keypad • Aim Anywhere feature • Easy access to accessibility features like Closed Captioning and voice guidance • TV input control </div> <div style="text-align: center;">  </div> <p>In the figure above, the Comcast XR11 is a television remote control that receives a voice command when a user presses the Microphone button (a push-to-talk switch) on the remote control and speaks into the remote.</p> <p>See https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (“How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.”)</p>
<p>[21A(i)] activating said microphone, deactivating said microphone, activating a help menu, deactivating a help menu, activating a telephone, deactivating said telephone, adjusting the gain on said microphone, muting said microphone, and performing a shift function.</p>	<p>Pressing the Microphone button on the XR11 remote control activates the microphone of the remote control until the Microphone button is released.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (“How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.”)</p>
<p>[23] The apparatus of claim 19,</p>	<p>See Claim 19 above.</p>
<p>[23A] wherein said remote control comprises a wireless transmitter employing any of the following wireless communication formats:</p>	<p>Comcast’s XR11 remote control comprises a wireless transmitter.</p> <p>See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote (“From a technology perspective, the remote records sound from a microphone when the Mic button is held down and then uses voice-over-RF4CE™ ZigBee® technology to compress</p>

Claim Language from U.S. Patent No. 7,260,538	
	and transmit that recording over a low bandwidth link to the X1 platform.”)
[23A(i)] infrared, ultrasonic, radio frequency transmission, burst transmission, a multiplexed signal, a transmission device that conforms to a Bluetooth Specification, and an infrared repeater.	Comcast’s XR11 remote control can transmit information at least over radio frequency. See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote (“In addition to voice search, the new remote is backlit for nighttime viewing and uses radio frequency (RF4CE) transmission that lets users point anywhere when channel surfing and store their X1 set-top box in a cabinet or another room.”)
[33] The apparatus of claim 19,	See Claim 19 above.
[33A] where the head-end unit is programmed such that deriving the set-top-box-compatible command function includes any of: word recognition, semantic analysis.	Comcast derives the controller-compatible command function from the voice command at least using word recognition. See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download (“Once the ASR module processes the user’s request, the output (i.e. the request in text form) is sent on to the NLP module. NLP starts by parsing the text, using the same grammar used by ASR . . . The NLP module uses the resulting parse tree to interpret the utterance, inferring the semantics from the rules used and the tags assigned in the parsing process. . . . Once it has identified all the pieces of the request, the NLP module assembles them into a request structure that is passed on to the AR module.”)
[34] A centralized multi-user voice operated television control system, comprising:	Comcast provides a centralized multi-user voice operated television control system as per the claim elements below. See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-offers-voice-control-on-the-x1-remote-control-app (“Now, customers can use voice commands to access the X1 platform guide, giving them more ways to discover content, including changing channels by network name, searching for program titles, sports teams and actors, as well as browsing various categories in the Xfinity On Demand menu.”) See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)

**Claim Language from U.S. Patent
No. 7,260,538**

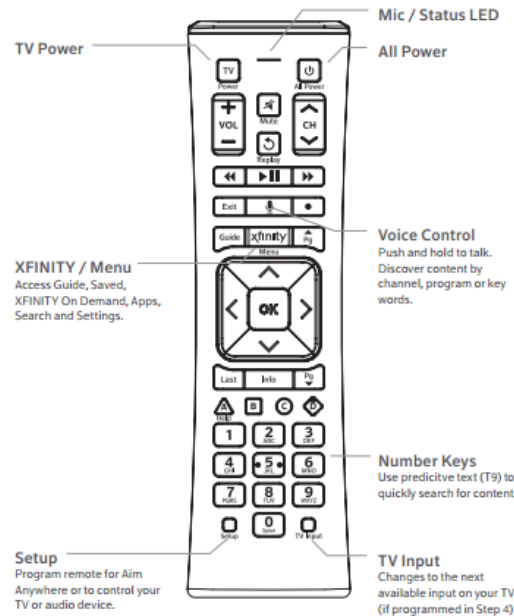
[34A] television remote controls configured to directly and wirelessly control television sets and additionally to receive user voice input and wirelessly transmit first output representative of the voice input to television set-top boxes;



In the figure above, the Comcast XR11 remote can control television sets via the keypad, can receive voice input via the microphone, and can wirelessly transmit voice signals to set-top boxes. See <https://www.xfinity.com/~media/DA2A42AEDCA241778354739D021381E8.ashx> See, e.g., <http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote> ("From a technology perspective, the remote records sound from a microphone when the Mic button is held down and then uses voice-over-RF4CE™ ZigBee® technology to compress and transmit that recording over a low bandwidth link to the X1 platform.")

<p>Claim Language from U.S. Patent No. 7,260,538</p>	
<p>[34B] television set top boxes configured to receive television input signals via cable television link and provide television output signals compatible with television sets, the set top boxes additionally responsive to receiving the first output from the television remote controls to transmit representative second output to a central processing station via the cable television link;</p>	<div> <p>The diagram shows the back of an XFINITY Set-Top Box with four ports. From left to right: 'Cable In/RF In' connected to a 'Cable Wall Outlet' via a 'Coax' cable; 'HDMI/HD To TV' connected to an 'HDTV' via an 'HDMI' cable; 'To TV/RF Out' connected to a 'Non-HDTV' via a 'Coax' cable; and 'Power' connected to an 'Electrical Outlet' via a 'Power' cable. A dashed line with '-Or-' between the HDTV and Non-HDTV indicates an alternative output path. A note at the top right states 'Actual device may vary.'</p> </div> <p>In the figure above, the XFINITY set-top box includes a “Cable In/RF In” Connection connected to the Comcast network via coaxial cable to receive television input signals and send return signals. The XFINITY set-top box also includes connections to television sets to provide output signals. Set-top boxes receive first output (compressed voice data) from remotes via RF and transmit second output (uncompressed voice data) to a central processing station via the coaxial cable connection. See https://www.xfinity.com/~media/00BDB153BBF34E17B5C2B541D1EB0CA1.ashx See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)</p>
<p>[34C] a centralized processing station configured to receive and process second output from a multitude of television set top boxes by applying voice recognition to the second output to identify user-intended voice commands, to derive set-top-box-compatible instructions to carry out the identified voice commands, and returning signals representing the</p>	<p>Comcast sends voice signals to a centralized processing station to apply voice recognition to voice commands, and returns signals representing instructions back to the respective set-top box via a cable television link to perform the voice command. See, e.g., https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ (“The voice remote (XR11) from XFINITY is a remote control that allows XFINITY X1 customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR.”) See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faq/ (“What happens to my voice commands after I speak them into the remote? After you speak into the remote, the voice commands are sent to Comcast and its contracted service provider for processing.”)</p>

Claim Language from U.S. Patent No. 7,260,538	
instructions to respective top boxes via the cable television link;	<p>See, e.g., http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b ("To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: 'ESPN.' 'Watch Disney Junior.' Watch channel 810.' 'Turn on Discovery Channel.'")</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("From the headend, Comcast uses fiber optic infrastructure to send signals to its hub location in Shoreview, MN. From the headend and hub, Comcast uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the NSCC area, where forward (or downstream) signals are transformed from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node. Forward (or downstream) services include all analog, standard definition (SD) digital and high definition (HD) digital channels including Video-On-Demand (VOD) and 3DTV channels.")</p>
[34D] where the set top boxes are further responsive to receiving the signals representing the instructions from the central processing station to execute the instructions.	<p>The Comcast set-top boxes execute the instructions from the central processing station, such as tuning the channel.</p> <p>See, e.g., http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b ("To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: 'ESPN.' 'Watch Disney Junior.' Watch channel 810.' 'Turn on Discovery Channel.'")</p>
[35] The system of claim 34,	See claim 34 above.
[35A] where the television remote controls include circuitry to ignore user voice input except during activation of a user-operated activation feature.	<p>The microphone of the Comcast XR11 remote control is not activated (ignores user voice input) until the Microphone button is pressed.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faq/ ("How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.")</p>
[40] A centralized multi-user voice operated television control system,	Comcast provides a centralized multi-user voice operated television control system as per the claim elements below.

<p>Claim Language from U.S. Patent No. 7,260,538</p>	
<p>comprising:</p>	<p>See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-offers-voice-control-on-the-x1-remote-control-app (“Now, customers can use voice commands to access the X1 platform guide, giving them more ways to discover content, including changing channels by network name, searching for program titles, sports teams and actors, as well as browsing various categories in the Xfinity On Demand menu.”)</p> <p>See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)</p>
<p>[40A] a plurality of television remote control means each for directly and wirelessly controlling television sets and additionally receiving user voice input and wirelessly transmitting first output representative of the voice input to a television set-top box means;</p>	<div>  <p>The diagram shows a Comcast XR11 remote control with the following labeled features:</p> <ul style="list-style-type: none"> TV Power: Points to the TV Power button at the top left. Mic / Status LED: Points to the microphone and status LED at the top right. All Power: Points to the All Power button at the top right. VOICE CONTROL: Points to the Voice Control button, which is a square button with a microphone icon. The text next to it says: "Push and hold to talk. Discover content by channel, program or key words." XFinity / Menu: Points to the Xfinity / Menu button, which is a square button with the Xfinity logo and the word "Menu". The text next to it says: "Access Guide, Saved, XFINITY On Demand, Apps, Search and Settings." Number Keys: Points to the numeric keypad. The text next to it says: "Use predictive text (T9) to quickly search for content." TV Input: Points to the TV Input button at the bottom right. The text next to it says: "Changes to the next available input on your TV (if programmed in Step 4)" Setup: Points to the Setup button at the bottom left. The text next to it says: "Program remote for Aim Anywhere or to control your TV or audio device." </div> <p>In the figure above, the Comcast XR11 remote can control television sets via the keypad, can receive voice input via the microphone, and can wirelessly transmit voice signals to set-top boxes.</p> <p>See https://www.xfinity.com/~media/DA2A42AEDCA241778354739D021381E8.ashx</p>

<p>Claim Language from U.S. Patent No. 7,260,538</p>	
	<p>See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote ("From a technology perspective, the remote records sound from a microphone when the Mic button is held down and then uses voice-over-RF4CE™ ZigBee® technology to compress and transmit that recording over a low bandwidth link to the X1 platform.")</p>
<p>[40B] a plurality of television set top box means each for receiving television input signals via cable television link and providing television output signals compatible with television sets, and responsive to receiving the first output from one of the television remote control means to transmit representative second output to a central processing station via the cable television link;</p>	<div> </div> <p>In the figure above, the XFINITY set-top box includes a "Cable In/RF In" Connection connected to the Comcast network via coaxial cable to receive television input signals and send return signals. The XFINITY set-top box also includes connections to television sets to provide output signals. Set-top boxes receive first output (compressed voice data) from remotes via RF and transmit second output (uncompressed voice data) to a central processing station via the coaxial cable connection. See https://www.xfinity.com/~media/00BDB153BBF34E17B5C2B541D1EB0CA1.ashx See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments ("Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.")</p>
<p>[40C] a centralized processing station configured to receive and process second output from a multitude of television set top box means by applying voice recognition to the second output to identify user-intended voice</p>	<p>Comcast sends voice signals to a centralized processing station to apply voice recognition to voice commands, and returns signals representing instructions back to the respective set-top box via a cable television link to perform the voice command. See, e.g., https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ ("The voice remote (XR11) from XFINITY is a remote control that allows XFINITY X1 customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control</p>

Claim Language from U.S. Patent No. 7,260,538	
<p>commands, to derive set-top-box-means-compatible instructions to carry out the identified voice commands, and returning signals representing the instructions to respective set top box means via the cable television link;</p>	<p>their DVR.”) <i>See, e.g.,</i> https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (“What happens to my voice commands after I speak them into the remote? After you speak into the remote, the voice commands are sent to Comcast and its contracted service provider for processing.”) <i>See, e.g.,</i> http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b (“To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: ‘ESPN.’ ‘Watch Disney Junior.’ Watch channel 810.’ ‘Turn on Discovery Channel.’”) <i>See, e.g.,</i> http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“From the headend, Comcast uses fiber optic infrastructure to send signals to its hub location in Shoreview, MN. From the headend and hub, Comcast uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the NSCC area, where forward (or downstream) signals are transformed from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node. Forward (or downstream) services include all analog, standard definition (SD) digital and high definition (HD) digital channels including Video-On-Demand (VOD) and 3DTV channels.”)</p>
<p>[40D] where each set top box means is further responsive to receiving the signals representing the instructions from the central processing station to execute the instructions.</p>	<p>The Comcast set-top boxes execute the instructions from the central processing station, such as tuning the channel. <i>See, e.g.,</i> http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b (“To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: ‘ESPN.’ ‘Watch Disney Junior.’ Watch channel 810.’ ‘Turn on Discovery Channel.’”)</p>
<p>[41] A method for operating a centralized multi-user voice operated television control system that includes a multitude of television remote controls situated at various television viewing sites, a</p>	<p>Comcast performs the method for operating a centralized multi-user voice operated television system that includes voice remotes, set-topb boxes, and a centralized processing station as per the claim elements below. <i>See, e.g.,</i> http://corporate.comcast.com/news-information/news-feed/comcast-offers-voice-control-on-the-x1-remote-control-app (“Now, customers can use voice commands to access the X1 platform guide, giving them more ways to discover content, including changing channels by network name, searching for</p>

Claim Language from U.S. Patent No. 7,260,538	
<p>multitude of set top boxes situated at the television sites to receive television input signals via cable television link and provide television output signals compatible with television sets at the television viewing sites, and a centralized processing station remote from the television viewing sites and coupled to the set top boxes via the cable television link, the method comprising operations of:</p>	<p>program titles, sports teams and actors, as well as browsing various categories in the Xfinity On Demand menu.”)</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (“What happens to my voice commands after I speak them into the remote? After you speak into the remote, the voice commands are sent to Comcast and its contracted service provider for processing. Comcast and its provider use these voice commands to provide the voice control service (including for quality assurance, troubleshooting, and customer support), improve Comcast's products and services and improve their voice recognition algorithms.”)</p> <p>See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)</p>
<p>[41A] operating the television remote controls to perform additional operations including receiving user voice input and wirelessly transmitting first output representative of the voice input to set-top boxes;</p>	<p>The Comcast XR11 remote control receives voice input and transmits the first output representative of the voice input to the set-top box via RF.</p> <p>See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (“How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.”)</p>

<p>Claim Language from U.S. Patent No. 7,260,538</p>	
<p>[41B] operating the set top boxes to perform additional operations including, responsive to receiving the first output from the television remote controls, transmitting representative second output to a central processing station via the cable television link;</p>	<div> </div> <p>In the figure above, the XFINITY set-top box includes a “Cable In/RF In” Connection connected to the Comcast network via coaxial cable to receive television input signals and send return signals. Set-top boxes receive first output (compressed voice data) from remotes via RF and transmit second output (uncompressed voice data) to a central processing station via the coaxial cable connection. See https://www.xfinity.com/~media/00BDB153BBF34E17B5C2B541D1EB0CA1.ashx See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)</p>
<p>[41C] operating the centralized processing station to receive and process second output from a multitude of set top boxes by applying voice recognition to the second outputs to identify user-intended voice commands, to derive set-top-box compatible instructions to carry out the identified voice commands, and to return signals representing the instructions to the set top boxes via</p>	<p>Comcast sends voice signals from set-top boxes to a centralized processing station to apply voice recognition to the voice signals, and returns signals representing instructions to carry out the voice command back to the respective set-top box via a cable television link to perform the voice command. See, e.g., https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ (“The voice remote (XR11) from XFINITY is a remote control that allows XFINITY X1 customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR.”) See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”) See, e.g., http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-</p>

Claim Language from U.S. Patent No. 7,260,538	
the cable television link;	<p>Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b ("To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: 'ESPN.' 'Watch Disney Junior.' Watch channel 810.' 'Turn on Discovery Channel.'")</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("From the headend, Comcast uses fiber optic infrastructure to send signals to its hub location in Shoreview, MN. From the headend and hub, Comcast uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the NSCC area, where forward (or downstream) signals are transformed from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node. Forward (or downstream) services include all analog, standard definition (SD) digital and high definition (HD) digital channels including Video-On-Demand (VOD) and 3DTV channels.")</p>
[41D] operating the set top boxes to perform further operations including, responsive to receiving the signals representing the instructions from the central processing station, executing the instructions.	<p>The Comcast set-top boxes execute the instructions from the central processing station, such as tuning the channel.</p> <p>See, e.g., http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b ("To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: 'ESPN.' 'Watch Disney Junior.' Watch channel 810.' 'Turn on Discovery Channel.'")</p>

EXHIBIT B

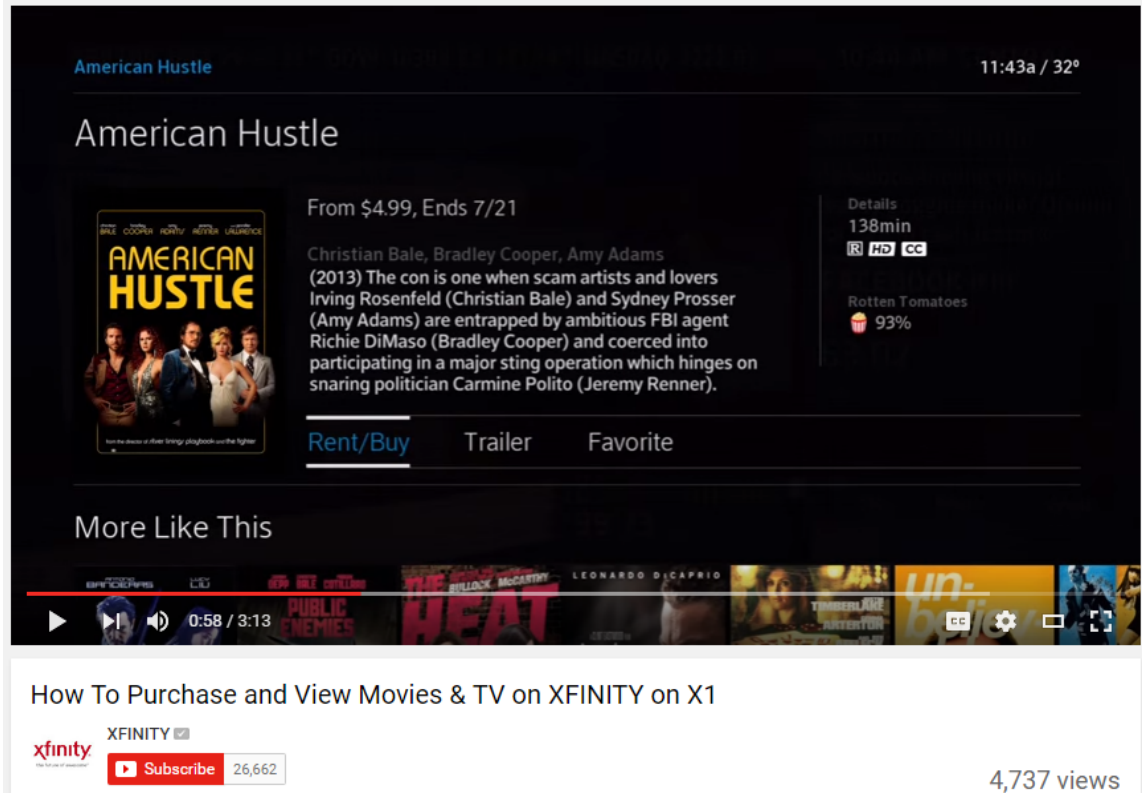
Initial Claim Charts Against Accused Instrumentalities

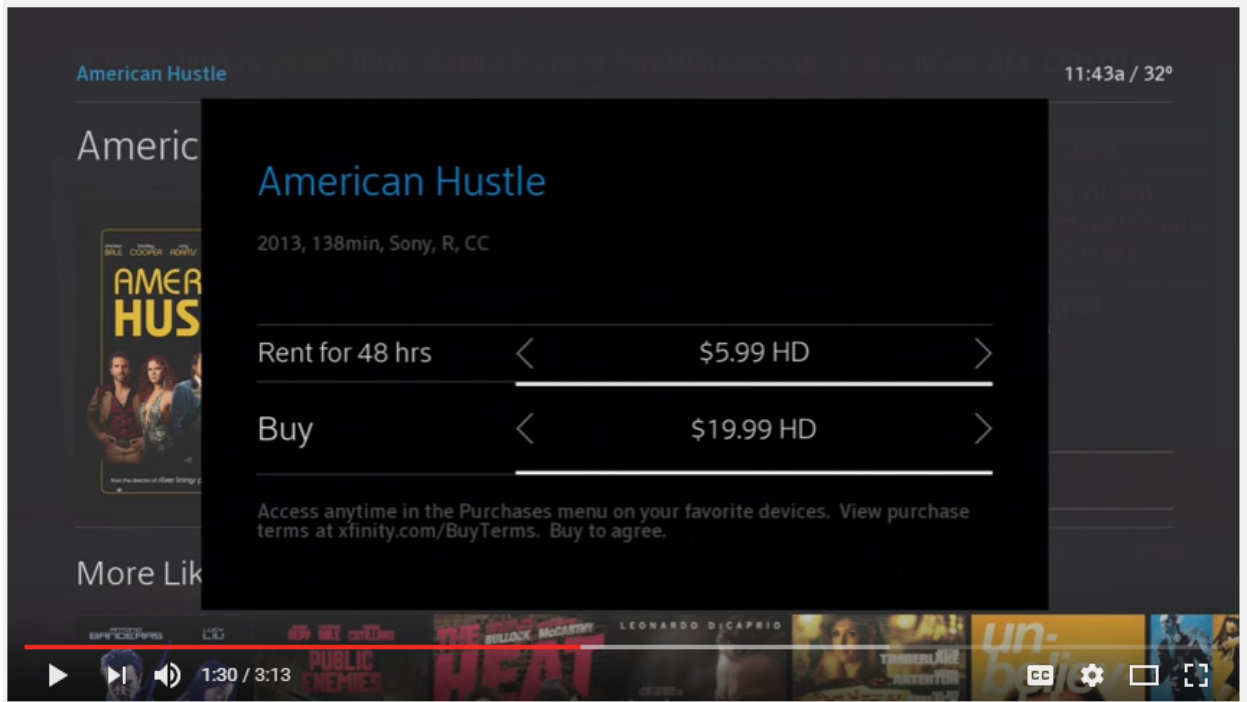
Claim Language from U.S. Patent No. 7,047,196	
<p>[1] A method of using a back channel containing a multiplicity of identified speech channels from a multiplicity of user sites presented to a speech processing system at a wireline node in a network supporting at least one of cable television delivery and video delivery, comprising the steps of:</p>	<p>Comcast performs the method of using a back channel containing speech channels from user sites presented to a speech processing system at a wireline node in a network supporting cable and video delivery as per the claim elements below.</p> <p><i>See, e.g.,</i> http://corporate.comcast.com/news-information/news-feed/comcast-offers-voice-control-on-the-x1-remote-control-app (“Now, customers can use voice commands to access the X1 platform guide, giving them more ways to discover content, including changing channels by network name, searching for program titles, sports teams and actors, as well as browsing various categories in the Xfinity On Demand menu.”)</p> <p><i>See, e.g.,</i> http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast’s headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.”)</p> <p><i>See, e.g.,</i> http://corporate.comcast.com/comcast-voices/bello-new-voice-remote-now-speaks-minionese (“The rollout of our new voice remote is off to a fast, fun start. Tens of thousands of people are talking into their remote each week to find the shows and movies they love, and we’ve already added new search features, like movie quotes, to make the experience even better. So far, X1 users have talked into their remote 8 million times.”)</p> <p><i>See, e.g.,</i> https://www.xfinity.com/support/cable-tv/xr11-remote-faq/ (“What Comcast TV boxes support the voice remote? The voice remote is supported by all X1 TV box models (except the RNG150N). The remote must be paired with the appropriate model TV box to enable the voice control functionality.”)</p> <p><i>See, e.g.,</i> http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)</p>
<p>[1A] receiving said back channel to create a received back channel;</p>	<p>Data travels to Comcast through a back channel and is received by a receiver to create a received back channel.</p>

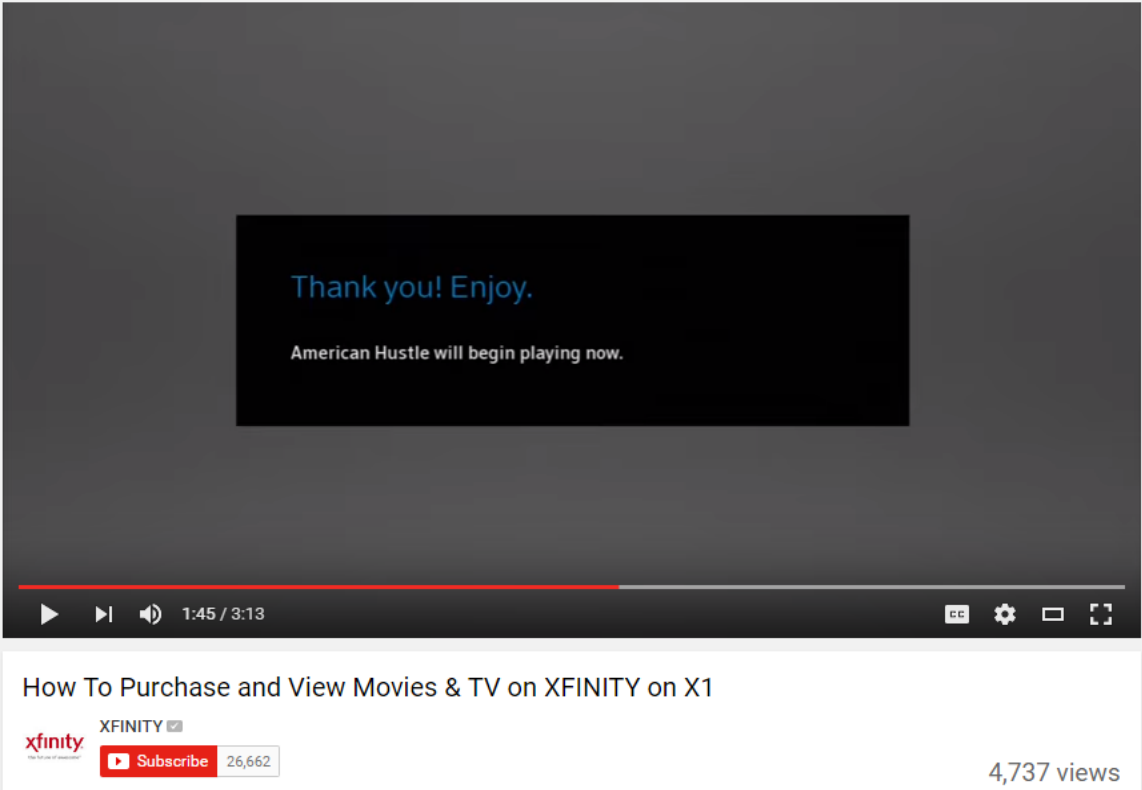
Claim Language from U.S. Patent No. 7,047,196	
	<p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast’s headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.”)</p> <p>See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote (“From a technology perspective, the remote records sound from a microphone when the Mic button is held down and then uses voice-over-RF4CE™ ZigBee® technology to compress and transmit that recording over a low bandwidth link to the X1 platform.”)</p>
<p>[1B] partitioning said received back channel into a multiplicity of received identified speech channels;</p>	<p>Comcast partitions the received back channel comprising signals from multiple customers.</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast’s headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.”)</p> <p>See, e.g., http://corporate.comcast.com/comcast-voices/bello-new-voice-remote-now-speaks-minionese (“The rollout of our new voice remote is off to a fast, fun start. Tens of thousands of people are talking into their remote each week to find the shows and movies they love, and we’ve already added new search features, like movie quotes, to make the experience even better. So far, X1 users have talked into their remote 8 million times.”)</p>
<p>[1C] processing said multiplicity of said received identified speech channels to create a multiplicity of identified speech content; and</p>	<p>Comcast processes received identified speech channels to create identified speech content.</p> <p>See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download (“In order to provide a voice interface, we need to answer three questions: what words did the user speak, what action or information are they requesting, and how do we carry out the action or get the information? Each of these questions is answered by a specific module in V-REX. Automated speech recognition (ASR) identifies the words the user has spoken. Natural language processing (NLP) figures out what action or information has been requested. Action resolution (AR) responds to the request.”)</p>
<p>[1D] responding to said identified speech content to create an identified speech content response</p>	<p>Comcast responds to speech content and creates a unique corresponding speech content response for each query.</p> <p>See, e.g., http://www.masslive.com/business-news/index.ssf/2015/05/comcast_introduces_voice-</p>

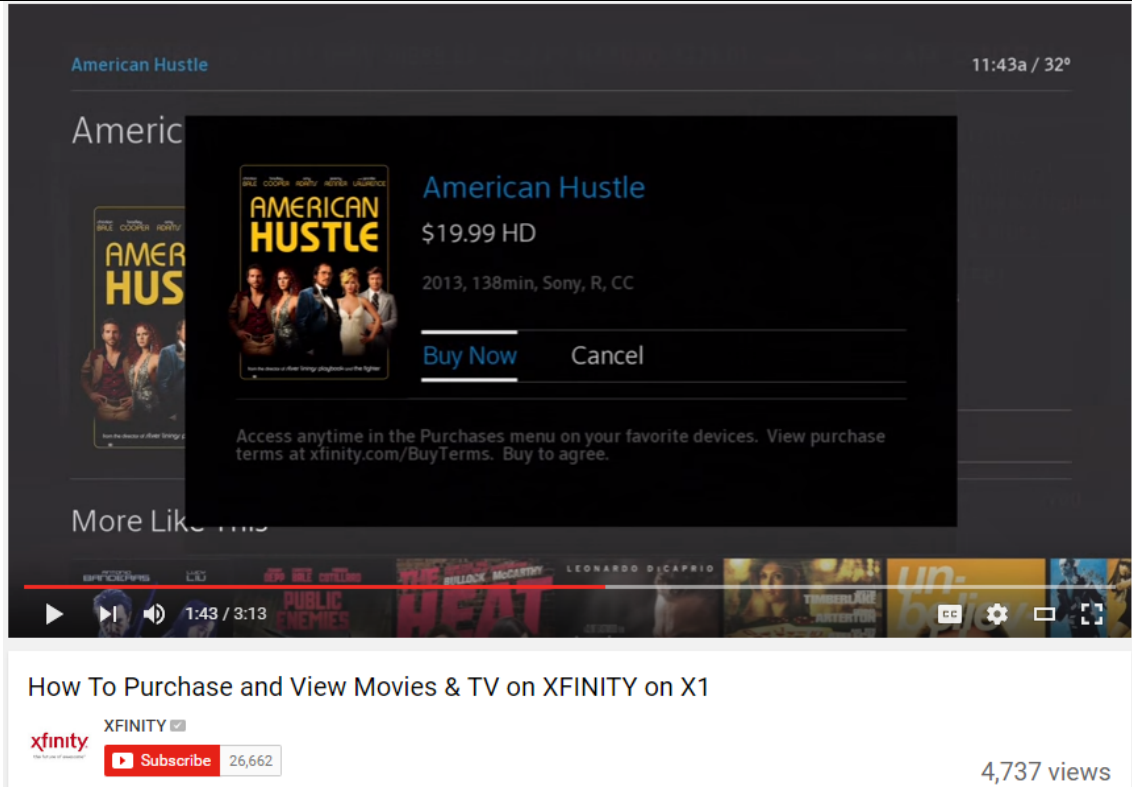
Claim Language from U.S. Patent No. 7,047,196	
that is unique, for each of said multiplicity of identified speech contents.	<p>activated remot.html ("‘Watch Modern Family.’ The on-screen menu changed to a display of ‘Modern Family’ episodes, not only the first-run episodes on ABC, but reruns, available on-demand and episodes stored on the systems' DVR. . . . ‘What time is the Red Sox Game’ displays a short preview of the game and tells you if its [sic] on NESN, or an exclusive ESPN or a Fox broadcast.”</p> <p>See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download (“The AR module receives the request structure built by the NLP module and attempts to carry out the request. This involves constructing and sending an appropriate query to Comcast’s REX search system. REX is the system we use to index and search through the complete set of programs available on broadcast and cable channels and on demand. . . . The results returned by REX are packaged up along with an indication of the request type and the output of the ASR module and sent back to the client app.”)</p>
[2] The method of claim 1,	See Claim 1 above.
[2A] wherein at least one of said identified speech channels has an associated user site; and	<p>Comcast associates speech channels with an associated user site by pairing an XFINITY remote with a TV box at a specific location such that the speech input through the XFINITY remote is transmitted to a paired set-top box and then further transmitted to a speech recognition system.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/remote-program-the-xr2-or-xr5-to-aim-anywhere/ (“Your XFINITY remote can be paired with XFINITY X1 TV boxes, allowing you to control the TV box even when it is placed out of sight, such as in an entertainment center or in another room (up to 50 feet away). XFINITY remotes can be identified by the model number on the back panel or within the battery compartment of the remote. Note: Once your remote is successfully paired with a TV box, it will not control any other TV box until paired with the other TV box. XFINITY remotes can only be paired with one TV box at a time.”)</p>
[2B] wherein the step partitioning said received back channel is further comprised of the step of:	See Claim 1B above.
[2B(i)] partitioning said received back channel into a multiplicity of said received identified speech channels from said associated user site;	<p>Each XFINITY remote can be paired to an X1 TV box, and a backchannel of a multiplicity of identified speech channels from an associated user site can be partitioned.</p> <p>See Claims 1B and 2A above.</p>

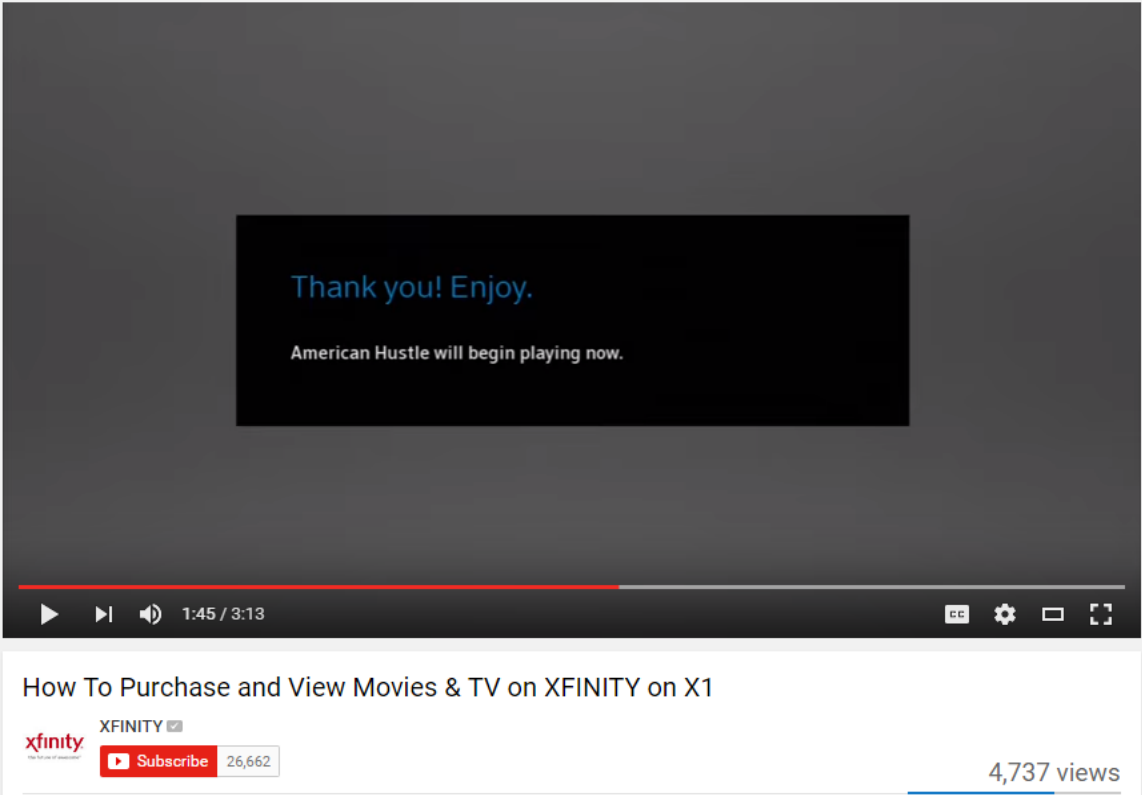
Claim Language from U.S. Patent No. 7,047,196	
[2C] wherein the step processing said multiplicity of said received identified speech channels is further comprised of the step of:	See Claim 1C above.
[2C(i)] processing said multiplicity of said received identified speech channels from said associated user site to create a multiplicity of said identified speech contents; and	Comcast processes identified speech channels from associated user sites to create identified speech content. See Claims 1C and 2A above.
[2D] wherein the step responding to said identified speech content is further comprised of the step of:	See Claim 1D above.
[2D(i)] responding to said identified speech content from said associated user site to create said identified speech content response for said associated user site.	Comcast processes identified speech content from associated user sites to create identified speech content response for the associated user site. See Claims 1D and 2A above.
[4] The method of claim 2,	See Claim 2 above.
[4A] wherein the step responding to said identified speech contents from said associated user site is comprised of the steps of:	See Claim 2D(i) above.
[4A(i)] processing said identified speech content response to create said identified user site response; and	Comcast can process an identified speech content response into a function performed by the set-top box (identified user site response) such as the set-top box changing the channel. See, e.g., http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b ("To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: 'ESPN.' 'Watch Disney Junior.' Watch channel 810.' 'Turn on Discovery Channel.'")
[4A(ii)] sending said identified user	See Claim 4A(i) above.

Claim Language from U.S. Patent No. 7,047,196	
site response to said identified user site.	
[5] The method of claim 2,	See Claim 2 above.
[5A] wherein the step responding to said identified speech contents from said associated user site is comprised of the steps of:	See Claim 2D(i) above.
[5A(i)] assessing said speech content response identified as to said user site to create a financial consequence identified as to said user site; and	 <p>In the figure above, Comcast can respond to a user's request by offering the user an opportunity to</p>

<p>Claim Language from U.S. Patent No. 7,047,196</p>	
	<p>“rent/buy” the requested movie. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>  <p>In the figure above, the price for renting or buying is presented to the user. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

<p>Claim Language from U.S. Patent No. 7,047,196</p>	
<p>[5A(ii)] billing said user site based upon said financial consequence.</p>	 <p>In the figure above, after a user selects to “rent/buy” a movie or TV show, “Thank you! Enjoy.” is displayed to the user, and the movie is billed to the user’s Comcast account. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>
<p>[6] The method of claim 2,</p>	<p>See Claim 2 above.</p>
<p>[6A] wherein the step responding to said identified speech contents from said associated user site is comprised of the steps of:</p>	<p>See Claim 2D(i) above.</p>

<p>Claim Language from U.S. Patent No. 7,047,196</p>	
<p>[6A(i)] assessing said speech response to create a financial consequence identified with said user site;</p>	<p>See Claim 5A(i) above.</p>
<p>[6A(ii)] displaying said financial consequence to create a displayed financial consequence at said user site;</p>	<div>  <p>The screenshot shows a Comcast Xfinity interface. At the top, it says 'American Hustle' and '11:43a / 32°'. Below this, there's a movie poster for 'AMERICAN HUSTLE' and a confirmation dialog box. The dialog box displays the movie title 'American Hustle', the price '\$19.99 HD', and the details '2013, 138min, Sony, R, CC'. It has two buttons: 'Buy Now' and 'Cancel'. Below the dialog box, it says 'Access anytime in the Purchases menu on your favorite devices. View purchase terms at xfinity.com/BuyTerms. Buy to agree.' At the bottom, there's a video player showing a trailer for 'PUBLIC ENEMIES' with a progress bar at 1:43 / 3:13. Below the video player, there's a title 'How To Purchase and View Movies & TV on XFINITY on X1', the Xfinity logo, a 'Subscribe' button, and '26,662' views. To the right, it says '4,737 views'.</p> </div> <p>In the figure above, after a user has decided to buy a movie, Comcast asks the user to confirm whether the user wants to buy the movie now for a specified price or cancel the transaction. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

Claim Language from U.S. Patent No. 7,047,196	
<p>[6A(iii)] confirming said displayed financial consequence from said user site to create a financial commitment; and</p>	 <p>In the figure above, Comcast confirms purchase by displaying to the user “Thank you! Enjoy.” after a user purchases or rents a movie. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>
<p>[6A(iv)] billing said user site based upon said financial commitment.</p>	<p>See Claim 5A(ii) above.</p>
<p>[12] The method of claim 2,</p>	<p>See Claim 2 above.</p>
<p>[12A] wherein the step responding to said identified speech content</p>	<p>See Claim 2D(i) above.</p>

Claim Language from U.S. Patent No. 7,047,196	
from said associated user site is further comprised of the step of:	
[12A(i)] responding to said speech content identified as to said user site based upon natural language to create a speech content response of said speech content identified with said user site.	Comcast responds to identified speech content based upon natural language to create a speech content response. See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download ("Once the ASR module processes the user's request, the output (i.e. the request in text form) is sent on to the NLP module. NLP starts by parsing the text, using the same grammar used by ASR . . . The NLP module uses the resulting parse tree to interpret the utterance, inferring the semantics from the rules used and the tags assigned in the parsing process. . . . Once it has identified all the pieces of the request, the NLP module assembles them into a request structure that is passed on to the AR module.") See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-wins-emmy-award-for-x1-voice-remote-technology ("Comcast technologists built and deployed the Natural Language Processing platform that allows the remote to deliver such precise results.")
[13] The method of claim 2,	See Claim 2 above.
[13A] wherein the step processing said multiplicity of said received speech channels is further comprised for at least one of said user sites is further comprised of the step of:	See Claim 2C(i) above.
[13A(i)] processing said received speech channels from said user site based upon natural language for said user site to create said speech content identified as to said user site.	Comcast performs processing on received speech channels based upon natural language to create identified speech content. See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faq/ (" What voice commands can I use? The voice remote from XFINITY supports natural language speech recognition, so you can search by keyword as well as by phrase. Use voice control to change channels, search for shows, get recommendations and more.") See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote ("Using natural language processing (NLP) coupled with advanced entertainment metadata and relevancy algorithms, X1 easily gets you to what you want.")

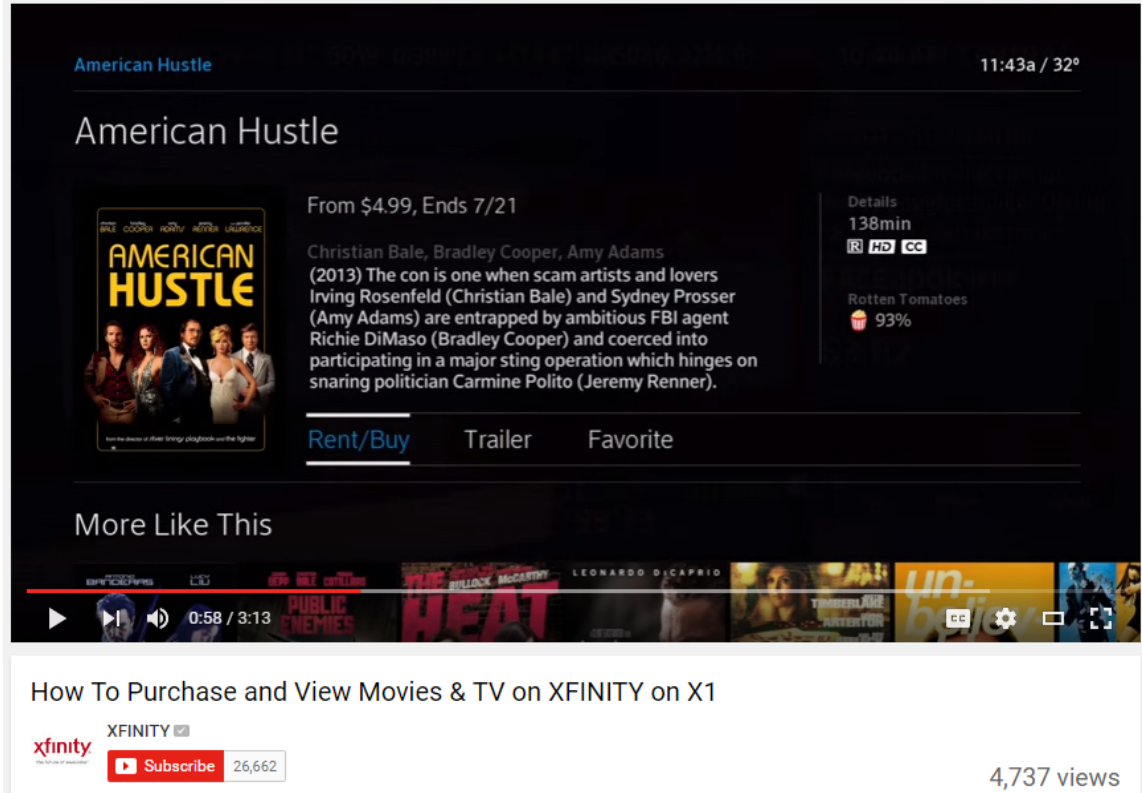
Claim Language from U.S. Patent No. 7,047,196	
<p>[14] A program system controlling at least part of a speech recognition system coupled to a wireline node in a network, said program system comprising the program steps of:</p>	<p>Comcast controls a speech recognition system coupled to a wireline node in a network as per the claim elements below. <i>See, e.g.,</i> http://corporate.comcast.com/news-information/news-feed/comcast-offers-voice-control-on-the-x1-remote-control-app ("Now, customers can use voice commands to access the X1 platform guide, giving them more ways to discover content, including changing channels by network name, searching for program titles, sports teams and actors, as well as browsing various categories in the Xfinity On Demand menu.") <i>See, e.g.,</i> http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.")</p>
<p>[14A] processing a multiplicity of received identified speech channels to create a multiplicity of identified speech content; and</p>	<p>Comcast processes a multiplicity of received identified speech channels to create a multiplicity of identified speech content. <i>See, e.g.,</i> http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download ("In order to provide a voice interface, we need to answer three questions: what words did the user speak, what action or information are they requesting, and how do we carry out the action or get the information? Each of these questions is answered by a specific module in V-REX. Automated speech recognition (ASR) identifies the words the user has spoken. Natural language processing (NLP) figures out what action or information has been requested. Action resolution (AR) responds to the request.")</p>
<p>[14B] responding to said identified speech content to create an identified speech content response that is unique to each of said multiplicity of identified speech contents;</p>	<p>Comcast responds to speech content and creates a unique corresponding speech content response for each query. <i>See, e.g.,</i> http://www.masslive.com/business-news/index.ssf/2015/05/comcast_introduces_voice-activated_remot.html ("'Watch Modern Family.' The on-screen menu changed to a display of 'Modern Family' episodes, not only the first-run episodes on ABC, but reruns, available on-demand and episodes stored on the systems' DVR. . . . 'What time is the Red Sox Game' displays a short preview of the game and tells you if its [<i>sic</i>] on NESN, or an exclusive ESPN or a Fox broadcast." <i>See, e.g.,</i> http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download</p>

Claim Language from U.S. Patent No. 7,047,196	
	xfinity/download ("The AR module receives the request structure built by the NLP module and attempts to carry out the request. This involves constructing and sending an appropriate query to Comcast's REX search system. REX is the system we use to index and search through the complete set of programs available on broadcast and cable channels and on demand. . . . The results returned by REX are packaged up along with an indication of the request type and the output of the ASR module and sent back to the client app.")
[14C] wherein said speech recognition system is provided said multiplicity of received identified speech channels based upon a received back channel at said wireline node from a multiplicity of user sites coupled to said network;	<p>Data travels to Comcast through a back channel and is received by a receiver to create a received back channel. Comcast then sends a multiplicity of received identified speech channels to a speech recognition system.</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.")</p> <p>See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote ("From a technology perspective, the remote records sound from a microphone when the Mic button is held down and then uses voice-over-RF4CE™ ZigBee® technology to compress and transmit that recording over a low bandwidth link to the X1 platform.")</p>
[14D] wherein each of said program steps reside in memory accessibly coupled to at least one computer included in said speech recognition system;	<p>Comcast processors perform program steps and use memory to store program instructions and dictionaries and grammar for speech recognition.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ ("What happens to my voice commands after I speak them into the remote? After you speak into the remote, the voice commands are sent to Comcast and its contracted service provider for processing.</p> <p>See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download ("We built our own application-specific language model, which has two major parts, a pronouncing dictionary and a grammar")</p>
[14E] wherein said at least one computer communicatively couples through said wireline node to said multiplicity of user sites; and	<p>A Comcast computer is communicatively coupled through a wireline node to a multiplicity of user sites.</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD</p>

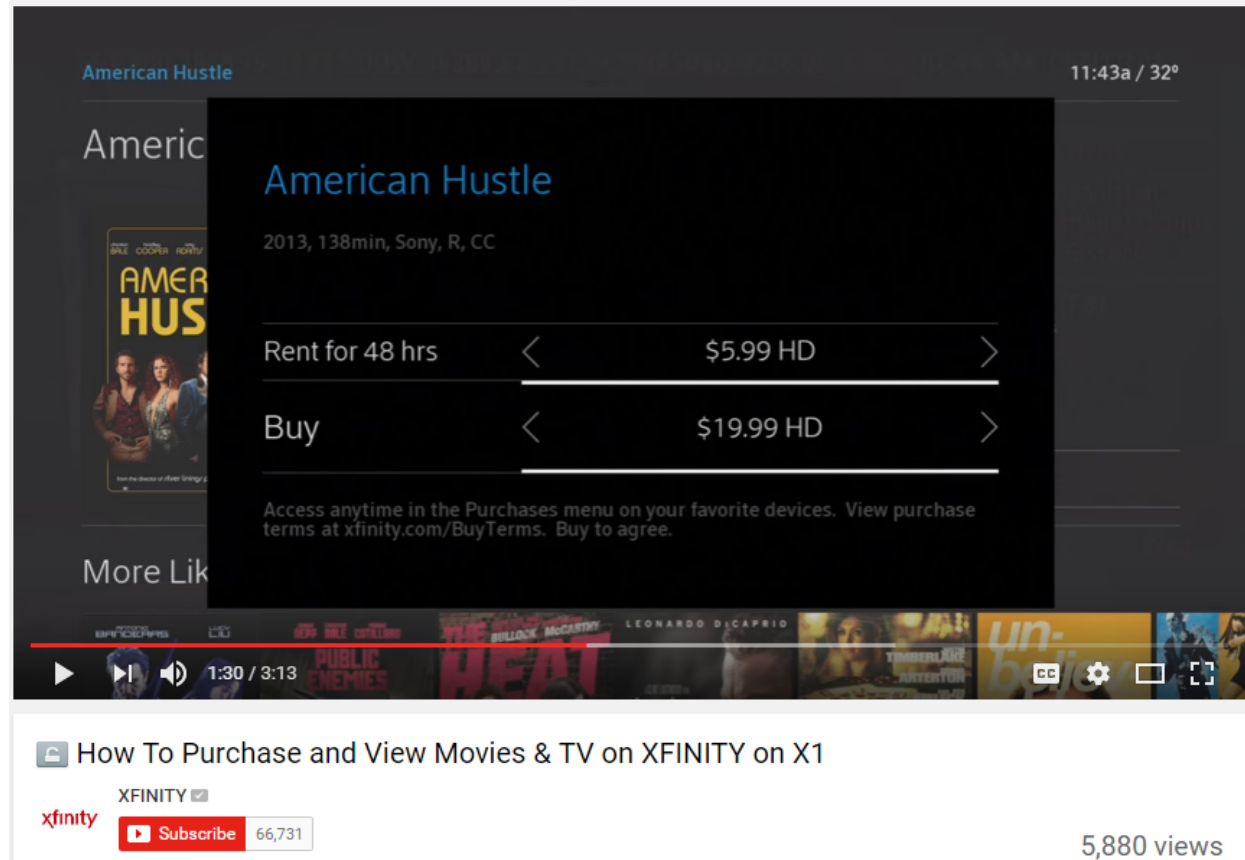
Claim Language from U.S. Patent No. 7,047,196	
	and other video services as well as telephone traffic.”)
[14F] wherein said network supports at least one of the collection comprising:	Comcast’s network supports information delivery. See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast’s headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.”)
[14F(i)] cable television delivery to said multiplicity of user sites; and	Comcast delivers cable television and video to a multiplicity of user sites. See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faq/ (“ What voice commands can I use? The voice remote from XFINITY supports natural language speech recognition, so you can search by keyword as well as by phrase. Use voice control to change channels, search for shows, get recommendations and more.”) See, e.g., http://corporate.comcast.com/comcast-voices/bello-new-voice-remote-now-speaks-minionese (“The rollout of our new voice remote is off to a fast, fun start. Tens of thousands of people are talking into their remote each week to find the shows and movies they love, and we’ve already added new search features, like movie quotes, to make the experience even better. So far, X1 users have talked into their remote 8 million times.”)
[14F(ii)] video delivery to said multiplicity of user sites.	See Claim 14AF(i) above.
[15] The program system of claim 14,	See Claim 14 above.
[15A] wherein at least one of said identified speech channels has an associated user site; and	Comcast associates speech channels with an associated user site by pairing an XFINITY remote with a TV box such that the speech input through the XFINITY remote is transmitted to a paired set-top box and then further transmitted to a speech recognition system. See, e.g., https://www.xfinity.com/support/cable-tv/remote-program-the-xr2-or-xr5-to-aim-anywhere/ (“Your XFINITY remote can be paired with XFINITY X1 TV boxes, allowing you to control the TV box even when it is placed out of sight, such as in an entertainment center or in another room (up to 50 feet away). XFINITY remotes can be identified by the model number on the back panel or within the battery compartment of the remote. Note: Once your remote is successfully paired with a TV box, it will not control any other TV box until paired with the other TV box. XFINITY remotes can only be paired with

Claim Language from U.S. Patent No. 7,047,196	
	one TV box at a time.”)
[15B] wherein the program step processing said multiplicity of said received identified speech channels is further comprised of the program step of:	See claim 14A above.
[15B(i)] processing said multiplicity of said received identified speech channels from said associated user site to create a multiplicity of said identified speech content; and	Comcast processes identified speech channels from associated user sites to create identified speech content. See Claims 14A and 15A above.
[15C] wherein the program step responding to said identified speech content is further comprised of the program step of:	See claim 14B above.
[15C(i)] responding to said identified speech content from said associated user site to create said identified speech content response for said associated user site.	Comcast processes identified speech content from associated user sites to create identified speech content response for the associated user site. See Claims 14B and 15A above.
[17] The program system of claim 15,	See Claim 15 above.
[17A] wherein the program step responding to said identified speech content from said associated user site is comprised of the program steps of:	See Claim 15C(i) above.
[17A(i)] processing said identified speech content response to create said identified user site response;	Comcast can process an identified speech content response into a function performed by the set-top box (identified user site response) such as the set-top box changing the channel. See, e.g., http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-

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and	Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b (“To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: ‘ESPN.’ ‘Watch Disney Junior.’ Watch channel 810.’ ‘Turn on Discovery Channel.’”)
[17A(ii)] sending said identified user site response to said identified user site.	See Claim 17A(i) above.
[18] The program system of claim 15,	See Claim 15 above.
[18A] wherein the program step responding to said identified speech content from said associated user site is comprised of the program steps of:	See Claim 15C(i) above.

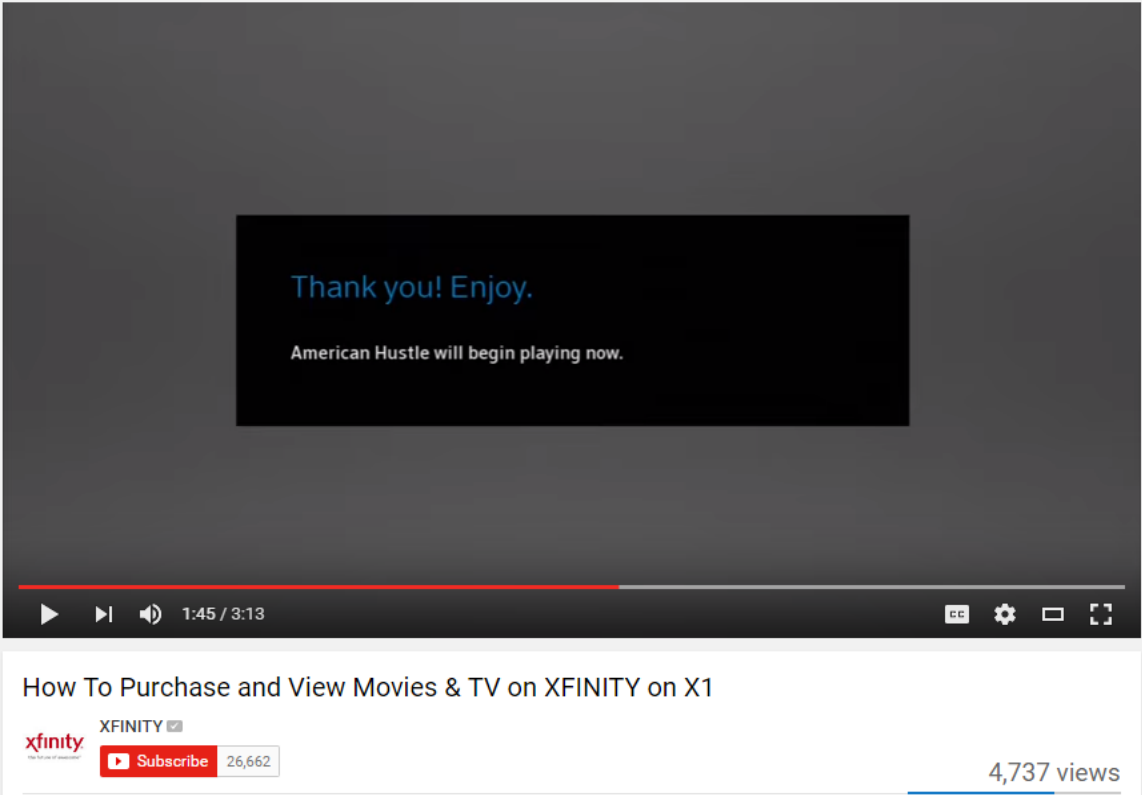
<p>Claim Language from U.S. Patent No. 7,047,196</p>	
<p>[18A(i)] assessing said speech content response identified as to said user site to create a financial consequence identified as to said user site; and</p>	<div>  <p>The screenshot shows a Comcast Xfinity user interface. At the top, the movie 'American Hustle' is featured with its poster and title. Below the title, it says 'From \$4.99, Ends 7/21'. A synopsis follows: 'Christian Bale, Bradley Cooper, Amy Adams (2013) The con is one when scam artists and lovers Irving Rosenfeld (Christian Bale) and Sydney Prosser (Amy Adams) are entrapped by ambitious FBI agent Richie DiMaso (Bradley Cooper) and coerced into participating in a major sting operation which hinges on snaring politician Carmine Polito (Jeremy Renner)'. To the right, details include '138min', 'R HD CC', and a 'Rotten Tomatoes' score of '93%'. Below this are buttons for 'Rent/Buy', 'Trailer', and 'Favorite'. A 'More Like This' section shows a video player with a trailer for 'Public Enemies'. At the bottom, there is a Comcast Xfinity logo and a 'Subscribe' button with '26,662' subscribers. The video player shows '0:58 / 3:13' and '4,737 views'.</p> </div> <p>In the figure above, Comcast can respond to a user’s request by offering the user an opportunity to “rent/buy” the requested movie.</p> <p>See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

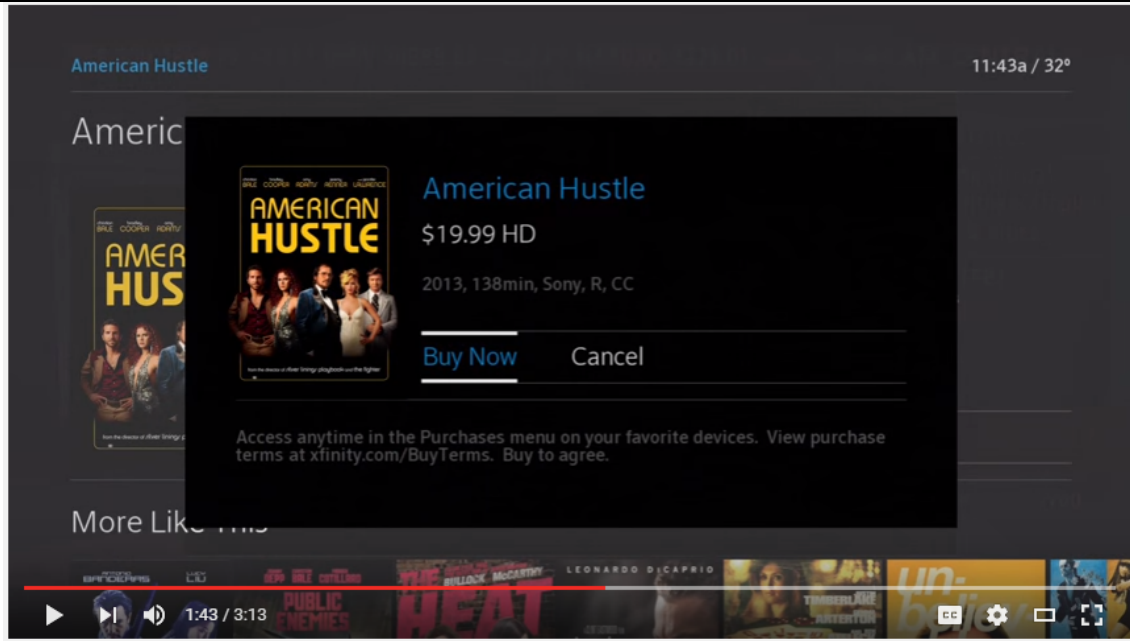
Claim Language from U.S. Patent
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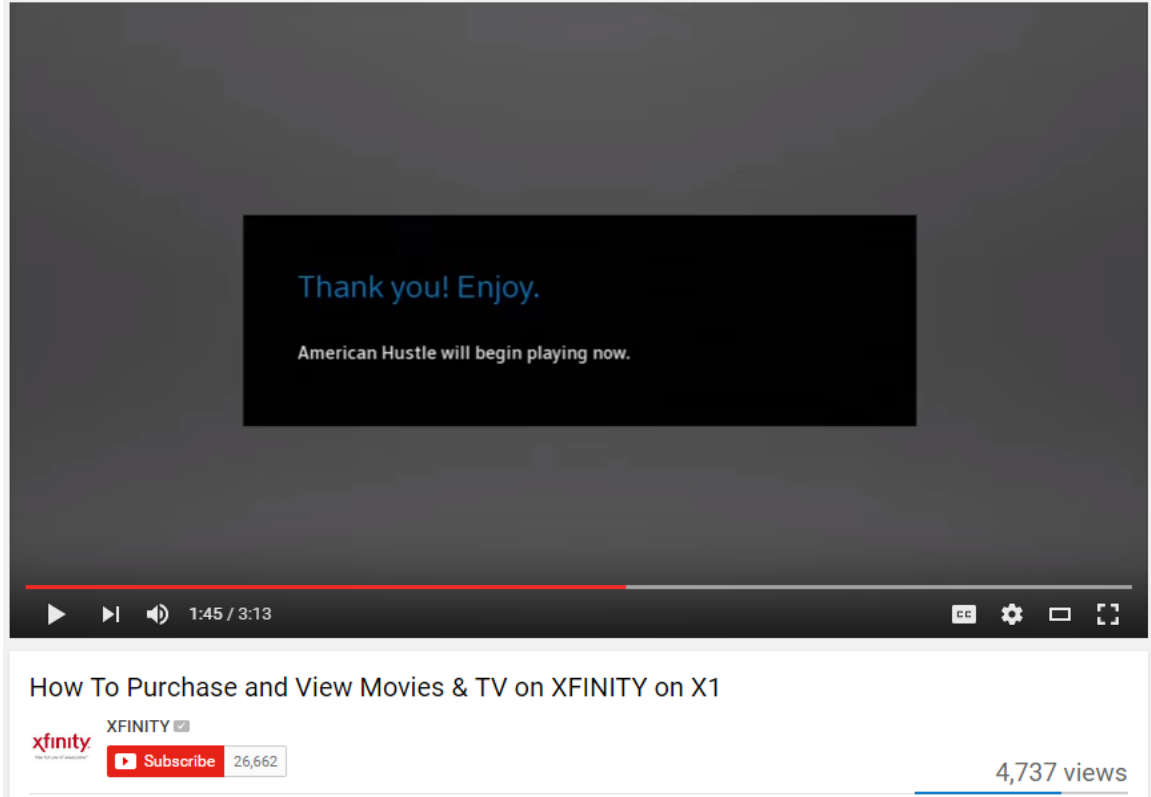


In the figure above, the price for renting or buying is presented to the user.

See <https://www.youtube.com/watch?v=cYtdEX2WjD0>

<p>Claim Language from U.S. Patent No. 7,047,196</p>	
<p>[18A(ii)] billing said user site based upon said financial consequence.</p>	 <p>In the figure above, after a user selects to “rent/buy” a movie or TV show, “Thank you! Enjoy.” is displayed to the user, and the movie is billed to the user’s Comcast account. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>
<p>[19] The program system of claim 15,</p>	<p>See Claim 15 above.</p>
<p>[19A] wherein the program step responding to said identified speech content from said associated user</p>	<p>See Claim 15C(i) above.</p>

<p>Claim Language from U.S. Patent No. 7,047,196</p>	
<p>site is comprised of the program steps of:</p>	
<p>[19A(i)] assessing said speech response to create a financial consequence identified as to said user site;</p>	<p>See Claim 18A(i) above.</p>
<p>[19A(ii)] displaying said financial consequence to create a displayed financial consequence at said user site;</p>	<div>  <p>The screenshot shows a video player interface for 'American Hustle'. A dark overlay box is centered on the screen, displaying the movie title 'American Hustle' in blue, the price '\$19.99 HD' in white, and the year '2013, 138min, Sony, R, CC' in white. Below this information are two buttons: 'Buy Now' in blue and 'Cancel' in white. At the bottom of the overlay, it says 'Access anytime in the Purchases menu on your favorite devices. View purchase terms at xfinity.com/BuyTerms. Buy to agree.' The background of the video player shows a scene from the movie 'American Hustle' with the title 'AMERICAN HUSTLE' in large yellow letters. Below the video player, there is a section titled 'How To Purchase and View Movies & TV on XFINITY on X1' with the Xfinity logo and a 'Subscribe' button showing '26,662' subscribers. To the right of this section, it says '4,737 views'.</p> </div> <p>In the figure above, after a user has decided to buy a movie, Comcast asks the user to confirm whether the user wants to buy the movie now for a specified price or cancel the transaction. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

Claim Language from U.S. Patent No. 7,047,196	
[19A(iii)] confirming said displayed financial consequence from said user site to create a financial commitment; and	 <p>In the figure above, Comcast confirms purchase by displaying to the user “Thank you! Enjoy.” after a user purchases or rents a movie. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>
[19A(iv)] billing said user site based upon said financial commitment.	See Claim 18A(ii) above.
[25] The program system of claim 15,	See Claim 15 above.
[25A] wherein the program step	See Claim 15C(i) above.

Claim Language from U.S. Patent No. 7,047,196	
responding to said identified speech content from said associated user site is comprised, for at least one of said user sites, of the program step of:	
[25A(i)] responding to said speech content identified as to said user site based upon natural language to create a speech content response of said speech [contents] identified as to said user site.	Comcast responds to identified speech content based upon natural language to create a speech content response. See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download ("Once the ASR module processes the user's request, the output (i.e. the request in text form) is sent on to the NLP module. NLP starts by parsing the text, using the same grammar used by ASR . . . The NLP module uses the resulting parse tree to interpret the utterance, inferring the semantics from the rules used and the tags assigned in the parsing process. . . . Once it has identified all the pieces of the request, the NLP module assembles them into a request structure that is passed on to the AR module." See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-wins-emmy-award-for-x1-voice-remote-technology ("Comcast technologists built and deployed the Natural Language Processing platform that allows the remote to deliver such precise results.")
[26] The program system of claim 15,	See Claim 15 above.
[26A] wherein the program step processing said multiplicity of said received speech channels is further comprised, for at least one of said user sites, of the program step of:	See Claim 15B(i) above.
[26A(ii)] processing said received speech channels from said user site based upon natural language for said user site to create said speech content identified as to said user site.	Comcast performs processing on received speech channels based upon natural language to create identified speech content. See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (" What voice commands can I use? The voice remote from XFINITY supports natural language speech recognition, so you can search by keyword as well as by phrase. Use voice control to change channels, search for shows, get recommendations and more.")

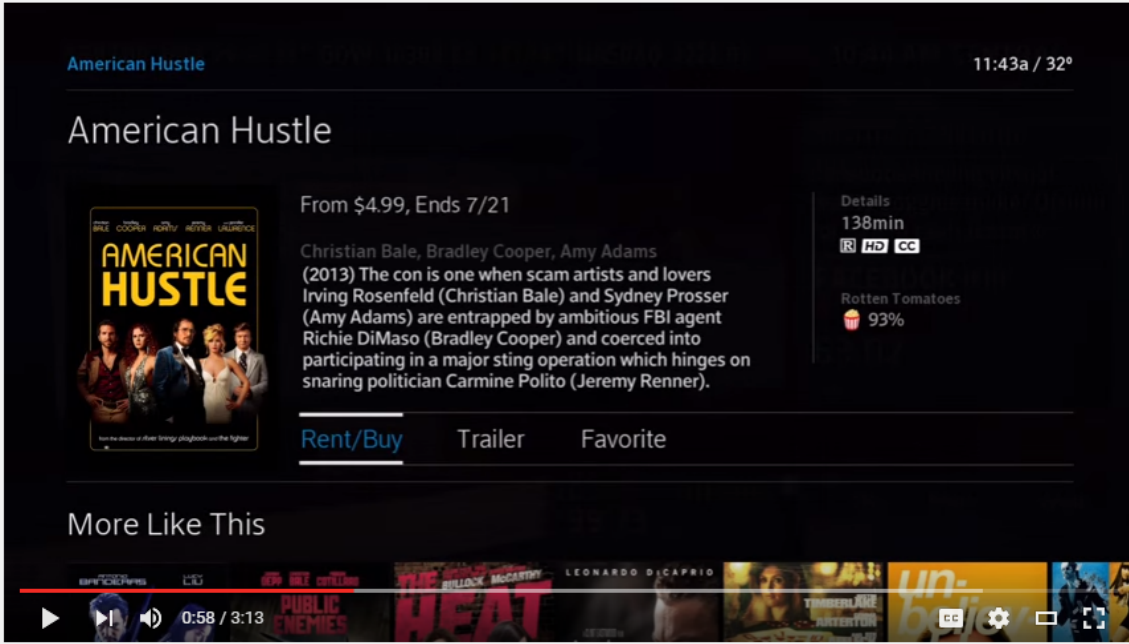
Claim Language from U.S. Patent No. 7,047,196	
	See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote ("Using natural language processing (NLP) coupled with advanced entertainment metadata and relevancy algorithms, X1 easily gets you to what you want.")
[27] A system supporting speech recognition in a network, said system comprising:	Comcast supports speech recognition in a network as per the claim elements below. See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-offers-voice-control-on-the-x1-remote-control-app ("Now, customers can use voice commands to access the X1 platform guide, giving them more ways to discover content, including changing channels by network name, searching for program titles, sports teams and actors, as well as browsing various categories in the Xfinity On Demand menu.")
[27A] a speech recognition system coupled to a wireline node in said network for receiving a back channel from a multiplicity of user sites coupled to said network, further comprising	Comcast includes a speech recognition system coupled to a wireline node in a network for receiving a back channel from a multiplicity of user sites. See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments ("Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.") See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.") See, e.g., http://corporate.comcast.com/comcast-voices/bello-new-voice-remote-now-speaks-minionese ("The rollout of our new voice remote is off to a fast, fun start. Tens of thousands of people are talking into their remote each week to find the shows and movies they love, and we've already added new search features, like movie quotes, to make the experience even better. So far, X1 users have talked into their remote 8 million times.")
[27A(i)] a back channel receiver, for receiving said back channel to create a received back channel;	Comcast includes a backchannel receiver for receiving the back channel and creating a received back channel. See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD

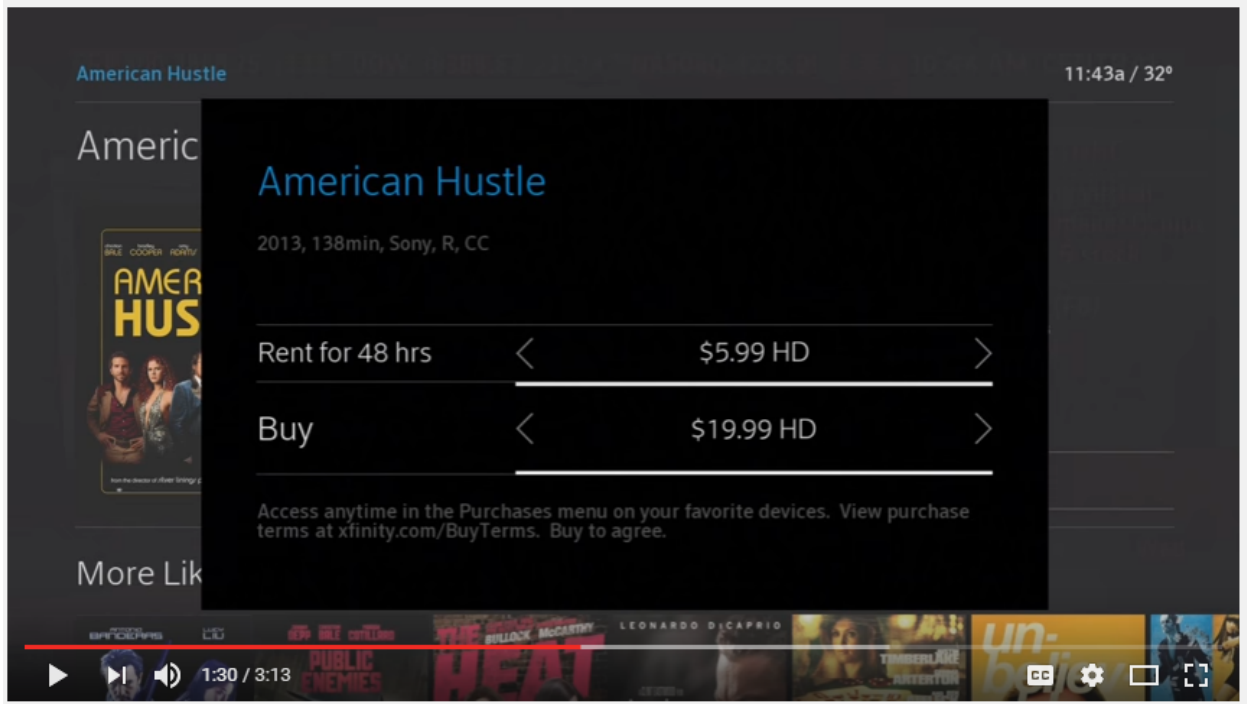
Claim Language from U.S. Patent No. 7,047,196	
	<p>and other video services as well as telephone traffic.”)</p> <p>See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote (“From a technology perspective, the remote records sound from a microphone when the Mic button is held down and then uses voice-over-RF4CE™ ZigBee® technology to compress and transmit that recording over a low bandwidth link to the X1 platform.”)</p>
<p>[27A(ii)] a speech channel partitioner, for partitioning said received back channel into a multiplicity of received identified speech channels; and</p>	<p>Comcast partitions the received back channel comprising signals from multiple customers.</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast’s headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.”)</p> <p>See, e.g., http://corporate.comcast.com/comcast-voices/bello-new-voice-remote-now-speaks-minionese (“The rollout of our new voice remote is off to a fast, fun start. Tens of thousands of people are talking into their remote each week to find the shows and movies they love, and we’ve already added new search features, like movie quotes, to make the experience even better. So far, X1 users have talked into their remote 8 million times.”)</p>
<p>[27A(iii)] a processor network executing a program system comprised of program steps residing in memory accessibly coupled to at least one computer in said processor network;</p>	<p>Comcast processors perform program steps and use memory to store program instructions and dictionaries and grammar for speech recognition.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (“What happens to my voice commands after I speak them into the remote? After you speak into the remote, the voice commands are sent to Comcast and its contracted service provider for processing.</p> <p>See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download (“We built our own application-specific language model, which has two major parts, a pronouncing dictionary and a grammar”)</p>
<p>[27B] wherein said program system is comprised of the program steps of:</p>	<p>See Claim 27A(iii) above.</p>
<p>[27B(i)] processing said multiplicity of said received identified speech channels to create a multiplicity of identified speech content;</p>	<p>Comcast processes received identified speech channels to create identified speech content.</p> <p>See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download (“In order to provide a voice interface, we need to answer three questions: what words did the user speak, what action or information are they requesting, and how do we carry out the action</p>

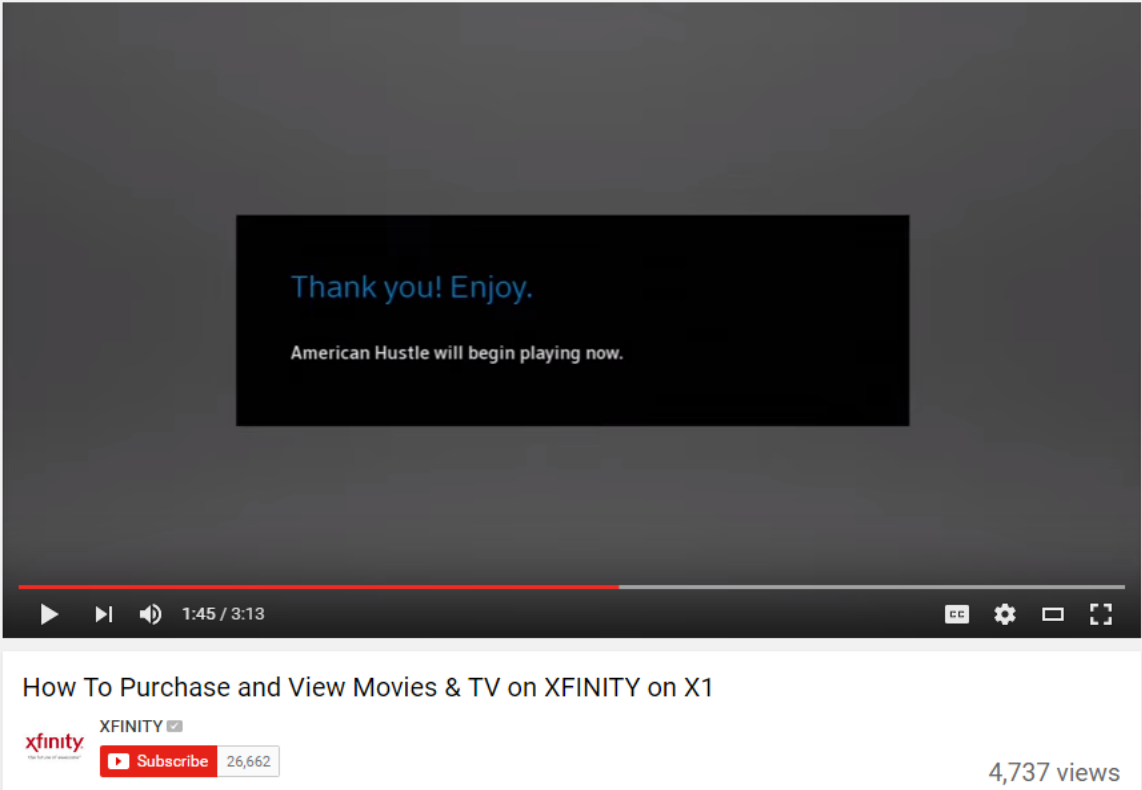
Claim Language from U.S. Patent No. 7,047,196	
	or get the information? Each of these questions is answered by a specific module in V-REX. Automated speech recognition (ASR) identifies the words the user has spoken. Natural language processing (NLP) figures out what action or information has been requested. Action resolution (AR) responds to the request.”)
[27B(ii)] responding to said identified speech content to create an identified speech content response, for each of said multiplicity of said identified speech contents; and	Comcast responds to speech content and creates a unique corresponding speech content response for each query. See, e.g., http://www.masslive.com/business-news/index.ssf/2015/05/comcast_introduces_voice-activated_remot.html (“‘Watch Modern Family.’ The on-screen menu changed to a display of ‘Modern Family’ episodes, not only the first-run episodes on ABC, but reruns, available on-demand and episodes stored on the systems’ DVR. . . . ‘What time is the Red Sox Game’ displays a short preview of the game and tells you if its [sic] on NESN, or an exclusive ESPN or a Fox broadcast.”) See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download (“The AR module receives the request structure built by the NLP module and attempts to carry out the request. This involves constructing and sending an appropriate query to Comcast’s REX search system. REX is the system we use to index and search through the complete set of programs available on broadcast and cable channels and on demand. . . . The results returned by REX are packaged up along with an indication of the request type and the output of the ASR module and sent back to the client app.”)
[27C] wherein said network supports at least one of the collection comprising:	Comcast supports information delivery. See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast’s headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.”)
[27C(i)] cable television delivery to said multiplicity of user sites; and	Comcast delivers cable television and video to a multiplicity of user sites. See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (“ <i>What voice commands can I use?</i> The voice remote from XFINITY supports natural language speech recognition, so you can search by keyword as well as by phrase. Use voice control to change channels, search for shows, get recommendations and more.”) See, e.g., http://corporate.comcast.com/comcast-voices/bello-new-voice-remote-now-speaks-minionese (“The rollout of our new voice remote is off to a fast, fun start. Tens of thousands of people

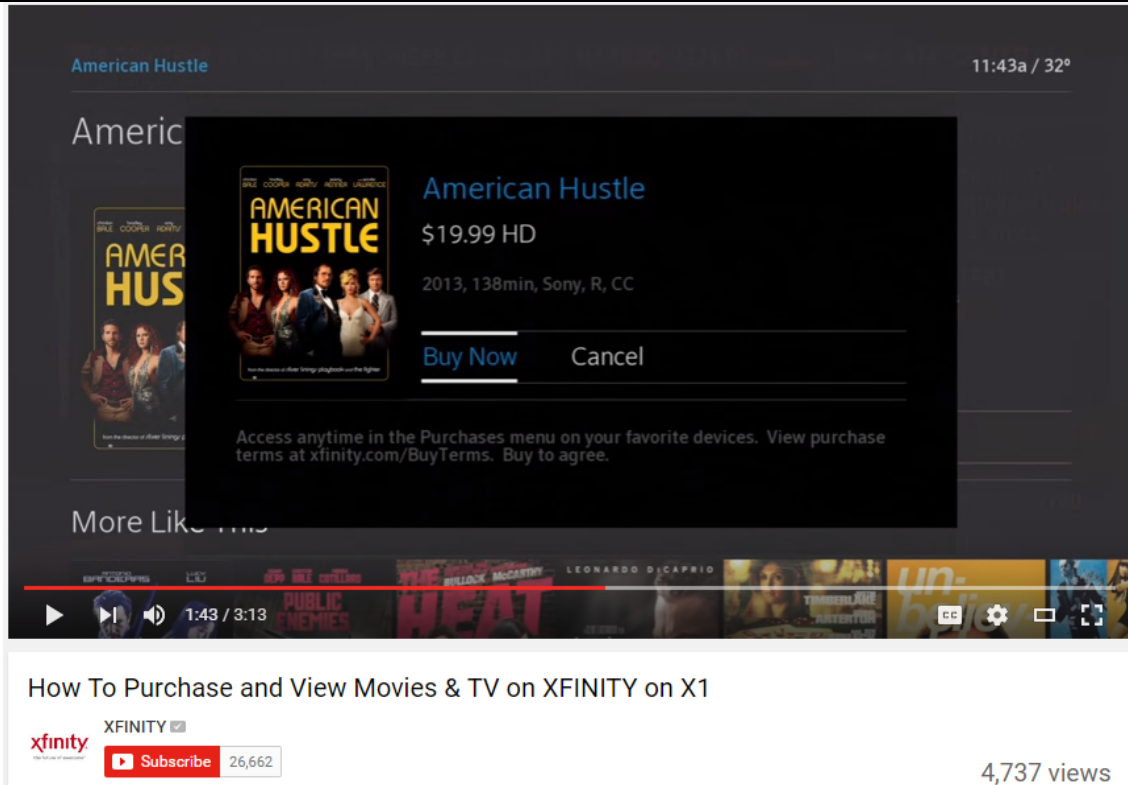
Claim Language from U.S. Patent No. 7,047,196	
	are talking into their remote each week to find the shows and movies they love, and we've already added new search features, like movie quotes, to make the experience even better. So far, X1 users have talked into their remote 8 million times.")
[27C(ii)] video delivery to said multiplicity of user sites.	See Claim 27C(i) above.
[28] The system of claim 27,	See Claim 27 above.
[28A] wherein at least one of said identified speech channels has an associated user site; and	Comcast associates speech channels with an associated user site by pairing an XFINITY remote with a TV box such that the speech input through the XFINITY remote is transmitted to a paired set-top box and then further transmitted to a speech recognition system. See, e.g., https://www.xfinity.com/support/cable-tv/remote-program-the-xr2-or-xr5-to-aim-anywhere/ ("Your XFINITY remote can be paired with XFINITY X1 TV boxes, allowing you to control the TV box even when it is placed out of sight, such as in an entertainment center or in another room (up to 50 feet away). XFINITY remotes can be identified by the model number on the back panel or within the battery compartment of the remote. Note: Once your remote is successfully paired with a TV box, it will not control any other TV box until paired with the other TV box. XFINITY remotes can only be paired with one TV box at a time.")
[28B] wherein partitioning said received back channel is further comprised of:	See Claim 27A(ii) above.
[28B(i)] partitioning said received back channel into a multiplicity of said received identified speech channels from said associated user site;	Each XFINITY remote can be paired to an X1 TV box, and a backchannel of a multiplicity of identified speech channels from an associated user site can be partitioned. See Claim 27A(ii) and 28A above.
[28C] wherein the program step processing said multiplicity of said received identified speech channels is further comprised of the program step of:	See Claim 27B(i) above.
[28C(i)] processing said multiplicity	Comcast processes identified speech channels from associated user sites to create identified speech

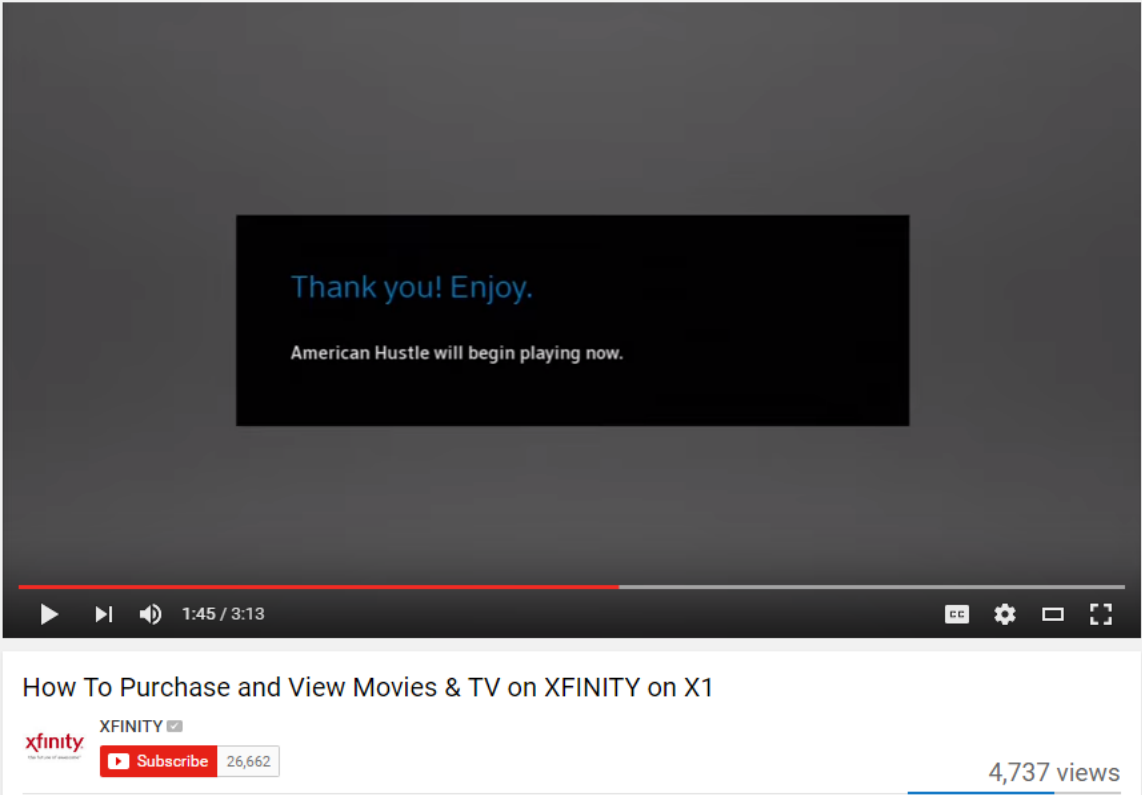
Claim Language from U.S. Patent No. 7,047,196	
of said received identified speech channels from said associated user site to create a multiplicity of said identified speech content; and	content. See Claim 27B(i) and 28A above.
[28D] wherein the program step responding to said identified speech content is further comprised of the program step of:	See Claim 27B(ii) above.
[28D(i)] responding to said identified speech content from said associated user site to create said identified speech content response for said associated user site.	Comcast processes identified speech content from associated user sites to create identified speech content response for the associated user site. See Claims 27B(ii) and 28A above.
[30] The system of claim 28,	See Claim 28 above.
[30A] wherein the program step responding to said identified speech [contents] from said associated user site is comprised of the program steps of:	See Claim 28D(i) above.
[30A(i)] processing said identified speech content response to create said identified user site response; and	Comcast can process an identified speech content response into a function performed by the set-top box (identified user site response) such as the set-top box changing the channel. <i>See, e.g.,</i> http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b ("To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: 'ESPN.' 'Watch Disney Junior.' Watch channel 810.' 'Turn on Discovery Channel.'")
[30A(ii)] sending said identified user site response to said identified user site.	See Claim 30A(i) above.

<p>Claim Language from U.S. Patent No. 7,047,196</p>	
<p>[31] The system of claim 28,</p>	<p>See Claim 28 above.</p>
<p>[31(A)] wherein the program step responding to said identified speech [contents] from said associated user site is comprised of the program steps of:</p>	<p>See Claim 28D(i) above.</p>
<p>[31A(i)] assessing said speech content response identified as to said user site to create a financial consequence identified as to said user site; and</p>	<div>  <p>The screenshot shows a Comcast Xfinity user interface. At the top, it says 'American Hustle' with a timestamp '11:43a / 32°'. Below this, the movie title 'American Hustle' is prominently displayed. To the left is a movie poster for 'AMERICAN HUSTLE' featuring the main cast. To the right, it says 'From \$4.99, Ends 7/21'. Below that is a synopsis: 'Christian Bale, Bradley Cooper, Amy Adams (2013) The con is one when scam artists and lovers Irving Rosenfeld (Christian Bale) and Sydney Prosser (Amy Adams) are entrapped by ambitious FBI agent Richie DiMaso (Bradley Cooper) and coerced into participating in a major sting operation which hinges on snaring politician Carmine Polito (Jeremy Renner)'. There are buttons for 'Rent/Buy', 'Trailer', and 'Favorite'. Below the movie details is a 'More Like This' section with a video player showing a trailer for 'Public Enemies'. At the bottom, there is a section titled 'How To Purchase and View Movies & TV on XFINITY on X1' with an Xfinity logo and a 'Subscribe' button showing 26,662 subscribers. The video player shows a progress bar at 0:58 / 3:13. The bottom right corner of the screenshot shows '4,737 views'.</p> </div> <p>In the figure above, Comcast can respond to a user’s request by offering the user an opportunity to “rent/buy” the requested movie. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

<p>Claim Language from U.S. Patent No. 7,047,196</p>	
	 <p>The screenshot displays the Xfinity interface for the movie 'American Hustle'. At the top, the movie title 'American Hustle' is shown in blue text, followed by '2013, 138min, Sony, R, CC'. Below this, there are two pricing options: 'Rent for 48 hrs' for '\$5.99 HD' and 'Buy' for '\$19.99 HD'. Each option has left and right arrow navigation buttons. A note states: 'Access anytime in the Purchases menu on your favorite devices. View purchase terms at xfinity.com/BuyTerms. Buy to agree.' Below the pricing section, there is a 'More Like' section with a horizontal scroll bar showing other movie posters including 'Public Enemies', 'Heat', 'Leonardo DiCaprio', 'Timberlake', and 'un-believable'. At the bottom of the interface, there is a video player showing a progress bar at 1:30 / 3:13. Below the video player, the video title 'How To Purchase and View Movies & TV on XFINITY on X1' is displayed, along with the Xfinity logo, a 'Subscribe' button, and a subscriber count of 66,731. The view count '5,880 views' is shown on the right side of the video player area.</p> <p>In the figure above, the price for renting or buying is presented to the user. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

<p>Claim Language from U.S. Patent No. 7,047,196</p>	
<p>[31A(ii)] billing said user site based upon said financial consequence.</p>	 <p>The screenshot shows a video player interface. The video frame displays a dark background with the text "Thank you! Enjoy." in blue and "American Hustle will begin playing now." in white. Below the video frame is a progress bar and playback controls. The video title "How To Purchase and View Movies & TV on XFINITY on X1" is visible, along with the Xfinity logo, a "Subscribe" button, and the view count "4,737 views".</p> <p>In the figure above, after a user selects to “rent/buy” a movie or TV show, “Thank you! Enjoy.” is displayed to the user, and the movie is billed to the user’s Comcast account. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>
<p>[32] The system of claim 28,</p>	<p>See Claim 28 above.</p>
<p>[32A] wherein the program step responding to said identified speech content from said associated user site is comprised of the program</p>	<p>See Claim 28D(i) above.</p>

<p>Claim Language from U.S. Patent No. 7,047,196</p>	
<p>steps of:</p>	
<p>[32A(i)] assessing said speech response to create a financial consequence identified as to said user site;</p>	<p>See Claim 31A(i) above.</p>
<p>[32A(ii)] displaying said financial consequence to create a displayed financial consequence at said user site;</p>	<div>  <p>The screenshot shows a Comcast Xfinity interface. At the top, it says 'American Hustle' and '11:43a / 32°'. Below this, there's a movie poster for 'AMERICAN HUSTLE' with the cast: Amy Adams, Bradley Pitt, Jennifer Lawrence, and others. To the right of the poster, it says 'American Hustle \$19.99 HD 2013, 138min, Sony, R, CC'. Below this, there are two buttons: 'Buy Now' and 'Cancel'. At the bottom of the movie card, it says 'Access anytime in the Purchases menu on your favorite devices. View purchase terms at xfinity.com/BuyTerms. Buy to agree.' Below the movie card, there's a video player showing a scene from 'American Hustle' with a progress bar at 1:43 / 3:13. Below the video player, there's a title 'How To Purchase and View Movies & TV on XFINITY on X1' and a Comcast logo. To the right of the Comcast logo, there's a 'Subscribe' button and a view count of '26,662'. At the bottom right, it says '4,737 views'.</p> </div> <p>In the figure above, after a user has decided to buy a movie, Comcast asks the user to confirm whether the user wants to buy the movie now for a specified price or cancel the transaction. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

Claim Language from U.S. Patent No. 7,047,196	
<p>[32A(iii)] confirming said displayed financial consequence from said user site to create a financial commitment; and</p>	 <p>In the figure above, Comcast confirms purchase by displaying to the user “Thank you! Enjoy.” after a user purchases or rents a movie. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>
<p>[32A(iv)] billing said user site based upon said financial commitment.</p>	<p>See Claim 31A(ii) above.</p>
<p>[38] The system of claim 28,</p>	<p>See Claim 28 above.</p>
<p>[38A] wherein the program step responding to said identified speech</p>	<p>See Claim 28D(i) above.</p>

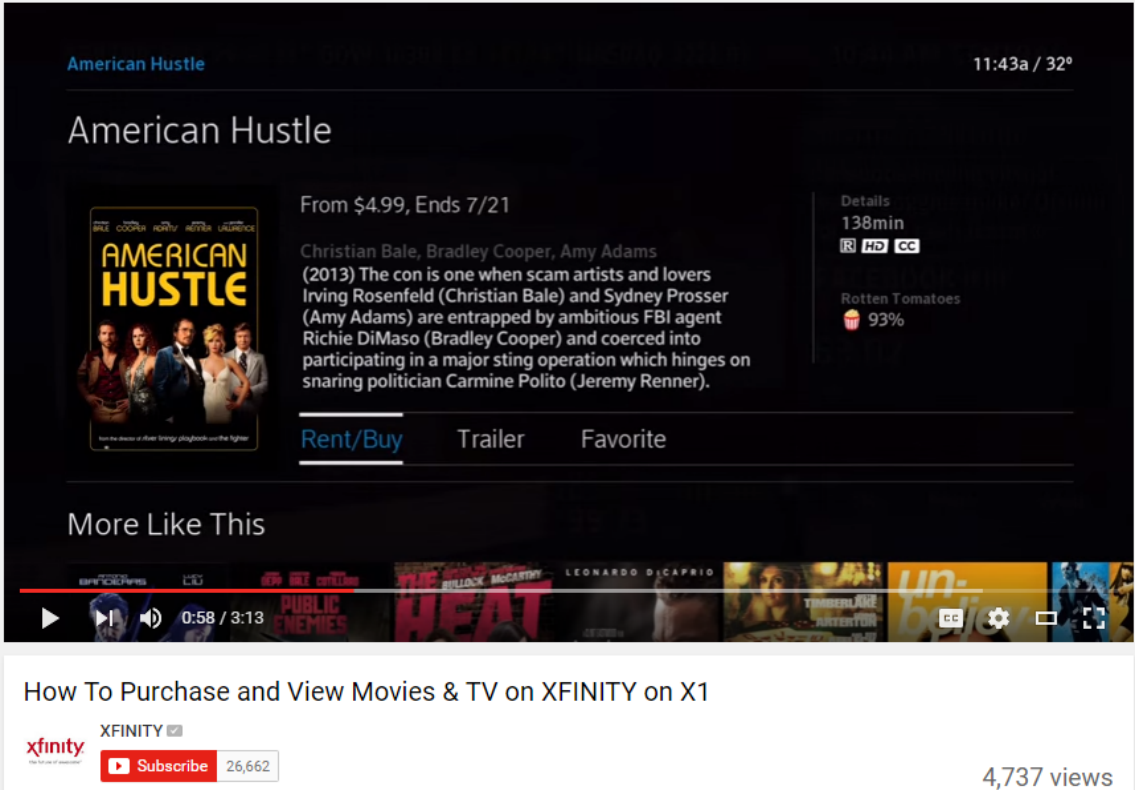
Claim Language from U.S. Patent No. 7,047,196	
content from said associated user site is comprised, for at least one of said user sites, of the program step of:	
[38A(i)] responding to said speech content identified as to said user site based upon natural language to create a speech content response of said speech contents identified as to said user site.	Comcast responds to identified speech content based upon natural language to create a speech content response. See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download ("Once the ASR module processes the user's request, the output (i.e. the request in text form) is sent on to the NLP module. NLP starts by parsing the text, using the same grammar used by ASR . . . The NLP module uses the resulting parse tree to interpret the utterance, inferring the semantics from the rules used and the tags assigned in the parsing process. . . . Once it has identified all the pieces of the request, the NLP module assembles them into a request structure that is passed on to the AR module.") See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-wins-emmy-award-for-x1-voice-remote-technology ("Comcast technologists built and deployed the Natural Language Processing platform that allows the remote to deliver such precise results.")
[39] The system of claim 28,	See Claim28 above.
[39A] wherein the program step processing said multiplicity of said received speech channels is further comprised, for at least one of said user sites, of the program step of:	See Claim 28C(i) above.
[39A(i)] processing said received speech channels from said user site based upon natural language for said user site to create said speech content identified as to said user site.	Comcast performs processing on received speech channels based upon natural language to create identified speech content. See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (" What voice commands can I use? The voice remote from XFINITY supports natural language speech recognition, so you can search by keyword as well as by phrase. Use voice control to change channels, search for shows, get recommendations and more.") See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote ("Using natural language processing (NLP) coupled with advanced entertainment

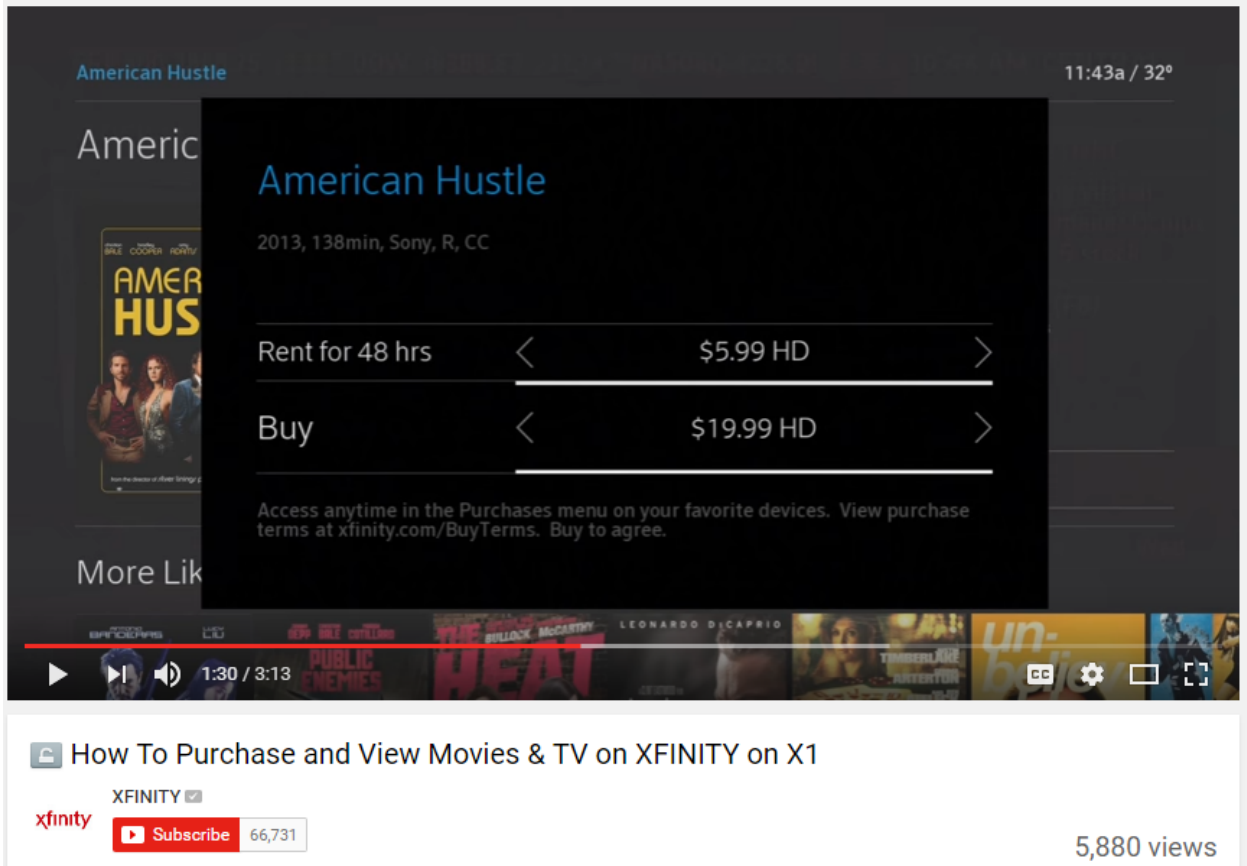
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	metadata and relevancy algorithms, X1 easily gets you to what you want.”)
[40] The system of claim 28,	See Claim 28 above.
[40A] wherein said network includes a wired residential broadband network servicing at least part of said multiplicity of user sites.	Comcast user sites are connected to the Comcast network at least by coaxial cable or fiber infrastructure. See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast’s headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.”) See, e.g., http://fiberavailability.com/news/comcast-bringing-2-gig-fiber-internet-speeds-18-million-homes-year (“Today Comcast announced they will be rolling out 2-Gigabits-per-second (Gbps) speeds over fiber to 18 million homes by years end.”)
[41] The system of claim 40,	See Claim 40 above.
[41A] wherein said wired residential broadband network is a fiber-to-the-curb residential broadband network.	Comcast operates a Hybrid Fiber Coaxial cable (HFC) network. See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“From the headend and hub, Comcast uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the NSCC area, where forward (or downstream) signals are transformed from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node.”)
[42] The system of claim 40,	See Claim 40 above.
[42A] wherein said wired residential broadband network is a fiber-to-the-home residential broadband network.	Comcast has deployed fiber-to-the home service. See, e.g., https://arstechnica.com/business/2016/02/comcast-2gbps-fiber-available-to-18m-homes-gigabit-cable-coming-soon/ (“While Comcast's fiber-to-the-home service—known as Gigabit Pro—delivers 2Gbps both downstream and upstream, it won't be available throughout Comcast's territory. Comcast says it does plan to bring gigabit cable to ‘virtually’ its entire territory over the next two or three years”)

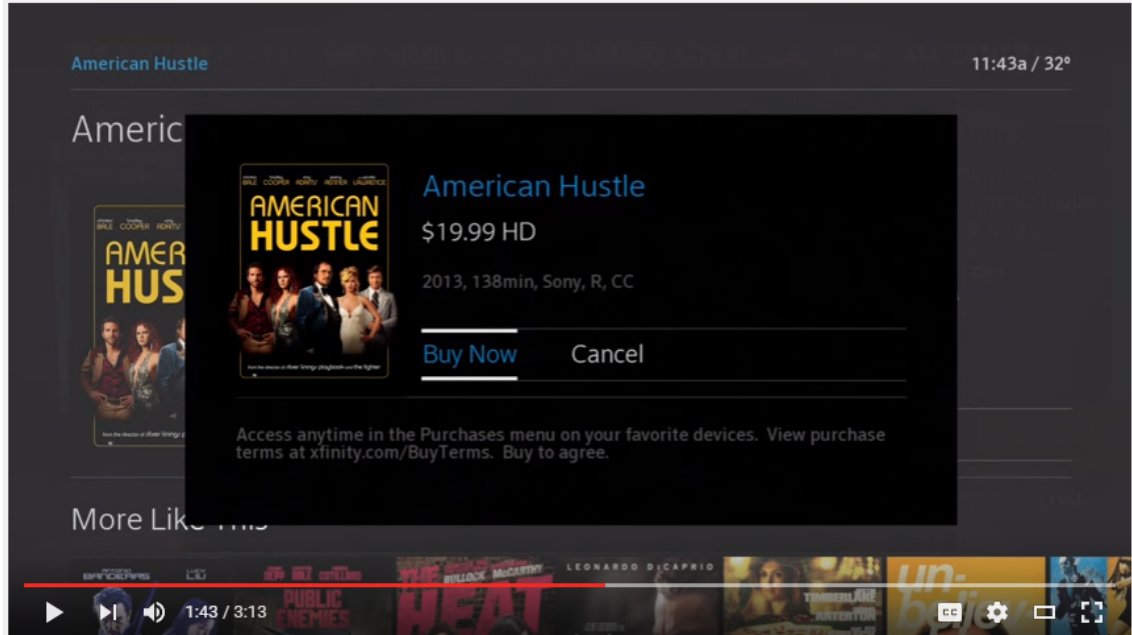
Claim Language from U.S. Patent No. 7,047,196	
<p>[53] A method of operating at least part of a speech recognition system coupled to a wireline node in a network, comprising the steps of:</p>	<p>Comcast performs the method of operating at least part of a speech recognition system coupled to a wireline node in a network as per the claim elements below.</p> <p>See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-offers-voice-control-on-the-x1-remote-control-app ("Now, customers can use voice commands to access the X1 platform guide, giving them more ways to discover content, including changing channels by network name, searching for program titles, sports teams and actors, as well as browsing various categories in the Xfinity On Demand menu.")</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.")</p>
<p>[53A] processing a multiplicity of received identified speech channels to create a multiplicity of identified speech content; and</p>	<p>Comcast processes a multiplicity of received identified speech channels to create a multiplicity of identified speech content.</p> <p>See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download ("In order to provide a voice interface, we need to answer three questions: what words did the user speak, what action or information are they requesting, and how do we carry out the action or get the information? Each of these questions is answered by a specific module in V-REX. Automated speech recognition (ASR) identifies the words the user has spoken. Natural language processing (NLP) figures out what action or information has been requested. Action resolution (AR) responds to the request.")</p>
<p>[53B] responding to said identified speech content to create an identified speech content response that is unique to each of said multiplicity of identified speech contents;</p>	<p>Comcast responds to speech content and creates a unique corresponding speech content response for each query.</p> <p>See, e.g., http://www.masslive.com/business-news/index.ssf/2015/05/comcast_introduces_voice-activated_remot.html ("'Watch Modern Family.' The on-screen menu changed to a display of 'Modern Family' episodes, not only the first-run episodes on ABC, but reruns, available on-demand and episodes stored on the systems' DVR. . . . 'What time is the Red Sox Game' displays a short preview of the game and tells you if its [sic] on NESN, or an exclusive ESPN or a Fox broadcast.")</p> <p>See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download ("The AR module receives the request structure built by the NLP module and attempts</p>

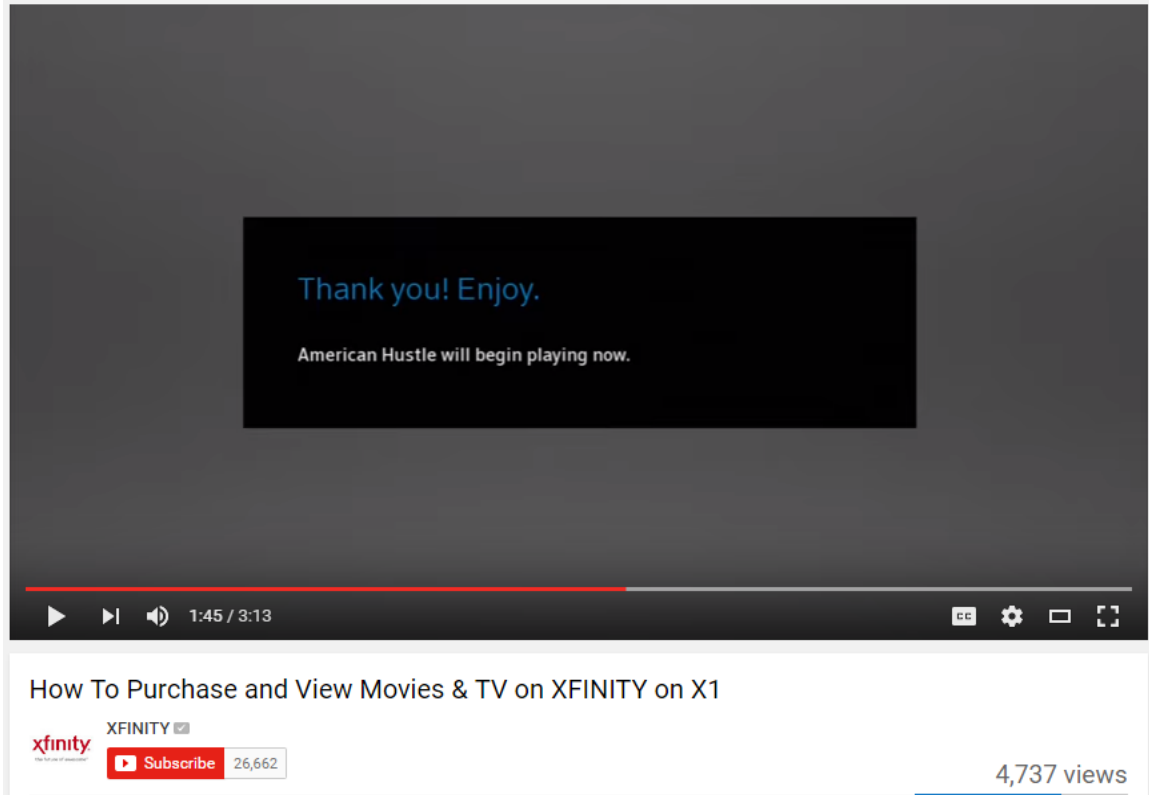
<p>Claim Language from U.S. Patent No. 7,047,196</p>	
	<p>to carry out the request. This involves constructing and sending an appropriate query to Comcast's REX search system. REX is the system we use to index and search through the complete set of programs available on broadcast and cable channels and on demand. . . . The results returned by REX are packaged up along with an indication of the request type and the output of the ASR module and sent back to the client app.")</p>
<p>[53C] wherein said speech recognition system is provided said multiplicity of received identified speech channels based upon a received back channel at said wireline node from a multiplicity of user sites coupled to said network;</p>	<p>Data travels to Comcast through a back channel and is received by a receiver to create a received back channel. Comcast then sends a multiplicity of received identified speech channels to a speech recognition system. <i>See, e.g.,</i> http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.") <i>See, e.g.,</i> http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote ("From a technology perspective, the remote records sound from a microphone when the Mic button is held down and then uses voice-over-RF4CE™ ZigBee® technology to compress and transmit that recording over a low bandwidth link to the X1 platform.")</p>
<p>[53D] wherein said network supports at least one of the collection comprising:</p>	<p>Comcast's network supports information delivery. <i>See, e.g.,</i> http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.")</p>
<p>[53D(i)] cable television delivery to said multiplicity of user sites; and</p>	<p>Comcast delivers cable television and video to a multiplicity of user sites. <i>See, e.g.,</i> https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ ("<i>What voice commands can I use?</i> The voice remote from XFINITY supports natural language speech recognition, so you can search by keyword as well as by phrase. Use voice control to change channels, search for shows, get recommendations and more.") <i>See, e.g.,</i> http://corporate.comcast.com/comcast-voices/bello-new-voice-remote-now-speaks-minionese ("The rollout of our new voice remote is off to a fast, fun start. Tens of thousands of people are talking into their remote each week to find the shows and movies they love, and we've already</p>

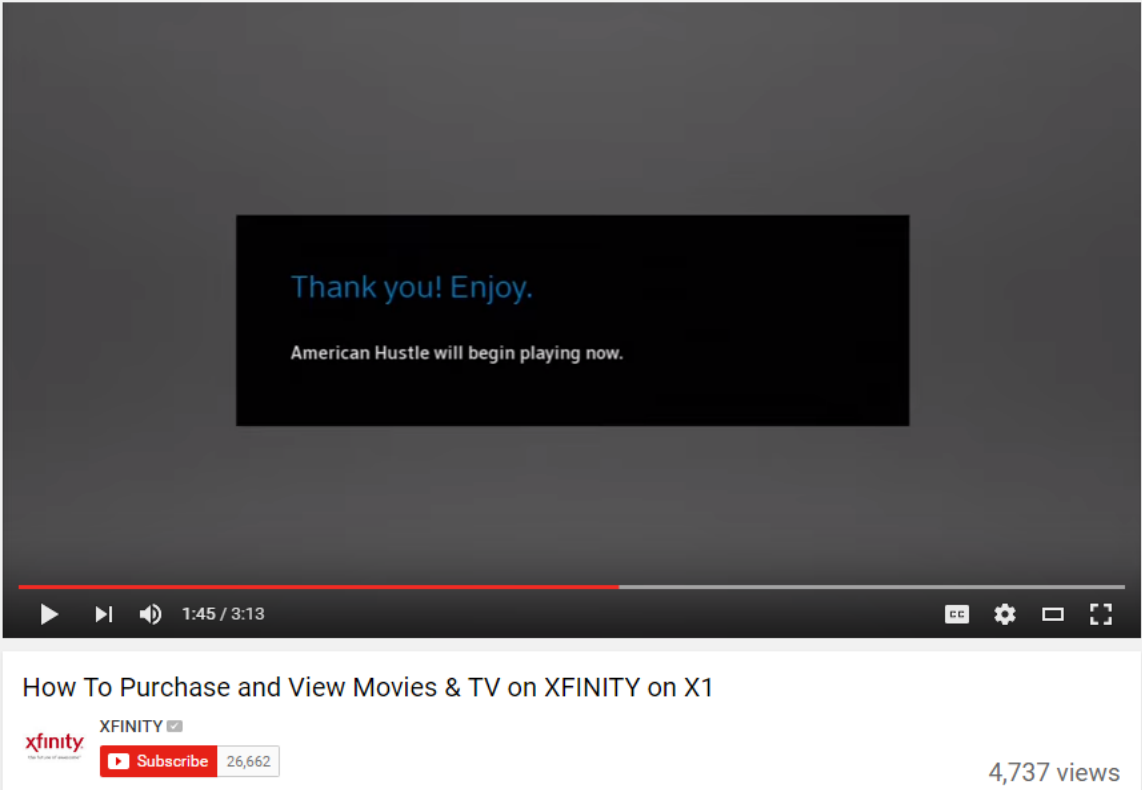
Claim Language from U.S. Patent No. 7,047,196	
	added new search features, like movie quotes, to make the experience even better. So far, X1 users have talked into their remote 8 million times.”)
[53D(ii)] video delivery to said multiplicity of user sites.	See Claim 53D(i) above.
[54] The method of claim 53 ,	See Claim 53 above.
[54A] wherein at least one of said identified speech channels has an associated user site; and	Comcast associates speech channels with an associated user site by pairing an XFINITY remote with a TV box such that the speech input through the XFINITY remote is transmitted to a paired set-top box and then further transmitted to a speech recognition system. See, e.g., https://www.xfinity.com/support/cable-tv/remote-program-the-xr2-or-xr5-to-aim-anywhere/ (“Your XFINITY remote can be paired with XFINITY X1 TV boxes, allowing you to control the TV box even when it is placed out of sight, such as in an entertainment center or in another room (up to 50 feet away). XFINITY remotes can be identified by the model number on the back panel or within the battery compartment of the remote. Note: Once your remote is successfully paired with a TV box, it will not control any other TV box until paired with the other TV box. XFINITY remotes can only be paired with one TV box at a time.”)
[54B] wherein the step processing said multiplicity of said received identified speech channels is further comprised of the step of:	See Claim 53A above.
[54B(i)] processing said multiplicity of said received identified speech channels from said associated user site to create a multiplicity of said identified speech content; and	Comcast processes identified speech channels from associated user sites to create identified speech content. See Claims 53A and 54A above.
[54C] wherein the step responding to said identified speech content is further comprised of the step of:	See Claim 53B above.
[54C(i)] responding to said identified speech content from said	Comcast processes identified speech content from associated user sites to create identified speech content response for the associated user site.

Claim Language from U.S. Patent No. 7,047,196	
associated user site to create said identified speech content response for said associated user site.	See Claims 53B and 54A above.
[55] The method of claim 54 ,	See Claim 54 above.
[55A] wherein the step responding to said identified speech content from said associated user site is comprised of the steps of:	See Claim 54C(i) above.
[55A(i)] assessing said speech response to create a financial consequence identified as to said user site;	

<p>Claim Language from U.S. Patent No. 7,047,196</p>	
	<p>In the figure above, Comcast can respond to a user's request by offering the user an opportunity to "rent/buy" the requested movie.</p> <p>See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>  <p>The screenshot displays a video player interface for the movie 'American Hustle'. The movie title is at the top left, with its release year (2013), duration (138min), and ratings (Sony, R, CC) below it. A central overlay shows two purchase options: 'Rent for 48 hrs' for '\$5.99 HD' and 'Buy' for '\$19.99 HD'. Below these options, a note states: 'Access anytime in the Purchases menu on your favorite devices. View purchase terms at xfinity.com/BuyTerms. Buy to agree.' The video player controls at the bottom show a progress bar at 1:30 / 3:13. Below the player, the video title 'How To Purchase and View Movies & TV on XFINITY on X1' is visible, along with the XFINITY logo, a 'Subscribe' button, and a view count of 5,880 views.</p> <p>In the figure above, the price for renting or buying is presented to the user.</p> <p>See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

<p>Claim Language from U.S. Patent No. 7,047,196</p>	
<p>[55A(ii)] displaying said financial consequence to create a displayed financial consequence at said user site;</p>	 <p>The screenshot shows a video player interface for the movie 'American Hustle'. The movie title is at the top left, and the price '\$19.99 HD' is displayed in the center. Below the price, the movie's runtime '2013, 138min, Sony, R, CC' is shown. A 'Buy Now' button is highlighted with a white underline, and a 'Cancel' button is to its right. Below these buttons, a message states: 'Access anytime in the Purchases menu on your favorite devices. View purchase terms at xfinity.com/BuyTerms. Buy to agree.' The video player controls at the bottom show a progress bar at 1:43 / 3:13. Below the video player, the video title 'How To Purchase and View Movies & TV on XFINITY on X1' is visible, along with the Xfinity logo, a 'Subscribe' button, and the view count '4,737 views'.</p> <p>How To Purchase and View Movies & TV on XFINITY on X1</p> <p>In the figure above, after a user has decided to buy a movie, Comcast asks the user to confirm whether the user wants to buy the movie now for a specified price or cancel the transaction. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

<p>Claim Language from U.S. Patent No. 7,047,196</p>	
<p>[55A(iii)] confirming said displayed financial consequence from said user site to create a financial commitment; and</p>	<div>  <p>The image shows a YouTube video player interface. The video frame displays a dark background with a black rectangular box in the center. Inside the box, the text 'Thank you! Enjoy.' is written in a light blue font, and below it, 'American Hustle will begin playing now.' is written in a smaller white font. Below the video frame, the video title 'How To Purchase and View Movies & TV on XFINITY on X1' is visible, along with the Xfinity logo, a 'Subscribe' button, and the view count '4,737 views'.</p> </div> <p>In the figure above, Comcast confirms purchase by displaying to the user “Thank you! Enjoy.” after a user purchases or rents a movie. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

<p>Claim Language from U.S. Patent No. 7,047,196</p>	
<p>[55A(iv)] billing said user site based upon said financial commitment.</p>	 <p>The screenshot shows a YouTube video player interface. The video frame displays a black background with white text that reads "Thank you! Enjoy." and "American Hustle will begin playing now." Below the video frame, the title "How To Purchase and View Movies & TV on XFINITY on X1" is visible, along with the Xfinity logo, a "Subscribe" button, and the view count "4,737 views". The video progress bar indicates the video is at 1:45 / 3:13.</p> <p>In the figure above, after a user selects to “rent/buy” a movie or TV show, “Thank you! Enjoy.” is displayed to the user, and the movie is billed to the user’s Comcast account. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>
<p>[61] The method of claim 54 ,</p>	<p>See Claim 54 above.</p>
<p>[61A] wherein the step responding to said identified speech content from said associated user site is comprised, for at least one of</p>	<p>See Claim 54C(i) above.</p>

Claim Language from U.S. Patent No. 7,047,196	
said user sites, of the step of:	
[61A(i)] responding to said speech content identified as to said user site based upon natural language to create a speech content response of said speech [contents] identified as to said user site.	Comcast responds to identified speech content based upon natural language to create a speech content response. See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-xfinity/download ("Once the ASR module processes the user's request, the output (i.e. the request in text form) is sent on to the NLP module. NLP starts by parsing the text, using the same grammar used by ASR . . . The NLP module uses the resulting parse tree to interpret the utterance, inferring the semantics from the rules used and the tags assigned in the parsing process. . . . Once it has identified all the pieces of the request, the NLP module assembles them into a request structure that is passed on to the AR module.") See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-wins-emmy-award-for-x1-voice-remote-technology ("Comcast technologists built and deployed the Natural Language Processing platform that allows the remote to deliver such precise results.")
[62] The method of claim 54 ,	See Claim 54 above.
[62A] wherein the step processing said multiplicity of said received speech channels is further comprised, for at least one of said user sites, of the step of:	See Claim 54B(i) above.
[62A(i)] processing said received speech channel from said user site based upon natural language for said user site to create said speech content identified as to said user site.	Comcast performs processing on received speech channels based upon natural language to create identified speech content. See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faqs/ (" What voice commands can I use? The voice remote from XFINITY supports natural language speech recognition, so you can search by keyword as well as by phrase. Use voice control to change channels, search for shows, get recommendations and more.") See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote ("Using natural language processing (NLP) coupled with advanced entertainment metadata and relevancy algorithms, X1 easily gets you to what you want.")
[64] The method of claim 54 ,	See Claim 54 above.

Claim Language from U.S. Patent No. 7,047,196	
[64A] wherein the step responding to said identified speech content from said associated user site is comprised of the steps of:	See Claim 54C(i) above.
[64A(i)] processing said identified speech content response to create said identified user site response; and	Comcast can process an identified speech content response into a function performed by the set-top box (identified user site response) such as the set-top box changing the channel. <i>See, e.g.,</i> http://cdn.comcast.com/~Media/2015/Landing%20Pages/communities/handbook/26-XC-X1-Tips-Voice-Remote.pdf?rev=97e17dde-a823-4d5e-b3b5-c7bc2b57467b ("To change the channel using the Voice Remote from XFINITY, press the Microphone button, which activates voice control, and say something similar to the following voice commands: 'ESPN.' 'Watch Disney Junior.' Watch channel 810.' 'Turn on Discovery Channel.'")
[64A(ii)] sending said identified user site response to said identified user site.	See Claim 64A(i) above.
[65] The method of claim 54 ,	See Claim 54 above.
[65A] wherein the step responding to said identified speech content from said associated user site is comprised of the steps of:	See Claim 54C(i) above.
[65A(i)] assessing said speech content response identified as to said user site to create a financial consequence identified as to said user site; and	See Claim 55A(i) above.
[65A(ii)] billing said user site upon said financial consequence.	See Claim 55A(iv) above.
[66] The method of claim 54 ,	See Claim 54 above.
[66A] wherein each of said identified speech channels has an	Comcast associates speech channels with an associated user site by pairing an XFINITY remote with a TV box such that the speech input through the XFINITY remote is transmitted to a paired set-top box and

Claim Language from U.S. Patent No. 7,047,196	
associated user site.	<p>then further transmitted to a speech recognition system.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/remote-program-the-xr2-or-xr5-to-aim-anywhere/ ("Your XFINITY remote can be paired with XFINITY X1 TV boxes, allowing you to control the TV box even when it is placed out of sight, such as in an entertainment center or in another room (up to 50 feet away). XFINITY remotes can be identified by the model number on the back panel or within the battery compartment of the remote. Note: Once your remote is successfully paired with a TV box, it will not control any other TV box until paired with the other TV box. XFINITY remotes can only be paired with one TV box at a time.")</p>

EXHIBIT C

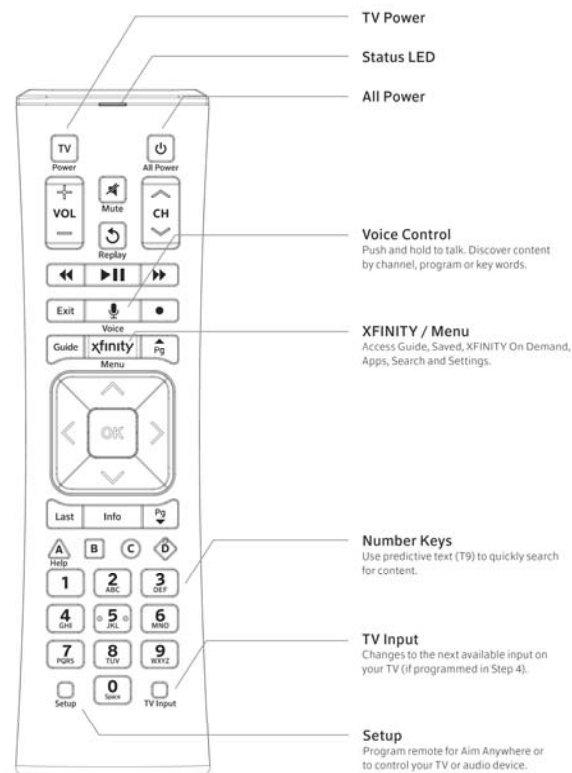
Initial Claim Charts Against Accused Instrumentalities

Claim Language from U.S. Patent No. RE44,326	
<p>[1] A method for speech directed information delivery, comprising:</p>	<p>Comcast performs the method for speech directed information delivery as per the claim elements below. <i>See, e.g.,</i> https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ (“The voice remote (XR11) from XFINITY is a remote control that allows XFINITY X1 customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR.”)</p>
<p>[1A] receiving speech information at a first device, wherein said first device is a wireless device;</p>	<p>Comcast receives speech information at a first wireless device, which can be either a voice remote (XR11) or through the X1 Remote app for iOS and Android. <i>See, e.g.,</i> https://www.xfinity.com/support/cable-tv/xr11-remote-faq/ (“How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.”) <i>See, e.g.,</i> http://www.prnewswire.com/news-releases/comcast-selects-tis-innovative-voice-over-rf4ce-remote-control-technology-to-bring-voice-search-and-navigation-to-your-tv-300015146.html (“Comcast selects TI's innovative voice-over-RF4CE™ remote control technology to bring voice search and navigation to your TV”)</p>
<p>[1B] transferring said speech information from said first wireless device via a first network path to a speech recognition engine; and</p>	<p>Comcast transfers speech information from the first wireless device over a first network path to a speech recognition engine. <i>See, e.g.,</i> http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”) <i>See, e.g.,</i> http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“[T]he nodes receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast’s headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.”)</p>
<p>[1C] at said speech recognition</p>	<p>Comcast recognizes speech information at a speech recognition engine and effects delivery to a second</p>

Claim Language from U.S. Patent No. RE44,326	
engine, recognizing said speech information and effecting information delivery to a second device via a second network path.	<p>device via a second network path.</p> <p>See, e.g., http://www.masslive.com/business-news/index.ssf/2015/05/comcast_introduces_voice-activated_remot.html ("‘Watch Modern Family.’ The on-screen menu changed to a display of ‘Modern Family’ episodes, not only the first-run episodes on ABC, but reruns, available on-demand and episodes stored on the systems’ DVR. . . . ‘What time is the Red Sox Game’ displays a short preview of the game and tells you if its [sic] on NESN, or an exclusive ESPN or a Fox broadcast.”</p> <p>See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“From the headend and hub, Comcast uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the NSCC area, where forward (or downstream) signals are transformed from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node. Forward (or downstream) services include all analog, standard definition (SD) digital and high definition (HD) digital channels including Video-On-Demand (VOD) and 3DTV channels.”)</p>
[2] The method of claim 1,	See Claim 1 above.
[2A] wherein said first network path and said second network path are different paths.	<p>Comcast performs downstream and upstream services using different paths.</p> <p>See e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf (“[R]eturn (or upstream) signals are transmitted between 5 MHz and 42 MHz. The forward system is capable of transmitting signals between 50 MHz to 750 MHz.”)</p>
[3] The method of claim 1,	See Claim 1 above.
[3A] wherein said first device and said second device are different devices.	<p>Comcast’s first device, the X11 voice remote, is a different device than the second device that information is delivered to, including various devices such as a set-top box, a server, a television, and so forth.</p> <p>See, e.g., https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ (“The voice remote (XR11) from XFINITY is a remote control that allows XFINITY X1 customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR.”)</p>
[4] The method of claim 1,	See Claim 1 above.

Claim Language from U.S. Patent No. RE44,326	
[4A] wherein said speech information comprises video search information; and wherein said information delivery comprises video information.	Comcast's speech information is video search information, and Comcast's information delivery comprises video information. <i>See, e.g.,</i> http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote ("The new Xfinity remote with voice control lets viewers search for networks, shows and movies; set DVR recordings; get recommendations; navigate Xfinity On Demand and more. . . . Just press the blue button, say what you want to watch and it appears on screen.")
[5] The method of claim 1,	See Claim 1 above.
[5A] wherein said speech information transfer comprises transferring said speech information in either of a partially recognized state or an unrecognized state.	Comcast transfers speech information in an unrecognized state from the first wireless device over a first network path to a speech recognition engine because speech recognition is not performed until speech information reaches the speech recognition engine. <i>See, e.g.,</i> http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments ("Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.")
[6] The method of claim 1,	See Claim 1 above.
[6A] wherein said wireless device is used for input and output for control purposes, wherein said information delivery is to said second device which comprises a television and STB.	Comcast's X11 voice remote is used both for input and output for control purposes, and Comcast can deliver information to a second device comprising a television and STB.

**Claim Language from U.S. Patent
No. RE44,326**

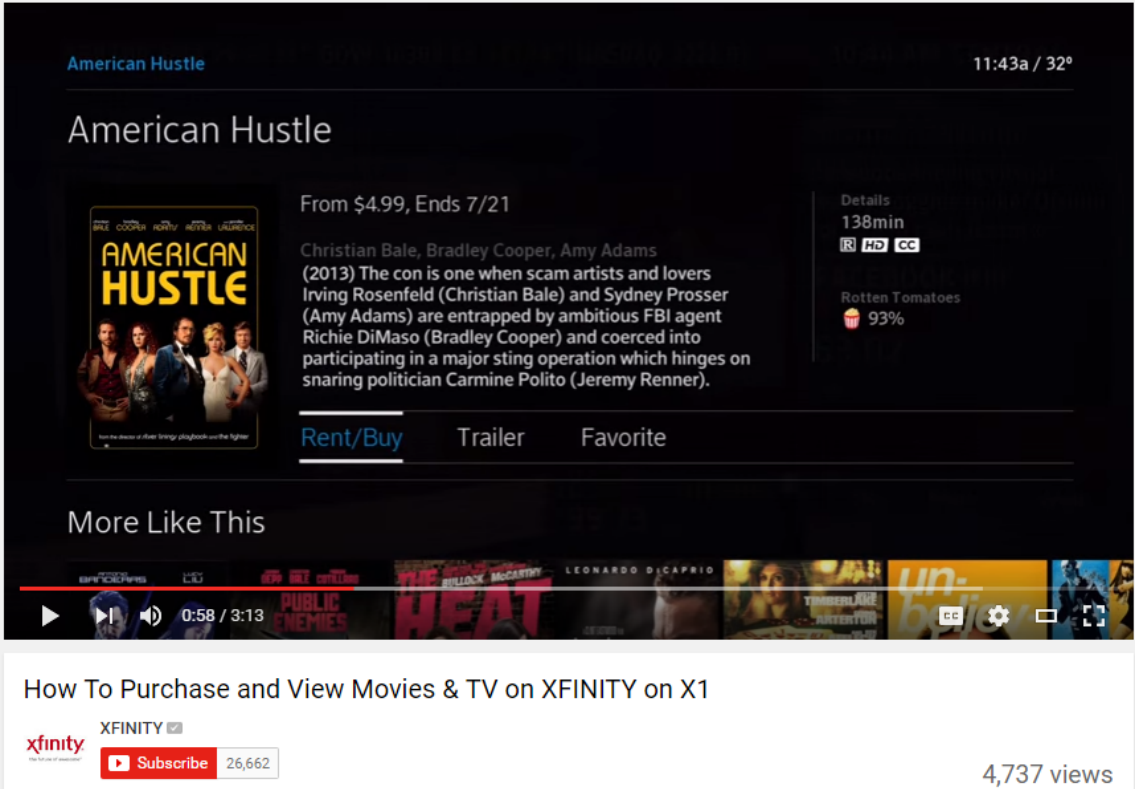


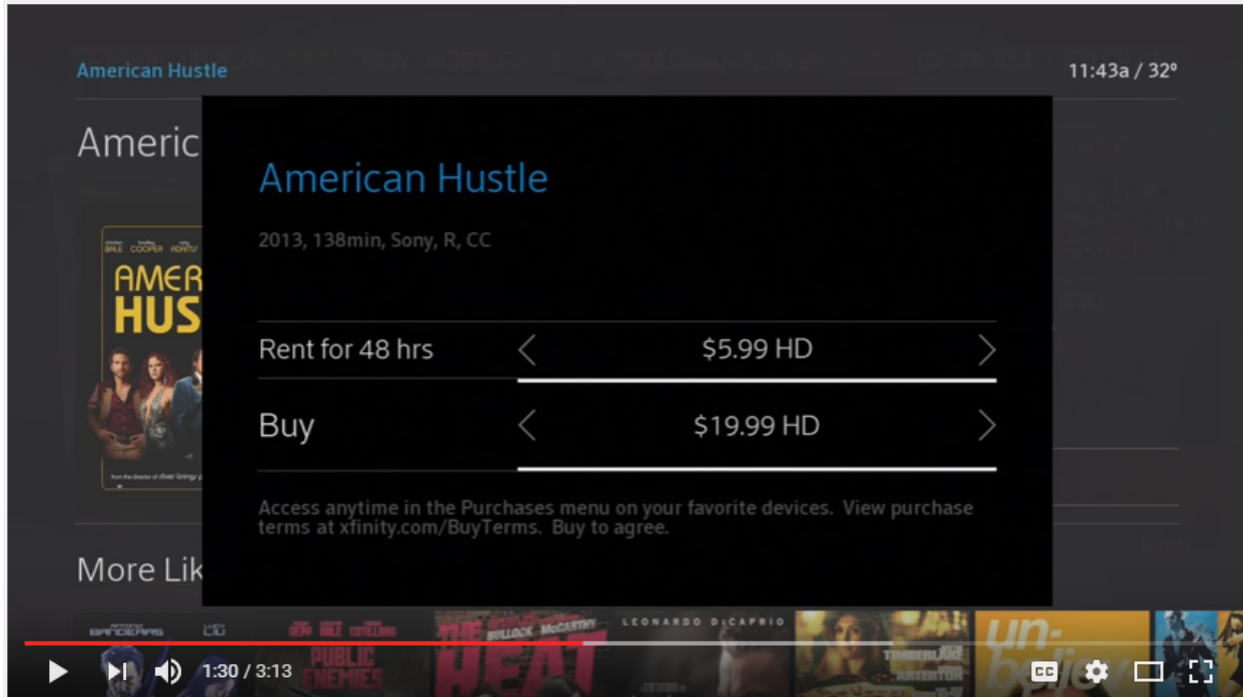
In the figure above, Comcast's X11 voice remote can be used for input for control purposes by depressing buttons and accepting voice input via a microphone to control television search content. Output is produced when the Status LED flashes in response.

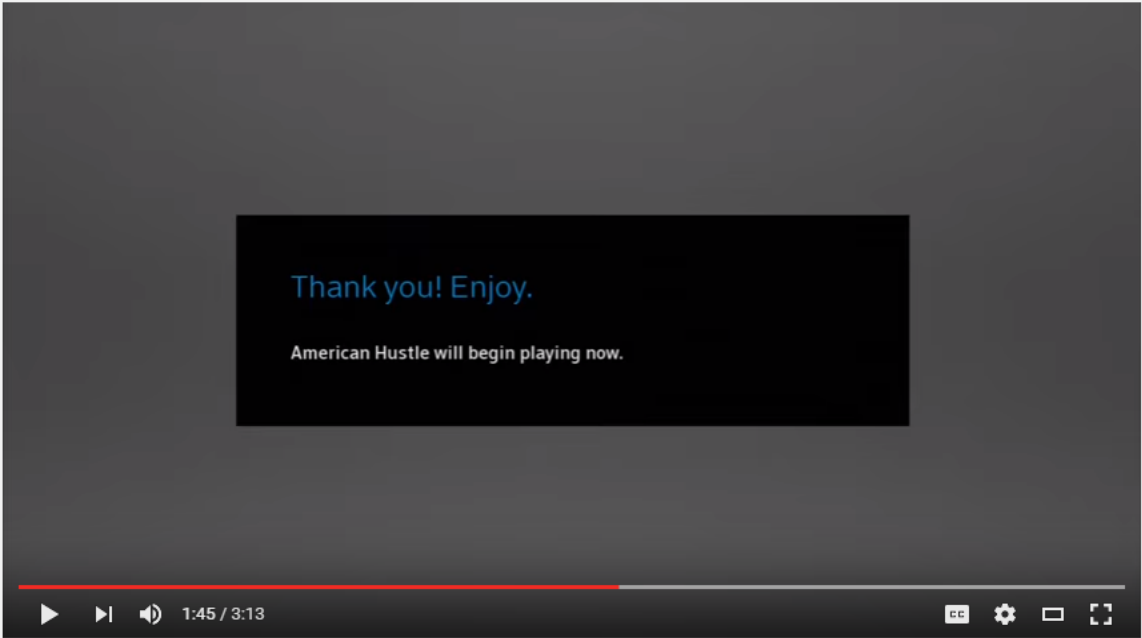



See <https://www.xfinity.com/~media/DA2A42AEDCA241778354739D021381E8.ashx>

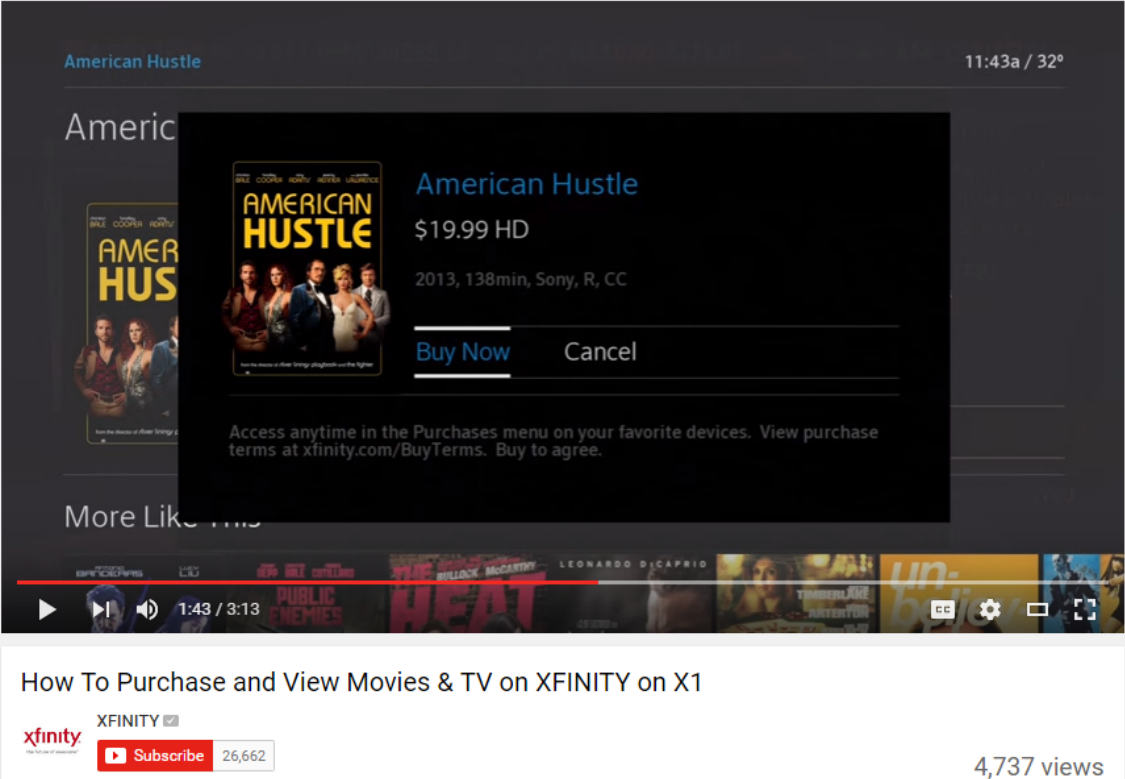
See, e.g., <http://www.philly.com/philly/business/comcast/comcast-plans-for-xfinity-tv-voice-remote-apple-amazon-google-alexa-xfinity-home-echo-samsung-bixby-20171019.html> ("The Comcast X1 cloud – basically 50,000 separate computers – interprets what the subscriber wants to do and performs it, sending the directions back to the home set-top box and television.")

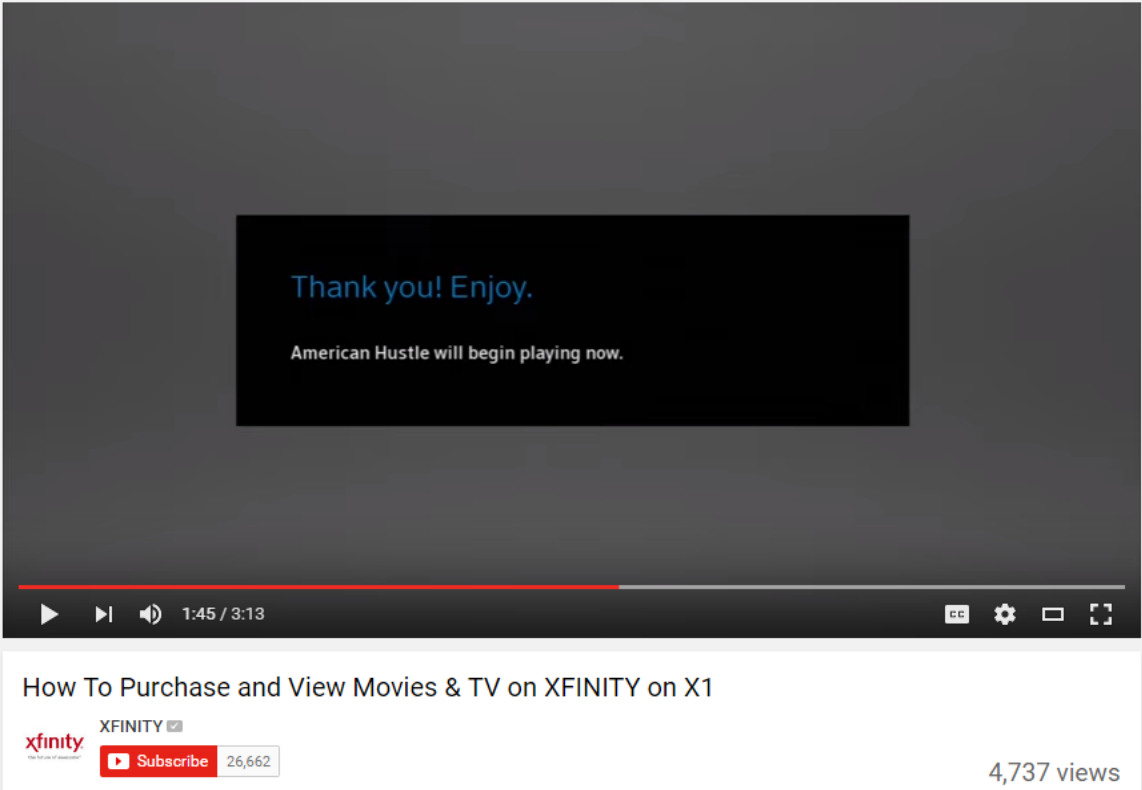
Claim Language from U.S. Patent No. RE44,326	
[7] The method of claim 1, further comprising at least one of the steps of:	See Claim 1 above.
[7A] determining a user site associated with a user of said first device;	Comcast determines a user site associated with a user of a first device because every XFINITY remote can be paired with only one XFINITY set-top box at a time. <i>See, e.g., https://www.xfinity.com/support/cable-tv/remote-program-the-xr2-or-xr5-to-aim-anywhere/</i> ("Your XFINITY remote can be paired with XFINITY X1 TV Boxes, allowing you to control the TV Box even when it is placed out of sight . . . Note: Once your remote is successfully paired with a TV Box, it will not control any other TV Box until paired with the other TV Box. XFINITY remotes can only be paired with one TV Box at a time.")
[7B] determining said associated user site from said recognized speech;	
[7C] determining said associated user site from said recognized speech and a speaker identification library;	
[7D] determining said associated user site from said recognized speech and a speech recognition library; and	
[7E] (E) determining said associated user site from an identification within said speech channel.	
[8] The method of claim 1, further comprising the steps of:	See Claim 1 above.

<p>Claim Language from U.S. Patent No. RE44,326</p>	
<p>[8A] assessing a response identified as to a user device comprising any of said first device and said second device to create a financial consequence; and</p>	 <p>In the figure above, Comcast can respond to a user's request by offering the user an opportunity to "rent/buy" the requested movie.</p> <p>See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

<p>Claim Language from U.S. Patent No. RE44,326</p>	
	 <p>The screenshot shows a video player interface for the movie 'American Hustle'. The title 'American Hustle' is displayed in blue text. Below the title, it says '2013, 138min, Sony, R, CC'. There are two main options: 'Rent for 48 hrs' for '\$5.99 HD' and 'Buy' for '\$19.99 HD'. Below these options, it says 'Access anytime in the Purchases menu on your favorite devices. View purchase terms at xfinity.com/BuyTerms. Buy to agree.' The video player shows a progress bar at 1:30 / 3:13. Below the video player, there is a title 'How To Purchase and View Movies & TV on XFINITY on X1' and a channel name 'XFINITY'. There is a 'Subscribe' button with 66,731 subscribers and a view count of 5,880 views.</p> <p>In the figure above, the price for renting or buying is presented to the user. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

<p>Claim Language from U.S. Patent No. RE44,326</p>	
<p>[8B] billing a user associated with said user device based upon said financial consequence.</p>	 <p>The image shows a YouTube video player interface. The video frame displays a black background with white text that reads "Thank you! Enjoy." and "American Hustle will begin playing now." below it. Below the video frame is a progress bar and standard YouTube controls. The video title is "How To Purchase and View Movies & TV on XFINITY on X1". The channel name is "XFINITY" with a verified badge. There is a "Subscribe" button and a view count of "26,662". The current view count for this video is "4,737 views".</p> <p>How To Purchase and View Movies & TV on XFINITY on X1</p> <p>XFINITY </p> <p>  26,662</p> <p>4,737 views</p> <p>In the figure above, after a user selects to “rent/buy” a movie or TV show, “Thank you! Enjoy.” is displayed to the user, and the movie is billed to the user’s Comcast account. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>
<p>[9] The method of claim 1, further comprising the steps of:</p>	<p>See Claim 1 above.</p>
<p>[9A] assessing a response to create a financial consequence identified with a user site;</p>	<p>See Claim 8A above.</p>

<p>Claim Language from U.S. Patent No. RE44,326</p>	
<p>[9B] communicating said financial consequence to said user;</p>	 <p>In the figure above, the price of renting or buying a movie is displayed on the TV screen. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>
<p>[9C] said user confirming said communicated financial consequence to create a financial commitment; and</p>	<p>After a user has decided to buy a movie, Comcast asks the user to confirm whether the user wants to buy the movie now for a specified price or cancel the transaction. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

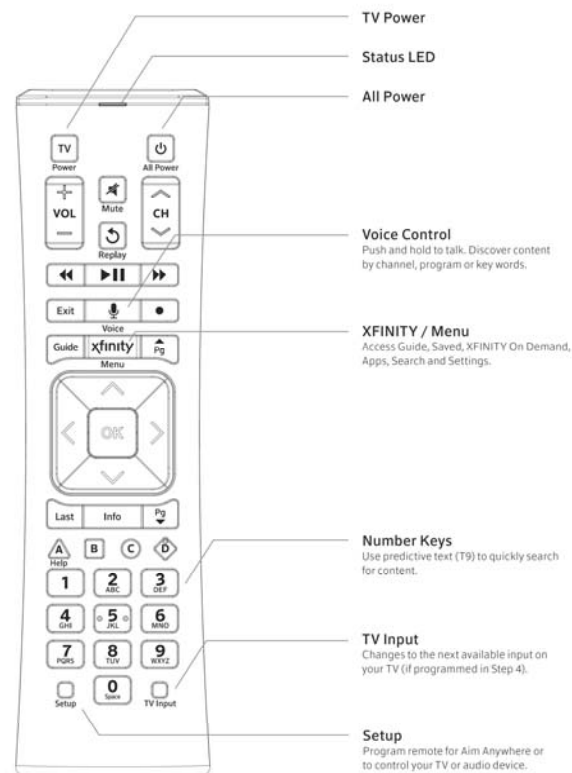
<p>Claim Language from U.S. Patent No. RE44,326</p>	
<p>[9D] billing said user based upon said financial commitment.</p>	 <p>In the figure above, Comcast confirms purchase by displaying to the user “Thank you! Enjoy.” After a user purchases or rents a movie. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>
<p>[11] The method of claim 1, further comprising the steps of</p>	<p>See Claim 1 above.</p>
<p>[11A] responding to recognized speech identified as to said first device based upon natural language</p>	<p>Comcast responds to recognized speech content based upon natural language to create a unique response. See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-</p>

Claim Language from U.S. Patent No. RE44,326	
to create a response uniquely identified with said user device.	xfinity/download ("Once the ASR module processes the user's request, the output (i.e. the request in text form) is sent on to the NLP module. NLP starts by parsing the text, using the same grammar used by ASR . . . The NLP module uses the resulting parse tree to interpret the utterance, inferring the semantics from the rules used and the tags assigned in the parsing process. . . . Once it has identified all the pieces of the request, the NLP module assembles them into a request structure that is passed on to the AR module.")
[12] A method for speech directed information delivery comprising:	Comcast performs the method for speech directed information delivery as per the claim elements below. See, e.g., https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ ("The voice remote (XR11) from XFINITY is a remote control that allows XFINITY X1 customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control their DVR.")
[12A] receiving speech information at a first device, wherein said first device is a wireless device;	Comcast receives speech information at a first wireless device, which can either be a voice remote (XR11) or through the X1 Remote app for iOS and Android. See, e.g., https://www.xfinity.com/support/cable-tv/xr11-remote-faq/ (" How do I use voice control? Press and hold the Microphone (Mic) button while speaking a command into the microphone located at the top of the remote. Be sure to speak one to eight inches away from the microphone. Release the Microphone (Mic) button when you have finished the command.") See, e.g., http://www.prnewswire.com/news-releases/comcast-selects-tis-innovative-voice-over-rf4ce-remote-control-technology-to-bring-voice-search-and-navigation-to-your-tv-300015146.html ("Comcast selects TI's innovative voice-over-RF4CE™ remote control technology to bring voice search and navigation to your TV")
[12B] transferring said speech information in an unrecognized state from said first device via a first network path to a speech recognition engine; and	Comcast transfers speech information in an unrecognized state from the first wireless device over a first network path to a speech recognition engine because speech recognition is not performed until speech information reaches the speech recognition engine. See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments ("Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.") See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("[T]he nodes

Claim Language from U.S. Patent No. RE44,326	
	receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend or hub. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.")
[12C] at said speech recognition engine, recognizing said speech information and effecting information delivery to a second device via a second network path, wherein said second device is capable of displaying electronically coded and propagated moving or still images and playing electronically coded and propagated audio;	Comcast recognizes speech information at a speech recognition engine and effects delivery to a second device capable of displaying images and audio via a second network path. See, e.g., http://www.masslive.com/business-news/index.ssf/2015/05/comcast_introduces_voice-activated_remot.html ("‘Watch Modern Family.’ The on-screen menu changed to a display of ‘Modern Family’ episodes, not only the first-run episodes on ABC, but reruns, available on-demand and episodes stored on the systems’ DVR. . . . ‘What time is the Red Sox Game’ displays a short preview of the game and tells you if its [sic] on NESN, or an exclusive ESPN or a Fox broadcast." See, e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("From the headend and hub, Comcast uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the NSCC area, where forward (or downstream) signals are transformed from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node. Forward (or downstream) services include all analog, standard definition (SD) digital and high definition (HD) digital channels including Video-On-Demand (VOD) and 3DTV channels.")
[12D] wherein said first network path and said second network path are different.	Comcast performs downstream and upstream services using different paths. See e.g., http://www.ctvnorthsuburbs.org/content/franchise/NSCCFinalReport.pdf ("[R]eturn (or upstream) signals are transmitted between 5 MHz and 42 MHz. The forward system is capable of transmitting signals between 50 MHz to 750 MHz.")
[13] The method of claim 12,	See Claim 12 above.
[13A] wherein said first device and said second device are different devices.	Comcast's first device, the X11 voice remote, is a different device than the second device that information is delivered to, including various devices such as a set-top box, a server, a television, and so forth. See, e.g., https://www.xfinity.com/support/cable-tv/get-to-know-xr11-remote/ ("The voice remote (XR11) from XFINITY is a remote control that allows XFINITY X1 customers to find what they want faster by using voice commands to change channels, search for shows, get recommendations and more. Customers can use their voice to quickly find their favorite content, tune to channels, search and control

Claim Language from U.S. Patent No. RE44,326	
	their DVR.”)
[14] The method of claim 12,	See Claim 12 above.
[14A] wherein said speech information comprises video search information; and wherein said information delivery comprises video information.	Comcast’s speech information is video search information, and Comcast’s information delivery comprises video information. See, e.g., http://corporate.comcast.com/news-information/news-feed/comcast-introduces-voice-controlled-tv-remote (“The new Xfinity remote with voice control lets viewers search for networks, shows and movies; set DVR recordings; get recommendations; navigate Xfinity On Demand and more. . . . Just press the blue button, say what you want to watch and it appears on screen.”)
[15] The method of claim 12,	See Claim 12 above.
[15A] wherein said speech information transfer comprises transferring said speech information in either of a partially recognized state or an unrecognized state.	Comcast transfers speech information in an unrecognized state from the first wireless device over a first network path to a speech recognition engine because speech recognition is not performed until speech information reaches the speech recognition engine. See, e.g., http://corporate.comcast.com/comcast-voices/comcast-voice-remote-texas-instruments (“Adding voice requires you to compress the data, send it from the remote via RF to the set-top box, and then uncompress the data before passing it to the voice recognition engine.”)
[16] The method of claim 12,	See Claim 12 above.
[16A] wherein said wireless first device is used for input and output for control purposes, wherein said information delivery is to said second device which comprises a television and STB.	Comcast’s X11 voice remote is used both for input and output for control purposes, and Comcast can deliver information to a second device comprising a television and STB.

**Claim Language from U.S. Patent
No. RE44,326**






In the figure above, Comcast's X11 voice remote can be used for input for control purposes by depressing buttons and accepting voice input via a microphone to control television search content. Output is produced when the Status LED flashes in response.

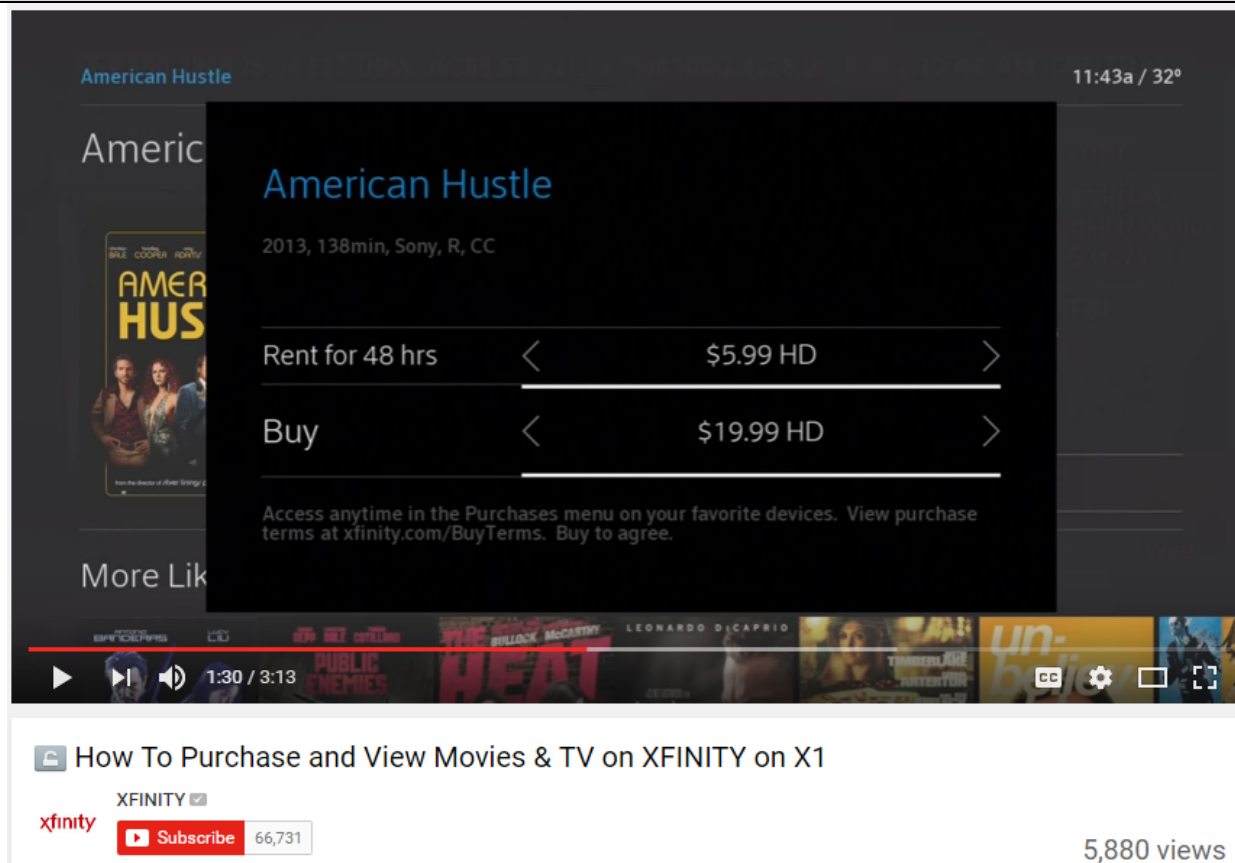
See <https://www.xfinity.com/~media/DA2A42AEDCA241778354739D021381E8.ashx>

See, e.g., <http://www.philly.com/philly/business/comcast/comcast-plans-for-xfinity-tv-voice-remote-apple-amazon-google-alexa-xfinity-home-echo-samsung-bixby-20171019.html> ("The Comcast X1 cloud – basically 50,000 separate computers – interprets what the subscriber wants to do and performs it, sending the directions back to the home set-top box and television.")

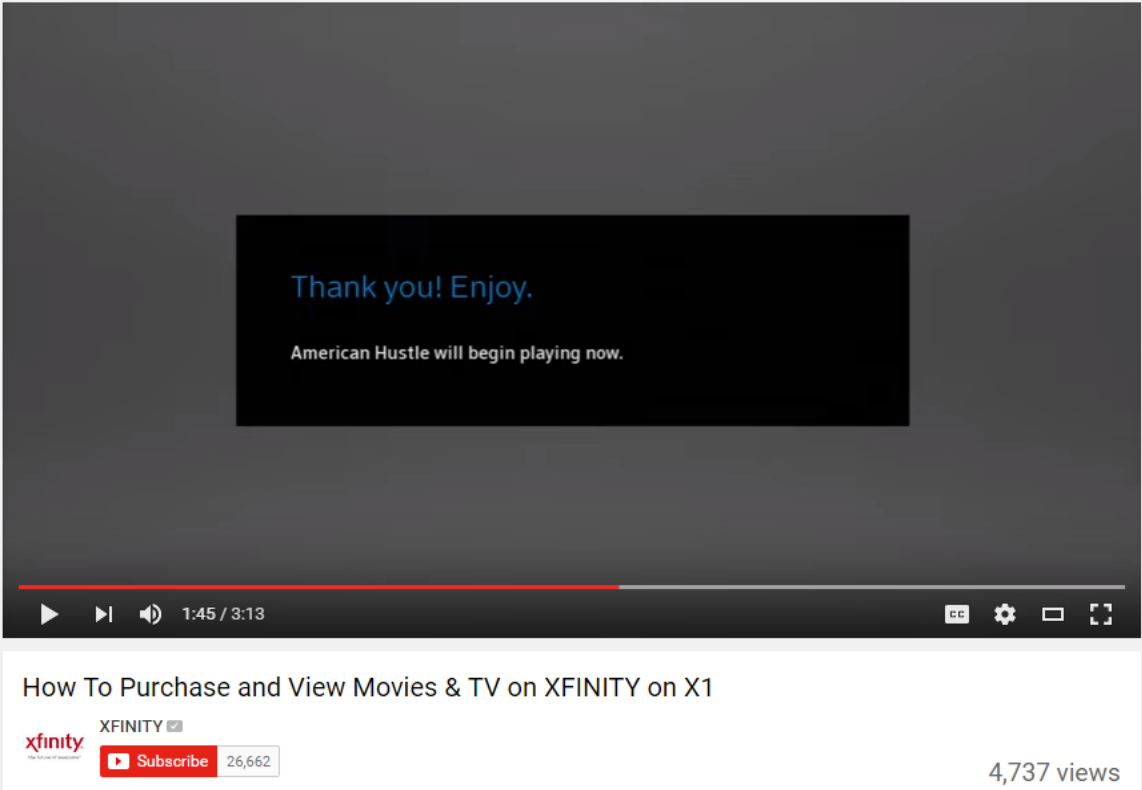
Claim Language from U.S. Patent No. RE44,326	
[17] The method of claim 12, further comprising at least one of the steps of:	See Claim 12 above.
[17A] determining a user site associated with a user of said first device;	Comcast determines a user site associated with a user of a first device because every XFINITY remote can be paired with only one XFINITY set-top box at a time. See, e.g., https://www.xfinity.com/support/cable-tv/remote-program-the-xr2-or-xr5-to-aim-anywhere/ ("Your XFINITY remote can be paired with XFINITY X1 TV Boxes, allowing you to control the TV Box even when it is placed out of sight . . . Note: Once your remote is successfully paired with a TV Box, it will not control any other TV Box until paired with the other TV Box. XFINITY remotes can only be paired with one TV Box at a time.")
[17B] determining said associated user site from said recognized speech;	
[17C] determining said associated user site from said recognized speech and a speaker identification library;	
[17D] determining said associated user site from said recognized speech and a speech recognition library; and	
[17E] determining said associated user site from an identification within said speech channel.	
[18] The method of claim 12, further comprising the steps of:	See Claim 12 above.

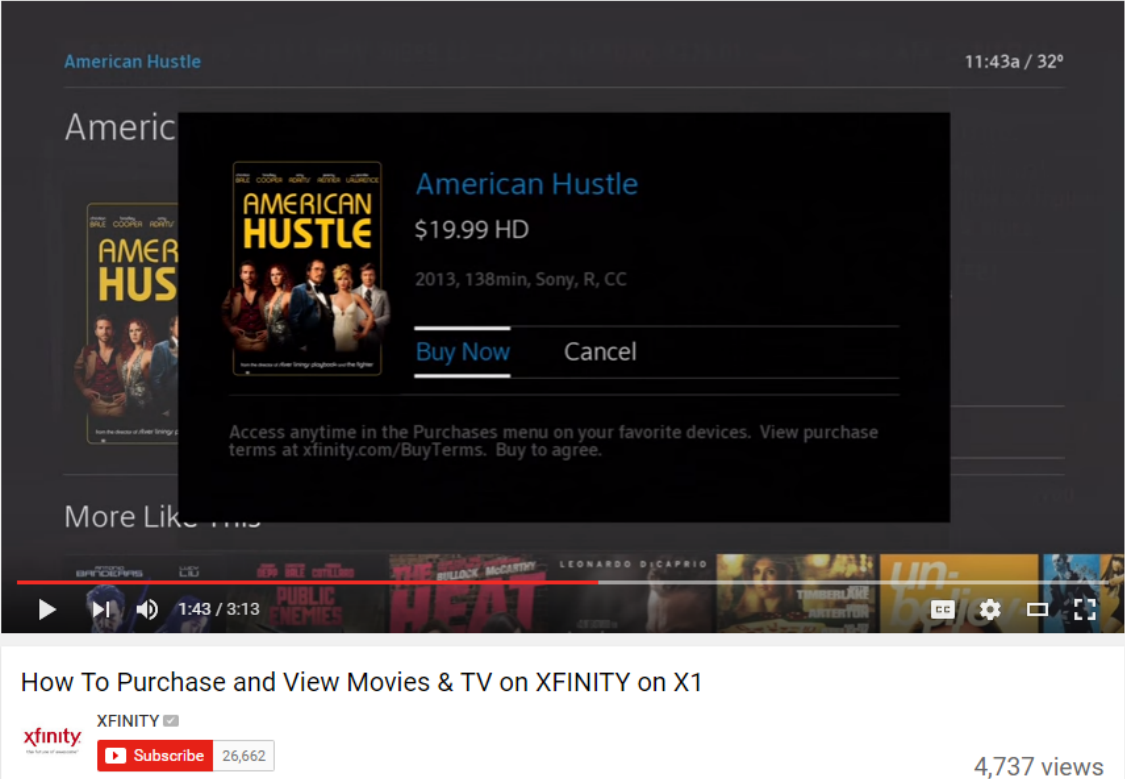
<p>Claim Language from U.S. Patent No. RE44,326</p>	
<p>[18A] assessing a response identified as to a user device comprising any of said first device and said second device to create a financial consequence; and</p>	<div>  <p>The screenshot shows the Comcast Xfinity interface for the movie 'American Hustle'. At the top, the movie title 'American Hustle' is displayed in blue. Below it, the rental price 'From \$4.99, Ends 7/21' is shown. The cast list includes Christian Bale, Bradley Cooper, Amy Adams, and others. A synopsis follows: '(2013) The con is one when scam artists and lovers Irving Rosenfeld (Christian Bale) and Sydney Prosser (Amy Adams) are entrapped by ambitious FBI agent Richie DiMaso (Bradley Cooper) and coerced into participating in a major sting operation which hinges on snaring politician Carmine Polito (Jeremy Renner)'. To the right, details show a runtime of 138min and a Rotten Tomatoes score of 93%. At the bottom, there is a 'Rent/Buy' button, a 'Trailer' link, and a 'Favorite' button. Below this is a 'More Like This' section with a video player showing a trailer for 'Public Enemies'.</p> </div> <p>How To Purchase and View Movies & TV on XFINITY on X1</p> <p> XFINITY  26,662</p> <p>4,737 views</p> <p>In the figure above, Comcast can respond to a user's request by offering the user an opportunity to "rent/buy" the requested movie.</p> <p>See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

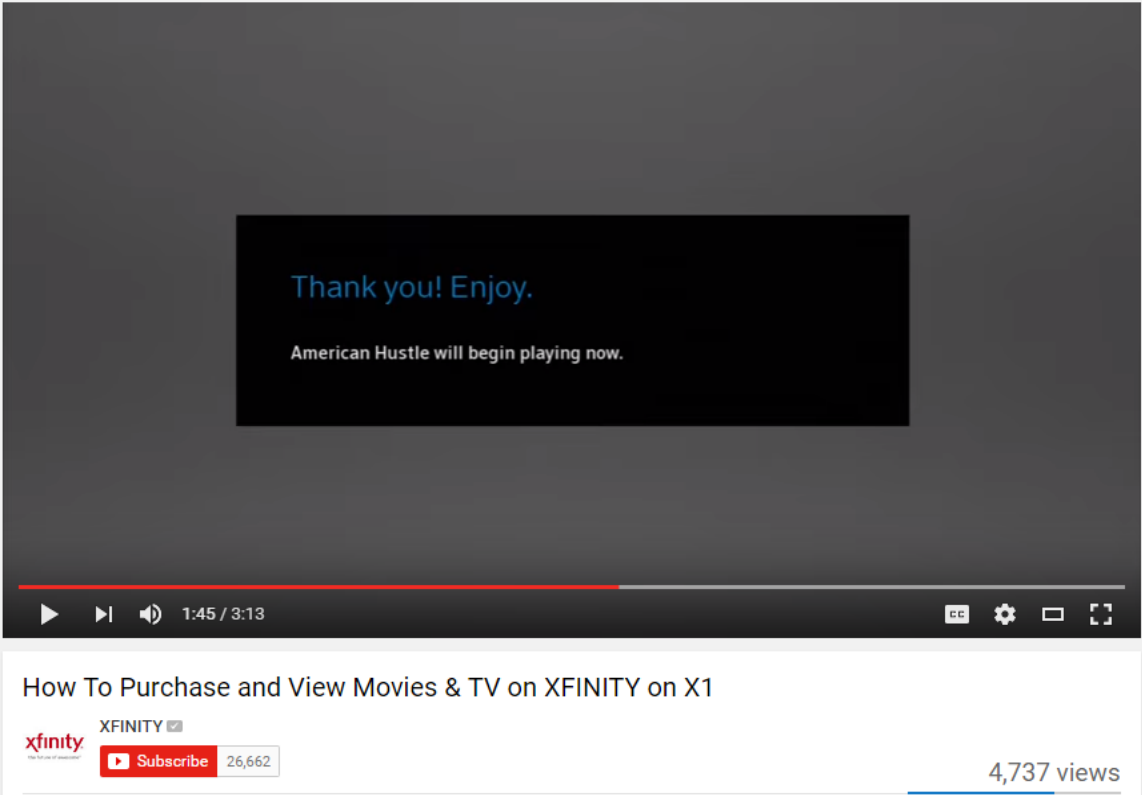
Claim Language from U.S. Patent
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In the figure above, the price for renting or buying is presented to the user.
See <https://www.youtube.com/watch?v=cYtdEX2WjD0>

<p>Claim Language from U.S. Patent No. RE44,326</p>	
<p>[18B] billing a user associated with said user device based upon said financial consequence.</p>	 <p>The screenshot shows a YouTube video player. The video frame displays a black background with the text "Thank you! Enjoy." in blue and "American Hustle will begin playing now." in white. Below the video frame is a progress bar at 1:45 / 3:13. The video title is "How To Purchase and View Movies & TV on XFINITY on X1". The channel is "XFINITY" with a subscriber button showing "26,662" subscribers. The view count is "4,737 views".</p> <p>In the figure above, after a user selects to “rent/buy” a movie or TV show, “Thank you! Enjoy.” Is displayed to the user, and the movie is billed to the user’s Comcast account. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>
<p>[19] The method of claim 12, further comprising the steps of:</p>	<p>See Claim 12 above.</p>
<p>[19A] assessing a response to create a financial consequence identified with a user site;</p>	<p>See Claim 18A above.</p>

<p>Claim Language from U.S. Patent No. RE44,326</p>	
<p>[19B] communicating said financial consequence to said user;</p>	 <p>In the figure above, the price of renting or buying a movie is displayed on the TV screen. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>
<p>[19C] said user confirming said communicated financial consequence to create a financial commitment; and</p>	<p>After a user has decided to buy a movie, Comcast asks the user to confirm whether the user wants to buy the movie now for a specified price or cancel the transaction. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>

<p>Claim Language from U.S. Patent No. RE44,326</p>	
<p>[19D] billing said user based upon said financial commitment.</p>	 <p>In the figure above, Comcast confirms purchase by displaying to the user “Thank you! Enjoy.” after a user purchases or rents a movie. See https://www.youtube.com/watch?v=cYtdEX2WjD0</p>
<p>[21] The method of claim 12, further comprising the steps of:</p>	<p>See Claim 12 above.</p>
<p>[21A] responding to recognized speech identified as to said first device based upon natural language</p>	<p>Comcast responds to recognized speech content based upon natural language to create a unique response. See, e.g., http://www.nctatechnicalpapers.com/Paper/2012/2012-v-rex-voice-relevance-engine-for-</p>

Claim Language from U.S. Patent No. RE44,326	
to create a response uniquely identified with said user device.	xfinity/download ("Once the ASR module processes the user's request, the output (i.e. the request in text form) is sent on to the NLP module. NLP starts by parsing the text, using the same grammar used by ASR . . . The NLP module uses the resulting parse tree to interpret the utterance, inferring the semantics from the rules used and the tags assigned in the parsing process. . . . Once it has identified all the pieces of the request, the NLP module assembles them into a request structure that is passed on to the AR module.")