US 20070283384A1

(19) United States

(12) Patent Application Publication

Haeuser et al.

(10) Pub. No.: US 2007/0283384 A1

(43) Pub. Date: Dec. 6, 2007

(54) SYSTEM AND METHOD OF PROVIDING TARGETED ADVERTISEMENTS

(75) Inventors: **Anthony A. Haeuser**, Aurora, IL (US); **Mary McCarthy**, San Antonio, TX (US); **Scott A. Pettit**, San Antonio, TX (US); **Christopher Lee**, Lakewood, CO (US); **Roland Noll**, San Antonio, TX (US)

Correspondence Address:
TOLER SCHAFFER, LLP
8500 BLUFFSTONE COVE, SUITE A201
AUSTIN, TX 78759

(73) Assignee: **SBC Knowledge Ventures, LP**, Reno, NV (US)

(21) Appl. No.: **11/444,261**

(22) Filed: **May 31, 2006**

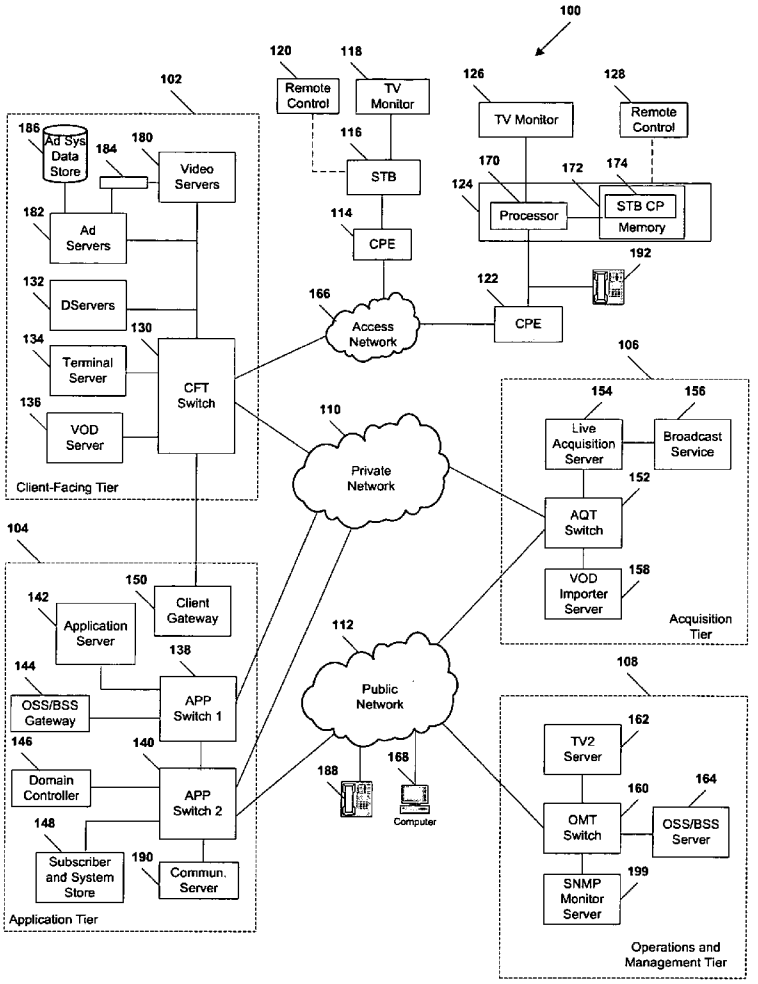
Publication Classification

(51) **Int. Cl.**
H04N 7/025 (2006.01)
H04N 7/10 (2006.01)

(52) **U.S. Cl.** **725/34**; 725/35

(57) **ABSTRACT**

The present disclosure is directed to a system and method of providing targeted advertisements. In a particular embodiment, the method includes receiving video content of television programming at a set-top box device from a video server of an Internet Protocol Television (IPTV) system. The method also includes receiving video content of a targeted advertisement at the set-top box device from the video server with the video content of the television programming, where an advertisement server of the IPTV system selects the targeted advertisement based on a customer profile associated with an identifier of the set-top box device. The method also includes recognizing an advertisement insertion point in the video content of the television programming. The method also includes inserting the video content of the targeted advertisement into the video content of the television programming at the advertisement insertion point.



FreeWheel, Ex. 1006

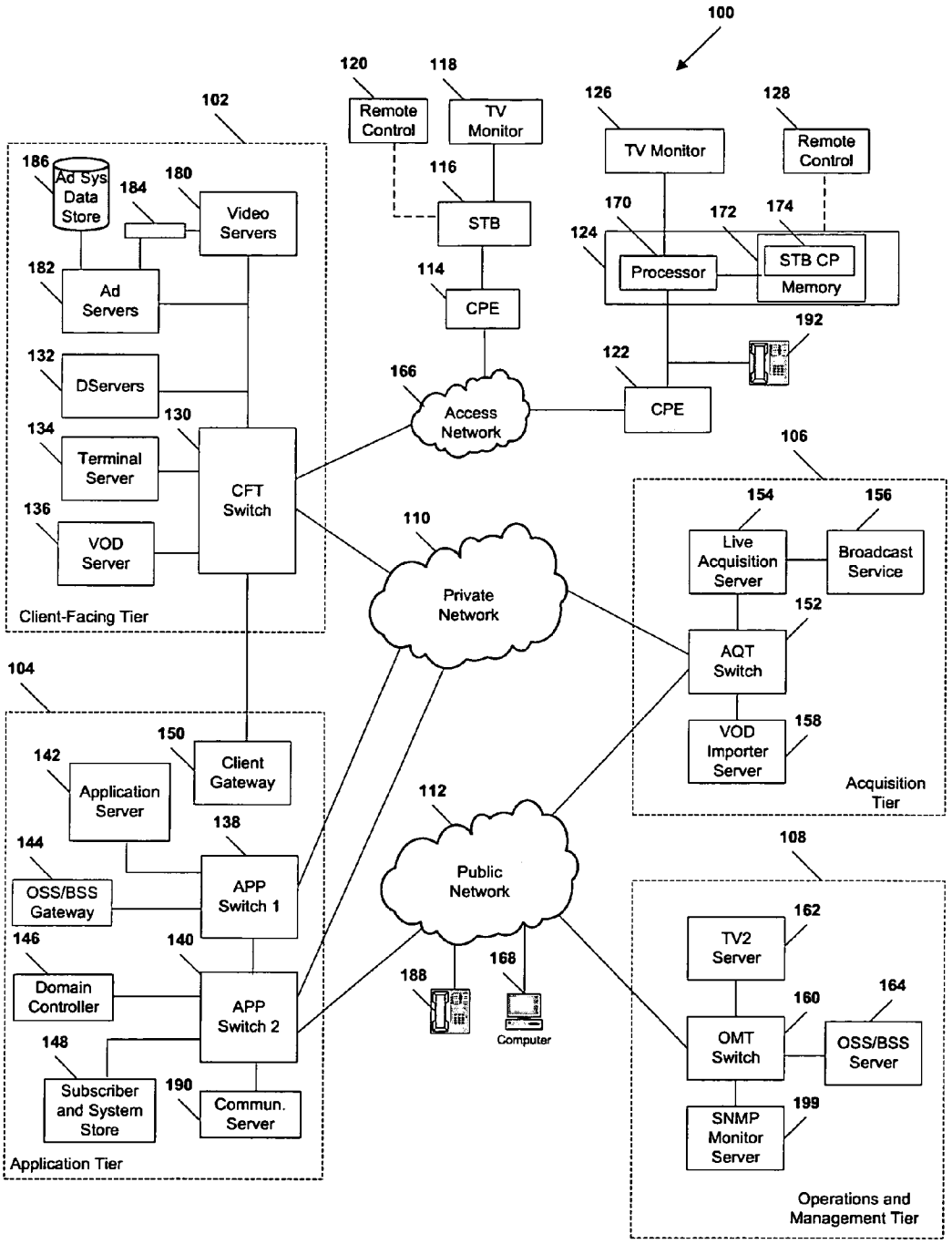

100
102
Client-Facing Tier
186
Ad Sys Data Store
184
180
Video Servers
182
Ad Servers
132
DServers
134
Terminal Server
136
VOD Server
130
CFT Switch
104
Application Tier
150
Client Gateway
142
Application Server
138
144
OSS/BSS Gateway
APP Switch 1
146
Domain Controller
140
APP Switch 2
148
Subscriber and System Store
190
Commun. Server
120
Remote Control
118
TV Monitor
116
STB
114
CPE
166
Access Network
110
Private Network
112
Public Network
188
168
Computer
126
TV Monitor
128
Remote Control
124
170
Processor
172
174
STB CP
Memory
192
122
CPE
106
Acquisition Tier
154
Live Acquisition Server
156
Broadcast Service
152
AQT Switch
158
VOD Importer Server
108
Operations and Management Tier
162
TV2 Server
160
OMT Switch
164
OSS/BSS Server
199
SNMP Monitor Server

FIG. 1

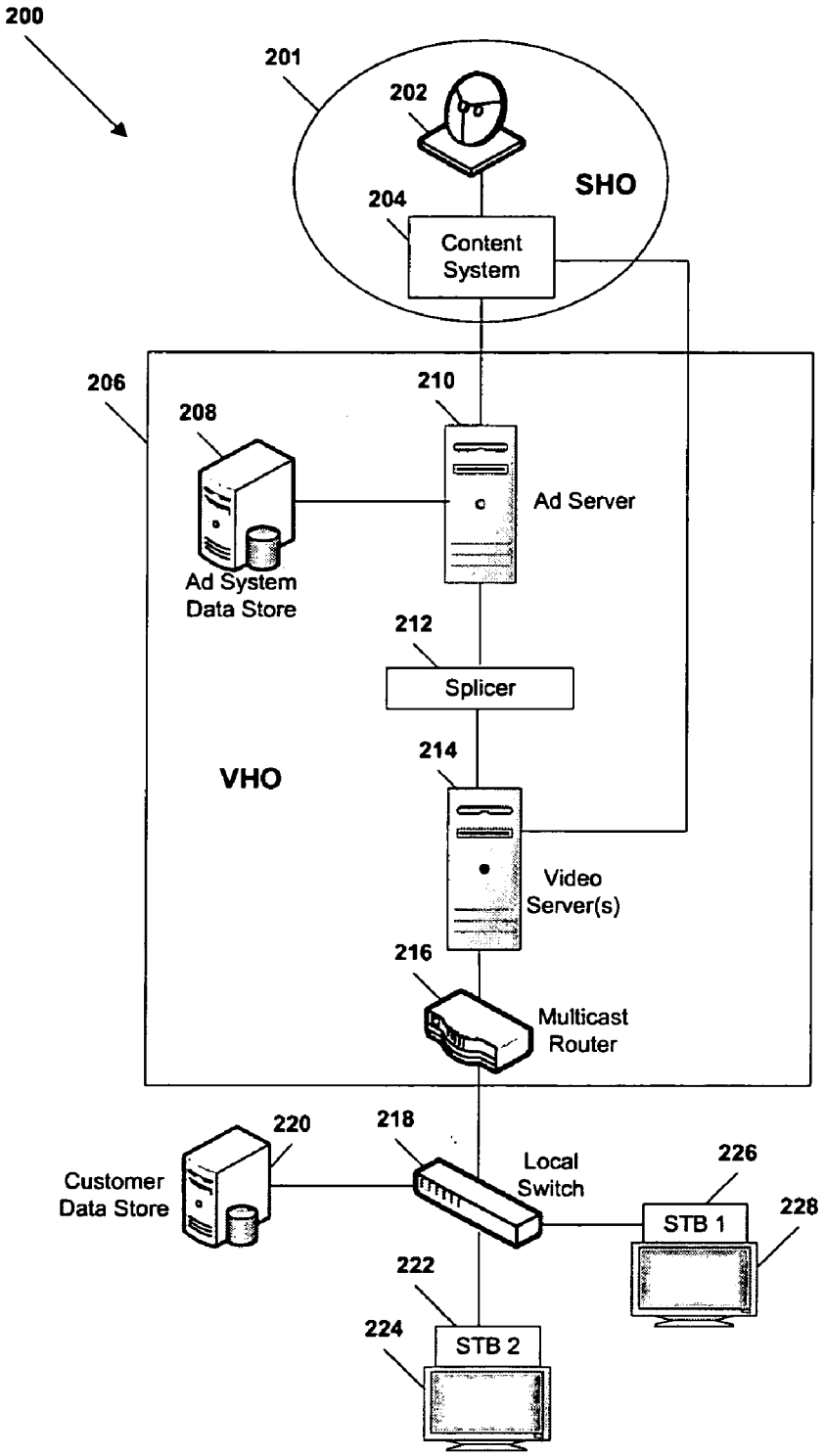

200
201
202
SHO
204
Content System
206
210
208
Ad Server
Ad System Data Store
212
Splicer
214
VHO
Video Server(s)
216
Multicast Router
220
218
Customer Data Store
Local Switch
226
STB 1
228
222
224
STB 2

FIG. 2

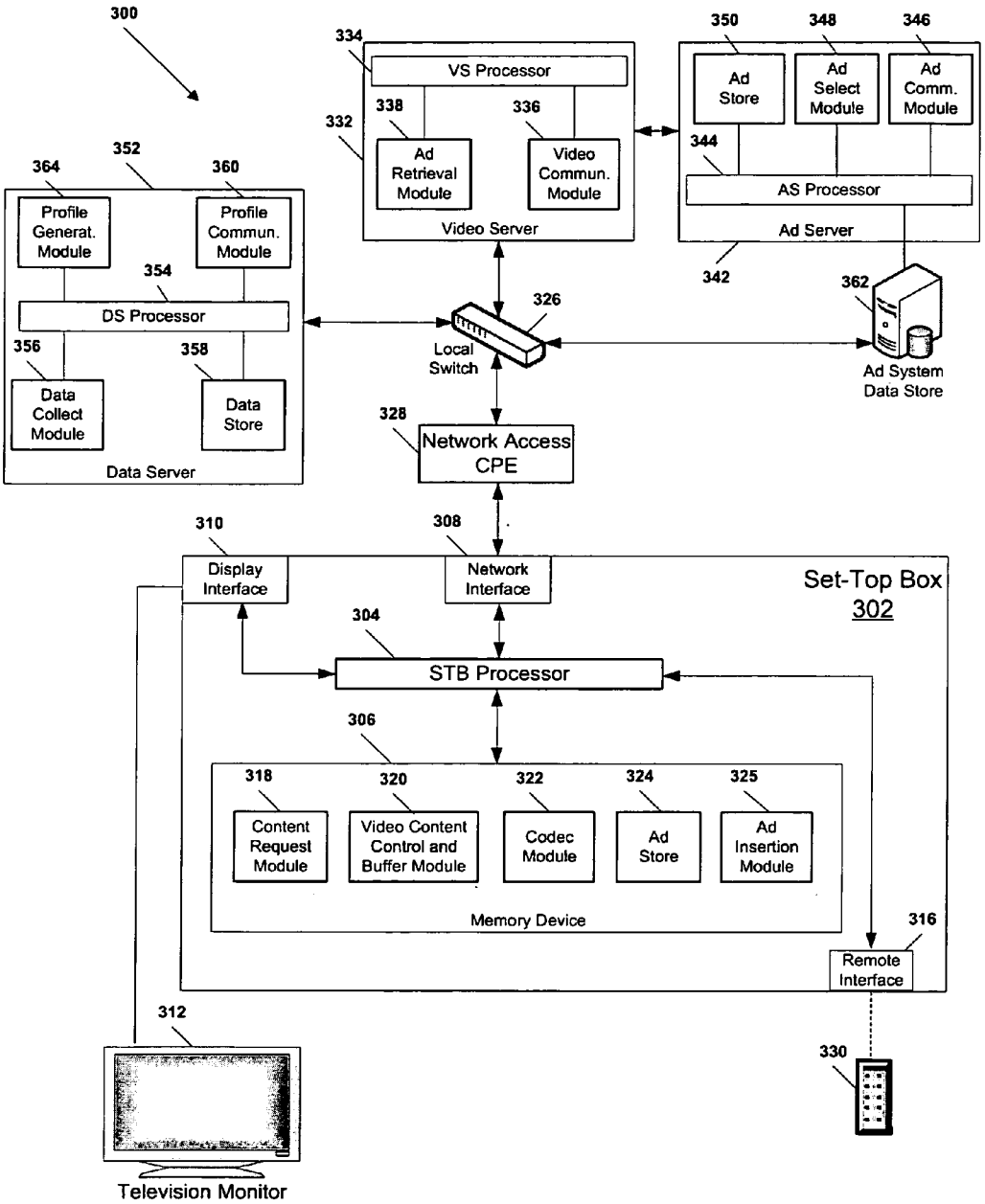

300
334
VS Processor
338
336
332
Ad Retrieval Module
Video Commun. Module
Video Server
350
348
346
Ad Store
Ad Select Module
Ad Comm. Module
344
AS Processor
Ad Server
342
362
Ad System Data Store
364
352
360
Profile Generat. Module
Profile Commun. Module
354
DS Processor
356
358
Data Collect Module
Data Store
Data Server
326
Local Switch
328
Network Access CPE
310
308
Display Interface
Network Interface
Set-Top Box
302
304
STB Processor
306
318
320
322
324
325
Content Request Module
Video Content Control and Buffer Module
Codec Module
Ad Store
Ad Insertion Module
Memory Device
316
Remote Interface
312
330
Television Monitor

FIG. 3

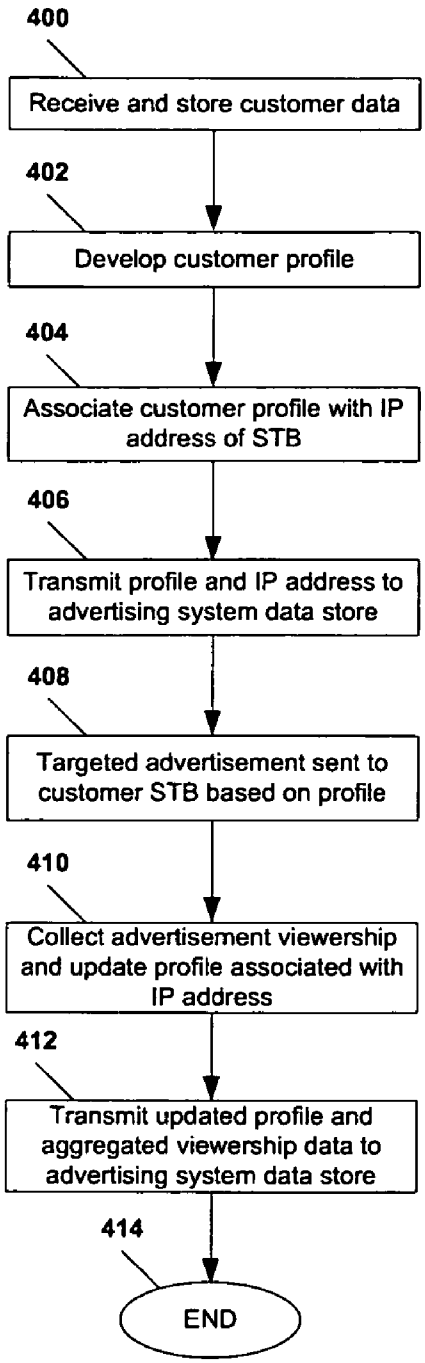

400
Receive and store customer data
402
Develop customer profile
404
Associate customer profile with IP address of STB
406
Transmit profile and IP address to advertising system data store
408
Targeted advertisement sent to customer STB based on profile
410
Collect advertisement viewership and update profile associated with IP address
412
Transmit updated profile and aggregated viewership data to advertising system data store
414
END

FIG. 4

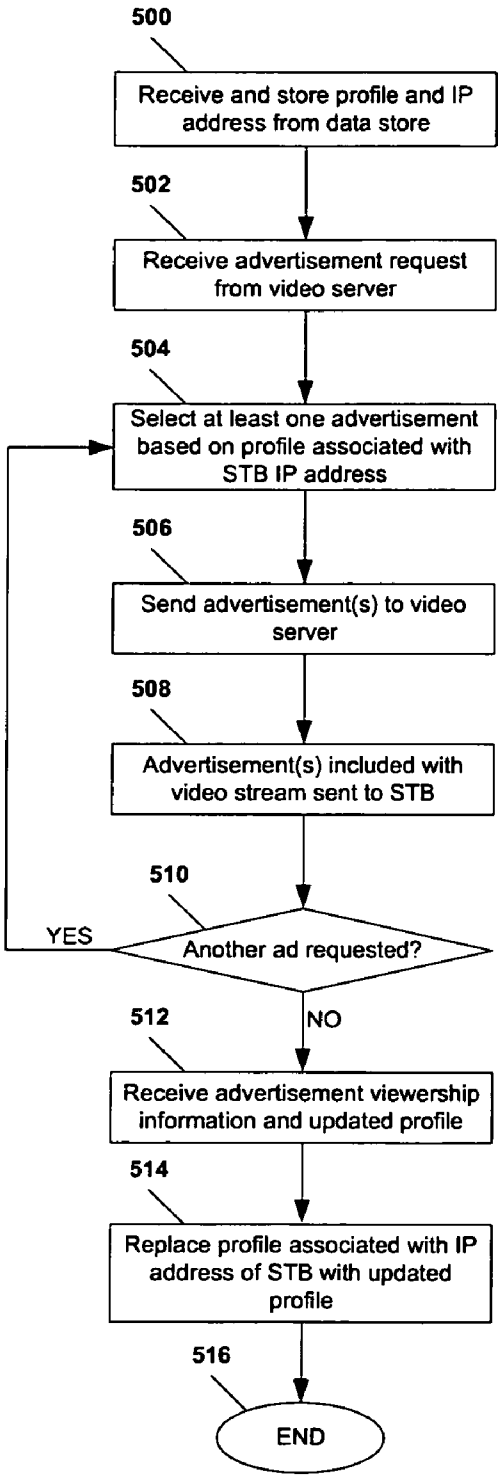

500
Receive and store profile and IP address from data store
502
Receive advertisement request from video server
504
Select at least one advertisement based on profile associated with STB IP address
506
Send advertisement(s) to video server
508
Advertisement(s) included with video stream sent to STB
510
Another ad requested?
YES
NO
512
Receive advertisement viewership information and updated profile
514
Replace profile associated with IP address of STB with updated profile
516
END

FIG. 5

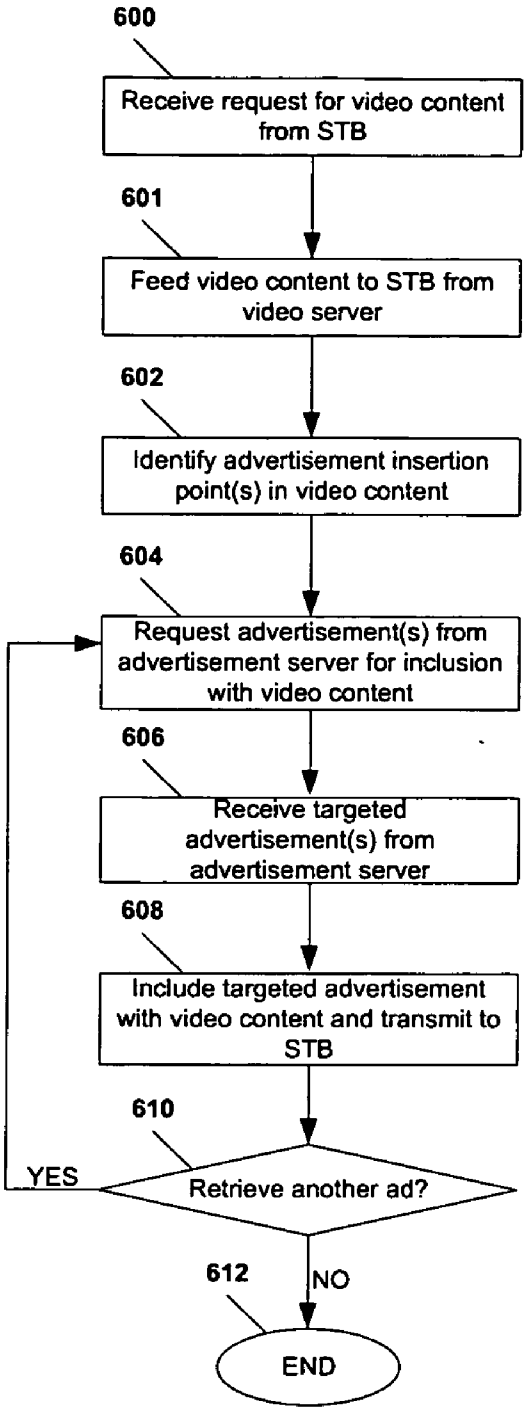

600
Receive request for video content from STB
601
Feed video content to STB from video server
602
Identify advertisement insertion point(s) in video content
604
Request advertisement(s) from advertisement server for inclusion with video content
606
Receive targeted advertisement(s) from advertisement server
608
Include targeted advertisement with video content and transmit to STB
610
Retrieve another ad?
YES
NO
612
END

FIG. 6

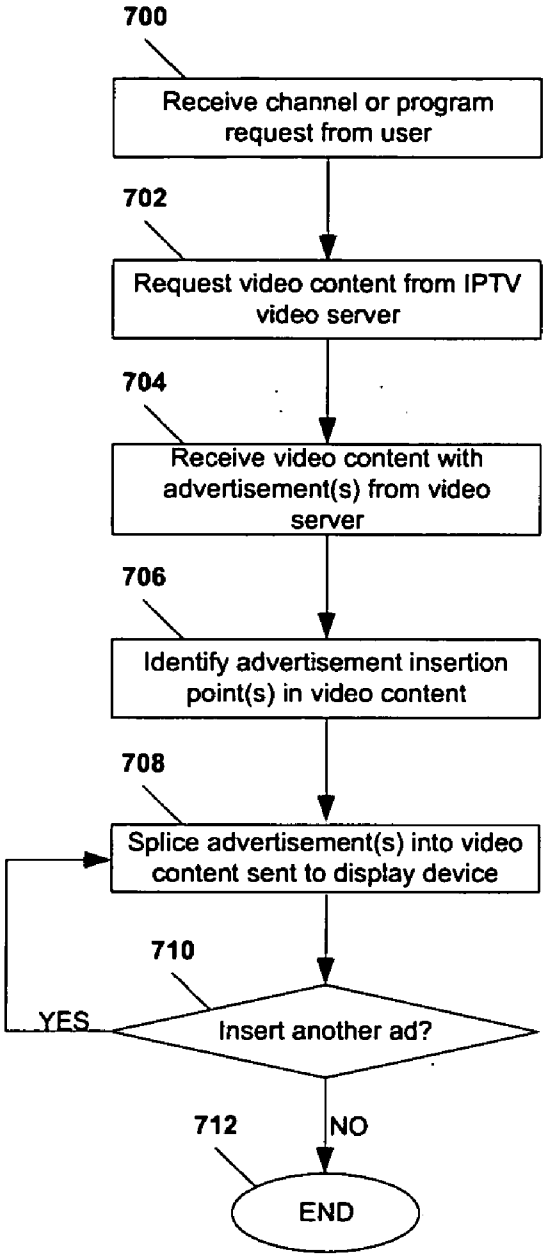

700
Receive channel or program request from user
702
Request video content from IPTV video server
704
Receive video content with advertisement(s) from video server
706
Identify advertisement insertion point(s) in video content
708
Splice advertisement(s) into video content sent to display device
710
Insert another ad?
YES
NO
712
END

FIG. 7

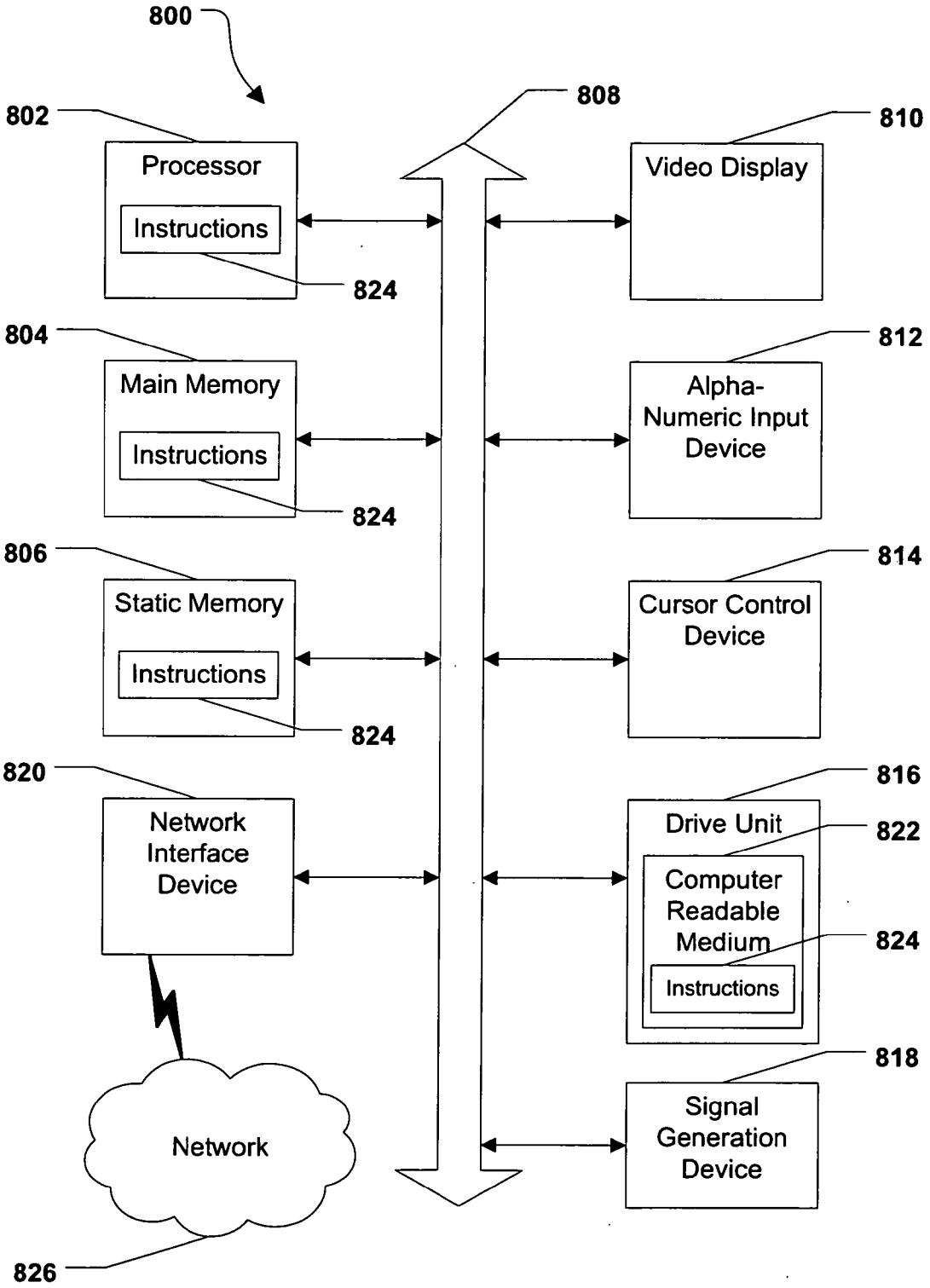

800
802
Processor
Instructions
824
804
Main Memory
Instructions
824
806
Static Memory
Instructions
824
820
Network Interface Device
Network
826
808
810
Video Display
812
Alpha-Numeric Input Device
814
Cursor Control Device
816
Drive Unit
822
Computer Readable Medium
824
Instructions
818
Signal Generation Device

FIG. 8

SYSTEM AND METHOD OF PROVIDING TARGETED ADVERTISEMENTS

FIELD OF THE DISCLOSURE

[0001] The present disclosure relates generally to providing targeted advertisements.

BACKGROUND

[0002] Television viewing is part of daily life for many people. Most television networks support their programming by charging advertising fees for commercials. Many advertisers use Nielsen ratings and program viewer demographics to evaluate advertisements for their products. Such ratings information includes a sampling of audiences. Thus, advertisers are likely to put their products in front of some disinterested viewers and to miss some interested viewers. Additionally, because television service providers typically offer a wide variety of channels and content, many viewers switch form one network to another during commercial advertisements. For these reasons, advertisers may not realize a return on their commercial advertisements that justifies the fees charged by the networks. The advertisers, in turn, may be less likely to use television commercials as an advertisement means, unless a sufficient number of viewers watch their advertisements. Hence, there is a need for a system and method of providing targeted advertisements.

BRIEF DESCRIPTION OF THE DRAWINGS

[0003] FIG. **1** is a block diagram of a particular illustrative embodiment of a system to provide targeted advertisements;

[0004] FIG. **2** is a block diagram of a second particular illustrative embodiment of a system to provide targeted advertisements;

[0005] FIG. **3** is a block diagram of a third particular illustrative embodiment of a system to provide targeted advertisements;

[0006] FIG. **4** is a flow diagram of a particular illustrative embodiment of a method of providing targeted advertisements;

[0007] FIG. **5** is a flow diagram of a second particular embodiment of a method of providing targeted advertisements;

[0008] FIG. **6** is a flow diagram of a third particular illustrative embodiment of a method of providing targeted advertisements;

[0009] FIG. **7** is a flow diagram of a fourth particular illustrative embodiment of a method of providing targeted advertisements; and

[0010] FIG. **8** is a diagram of an illustrative embodiment of a general computer system.

DETAILED DESCRIPTION OF THE DRAWINGS

[0011] The present disclosure is directed to a set-top box device that includes a processor and a memory device accessible to the processor. The set-top box device also includes a buffer to receive video content of television programming from a video server of an Internet Protocol Television (IPTV) system. The set-top box device also includes an advertisement store to receive video content of a targeted advertisement from the video server with the video content of the television programming, where an advertisement server of the IPTV system selects the targeted advertisement based on a customer profile associated with an identifier of the set-top box device. Further, the memory device includes an advertisement insertion module executable by the processor to recognize an advertisement insertion point in the video content of the television programming and to insert the video content of the targeted advertisement into the video content of the television programming at the advertisement insertion point.

[0012] In another embodiment, the disclosure is directed to a method of providing targeted advertisements that includes receiving video content of television programming at a set-top box device from a video server of an Internet Protocol Television (IPTV) system. The method also includes receiving video content of a targeted advertisement from the video server with the video content of the television programming, where an advertisement server of the IPTV system selects the targeted advertisement based on a customer profile associated with an identifier of the set-top box device. The method also includes recognizing an advertisement insertion point in the video content of the television programming and inserting the video content of the targeted advertisement into the video content of the television programming at the advertisement insertion point.

[0013] In another embodiment, the disclosure is directed to a computer program embedded in a computer-readable medium. The computer program includes instructions to receive video content of television programming from a video server of an Internet Protocol Television (IPTV) system. The computer program also includes instructions to receive video content of a targeted advertisement from the video server with the video content of the television programming, where an advertisement server of the IPTV system selects the targeted advertisement based on a customer profile associated with an identifier of the set-top box device. The computer program also includes instructions to recognize an advertisement insertion point in the video content of the television programming and to insert the video content of the targeted advertisement into the video content of the television programming at the advertisement insertion point.

[0014] In another embodiment, the disclosure is directed to a system that includes a video server configured to send video content of television programming to a set-top box device via an access network of an Internet Protocol Television (IPTV) system, where the video server includes a processor and a memory device. The memory device includes instructions executable by the processor to identify an advertisement insertion point in the video content of the television programming and to issue a request to an advertisement server of the IPTV system to receive at least one advertisement to be sent to the set-top box device. The request can include an identifier of the set-top box device. In addition, the memory device includes instructions executable by the processor to insert video content of a targeted advertisement received from the advertisement server into the video content of the television programming, the advertisement server selecting the targeted advertisement based on a profile associated with the identifier of the set-top box device. In a particular embodiment, the profile can include telephone call history data.

[0015] In another embodiment, the disclosure is directed to a method of providing targeted advertisements that includes receiving a customer profile associated with an identifier of a set-top box device at an advertisement server of an Internet Protocol Television (IPTV) system, where the

customer profile is based at least partially on telephone call history data and indicates a customer preference for at least one product, at least one service, or any combination thereof. The method also includes selecting at least one advertisement in response to a request for at least one advertisement to be sent to the set-top box device, wherein the customer profile at least partially matches an intended target of the at least one selected advertisement.

[0016] In another embodiment, the disclosure is directed to a method of providing targeted advertisements that includes receiving customer information associated with a set-top box device, where the customer information includes telephone call history data. The method also includes creating a customer profile based on the customer information and associating the customer profile with an identifier of the set-top box device. The method also includes sending the customer profile with the identifier to an advertisement server of an Internet Protocol Television (IPTV) system, where the advertisement server selects at least one advertisement based on the customer profile and wherein video content the at least one advertisement is included with video content of television programming sent to the set-top box device via an access network of the IPTV system.

[0017] In another embodiment, the disclosure is directed to a method of providing targeted advertisements that includes sending video content of television programming to a set-top box device from a video server of an Internet Protocol Television (IPTV) system. The method also includes identifying an advertisement insertion point in the video content of the television programming. The method also includes issuing a request to an advertisement server of the IPTV system to receive video content of an advertisement to be sent to the set-top box device, where the request includes an identifier of the set-top box device. Further, the method includes receiving video content of a targeted advertisement from the advertisement server, where the advertisement server selects the targeted advertisement based on a customer profile associated with the identifier of the set-top box device, the customer profile including telephone call history data.

[0018] In another embodiment, the disclosure is directed to a computer program embedded in a computer-readable medium. The computer program includes instructions to store video content a plurality of advertisements. The computer program also includes instructions to receive a profile associated with an identifier of a set-top box device of an Internet Protocol Television (IPTV) system, where the profile is based at least partially on telephone call history data. The computer program also includes instructions to select an advertisement from the plurality of advertisements based on the profile, where the profile at least partially matches an intended target of the selected advertisement.

[0019] In another embodiment, the disclosure is directed to a computer program embedded in a computer-readable medium. The computer program includes instructions to send video content of television programming to a set-top box device via an access network of an Internet Protocol Television (IPTV) system. The computer program also includes instructions to identify an advertisement insertion point in the video content of the television programming and to issue a request to an advertisement server of the IPTV system to receive at least one advertisement to be sent to the set-top box device, the request including an identifier of the set-top box device. The computer program also includes instructions to insert video content of a targeted advertisement received from the advertisement server into the video content of the television programming, the advertisement server selecting the targeted advertisement based on a profile associated with the identifier of the set-top box device, the profile including telephone call history data.

[0020] Referring to FIG. **1**, an illustrative embodiment of an Internet Protocol Television (IPTV) system that may be used to provide one or more targeted advertisements is illustrated and is generally designated **100**. As shown, the system **100** can include a client facing tier **102**, an application tier **104**, an acquisition tier **106**, and an operations and management tier **108**. Each tier **102**, **104**, **106**, **108** is coupled to a private network **110**; to a public network **112**, such as the Internet; or to both the private network **110** and the public network **112**. For example, the client-facing tier **102** can be coupled to the private network **110**. Further, the application tier **104** can be coupled to the private network **110** and to the public network **112**. The acquisition tier **106** can also be coupled to the private network **110** and to the public network **112**. Additionally, the operations and management tier **108** can be coupled to the public network **112**.

[0021] As illustrated in FIG. **1**, the various tiers **102**, **104**, **106**, **108** communicate with each other via the private network **110** and the public network **112**. For instance, the client-facing tier **102** can communicate with the application tier **104** and the acquisition tier **106** via the private network **110**. The application tier **104** can also communicate with the acquisition tier **106** via the private network **110**. Further, the application tier **104** can communicate with the acquisition tier **106** and the operations and management tier **108** via the public network **112**. Moreover, the acquisition tier **106** can communicate with the operations and management tier **108** via the public network **112**. In a particular embodiment, elements of the application tier **104**, including, but not limited to, a client gateway **150**, can communicate directly with the client-facing tier **102**.

[0022] The client-facing tier **102** can communicate with user equipment via an access network **166**, such as an Internet Protocol Television (IPTV) access network. In an illustrative embodiment, customer premises equipment (CPE) **114**, **122** can be coupled to a local switch or router of the access network **166**. The client-facing tier **102** can communicate with a first representative set-top box device **116** at a first customer premise via the first CPE **114** and with a second representative set-top box device **124** at a second customer premise via the second CPE **122**. The CPE **114**, **122** can include routers, local area network devices, modems, such as digital subscriber line (DSL) modems, any other suitable devices for facilitating communication between a set-top box device and the access network **166**, or any combination thereof.

[0023] In a particular embodiment, the client-facing tier **102** can be coupled to the CPE **114**, **122** via fiber optic cables. Alternatively, the CPE **114**, **122** can be digital subscriber line (DSL) modems that are coupled to one or more network nodes via twisted pairs, and the client-facing tier **102** can be coupled to the network nodes via fiber-optic cables. Each set-top box device **116**, **124** can process data received via the access network **166**, via an IPTV software platform, such as Microsoft® TV IPTV Edition.

[0024] Additionally, the first set-top box device **116** can be coupled to a first external display device, such as a first television monitor **118**, and the second set-top box device

124 can be coupled to a second external display device, such as a second television monitor **126**. Moreover, the first set-top box device **116** can communicate with a first remote control **120**, and the second set-top box device **124** can communicate with a second remote control **128**. The set-top box devices **116**, **124** can include IPTV set-top box devices; video gaming devices or consoles that are adapted to receive IPTV content; personal computers or other computing devices that are adapted to emulate set-top box device functionalities; any other device adapted to receive IPTV content and transmit data to an IPTV system via an access network; or any combination thereof.

[0025] In an exemplary, non-limiting embodiment, each set-top box device **116**, **124** can receive data, video, or any combination thereof, from the client-facing tier **102** via the private access network **166** and render or display the data, video, or any combination thereof, at the display device **118**, **126** to which it is coupled. In an illustrative embodiment, the set-top box devices **116**, **124** can include tuners that receive and decode television programming signals or packet streams for transmission to the display devices **118**, **126**. Further, the set-top box devices **116**, **124** can include a STB processor **170** and a STB memory device **172** that is accessible to the STB processor **170**. In one embodiment, a computer program, such as the STB computer program **174**, can be embedded within the STB memory device **172**.

[0026] In an illustrative embodiment, the client-facing tier **102** can include a client-facing tier (CFT) switch **130** that manages communication between the client-facing tier **102** and the access network **166** and between the client-facing tier **102** and the private network **110**. As illustrated, the CFT switch **130** is coupled to one or more data servers, such as D-servers **132**, that store, format, encode, replicate, or otherwise manipulate or prepare video content for communication from the client-facing tier **102** to the set-top box devices **116**, **124**. The CFT switch **130** can also be coupled to a terminal server **134** that provides terminal devices with a connection point to the private network **110**. In a particular embodiment, the CFT switch **130** can be coupled to a video-on-demand (VOD) server **136** that stores or provides VOD content imported by the IPTV system **100**.

[0027] Further, the CFT switch **130** is coupled to one or more video servers **180** that receive video content and transmit the content to the access network **166** via the CFT switch **130**. In a particular embodiment, the CFT switch **130** can be coupled to one or more advertisement servers **182** that store advertisements. In an illustrative, non-limiting embodiment, the advertisement server(s) **182** can be coupled to the video server(s) via a splicer **184**. In addition, the advertisement server(s) **182** can be coupled to one or more advertising system data stores **186** that store intended target criteria and other information related to the advertisements stored at the advertisement server(s) **182**. Moreover, the advertising system data store(s) **186** can store customer profiles associated with the set-top box devices **116**, **124**.

[0028] In an illustrative embodiment, the client-facing tier **102** can communicate with a large number of set-top boxes, such as the representative set-top boxes **116**, **124** over a wide geographic area, such as a regional area, a metropolitan area, a viewing area, a designated market area or any other suitable geographic area, market area, or subscriber or customer group that can be supported by networking the client-facing tier **102** to numerous set-top box devices. In a particular embodiment, the client-facing switch **130**, or any portion thereof, can be a multicast router or switch that feeds one or more video streams from a video server to multiple set-top box devices.

[0029] As illustrated in FIG. **1**, the application tier **104** can communicate with both the private network **110** and the public network **112**. The application tier **104** can include a first application tier (APP) switch **138** and a second APP switch **140**. In a particular embodiment, the first APP switch **138** can be coupled to the second APP switch **140**. The first APP switch **138** can be coupled to an application server **142** and to an OSS/BSS gateway **144**. In a particular embodiment, the application server **142** can provide applications to the set-top box devices **116**, **124** via the access network **166**, which enable the set-top box devices **116**, **124** to provide functions, such as display, messaging, processing of IPTV data and VOD material, etc. In a particular embodiment, the OSS/BSS gateway **144** includes operation systems and support (OSS) data, as well as billing systems and support (BSS) data. In one embodiment, the OSS/BSS gateway **144** can provide or restrict access to an OSS/BSS server **164** that stores operations and billing systems data.

[0030] The second APP switch **140** can be coupled to a domain controller **146** that provides Internet access, for example, to users at their computers **168** via the public network **112**. For example, the domain controller **146** can provide remote Internet access to IPTV account information, e-mail, personalized Internet services, or other online services via the public network **112**. In addition, the second APP switch **140** can be coupled to a subscriber and system store **148** that includes account information, such as account information that is associated with users who access the system **100** via the private network **110** or the public network **112**. In an illustrative embodiment, the subscriber and system store **148** can store subscriber or customer data and create subscriber or customer profiles that are associated with IP addresses of corresponding set-top box devices **116**, **124**.

[0031] In another illustrative embodiment, the second APP switch **140** can be coupled to one or more communication servers **190** that can connect calls from user telephones **188**, **192** with source or destination devices via the access network **166**, the public network **112**, a public switched telephone network (PSTN), another telephone network, or any combination thereof. In a particular embodiment, the communication server(s) **190** can collect telephone call history data, such as locations from which a customer has received calls, locations to which a customer has placed calls, or any combination thereof. The communication server(s) **190** can store the telephone call history data and send it to the subscriber and system store **148**, a data store of the access network **166**, another device within the IPTV system **100**, or any combination thereof, where the information can be used in the creation of customer profiles. In an illustrative, non-limiting embodiment, a service provider can obtain any necessary consents from customers prior to the communication server(s) **190** collecting the telephone call history data. In another embodiment, the communication server(s) **190** can collect the telephone call history data without such consents, for example, where such consents are not required by regulation.

[0032] In a particular embodiment, the application tier **104** can include a client gateway **150** that communicates data directly to the client-facing tier **102**. In this embodiment, the client gateway **150** can be coupled directly to the CFT

switch **130**. The client gateway **150** can provide user access to the private network **110** and the tiers coupled thereto. In an illustrative embodiment, the set-top box devices **116**, **124** can access the IPTV system **100** via the access network **166**, using information received from the client gateway **150**. User devices can access the client gateway **150** via the access network **166**, and the client gateway **150** can allow such devices to access the private network **110** once the devices are authenticated or verified. Similarly, the client gateway **150** can prevent unauthorized devices, such as hacker computers or stolen set-top box devices from accessing the private network **110**, by denying access to these devices beyond the access network **166**.

[0033] For example, when the first representative set-top box device **116** accesses the client-facing tier **102** via the access network **166**, the client gateway **150** can verify subscriber information by communicating with the subscriber and system store **148** via the private network **110**. Further, the client gateway **150** can verify billing information and status by communicating with the OSS/BSS gateway **144** via the private network **110**. In one embodiment, the OSS/BSS gateway **144** can transmit a query via the public network **112** to the OSS/BSS server **164**. After the client gateway **150** confirms subscriber and/or billing information, the client gateway **150** can allow the set-top box device **116** to access IPTV content and VOD content at the client-facing tier **102**. If the client gateway **150** cannot verify subscriber information for the set-top box device **116**, e.g., because it is connected to an unauthorized twisted pair, the client gateway **150** can block transmissions to and from the set-top box device **116** beyond the access network **166**.

[0034] As indicated in FIG. **1**, the acquisition tier **106** includes an acquisition tier (AQT) switch **152** that communicates with the private network **110**. The AQT switch **152** can also communicate with the operations and management tier **108** via the public network **112**. In a particular embodiment, the AQT switch **152** can be coupled to a live acquisition server **154** that receives or acquires television content, movie content, advertisement content, other video content, or any combination thereof, from a broadcast service **156**, such as a satellite acquisition system or satellite head-end office. In a particular embodiment, the live acquisition server **154** can transmit content to the AQT switch **152**, and the AQT switch **152** can transmit the content to the CFT switch **130** via the private network **110**.

[0035] In an illustrative embodiment, content can be transmitted to the D-servers **132**, where it can be encoded, formatted, stored, replicated, or otherwise manipulated and prepared for communication from the video server(s) **180** to the set-top box devices **116**, **124**. Advertisement content can be stored with or without such manipulation at the advertisement server(s) **182** until it is requested by the video server(s) **180**. The CFT switch **130** can receive content from the video server(s) **180** and communicate the content to the CPE **114**, **122** via the access network **166**. The set-top box devices **116**, **124** can receive the content via the CPE **114**, **122**, and can transmit the content to the television monitors **118**, **126**. In an illustrative embodiment, video or audio portions of the content can be streamed to the set-top box devices **116**, **124**.

[0036] Further, the AQT switch **152** can be coupled to a video-on-demand importer server **158** that receives and stores television or movie content received at the acquisition tier **106** and communicates the stored content to the VOD server **136** at the client-facing tier **102** via the private network **110**. Additionally, at the acquisition tier **106**, the video-on-demand (VOD) importer server **158** can receive content from one or more VOD sources outside the IPTV system **100**, such as movie studios and programmers of non-live content. The VOD importer server **158** can transmit the VOD content to the AQT switch **152**, and the AQT switch **152**, in turn, can communicate the material to the CFT switch **130** via the private network **110**. The VOD content can be stored at one or more servers, such as the VOD server **136**.

[0037] When users issue requests for VOD content via the set-top box devices **116**, **124**, the requests can be transmitted over the access network **166** to the VOD server **136**, via the CFT switch **130**. Upon receiving such requests, the VOD server **136** can retrieve the requested VOD content and transmit the content to the set-top box devices **116**,**124** across the access network **166**, via the CFT switch **130**. The set-top box devices **116**, **124** can transmit the VOD content to the television monitors **118**, **126**. In an illustrative embodiment, video or audio portions of VOD content can be streamed to the set-top box devices **116**, **124**.

[0038] FIG. **1** further illustrates that the operations and management tier **108** can include an operations and management tier (OMT) switch **160** that conducts communication between the operations and management tier **108** and the public network **112**. In the embodiment illustrated by FIG. **1**, the OMT switch **160** is coupled to a TV2 server **162**. Additionally, the OMT switch **160** can be coupled to an OSS/BSS server **164** and to a simple network management protocol (SNMP) monitor **199** that monitors network devices within or coupled to the IPTV system **100**. In a particular embodiment, the OMT switch **160** can communicate with the AQT switch **152** via the public network **112**.

[0039] In an illustrative embodiment, the live acquisition server **154** can transmit content to the AQT switch **152**, and the AQT switch **152**, in turn, can transmit the content to the OMT switch **160** via the public network **112**. In this embodiment, the OMT switch **160** can transmit the content to the TV2 server **162** for display to users accessing the user interface at the TV2 server **162**. For example, a user can access the TV2 server **162** using a personal computer (PC) coupled to the public network **112**.

[0040] In a particular illustrative embodiment, customer information associated with the set-top box devices **116**, **124** can be stored at a data store coupled to a local switch of the access network **166**. For example, the customer information can include viewing habits at the set-top box devices **116**, **124**; age, gender, marriage, children or other demographic information associated with customers or users of the set-top box devices **116**, **124**; and other information that can be related to preferences or interests associated with customers or users of the set-top box devices **116**, **124**. In a particular embodiment, the customer information can include telephone call history data associated with customers or users of the set-top box devices **116**, **124**, Internet viewing habits associated with customers or users of the set-top box devices **116**, **124**, or any combination thereof. In an illustrative, non-limiting embodiment, a service provider can obtain any necessary consents from customers prior to collecting the telephone call history data, Internet viewing habits, or any combination thereof. In another embodiment, the service provider can collect the telephone call history data, Internet

viewing habits, or any combination thereof, without such consents, for example, where such consents are not required by regulation.

[0041] In a particular embodiment, the data store can receive and store at least a portion of the customer information from the communication server(s) **190**, subscriber and system store **148** or another device of the IPTV system **100**. In another particular embodiment, at least a portion of the customer information can be collected at the local switch.

[0042] In an illustrative embodiment, customer information stored at the access network **166** can be used to develop customer profiles that are associated with IP addresses of various set-top box devices. For instance, a customer profile can predict or otherwise indicate, for example, needs, wants, preferences, interests, or any combination thereof, for goods, services, or any combination thereof, at a customer's household. In an exemplary embodiment, a first customer profile associated with the first representative set-top box device **116** can be associated with an IP address of the first representative set-top box device **116**, and a second customer profile associated with the second representative set-top box device **124** can be associated with an IP address of the second representative set-top box device **124**. The customer profiles and associated IP addresses can be sent from the access network **166** to the advertising system data store(s) **186** at the client-facing tier **102**.

[0043] In an illustrative embodiment, advertisements can be received at the acquisition tier **106**, for example, via the broadcast service **156**. Such advertisements are sent to the advertisement server(s) **182** and stored. The advertising system data store(s) **186** can store information associated with advertisements stored at the advertisement server(s) **182**, such as advertisement identifiers, advertisement lengths, advertisement subject matter, advertiser name, product name, profiles of intended advertisement targets, other information related to advertisements stored at the advertisement server(s) **182**, or any combination thereof.

[0044] Further, the advertising system data store(s) **186** can store information related to advertisements stored at the advertisement server(s) **182**. For example, the advertising system data store(s) **186** can store an identifier of each one of the advertisements stored at the advertisement server(s) **182**. Further, advertising system data store(s) **186** can store one or more indicators associated with each advertisement, each indicator identifying a time, program, network, advertisement insertion point, or any combination thereof, at which an advertisement is to be displayed (e.g., the 15:52 point of FOX's '24'). In addition, the advertising system data store(s) **186** can store intended target information related to each one of the advertisements stored at the advertisement server(s) **182**, which can be compared to customer profiles stored at the advertising system data store(s) **186**. Intended target information can include a profile of an intended target or profiles of multiple intended targets associated with each advertisement. For example, an advertisement for a travel package to Scotland could have a single intended target of customers with Scottish surnames, or multiple intended targets, such as customers with Scottish surnames, customers that exchange telephone calls with locations in Scotland, and customers who are golf enthusiasts.

[0045] In a particular embodiment, the video server(s) **180** can receive requests from the set-top box devices **116**, **124** for video content of one or more television programs. The video server(s) **180** can recognize advertisement insertion points, such as cue tones or other cues, in the video content transmitted or to be transmitted to the set-top box devices **116**, **124**. Upon recognizing such advertisement insertion points, the video server(s) **180** can issue one or more requests to the advertisement server(s) **182** to receive one or more advertisements. For instance, the video server(s) **180** can issue a request to the advertisement server(s) **182** for one or more first advertisements to be inserted at one or more first advertisement insertion points into a first video stream being sent to the IP address of the first representative set-top box device **116**. Similarly, the video server(s) **180** can issue a request to the advertisement server(s) **182** for one or more second advertisements to be inserted at one or more second advertisement insertion points into a second video stream being sent to the IP address of the second representative set-top box device **124**. Each request can include an IP address or other identifier of the set-top box device to which a requested advertisement is to be sent.

[0046] The advertisement server(s) **182** can select the first advertisement(s) based on the customer profile associated with the IP address of the first representative set-top box device **116** at the advertising system data store(s) **186**, and the second advertisement(s) based on the customer profile associated with the IP address of the second representative set-top box device **124** at the advertising system data store(s) **186**. In an illustrative embodiment, the advertisement server (s) **182** can issue a query to the advertising system data store(s) **186** to receive a recommendation or selection of a targeted advertisement to be sent to a set-top box device identified in a request from the video server(s) **180**. The advertising system data store(s) **186** can compare a customer profile associated with the identified set-top box device to intended target information related to advertisements stored at the advertisement server(s) **182**. The advertising system data store(s) **186** can send recommendations or selections of targeted advertisements to be sent to the set-top box devices **116**, **124** to the advertisement server(s) **182**, where the customer profile associated with a set-top box device at least partially matches intended advertisement target information associated with the targeted advertisements recommended for that set-top box device. The advertisement server(s) **182** can select advertisements based on the recommendation or selection received from the advertising system data store(s) **186** and send video content of the selected advertisement to the video server(s) **180**.

[0047] The video server(s) **180** include the video content of selected advertisements with the video streams being sent to the IP addresses of corresponding set-top box devices **116**, **124**. In an illustrative, non-limiting embodiment, the advertisement server(s) **182** can transmit the selected advertisement(s) to the video server(s) **180** via the splicer **184**, and the splicer **184** can splice the video content of the selected advertisements into the video streams being sent by the video server (s) **180** to each set-top box device. In another embodiment, video content of advertisements can be pushed to the set-top box devices **116**, **124**, and the set-top box devices **116**, **124** can splice video content of each advertisement into video content of television programming at an advertisement insertion point. For example, video content of each advertisement can include tags or other indicators that identify an advertisement insertion point, such as the 52:30

point of NBC's 'ER,' at which the advertisement is to be inserted into television programming video content by the set-top box device.

[0048] In a particular embodiment, the local switch of the access network **166** can determine and record whether the set-top box device of an intended advertisement target was tuned to a network on which a targeted advertisement was shown during all of the targeted advertisement, a portion of the targeted advertisement, or none of the targeted advertisement. Such ad viewership information can be stored at the access network **166** and can be used to update customer profiles. Aggregated viewership information, non-aggregated viewership information, updated profiles, or any combination thereof, can be sent from the access network **166** to the advertising system data store(s) **186**.

[0049] Referring to FIG. **2**, a second particular embodiment of a system to provide targeted advertisements is illustrated and designated generally at **200**. The system **200** includes a video acquisition system **201** that communicates with a video head end office (VHO) **206** of an Internet Protocol Television (IPTV) system. In an illustrative embodiment, the video acquisition system **201** can be within a satellite head-end office (SHO) and can include a satellite dish **202** coupled to a content system **204**. The content system **204** can include, for example, a low-noise block-down (LNB) converter that is coupled to or integrated with a satellite signal decoder that extracts video content from a satellite signal.

[0050] In an illustrative embodiment, the content system **204** communicates advertisements received at the video acquisition system **201** to one or more advertisement servers **210** at the VHO **206**. The advertisement server(s) **210** can be coupled to one or more advertising system data stores **208**. The advertising system data store(s) **208** can store information associated with advertisements stored at the advertisement server(s) **210**, such as advertisement identifiers, advertisement lengths, advertisement subject matter, advertiser name, product name, profiles of intended advertisement targets, intended advertisement insertions points (i.e., networks, times, programs, or any combination thereof), other information related to advertisements stored at the advertisement server(s) **210**, or any combination thereof. Further, the advertising system data store(s) **208** can associate one or more advertisement identifiers or other advertisement information with customer profile/IP address combinations received from a customer data store **220** via a local switch **218** of the IPTV system.

[0051] The content system **204** communicates video content of television and movie programs to one or more video servers **214** at the VHO **206**. In an illustrative embodiment, the video server(s) **214** can be the video server(s) **180** illustrated in FIG. **1**. The video server(s) **180** feed video streams via a local switch **218** to at least a first set-top box device **222** and a second set-top box device **226** for display at display devices **224**, **228**. In an illustrative, non-limiting embodiment, the video server(s) **214** can feed a video stream to many set-top box devices via many local switches, via a multicast router **216**.

[0052] In a particular embodiment, the local switch **218** can be coupled to a customer data store **218**. The customer data store **218** stores customer information associated with the first set-top box device **222** and the second set-top box device **224**. In an illustrative embodiment, the customer data store **218** can develop customer profiles from the customer information and associate each customer profile with an IP address of a set-top box device. For example, the customer data store **218** can associate a first customer profile with an IP address of the first set-top box device **222**. Further, the customer data store **218** can associate a second customer profile with the IP address of the second set-top box device **226**. The customer data store **218** sends the profiles and associated IP addresses to the advertising system data store **208** at the VHO **206**.

[0053] In an illustrative embodiment, the video server(s) **214** can receive requests from the set-top box devices **222**, **226** for video content of one or more television programs. The video server(s) **214** can recognize advertisement insertion points, such as cue tones or other cues in a video stream, in the video content transmitted or to be transmitted to the set-top box devices **222**, **226**. Upon recognizing such advertisement insertion points, the video server(s) **214** can issue one or more requests to the advertisement server(s) **210** to receive one or more advertisements. For instance, the video server(s) **214** can issue a request to the advertisement server(s) **210** for one or more first advertisements to be inserted at one or more first advertisement insertion points into a first video stream being sent to the IP address of the first set-top box device **222**. Similarly, the video server(s) **214** can issue a request to the advertisement server(s) **210** for one or more second advertisements to be inserted at one or more second advertisement insertion points into a second video stream being sent to the IP address of the second set-top box device **226**.

[0054] Each request can include an IP address or other identifier of the set-top box device to which the requested advertisement(s) will be sent. The advertisement server(s) **210** can select the first advertisement(s) based on the customer profile associated with the IP address of the first set-top box device **222** at the advertising system data store(s) **208**, and the second advertisement(s) based on the customer profile associated with the IP address of the second set-top box device **226** at the advertising system data store(s) **208**.

[0055] In a particular embodiment, the advertisement server(s) **210** can issue a query to the advertising system data store(s) **208** to receive recommendations or selections of targeted advertisements to be sent to a set-top box device identified in a request from the video server(s) **214**. The advertising system data store(s) **208** can compare a customer profile associated with the identified set-top box device to intended target information related to advertisements stored at the advertisement server(s) **210**. The advertising system data store(s) **208** can send recommendations or selections of one or more targeted advertisements to be sent to the set-top box device to the advertisement server(s) **210**, where the customer profile associated with the set-top box device at least partially matches intended advertisement target information associated with the targeted advertisements. The advertisement server(s) **210** can select one or more advertisements based on the recommendation or selection received from the advertising system data store(s) **208** and send video of the selected advertisement(s) to the video server(s) **214**.

[0056] In a particular embodiment, the advertisement server(s) **210** transmit selected advertisements to the video server(s) **214**, and the video server(s) **214** place the advertisements into video streams being sent to the set-top box devices **222**, **226**. In an illustrative, non-limiting embodiment, the advertisement server(s) **210** can transmit the

selected advertisements to the video server(s) **214** via the splicer **212**. The video streams containing the targeted advertisements are dispatched to the IP addresses of the set-top box devices **222**, **226** via the local switch **218**.

[0057] In a particular embodiment, the local switch **218** can determine and record whether the set-top box device of an intended advertisement target was switched to a network on which a targeted advertisement was shown during all of the targeted advertisement, a portion of the targeted advertisement, or none of the targeted advertisement. Such ad viewership information can be stored at the customer data store **220** and can be used to update customer profiles. Aggregated viewership information, non-aggregated viewership information, updated profiles, or any combination thereof, can be sent from the customer data store **220** to the advertising system data store **208** via the local switch **218**.

[0058] Referring to FIG. **3**, a third particular embodiment of a system to provide one or more targeted advertisement is illustrated and designated generally at **300**. The system **300** includes a set-top box device **302** that communicates with a video server **332** of an Internet Protocol Television (IPTV) system via a local switch **326** of an IPTV access network. In a particular embodiment, the local switch **326** is coupled to a data server **352** that stores customer information, including account information and other information related to a customer associated with the set-top box device **302**. Further, the video server **332** is coupled to an advertisement server **342** that stores advertisements and communicates with a advertising system data store **362** to target stored advertisements to set-top box devices. In an illustrative, non-limiting embodiment, the local switch **326** can communicate directly with the advertising system data store **362**.

[0059] As indicated in FIG. **3**, the set-top box device **302** includes a STB processor **304** and a memory device **306** accessible to the STB processor **304**. In an illustrative, non-limiting embodiment, the STB processor **304** can communicate with a local switch **326** of an external access network, such as an IPTV access network, via the network interface **308**. In a particular embodiment, network access customer premises equipment (CPE) **328** can facilitate communication between the network interface **308** and the local switch **326**. The network access CPE **328** can include a router, a local area network device, a modem, such as a digital subscriber line (DSL) modem, any other suitable device for facilitating communication between the network interface **308** of the set-top box device **302** and the local switch **326**, or any combination thereof. Further, the STB processor **304** can communicate video content to a display device **312** via a display interface **310**. In addition, the STB processor **304** can receive commands from a remote control device **330** via a remote interface **316**.

[0060] In a particular embodiment, the memory device **306** can include a content request module **318** that is executable by the STB processor **304** to receive a request for video content from a user via the remote control device **330**. For example, the request can be a channel change request or a video-on-demand request. The content request module **318** can be executable by the STB processor **304** to request and receive the video content from the video server **332** via the local switch **326**. The memory device **306** can also include a video content control and buffer module **320** that is executable by the STB processor **304** to receive video content requested by a user and to buffer the video content before transmitting it to the display interface **310**, in order to prevent underflow. Further, the memory device **306** can include a codec module **322** that is executable by the STB processor **304** to decode video streams received from the IPTV system via the local switch **326** prior to transmitting the video streams to the display device **312**.

[0061] In a particular embodiment, the memory device **306** can include an advertisement store **324** to store video content of advertisements received with video content. Further, the memory device **306** can include an advertisement insertion module **325** that is executable by the processor **304** to splice or otherwise insert video content of one or more advertisements stored in the advertisement store **324** into video content sent to the display device **312** from the video content control and buffer module **320**.

[0062] In a particular embodiment, the video server **332** can include a VS processor **334**. The video server **332** can include a video communication module **338** that is executable by the VS processor **334** to receive video content, for example, from an acquisition system or D-server, and to transmit the content to the set-top box device **302** via the local switch **326**. In addition, the video server **332** can include an advertisement retrieval module **336** that is executable by the VS processor **334** to recognize one or more advertisement insertion points in a video stream being sent to a set-top box device and to request one or more advertisements from the advertisement server **342**. In an illustrative embodiment, the video communication module **338** can be executable by the VS processor **334** to include video content of each advertisement with the video stream to be transmitted to the set-top box device **302** or to multiple set-top box devices. In an illustrative embodiment, the various modules **336**, **338** of the video server **332** can be included in a memory device of the video server **332**.

[0063] In a particular embodiment, the advertisement server **342** can include an AS processor **344**. Further, the advertisement server **342** can include an advertisement communication module **346** that is executable by the AS processor **344** to receive advertisements from an acquisition system and to store the advertisements in an advertisement store **350**. The advertisement server **342** can also include an advertisement selection module **348** that is executable by the AS processor **344** to select an advertisement from the advertisement store **350** based on intended advertisement target information associated with each advertisement in the advertisement store **350**, as well as a customer profile associated with an IP address of a set-top box device for which one or more advertisements are requested by the video server **332**. The customer profile, IP address, and intended advertisement target information can be stored at the advertisement server **342**, at the advertising system data store **362**, or any combination thereof. In an illustrative embodiment, the advertisement selection module **348** can be executable by the AS processor **344** to communicate selected advertisements to the video server **332**. In an illustrative embodiment, the various modules **346-350** of the advertisement server **342** can be included in a memory device of the advertisement server **342**.

[0064] In a particular embodiment, the data server **352** can include a DS processor **354**. Further, the data server **352** can include a data collection module **356** that is executable by the DS processor **354** to collect data associated with the set-top box device **302**, such as requested video content, channel selections, viewership of television programs, view-

ership of movies, viewership of commercial advertisements, other data, or any combination thereof. Further, the data collection module **356** can be executable by the DS processor **354** to receive customer information, such as account information, demographic information, location information, other customer information, or any combination thereof, from a subscriber store, communication server, or other device within the IPTV system via the local switch **326**. The data collection module **356** can be executable by the DS processor **354** to store the customer information in a data store **358**. The data store **358** can also store IP addresses associated with set-top box devices served by the local switch **326**.

[0065] In an illustrative embodiment, the data server **352** can include a profile generation module **364** that is executable by the DS processor **354** to develop a customer profile based on customer information associated with the set-top box device **302**. Additionally, the profile generation module **364** can be executable by the DS processor **354** to associate the customer profile with the IP address of the set-top box device **302**. Further, the data server **352** can include a profile communication module **360** that is executable by the DS processor **354** to communicate the customer profile and associated IP address to the advertising system data store **362** via the local switch **326**. In an illustrative embodiment, the various modules **356-360**, **364** of the data server **352** can be included in a memory device of the data server **352**.

[0066] In an illustrative embodiment, the video server **332** can receive a request for video content corresponding to particular television programming. The video server **332** can recognize one or more advertisement insertion points in the video content indicating that an advertisement is to be inserted into a video sequence. Upon recognizing the advertisement insertion point(s), the video server **332** issues a request to the advertisement server **342** for one or more advertisements. The request includes an IP address or other identifier of the set-top box device **302**. In an illustrative embodiment, the advertisement server **342** can select the advertisement(s) based on a customer profile associated with the IP address of the set-top box device **302** at the advertising system data store **362**.

[0067] The advertisement server **342** transmits the selected advertisement(s) to the video server **332**, and the video server **332** sends video content of the advertisement(s) with the video stream being sent to the set-top box device **302**. In an illustrative, non-limiting embodiment, the video content of each advertisement can include a tag or other indicator that describes an advertisement insertion point, such as the 06:47 point of ABC's 'LOST.' The set-top box device **302** can splice or otherwise insert the video content of the advertisement(s) into the video content of television programming at the indicated advertisement insertion point (s), before sending the video content of the television programming to the display device **312**.

[0068] In a particular embodiment, the local switch can determine and record whether the set-top box device of an intended advertisement target was tuned to a network on which a targeted advertisement was shown. Such advertisement viewership information can be stored at the data server **352** and can be used to update customer profiles. Aggregated viewership information, non-aggregated viewership information, updated profiles, or any combination thereof, can be sent from the data server **352** to the advertising system data store **362** via the local switch **326**.

[0069] Referring to FIG. **4**, a particular embodiment of a method of providing one or more targeted advertisements is illustrated. At block **400**, a customer data store receives customer information corresponding to a subscriber or other customer associated with a set-top box device that receives video content from an Internet Protocol Television (IPTV) system. In an illustrative embodiment, the customer information can be received at a subscriber and system store, communication server, or other device of the IPTV system, such as the subscriber and system store **148** or communication server **190** illustrated in FIG. **1**. In another embodiment, the customer information can be stored at a customer data server that communicates with a local switch of the IPTV system, such as the customer data store **220** illustrated in FIG. **2** or the data server **352** illustrated in FIG. **3**.

[0070] In an illustrative embodiment, customer information can be received or collected from the customer, for example, via a set-top box device or computing device that communicates with the IPTV system. In another embodiment, the data can be received at the customer data server from the subscriber and system store **148** or communication server **190** illustrated in FIG. **1**. Customer data can include viewing habits at the customer's set-top box device; age, gender, marriage, children or other demographic information of the customer, other users of the customer's set-top box device, or any combination thereof; and other information related to preferences or interests associated with the customer, other users of the customer's set-top box device, or any combination thereof. In a particular embodiment, the customer information can include telephone call history data associated with the customer, other users of the customer's set-top box device, or any combination thereof; or Internet viewing habits associated with customer, other users of the set-top box device, or any combination thereof.

[0071] Moving to block **402**, in an illustrative embodiment, customer information stored at the customer data store is used to develop a customer profile. For instance, a customer profile can predict or otherwise indicate, for example, needs, wants, preferences, interests, or any combination thereof, for goods, services, or any combination thereof, at a customer's household. At block **404**, the customer profile is associated with an IP address corresponding to the customer's set-top box device. Proceeding to block **406**, the customer profile and associated IP address are sent from the customer data store to a data store of an advertising system. In an illustrative embodiment, the customer profile and associated IP address can be sent to an advertisement server of the IPTV system. The advertisement server can store the customer profile and associated IP address or communicate the customer profile and associated IP address to a data store coupled to the advertisement server, such as the advertising system data store illustrated in FIGS. **1-3**. In another embodiment, the customer profile and associated IP address can be sent directly to a data store coupled to the advertisement server by the customer data store or by a data server or switch coupled thereto.

[0072] Continuing to block **408**, in a particular embodiment, a targeted advertisement is transmitted to the customer's set-top box device. In an illustrative embodiment, the targeted advertisement is selected by an advertisement server of the IPTV system based on the customer profile associated with the IP address of the set-top box device. The targeted advertisement can be inserted into a video stream

that is sent to the set-top box device by a video server or other device of the IPTV system.

[0073] Advancing to block **410**, in a particular embodiment, the customer data store collects and stores viewership information related to the targeted advertisement. For example, the customer data store can determine whether the entire targeted advertisement, none of the targeted advertisement, or a portion of the targeted advertisement, was viewed at the customer's set-top box device. In an illustrative embodiment, the viewership information can be used to update the customer's profile, for instance, with respect to interests, viewing habits, or other information associated with the customer's profile.

[0074] Moving to block **412**, in an illustrative, non-limiting embodiment, an updated profile that includes or is based on collected viewership information can be associated with the IP address of the customer's set-top box device, and the updated profile and IP address can be sent to the advertising system data store. In another embodiment, the customer data store can aggregate viewership information and statistics related to an advertisement, for instance, where the advertisement has been targeted to many customers served by a local switch or other device of the IPTV system. Such aggregated viewership data can be sent to the advertising system data store for analysis by or transmission to advertisers or other parties. The method terminates at **414**.

[0075] Referring to FIG. **5**, a second particular embodiment of a method of providing one or more targeted advertisements is illustrated. At block **500**, a profile and associated set-top box IP address are received from a data store or server at an advertising system data store within an Internet Protocol Television (IPTV) system. The profile is based on information corresponding to a customer of the set-top box device, other users of the set-top box device, or any combination thereof. In an illustrative embodiment, the profile and associated IP address can be received at an advertisement server of the IPTV system. The advertisement server can store the profile and associated IP address or communicate the profile and associated IP address to a data store coupled to the advertisement server, such as the advertising system data store illustrated in FIGS. **1-3**. In another embodiment, the profile and associated IP address can be sent directly to the advertising system data store by the data store or server, or from a switch coupled thereto.

[0076] Moving to block **502**, the advertisement server receives a request to send an advertisement to a video server of the IPTV system. In an illustrative embodiment, the request can include an IP address or other identifier associated with the set-top box device to which the video server will send the advertisement. Proceeding to block **504**, the advertisement server selects at least one advertisement based on the profile associated with the IP address of the set-top box device. For example, the advertisement server can store profiles and intended advertisement target information related to each advertisement that it stores. The advertisement server can select a targeted advertisement by comparing the profile to the intended target information.

[0077] In another embodiment, the advertising system data store can store intended target information related to each advertisement stored at the advertisement server. In this embodiment, the advertisement server can query the advertising system data store to receive one or more advertisement selections. The advertising system data store can compare the profile associated with the IP address of the set-top box device that will receive the advertisement to intended target information corresponding to each of the advertisements stored at the advertisement server. The advertising system data store can issue one or more commands, instructions, or selections to the advertisement server identifying an advertisement that has intended target information at least partially matching or matched by the profile.

[0078] Continuing to block **506**, the advertisement server transmits video content of the selected advertisement(s) to the video server. At block **508**, in an illustrative embodiment, video content of the selected advertisement(s) can be inserted into or otherwise included with a video stream that is sent to the set-top box device by the video server or other device of the IPTV system. In a particular embodiment, video content of the selected advertisement(s) can be included with video content sent to multiple set-top box devices that are associated with profiles having one or more similar or matching elements.

[0079] Advancing to block **510**, in a particular embodiment, the advertisement server can determine whether another advertisement is requested for insertion into the video stream. For example, multiple targeted advertisements can be used for one "commercial break" of a television program. If another advertisement is requested, the method returns to block **504**. Conversely, if no additional targeted advertisements are requested, the method moves to block **512**.

[0080] At block **512**, in a particular embodiment, the advertising system can receive an updated profile associated with an IP address of the set-top box device to which the targeted advertisement was sent. The profile can be updated based on viewership information related to the targeted advertisement, such as whether the entire targeted advertisement, none of the targeted advertisement, or a certain portion of the targeted advertisement, was viewed at the set-top box device. In an illustrative, non-limiting embodiment, the advertising system can also receive aggregated viewership information and statistics for an advertisement, for instance, where the advertisement has been targeted to many customers served by a local switch or other device of the IPTV system. Such aggregated viewership data can be sent to the advertising system data store for analysis by or transmission to advertisers or other parties. Proceeding to block **514**, the profile associated with the IP address of the set-top box device at the advertising system data store is replaced with the updated profile. The method terminates at **516**.

[0081] Referring to FIG. **6**, a third particular embodiment of a method of providing targeted advertisements is illustrated. At block **600**, a video server of an Internet Protocol Television (IPTV) system receives a request for video content, such as a channel or program request, from a set-top box device. Moving to block **601**, the video server feeds the video content to the set-top box device via a switch of the IPTV system. Moving to block **602**, the video server identifies one or more advertisement insertion points in the video stream. An advertisement insertion point may include a cue tone or other cue coinciding with or before the advertisement insertion point. Alternatively, video content associated with a program, for instance, can include data indicating a number of advertisement insertion points, positions of advertisement insertion points, or any combination thereof related to the program.

[0082] Proceeding to block **604**, the video server requests one or more advertisements from an advertisement server of the IPTV system. The request can include an IP address of a set-top box device that is to receive the advertisement(s). Continuing to block **606**, the video server receives video content of the requested advertisement(s) from the advertisement server. In an illustrative embodiment, the advertisement(s) can be targeted to a customer associated with the IP address of the set-top box device based on a profile of the customer that is created from customer information, such as account information, demographic information, other customer information, or any combination thereof. Advancing to block **608**, in a particular embodiment, the video content of the advertisement(s) can be spliced or otherwise inserted into the video content being fed to the set-top box device. In another particular embodiment, the advertisement(s) can be pushed to the set-top box device, and the set-top box device can splice the video content of the advertisement(s) into video content of programming.

[0083] At block **610**, in a particular embodiment, the video server can determine whether to retrieve another advertisement. For example, multiple targeted advertisements can be inserted during one "commercial break" of a television program. If the video server determines that another advertisement is to be requested, the method returns to block **604**. Conversely, if no additional targeted advertisements are to be requested, the method terminates at **612**.

[0084] Referring to FIG. **7**, a fourth particular embodiment of a method of providing targeted advertisements is illustrated. At block **700**, a set-top box device receives a request for a channel, program or any combination thereof, from a user. For example, the request can be received from a remote control device that communicates with the set-top box device. Moving to block **702**, the set-top box device requests video content corresponding to television programming, for example, from a video server of an Internet Protocol Television (IPTV) system.

[0085] Continuing to block **704**, the set-top box device receives the requested video content from a video server via a local switch, access network, or any combination thereof, of the IPTV system. In a particular embodiment, video content of one or more advertisements can be included with the video content of the requested programming. In an illustrative embodiment, the video content of each advertisement can include one or more indicators that identify one or more advertisement insertion points at which the advertisement is to be inserted into video content of the television programming. The advertisement(s) can include one or more targeted advertisements that are selected by an advertisement server or other device of the IPTV system, based on a profile of a customer, other user, or any combination thereof, associated with the set-top box device.

[0086] Advancing to block **706**, in a particular embodiment, the set-top box identifies one or more advertisement insertion points in the video stream. An advertisement insertion point may include a cue tone or other cue coinciding with or before the advertisement insertion point. Proceeding to block **708**, in a particular embodiment, the set-top box device can splice or otherwise insert the video content of the advertisement(s) into the video content of television programming being sent to a display device coupled to the set-top box device.

[0087] At block **710**, in a particular embodiment, the set-top box device can determine whether to insert another advertisement into the video content of the television programming. For example, multiple advertisements can be inserted during one "commercial break" of a television program. If the set-top box device determines that another advertisement is to be requested, the method returns to block **708** and continues as described. Conversely, if no additional targeted advertisements are to be requested, the method terminates at **712**.

[0088] In a particular embodiment, the steps of the methods described herein can be executed in the order shown by the figures. In alternative embodiments, some steps can be executed simultaneously or in alternative sequences. For example, a single request for multiple advertisements can be communicated from a video server and received at an advertisement server. In another example, multiple successive requests can be communicated and received before the advertisement server returns any targeted advertisements to the video server.

[0089] In conjunction with the configuration of structure described herein, the system and method disclosed provide targeted advertisements based on a variety of information associated with a set-top box device. In an illustrative embodiment, a customer data server coupled to a local switch of an Internet Protocol Television (IPTV) access network can collect customer information, such as account information, demographic information, television viewing habits, and other customer information. In a particular embodiment, the customer information can include Internet viewing habits, telephone call history information, or any combination thereof. In an illustrative, non-limiting embodiment, a service provider can obtain any necessary consents from customers prior to collecting the telephone call history data, Internet viewing habits, or any combination thereof. In another embodiment, the service provider can collect the telephone call history data, Internet viewing habits, or any combination thereof, without such consents, for example, where such consents are not required by regulation.

[0090] The customer data server can use the customer information to create a customer profile associated with an IP address of the customer's set-top box device and communicate the profile and IP address to an advertising system of the IPTV system. For example, the customer data server can communicate the customer profile to an advertisement server that stores the customer profile at an advertising system data store. In a particular embodiment, the advertising system data store can also store information and identifiers related to advertisements stored at the advertisement server.

[0091] In an illustrative embodiment, a video server of the IPTV system can receive a request for video content, such as television programming, from a set-top box device. The video server can recognize one or more advertisement insertion points in the requested video content. The video server can request one or more targeted advertisements to be inserted into the video content of the television programming from the advertisement server. Upon receiving such a request, the advertisement server, advertising system data store, or any combination thereof, can select one or more targeted advertisements based on the customer profile associated with the IP address of the set-top box device. The advertisement server can send video content of the selected advertisement(s) to the video server, and the video content of the advertisement(s) can be included with the video content of the television programming sent to the set-top box

device. In one embodiment, the video content of the advertisement(s) can be spliced or otherwise inserted into the video content of the television programming being fed to the set-top box device. In another embodiment, the video content of the advertisement(s) can be included with the video content of the television programming being fed to the set-top box device, and the set-top box device can splice or otherwise insert the video content of the advertisement(s) into the video content of the television programming.

[0092] In a particular embodiment, viewership data corresponding to the advertisement(s) can be collected and used to update the customer profile. Further, aggregated viewership data corresponding to multiple customers receiving the same targeted advertisement(s) can be collected and stored for use by advertisers or other parties.

[0093] In an exemplary embodiment, two customers can be watching a single program, such as a football game, at different locations. One of the customer's demographic data, such as a birth date, may indicate that the customer is a retired person. The other customer's billing data may show that he or she is a college student on a university campus. The disclosed system and method can allow an advertiser, such as a car company or beer manufacturer, to promote a luxury car or premium beer to the first customer, while promoting a sports car or light beer to the second customer, during the same commercial break in the football game.

[0094] In another exemplary embodiment, two customers could be watching another program, such as a travel program, at different locations. One of the customer's telephone call history data may indicate that the customer calls Mexico frequently. The other customer's Internet viewing data may include Bahamas travel packages. Upon obtaining any necessary consents from the customer, regulatory agencies, or any combination thereof, the disclosed system and method can allow a service provider to advertise a hotel package in Puerto Vallarta to the first customer, while advertising a cruise to the Bahamas to the second customer, during the same commercial break in the travel program.

[0095] Referring to FIG. **8**, an illustrative embodiment of a general computer system is shown and is designated **800**. The computer system **800** can include a set of instructions that can be executed to cause the computer system **800** to perform any one or more of the methods or computer based functions disclosed herein. The computer system **800**, or any portion thereof, may operate as a standalone device or may be connected, e.g., using a network, to other computer systems or peripheral devices, including a server or set-top box device, as shown in FIGS. **1-3**.

[0096] In a networked deployment, the computer system may operate in the capacity of an IPTV server or set-top box device. The computer system **800** can also be implemented as or incorporated into various devices, such as a personal computer (PC), a tablet PC, a set-top box (STB), a personal digital assistant (PDA), a mobile device, a palmtop computer, a laptop computer, a desktop computer, a communications device, a wireless telephone, a land-line telephone, a control system, a camera, a scanner, a facsimile machine, a printer, a pager, a personal trusted device, a web appliance, a network router, switch or bridge, or any other machine capable of executing a set of instructions (sequential or otherwise) that specify actions to be taken by that machine. In a particular embodiment, the computer system **800** can be implemented using electronic devices that provide voice, video or data communication. Further, while a single computer system **800** is illustrated, the term "system" shall also be taken to include any collection of systems or sub-systems that individually or jointly execute a set, or multiple sets, of instructions to perform one or more computer functions.

[0097] As illustrated in FIG. **8**, the computer system **800** may include a processor **802**, e.g., a central processing unit (CPU), a graphics-processing unit (GPU), or both. Moreover, the computer system **800** can include a main memory **804** and a static memory **806** that can communicate with each other via a bus **808**. As shown, the computer system **800** may further include a video display unit **810**, such as a liquid crystal display (LCD), an organic light emitting diode (OLED), a flat panel display, a solid state display, or a cathode ray tube (CRT). Additionally, the computer system **800** may include an input device **812**, such as a keyboard, and a cursor control device **814**, such as a mouse. Further, the computer system **800** can include a wireless input device **815**, e.g., a remote control device. The computer system **800** can also include a disk drive unit **816**, a signal generation device **818**, such as a speaker or remote control, and a network interface device **820**.

[0098] In a particular embodiment, as depicted in FIG. **8**, the disk drive unit **816** may include a computer-readable medium **822** in which one or more sets of instructions **824**, e.g. software, can be embedded. Further, the instructions **824** may embody one or more of the methods or logic as described herein. In a particular embodiment, the instructions **824** may reside completely, or at least partially, within the main memory **804**, the static memory **806**, and/or within the processor **802** during execution by the computer system **800**. The main memory **804** and the processor **802** also may include computer-readable media.

[0099] In an alternative embodiment, dedicated hardware implementations, such as application specific integrated circuits, programmable logic arrays and other hardware devices, can be constructed to implement one or more of the methods described herein. Applications that may include the apparatus and systems of various embodiments can broadly include a variety of electronic and computer systems. One or more embodiments described herein may implement functions using two or more specific interconnected hardware modules or devices with related control and data signals that can be communicated between and through the modules, or as portions of an application-specific integrated circuit. Accordingly, the present system encompasses software, firmware, and hardware implementations.

[0100] In accordance with various embodiments of the present disclosure, the methods described herein may be implemented by software programs executable by a computer system. Further, in an exemplary, non-limited embodiment, implementations can include distributed processing, component/object distributed processing, and parallel processing. Alternatively, virtual computer system processing can be constructed to implement one or more of the methods or functionality as described herein.

[0101] The present disclosure contemplates a computer-readable medium that includes instructions **824** or receives and executes instructions **824** responsive to a propagated signal, so that a device connected to a network **826** can communicate voice, video or data over the network **826**. Further, the instructions **824** may be transmitted or received over the network **826** via the network interface device **820**.

[0102] While the computer-readable medium is shown to be a single medium, the term "computer-readable medium"

includes a single medium or multiple media, such as a centralized or distributed database, and/or associated caches and servers that store one or more sets of instructions. The term "computer-readable medium" shall also include any medium that is capable of storing, encoding or carrying a set of instructions for execution by a processor or that cause a computer system to perform any one or more of the methods or operations disclosed herein.

[0103] In a particular non-limiting, exemplary embodiment, the computer-readable medium can include a solid-state memory such as a memory card or other package that houses one or more non-volatile read-only memories. Further, the computer-readable medium can be a random access memory or other volatile re-writable memory. Additionally, the computer-readable medium can include a magneto-optical or optical medium, such as a disk or tapes or other storage device to capture carrier wave signals such as a signal communicated over a transmission medium. A digital file attachment to an e-mail or other self-contained information archive or set of archives may be considered a distribution medium that is equivalent to a tangible storage medium. Accordingly, the disclosure is considered to include any one or more of a computer-readable medium or a distribution medium and other equivalents and successor media, in which data or instructions may be stored.

[0104] In accordance with various embodiments, the methods described herein may be implemented as one or more software programs running on a computer processor. Dedicated hardware implementations including, but not limited to, application specific integrated circuits, programmable logic arrays and other hardware devices can likewise be constructed to implement the methods described herein. Furthermore, alternative software implementations including, but not limited to, distributed processing or component/object distributed processing, parallel processing, or virtual machine processing can also be constructed to implement the methods described herein.

[0105] It should also be noted that software that implements the disclosed methods may optionally be stored on a tangible storage medium, such as: a magnetic medium, such as a disk or tape; a magneto-optical or optical medium, such as a disk; or a solid state medium, such as a memory card or other package that houses one or more read-only (non-volatile) memories, random access memories, or other re-writable (volatile) memories. The software may also utilize a signal containing computer instructions. A digital file attachment to e-mail or other self-contained information archive or set of archives is considered a distribution medium equivalent to a tangible storage medium. Accordingly, the disclosure is considered to include a tangible storage medium or distribution medium as listed herein, and other equivalents and successor media, in which the software implementations herein may be stored.

[0106] Although the present specification describes components and functions that may be implemented in particular embodiments with reference to particular standards and protocols, the invention is not limited to such standards and protocols. For example, standards for Internet and other packet switched network transmission (e.g., TCP/IP, UDP/IP, HTML, HTTP) represent examples of the state of the art. Such standards are periodically superseded by faster or more efficient equivalents having essentially the same functions. Accordingly, replacement standards and protocols having the same or similar functions as those disclosed herein are considered equivalents thereof.

[0107] The illustrations of the embodiments described herein are intended to provide a general understanding of the structure of the various embodiments. The illustrations are not intended to serve as a complete description of all of the elements and features of apparatus and systems that utilize the structures or methods described herein. Many other embodiments may be apparent to those of skill in the art upon reviewing the disclosure. Other embodiments may be utilized and derived from the disclosure, such that structural and logical substitutions and changes may be made without departing from the scope of the disclosure. Additionally, the illustrations are merely representational and may not be drawn to scale. Certain proportions within the illustrations may be exaggerated, while other proportions may be minimized. Accordingly, the disclosure and the figures are to be regarded as illustrative rather than restrictive.

[0108] One or more embodiments of the disclosure may be referred to herein, individually and/or collectively, by the term "invention" merely for convenience and without intending to voluntarily limit the scope of this application to any particular invention or inventive concept. Moreover, although specific embodiments have been illustrated and described herein, it should be appreciated that any subsequent arrangement designed to achieve the same or similar purpose may be substituted for the specific embodiments shown. This disclosure is intended to cover any and all subsequent adaptations or variations of various embodiments. Combinations of the above embodiments, and other embodiments not specifically described herein, will be apparent to those of skill in the art upon reviewing the description.

[0109] The Abstract of the Disclosure is provided to comply with 37 C.F.R. §1.72(b) and is submitted with the understanding that it will not be used to interpret or limit the scope or meaning of the claims. In addition, in the foregoing Detailed Description, various features may be grouped together or described in a single embodiment for the purpose of streamlining the disclosure. This disclosure is not to be interpreted as reflecting an intention that the claimed embodiments require more features than are expressly recited in each claim. Rather, as the following claims reflect, inventive subject matter may be directed to less than all of the features of any of the disclosed embodiments. Thus, the following claims are incorporated into the Detailed Description, with each claim standing on its own as defining separately claimed subject matter.

[0110] The above-disclosed subject matter is to be considered illustrative, and not restrictive, and the appended claims are intended to cover all such modifications, enhancements, and other embodiments, which fall within the true spirit and scope of the present invention. Thus, to the maximum extent allowed by law, the scope of the present invention is to be determined by the broadest permissible interpretation of the following claims and their equivalents, and shall not be restricted or limited by the foregoing detailed description.

What is claimed is:

1. A method of providing targeted advertisements, the method comprising:

receiving video content of television programming at a set-top box device from a video server of an Internet Protocol Television (IPTV) system;

receiving video content of a targeted advertisement at the set-top box device from the video server with the video content of the television programming, wherein an advertisement server of the IPTV system selects the targeted advertisement based on a customer profile associated with an identifier of the set-top box device;

recognizing an advertisement insertion point in the video content of the television programming; and

inserting the video content of the targeted advertisement into the video content of the television programming at the advertisement insertion point.

2. The method of claim **1**, wherein the set-top box device splices the video content of the targeted advertisement into the video content of the television programming.

3. The method of claim **1**, wherein the video content of the targeted advertisement includes data indicating an advertisement insertion point at which the video content of the targeted advertisement is to be inserted into the video content of the television programming.

4. The method of claim **3**, wherein the video content of the targeted advertisement is inserted into the video content of the television programming at the indicated advertisement insertion point.

5. The method of claim **1**, further comprising:

communicating a request for video content of different television programming to the video server; and

receiving a different targeted advertisement associated with the different television programming, a network of the different television programming, or any combination thereof.

6. A set-top box device, comprising:

a processor and a memory device accessible to the processor;

a buffer to receive video content of television programming from a video server of an Internet Protocol Television (IPTV) system;

an advertisement store to receive video content of a targeted advertisement from the video server with the video content of the television programming, wherein an advertisement server of the IPTV system selects the targeted advertisement based on a customer profile associated with an identifier of the set-top box device; and

wherein the memory device includes an advertisement insertion module executable by the processor to recognize an advertisement insertion point in the video content of the television programming and to insert the video content of the targeted advertisement into the video content of the television programming at the advertisement insertion point.

7. The set-top box device of claim **6**, wherein the identifier of the set-top box device includes an Internet Protocol (IP) address.

8. The set-top box device of claim **6**, wherein the advertisement insertion module is executable by the processor to insert video content of multiple successive targeted advertisements into the video content of the television programming at the advertisement insertion point.

9. A computer program embedded in a computer-readable medium, the computer program comprising:

instructions to receive video content of television programming from a video server of an Internet Protocol Television (IPTV) system;

instructions to receive video content of a targeted advertisement from the video server with the video content of the television programming, wherein an advertisement server of the IPTV system selects the targeted advertisement based on a customer profile associated with an identifier of the set-top box device; and

instructions to recognize an advertisement insertion point in the video content of the television programming and to insert the video content of the targeted advertisement into the video content of the television programming at the advertisement insertion point.

10. The computer program of claim **9**, further comprising instructions to communicate to a data server at an access network of the IPTV system data indicating whether the set-top box device received video content of all of a particular targeted advertisement, none of a particular targeted advertisement, or a portion of a particular targeted advertisement.

11. The computer program of claim **10**, wherein the customer profile is at least partially based on whether the set-top box device received video content of all of a particular targeted advertisement, none of a particular targeted advertisement, or a portion of a particular targeted advertisement.

12. A method of providing targeted advertisements, the method comprising:

receiving a customer profile associated with an identifier of a set-top box device at an advertisement server of an Internet Protocol Television (IPTV) system, wherein the customer profile is based at least partially on telephone call history data and indicates a customer preference for at least one product, at least one service, or any combination thereof; and

selecting at least one advertisement in response to a request for at least one advertisement to be sent to the set-top box device, wherein the customer profile at least partially matches an intended target of the at least one selected advertisement.

13. The method of claim **12**, further comprising:

storing video content of a plurality of advertisements including video content of the at least one advertisement; and

storing data identifying intended targets of each of the plurality of advertisements.

14. The method of claim **13**, further comprising comparing the customer profile with intended target information associated with each of the plurality of advertisements, wherein the intended target information indicates that an advertisement is to be sent to a customer that receives calls from a location, places calls to the location, or any combination thereof.

15. The method of claim **12**, wherein the request for the at least one advertisement is received from a video server of the IPTV system.

16. The method of claim **15**, further comprising sending video content of the at least one advertisement to the video server, wherein the video content of the at least one advertisement is inserted into video content of television programming sent to the set-top box device.

17. The method of claim **16**, further comprising sending the video content of the at least one advertisement to the video server via a splicer.

18. The method of claim **12**, further comprising storing the customer profile and identifier at an advertising system data store coupled to the advertisement server.

19. The method of claim **18**, further comprising:

requesting a recommendation of an advertisement to be sent to the set-top box device from the advertising system data store, wherein the advertising system data store stores data related to intended targets of a plurality of advertisements;

receiving a recommendation of the at least one selected advertisement from the advertising system data store, wherein the advertising system data store determines that the customer profile at least partially matches the intended target of the at least one selected advertisement; and

wherein the at least one selected advertisement is selected based on the recommendation.

20. A method of providing targeted advertisements, the method comprising:

receiving customer information associated with a set-top box device, wherein the customer information includes telephone call history data;

creating a customer profile based on the customer information;

associating the customer profile with an identifier of the set-top box device; and

sending the customer profile with the identifier to an advertisement server of an Internet Protocol Television (IPTV) system, wherein the advertisement server selects at least one advertisement based on the customer profile and wherein video content the at least one advertisement is included with video content of television programming sent to the set-top box device via an access network of the IPTV system.

21. The method of claim **20**, wherein the customer profile is based on customer information that includes television viewing habits, age, gender, other demographic information, Internet viewing habits, other information related to preferences or interests, or any combination thereof.

22. The method of claim **21**, wherein the telephone call history data includes locations from which the customer has received calls, locations to which the customer has placed calls, or any combination thereof.

23. The method of claim **20**, further comprising:

determining whether the set-top box device received video content of all of the at least one advertisement, none of the at least one advertisement, or a portion of the at least one advertisement; and

updating the customer profile based on whether the set-top box device received video content of all of the at least one advertisement, none of the at least one advertisement, or a portion of the at least one advertisement.

24. A method of providing targeted advertisements, the method comprising:

sending video content of television programming to a set-top box device from a video server of an Internet Protocol Television (IPTV) system;

identifying an advertisement insertion point in the video content of the television programming;

issuing a request to an advertisement server of the IPTV system to receive video content of an advertisement to be sent to the set-top box device, wherein the request includes an identifier of the set-top box device; and

receiving video content of a targeted advertisement from the advertisement server, wherein the advertisement server selects the targeted advertisement based on a customer profile associated with the identifier of the set-top box device, the customer profile including telephone call history data.

25. The method of claim **24**, further comprising inserting the video of the targeted advertisement into the requested video content at the advertisement insertion point.

26. The method of claim **24**, further comprising multicasting the video of the targeted advertisement to a plurality of set-top box devices, wherein a profile of a customer associated with each of the plurality of set-top box devices at least partially matches one of a plurality of intended targets of the targeted advertisement.

27. A system, comprising:

a video server configured to send video content of television programming to a set-top box device via an access network of an Internet Protocol Television (IPTV) system, wherein the video server includes a processor and a memory device;

wherein the memory device includes instructions executable by the processor to identify an advertisement insertion point in the video content of the television programming and to issue a request to an advertisement server of the IPTV system to receive at least one advertisement to be sent to the set-top box device, the request including an identifier of the set-top box device; and

wherein the memory device includes instructions executable by the processor to insert video content of a targeted advertisement received from the advertisement server into the video content of the television programming, the advertisement server selecting the targeted advertisement based on a profile associated with the identifier of the set-top box device, the profile including telephone call history data.

28. The system of claim **27**, wherein the video server is coupled to a multicast device configured to multicasting the video of the targeted advertisement to a plurality of set-top box devices, wherein a profile associated with each of the plurality of set-top box devices at least partially matches intended targets of the targeted advertisement.

29. A computer program embedded in a computer-readable medium, the computer program comprising:

instructions to store video content a plurality of advertisements;

instructions to receive a profile associated with an identifier of a set-top box device of an Internet Protocol Television (IPTV) system, wherein the profile is based at least partially on telephone call history data; and

instructions to select an advertisement from the plurality of advertisements based on the profile, wherein the profile at least partially matches an intended target of the selected advertisement.

30. The computer program of claim **29**, further comprising instructions to send video data of the selected advertisement to a video server of the IPTV system.

31. A computer program embedded in a computer-readable medium, the computer program comprising:

instructions to send video content of television programming to a set-top box device via an access network of an Internet Protocol Television (IPTV) system;

instructions to identify an advertisement insertion point in the video content of the television programming and to issue a request to an advertisement server of the IPTV system to receive at least one advertisement to be sent to the set-top box device, the request including an identifier of the set-top box device; and

instructions to insert video content of a targeted advertisement received from the advertisement server into the video content of the television programming, the advertisement server selecting the targeted advertisement based on a profile associated with the identifier of the set-top box device, the profile including telephone call history data.

32. The method of claim **31**, wherein the request is issued to the advertisement server in response to a cue tone in the video stream before or coinciding with the advertisement insertion point.

* * * * *