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Title of Invention:

SYSTEMS AND METHODS FOR PLAYBACK RESPONSIVE ADVERTISEMENTS
AND PURCHASE TRANSACTIONS

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UTILITY SEARCH FEE	2111	1	330	330
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37 CFR 1.16 (National application filing, search, and examination fees)

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		1-Application-1p-PUCs-tech1US_.pdf	200869	yes	25
			4bbf7f39ee96832aeb91e892b0ed6f2ce10178aa		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Drawings-only black and white line drawings		22	25	
	Abstract		21	21	
	Claims		19	20	
	Specification		1	18	
Warnings:					
Information:					
2	Oath or Declaration filed	2-Declaration-signed.pdf	1133294	no	1
			276df29a13e446bc799bc62e4ef64cd33f6c11e1		
Warnings:					
Information:					
3	Application Data Sheet	3-ADS.pdf	1255908	no	8
			1333a11f08e14a40d4618c339e8f725f08f2b48a		
Warnings:					
Information:					
4	Information Disclosure Statement (IDS) Form (SB08)	4-IDS.pdf	1034343	no	4
			6569eb79cc8d5be419036221b25f4d80be6ce5d8		
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5	Fee Worksheet (SB06)	fee-info.pdf	35206	no	2
			27f85b4ba128cc680699a0c623c4460b83621540		

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If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

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SYSTEMS AND METHODS FOR PLAYBACK RESPONSIVE ADVERTISEMENTS AND PURCHASE TRANSACTIONS

Field of the Invention

[0001] The field of the invention is interactive media playback.

Background

[0002] Conventional advertisements play at prearranged commercial breaks and are severely limited in their interactivity. Content from streaming websites often contains at least one advertisement break when one or more advertisements are played back. Often, these advertisements repeat as conventional systems fail to tailor the advertisements to the particular user viewing the advertisement. Further, the advertisements in conventional streaming content have limited interactive elements, including, for example, skipping an advertisement or clicking a hyperlink to take you to a separate website.

[0003] U.S. Patent Application Publication No. 2008/0282285 to Thomas discloses a method of substituting pause-time content in place of media that is paused. Among other things, Thomas does not disclose analyzing the media content and user data to queue advertisements to over-the-top (OTT) internet signals. Additionally, Thomas does not contemplate the use of interactive advertisements that can work with a single user device or cooperatively with multiple user devices to receive user input and execute transactions directly from the interactive advertisement.

[0004] U.S. Patent Application Pub. No. 2004/0034874 A1 to Hord discloses advertisement playback during trick mode functionality. However, Hord does not disclose the delivery of interactive advertisements. Further, Hord does not disclose the queuing of advertisements prior to advertisement playback based on user data, media data, and advertisement data.

[0005] Similarly to Hord, U.S. Patent Application Pub. No. 2007/0162951 A1 to Rashkovskly discloses advertisement playback during paused content. However, Rashkovskly does not disclose the delivery of interactive advertisements. As with Hord, Rashkovskly also does not disclose the queuing of advertisements prior to advertisement playback based on user data, media data, and advertisement data.

[0006] U.S. Patent No. 8,775,256 to Rosenberg discloses a hardware implementation of pause ads and content delivery. Rosenberg integrates advertisement delivery into a piece of hardware (e.g., a set top box/device), and advertisements are served to that device and displayed from that device. However, Rosenberg does not contemplate the delivery of conventional and/or interactive advertisements through software-based mediums, including, for example, audio delivery applications, long form content applications, and gaming applications.

[0007] Thomas, Hord, Rashkovskly, Rosenberg, and all other extrinsic materials discussed herein are incorporated by reference to the same extent as if each individual extrinsic material was specifically and individually indicated to be incorporated by reference. Where a definition or use of a term in an incorporated reference is inconsistent or contrary to the definition of that term provided herein, the definition of that term provided herein applies and the definition of that term in the reference does not apply.

[0008] Conventional advertisement systems can be improved by using user data, media data, and advertisement data to select one or more advertisements for playback during a partial or complete pause in media playback. By using a wider array of data to make advertisement playback decisions, the present invention is an improvement over the prior art because it allows highly user and media-relevant advertisements to be played back during a partial or complete pause in media playback.

[0009] Thus, there is still a need for systems and methods for improving advertisement playback based on user data, media data, and advertisement data.

Summary of The Invention

[0010] Among other things, the inventive subject matter provides apparatus, systems, and methods for displaying tailored advertising in response to user media playback behavior.

[0011] The inventive concept herein can be employed in a variety of applications, including, for example, long and short form video content, video game-based software content, and long and short form audio content. Conventional advertisement delivery systems do not contemplate the delivery of interactive advertisements to any device through software applications during pauses in content playback or interaction (e.g., pauses in playing video games). As such, the claimed

invention improves upon the conventional advertisement delivery systems by enabling interactive advertisement delivery to software applications, which allows advertisement delivery to any software through any type of media playback device.

[0012] Various resources, features, aspects and advantages of the inventive subject matter will become more apparent from the following detailed description of preferred embodiments, along with the accompanying drawing figures in which like numerals represent like components.

[0013] The present invention advantageously allows advertisements to playback when media content is partially or completely paused.

Brief Description of The Drawings

[0014] Fig. 1 is a functional block diagram illustrative a distributed data processing environment.

[0015] Fig. 2 is a schematic of a method of using user data to determine an advertisement policy for a user.

[0016] Fig. 3 is a schematic of a method of compiling and initiating playback of advertisements in response to a media playback action.

[0017] Fig. 4 is a schematic of a method of executing a transaction via a media playback action initiated interactive advertisement.

Detailed Description

[0018] In some embodiments, the numbers expressing quantities of ingredients, properties such as concentration, reaction conditions, and so forth, used to describe and claim certain embodiments of the invention are to be understood as being modified in some instances by the term “about.” Accordingly, in some embodiments, the numerical parameters set forth in the written description and attached claims are approximations that can vary depending upon the desired properties sought to be obtained by a particular embodiment. In some embodiments, the numerical parameters should be construed in light of the number of reported significant digits and by applying ordinary rounding techniques. Notwithstanding that the numerical ranges and parameters setting forth the broad scope of some embodiments of the invention are approximations, the numerical values set forth in the specific examples are reported as precisely

as practicable. The numerical values presented in some embodiments of the invention may contain certain errors necessarily resulting from the standard deviation found in their respective testing measurements.

[0019] As used in the description herein and throughout the claims that follow, the meaning of “a,” “an,” and “the” includes plural reference unless the context clearly dictates otherwise. Also, as used in the description herein, the meaning of “in” includes “in” and “on” unless the context clearly dictates otherwise.

[0020] Unless the context dictates the contrary, all ranges set forth herein should be interpreted as being inclusive of their endpoints, and open-ended ranges should be interpreted to include only commercially practical values. Similarly, all lists of values should be considered as inclusive of intermediate values unless the context indicates the contrary.

[0021] The recitation of ranges of values herein is merely intended to serve as a shorthand method of referring individually to each separate value falling within the range. Unless otherwise indicated herein, each individual value with a range is incorporated into the specification as if it were individually recited herein. All methods described herein can be performed in any suitable order unless otherwise indicated herein or otherwise clearly contradicted by context. The use of any and all examples, or exemplary language (e.g. “such as”) provided with respect to certain embodiments herein is intended merely to better illuminate the invention and does not pose a limitation on the scope of the invention otherwise claimed. No language in the specification should be construed as indicating any non-claimed element essential to the practice of the invention.

[0022] Groupings of alternative elements or embodiments of the invention disclosed herein are not to be construed as limitations. Each group member can be referred to and claimed individually or in any combination with other members of the group or other elements found herein. One or more members of a group can be included in, or deleted from, a group for reasons of convenience and/or patentability. When any such inclusion or deletion occurs, the specification is herein deemed to contain the group as modified thus fulfilling the written description of all Markush groups used in the appended claims.

[0023] The following discussion provides many example embodiments of the inventive subject matter. Although each embodiment represents a single combination of inventive elements, the inventive subject matter is considered to include all possible combinations of the disclosed elements. Thus if one embodiment comprises elements A, B, and C, and a second embodiment comprises elements B and D, then the inventive subject matter is also considered to include other remaining combinations of A, B, C, or D, even if not explicitly disclosed.

[0024] As used herein, and unless the context dictates otherwise, the term "coupled to" is intended to include both direct coupling (in which two elements that are coupled to each other contact each other) and indirect coupling (in which at least one additional element is located between the two elements). Therefore, the terms "coupled to" and "coupled with" are used synonymously.

[0025] **Figure 1** is a functional block diagram illustrative a distributed data processing environment.

[0026] As used herein, the term “distributed” describes a computer system that includes multiple, physically distinct devices that operate together as a single computer system. Fig. 1 provides only an illustration of one implementation and does not imply any limitations with regard to the environments in which different embodiments may be implemented. Many modifications to the depicted environment may be made by those skilled in the art without departing from the scope of the invention as recited by the claims.

[0027] Distributed data processing environment 100 includes user device 104 and server computer 108, interconnected over network 102. Network 102 can include, for example, a telecommunications network, a local area network (LAN), a wide area network (WAN), such as the Internet, or a combination of the three, and can include wired, wireless, or fiber optic connections. Network 102 can include one or more wired and/or wireless networks that are capable of receiving and transmitting data, voice, and/or video signals, including multimedia signals that include voice, data, and video information. In general, network 102 can be any combination of connections and protocols that will support communications between user device 104, server computer 108, and any other computing devices (not shown) within distributed data processing environment 100.

[0028] It is contemplated that user device 104 can be any programmable electronic computing device capable of communicating with various components and devices within distributed data processing environment 100, via network 102. It is further contemplated that user device 104 can execute machine readable program instructions and communicate with any devices capable of communication wirelessly and/or through a wired connection. For example, user device 104 can be any one or more of smart phones, desktop computers, tablet computers, laptops, and smart watches. It is contemplated that user device 104 also includes any one or more communicatively coupled peripheral electronic devices (e.g., computer mice, keyboards, electronic sensors, communication devices, storage devices, etc.). User device 104 includes an instance of ad interface 106.

[0029] Ad interface 106 provides a user interface to ad engine 110. Preferably, ad interface 106 comprises a graphical user interface (GUI) or a web user interface (WUI) that can display one or more of text, documents, web browser windows, user option, application interfaces, and operational instructions. It is also contemplated that the ad interface can include information, such as, for example, graphics, texts, and sounds that a program presents to a user and the control sequences that allow a user to control a program.

[0030] In some embodiments, user interface can be mobile application software. Mobile application software, or an “app,” is a computer program designed to run on smart phones, tablet computers, and any other mobile devices.

[0031] Ad interface 106 allows a user to register with and configure ad engine 110 (discussed in more detail below) to enable ad engine 110 to track user activity and preferences and respond to user media playback actions. It is contemplated that ad interface 106 allows a user to provide any information to ad engine 110. For example, a user can input authentication, advertisement parameters, product purchases, user information, and any other information that is used by ad engine 110. As used herein, “advertisement parameters” comprise any variable(s) that can directly or indirectly control how ad engine 110 executes advertisements and receives user inputs.

[0032] Ad interface 106 is also contemplated to allow a user to complete any type of transaction. For example, ad interface 106 can receive user payment data and execute a financial transaction. In another example, ad interface 106 can receive user credentials to log-in to third-party services.

[0033] Server computer 108 can be a standalone computing device, a management server, a web server, a mobile computing device, or any other computing system capable of receiving, sending, and processing data.

[0034] It is contemplated that server computer 108 can include a server computing system that utilizes multiple computers as a server system, such as, for example, a cloud computing system.

[0035] In other embodiments, server computer 108 can be a computer system utilizing clustered computers and components that act as a single pool of seamless resources when accessed within distributed data processing environment 100.

[0036] Ad engine 110 is depicted and described in more detail in Figure 2, Figure 3, and Figure 4.

[0037] Database 112 is a repository for data used by ad engine 110. In the depicted embodiment, ad engine 110 resides on server computer 108. However, database 112 can reside anywhere within a distributed data processing environment provided that ad engine 110 has access to database 112.

[0038] Data storage can be implemented with any type of data storage device capable of storing data and configuration files that can be accessed and utilized by server computer 108. Data storage devices can include, but are not limited to, database servers, hard disk drives, flash memory, and any combination thereof.

[0039] **Figure 2** is a schematic of a method of using user data to determine an advertisement policy for a user.

[0040] Ad engine 110 identifies a user (step 202).

[0041] In one embodiment, ad engine 110 identifies a user based on a user credential inputted through ad interface 106. User credentials can include any one or more identifying attributes of a user.

[0042] For example, ad engine 110 can identify a user through a user name and associated alphanumeric password inputted through log-in process on an internet-connected smart TV. In another example, ad engine 110 can identify a user through an internet protocol (IP) address tied to a desktop computer. In yet another example, ad engine 110 can identify a user through biometric data inputted through a fingerprint reader on a laptop.

[0043] Biometric data can include, but is not limited to, fingerprints, retinal scans, image recognition, facial recognition, and speech recognition. It is also contemplated that user device 104 can collect biometric data using any combination of sensors. Sensors can include, but are not limited to, infrared cameras, flood illuminators, proximity sensors, ambient light sensors, capacitive touch sensors, pressure-based touch sensors, and microphones.

[0044] In a related embodiment, ad engine 110 can use a combination of user credentials to identify a user. For example, ad engine 110 can use a combination of a facial recognition scan and an IP address to identify the user. In another example, ad engine 110 can use a combination of a pin number and a fingerprint scan to identify the user.

[0045] However, it is contemplated that ad engine 110 can identify a user in any manner contemplated in the art.

[0046] Ad engine 110 receives user data (step 204).

[0047] It is contemplated that user data can be retrieved from local storage and/or remote storage. User data can include any data associated with a user, including, for example, purchasing behavior, media consumption behavior, media content data, geolocation data, and biometric data.

[0048] In one embodiment, ad engine 110 receives user data from database 112 residing remotely on server computer 108. For example, ad engine 110 can receive data regarding a user's viewing habits, shows watched, purchase history, and recent keyword searches from a

solid-state drive (SSD) residing in a remote server through the Internet. In another example, ad engine 110 can receive data regarding a user's viewing habits from multiple databases in a distributed database system in a cloud environment.

[0049] Ad engine 110 determines an advertisement policy for the user based on the user data (step 206).

[0050] An advertisement policy can comprise any one or more parameters that guide ad engine 110 in the selection of advertisements for a user.

[0051] In one embodiment, ad engine 110 determines an advertisement policy for a user using one or more metrics associated with the user data. For example, ad engine 110 can use data regarding user screen time, most watched genres, and commonly purchased products/services to set parameters for advertisement selection. It is contemplated that the parameters can be set by one or more algorithms.

[0052] In some embodiments, ad engine 110 can determine an advertisement policy for a user using one or more machine learning algorithms. Machine learning algorithms can include, but are not limited to, linear regression analysis, supervised learning, time-series analysis, and neural networks.

[0053] For example, ad engine 110 can use a supervised learning classifier to identify that the user frequently watches animated content directed to a mid-20-year-old demographic. Ad engine 110 can further use a time-series analysis to determine that the user consumes the most content between the hours of 7:00 A.M.-8:00 A.M. and 6:00 P.M.-10:00PM. Ad engine 110 can even further use a linear regression analysis to forecast that the user is four times more likely to purchase products during the hours of 8:00 P.M.-9:30 P.M. Based on this information, ad engine 110 can determine a tailored advertisement policy for the user.

[0054] Ad engine 110 applies the advertisement policy for the user to available advertisements to select one or more advertisements (step 208).

[0055] It is contemplated that advertisements in any media format can be stored locally and/or remotely. It is further contemplated that ad engine 110 can classify the advertisement in any

manner contemplated in the art. For example, an advertisement for a male body spray can be can be classified under “30 second ad”, “20-30 years old”, “quirky humor”, and “interactive”. In another example, an advertisement for a high-end laptop computer can be classified under “expensive”, “technology”, and “designer”.

[0056] Using these classifications, ad engine 110 can quickly target and retrieve relevant advertisements based on user viewing behaviors. For example, ad engine 110 can quickly select advertisements most relevant to a 23-year-old video game enthusiast by searching for ads under the classifications “gamer”, “massively multiplayer online role-playing game”, “alcohol”, and “animated”.

[0057] Similarly to step 206, ad engine 110 can use one or more machine learning algorithms to classify advertisements and to select one or more relevant advertisements. For example, ad engine 110 can use a supervised learning classifier to determine what type of advertisement content receives the most clicks and/or purchase orders from a user. By analyzing the historically successful ads, ad engine 110 can determine which advertisements contain content that is the most likely to elicit a click and/or purchase order from the user.

[0058] Ad engine 110 compiles user relevant advertisements based on the advertisement policy (step 210).

[0059] After applying the advertisement policy to select one or more advertisements, ad engine 110 compiles the advertisements for later playback. In some embodiments, ad engine 110 retrieves advertisement data (e.g., audio and video files, etc.) and stored the advertisement data in local memory for later playback. For example, ad engine 110 can cause user device 104 to pre-load advertisement content into random access memory (RAM) for later playback during a user-initiated pause.

[0060] **Figure 3** is a schematic of a method of compiling and initiating playback of advertisements in response to a media playback action.

[0061] Ad engine 110 detects user initiation of media playback (step 302).

[0062] In one embodiment, ad engine 110 detects the selection of a media file for playback. For example, ad engine 110 can detect the selection of a television comedy from an over-the-top media streaming service. In another example, ad engine 110 can detect a user resuming playback of paused content.

[0063] In some embodiments, ad engine 110 detects user actions prior to initiation of media playback. For example, ad engine 110 can detect a video streaming device waking up from a sleep mode and detect which shows the user scrolls over prior to making a final selection.

[0064] It is contemplated that detecting user actions prior to initiation of media playback enables ad engine 110 to analyze and predict the type of media content that the user will eventually select. For example, ad engine 110 can detect that a user has scrolled over and read the synopsis of three romantic comedies. Based on detected user behavior, ad engine 110 can predict one or more media attributes of the final selection, which can, for example, allow ad engine 110 to start compiling relevant advertisements.

[0065] Ad engine 110 retrieves the advertisement policy (step 304).

[0066] In a preferred embodiment, ad engine 110 retrieves the advertisement policy from database 112 stored remotely in server computer 108. However, ad engine 110 can retrieve the advertisement policy from any one or more storage mediums. For example, ad engine 110 can retrieve the advertisement policy from a distributed database system (e.g., cloud storage).

[0067] Ad engine 110 analyzes media attributes to filter one or more advertisements from available advertisements (step 306).

[0068] Media attributes include any objective and subjective characteristics of the media content itself. Objective characteristics can include, for example, total playback time, listed actors/actresses, total number of episodes, and genres. Subjective characteristics can include, for example, type of humor, tone, and pacing. However, the objective and subjective characteristics listed herein are merely illustrative and are not limited to the provided examples.

[0069] It is contemplated that ad engine 110 can use apply the advertisement policy to the analyzed media attributes to assist in determining which advertisements to run. In preferred

embodiments, ad engine 110 uses the analyzed media attributes to select advertisements. For example, ad engine 110 can determine that a user selected video spans 2 hours and is associated with the horror genre. Based on this information, ad engine 110 can select advertisements with darker color tones, set advertisements to run every 15 minutes, and set advertisement breaks to a length of 4 minutes per break.

[0070] Ad engine 110 queues advertisements based on the analyzed media attributes and the advertisement policy (step 308).

[0071] It is contemplated that ad engine 110 queues advertisements that are the most relevant to the user by applying the user-specific advertisement policy to the filtered advertisements based on analyzed media attributes.

[0072] For example, ad engine 110 can, based on the advertisement policy for a user, determine that advertisements associated with the classifiers “college-educated”, “male-oriented”, “liberal”, and “less than 30 seconds long” are the most relevant to a 20-year-old college student. Ad engine 110 can further determine that the user averages 4 pauses per hour for with an average pause-length of 3 minutes for long-form content (e.g., playback time of greater than one hour long). As a result, ad engine 110 can select a group of 45 advertisements that are each less than 30 seconds long and directed to comedic themes from a pool of advertisements based on the analyzed media being a slapstick comedy movie that spans a length of 2 hours. Following this selection of 45 advertisements, ad engine 110 can select 16 30-second-long advertisements and schedule them in order of ascending relevance to the user based on the advertisement policy (e.g., male, mid-twenties, college-educated) indicated by the advertisement policy. The queued advertisements can then playback in the designated order when the user pauses the movie.

[0073] In another example, ad engine 110 can select a group of 40 advertisements that are each less than 30 seconds long and directed to financial topics from a pool of advertisements based on the analyzed media being a series of 10 fifteen-minute-long investment tutorial videos. Following this selection of 40 advertisements, ad engine 110 can select 20 thirty-second-long advertisements and schedule them in order of ascending relevance to the user’s demographics (e.g., female, high-income, doctor, home-owner, etc.) indicated by the advertisement policy.

[0074] Ad engine 110 detects a change in media playback (step 310).

[0075] In a preferred embodiment, ad engine 110 detects a user-initiated pause in media playback. For example, ad engine 110 can detect a “pause” command during playback of a movie in a streaming service. In another example, ad engine 110 can detect a “pause” command from a verbal user command spoken into a microphone. In another example, ad engine 110 can detect a “pause” command from a user gesture using one or more image recognition techniques.

However, it is contemplated that ad engine 110 can detect a user-initiated pause in any manner contemplated in the art.

[0076] In another embodiment, ad engine 110 detects a pause in at least one element associated with media playback. Elements in a streaming video, for example, can include the audio track, the video file, and closed captioning overlays. However, elements can include any one or more separable components of any media format known in the art.

[0077] In one example, ad engine 110 can detect that a user muted the audio track but the video file continues to play. In this example, ad engine 110 can play another audio file in place of the original audio track.

[0078] In a preferred example, ad engine 110 can detect that a user turned off the display without pausing media playback. In response, ad engine 110 can play advertisements tailored to non-video based media playback (e.g., radio commercials).

[0079] In yet another example, ad engine 110 can detect that a user turns off the closed captions (i.e., subtitles). In response, ad engine 110 can insert textual and/or graphical advertisements in the space that the closed captions would normally occupy.

[0080] In interactive software applications, such as video games, ad engine 110 can detect that a user pauses the game. In response, ad engine 110 can insert an interactive advertisement in the video game, such as a video, an interactive ad, text, and any other advertising material. It is contemplated that the advertisements can be sourced from any entity, including third-party entities. For example, ad engine 110 can deliver advertisements that are not limited to purchases associated with the video game, but can also include non-interactive and interactive

advertisements for third parties (e.g., an interactive advertisement allowing a user to order delivery from a food delivery service directly in the video game.).

[0081] Ad engine 110 initiates playback of a queued advertisement (step 312).

[0082] In a preferred embodiment, ad engine 110 initiates the playback of a queued advertisement stored on a local storage media (e.g., internal hard drive, internal solid-state drive, random access memory, etc.). For example, ad engine 110 can detect a user-initiated pause in the playback of a streaming comedy and cause playback of a humorous advertisement from a data buffer in RAM.

[0083] In another embodiment, ad engine 110 retrieves a queued advertisement from database 112 residing on server computer 108. For example, ad engine 110 can retrieve actively begin retrieving data for an advertisement into a buffer once ad engine 110 detects a pause in the playback. While actively playing the advertisement to the user, ad engine 110 can continue retrieving the remainder of the queued advertisement into the buffer.

[0084] Ad engine 110 can initiate playback of a queued advertisement over any broadcast medium. In a preferred embodiment, ad engine 110 initiates playback through an over-the-top system. OTT systems can include any one or more systems or elements of a larger system that use publicly accessible internet connections to deliver video streams. OTT systems advantageously allow digital content to be accessible by any devices that can access the internet and establish a connection with ad engine 110. As such, an advertiser can create one version of an advertisement that can be formatted and played across multiple different devices (e.g., a tablet, a phone, and a laptop) without the restrictions of closed systems and proprietary formats. For example, ad engine 110 can initiate ad playback in an online streaming service that allows users to view the same advertisements through multiple internet connected devices, including, for example, smart phones, laptops, and tablet computers.

[0085] Further, ad engine 110 can deliver the advertisements in the form of program instructions that allows advertisements to have interactive elements. It is contemplated that interactive elements can allow advertisements to receive new program instructions from a user. For example, when a user pauses a video on their smart phone, ad engine 110 can initiate playback of

an interactive advertisement that further allows the user to input an order for fast food delivery straight through an internet-connect television, smart phone, and/or tablet computer. The advertisement can further include additional functionality, including, for example, a map showing the location of your delivery driver after a user places a food delivery order using an advertisement user interface.

[0086] By allowing interactive advertisements to OTT video playback technologies, the efficacy and functionalities of advertisements can be greatly enhanced and reach a far broader audience than traditional closed advertising systems, such as, for example, advertisements delivered through conventional television set-top boxes. Additionally, advertisement functionalities can be modified in substantially real-time to allow for quick changes to advertisements based on changing advertising variables. For example, ad engine 110 can allow a programmer to add facial recognition-based authentication to an advertisement when facial recognition technology is incorporated into a newly released smart phone.

[0087] In some embodiments, ad engine 110 initiates playback over an internet protocol television (IPTV) system. IPTV systems limit delivery of advertisements through ad engine 110 to a closed system. For example, ad engine 110 can send advertisements over the internet to a set-top box that is owned and operated by an external entity.

[0088] **Figure 4** is a schematic of a method of executing a transaction via a media playback action initiated interactive advertisement.

[0089] Ad engine 110 displays an interactive advertisement with a user interface (step 402).

[0090] In a preferred embodiment, ad engine 110 displays an interactive advertisement stored on a local storage media (e.g., internal hard drive, internal solid-state drive, random access memory, etc.). For example, ad engine 110 can detect a user-initiated pause in the playback of a streaming comedy and cause playback of an interactive advertisement that includes a hyperlink to the website for the advertised product and an input field for a user to submit an email address for future promotional offers for the advertised product. In another example, ad engine 110 can display an online music streaming service advertisement with various input fields to directly

facilitate the purchase of the advertised product (e.g., signing up for a trial period, purchasing the product, etc.).

[0091] Ad engine 110 receives a transaction request via a user input associated with the advertisement (step 404).

[0092] In one embodiment, ad engine 110 can receive a transaction request via a user input to a device displaying the advertisement. For example, ad engine 110 can receive a transaction request from a user inputting payment information into the advertisement interface on an internet-enabled television (e.g., smart TV) and selecting a “confirm purchase” button using a television remote.

[0093] In some embodiments, ad engine 110 can cooperate with separate user devices with separate user interfaces to interact with the advertisement. For example, ad engine 110 can display a quick-response code on an advertisement to allow a user to automatically be directed to a product’s website. In another example, ad engine 110 can allow a user to input authentication for a purchase through an interactive ad through a smart phone.

[0094] It is further contemplated that user devices with unique interfaces can use any means of receiving user input. For example, the user device can be a smart phone with a fingerprint reader used to authenticate a transaction associated with an interactive advertisement. In another example, the user device can be a smart phone with a depth sensing camera used to authenticate a user based on the user’s unique combination of facial features. In yet another example, a user device can be a smart watch that receives a password from the user to authenticate a transaction.

[0095] Ad engine 110 executes a transaction (step 406).

[0096] It is contemplated that any transaction between a user and an entity associated with an advertisement can be executed by ad engine 110.

[0097] In one embodiment, ad engine 110 executes a financial transaction between a product provider and a user/customer. For example, ad engine 110 can authenticate payment details and shipping information for a pizza to be delivered from a restaurant to a user’s house.

[0098] In another embodiment, ad engine 110 can execute an exchange of information between a user and a product/service provider. For example, ad engine 110 can send user information inputted into an advertisement interface to a service provider to activate a one-month trial of a music streaming service.

[0099] Ad engine 110 causes a product and/or a service to be delivered to a user (step 408).

[00100] It is contemplated that ad engine 110 can cause a product and/or a service to be delivered to a user in any manner known in the art. For example, ad engine 110 can cause a physical product to be shipped from a warehouse to the customer. In another example, ad engine 110 can deliver streaming movies from a streaming video service after a user activates their account.

[00101] It should be noted that while the description discusses embodiments comprising computer-based controllers, various alternative configurations are also deemed suitable and may employ various computing devices including servers, interfaces, systems, databases, engines, controllers, or other types of computing devices operating individually or collectively. One should appreciate the computing devices comprise a processor configured to execute software instructions stored on a tangible, non-transitory computer readable storage medium (*e.g.*, hard drive, solid state drive, RAM, flash, ROM, etc.). The software instructions preferably configure the computing device to provide the roles, responsibilities, or other functionality as discussed below with respect to the disclose apparatus. In especially preferred embodiments, the various servers, systems, databases, or interfaces exchange data using standardized protocols or algorithms, possibly based on HTTP, HTTPS, AES, public-private key exchanges, web service APIs, known financial transaction protocols, or other electronic information exchanging methods. Data exchanges preferably are conducted over a packet-switched network, the Internet, LAN, WAN, VPN, or other type of packet switched network.

[00102] It should be apparent to those skilled in the art that many more modifications besides those already described are possible without departing from the inventive concepts herein. The inventive subject matter, therefore, is not to be restricted except in the scope of the appended claims. Moreover, in interpreting both the specification and the claims, all terms should be interpreted in the broadest possible manner consistent with the context. In particular, the terms

“comprises” and “comprising” should be interpreted as referring to elements, components, or steps in a non-exclusive manner, indicating that the referenced elements, components, or steps may be present, or utilized, or combined with other elements, components, or steps that are not expressly referenced. Where the specification claims refers to at least one of something selected from the group consisting of A, B, C and N, the text should be interpreted as requiring only one element from the group, not A plus N, or B plus N, etc.

CLAIMS

What is claimed is:

1. A method for displaying tailored advertising in response to user media playback behavior, comprising:
 - detecting media playback by a user;
 - retrieving an advertisement rule associated with the user;
 - analyzing content associated with the media playback;
 - queueing user tailored advertisements based on the analyzed content and the advertisement rule; and
 - displaying an advertisement in response to detecting a pause in the media playback.
2. The method of claim 1, wherein the advertisement rule controls selection of advertisements based on a variable selected from the group consisting of: permitted brands, permitted themes, advertisement length, advertisement content, advertisement format, seasonality, user advertisement preferences, derived user advertisement preferences, and technical specifications of a playback device.
3. The method of claim 1, wherein analyzing the media content further comprises analyzing a media attribute selected from the group consisting of: total playback time, format, designated commercial breaks, subject matter, themes, actors, production studios, and playback permissions.
4. The method of claim 1, further comprising:
 - verifying an identity of the user;
 - analyzing historical data associated with the identity;
 - creating the advertisement rule for the user;
 - applying the advertisement rule to a group of available advertisements; and
 - compiling the user-tailored advertisements based on the advertisement rule.
5. The method of claim 1, wherein the advertisement is configured to receive user input via a user interface.
6. The method of claim 5, further comprising:
 - receiving a user purchase request associated with the advertisement;

executing the user purchase request; and
causing one or more of a product and a service to be delivered to the user.

7. The method of claim 5, further comprising:

receiving a user information input associated with the advertisement; and
storing the user information.

8. A method for displaying tailored advertising on a media player through a content provider-based software application, comprising:

retrieving an advertisement rule associated with a user;
analyzing content associated with the media player through the content provider-based software application;
selecting one or more advertisements that are tailored to the user based on the analyzed content and the advertisement rule; and
displaying the one or more advertisements on the media player through the content provider-based software application in response to receiving a pause command during playback of the content.

9. The method of claim 8, wherein the content comprises one or more media files stored in a database.

10. The method of claim 8, wherein the one or more advertisements comprises one or more media files stored in a database.

11. The method of claim 8, wherein the content is selected from the group consisting of: a television show, a streaming video, a movie, a video game, and an audio recording, wherein the content comprises any one or more of short form content and long term content.

12. The method of claim 8, wherein the media player through the content provider-based software application is selected from the group consisting of: a computer, a television, a tablet computer, a smart phone, a smart watch, a projector, and an audio playback device.

ABSTRACT

In a method for displaying tailored advertising in response to user media playback behavior, an ad engine detects media playback by a user. The ad engine retrieves an advertisement rule associated with the user. Following retrieval of the advertisement rule, the ad engine analyzes the content associated with the media playback and queues user tailored advertisements based on the analyzed content and the advertisement rule. The ad engine then displays an advertisement in response to detecting a pause in the media playback in a content provider-based software application.

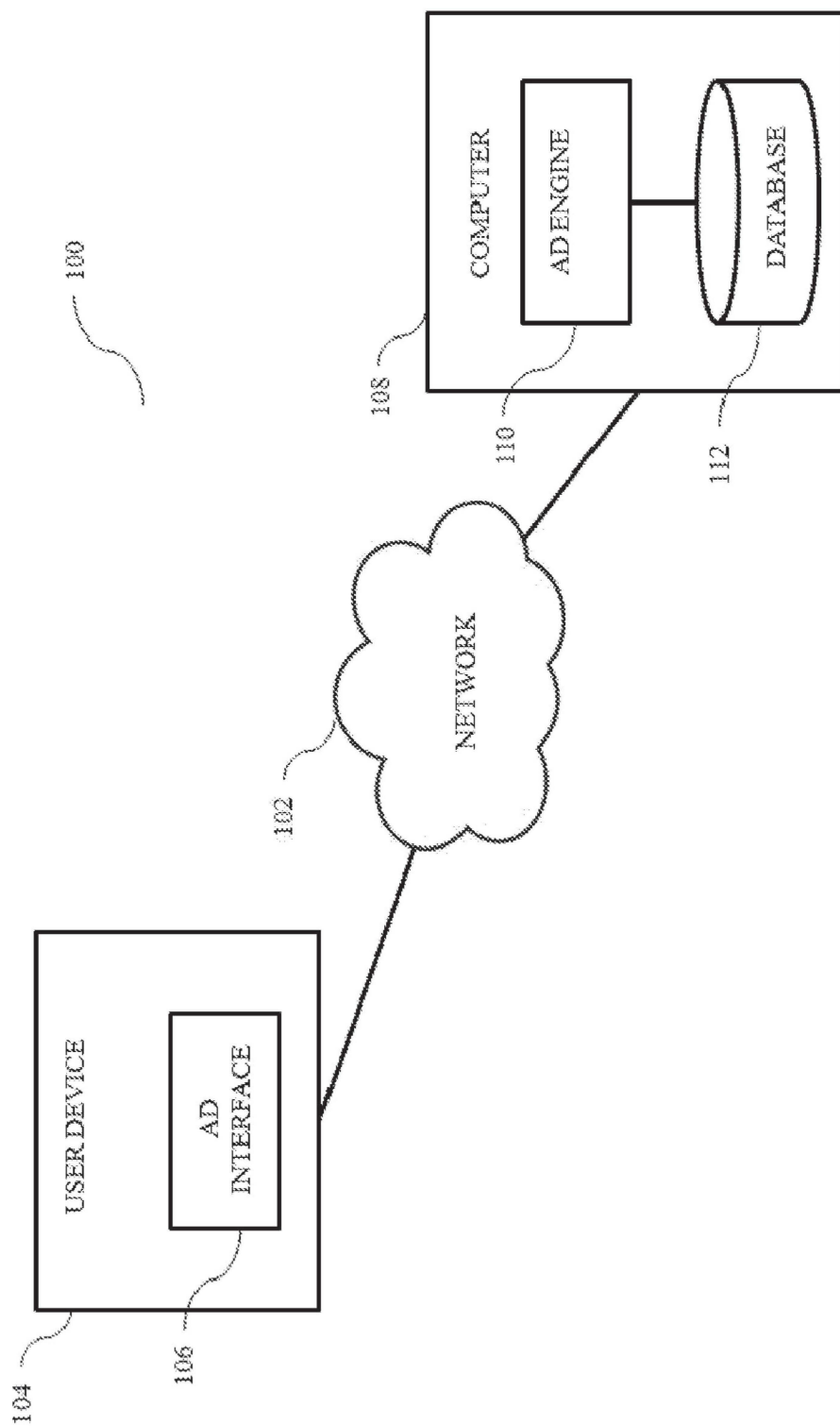


FIGURE 1

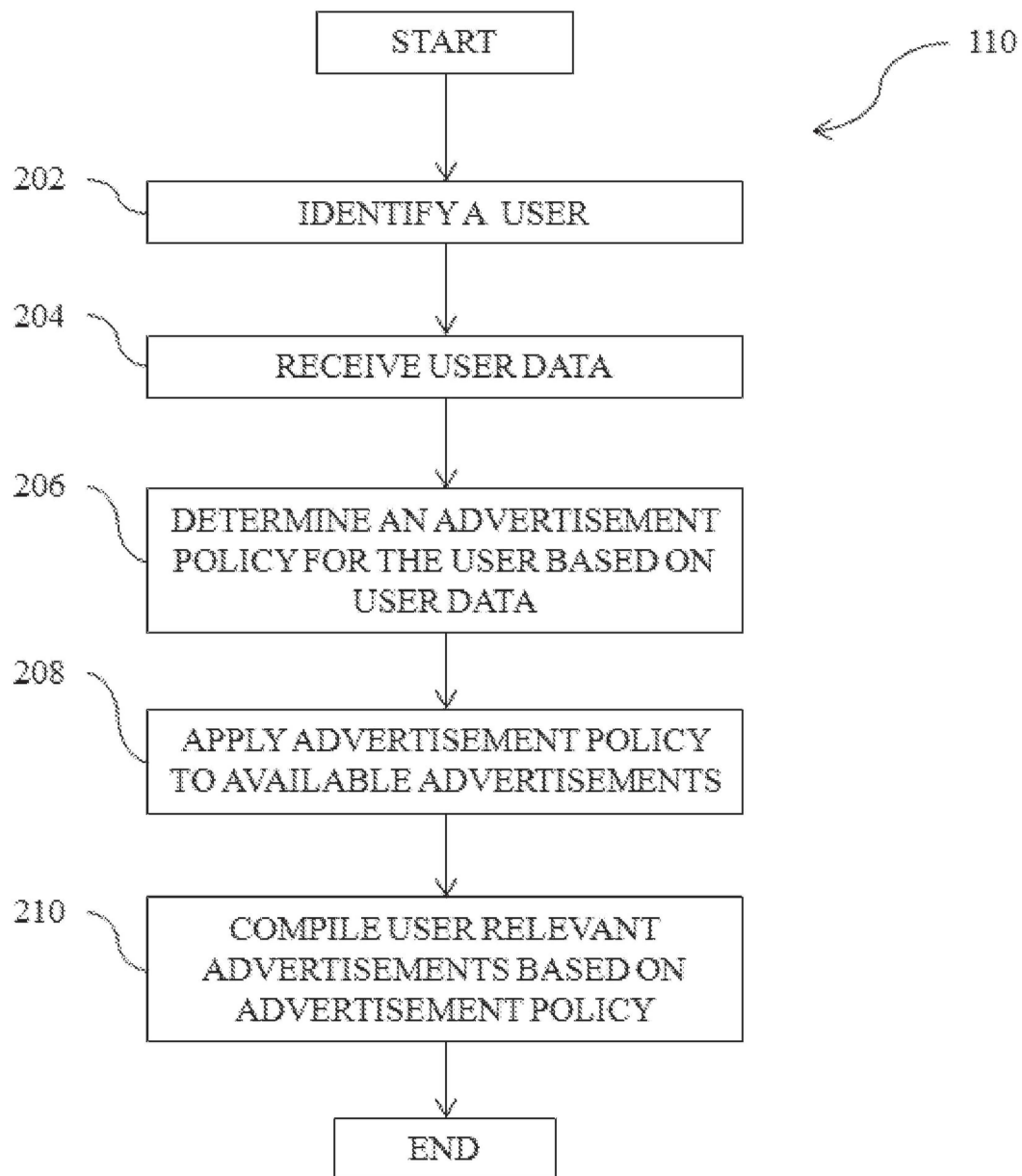


FIGURE 2

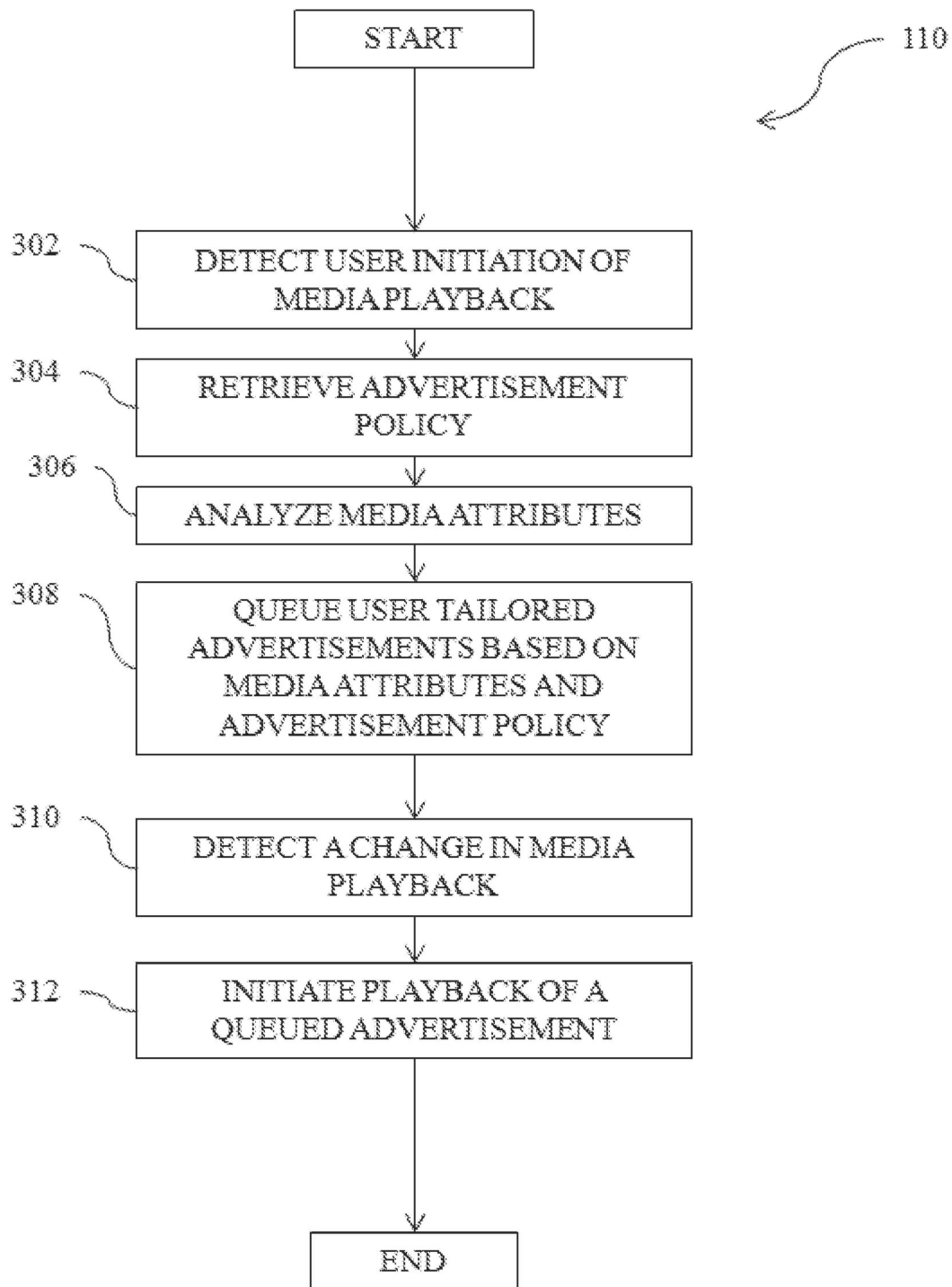


FIGURE 3

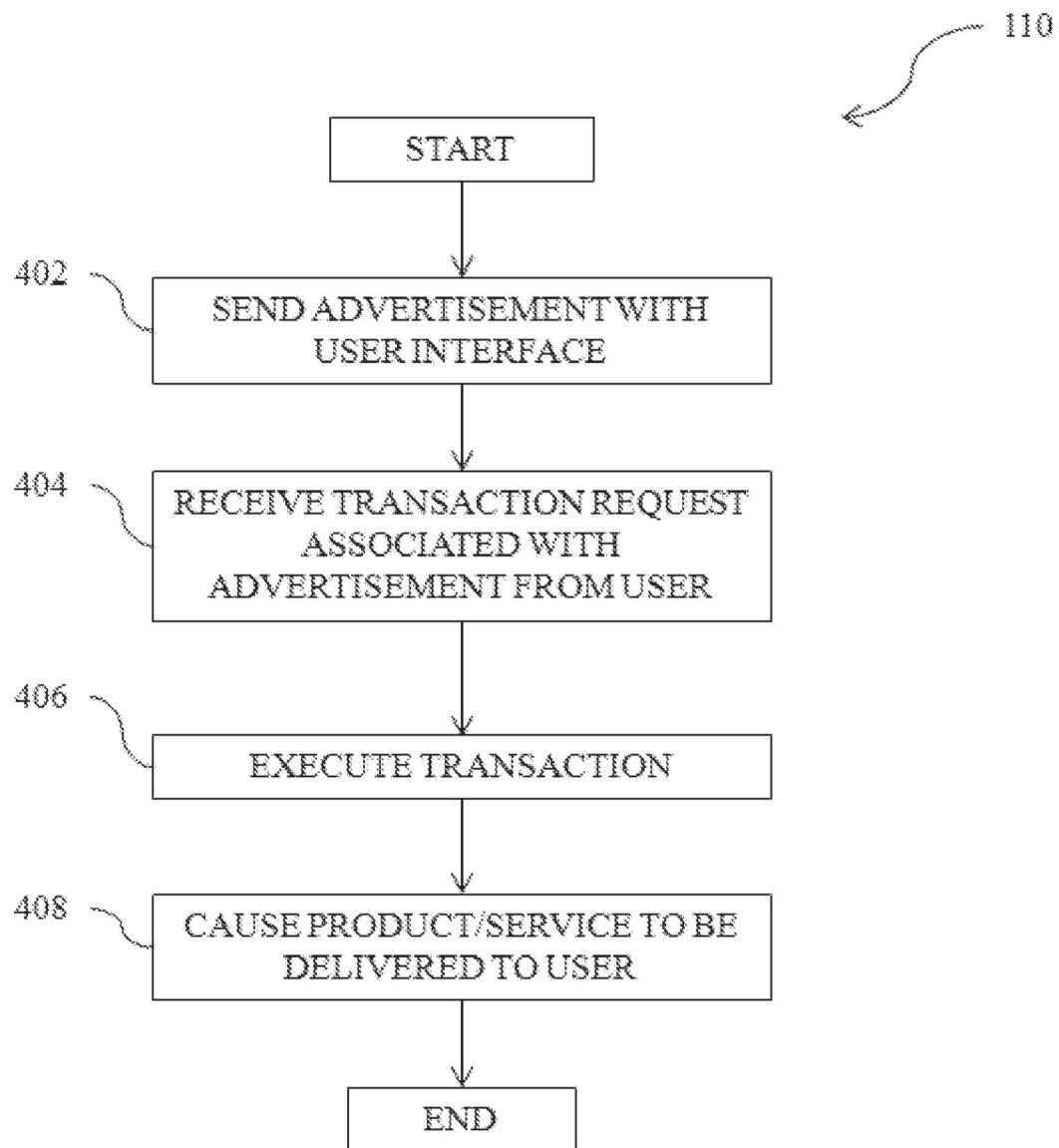


FIGURE 4

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of
Invention

SYSTEMS AND METHODS FOR PLAYBACK RESPONSIVE ADVERTISEMENTS
AND PURCHASE TRANSACTIONS

As the below named inventor, I hereby declare that:

This declaration
is directed to:



The attached application, or



United States application or PCT international application number _____

filed on _____

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Charles Johnson

Date (Optional):

12-18-2018

Signature:

Charles Johnson

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9198 and select option 2.

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	103367.0001US
		Application Number	
Title of Invention	SYSTEMS AND METHODS FOR PLAYBACK RESPONSIVE ADVERTISEMENTS AND PURCHASE TRANSACTIONS		
<p>The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.</p> <p>This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.</p>			

Secrecy Order 37 CFR 5.2:

<input type="checkbox"/>	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
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Inventor Information:

Inventor	1				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Charles		Johnson			
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service						
City	Los Angeles	State/Province	CA	Country of Residence	US	
Mailing Address of Inventor:						
Address 1	12028 National Boulevard					
Address 2						
City	Los Angeles	State/Province	CA			
Postal Code	90064	Country	US			
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.						
Add						

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
<input type="checkbox"/> An Address is being provided for the correspondence information of this application.			
Customer Number	24392		
Email Address	patents@fishiplaw.com	Add Email	Remove Email

Application Information:

Title of the Invention	SYSTEMS AND METHODS FOR PLAYBACK RESPONSIVE ADVERTISEMENTS AND PURCHASE TRANSACTIONS		
Attorney Docket Number	103367.0001US	Small Entity Status Claimed	<input checked="" type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	4	Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	103367.0001US
		Application Number	
Title of Invention	SYSTEMS AND METHODS FOR PLAYBACK RESPONSIVE ADVERTISEMENTS AND PURCHASE TRANSACTIONS		

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	<input checked="" type="radio"/> Customer Number	<input type="radio"/> US Patent Practitioner	<input type="radio"/> Limited Recognition (37 CFR 11.9)
Customer Number	24392		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	<div></div>	<div>Remove</div>	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
<div></div>	<div></div>		
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	103367.0001US
		Application Number	
Title of Invention	SYSTEMS AND METHODS FOR PLAYBACK RESPONSIVE ADVERTISEMENTS AND PURCHASE TRANSACTIONS		

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	103367.0001US
		Application Number	
Title of Invention	SYSTEMS AND METHODS FOR PLAYBACK RESPONSIVE ADVERTISEMENTS AND PURCHASE TRANSACTIONS		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.