(54) Title: SYSTEM AND METHOD FOR ASSET MANAGEMENT AND DELIVERY

(57) Abstract: The present disclosure relates generally to a method and system for delivering secondary content assets to an electronic device. In one embodiment, the method includes embedding by a processing element a secondary content asset within a primary content; assessing by the processing element consumption characteristics corresponding to a performance of the primary content, wherein the consumption characteristics are associated with a perceivability of the primary content in real-time; and determining by the processing element a ratings value based on the consumption characteristics to determine a delivered price for the secondary content asset.


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SYSTEM AND METHOD FOR ASSET MANAGEMENT AND DELIVERY

CROSS-REFERENCE TO RELATED APPLICATIONS


FIELD

[0002] The present disclosure relates generally to systems for online advertising management and delivery.

BACKGROUND

(0603) Advertisements, such as pop-ads and banner ads, are used to target particular viewers for online content, such as webpages and online video content (e.g., YouTube). However, many of these advertisements are easily blocked by ad blocking software and tars are not actually displayed to a viewer. Additionally, many primary content providers do not have control over the types of advertisements that are delivered on their webpage, or the manner in which the advertisements are delivered. For example, many advertisements are applied to primary content after the content has been delivered to a viewer's device. In these instances, content providers cannot control the advertisements, and therefore undesirable brands, types of advertisements, or the like are displayed along with the primary content, even though the primary content providers do not endorse nor support these types of advertisements.

(6004) Further, current billing practices for advertisements do not provide a fair or accurate value for delivery to viewers. For example, television advertisement slots are valued based on an expected number of viewers and are typically predicted based on historical data and trends. In instances where the historical data does not match the demand and the actual viewers vary from the predications, advertisers may pay too much or too little for the advertisement slot. Additionally, advertisements must be selected before the primary content is aired, and thus specific assets cannot be readily changed due to changes in current or actual viewership. Thus, primary content generators and advertisers may not receive the full value of a particular advertisement slot.
SUMMARY

One embodiment of the present disclosure includes a method for inserting a secondary content asset (e.g., advertising content) into primary content displayed on an electronic device. The method includes embedding by a processing element a secondary content asset within a media content, analyzing by the processing element consumer characteristics corresponding to a display of the primary content, where the consumer characteristics are associated with perceivable quality of the primary content in real time, and determining by the processing element a ratings value based on the consumer characteristics to determine a delivered price for the secondary content asset.

Another embodiment of the present disclosure includes a method for embedding secondary content asset into primary content. The method includes determining a template defining a plurality of predetermined locations for receiving secondary content asset within a sample content; receiving by a processing element a layout request corresponding to a primary content, wherein the layout request includes selection of a first location from the plurality of predetermined locations; dynamically selecting by the processing element secondary content asset for placement within the first location; and generating by the processing element displayable content comprising the primary content and the secondary content asset, wherein the secondary content asset is configured to be displayed in the first location.

In another embodiment, a method for generating content for consumption by a user through an electronic device is disclosed. The method includes determining by a processing element a rating for a primary content; based on the rating, selecting by the processing element a secondary content asset for insertion into the primary content; integrating by the processing element the secondary content asset into the primary content to generate a combination content; transmitting by the processing element the combination content for output; and evaluating by the processing element a delivered value of the secondary content asset, wherein the delivered value corresponds to a rating of the combination content.

Yet another embodiment of the present disclosure includes a system for embedding secondary content asset into a primary content. The system includes a processing element configured to perform the following operations: receive a user request for insertion of a secondary content asset into the primary content; evaluate data corresponding to a plurality of secondary content files to select a secondary content file for insertion; and generate a...
combination content file including the primary content and the selected secondary content asset file.

**BRIEF DESCRIPTION OF THE DRAWINGS**

[0009] Fig. 1 is a block diagram for a system of the present disclosure.

[0010] Fig. 2 is a simplified block diagram for one or more computing devices of the system.

[0011] Fig. 3 illustrates a high level architecture or platform for the system of Fig. 1.

[0012] Fig. 4 is a flow chart illustrating a method for assessing a bid-value for insertion of a secondary asset into a primary content.

[0013] Fig. 5 illustrates a block diagram of the priority queue builder module of Fig. 3 for implementing the method of Fig. 4.

[0014] Fig. 6 illustrates a method for configuring the insertion of secondary content asset into primary content.

[0015] Fig. 7 illustrates a block diagram of the production center module for performing the method of Fig. 6 and its interactions with other modules in the architecture of Fig. 3.

[0016] Fig. 8 illustrates an example of the asset templates that can be generated in the method of Fig. 6.

[0017] Fig. 9 is a flow chart illustrating a method for integrating secondary content assets into primary content.

[0018] Fig. 10 is a block diagram illustrating an architecture of the ratings generation: module of Fig. 3.

[0019] Fig. 11 is a block diagram illustrating an architecture for the priority queue builder and the priority queue manager of Fig. 3.

[0020] Fig. 12 illustrates an example architecture for the transmission and delivery of the combination content,

[0021] Fig. 13 illustrates a block diagram of an architecture for the media distribution and accounting module of Fig. 3.

[0022] Fig. 14 illustrates a block diagram of an architecture for the information warehouse manager of Fig. 3.
Detailed Description

[0023] The present disclosure is generally related to a method for generating, selling, and delivering advertisements or other types of secondary content assets. In one embodiment, the method includes a ratings generator for evaluating primary content for relevant advertising parameters, such as, consumer demographies, time, day, etc., and using the ratings generator, the system accepts and evaluates bids from secondary content asset owners corresponding to insertion of the content into the primary content. The secondary content asset is then embedded into the primary content to create a combination content that includes the primary content and the secondary content asset. In this manner, the secondary content asset cannot be "blocked" or removed from the primary content during the display of the primary content by traditional means, or without leaving a gap in the primary content from, where the secondary content asset was excised.

[0024] The present disclosure also includes methods for evaluating the actual consumer/hours for the secondary content assets. In particular, the method utilizes a post-hoc analysis of the combination content to assess the actual number of consumers and the time that the secondary content asset was performed or consumed (e.g., displayed, played, or the like), to determine a value for the secondary content asset. Using the determined value, the method can be used to more accurately invoice content owners for displaying content. For example, the price determination for a select secondary content asset may be based on the ratings for the combination content multiplied by the bid price for the asset. The ratings may be based on the parameters for the content. For example, the secondary content asset owner may wish to target female consumers and the bid on the content delivery slot may have been based only on the female consumers, in this example, the post hoc analysis of the value of the secondary content asset is based on a function of the bid price that the content owner offered, the number of female consumers that perceived the content (or to whom the content was presented), and the amount of time that the secondary content asset was performed. The combination content allows the post hoc analysis to be more accurate as the processing element can assume that if the primary content was performed on the consumer device, than the secondary content asset, which is integrated with the primary content, was also performed.

[0025] The present disclosure also includes methods to allow secondary content asset owners to directly insert secondary content asset into their primary content directly from peer to portal. In particular, the system provides users with templates to easily select how and
where to insert secondary content asset into the primary content. For example, a content owner can select a particular template from a plurality of templates and using the template can determine characteristics such as shape, location, dimensions, and the like, that will be used to insert the secondary content asset into the primary content.

As used herein, the term "primary content" describes media content that typically is the main content, or related to what is principally requested by or selected to be transmitted to a user, such as in response to a search or a request. In a preferred embodiment, the primary content includes playable or performable content, for example, content that is presented to a user that has a time element or changes over time, such as a video, audio, or a video game or video game element, and can be 2D or 3D, for example. In alternative embodiments, primary content can include 2D or 3D still images. The primary content can be live-streamed or live-distributed, prerecorded or delayed, and can be provided via peer to portal delivery, as well as peer to peer, live television broadcast, or other suitable types of content delivery. The term "secondary content asset" includes content that is secondary to the primary content, such as advertisements, banners, or the like. Secondary content assets can be any suitable type of media content, such as playable or performable content, for example, content that is presented to a user that has a time element or changes over time, such as a video, audio, or a video game or video game element, and can be 2D or 3D, for example. In embodiments, secondary content also includes 2D or 3D still images, text, and/or external data sources (Twitter, news RSS feeds, etc.). Typically, secondary content is not what was requested or searched, and in some embodiments is unrelated to the primary content, although in other embodiments it can include content that is related to a search or a request. In some embodiments, secondary content asset also encompasses advertisements that can be delivered as endorsements for events that are "primary content," e.g., "sponsored replay." Depending on the type of media of both the primary and secondary content, the consumer may view and/or listen to the performance of the content on his or her devices.

Turning to the figures, the method and system of the present disclosure will now be discussed in more detail. Fig. 1 is a block diagram illustrating a system 100 for asset management and delivery. With reference to Fig. 1, the system 100 includes one or more servers 102, a network 104, a plurality of consumer devices 106a-106n, a plurality of content generator devices 108a-108n, and a plurality of asset manager devices 110a-110n. Each of the electronic devices may be in communication either directly or indirectly with one another via the network 104.
The network 104 provides communication either directly or indirectly to the various devices 102, 106a-106n, 108a-108n, 110a-110n of the system 100. The network 104 may be substantially any suitable type of system or protocol (or combinations of systems and protocols) that provide for data exchange between the devices in the system 100. For example, the network 104 may include WiPi, Bluetooth, cellular networks, Ethernet, or the like.

The system server 103 may be substantially any type of computing device but typically may be one or more computing devices in communication with one another that perform one or more tasks for system 100. In some embodiments, the server 102 is a computing device that hosts a web server application or other software applications that transmits and receives data to and from the consumer devices 106a-106n, the content generator devices 108a-108n, and the asset manager devices 110a-110n. The server 102 may typically include one or more processing elements, memory components, and networking/communication interfaces, but may generally have increased processing power and memory storage as compared to the consumer devices 106a-106n. The server 102 is configured to host one or more aspects of the delivery system as discussed herein.

The consumer devices 106a-106n may be any suitable type of computing device. Some non-limiting examples include a smartphone, a tablet computer, a digital music player, portable gaming station, laptop computer, set top box, television, wearable devices, virtual reality headset, augmented reality display, media player (e.g., digital video disc player, digital video recorder), or the like.

The content generator devices 108a-108n and the asset manager devices 110a-110n may be substantially similar to the consumer devices 106a-106n and/or the server 102.

Fig. 2 is a simplified block diagram of a computing device illustrating representative components of the server 102, the consumer devices 106a-106n, the content generator devices 108a-108n, and asset manager devices 110a-110n. The below discussion is with respect to the server 102, but it should be understood that each of the other devices in the system may include the same or similar components.

With reference to Fig. 2, the server 102 may include one or more of the components shown in Fig. 2 such as one or more processing elements 112, one or more memory components 120, a display 114, a networking/communication interface 118, an input/output (I/O) interface 116, and a power source 122. It should be noted that Fig. 2 is
meant as exemplary only, in other examples the computing devices of the system, e.g., the server 102 and consumer devices 106a-106n, content generator devices 108a-108n, and asset-manager devices 110a-1110n may include fewer or more components than those shown in Fig. 2.

(0034) The one or more processing elements 112 may be substantially any electronic device capable of processing, receiving, and/or transmitting instructions. For example, the processing element 112 may be a microprocessor or a microcomputer. Additionally, it should be noted that the processing element 112 may include more than one processing member. For example, a first processing element may control a first set of components and a second processing element may control a second set of components, where the first and second processing elements may or may not be in communication with each other. Additionally, each processing element 112 may be configured to execute one or more instructions in parallel.

(0035) The memory 120 stores electronic data that may be utilized by the computing devices 102, 106a-106n, 108a-108n, 110a-110n, and 110a-1110n. For example, the memory 120 may store electrical data or content e.g., audio files, video files, document files, and so on, corresponding to various applications. The memory 120 may be, for example, non-volatile storage, a magnetic storage medium, optical storage medium, magneto-optical storage medium, read only memory, random access memory, erasable programmable memory, flash memory, or a combination of one or more types of memory components. In many embodiments, the server 102 may have a larger memory capacity than the other devices 106a-106n, 108a-108n, 110a-1110n. The memory may be accessible by any of the devices or a subset of the devices. In some embodiments, the server 102 may include different memory components or different memory sections that store different types of data.

(0036) The networking/communication interface 118 receives and transmits data to and from the network 104 to each of the computing devices 102, 106a-106n, 108a-108n, 110a-1110n. The networking/communication interface 118 may transmit and send data to the network 104, and/or other computing devices. For example, the networking/communication interface 118 may transmit data to and from other computing devices through the network 104 which may be a cellular or other wireless network (e.g., Wi-Fi, Bluetooth) or a wired network (e.g., Ethernet), or a combination thereof.
The computing devices 102, 106a-106n, 108a-108n, 110a-110n may also include a power supply 122. The power supply 122 provides power to various components of the computing devices 102, 106a-106n, 108a-108n, 110a-110n. The power supply 122 may include one or more rechargeable, disposable, or hardwire sources, e.g., batteries, power cord, or the like. Additionally, the power supply 122 may include one or more types of connectors or components that provide different types of power to the computing devices 102, 106a-106n, 108a-108n, 110a-110n.

The input/output interface 116 allows the computing devices 102, 106a-106n, 108a-108n, 110a-110n to receive inputs from a user and provide output to the user. For example, the input/output interface 116 may include a capacitive touch screen, keyboard, mouse, stylus, or the like. The type of devices that internet via the input/output interface 116 may be varied as desired.

The display 114 provides a visual output for the computing devices 102, 106a-106n, 108a-108n, 110a-110n. The display 114 may be substantially any size and may be positioned substantially anywhere on the computing devices 102, 106a-106n, 108a-108n, 110a-110n. For example, if the server 102 includes a screen, the display will typically be a separate component from the server 102 and in communication therewith, whereas the consumer devices 106a-106n may include an integrated display screen. In some embodiments, the display 114 may be a liquid crystal display screen, plasma screen, light emitting diode screen, and so on. In some embodiments, the display 114 may also function as an input device in addition to displaying output from computing device. For example, the display 114 may include capacitive touch sensors, infrared touch sensors, or the like that may capture a user's input to the display 114. In other embodiments, the display 114 may be separate from or otherwise external to the electronic device, but may be in communication therewith to provide a visual output for the electronic device.

The computing devices may also include other types of output components, such as speakers or tactile feel devices that provide output to the users. Depending on the type of content, different output components can be used to allow a consumer to consume (e.g., view, listen, or feel) the content.

Fig. 3 illustrates a high level architecture 150 for the system 100. With reference to Fig. 3, the architecture 150 includes a plurality of modules, which may be portions or standalone software programs that execute on the Server 102. The various modules may be
used alone or in combination with one another. The modules in the architecture 150 can be stored on the memory component 120 and executed by the processing element 112 (or a combination of processing elements and memory components). The architecture 150 includes a ratings generation module 152, an information warehouse manager 154, a priority queue builder 156, a product center 158, a priority queue manager 160, and a media distribution and accounting module 162. Each of the modules may be in communication with one another (either directly or indirectly) such that data flows between each of them to allow execution of the various methods discussed in in Figs. 4, 6, and 9. The architecture 150 also includes a content distribution network 164 that forms a part of the network 104 and receives a broadcast signal from the architecture 150 and distributes it to the various consumer devices 106a-106n.

[0042] The ratings generator module 152 accesses ratings data sources, such as first and third party sources, to determine a rating for primary content or a primary content source (e.g., channel or personality). The rating data used by the module 152 may include consumer data e.g., types of consumers, access locations, gender, interests, and so on.

[0043] The information warehouse manager 154 houses information from various modules, such as from the ratings generation module 152, the queue builder 156, the queue manager 160, and the media distribution accounting module 162. The warehouse manager 154 stores data on the memory components 120 of one or more servers and may utilize the network 104 to store and access data from cloud storage or the like.

[0044] The priority queue builder module 156 generates lists of possible secondary content assets that can be delivered to a production center for insertion into primary content. The priority queue manager 160 is a server that receives requests from the production center 158 and selects secondary content asset to be displayed.

[0045] The media distribution accounting module 162 determines the cost of the secondary content asset based on data from the rating generator 152 and the priority queue builder 156. The media distribution center 162 communicates with third parties, such as advertisers or secondary content asset managers to invoice or otherwise provide communications regarding the end cost of the delivery for the secondary content asset.

[0046] The content distribution network module 164 interfaces with the network 104 to provide communications between the system architecture 150 and the consumer devices.
and the content generator devices 108a-108n. For example, the network module 164 receives a broadcast signal containing the combination content (primary and secondary) and distributes it via the network 104 to the consumer devices 106a-106n.

(0047) Various operations of the components within the architecture 150 and the system 100 will now be discussed below. Fig. 4 is a flow chart illustrating a method 200 analyzing a bid value for insertion of a secondary content asset into a primary content. In some embodiments, the method 200 may be implemented across the priority queue builder module 156 and the/warehouse manager module 154. However, in other embodiments, the method 200 can be implemented by the server 102 without the module structure. The method can be implemented in a variety of manners and the architecture 150 provides just one example of an implementation structure.

(0048) The method 200 begins with operation 202 and the processing element 112 receives an input corresponding to a primary content selection. For example, an asset manager user provides an input through one of the asset manager devices 110a-110n of a particular primary content where insertion of the manager's secondary content asset is desired. The primary content may be a channel or a genre of content or may be specific content, such as a particular show on a particular day and time.

(0049) Once the processing element 112 has received the primary content selection, the method 200 may proceed to operation 204. In operation 204, the processing element 112 receives one or more inputs corresponding to primary content characteristics. The primary content characteristics include data about the content, such as a desired consumer demographic, a time of day for delivery, a media target, new consumers (e.g., consumers who have not seen an asset), and other strategic targets outlined by the asset manager. In embodiments where new consumers are tracked, various methods may be used for assessing whether a consumer has viewed a second content asset. Examples include using user id names, login names, tracking a browser cookie at the time the secondary content asset is served, using device fingerprinting methods (with or without cookies), browser fingerprint or other suitable user or device identifications. When a secondary content asset is served, the user's identification (or other tracking characteristic) can be added to a list to keep track of those users that have been served the select secondary content asset.

(0050) The number and type of content characteristics depends on whether the primary content selection in operation 202 is generic or specific. The primary content characteristics
are input to: the processing element 112, through the asset manager devices: 110a-110n, and may be received for discrete primary content selections or may be received by talk to be applied to multiple primary content selections. For example, an asset manager may develop a brand strategy for multiple secondary content assets that includes desired primary content characteristics being targeted with the secondary content assets. In this example, the primary content characteristics can be imported to the server 102 in bulk.

[0051] After the content characteristics have been received by the processing element 112 of the server 102, the method 200 proceeds to operation 206. In operation 206, the processing element 112 receives an initial bid for a slot in the primary content from the asset manager. The bid may be in substantial any type of format, but in one example is in a consumer/hour metric, e.g., if for each consumer/hour that the primary content is predicted to be displayed. The initial bid may be selected by the asset manager or may be set by the system 100.

[0052] Once the bid is received, the method 200 proceeds to operation 208. In operation 208, the processing element 112 determines whether weighted characteristics should be used. In some embodiments, the asset manager may input that he or she would like to include weighted characteristics. In other embodiments, the system may evaluate the primary content characteristics selected to determine whether weighted characteristics should be applied. In instances where the primary content characteristic include features that may reduce the number of consumers that the asset manager is targeting, the processing element 112 will determine that the bid should be modified with weighted factors. Alternatively or additionally, the asset manager can indicate that it wishes to include weighted characteristics.

[0053] The weighted characteristics are used to provide a more accurate bid for a particular content delivery slot. For example, in some embodiments, the system 100 will charge a price for the consumer/hours that satisfy the primary content characteristics requested by the asset manager. In these embodiments, the bid will be modified to reflect the estimated amount of consumers that satisfy the primary content characteristics.

[0054] Examples of modifying a bid amount are provided below.

\[
Modified \text{bid} = (\text{bid amount}) \times (\text{percentage of new consumers})
\]

\[
Modified \text{bid} = (\text{bid amount}) \times (\text{percentage of consumers from desired geography})
\]

\[
Modified \text{bid} = (\text{bid amount}) \times (\text{percentage of consumers of a desired gender})
\]
In some embodiments, the bid amount may be in units of cost per consumer hour or cost per consumer. In embodiments where the bid amount is defined in cost per consumer hour, the bid can be defined as a currency amount (e.g., dollar) willing to be paid for every hour a secondary content asset is delivered by the architecture 150 and perceivable by a consumer. In embodiments where the bid is defined as a cost per consumer the bid can be defined as a currency amount (e.g., dollar) willing to be paid for each consumer of the secondary content asset, which may be one or more of the following: unique consumers, total consumers, or a combination of both, and is separate from the time of the performance of the secondary content asset.

If the primary content characteristics will reduce the overall value of the bid, then the method proceeds to operation 210. In operation 210, the processing element 210 weighs the bid based on the characteristics. For example, if the initial bid included primary content characteristics corresponding to only female consumers, the bid is modified to include this weighted characteristic as it may change the overall value of the content delivery slot.

After operation 210, or if the primary characteristics are not weighted as part of the initial bid, after operation 206, the asset manager’s preferences for the primary content are stored in the memory 120 as part of the information warehouse manager 154.

Fig. 5 illustrates a block diagram of the priority queue builder module 156 for implementing the method 200 of Fig. 4. With reference to Fig. 5, the priority queue builder module 156 is used to allow asset managers (e.g., advertisers) to define characteristics regarding the content to which the secondary content assets may be delivered, as well as which secondary content assets to deliver, and how the secondary content assets will be delivered. The priority queue builder 156 is used to assign a bid to the secondary content asset as described in the method 200 of Fig. 4.

With reference to Fig. 5, the priority queue builder 156 may include a media configuration editor 224 that receives the primary content input selections in operation 202 from the asset managers. The media configuration editor 224 may include one or more characteristic editors 226a, 226b, 226c, 226d, 226e. In one embodiment, the media configuration editor 224 includes a channel target editor 226a, a time of day target editor 226b, a bid price editor 226c, a bid modifier editor 226d, and a media type editor 226e. However, fewer or more specific characteristic editors may be used as well.
The channel target editor 226a provides an interface to allow the asset manager to select the channels to which its secondary content assets can be delivered. The channels may be contents such as individual user accounts, brand accounts, broadcast channels, or the like may be selected by content owners regardless of the channel on which they are displayed.

The time of day editor 226b allows the asset manager to select the time of day (or more than one time of day) when the secondary content is delivered. The bid price editor 226c allows an asset manager to input one or more values for the perceivability, which is the amount of time that a secondary content asset is able to be perceived by the consumer (e.g., the "screen time" or play time) on a consumer's device.

The media modifier editor 226d is used to allow an asset manager to input one or more weighted characteristics, such as, but not limited to, gender, age, location, or the like, that are used to affect the bid. These weighted characteristics can be used in operation 210 in the method 200. The media type editor 226e allows an asset manager to configure the type of secondary content asset to be delivered (e.g., still image, video, audio, or the like), as optionally select a secondary content asset for delivery.

With reference to Fig. 5, the priority queue builder 156 also includes a targeting data store 228. This data store 228 forms a part of the memory 120 and forms a database for storing the targeting parameters selected by the asset manager with the media configuration editor 224. The priority queue generator 230 uses the characteristic preferences and bid selections stored in the targeting data store 228 to select a priority of secondary content assets for delivery based on the bid price. In particular, the priority queue generator 230 analyzes bids from one or more asset managers and based on my weighted factors as applied to the bids and determines which secondary content asset should be inserted into a particular content delivery slot. In some embodiments, the bid price alone may determine which asset will be delivered, in other embodiments the bid price and/or secondary factors such as related accounts, volume, and the like, may be used to determine which secondary content asset should be delivered.

After the period queue builder 156 has built a priority list of secondary content assets for delivery, the list or ranking may be stored in a priority queue storage 232. The priority queue storage 232 forms a memory component 120 for the system 100 and forms a database storing the prioritized listing of secondary content assets. As will be discussed in
more detail below, the priority queue manager module 160 selects the most relevant secondary content asset for a channel based on the prioritized list of secondary content assets sorted in the priority queue storage 232.

In some embodiments, the architecture 150 allows a content generator to control or modify various characteristics of the placement of secondary content assets into primary content and/or select particular secondary content assets for insertion into the primary content. Fig. 6 illustrates a method for configuring the insertion of secondary content into primary content. In some embodiments, the method 300 of Fig. 6 is performed by the live-stream content production center 158 with input from the one or more content generator devices 108a-108n. Fig. 7 illustrates a block diagram of the production center 158 module for performing the method 300 and its interactions with other modules in the architecture 150. Alternatively, the method may be performed by the server 102 and processing element without specialized modules.

With reference to Figs. 6 and 7, the method 300 may begin with operation 302 and one or more asset templates are generated. In one embodiment, the processing element 112 of the server 102 retrieves a plurality of asset templates from memory and/or generates them dynamically from one or more characteristics. Fig. 8 illustrates an example of the asset templates 320a, 320b that can be generated in operation 302. The templates 320a, 320b include different types and locations of boundary boxes or slots where the secondary content assets can be positioned in the primary content. The user can then select a desired template and optionally modify the boundary slots of the template and/or may dynamically generate a new template based on additional inputs (e.g., number of boundary boxes, size, shape, etc.) to the system 100.

With reference again to Fig. 6, after the templates 320a, 320b have been generated, the method 300 proceeds to operation 304 and user layout input corresponding to a select template is received. For example, the content generator selects a template from the plurality of templates 320a, 320b via the content generator devices 108a-108n (e.g., using a mouse, keyboard, touchpad or the like to select one of the templates displayed on his or her screen).

Once the user has selected a template, the method 300 proceeds to operation 306, in operation 306 the content generator inputs one or more asset characteristics received by the server 102. For example, using editors such as a media position editor 310a, a media type editor 310b, or a media dimension editor 310c the content generator provides input to the
system regarding desired characteristics such as the size, type (e.g., still image, video, audio), and shape or placement of the secondary asset. As shown in Fig. 8, once a template 322, the user can move placement slots 324, 326 to different areas of the Content-screen 330. The placement slots 324, 326 define boundaries of where a secondary content asset will be positioned in the primary content to create the combination content. The size, shape, and location of the slots 324, 326 (as well as the number of slots 324, 326) can be varied by the user.

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Outing the template and layout options, the content generator can also request certain secondary content assets, asset characteristics, and/or prohibit certain asset characteristics. For example, the content generator can create a "white-list" corresponding to desired asset characteristics and/or a "black list" corresponding to prohibited asset characteristics. The two lists can include brand names, types of media (e.g., still images, audio, etc.), length or size of the assets, or the like. For example, a content generator may prohibit certain products or brands (e.g., sexual related advertisements, Brand A, advertisements, or the like) from being integrated with their content and/or may request certain products, brands, or actual assets. Other types of asset characteristics include the number of times that a particular asset is displayed, the time between assets (e.g., show one asset every five minutes, every fifteen minutes, etc.), and so on. The asset characteristics can be based any number of data, but in some instances each secondary content asset in the system includes metadata associated therewith. The metadata for each secondary content asset may provide information regarding its asset characteristics and thus can be used by the system in analysing a content generator's asset characteristic selections.

(0070) After the server 102 has received the asset characteristic inputs, the method 300 may proceed to operation 308. In operation 308, the selected layout (e.g., modified template) and the asset characteristics are stored in a layout data store 312. The layout data store 312 forms a memory component 120 for the system and forms a database that is used to store the layout parameters. As will be discussed in more detail below, the layout defines a placeholder for dynamically selected secondary content assets that can be inserted into the layout and the primary content.

[0071] A method for selecting and displaying secondary content assets within primary content will now be discussed. Fig. 9 is a flow chart illustrating a method for integrating secondary content assets into primary content. Fig. 10 is a block diagram illustrating an
architecture of the ratings generation module 152. With reference to Figs. 9 and 10, the 
method 400 begins with operation 402 and a rating for the primary content is determined by 
the processing element 112. The rating is determined by evaluating data from one or more 
"sources, such as first and third party sources that relate to or have data regarding consumers 
of the primary content.

[0072] In many embodiments, the ratings generation module 152 acts to determine the 
rating for primary content. With reference to Fig. 10, in these embodiments, the ratings 
generation module 152 includes a plurality of data sources 420a, 420b, 420c and a collector 
422 for gathering and optionally analyzing the data. In one example, the ratings generation 
module 152 includes age data 420a that includes data from first or third party sources related 
to the age of consumers of the primary content, gender data 420b which includes data related 
to the gender of consumers of the primary content, and consumer data 420c which includes 
data related to the number of consumers and/or consumer location of the primary content.

[0073] The data 420a, 420b, 420c may be received from a third party, such as a video 
server 454 (see Fig. 12) hosting the primary content, social media networks, data provider 
sources, website analytics (e.g., GOOGLE® analytics), or from first party sources, such as 
the server 102. In instances where the data is from a first party source, the server 102 may 
also host the primary content in addition to preparing the combination content for display. It 
should be noted that many other data sources and types may be used to assess the rating for a 
particular primary content. Additionally, the data may be evaluated for a particular content 
delivery slot or channel, or may be assessed dynamically based on the primary content as it is 
delivered.

[0074] Once the primary content data has been received from the various data sources 
420a, 420b, 420c, the data may be transferred to data collector 422 which collects the 
audience/consumer data from the sources 420a, 420b, 420c which then transfers the collected 
data to a data store 426. The data store 426 forms a memory component 120 of the system 
100 and stores the data to be accessed by the server 102, e.g., accessible by the processing 
element 112 of the server 102.

[0075] A ratings generator 424 accesses the consumer data stored in the data store 426 and 
uses the data to determine a rating for the primary content. In one example, the rating is 
defined as a function of consumers, age demographic, gender demographic, time of day, type 
of content, or the like, as well as any additional data points that are collected or desired to be
evaluated. **Equation (1) below illustrates one example of the ratings generator function that cars be used, where Rating is a single scalar value. However, it should be noted that many other functions and relationships can be used. For example, certain data points or variables can be weighted rather than each being applied equally.**

\[
\text{Rating} = f(\text{consumers, age demographic, gender demographic}) \quad \text{Eq. 0}
\]

Using Eq. (1) or another relationship, the ratings generator 424, which may be one or more processing elements 112 or servers 102, determines one or more ratings for a particular channel or primary content. Examples of rating implementations include:

\[
\text{Rating} = \text{(number of consumers currently watching a content stream)}
\]

\[
\text{Rating} = (\text{number of consumers watching a stream}) \times (\text{percentage of consumers between 18-24})
\]

\[
\text{Rating} = (\text{number of consumers currently watching the stream}) \times (\text{percentage of female consumers})
\]

The rating can then be stored in the memory 120, such as in the data store 426 for access by the other modules in the architecture 150.

With reference to Fig. 9, after operation 402, the method 400 may proceed to operation 404 and the processing element 112 generates a list of secondary content assets available for insertion in the rated primary content. In one embodiment, the priority queue manager module 160 is used to generate a list of assets. For example, when a request is received for a secondary content asset, a queue server 157, which may form a portion of the priority queue manager 160, retrieves a prioritized list of eligible media assets from the priority queue storage 232. The list includes assets that satisfy any criteria set by the content generator (e.g., media type, interaction on the white list or black list), as well as those assets that match with the rating of the primary content. For example, the processing element 112 will remove secondary content assets having asset requirements that do not match the actual characteristics of the primary content (e.g., time of day, channel, content generator, consumer demographics, or the like), and will also remove assets that have been included on a black list by the content generator (e.g., excluded brands, excluded media types or sizes, or the like).

In some embodiments, the secondary content assets may be prioritized in other manners. For example, the secondary content assets can be prioritised based on requested
assets (e.g., those requested by the content generator), random selection, ranked by most recent asset displayed, or the like.

With reference to Fig. 9, once the queue server 157 has generated the prioritized list of secondary content assets, the method 400 may proceed to operation 406. In operation 406, the processing element 112 selects one or more secondary content assets for display. In one example, the processing element 112 evaluates the bid of the listed relevant assets and selects the bid with the highest value. As discussed above, the bid value may be affected by the projected demographics or other characteristics of the primary content and so a bid with a higher dollar amount may have a lower value if it includes too many restrictions on consumers or the like. Alternatively or additionally, the queue server 157 may select the secondary content asset that is the most relevant to the primary content based on the black list and white list generated by the content generator.

Once the secondary content asset has been selected, the method 400 proceeds to operation 408. In operation 408 the secondary content asset is inserted into or otherwise combined with the primary content. With reference to Fig. 7, in one embodiment, the live stream production center 158 receives the selected secondary content asset from the priority queue manager 160 (which receives it from the queue server 157). The layout 314 includes a program executed by the processing element 112 that retrieves the layout or modified template selected by the content generator during using the method 300 of Fig. 6. The secondary content asset is then placed into the media capture device 316 of the content generator in the content delivery slot and with the constraints selected in the template generation of method 300 and rendered as an overlay on top of the medial source 318, which is typically the actual content or stream that is broadcast or delivered by the content generator devices 108a-108n to the consumer devices. In other words, the template selected and optionally modified by the content generator defines the locations (the content delivery slots) in the layout where the secondary content assets are delivered with respect to the primary media.

In these embodiments, the secondary content asset and the primary content are integrated together as a combination content. This helps to prevent the secondary content asset from being "blocked" or screened out by ad blockers or other related software that do not play, display, etc., secondary content in particular, the combination content is rendered
such that the primary content and the secondary content asset are rendered together and inseparably from one another.

[0083] In one example, if the primary content is video or an image, the secondary content asset is embedded by replacing some of the original pixels in the original content with the secondary content asset, e.g., the original pixels are removed, deleted, overwritten, or the like, thereby providing the combination content. In this example, removing the secondary content asset from the primary content would result in a gap, hole, or missing section of the content because the removed original pixels are no longer present in the combination content. As another example, the secondary content asset may be partially transparent and overlaid on top of the primary content. In this example, the combination content may be re-rendered or otherwise integrated so as to change the underlying primary content such that the secondary content asset and primary content are inseparable from one another. In another example in which the primary and secondary contents are sound files, some of the original data can similarly be replaced, overlayed, or combined to provide the combination content.

[0084] With reference to Fig. 9, one© the secondary content assets have been integrated into the primary content, the method 400 may proceed to operation 410. In operation 410, the combination content is transmitted for consumption. In one embodiment, the combination content is transmitted to the live stream content distribution network 1,64 and transmitted directly to the consumer devices 104a-108n for output on those devices. In this embodiment, the system 100 in inserted between the content generator devices 108a-108n and the consumer devices 106a-106n. In another embodiment, the combination content is transmitted back to the content generator devices 108a-108n, which then transmit the combination content directly to the consumer devices 106a-106n.

[0085] in one embodiment, the delivery requests and fulfilment can be done by broadcast software having the capability of making HTTP requests, such as, but not limited to, open broadcast software, X split, or the like, and the broadcast software can make the requests via layout or an individual HTTP request. Other types of connections are possible to, such as, but not limited to, persistent connections (e.g., web socket connection), or any other suitable connection protocol or mechanism.

[0086] Fig. 12 illustrates an example architecture for the transmission and delivery of the combination content. With reference to Fig. 12, in one embodiment, the live stream production center 158 transmits the combination content to the live stream content...
distribution network 164 which may include one or more video servers 454 and video consuming portals 450. The video consuming portals 450 may be one or more displays 114 on the consumer devices 106a-106n.

(6087) After the combination content has been transmitted for display, the method 400 proceeds to operation 412 and the delivered value of the secondary asset is determined by analyzing the actual consumer data of the combination content (as delivered). For example, the server 102 analyzes the actual consumer data for the combination content and based on the rate of the secondary content asset provides an actual delivered value to the asset manager devices 110a-110n. An example of the value determination is below.

\[ \text{Price} = (\text{modified bid amount}) \times \text{rating} \times (\text{time asset live on broadcast}) \]

[0088] Fig. 13 illustrates a block diagram of an architecture for the media distribution and accounting module 162. With reference to Fig. 13, in one embodiment, the media distribution and accounting module 162 includes a media accounting storage 444, a media billing module 440, and a contracts data store 442 that are in communication with the information warehouse manager 154, the ratings and consumer data store 426, and the queue server 157 of the priority queue manager 160. In this embodiment, the media billing module 440 receives inputs corresponding to one or more asset manager contracts and one or more content generator contracts that are stored in a memory component 1.20 of the contracts data store 442. The contracts data store 442 includes a database having contractual data (e.g., payment types, payment terms, payment methods, etc.) for the asset manager (e.g., advertiser or other owner of the secondary content asset), as well as the content generator (e.g., owner of the primary content).

(6089) Additionally, the billing module 440 receives inputs corresponding to the bid price set for the delivered secondary content asset and the post-bid rating of the combination content as received from the ratings data store 426 (which may be from one or more first or third parties). Using the above inputs, the processing element 1.2 executes a cost function to determine the value for the secondary content asset. For example, in the instance where the bid is selected based on a price of $1 per female consumer, the combination content included 100 female consumers that perceived the content, for 30 minutes the delivered value would be $50. Other functions can be used as well and it should be noted that the cost passed to the secondary content generator may be varied based on previous contracts, relationships,
volume, or the like. The value of the delivered secondary content asset can then be stored in the media accounting storage 444 for delivery or billing to one or more asset managers.

0090: The information warehouse manager 154 is used to store and transmit data to and from the various modules. Fig. 14 illustrates a block diagram of an architecture for the information warehouse manager 154. With reference to Fig. 14, the information warehouse manager 154 includes an importer/translator 43% a data warehouse controller 433, and a data warehouse storage 434 each of which may be in communication with one another. In one embodiment, the importer/translator 430 is an application program interface that is built on top of the data warehouse storage 434 and provides standardized read/write-access to the various database in the system 1.00. The data warehouse controller 342 is a data storage device that defines the protocol for accessing data stored in the data warehouse storage device 434. The data warehouse storage 434 is a data storage device that houses all of the various databases that the information warehouse manager 154 communicates with, such as, but not limited to, the ratings data store 426, the layout data store 312, the targeting data store 228, the contracts data store 442, and/or the media accounting storage 444. In this manner, the information warehouse manager 154 provides data communication across the architecture 150 to allow each of the various modules to execute as desired with select types of data.

0091: Using the methods and the system 100, secondary content assets, such as advertisements, can be delivered to consumer devices in an integrated manner with the primary content such that asset managers can be guaranteed that the secondary content assets are actually perceived (or able to be perceived) by a consumer, in many online and computer advertisement systems, the assets are delivered discretely from the primary content (e.g., web page or video) and are easily blocked by plugins and other software, in these conventional systems the asset manager cannot be sure whether a particular asset may have been actually perceivable on a consumer's device. On the contrary, with the present method, the secondary asset is encoded into the broadcast signal of the primary content before it is delivered to a consumer device, whereas conventional advertisements are delivered after the primary content has loaded on a consumer devices and the advertisements are delivered to the browser and thus can be easily blocked by a consumer.

0092: Additionally, the system 100 provides a more accurate and fair accounting for advertisements than is possible with conventional techniques and systems, in particular, the system 100 allows advertisement slots in primary content to be bid upon based on actual data.
for the primary content, as well as a post-hoc analysis that defines the actual value provided to an asset manager from the delivery of the advertisement. That is, the system 100 does not estimate the consumers who may have perceived asset, but determines the actual number of consumer devices that output the secondary content asset. However, it should be noted that to give an approximate value for an advertisement before delivery, the system uses an estimated amount of consumers during the bidding process and then updates the estimate based on actual consumers when determining the final delivered valued of the secondary content asset.

[0093] Further, the system gives more control to content generators in controlling aspects of advertisement delivery in their content. Content generators can control the types, sizes, and shapes of the advertisements that are inserted into their primary content as well as provide restrictions (or permissions) as to what type of secondary content asset can be inserted into their primary content. For example, certain content generators may have contracts with some brands, such as, Soda Brand A, and can dictate to the system 100 that no Soda Brand B advertisings are inserted into their content and/or that only Soda Brand A advertisements are inserted into their content. The system 100 allows each content-generator to act as his or her own broadcast studio from his or her content generator device 108a-108. In one example, the architecture 150 of the system 100 is accessible by the content generator through a plugin to a browser or other software that allows them to retrieve media assets from a remote database or data store and insert them into their content.

[0094] It should be noted that while the present disclosure focuses on advertisements for streaming content, the methods and disclosure can be used in many other applications. As such, the discussion of any particular embodiment is meant as illustrative only.

[0095] In methodologies directly or indirectly set forth herein, various steps and operations are described in one possible order of operation, but those skilled in the art will recognize the steps and operations may be suitably rearranged, replaced or eliminated without necessarily departing from the spirit and scope of the present invention. Suitable changes in detail or structure may be made without departing from the spirit of the invention as defined in the appended claims.
CLAIMS:

What is claimed is:

1. A method for delivering secondary content to an electronic device, comprising:
   - embedding by a processing element a secondary-content asset within a primary media content;
   - assessing by the processing element consumption characteristics corresponding to a performance of the primary content, wherein the consumption characteristics are associated with a perceivability of the primary content in real-time; and
   - determining by the processing element a ratings value based on the consumption characteristics to determine a delivered price for the secondary content assets.

2. The method of claim 1, wherein the ratings value comprises at least one of the following:
   - a number of consumers perceiving the performance of the media content, a gender distribution of the consumers, an age distribution of the consumers, or a location of the consumers.

3. The method of claim 1, wherein:
   - the consumer characteristics comprise:
     - consumer data corresponding to the number of consumers perceiving the secondary content asset and the primary content, and
     - a length of time the secondary content asset is perceivable by the consumer;
   - and
   - the processing element receives the consumer data and stores the consumer data in a memory component.

4. The method of claim 1, further comprising:
   - generating by the processing element a queue comprising a plurality of secondary content assets selected for delivery in the primary content; and
   - selecting by the processing element the secondary content asset based on one or more selection factors.
5. The method of claim 1, wherein embedding by the processing element the secondary content asset with the primary content comprises modifying an image file of the media content with the secondary content asset to generate a modified primary content.

6. The method of claim 5 further comprising receiving a request from a consumer device to access the primary content, and responsive to the request embedding the secondary content asset in the primary content.

7. The method of claim 6, wherein the primary content is a viewable media configured for display on a consumer device.

8. A method for embedding a secondary content asset into primary content comprising:
   - determining a template defining a plurality of predetermined locations for receiving secondary-content-assets within a sample content;
   - receiving by a processing element a layout request corresponding to a primary content, wherein the layout request includes selection of a first location from the plurality of predetermined locations;
   - dynamically selecting by the processing element a secondary content asset for placement within the first location; and
   - generating by the processing element displayable content comprising the primary content and the secondary content asset, wherein the secondary content asset is configured to be displayed in the first location.

9. The method of claim 8, wherein dynamically selecting the secondary content asset for placement within the first location comprises:
   - analysing by the processing element multiple factors corresponding to the primary media;
   - selecting by the processing element the secondary content asset most closely corresponding to the multiple factors.

10. A system for embedding secondary content asset into a primary content comprising:
    - a processing element configured to perform the following operations:
      - receive a user request for insertion of a secondary content asset into the
primary content;
    evaluate data corresponding to a **plurality** of secondary content asset files to
select a secondary content asset file for **insertion**; and
    generate a combination content file including the **primary content** and the
selected secondary content asset file.

11. The system of claim 10, wherein the processing element is further configured to:
    create a content template for the **primary content** corresponding to a plurality of
insertion locations for the secondary content asset file; and
    receive a placement instruction from a user selecting one insertion location of the
plurality of insertion locations, **wherein** the **secondary content** asset file is inserted into the
one insertion location of the **primary content** to generate the **combination content** file.

12. The system of claim 10, wherein evaluate data corresponding to the **plurality of**
secondary content asset files comprises:
    analyze one of more **primary** media factors related to viewership and user preferences;
and
    select the secondary content asset file matching a highest number of the primary
media factors.

13. A **method** for generating **content for consumption by a user through** an electronic device
comprising:
    **determining** by a processing element a rating for a **primary content**;
    based on the rating, **selecting** by the processing element a secondary **content** asset for
insertion into the **primary content**;
    **integrating** by the processing element the **secondary content** asset into the primary
content to generate a combination content;
    transmitting by the processing element the combination content for output; and
    **evaluating** by the processing element a delivered **value** of the secondary content asset,
wherein the delivered **value** corresponds to a rating of the **combination content**.
14. The method of claim 13, wherein the secondary content asset is an advertisement.

15. The method of claim 13, wherein the user rating corresponds to a number of user devices outputting the combination content.

16. The method of claim 13, wherein the rating is determined by analyzing data corresponding to one or more of the following: types of consumers consuming the primary content, access location of consumers consuming the primary content, or gender data of the consumers consuming the primary content.

17. The method of claim 13, further comprising analyzing a plurality of primary content characteristics and a plurality of secondary content asset characteristics to generate a selection of secondary content assets for insertion into the primary content.

18. The method of 17, wherein the plurality of primary content characteristics comprise a function of one or more of the following: consumer age demographic, gender demographic, time of day, or time of content.

19. The method of claim 13, further comprising determining by the processing element an insertion location in the primary content for the secondary content asset based on user input, wherein the secondary content asset is integrated into the primary content in the insertion location.

20. The method of claim 19, wherein the insertion location is selected by the user input from a template of possible insertion locations.
FIG. 4

1. RECEIVE PRIMARY CONTENT SELECTION INPUT
2. RECEIVE PRIMARY CONTENT CHARACTERISTIC INPUT
3. RECEIVE INITIAL BID
4. MODIFY?
   - YES: RECEIVE WEIGHTED CHARACTERISTICS
   - NO: STORE PREFERENCES
GENERATE ASSET TEMPLATE

RECEIVE USER LAYOUT INPUT

RECEIVE ASSET CHARACTERISTIC + USER INPUT

STORE LAYOUT & ASSET PARAMETERS

FIG. 6
FIG. 8
1. Determine primary content rating
2. Generate list of secondary content assets
3. Select secondary content assets for output
4. Integrate secondary content asset into primary content
5. Transmit for output
6. Determine delivered value of secondary content asset

FIG. 9
**INTERNATIONAL SEARCH REPORT**

**International application No.**

PCT/US20 17/02 1892

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(8) - G06F 15/16; G06F 17/00; G06Q 30/02 (2017.01)

CPC - H04L 29/06; H04L 29/08072; H04L 29/0809 (2017.02)

According to International Patent Classification (IPC) or to both national classification and IPC.

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

USPC - 705/14.54; 709/217; 715/202 (keyword delimited)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

See Search History document

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
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Further documents are listed in the continuation of Box C. See patent family annex.

- **A** denotes a document defining the general state of the art which is not considered to be of particular relevance.
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