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(54) **DEVICE, SYSTEM AND METHOD OF
DELIVERING TARGETED
ADVERTISEMENTS USING WIRELESS
APPLICATION PROTOCOL**

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filed on Jan. 24, 2006.

Publication Classification

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(57) **ABSTRACT**

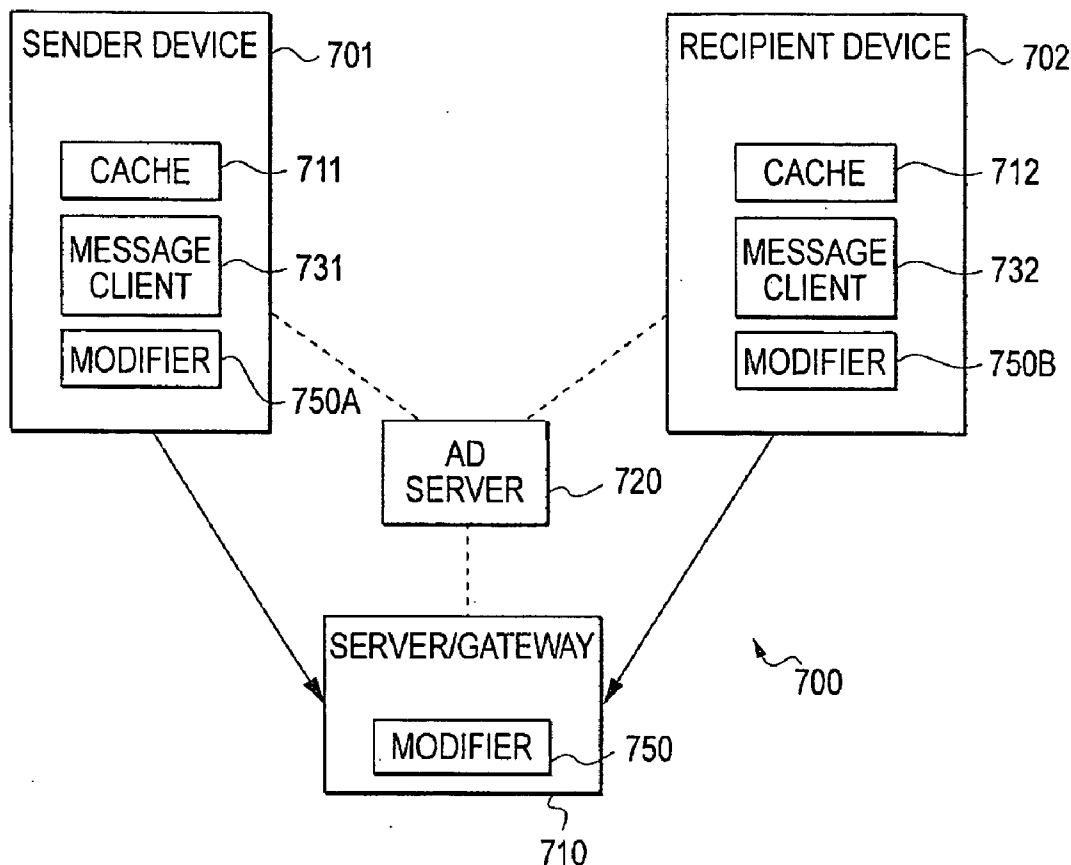
Devices, systems and methods of presentation of delivering targeted advertisements using Wireless Application Protocol. For example, a wireless communication device includes: a server to receive a request transmitted by a wireless communication device using Wireless Application Protocol (WAP) to access a WAP-page of a WAP-site, the server to select an advertisement based on a property selected from a group consisting of: a property of said wireless communication device, and a property associated with a user of said wireless communication device, and the server to serve the advertisement to said wireless communication device using WAP in response to said request.

(21) Appl. No.: **11/417,143**

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(63) Continuation-in-part of application No. 11/250,476,
filed on Oct. 17, 2005.
Continuation-in-part of application No. 11/332,387,
filed on Jan. 17, 2006.



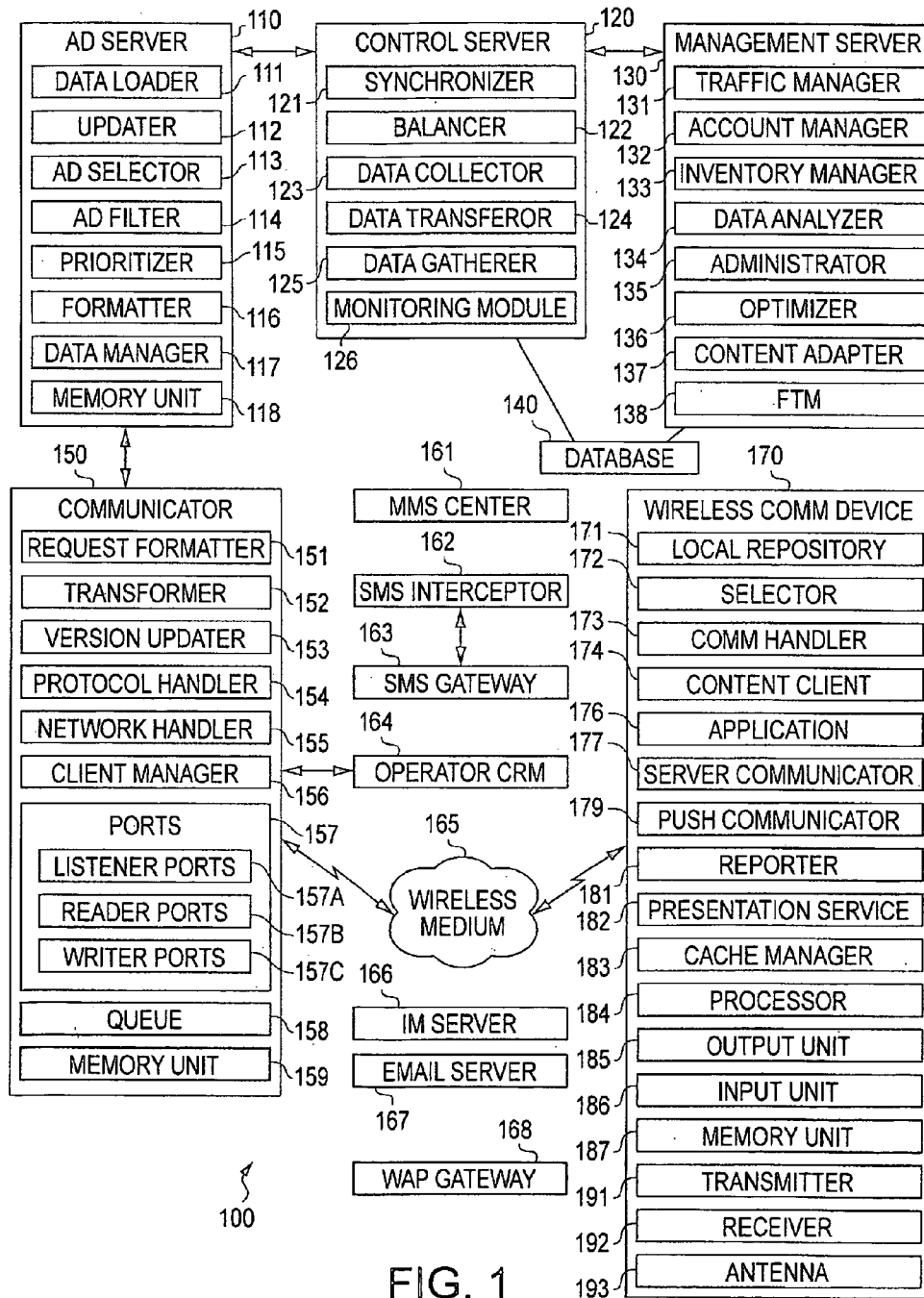


FIG. 1

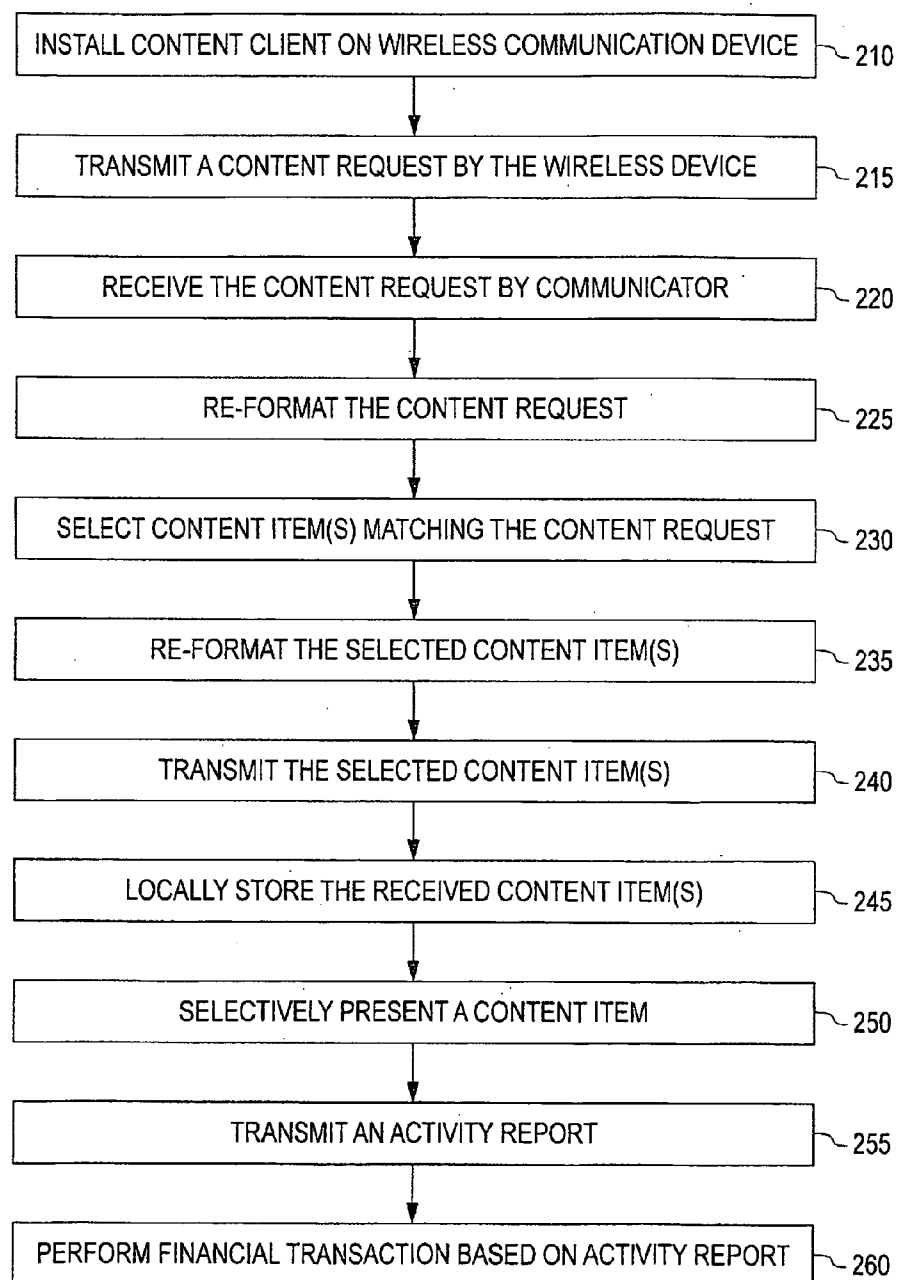


FIG. 2

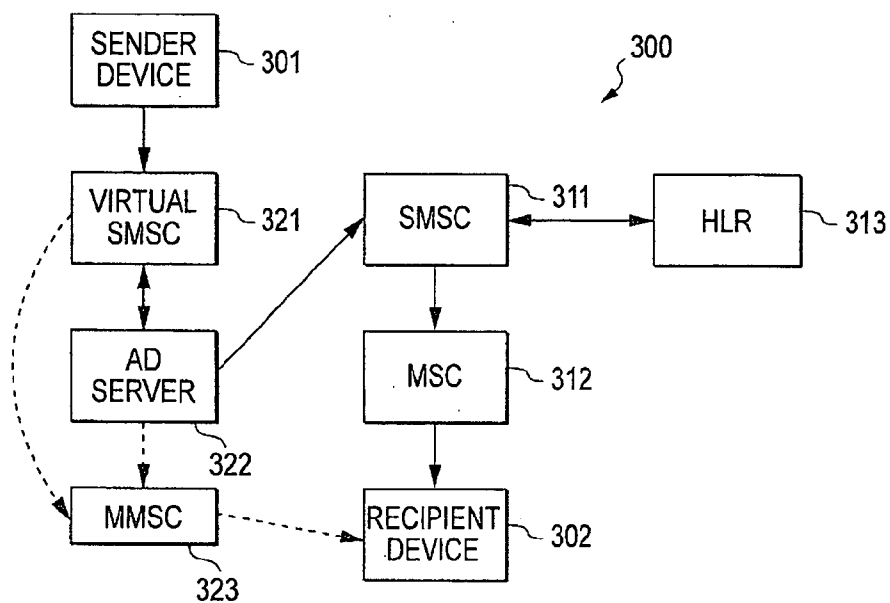


FIG. 3

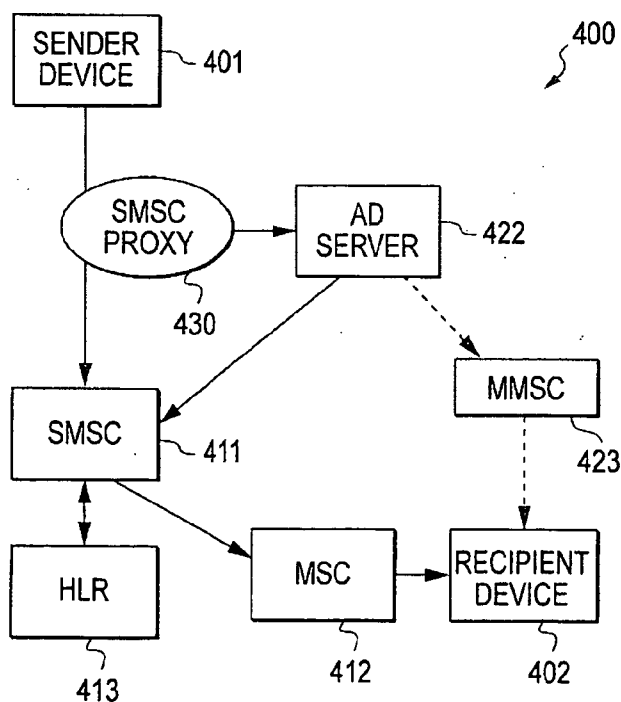


FIG. 4

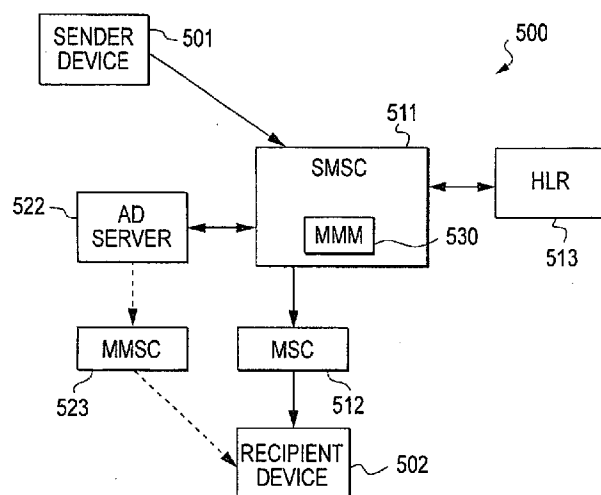


FIG. 5

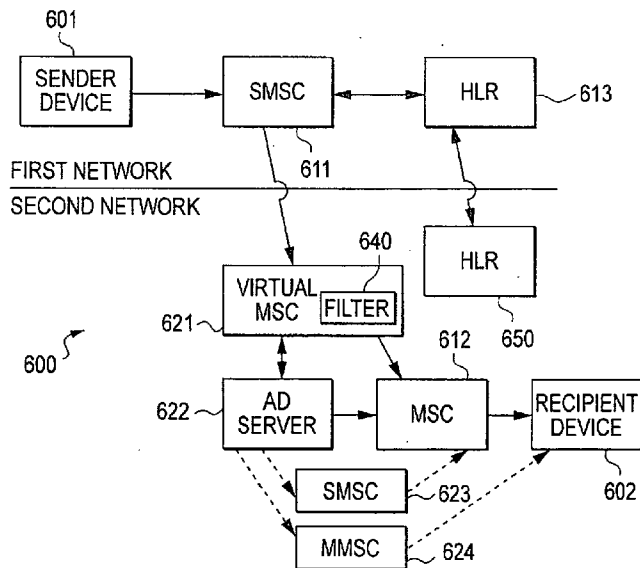


FIG. 6

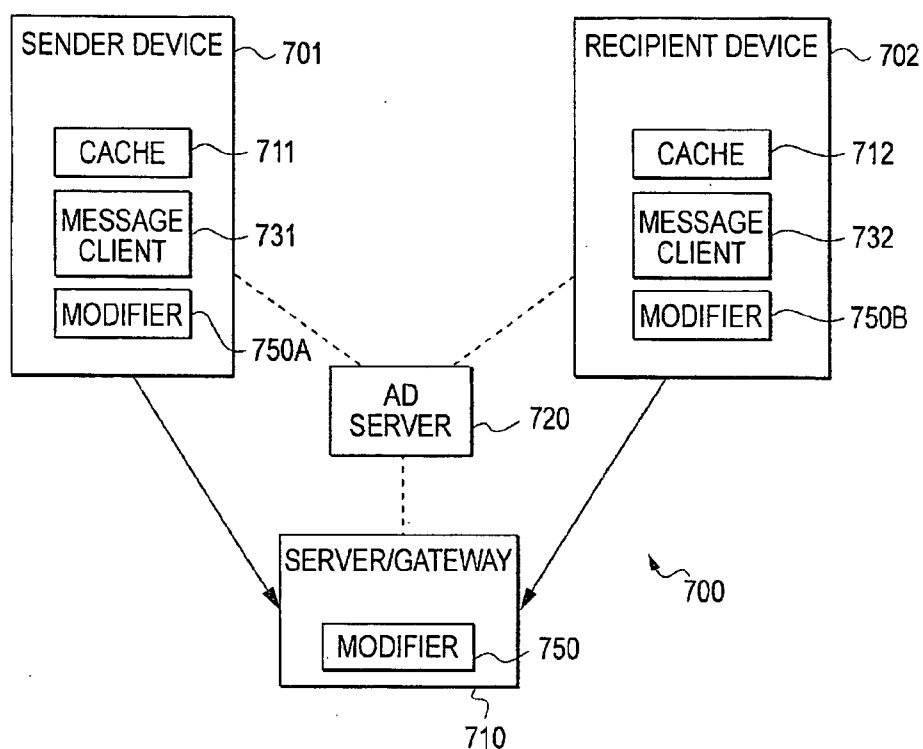


FIG. 7

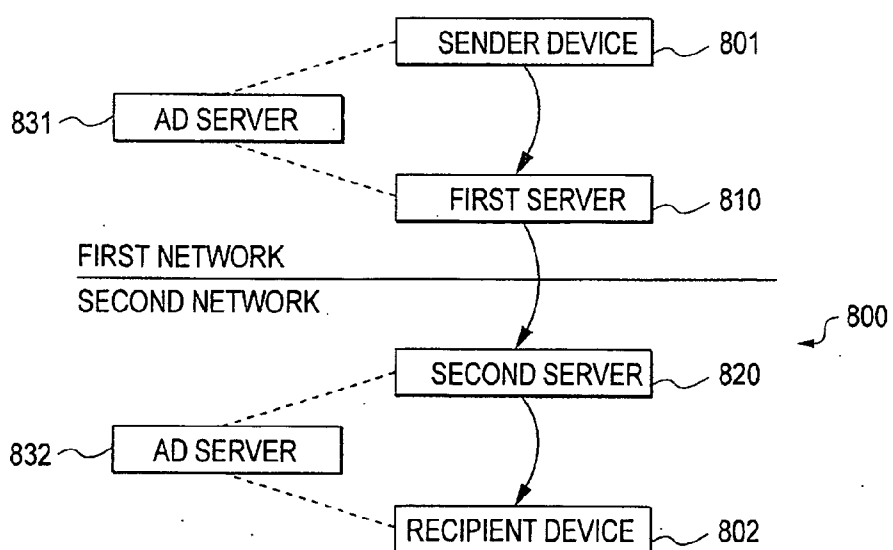


FIG. 8

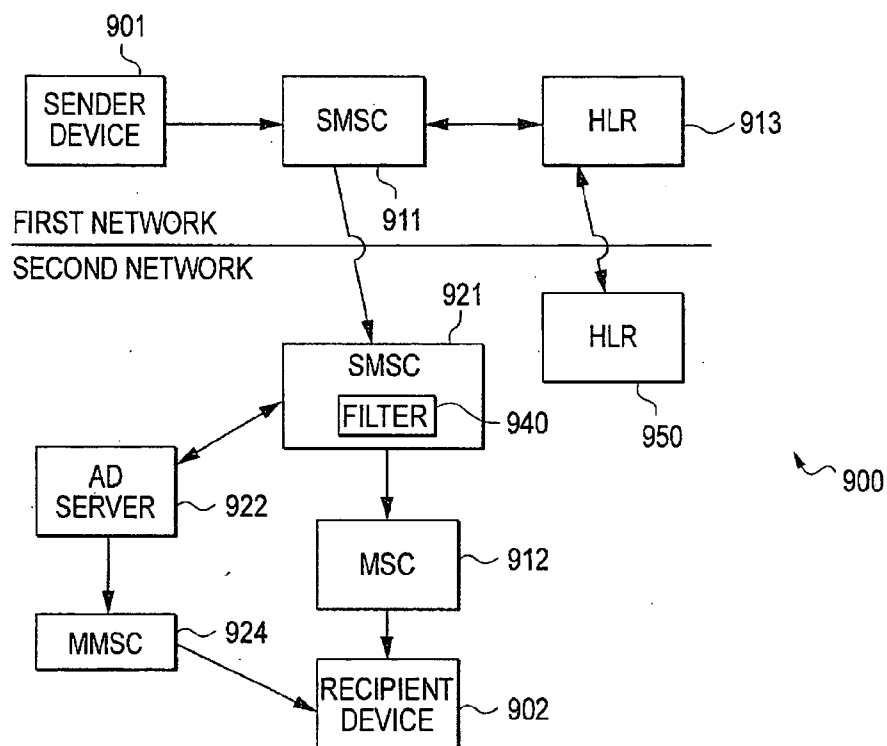


FIG. 9

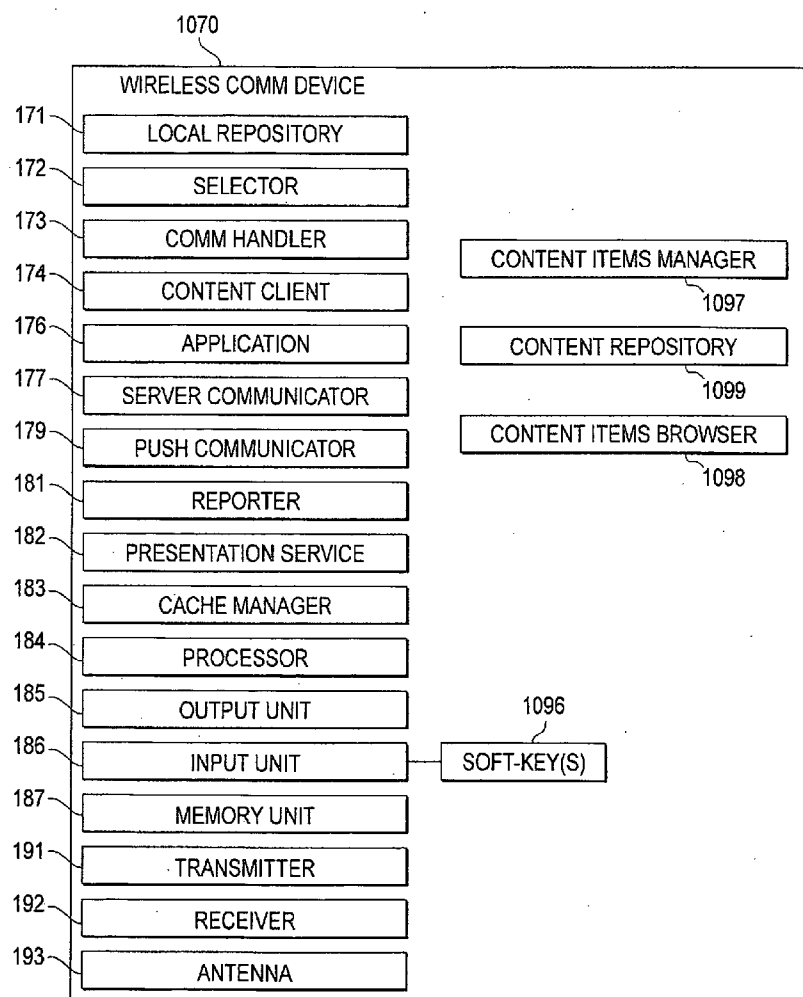


FIG. 10

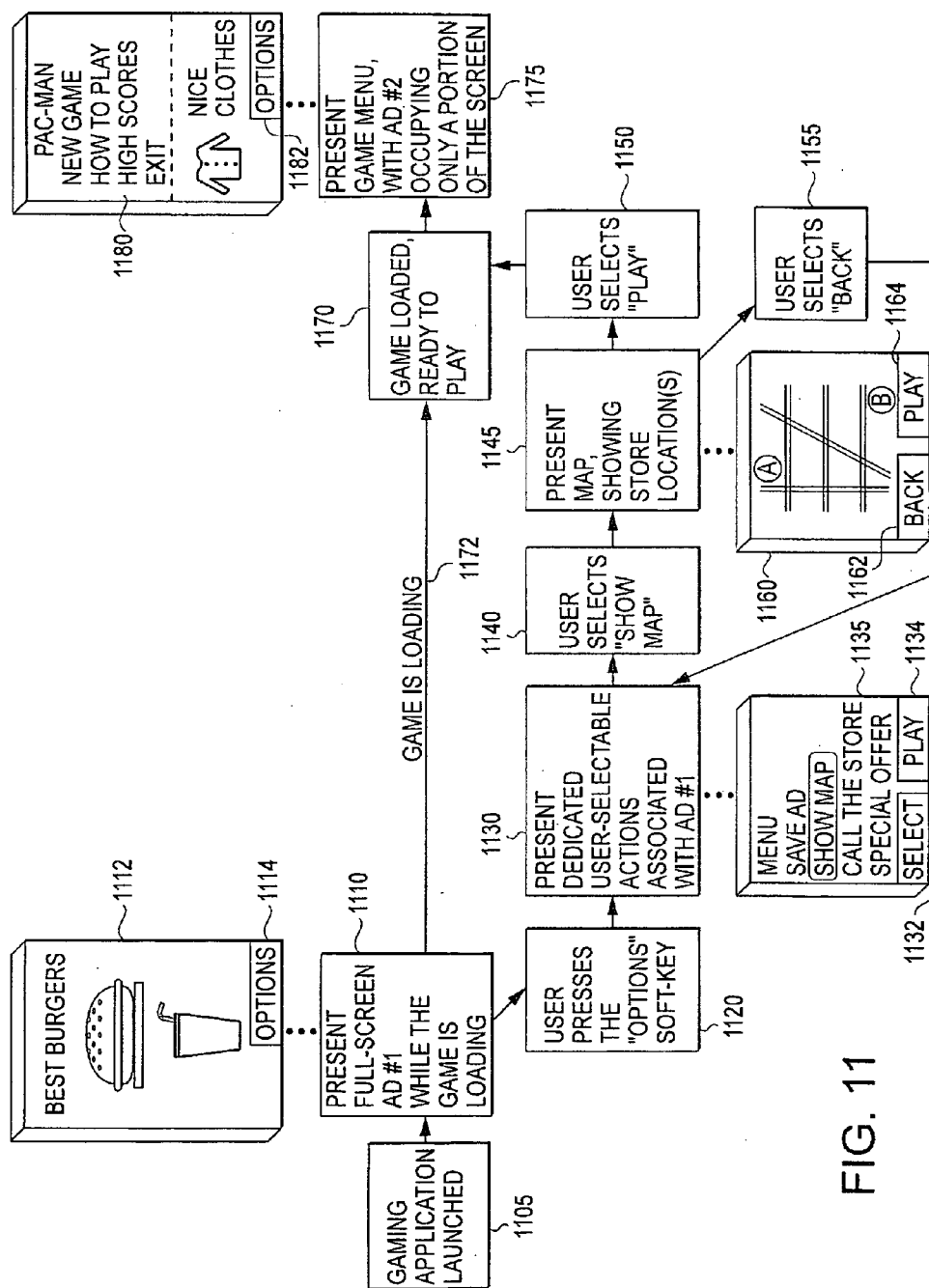
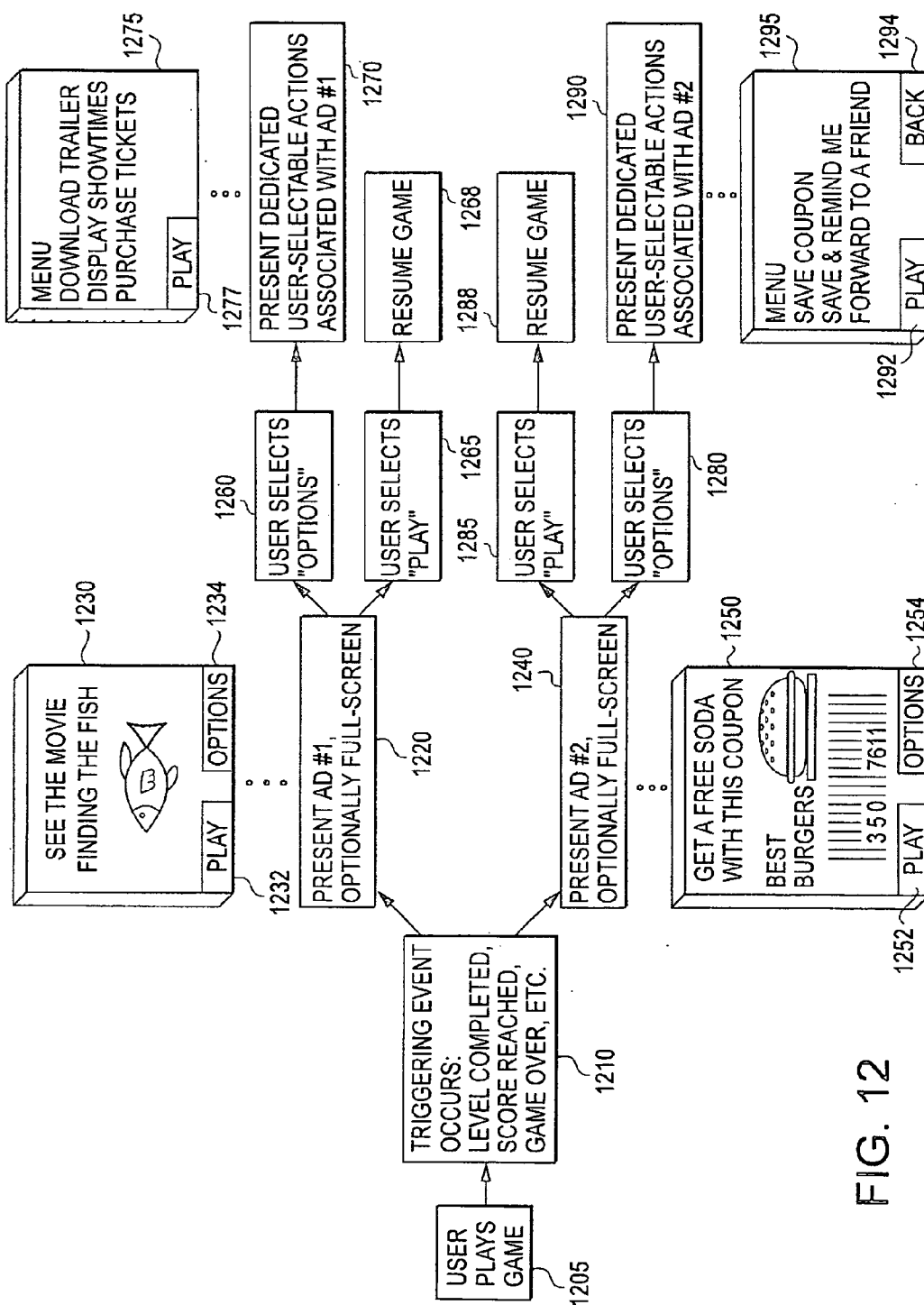


FIG. 11



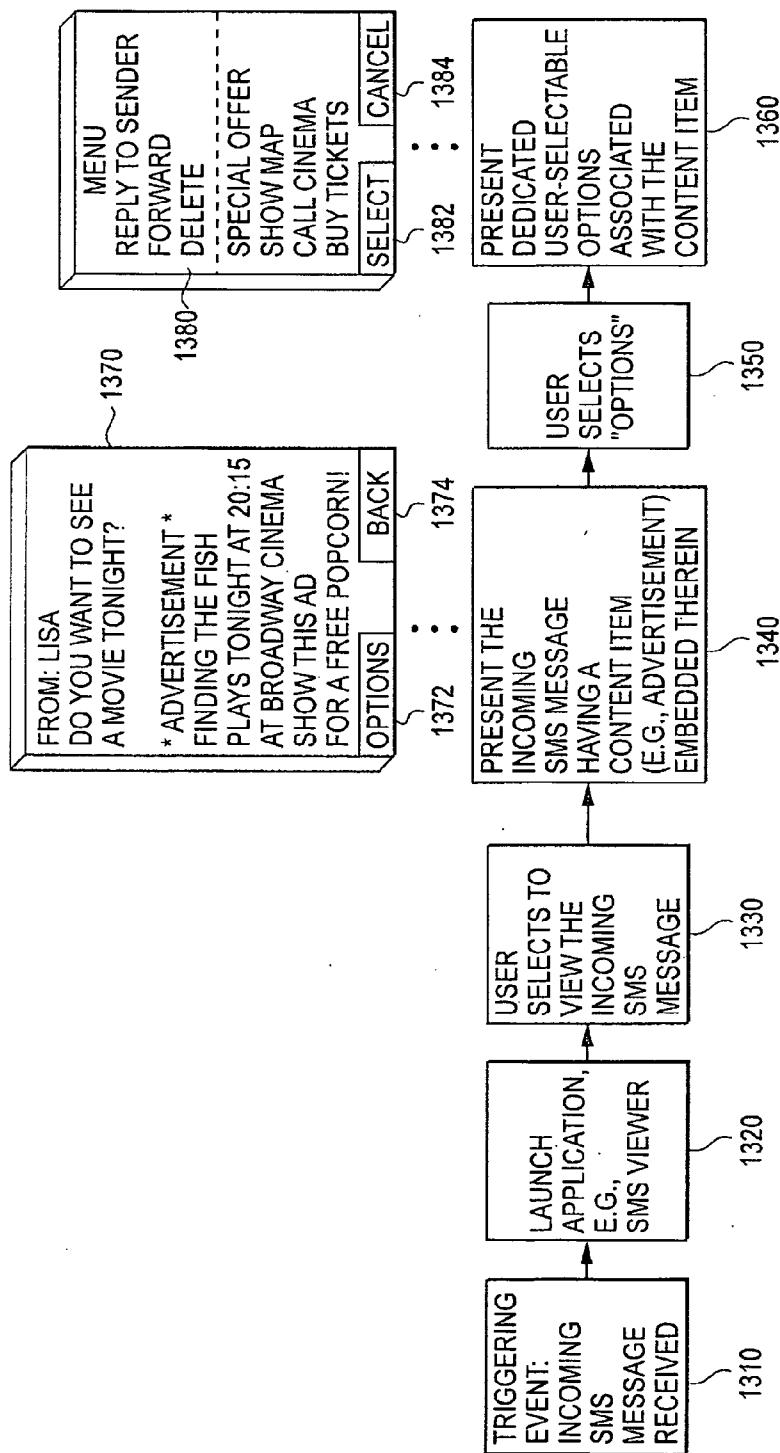


FIG. 13

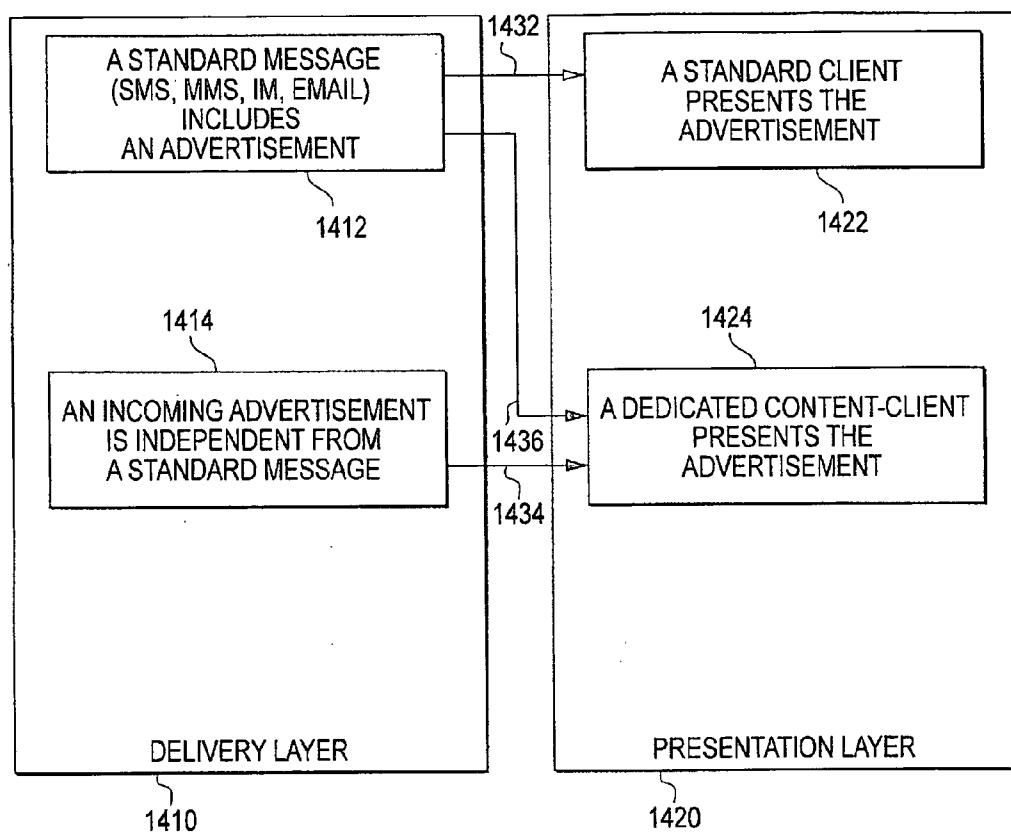


FIG. 14

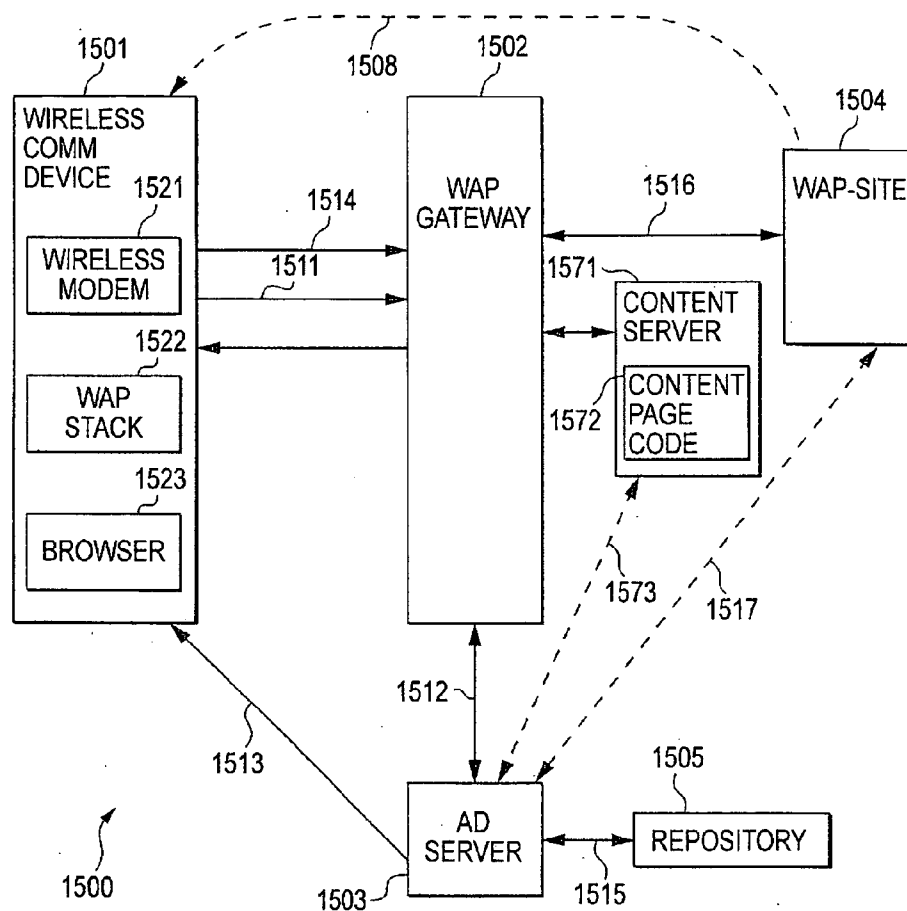


FIG. 15

**DEVICE, SYSTEM AND METHOD OF
DELIVERING TARGETED ADVERTISEMENTS
USING WIRELESS APPLICATION PROTOCOL**

PRIOR APPLICATIONS DATA

[0001] This application is a continuation-in-part of, and claims priority and benefit from: (1) U.S. patent application Ser. No. 11/250,476, entitled "Device, System and Method of Wireless Content Delivery", filed on Oct. 17, 2005, which is hereby incorporated by reference in its entirety; (2) U.S. patent application Ser. No. 11/332,387, entitled "Device, System and Method of Wireless Delivery of Targeted Advertisements", filed on Jan. 17, 2006, which is hereby incorporated by reference in its entirety; and (3) U.S. patent application Ser. No. 11/337,553, entitled "Device, System and Method of Presentation of Advertisements on a Wireless Device", filed on Jan. 24, 2006, which is hereby incorporated by reference in its entirety

BACKGROUND OF THE INVENTION

[0002] In the field of wireless communications, a wireless communication system may allow a wireless communication device to download and use games and applications, to transmit and receive a Short Message Service (SMS) item or a Multimedia Messaging Service (MMS) item, or the like.

[0003] Unfortunately, such operations, in which content is downloaded to or uploaded from the wireless device, may consume system resources and bandwidth resources, and may require a user to pay a fee to cover the cost of using such resources.

SUMMARY OF THE INVENTION

[0004] Some embodiments of the invention include devices, systems and methods of wireless content delivery.

[0005] Some embodiments may provide, for example, contextual and/or non-contextual placement of content, e.g., advertisements or banners, within an application executed by a cellular phone, a mobile phone, or other wireless communication device.

[0006] In some embodiments, previously-prepared applications, e.g., utilities or games for mobile phones, may be configured or adapted to include or embed a content client, e.g., using a Software Development Kit (SDK) or a Close Class. The content client may periodically connect to a content server or ad server and request content. The ad server may selectively serve content items to the content client, based on parameters related to the mobile phone, e.g., manufacturer identifier, model identifier, available memory, presentation capabilities, or the like, and/or based on parameters related to a user of the mobile phone, e.g., age, age group, gender, marital status, profession, occupation, geographical location, proximity to geographical places, or the like.

[0007] In some embodiments, the ad server or other operatively associated servers may perform ad targeting, for example, to target or tailor an appropriate content item based on such parameters. In one embodiment, the ad server or other operatively associated servers may perform ad targeting based on Customer Relationship Management (CRM) data about the user, based on various information or personal information collected or otherwise obtained about a user,

based on information that the user provided (e.g., using a form, a web-site, an opt-in service, or the like), based on a usage analysis of the mobile phone by the user, based on a contextual analysis of messages sent and/or received by the mobile phone, or the like.

[0008] In some embodiments, the mobile phones may periodically report to the ad server, or to other operatively associated servers, information related to past presentation of content items by the mobile phone and/or information regarding other actions or operations performed by the user, e.g., since the last reporting and/or since the last request for content items.

[0009] In some embodiments, for example, a system may include a server to receive an application-initiated content request from a wireless communication device, and to selectively serve to the wireless communication device a content item based on data included in the application-initiated content request, wherein the application-initiated content request may include data identifying at least a manufacturer of the wireless communication device and a model of the wireless communication device.

[0010] In some embodiments, for example, the application-initiated content request may include a data item selected, e.g., taking into account the capabilities of the device, from a group consisting of: a data item representing an available memory of the wireless communication device, a data item representing an audio capability of the wireless communication device, a data item representing a video capability of the wireless communication device, a data item representing a screen size of the wireless communication device, a data item representing a content item type that the wireless communication device is able to present, and a data item representing a location of the wireless communication device.

[0011] In some embodiments, for example, the server may selectively serve the content item based on a personal data item representing a property of a user of said wireless communication device. In some embodiments, for example, the personal data item may be selected from a group consisting of: a data item representing an age of the user, a data item representing an age group of the user, a data item representing a gender of the user, a data item representing an occupation of the user, a data item representing a profession of the user, and a data item representing usage pattern associated with the user.

[0012] In some embodiments, for example, the server may include a memory unit to store a plurality of content items from which the content item is selected.

[0013] In some embodiments, for example, the memory unit may include a volatile memory or a non-volatile memory.

[0014] In some embodiments, for example, the server is to periodically copy the content of the volatile memory into a non-volatile memory.

[0015] In some embodiments, for example, the plurality of content items may include at least a first version of the content item adapted for presentation using a first type of wireless communication device, and a second version of the content item adapted for presentation using a second type of wireless communication device.

[0016] In some embodiments, for example, the server is operatively associated with a communicator able to receive a plurality of substantially concurrent content requests and to store the plurality of content requests in a queue.

[0017] In some embodiments, for example, the system may include a first listener port to detect a first incoming content request, and a second listener port to substantially simultaneously detect a second, substantially concurrent, incoming content request.

[0018] In some embodiments, for example, the system may include a first reader port to read the first incoming content request, and a second reader port to substantially simultaneously read the second, substantially concurrent, incoming content request.

[0019] In some embodiments, for example, the server is able to execute substantially simultaneously a first thread to process the first incoming content request and a second thread to process the second incoming content request.

[0020] In some embodiments, for example, the system may include a first writer port to transmit a first content item in response to the first incoming content request, and a second writer port to substantially simultaneously transmit a second content item in response to the second incoming content request.

[0021] In some embodiments, for example, the wireless communication device may include: a receiver to receive the content item; and a selector to selectively present the content item if a pre-defined condition is met.

[0022] In some embodiments, for example, the server is to serve the content item if a number of previously-served content items is smaller than a pre-defined quota.

[0023] In some embodiments, for example, the server may include: a plurality of serving platforms; and a balancer to distribute a quota of servings of the content item among the plurality of serving platforms.

[0024] In some embodiments, for example, the server may include a content adapter to receive a first version of the content item and to generate a second, different, version of the content item.

[0025] In some embodiments for example, a method may include receiving an application-initiated content request from a wireless communication device; and selectively serving to the wireless communication device a content item based on data included in the application-initiated content request, wherein the application-initiated content request may include data identifying at least a manufacturer of the wireless communication device and a model of the wireless communication device.

[0026] In some embodiments, for example, the application-initiated content request may include a data item selected from a group consisting of: a data item representing an available memory of the wireless communication device, a data item representing an audio capability of the wireless communication device, a data item representing a video capability of the wireless communication device, a data item representing a screen size of the wireless communication device, a data item representing a content item type that the wireless communication device is able to present, and a data item representing a location of the wireless communication device.

[0027] In some embodiments, for example, the method may include selectively serving the content item based on a personal data item representing a property of a user of said wireless communication device. In some embodiments, for example, the data item is selected from a group consisting of: a data item representing an age of the user, a data item representing an age group of the user, a data item representing a gender of the user, a data item representing an occupation of the user, a data item representing a profession of the user, and a data item representing usage pattern associated with the user.

[0028] In some embodiments, for example, the method may further include storing in a memory unit a plurality of content items; and selecting the content item from the plurality of content items.

[0029] In some embodiments, for example, storing in a memory unit may include storing in a volatile memory, and the method may further include periodically copying the content of the volatile memory into a non-volatile memory.

[0030] In some embodiments, for example, the plurality of content items may include at least a first version of the content item adapted for presentation using a first type of wireless communication device, and a second version of the content item adapted for presentation using a second type of wireless communication device.

[0031] In some embodiments, for example, the method may further include receiving a plurality of substantially concurrent content requests; and storing the plurality of content requests in a queue.

[0032] In some embodiments, for example, the method may include substantially simultaneously detecting a first incoming content request and a second, substantially concurrent, incoming content request.

[0033] In some embodiments, for example, the method may include substantially simultaneously reading the first incoming content request and the second, substantially concurrent, incoming content request.

[0034] In some embodiments, for example, the method may include substantially simultaneously executing a first thread to process the first incoming content request and a second thread to process the second incoming content request.

[0035] In some embodiments, for example, the method may include substantially simultaneously transmitting a first content item in response to the first incoming content request and a second content item in response to the second incoming content request.

[0036] Some embodiments may include, for example, a machine-readable medium having stored thereon a set of instructions that, if executed by a machine, result in: receiving an application-initiated content request from a wireless communication device; and selectively serving to the wireless communication device a content item based on data included in the application-initiated content request, wherein the application-initiated content request may include data identifying at least a manufacturer of the wireless communication device and a model of the wireless communication device.

[0037] In some embodiments, for example, a wireless communication device may include a transmitter to transmit

an application-initiated content request; and a receiver to receive a content item selected by a server based on data included in the application-initiated content request, wherein the application-initiated content request may include data identifying at least a manufacturer of the wireless communication device and a model of the wireless communication device.

[0038] In some embodiments, for example, system may include a modifier to receive a message transmitted by a first wireless communication device and intended for reception by a second wireless communication device, and to selectively add an advertisement to the message prior to its presentation on the second wireless communication device.

[0039] In some embodiments, for example, the message may include a message selected from a group consisting of: a Short Message Service (SMS) message, a Multimedia Messaging Service (MMS) message, an Instant Messaging (IM) message, and an Electronic Mail (Email) message.

[0040] In some embodiments, for example, the modifier is to select the advertisement based on a contextual analysis of the message.

[0041] In some embodiments, for example, the contextual analysis may include an analysis utilizing a taxonomy tree of classified topics.

[0042] In some embodiments, for example, the contextual analysis is to determine to maintain the message unmodified.

[0043] In some embodiments, for example, the modifier is to select the advertisement based on a contextual analysis of one or more messages communicated prior to said message.

[0044] In some embodiments, for example, the modifier is to select the advertisement based on a manufacturer of the second wireless communication device and a model of the second wireless communication device.

[0045] In some embodiments, for example, the modifier is to select the advertisement based on a location of the second wireless communication device.

[0046] In some embodiments, for example, the modifier is to select the advertisement based on a personal data item representing a property of a user of the second wireless communication device.

[0047] In some embodiments, for example, the personal data item is selected from a group consisting of: a data item representing an age of said user, a data item representing an age group of said user, a data item representing a gender of said user, a data item representing an occupation of said user, a data item representing a profession of said user, and a data item representing usage pattern associated with said user.

[0048] In some embodiments, for example, the system may include a proxy server to intercept the message transmitted by the first wireless communication device, and to route the message to a gateway incorporating said modifier.

[0049] In some embodiments, for example, the modifier is included in said first wireless communication device, and the modifier is to selectively add the advertisement prior to transmission of the message to the second wireless communication device.

[0050] In some embodiments, for example, the modifier is included in said second wireless communication device.

[0051] In some embodiments, for example, the modifier is included in a message client application of said second wireless communication device.

[0052] In some embodiments, for example, the modifier is to obtain the advertisement from a local cache operatively coupled to the modifier.

[0053] In some embodiments, for example, the modifier is included in a device selected from a group consisting of: the first wireless communication device, and the second wireless communication device; and the modifier is to obtain the advertisement from a local cache of said device while said device is offline.

[0054] In some embodiments, for example, the modifier is to obtain the advertisement through an online connection with an advertisement server.

[0055] In some embodiments, for example, a method may include: receiving a message transmitted by a first wireless communication device and intended for reception by a second wireless communication device; and selectively adding an advertisement to the message prior to its presentation on the second wireless communication device.

[0056] In some embodiments, for example, the method may include receiving a message selected from a group consisting of: a Short Message Service (SMS) message, a Multimedia Messaging Service (MMS) message, an Instant Messaging (IM) message, and an Electronic Mail (Email) message.

[0057] In some embodiments, for example, the method may include selecting the advertisement based on a contextual analysis of the message.

[0058] In some embodiments, for example, the method may include, based on a contextual analysis of the message, determining to maintain the message unmodified.

[0059] In some embodiments, for example, the method may include intercepting the message transmitted by the first wireless communication device.

[0060] In some embodiments, for example, a wireless communication device may include: a receiver to receive a message transmitted by another wireless communication device and intended for reception by said wireless communication device; and a modifier to selectively add an advertisement to the message prior to its presentation on said wireless communication device.

[0061] In some embodiments, for example, the wireless communication device may include a receiver to receive a message selected from a group consisting of: a Short Message Service (SMS) message, a Multimedia Messaging Service (MMS) message, an Instant Messaging (IM) message, and an Electronic Mail (Email) message.

[0062] In some embodiments, for example, the modifier is to select the advertisement based on a contextual analysis of the message; to select the advertisement based on a contextual analysis of at least one message communicated prior to said message; and/or to select the advertisement from a local cache when said wireless communication device is offline.

[0063] In some embodiments, for example, a wireless communication device may include a display unit to display one or more user-selectable operations selectively associated

with an advertisement embedded within an incoming message. In some embodiments, for example, message may be selected from a group consisting of: a Short Message Service (SMS) message, a Multimedia Messaging Service (MMS) message, an Instant Messaging (IM) message, and an Electronic Mail (Email) message.

[0064] In some embodiments, for example, the wireless communication device may include a content client running on the wireless communication device to present the one or more user-selectable operation; and/or a content client to present the one or more user-selectable operations in a context of an application running on the wireless communication device

[0065] In some embodiments, for example, the wireless communication device may include a content item repository to locally store the advertisement in response to a command to save the advertisement; a content item repository to locally store the advertisement separately from the incoming message in response to a command to save the advertisement; a content items browser running on the wireless communication device to selectively present a previously-saved advertisement embedded within a previously-received incoming message.

[0066] In some embodiments, for example, the wireless communication device may include a soft-key or other user interface to select an operation from the one or more user-selectable operations selectively associated with the advertisement embedded within the incoming message.

[0067] In some embodiments, for example, the user-selectable operations may include: placing a call to a destination related to the advertisement; locally storing a coupon included in the advertisement for subsequent presentation; or the like.

[0068] In some embodiments, for example, the wireless communication device may include a content items manager to delete a local previously-stored advertisement based on an expiration time selectively associated with the local previously-stored advertisement.

[0069] In some embodiments, for example, a wireless communication device may include a wireless communication device to receive an advertisement selected in response to an application-initiated content request, to present the advertisement in a context of an application running on the wireless communication device, and to present one or more user-selectable operations selectively associated with the advertisement. The application may be, for example, a gaming application, a utility application, or the like.

[0070] In some embodiments, for example, a method may include presenting on a wireless communication device one or more user-selectable operations selectively associated with an advertisement embedded within an incoming message selected from a group consisting of: a Short Message Service (SMS) message, a Multimedia Messaging Service (MMS) message, an Instant Messaging (IM) message, and an Electronic Mail (Email) message.

[0071] In some embodiments, for example, the method may include storing the advertisement locally in the wireless communication device in response to a command to save the advertisement.

[0072] In some embodiments, for example, the method may include storing the advertisement separately from the incoming message and locally in the wireless communication device in response to a command to save the advertisement.

[0073] In some embodiments, for example, the method may include selectively presenting on the wireless communication device a previously-saved advertisement embedded within a previously-received incoming message.

[0074] In some embodiments, for example, the method may include configuring a soft-key of the wireless communication device to select an operation from the one or more user-selectable operations selectively associated with the advertisement embedded within the incoming message.

[0075] In some embodiments, for example, the method may include deleting from a local repository of the wireless communication device a previously-stored advertisement based on an expiration time associated with the previously-stored advertisement.

[0076] In some embodiments, for example, a system may include: a server to receive a request transmitted by a wireless communication device using Wireless Application Protocol (WAP) to access a WAP-page of a WAP-site, the server to select an advertisement based on a property selected from a group consisting of: a property of said wireless communication device, and a property associated with a user of said wireless communication device, and the server to serve the advertisement to said wireless communication device using WAP in response to said request.

[0077] In some embodiments, for example, said advertisement is included in said WAP-page, and said server is to serve said WAP-page to said wireless communication device in response to said request.

[0078] In some embodiments, for example, said server is to serve said advertisement to said wireless communication device separately from serving said WAP-page to said wireless communication device.

[0079] In some embodiments, for example, said server is to serve said advertisement to said wireless communication device prior to serving said WAP-page to said wireless communication device.

[0080] In some embodiments, for example, said advertisement may include a code that when executed by said wireless communication device causes said wireless communication device: to present said advertisement for a pre-defined time period; and to redirect said wireless communication device to said WAP-page after said pre-defined time period elapses.

[0081] In some embodiments, for example, said advertisement may include a hyperlink that when selected by an input unit of said wireless communication device causes said wireless communication device to redirect said wireless communication device to said WAP-page.

[0082] In some embodiments, for example, said advertisement may include a code that when executed by said wireless communication device causes said wireless communication device: to present said advertisement for a pre-defined time period; to present a hyperlink on said wireless communication device; and to redirect said wireless

communication device to said WAP-page upon the earlier of: when said pre-defined time period elapses, or when said hyperlink is selected by an input unit of said wireless communication device.

[0083] In some embodiments, for example, said property of said wireless communication device may include a presentation capability of said wireless communication device.

[0084] In some embodiments, for example, said property associated with said user may include a property selected from a group consisting of: an age of said user, a gender of said user, a profession of said user, an occupation of said user, a family status of said user, a location of said user, an operation previously performed by said user using said wireless communication device, an information item from Customer Relationship Management information of said user, an information associated with a content currently presented on said wireless communication device, a category associated with a requested WAP-site, a category associated with a currently-viewed WAP-site, a search query entered using said wireless communication device, and a search result presented on said wireless communication device.

[0085] In some embodiments, for example, said server is to provide a progress indication corresponding to progress of delivery of said advertisement to said wireless communication device, and said wireless communication device is able to present a progress representation based on said progress indication.

[0086] In some embodiments, for example, said advertisement is selectively associated with one or more user-selectable operations, said server is to deliver to said wireless communication device a code that when executed by said wireless communication device causes said wireless communication device to present said one or more user-selectable operations, and said user wireless communication device comprises an input unit to select one of said one or more user-selectable operations.

[0087] In some embodiments, for example, said wireless communication device may include a soft-key to select an operation from the one or more user-selectable operations.

[0088] In some embodiments, for example, said wireless communication device may include a repository to locally store said advertisement in response to a command to save the advertisement.

[0089] In some embodiments, for example, said wireless communication device may include a repository to locally store said advertisement separately from said WAP-page in response to a command to save the advertisement.

[0090] In some embodiments, for example, said advertisement may include a banner advertisement included in said WAP-page.

[0091] In some embodiments, for example, said one or more user-selectable operations may include at least an operation selected from a group consisting of: accessing another WAP-page associated with the requested WAP-page, accessing another WAP-page associated with the requested WAP-site, storing a bookmark pointing to a WAP-site associated with the selected advertisement, locally storing a copy of at least a portion of the selected advertisement, locally storing a promotional item associated with the

selected advertisement, requesting to receive additional information associated with the selected advertisement, requesting to view a map associated with the selected advertisement, initiating a call to a pre-defined phone number associated with the selected advertisement, sending a Short Message Service (SMS) message to a pre-defined destination associated with the selected advertisement, submitting a pre-defined form associated with the selected advertisement, storing in a phonebook database a contact item associated with the selected advertisement, and storing in a calendar database an event item associated with the selected advertisement.

[0092] In some embodiments, for example, a method may include: receiving a request transmitted by a wireless communication device using Wireless Application Protocol (WAP) to access a WAP-page of a WAP-site; selecting an advertisement based on a property selected from a group consisting of: a property of said wireless communication device, and a property associated with a user of said wireless communication device; and serving the advertisement to said wireless communication device using WAP in response to said request.

[0093] In some embodiments, for example, the method may include serving an advertisement included in said WAP-page in response to said request.

[0094] In some embodiments, for example, the method may include serving said advertisement to said wireless communication device separately from serving said WAP-page to said wireless communication device.

[0095] In some embodiments, for example, the method may include serving said advertisement to said wireless communication device prior to serving said WAP-page to said wireless communication device.

[0096] In some embodiments, for example, the method may include serving an advertisement comprising a code that when executed by said wireless communication device causes said wireless communication device: to present said advertisement for a pre-defined time period; and to redirect said wireless communication device to said WAP-page after said pre-defined time period elapses.

[0097] In some embodiments, for example, the method may include serving an advertisement comprising a hyperlink that when selected by an input unit of said wireless communication device causes said wireless communication device to redirect said wireless communication device to said WAP-page.

[0098] In some embodiments, for example, the method may include serving an advertisement comprising a code that when executed by said wireless communication device causes said wireless communication device: to present said advertisement for a pre-defined time period; to present a hyperlink on said wireless communication device; and to redirect said wireless communication device to said WAP-page upon the earlier of: when said pre-defined time period elapses, or when said hyperlink is selected by an input unit of said wireless communication device.

[0099] In some embodiments, for example, the method may include providing a progress indication corresponding to progress of delivery of said advertisement to said wireless

communication device; and presenting a progress representation based on said progress indication.

[0100] In some embodiments, for example, the method may include selectively associating said advertisement with one or more user-selectable operations; and delivering to said wireless communication device a code that when executed by said wireless communication device causes said wireless communication device to present said one or more user-selectable operations.

[0101] In some embodiments, for example, the method may include delivering to said wireless communication device a code that when executed by said wireless communication device causes said wireless communication device to present one or more user-selectable operations selected from a group consisting of: accessing another WAP-page associated with the requested WAP-page, accessing another WAP-page associated with the requested WAP-site, storing a bookmark pointing to a WAP-site associated with the selected advertisement, locally storing a copy of at least a portion of the selected advertisement, locally storing a promotional item associated with the selected advertisement, requesting to receive additional information associated with the selected advertisement, requesting to view a map associated with the selected advertisement, initiating a call to a pre-defined phone number associated with the selected advertisement, sending a Short Message Service (SMS) message to a pre-defined destination associated with the selected advertisement, submitting a pre-defined form associated with the selected advertisement, storing in a phonebook database a contact item associated with the selected advertisement, and storing in a calendar database an event item associated with the selected advertisement.

[0102] In some embodiments, for example, the method may include serving a banner advertisement included in said WAP-page.

[0103] Embodiments of the invention may provide various other benefits or advantages.

BRIEF DESCRIPTION OF THE DRAWINGS

[0104] The subject matter regarded as the invention is particularly pointed out and distinctly claimed in the concluding portion of the specification. The invention, however, both as to organization and method of operation, together with features and advantages thereof, may best be understood by reference to the following detailed description when read with the accompanied drawings in which:

[0105] FIG. 1 is a schematic block diagram illustration of a wireless communication system able to deliver content in accordance with an embodiment of the invention;

[0106] FIG. 2 is a schematic flow-chart of a method of wireless content delivery in accordance with an embodiment of the invention;

[0107] FIG. 3 is a schematic block diagram illustration of a mobile-originated single-network wireless communication system able to deliver content in accordance with an embodiment of the invention;

[0108] FIG. 4 is a schematic block-diagram illustration of a mobile-originated single-network wireless communication system able to deliver content in accordance with another embodiment of the invention;

[0109] FIG. 5 is a schematic block diagram illustration of a mobile-originated single-network wireless communication system able to deliver content in accordance with yet another embodiment of the invention;

[0110] FIG. 6 is a schematic block diagram illustration of a mobile-terminated multiple-network wireless communication system able to deliver content in accordance with an embodiment of the invention;

[0111] FIG. 7 is a schematic block diagram illustration of a wireless communication system of wireless context delivery in accordance with an embodiment of the invention;

[0112] FIG. 8 is a schematic block diagram illustration of a wireless communication system able to deliver content in accordance with another embodiment of the invention;

[0113] FIG. 9 is a schematic block diagram illustration of a mobile-terminated multiple-network wireless system able to deliver content in accordance with another embodiment of the invention.

[0114] FIG. 10 is a schematic illustration of a wireless communication device in accordance with some embodiments of the invention;

[0115] FIG. 11 is a schematic flow-chart of a method of content delivery and presentation in accordance with an embodiment of the invention;

[0116] FIG. 12 is a schematic flow-chart of a method of content delivery and presentation in accordance with another embodiment of the invention;

[0117] FIG. 13 is a schematic flow-chart of a method of content delivery and presentation in accordance with yet another embodiment of the invention;

[0118] FIG. 14 is a schematic flow-chart of relations between a delivery layer and a presentation layer in accordance with some embodiments of the invention; and

[0119] FIG. 15 is a schematic illustration of a wireless communication system able to deliver targeted advertisements using Wireless Application Protocol (WAP) in accordance with some embodiments of the invention.

[0120] It will be appreciated that for simplicity and clarity of illustration, elements shown in the figures have not necessarily been drawn to scale. For example, the dimensions of some of the elements may be exaggerated relative to other elements for clarity. Further, where considered appropriate, reference numerals may be repeated among the figures to indicate corresponding or analogous elements.

DETAILED DESCRIPTION OF THE INVENTION

[0121] In the following detailed description, numerous specific details are set forth in order to provide a thorough understanding of the invention. However, it will be understood by those of ordinary skill in the art that the invention may be practiced without these specific details. In other instances, well-known methods, procedures, components, units and/or circuits have not been described in detail so as not to obscure the invention.

[0122] FIG. 1 schematically illustrates a block diagram of a wireless communication system 100 able to deliver content in accordance with an embodiment of the invention. System

100 may include, for example, an ad server **110**, a control server **120**, a management server **130**, a database **140**, a communicator **150**, and one or more wireless communication devices, e.g., a wireless communication device **170**.

[0123] In accordance with some embodiments of the invention, device **170** may include an application **176** having a content client **174**. The application **176** may be, for example, a game or a software application. The content client **174** may be a module of application **176**, a plug-in of application **176**, or an external module operatively associated with application **176**. Content client **174** may be able to send a wireless signal indicating a request ("content request") to receive one or more content items, e.g., textual content, audio content, video content, advertisement, informational items, or the like. The content request may include, for example, data indicating properties of device **170**, e.g., handset manufacturer, handset model, screen resolution, screen color depth, audio capabilities, total memory, available memory, types of content items which the device **170** is capable to present, or the like; data indicating properties of the user of device **170**, e.g., age, age group, gender, occupation, profession, areas of interest, income, usage habits, usage patterns, usage time, or the like; and/or other suitable information, e.g., data indicating the type of application associated with application **176**, data identifying application **176**, or the like.

[0124] In some embodiments, the content request may be application-initiated, automatically-initiated, computer-initiated, periodically-initiated, user-initiated, non-user-initiated, or the like. For example, in one embodiment, application **176** may periodically initiate and transmit a content request, e.g., without intervention or command from the user of device **170**, or in the background and without the knowledge or awareness of the user of device **170**. In some embodiments, for example, application **176** may operate or continue to operate substantially seamlessly, and in parallel may automatically initiate and transmit a content request, e.g., periodically or when a pre-defined condition is met.

[0125] The content request may be received by communicator **150**, which may re-format or tailor the request in accordance with pre-defined rules or formats. In one embodiment, communicator **150** may augment the content request, e.g., by adding information obtained from a Customer Relationship Management (CRM) repository **164**. Communicator **150** may place the content request in a queue **158** within a memory unit **159** storing multiple content requests received, e.g., previously or concurrently, from other wireless communication devices in communication with communicator **150**.

[0126] Ad server **110** may include one or more servers, or a "server farm", which may be operatively connected to communicator **150**. Ad server **110** may process content requests stored in the queue **158** of communicator **150**, e.g., in accordance with a pre-defined order or algorithm. For example, ad server **150** may obtain a content request from the queue **150**, and may search a content items repository **118** within ad server **110** for one or more content items which match the requirements of the content request. In some embodiments, ad server **110** may selectively determine which content items, which may be previously stored in the content items repository **118**, match the content request being processed, e.g., using queries, filters, selection rules,

capping rules, or other conditions or criteria. In one embodiment, for example, ad server **110** may select one or more content items which may be adequately presented by device **170** based on properties of device **170**, e.g., handset model, screen resolution, screen color depth, audio capabilities, total memory, available memory, types of content items which the device **170** is capable to present, or the like.

[0127] In some embodiments, ad servers **150** may include multiple servers which may be shared among multiple campaigns or may be dedicated for a specific campaign or type of operation. For example, in one embodiment, a first ad server **150** may serve content items directed for presentation using a first application **176** (e.g., a chess game), whereas a second ad server **150** may serve content items directed for presentation using a second application **176** (e.g., a racing game). In another embodiment, a first ad server **150** may serve content items directed for presentation using a first type of applications **176** (e.g., games), whereas a second ad server **150** may serve content items directed for presentation using a second type of applications **176** (e.g., utility applications). In yet another embodiment, a first ad server **150** may serve content items of a first type (e.g., images in JPG format, images having a first file size, or the like), whereas a second ad server **150** may serve content items of a second type (e.g., images in GIF format, images having a second file size, or the like). In still another embodiment, a first ad server **150** may serve content items for SMS-related applications, a second ad server **150** may serve content items for MMS-related applications, a third ad server **150** may serve content items for IM-related applications, a fourth ad server **150** may serve content items for Email-related applications, and a fifth ad server **150** may serve content items for other types of applications. In some embodiments, a single ad server **150** may serve content items to multiple applications (e.g., SMS-related applications and/or MMS-related applications and/or IM-related applications and/or Email-related applications, or a combination of some of these applications). Other suitable combinations and configurations may be used. In another embodiment, a first ad server **150** may be dedicated to serve content items associated with a first advertiser, whereas a second ad server may be dedicated to serve content items associated with a second advertiser or with a group of multiple advertisers. Other suitable configurations may be used.

[0128] Ad server **110** may serve, transfer or transmit one or more selected content items to communicator **150**. Optionally, communicator **150** may re-format or tailor the content items to accommodate the properties of device **170**, for example, instead of a prior re-formatting by ad server **110** or in addition to such prior re-formatting. Communicator **150** may transmit the content items ("content response") to device **170**, which may receive the content items and store them in a local repository **171**.

[0129] In one embodiment, communicator **150** may further transmit to device **170**, e.g., together with the content item(s) or in a separate transmission, one or more presentation rules associated with the transmitted content items. The presentation rules may include, for example, a capping rule to cap the number of times that a certain content item may be presented, e.g., within a certain time period; a capping rule to cap the number of times that a certain type of content items (e.g., animated content items, large-sized

content items, audio content items) may be presented within a certain time period; a rule instructing device 170 to present a certain content item at a certain time or within a certain time window; a rule instructing device 170 to present the content items in accordance with a certain order or priority scheme; or other suitable rules or data to control the presentation of the content items.

[0130] In some embodiments, the content response may be received by device 170 automatically, e.g., without intervention or command from the user of device 170, or in the background and without the knowledge or awareness of the user of device 170. In some embodiments, for example, application 176 may operate or continue to operate substantially seamlessly, and in parallel may automatically receive a content request, e.g., periodically.

[0131] Device 170 may present the content item(s), for example, when device 170 is "online" and operatively connected to a servicing station or base station, and/or when device 170 is "offline" and is not operatively connected to a servicing station or base station. The presentation of the content item(s) may be performed by device 170 in accordance with the presentation rules provided by communicator 150. The presentation may be performed, for example, within application 176, during or together with the execution of application 176, before the execution of application 176, or after the execution of application 176. In some embodiments, the presentation may be performed using application 176, using content client 174, or using a presentation service which may be installed within device 170 and/or application 176 and/or content client 174.

[0132] Device 170 may store or otherwise log information related to presentations performed by device 170, e.g., data indicating the content item(s) presented, data the starting time and/or ending time of the presentations, data indicating operations performed by device 170 and/or the user of device 170 during or after the presentation (e.g., pressing a button, dialing, sending a SMS or MMS message, placing a call, or the like). Device 170 may periodically upload the logged data, e.g., to communicator 150, which may aggregate such data from multiple wireless communication devices. In one embodiment, the presentation-related data or the aggregated presentation-related data may be used for financial transactions or billing purposes, for example, to request or collect payment from an advertiser that provided the presented content items, to pay to a provider of the application 176 within which the presentation is performed, or the like.

[0133] Content items may be created or received (e.g., from third parties or advertisers) using management server 130. A content adapter 137 of management server 140 may create multiple versions of content item, for example, having various dimensions, various color depth, various sizes in bytes, various file formats (e.g., JPG, GIF, TIF, BMP, AVI, MPG, MOV, TXT, or the like), various codec sets, or differing in other properties. In one embodiment, for example, content items may have multiple versions corresponding to a descriptive property of device 170, e.g., a full-size content item which may fill the entire screen of device 170, a half-screen size content item which may occupy approximately one half of the screen of device 170, a quarter-screen size content item which may include a square-shaped or rectangular content item which may

occupy approximately one quarter of the screen of device 170, or the like. The various versions of a content item may be stored in database 140. Management server 140 may further receive, and may store in database 140, data indicating that a content item is ready for serving, e.g., data indicating properties of an advertising campaign that the content item may be associated with.

[0134] Management server 130 may include one or more modules or components, for example, a traffic manager 131, an account manager 132, an inventory manager 133, a data analyzer 134, an administrator module 135, an optimizer 136, content adapter 137, and a Financial Transactions Module (FTM) 138.

[0135] Traffic manager 131 may receive, for example, data representing definitions of a campaign of serving content items, and may generate campaign-related data. Traffic manager 131 may control and manage one or more campaigns of serving content items, including content items ("creatives") provided by one or more users, e.g., advertisers, advertising agencies, customers, or the like. Traffic manager 131 may monitor behavior and performance of a serving campaign, may generate reports, and may suspend or terminate a campaign, e.g., upon demand, if a pre-defined condition is met, or if an alert is generated within system 100.

[0136] Account manager 132 may allow insertion, modification or deletion of the details of one or more users, for example, advertisers, by such users and/or by an administrator of system 100.

[0137] Inventory manager 133 may estimate or predict usage of content items inventory, and may be used to categorize inventory content items. For example, a gaming content item may be added to an inventory list, stored in database 140, and categorized according to various criteria, e.g., game type, relevant ad types, or the like. Inventory manager 133 may produce notifications regarding over-booked inventory items, an estimated lack of future ad space, or an estimated lack of current ad space. Inventory manager 133 may be operatively associated with inventory optimizer 136, which may perform optimization operations on inventory items based on pre-defined criteria.

[0138] Data analyzer 134 may analyze inventory data and campaign-related data and may produce reports, e.g., statistical reports for advertisers and/or an administrator of system 100, market research reports, data mining reports, On-Line Analytical Processing (OLAP) reports, or the like.

[0139] Administrator module 135 may allow an administrator to access, control or operate one or more modules of management server 130.

[0140] FTM 138 may process and/or perform financial transactions, for example, based on the operations of ad server 110, communicator 150 and/or device 170. In one embodiment, for example, FTM 138 may request or collect a payment, e.g., from an advertiser associated with a certain content item, for serving(s) of that content item by ad server 110, and/or for presenting that content item by device 170. In another embodiment, for example, FTM 138 may perform a payment, e.g., to a third party which manufactured or provided the application 176, when the application 176 is downloaded and installed into device 170, thereby allowing

device 170 to receive content items from system 100. Other suitable financial transactions may be performed.

[0141] Control server 120 may include one or more modules or components, for example, a synchronizer 121, a balancer 122, a data collector 123, a data transferor 124, a data gatherer 125, and a monitoring module 126.

[0142] Control server 120 may selectively obtain from database 140 content items which are ready for serving in accordance with pre-defined rules, e.g., specific campaign-related rules. Control server 120 may selectively provide or distribute the content items to one or more ad servers 110, optionally together with capping rules and/or other rules controlling the servings of these content items. In one embodiment, control server 120 may distribute a content item for serving among multiple ad servers 110; for example, control server 120 may instruct a first ad server 110 to serve a first version of the content item not more than 400 times within the next 24 hours, and may instruct a second ad server 120 to serve a second version of the content item not more than 300 times within the next 36 hours. Other suitable capping rules or distribution rules may be used.

[0143] Control server 120 may, for example, re-format data and/or create files in accordance with a format suitable for a certain ad server 110, or may create or adapt multiple versions of a content item to accommodate multiple ad servers 110 or multiple formats. Control server 120 may monitor and track the distribution of content items among multiple ad servers 110, for example, by detecting that a first ad server 110 is not accessible or not responding and by sending or re-sending the data to a second ad server 110 instead, or by re-sending data to the first ad server 110 after a certain time period. Control server 120 may send setup data and/or configuration data to ad server(s) 110 and/or communicator 150, e.g., periodically and/or upon system update. Control server 120 may upload content items to one or more ad servers 110, and/or may adapt a content item to accommodate a pre-defined format suitable for presentation using device 170.

[0144] Control server 120 may further, for example, distribute data of campaigns of content items, and/or distribute updates to such data, to multiple ad servers 110 and/or to "server farms", e.g., using balancer 122, synchronizer 121 and/or data transferor 124. Control server 120 may update capping data, for example, by periodically comparing the number of content items served and a capping limit of requested servings ("impressions") of the content items, e.g., as defined by an advertiser. Control server 120 may trigger or perform maintenance operations, for example, archiving of expired content items. Synchronizer 121 may, for example, perform operations to format or re-format or tailor content items into a format suitable for ad server(s) 110, e.g., a binary format, and may control data transfer to multiple ad servers 110 and verify successful delivery of content items to ad servers 110;

[0145] Control server 120 may further collect usage data from ad server 110, e.g., using data collector 123 and/or data gatherer 125. Control server 120 may store the data in database 140, may track data collection, and may detect that a certain ad server 110 is not accessible and collect data upon its recovery. Control server 120 may validate content items integrity, data format correctness, and/or proper data transfer. Control server 120 may monitor the serving status of one or more ad servers 110, e.g., using monitoring module 126.

[0146] In one embodiment, a content item may be stored in one format or version, or in a relatively small number of formats or versions, during a testing mode; whereas the content item may be stored in multiple formats or versions, or in a relatively large number of formats or versions, during a "live" phase in which an advertising campaign is operational and content items are served.

[0147] Data transferor 124 may distribute content items to ad server(s) 110 periodically and/or in advance, for example, a certain time period before the content items are intended to be served to devices 170, e.g., ahead of a "live" campaign period. This may allow ad server(s) 110 to serve content items at their intended serving time, even if temporarily the ad server(s) 110 may not be able to access the control server 120 at that time or closely prior to that time.

[0148] In some embodiments, a first ad server 110 may be assigned to serve a first content item or a first group of content items (e.g., associated with a first advertiser, or having a first type or size), and a second, different ad server 110 may be assigned to serve a second content item or a second group of content items (e.g., associated with a second advertiser, or having a second type or size). For example, control server 120 may determine that certain advertisers may be associated with a first ad server 110, and data transferor 124 may upload to that ad server 110 the content items of the campaigns associated with these advertisers.

[0149] In some embodiments, a content item, or a group of content items, may be associated with one or more status identifiers, for example, an "uploaded" identifier indicating that the content item was already uploaded to ad server 110, a "ready" identifier indicating that the content item is not in use yet but is ready for uploading, a "test" identifier indicating that the content item is available for testing purposes only, an "updated" identifier indicating that the content item is updated and optionally requires uploading immediately or at a high priority, a "stopped" or "canceled" identifier indicating that one or more content items may not be served, or the like.

[0150] In some embodiments, a content item, or a group of content items, may be held in an upload queue by control server 120. Queue records may be marked as "done" upon uploading of the queued content items, e.g., to track uploaded content items. In one embodiment, if a content item is uploaded and then modified, it may not have an "uploaded" identifier, or a previously-assigned "uploaded" identifier may be reset or modified, e.g., to "ready".

[0151] In some embodiments, synchronizer 121 and/or balancer 122 may be used to update capping definitions, for example, among multiple ad servers 110. For example, a first ad server 110 may be non-operational, non-accessible or non-responding, and may not reach its assigned capping or intended quota of servings, whereas a second ad server 110 may be operational and may reach its assigned capping or intended quota of servings; or, for example, the first ad server 110 may have a lower capacity or a lower bandwidth than the second ad server 110. Therefore, synchronizer 121 and/or balancer 122 may periodically recalculate the amount of servings of content items served by each ad server 110, and may re-distribute serving amounts or modify capping definitions or quotas among multiple ad servers 110. For example, periodically, the total cap or remaining quota may be divided by the number of currently active ad servers 110,

to result in a partial cap or quota which may be assigned to each of these operational ad servers **110**. A similar calculation and re-distribution may be performed based on other suitable parameters, e.g., percentage of time in which each ad server **110** is operational, or the like. In one embodiment, the re-calculation and re-distribution may be performed periodically, and/or when control server **120** detects a substantial between the performance of two or more ad servers **110**.

[0152] Ad server **110** may selectively provide to communicator **150** one or more content items, e.g., advertisements, in response to a content request from communicator **150**. Ad server **110** may select such content items from a content inventory provided to ad server **110** by control server **120**, which may be stored in memory unit **118** of ad server **110**.

[0153] In one embodiment, memory unit **118** may include a non-volatile memory, for example, a long term memory unit, a disk, a hard disk drive, or the like. In another embodiment, memory unit **118** may include a volatile memory, for example, a Random Access Memory (RAM), a Dynamic RAM (DRAM), a Synchronous DRAM (SDRAM), a Flash memory, a cache memory, a buffer, a stack, a short term memory unit, or the like.

[0154] In some embodiments, for example, utilizing volatile memory unit **118**, a pre-defined memory “dumping” process may be used. For example, content items ready for serving may be received by ad server **110** from control server **120**, may be stored in volatile memory unit **118**, and optionally may not be stored in a non-volatile memory of ad server **110**. Ad server **110** may serve content items directly from its volatile memory unit **118**, and may further store in memory unit **118** a log tracking the activity or servings done by ad server **110**. Periodically, for example, at pre-defined time intervals (e.g., every 60 seconds, every 5 minutes, every hour, etc.) or upon serving a certain number of servings of content items (e.g., every 100 impressions, every 500 impressions, etc.), ad server **110** may “dump” or copy the activity log data into a non-volatile memory unit, e.g., included in ad server **110** or database **140**. This may allow ad server **110**, for example, to rapidly serve content items from its rapidly-available volatile memory unit **118**, instead of from a slower non-volatile memory (e.g., database **140** or other database); and the periodical “dumping” process of activity logs may limit the data loss in case of a power outage which may erase the volatile memory unit **118**.

[0155] In one embodiment, ad server **110** may provide to communicator **150** one or more content items; in another embodiment, ad server **110** may provide to communicator **150** pointers or references to one or more content items, or a list of content items, which may already be stored in volatile and/or non-volatile memory of communicator **150**, e.g., in memory unit **159**.

[0156] Ad server **110** may include one or more modules or components, for example, a data loader **111**, an updater **112**, an ad selector **113**, an ad filter **114**, a prioritizer **115**, and a formatter **116**.

[0157] Data loader **111** may obtain one or more parameters to allow ad server **110** to process the content request from communicator **150**. Such parameters may include, for example, parameters representing properties of various content items, e.g., a content item identifier, a group identifier

(e.g., identifying a group to which the content item belongs), an update time, priority data, a time period during which the content item may be served, a presentation template associated with the content item, an alternate text associated with the content item, a broadcast mode associated with the content item (e.g., “live broadcast” mode, “test” mode, “stop” mode, or the like), a cost or a price associated with a serving of the content item, capping or quota data, attribute data, data representing a target user or a group of target users to which the content item is intended to be presented (e.g., defined by age, by age range, by location, by gender, by occupation, by profession, or the like), or other parameters. In one embodiment, for example, data loader **111** may have a relatively fast access to data, and/or a read-only authorization.

[0158] In one embodiment, data loader **111** may optionally be operatively associated with a data manager **117** which may be utilized for loading of new data. For example, data loader **111** may include a reference to a current version of data manager **117**, and to a newer version of data manager **117** which may be available; upon completion of a data loading process, data loader may switch or modify the reference to point to the newer or latest available version of data manager **117**, which may be utilized in subsequent loadings.

[0159] Ad selector **113** may receive a first list of content items, and may selectively produce a second list of one or more content items to be served. Ad selector **113** may process or parse the content request received from communicator **150** to obtain information about device **170** and/or the user of device **170** from which the content request originates, and may correlate between such information and matching content items attributes. For example, ad selector **113** may determine that the content request originates from device **170** associated with user who is a 22 year old male student who lives in London and is interested in sports, and may select content items intended to be presented to such user, e.g., an advertisement of a sporting event in London.

[0160] Additionally or alternatively, ad selector **113** may process or parse the content request received from communicator **150** to obtain information about the device **170** from which the content request originated, and may correlate between such device information and content items attributes accommodating such information. For example, ad selector **113** may determine that the content request originates from device **170** able to present JPG images having resolution of 200 by 150 pixels and 8-bit color depth, and may select content items accommodating such attributes.

[0161] In some embodiments, ad selector **113** may select content items based on multiple attributes included in the content request, for example, multiple device **170** attributes and/or multiple user's attributes. In one embodiment, ad selector **113** may cross between multiple lists of candidate content items, to select content items accommodating multiple properties of device **170** and/or the user of device **170**.

[0162] Ad filter **114** may modify a list of content items generated by ad selector **113**, for example, to filter-out and remove content items in accordance with pre-defined criteria or constraints, e.g., capping criteria or quota criteria limiting the number of presentations of a certain content item, campaign-related constraints or quotas, or the like. In one

embodiment, ad filter **114** may check original limitations which may be included in relevant campaign-related data or definitions, or other suitable rules or data. For example, a campaign-related definition may require that a certain content item not be presented to the same user more than once, or more than a certain number of times per time period, and ad filter **114** may modify the list of content items according to such requirements.

[**0163**] Prioritizer **115** may calculate or otherwise determine or set a priority value associated with content items, for example, based on one or more parameters, e.g., a priority requirement included in the campaign data or campaign-related definitions, a price or profit associated with presenting the content item, a fulfillment factor, a value indicating the probability that the content item matches its target audience, a value indicating the relative size (e.g., dimensions or bytes), a content item type identifier, or the like. For example, in one embodiment, prioritizer **115** may determine a priority value of “7” for a first content item, which may be associated with a price of 17 cents per serving and with a campaign which is expected to terminate within 8 hours, and may determine a priority value of “2” for a second content item, which may be associated with a price of 12 cents per serving and with a campaign which is expected to terminate within 6 days. In another embodiment, for example, prioritizer **115** may determine a priority value of “8” for a first content item associated with a “sporting events” type, and may determine a priority value of “3” for a second content item associated with a “restaurants” type. In yet another embodiment, for example, prioritizer **115** may determine a priority value of “6” for a first content item having a half-screen size or having a 35 Kilobytes data size, and may determine a priority value of “4” for a second content item having a quarter-screen size or having a 24 Kilobytes data size. Other suitable data or rules may be used to determine absolute or relative priorities of content items.

[**0164**] Formatter **116** may optionally format or re-format or tailor the data produced by ad server **110** before the data is transferred to communicator **150**, for example, to match a pre-defined data format or data transfer protocol used by communicator **150**.

[**0165**] Communicator **150** may receive a content request from device **170** through a wireless medium **165**, may transfer a formatted content request to ad server **110**, may receive from ad server **110** one or more content items, and may transmit or transfer the content item(s) to device **170** through wireless medium **165**. Communicator **150** may include one or more modules or components, for example, a request formatter **151**, a transformer **152**, a version updater **153**, a protocol handler **154**, a network handler **155**, a client manager **156**, and one or more ports **157**.

[**0166**] Network handler **155** may control network communications between communicator **150** and device **170**. Network handler **155** may include, for example, a listener module able to detect and receive a wireless signal indicating a content request of device **170**, and may thereby trigger the operation of other components of communicator **150** to process the content request and to respond to the content request. Network handler **155** may communicate in parallel with multiple devices **170**, for example, using multiple ports **157** and/or multiple wireless communication standards or protocols, and may optionally assign priority values to

concurrent communications or a queue **158** for handling multiple received content requests.

[**0167**] For example, communicator **150** may receive a content request from device **170**, and network handler **158** may place the content request, or data of the content request, in a queue **158**. When the content request it reaches its turn for processing, network handler **155** may transfer to protocol handler **154** the data included in the content request. Upon completion of preparation of the response to the content request, network handler **155** may transmit the content response to device **170**.

[**0168**] In some embodiments, multiple ports **157** may be included in communicator **150**, to allow parallel or substantially simultaneous handling of multiple content requests. In one embodiment, for example, a first group of ports (e.g., listener ports **157A**) may detect wireless signals carrying content requests incoming from device(s) **170**; a second group of ports (e.g., reader ports **157B**) may read the detected content requests; and a third group of ports (e.g., writer ports **157C**) may transmit content responses to device(s) **170** upon completion of preparation of content responses.

[**0169**] In one embodiment, content requests read by reader ports **157B**, may be stored in a request queue, and may be processed using one or more processing threads, e.g., in parallel or substantially simultaneously. The resulting content responses may be placed in a responses queue for transmission by writer ports **157C**. This may allow, for example, utilizing multiple sockets (e.g., TCP/IP sockets or other sockets) or ports **157** to perform listening operations, receiving operations, and transmission operations, for example, in parallel or substantially simultaneously.

[**0170**] In one embodiment, memory unit **159** may include a non-volatile memory, for example, a long term memory unit, a disk, a hard disk drive, or the like. In another embodiment, memory unit **159** may include a volatile memory, for example, a Random Access Memory (RAM), a Dynamic RAM (DRAM), a Synchronous DRAM (SDRAM), a Flash memory, a cache memory, a buffer, a stack, a short term memory unit, or the like.

[**0171**] In some embodiments, for example, utilizing volatile memory unit **159**, a pre-defined memory “dumping” process may be used. For example, content items ready for serving may be received by communicator **150** from ad server **110**, may be stored in volatile memory unit **159**, and optionally may not be stored in a non-volatile memory of communicator **150**. Communicator **150** may optionally reformat or re-package content items directly in volatile memory unit **159**, and may transmit content items directly from its volatile memory unit **118** to device(s) **170**. Communicator **150** may further store in memory unit **159** a log tracking the activity or transmission done by communicator **150**. Periodically, for example, at pre-defined time intervals (e.g., every 60 seconds, every 5 minutes, every hour, etc.) or upon serving a certain number of servings of content items (e.g., every 100 impressions, every 500 impressions, etc.), communicator **150** may “dump” or copy the activity log data into a non-volatile memory unit, e.g., included in communicator **150** or database **140**. This may allow communicator **150**, for example, to rapidly transmit content items from its rapidly-available volatile memory unit **159**, instead of from a slower non-volatile memory (e.g., database **140** or other

database); and the periodical “dumping process of activity logs may limit the data loss in case of a power outage which may erase the volatile memory unit 159.

[0172] Protocol handler 154 may receive content request data, for example, information about device 170, information about the functional capabilities of device 170, a handset identifier, device attributes (e.g., Operating System (OS), memory size, application type, etc.), the content request time, last connection time, desired request period (e.g., immediately, once within the next two hours, etc.), and other suitable parameters. Protocol handler 154 may optionally re-format or tailor the content request data using the request reformatter 151 into a format suitable for processing by ad server 110, for example, having data arranged in accordance with pre-defined fields, records or parameters. Protocol handler 154 may optionally augment the data received in the content request, e.g., by adding Customer Relationship Management (CRM) information obtained from an operator CRM repository 164, by adding relevant in-memory data (e.g., handset data, application data, etc.), by adding localization data or regional data derived from IP address mapping, or the like.

[0173] In one embodiment, communicator 150 may insert into a content request one or more rules or constraints which may be applied by ad server 110 for content item selection or filtering. In one embodiment, for example, based on the available memory and/or the total memory of device 170, communicator 150 may add to the content request a requirement to select only a certain number of content items (e.g., no more than five), to select a group of content items having a certain cumulative data size (e.g., no more than 70 Kilobytes), to select a group of content items having a certain average file size (e.g., no more than 31 Kilobytes), or the like.

[0174] Upon receiving the content response from ad server 110, protocol handler 154 may selectively re-format or tailor the content response (e.g., utilizing transformer 152) to accommodate attributes or requirements of device 170, and may transfer the content response to network handler 155 for transmission to device 170. Optionally, version updater 153 may be used to remotely update or upgrade the version of a component of device 170, e.g., of context client 174 of device 170, for example, periodically or when a new version is available.

[0175] Device 170 may include or may be, for example, a wireless communication device, a wireless communication station, a Personal Digital Assistant (PDA) device, a Wireless LAN (WLAN) device, devices and/or networks operating in accordance with existing IEEE 802.11, 802.11a, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11n, 802.16 standards and/or future versions of the above standards, a Bluetooth® device, a ZigBee device, one-way and/or two-way radio communication systems, cellular radio-telephone communication systems, a cellular phone, a wireless phone, a mobile phone, a Personal Communication Systems (PCS) device, a PDA device which incorporates a wireless communication device, a PDA device which incorporates a mobile phone, a cordless phone, a portable phone, a Digital Enhanced Cordless Telecommunications (DECT) phone or device, an Instant Messaging (IM) terminal or device, or other suitable devices.

[0176] Device 170 may include one or more modules or components, for example, a local repository 171, a selector

172, a communication handler 173, content client 174, application 176, a server communicator 177, a push communicator 179, a reporter 181, a presentation service 182, a cache manager 183, a processor 184, an output unit 185, an input unit 186, a memory unit 187, a transmitter 191, a receiver 192, and an antenna 193.

[0177] Processor 184 may include, for example, a Central Processing Unit (CPU), a Digital Signal Processor (DSP), a microprocessor, a controller, a chip, a microchip, an Integrated Circuit (IC), or any other suitable multi-purpose or specific processor or controller. Processor 184 may, for example, process incoming and/or outgoing wireless communication signals, and may execute instructions to perform other operations of device 170 or its components.

[0178] Input unit 186 may include, for example, a keypad, a keyboard, a joystick, a trackball, a mouse, a touch-pad, a touch-screen, a microphone, or other suitable pointing device or input device. Output unit 185 may include, for example, a display unit, a monitor, a screen, one or more speakers, or other suitable output devices.

[0179] Memory unit 187 may include, for example, a Random Access Memory (RAM), a Read Only Memory (ROM), a Dynamic RAM (DRAM), a Synchronous DRAM (SD-RAM), a Flash memory, a volatile memory, a non-volatile memory, a cache memory, a buffer, a short term memory unit, a long term memory unit, a disk, a hard disk drive, a miniature disk or hard disk, or other suitable removable or non-removable storage units or memory units.

[0180] Transmitter 191 may include, for example, a wireless Radio Frequency (RF) transmitter able to transmit RF signals, e.g., through antenna 193. Receiver 192 may include a wireless RF receiver able to receive RF signals, e.g., through antenna 122.

[0181] In some embodiments, the functionality of transmitter 191 and receiver 192 may be implemented in the form of a transceiver, a transmitter-receiver, or one or more units able to perform separate or integrated functions of transmitting and/or receiving wireless communication signals, blocks, frames, transmission streams, packets, messages and/or data.

[0182] Antenna 193 may include an internal and/or external RF antenna, for example, a dipole antenna, a monopole antenna, an omni-directional antenna, an end fed antenna, a circularly polarized antenna, a micro-strip antenna, a diversity antenna, or any other type of antenna suitable for transmitting and/or receiving wireless communication signals, blocks, frames, transmission streams, packets, messages and/or data.

[0183] In accordance with some embodiments of the invention, device 170 may include application 176 having a content client 174. The application 176 may be, for example, a game or a software application. The content client 174 may be a module of application 170, a plug-in of application 170, or an external module operatively associated application 170. Content client 174 may be able to send a wireless signal indicating a request (“content request”) to receive one or more content items, e.g., textual content, audio content, video content, advertisement, informational items, or the like. The content request may be transmitted to communicator 150, for example, using communication handler 173. In one embodiment, transmission of the content request may

be triggered by a user command or a user command, e.g., a signal entered by a user utilizing the input unit **186** and indicating that the user requests one or more content items.

[0184] Device **170** may receive from communicator **150** one or more content items ("content response"), e.g., in response to the content request. The content response may be received from communicator **150**, for example, using communication handler **173**.

[0185] The received content items may be stored in local repository **171**, e.g., implemented using memory unit **187**. The local repository **171** may be managed or controlled by cache manager **183**. One or more content items stored in local repository **171** may be selectively presented, for example, in accordance with certain presentation rules, using presentation service **182** and output unit **185**.

[0186] Selector **172** may select from local repository **171** one or more content items for presentation, e.g., content items matching one or more rules, conditions or criteria related to the content items or to properties associated with their presentation. Presentation rules may be stored or pre-stored in device **170**, e.g., in memory unit **187** or as part of content client **174** or application **176** or presentation service **182**. In one embodiment, data indicating presentation rules may be received from communicator **170**, e.g., close to or together with receiving a content response.

[0187] For example, selector **172** may use a first presentation rule requiring that a certain content item, e.g., an advertisement for a certain restaurant, be presented within a pre-defined time period, for example, between 11:30 a.m. to 1:45 p.m., or the like. A second presentation rule may require, for example, that no less than two content items of a certain advertiser, and/or no more than four content items of that advertiser, be presented within a pre-defined time period, e.g., within 5 consecutive hours. A third presentation rule may require, for example, that a first type of content item, e.g., an animated banner having a size of 200 by 150 pixels, be followed by a second type of content item, e.g., a textual or non-animated content item having a size of 60 by 40 pixels. A fourth presentation rule may require, for example, that a certain content item be presented only when a pre-defined period of inactivity elapses, e.g., a period in which the user of device **170** does not perform any operation, or a period in which no content items are presented. A fifth presentation rule may require, for example, that a certain content item, e.g., an advertisement for a certain shop, be presented when device **170** is geographically located within a pre-defined distance (e.g., 300 meters) of the address of that shop.

[0188] Other suitable rules and/or combination of rules may be used by selector **172**. In applying such rules, selector **172** may utilize information about device **170**, information about the user of device **170**, and/or other information, e.g., the current time, the current date, available power left, history of prior presentations, history or patterns of usage of device **170**, or the like.

[0189] Together with or upon presentation of a content item, device **170** may register or log, for example, in memory unit **187**, properties related to that presentation, e.g., an identifier of application **176**, a location identifier, a presentation starting time, a presentation ending time, the total presentation time, a user's response to the presentation

(e.g., user viewed the presentation, user aborted or interrupted or paused the presentation, user pressed a button, user initiated a call or sent a SMS item, user interacted with the presented content item, or the like), and other data. Presentation-related data may be reported by reporter **181** to communicator **150**, e.g., periodically, upon demand, together with a subsequent content request, when a pre-defined condition is met, upon presenting a certain number of content items, or the like. In one embodiment, reporter **181** may be triggered or activated by content client **174**, presentation service **182**, server communicator **177**, or other components of device **170**.

[0190] In some embodiments, for example, a presentation report or presentation-related data may be transmitted by device **170** substantially together with a subsequent content request; for example, a second content request may include a presentation report related to content items presented since a previous report was transmitted, since a previous content request was transmitted, or the like. This may, for example, allow utilizing a single communication session to transmit both a content request and a presentation report. This may, for example, obviate the need to open a first communication session to transmit the content request and a second communication session to transmit the presentation report, or reduce the number of communication transactions required.

[0191] Communicator **150** may, for example, transfer the presentation-related data to control server **120**, which may store the presentation-related data in database **140** and/or may perform other operations, e.g., calculate an outgoing amount payment or an incoming amount payment associated with the reported presentations.

[0192] Cache manager **183** may, for example, perform maintenance operations on local repository **171** and/or memory unit **187**. For example, cache manager **183** may delete an expired content item, e.g., a content item that was presented for the maximum number of times allowed and reached its quota or capping, or a content item that expires at a certain date and time. Cache manager may otherwise manage or compact the local repository **171**, and may perform management operations with regard to memory unit **187**, e.g., deleting presentation-related data regarding previously-presented content items that were already reported by reporter **181**. Cache manager **183** may otherwise control the local repository **171**, e.g., by replacing a previously-stored content item with a new, updated or replacement content item, or the like.

[0193] A content request created by content client **174** may include data representing one or more properties of device **170** and/or one or more properties of the user of device **170**, for example, a version identifier of content client **174**, an identifier of application **176**, an identifier of device **170** (e.g., manufacturer, model, or the like), local time, installation time, last connection time, Operating System (OS) type and version, total memory size of device **170**, free or available memory of device **170**, free or available memory in local repository **171**, screen dimensions (e.g., height and width, by pixels), color depth (e.g., as a number of bits available to represent color information), user information, user name, cache content (e.g., list of previously-stored content items within local repository **171**), previous presentations data, or the like.

[0194] In some embodiments, content client **174** may periodically establish a connection with ad sever **110**, e.g.,

directly or through communicator **150**, to upload data about presented content items, to refresh or update content items stored in local repository **171**, to update or upgrade the installed version of content client **174**, to upload technical information about device **170** and/or personal information about a user of device **170** to allow improved targeting of content items, or the like.

[0195] In some embodiments, device **170** may communicate with communicator **150** and/or ad server **110** using server communicator **177** and/or push communicator **179**. For example, in one embodiment, server communicator **177** may utilize HyperText Transfer Protocol (HTTP) or a HTTP library to communicate with communicator **150** and/or ad server **110**. In another embodiment, server communicator **177** may open a TCP/IP socket with communicator **150** and/or ad server **110**, initialize a connection, resolve the IP address of a Uniform Resource Locator (URL) of communicator **150** and/or ad server **110**, send a HTTP request and wait for response; these operations may optionally be performed in a separate background thread.

[0196] In some embodiments, an initial URL that server communicator **177** may attempt to access may be pre-defined or pre-stored (e.g., “hard-coded”) within content client **174**. For example, the initial URL may point to a dedicated online server or domain, e.g., “http://www.ContentItemsAdServer.com”, or to sub-domain or network component, e.g., “http://ContentItems.NetworkProvider.com”. Other suitable methods may be used by device **170** to initiate communications with communicator **150** and/or ad server **110**.

[0197] In some embodiments, push communicator **179** may be able to receive a SMS push item, e.g., a SMS item addressed to application **176**. In response, push communicator **179** may trigger server communicator **177** to communicate with communicator **150** and/or ad server **110**. In one embodiment, push communicator **179** may be directed at, or may be operatively associated with, a SMS booster engine which may optionally be included in system **100** or device **170**. In such cases, device **170** may detect and avoid a possible conflict between the operation of push communicator **179** and the operation application **176**. In some embodiments, push communicator **179** may optionally communicate with communicator **150**, e.g., by sending to communicator **150** a request to receive data, thereby bringing communicator **150** out of a “sleep” mode or a stand-by mode.

[0198] System **100** may optionally include other suitable components, for example, an MMS Center (MMSC) **161**, an SMS interceptor **162**, an SMS gateway **163**, an Instant Messaging (IM) server **166**, an Email server **167**, and/or other servers or components (e.g., routers, switches, gateways, proxies, or the like) which may be operatively associated with communicator **150** and/or ad server **110**, and may be used to send and/or receive SMS items and/or MMS items and/or IM items and/or Email items having embedded therein a content item served by ad server **110**. For example, in one embodiment, a first wireless communication device **170** may send a SMS or MMS or IM or Email message intended to be received by a second wireless communication device **170**; system **100** may intercept the message, and may modify the message, e.g., by adding, inserting, augmenting, appending or embedding into the message a content item

stored in ad server **110**; and the modified SMS or MMS or IM or Email message may be transmitted to the second wireless communication device **170**. In one embodiment, for example, the appended content item may be an selected advertisement which may be added to a user-created SMS or MMS or IM or Email, for example, thereby reducing the cost or price that the sending user and/or the receiving user are required to pay to their service provider(s) in order to send or receive the SMS or MMS or IM or Email message.

[0199] In some embodiments, optionally, a content item may be selectively inserted into, or appended to, a SMS or MMS or IM or Email message or other message (e.g., textual message, audio clip, video clip, image, or the like) sent by a first user to a second user. The content item may be selected, for example, based on properties of the sending user and/or based on properties of the receiving party. Additionally or alternatively, in one embodiment, the content item may be selected based on an analysis (e.g., textual analysis, keyword analysis, image recognition analysis, sound recognition analysis, or the like) of the content item; for example, if the sending user sends a textual SMS item containing the word “chocolate” or “love”, then a content item having an advertisement for a chocolate product or a flowers delivery service may be selectively added to the SMS item. Other suitable criteria may be used to selectively serve content items.

[0200] In some embodiments, device **170** may present to its user one or more selectable options allowing the user to determine whether or not content client **174** will be activated, or whether or not to receive content in accordance with embodiments of the invention. In one embodiment, device **170** may present to its user, for example, a first option to download a first tennis gaming application having no content items, e.g., in exchange for a first amount of payment; and a second option to download a second tennis gaming application (e.g., similar or substantially identical to the first tennis gaming application) and having the capability to receive and present content items, e.g., in exchange for a second (e.g., reduced) amount of payment, or in exchange for substantially no payment. This may allow, for example, deliver of content (e.g., games and other application) to device(s) **170** for a reduced payment or no payment, as the delivered content may be “sponsored” by the advertisers associated with the presented content items.

[0201] Management server **130**, control server **120**, ad server **110**, communicator **150**, and/or other components of system **100**, may be implemented, for example, using one or more computing platforms or computing devices, e.g., one or more computers or servers including a processor, a memory unit, a storage unit, an input unit, an output unit, a transmitter, a receiver, an antenna, a power source, an Operating System, software applications, and/or other suitable software components and/or hardware components.

[0202] Device **170** may communicate with communicator **150** and/or ad sever **110** using wireless medium **165**, for example, in accordance with one or more standards or protocols, e.g., Transmission Control Protocol (TCP), Internet Protocol (IP), TCP/IP, Session Initiation Protocol (SIP), Signaling System 7 (SS7), Push protocol, SMS protocol, MMS protocol, IM protocol, Code-Division Multiple Access (CDMA), Wideband CDMA (W-CDMA), Time-Division Multiple Access (TDMA), Post Office Protocol 3

(POP3), Internet Message Access Protocol (IMAP), Simple Mail Transfer Protocol (SMTP), User Datagram Protocol (UDP), High-Speed Circuit-Switched Data (HSCSD), Wireless Village Protocol, XMPP Protocol, PAM/Parlay Protocol, SMPP Protocol, UCP Protocol, CIMD2 Protocol, CAMEL Protocol, SIGTRAN Protocol, or the like.

[0203] In some embodiments, optionally, one or more components of system 100 may remotely, directly or indirectly trigger device 170 to transmit a content request. For example, in one embodiment, device 170 may be remotely triggered using a “ping” or a ping-like message or packet, a “wake up” message or packet, or the like. In some embodiments, for example, communicator 150, SMS gateway 163, or other component of system 100 may send to device 170 a data item or a message, e.g., having a link or a shortcut which may trigger a content request by device 170. In some embodiments, device 170 may transmit a content request in response to an incoming signal or message, a background incoming signal or message, a user-transparent incoming signal or message, a remote signal or message, or the like.

[0204] In some embodiments, optionally, local repository 172 may be shared by multiple applications 176 within device 170. For example, a first application 176 may include a first game, and a second application 176 may include a second game. Device 170 may include the first and second applications 176, having embedded therein first and second content clients 174, respectively. Local repository 172 may optionally be shared by the first and second applications 170 and/or by the first and second content clients 174 of device 170. For example, the first application 176 may be executed and may transmit a content request; in response, multiple content items may be received by receiver 192 and may be stored in local repository 171; one or more content items may be presented by the first application 176. Then, the second application 176 may be executed, and may utilize, e.g., may present, one or more content items which may already be stored in local repository 176. In another embodiment multiple separate caches or multiple separate local repositories 171 may be used by multiple applications 176 of device 170. In some embodiments, optionally, the second application 176 may report to communicator 150 about presentation performed by the second application and/or the first application, or vice versa. Other suitable configurations may be used.

[0205] In some embodiments, optionally, a “cookie” or a cookie-like mechanism may be used by system 100, for example, to identify device 170, to store in device 170 data which may be unique to device 170, to store in device 170 data related to prior communications between device 170 and other components of system 100, to store in device 170 personal information about a user of device 170, or the like. The cookie may be stored, for example, in memory unit 187, and may be periodically read or updated.

[0206] FIG. 2 is a schematic flow-chart of a method of wireless content delivery in accordance with an embodiment of the invention. Operations of the method may be implemented, for example, by system 100 of FIG. 1, by ad server 110 of FIG. 1, by communicator 150 of FIG. 1, by device 170 of FIG. 1, by control server 120 of FIG. 1, and/or by other suitable devices and/or systems.

[0207] As indicated at box 210, the method may optionally include, for example, installing content client 174 on

device 170, e.g., as a stand-alone module or as an embedded part, plug-in or component of application 176. The installing operation may optionally include, for example, downloading the content client 174 from an online source.

[0208] As indicated at box 215, the method may optionally include, for example, transmitting a content request from device 170 to communicator 150. This may include, for example, creating a content request having data representing, for example, properties of device 170, properties of the user of device 170, properties of prior usage of device 170, or the like.

[0209] As indicated at box 220, the method may optionally include, for example, receiving the content request by communicator 150. This may include, for example, storing the content request in volatile memory 159 of communicator 150. Optionally, multiple content requests may be stored and/or processed using one or more queues.

[0210] As indicated at box 225, the method may optionally include, for example, re-formatting the content request by communicator 150, e.g., to accommodate a pre-define format. This may further include, for example, augmenting the content request with additional data, e.g., CRM data related to the user of device 170.

[0211] As indicated at box 230, the method may optionally include, for example, selecting one or more content items matching the content request, e.g., by ad server 110. In one embodiment, this may include selecting from a volatile repository of content items within ad server 110. The selection may include, for example, filtering-in or filtering-out content items based on pre-defined rules or criteria, e.g., capping or quota rules, campaign-related definitions, or the like.

[0212] As indicated at box 235, the method may optionally include, for example, re-formatting or re-packaging the selected content item(s), e.g., to accommodate or to better accommodate capabilities (e.g., screen size capabilities, audio capabilities, available memory, or the like) of device 170.

[0213] As indicated at box 240, the method may optionally include, for example, transmitting the selected content item(s) to device 170.

[0214] As indicated at box 245, the method may optionally include, for example, storing the received content item(s) in local repository 171 of device 170.

[0215] As indicated at box 250, the method may optionally include, for example, selectively presenting a content item by device 170, e.g., based on one or more criteria or conditions.

[0216] As indicated at box 255, the method may optionally include, for example, transmitting by device 170 to communicator 150 an activity report indicating properties of, or data related to, presentations presented by device 170.

[0217] As indicated at box 260, the method may optionally include, for example, performing financial transaction, e.g., payments and/or collections, based on the received activity report of presented presentations.

[0218] Other suitable operations or sets of operations may be used in accordance with embodiments of the invention.

[0219] Some embodiments of the invention may be used, for example, in conjunction with MMS and/or SMS and/or IM and/or Email items, messages, systems and/or networks, e.g., as described herein with reference to FIGS. 3-7. Some embodiments, for example, may allow contextual or targeted advertising, e.g., inside or in conjunction with SMS/MMS/IM/Email messages. For example, a user of a mobile communication device or station which receives a graphical or textual SMS/MMS/IM/Email message, may be selectively presented with an advertisement, which may be suited or tailored based on the content of the incoming SMS/MMS/IM/Email message. The tailoring or targeting of the advertisement may be, for example, sender-oriented and/or recipient-oriented.

[0220] FIG. 3 schematically illustrates a block diagram of mobile-originated single-network wireless system 300 able to deliver content in accordance with an embodiment of the invention. System 300 may include one or more wireless communication devices or stations, for example, a first wireless communication device which may be referred to as a sender device 301, and a second wireless communication device which may be referred to as a recipient device 302. Optionally, a user of sender device 301 and a user of recipient device 302 may be subscribers of a single wireless communication network of system 300, e.g., a network operated by a single wireless communication operator.

[0221] The user of sender device 301 may create, e.g., using sender device 301, a graphical and/or textual SMS message ("SMS message"), intended to be sent from sender device 301 to recipient device 302. Instead of transmitting the SMS message directly from sender device 301 to a Short Message Service Center (SMSC) 311 of system 300, the SMS message may be transmitted from sender device 301 to a virtual SMSC 321 which may be operatively connected to an ad server 322. For example, sender device 301 may be pre-configured or adapted to transmit SMS messages to the virtual SMSC 321, e.g., instead of to the SMSC 311.

[0222] The virtual SMSC 321 and/or the ad server 322 may analyze the SMS message, e.g. to selectively determine whether one or more additional content items, e.g., one or more advertisements, may be added to, inserted to, concatenated to, appended to and/or embedded within the SMS message. The determination may be based on, for example, one or more properties of the user of sender device 301, one or more properties of sender device 301, one or more properties of the user of recipient device 302, one or more properties of recipient device 302, and/or other data, e.g., current time, current date, advertisement quotas, demographic data, the original size of the SMS message, a maximum size limit for a modified SMS message, the space available within the SMS message for inclusion of advertisement(s). These parameters may be further used, for example, to selectively choose one or more advertisements, which may be personally tailored to the user of sender device 301 and/or to the user of recipient device 302.

[0223] Based on the analysis, the virtual SMSC 321 and/or the ad server 322 may selectively modify the SMS message, e.g., by adding to it or inserting into it one or more advertisements which may be stored in ad server 322; and may optionally convert the SMS message to another type of message, e.g., a MMS message. The modified message may be transmitted, by the virtual SMSC 321 or the ad server

322, to the SMSC 311 of system 300. The SMSC 311 may utilize a Home Location Register (HLR) 313 to determine (e.g., using interrogation) whether recipient device 302 is active, and/or to determine the roaming location of recipient device 302; and may deliver the modified SMS message to recipient device 302, e.g., optionally utilizing a Mobile Switching Center (MSC) 312.

[0224] In some embodiments, optionally, ad server 322 may selectively modify the SMS message; may optionally convert the SMS message to another type of message, e.g., a MMS message; and may add to the converted MMS message one or more advertisements stored in ad server 322. The MMS message may be transmitted, by the virtual SMSC 321 or the ad server 322, to a MMS Center (MMSC) 323 of system 300, and the MMSC 323 may deliver the MMS message to recipient device 302. As a result, instead of receiving the original SMS message sent by sender device 301, the recipient device 302 may receive and/or present a MMS message having embedded therein an advertisement.

[0225] Optionally, the user of sender device 301 may not be charged, or may be charged a reduce fee, for sending the SMS/MMS/IM/Email message which is modified by system 300. Additionally or alternatively, optionally, the user of user of recipient device 302 may not be charged, or may be charged a reduce fee, for receiving the SMS/MMS/IM/Email message which is modified by system 300.

[0226] FIG. 4 schematically illustrates a block diagram of mobile-originated single-network wireless system 400 able to deliver content in accordance with another embodiment of the invention. System 400 may include one or more wireless communication devices or stations, for example, a first wireless communication device which may be referred to as a sender device 401, and a second wireless communication device which may be referred to as a recipient device 402. Optionally, a user of sender device 401 and a user of recipient device 402 may be subscribers of a single wireless communication network of system 400, e.g., a network operated by a single wireless communication operator.

[0227] The user of sender device 401 may create, e.g., using sender device 401, a graphical and/or textual SMS message ("SMS message"), intended to be sent from sender device 401 to recipient device 402. The SMS message may be transmitted from sender device 401 to a Short Message Service Center (SMSC) 411 of system 400. An SMSC proxy 430 may "sniff", track or otherwise monitor wireless traffic, and may identify that the SMS message is transmitted from sender device 401 to SMSC 411. Optionally, the SMSC proxy 430 may check, for example, whether sender device 401 is a subscriber that requested that its outgoing SMS messages may be modified, e.g., in exchange for a reduced sending fee or no sending fee; and in one embodiment, SMSC proxy 430 may allow modification of SMS messages transmitted by only such subscribers, or by other pre-defined types or groups of subscribers.

[0228] The SMSC proxy 430 may, for example, forward a copy of the SMS message to an ad server 422. The ad server 422 may analyze the SMS message, e.g., to determine whether one or more additional content items, e.g., one or more advertisements, may be added to, inserted to, concatenated to, appended to and/or embedded within the SMS message. The determination may be based on, for example, one or more properties of the user of sender device 401, one

or more properties of sender device 401, one or more properties of the user of recipient device 402, one or more properties of recipient device 402, and/or other data, e.g., current time, current date, advertisement quotas, demographic data, the original size of the SMS message, a maximum size limit for a modified SMS message, the space available within the SMS message for inclusion of advertisement(s). These parameters may be further used, for example, to selectively choose one or more advertisements, which may be personally tailored to the user of sender device 401 and/or to the user of recipient device 402.

[0229] In one embodiment, based on the analysis, the ad server 422 may selectively modify the SMS message, e.g., by adding to it or inserting into it one or more advertisements which may be stored in ad server 422; and may optionally convert the SMS message to another type of message, e.g., a MMS message. The modified message may be transmitted by the ad server 422, e.g., to the SMSC 411. In another embodiment, the ad server 422 need not modify the original SMS message, and may send the additional content item (e.g., a selected advertisement) to the SMSC 411; the SMSC 411 may insert the additional content item received from ad server 422, to the original SMS message received from sender device 401.

[0230] In some embodiments, the SMSC 411 may utilize a Home Location Register (HLR) 413 to determine (e.g., using interrogation) whether recipient device 402 is active, and/or to determine the roaming location of recipient device 402; and may deliver the modified SMS/MMS message to recipient device 402, e.g., optionally utilizing a Mobile Switching Center (MSC) 412.

[0231] In some embodiments, optionally, ad server 422 may selectively modify the SMS message, e.g., by converting it to a MMS message and adding to the converted MMS message one or more advertisements stored in ad server 422. The MMS message may be transmitted by the ad server 422 to a MMS Center (MMSC) 423 of system 400, and the MMSC 423 may deliver the MMS message to recipient device 402. As a result, instead of receiving the original SMS message sent by sender device 401, the recipient device 402 may receive and/or present a MMS message having embedded therein an advertisement.

[0232] Optionally, the user of sender device 401 may not be charged, or may be charged a reduce fee, for sending the SMS/MMS/IM/Email message which is modified by system 400. Additionally or alternatively, optionally, the user of user of recipient device 402 may not be charged, or may be charged a reduce fee, for receiving the SMS/MMS/IM/Email message which is modified by system 400.

[0233] FIG. 5 schematically illustrates a block diagram of mobile-originated single-network wireless system 500 able to deliver content in accordance with yet another embodiment of the invention. System 500 may include one or more wireless communication devices or stations, for example, a first wireless communication device which may be referred to as a sender device 501, and a second wireless communication device which may be referred to as a recipient device 502. Optionally, a user of sender device 501 and a user of recipient device 502 may be subscribers of a single wireless communication network of system 500, e.g., a network operated by a single wireless communication operator.

[0234] The user of sender device 501 may create, e.g., using sender device 401, a graphical and/or textual SMS message ("SMS message"), intended to be sent from sender device 501 to recipient device 502. The SMS message may be transmitted from sender device 501 to a Short Message Service Center (SMSC) 511. A Message Modifier Module (MMM) 530 may be included in SMSC 511, or may be otherwise operatively associated with SMSC 511, e.g., as a plug-in, an external interface, or the like. Optionally, the MMM 530 may check, for example, whether sender device 501 is a subscriber that requested that its outgoing SMS messages may be modified, e.g., in exchange for a reduced sending fee or no sending fee; and in one embodiment, the MMM 530 may allow modification of SMS messages transmitted by only such subscribers, or by other pre-defined types or groups of subscribers.

[0235] The MMM 530 and/or the SMSC 511 may be operatively associated with an ad server 522, and may analyze the SMS message, e.g., to determine whether one or more additional content items, e.g., one or more advertisements, may be added to, inserted to, concatenated to, appended to and/or embedded within the SMS message. The determination may be based on, for example, one or more properties of the user of sender device 501, one or more properties of sender device 501, one or more properties of the user of recipient device 502, one or more properties of recipient device 502, and/or other data, e.g., current time, current date, advertisement quotas, demographic data, the original size of the SMS message, a maximum size limit for a modified SMS message, the space available within the SMS message for inclusion of advertisement(s). These parameters may be further used, for example, to selectively choose one or more advertisements, which may be personally tailored to the user of sender device 501 and/or to the user of recipient device 502.

[0236] Based on the analysis, the ad server 522 may select an appropriate advertisement or other content item. The ad server 522 and/or the MMM 530 may insert the selected advertisement or other content item to the SMS message, and may optionally convert the SMS message to another type of message, e.g., a MMS message. The modified message may be delivered to the recipient device, for example, through a MMS Center (MMSC) 523 (e.g., if the original SMS message is converted to a MMS message), or through the SMSC 511. The SMSC 511 may utilize a Home Location Register (HLR) 513 to determine (e.g., using interrogation) whether recipient device 502 is active, and/or to determine the roaming location of recipient device 502; and may deliver the modified message to recipient device 502, e.g., optionally utilizing a Mobile Switching Center (MSC) 512.

[0237] In some embodiments, optionally, ad server 522 may selectively modify the SMS message; may optionally convert it to another type of message, e.g., a MMS message; and may add to the converted MMS message one or more advertisements stored in ad server 522. The MMS message may be transmitted by the ad server 522 to MMS Center (MMSC) 523 of system 500, and the MMSC 523 may deliver the MMS message to recipient device 502. As a result, instead of receiving the original SMS message sent by sender device 501, the recipient device 502 may receive and/or present a MMS message having embedded therein an advertisement.

[0238] Optionally, the user of sender device 601 may not be charged, or may be charged a reduce fee, for sending the SMS/MMS/IM/Email message which is modified by system 500. Additionally or alternatively, optionally, the user of user of recipient device 602 may not be charged, or may be charged a reduce fee, for receiving the SMS/MMS/IM/Email message which is modified by system 500.

[0239] FIG. 6 schematically illustrates a block diagram of mobile-terminated multiple-network wireless system 600 able to deliver content in accordance with an embodiment of the invention. System 600 may include one or more wireless communication devices or stations, for example, a first wireless communication device which may be referred to as a sender device 601, and a second wireless communication device which may be referred to as a recipient device 602. Optionally, a user of sender device 601 may be a subscriber of a first wireless communication network, e.g., a network operated by a first wireless communication operator; whereas a user of recipient device 602 may be a subscriber of a second wireless communication network, e.g., a network operated by a second wireless communication operator.

[0240] The user of sender device 601 may create, e.g., using sender device 601, a graphical and/or textual SMS message ("SMS message"), intended to be sent from sender device 601 to recipient device 602. The SMS message may be transmitted by sender device 601 to a Short Message Service Center (SMSC) 611 of the first network. The SMSC 611 may query or interrogate a Home Location Register (HLR) 613 to determine (e.g., using interrogation) whether recipient device 602 is active, and/or to determine the roaming location of recipient device 602. The HLR 613 of the first network, may in turn query or interrogate a foreign HLR 650 of the second network, and may obtain a MSC routing. Optionally, the foreign HLR 650 of the second network may indicate, to HLR 613 of the first network, the location or address of a virtual MSC 621 of the second network; this may be performed, for example, only with regard to subscribers that requested to have their SMS messages modified. Optionally, the foreign HLR 650 of the second network may provide to the HLR 611 of the first network, an indication whether the user of recipient device requested or allowed modification of SMS messages.

[0241] The SMSC 611 of the first network may transmit the SMS message to the virtual MSC 621 of the second network, which may be operatively connected to an ad server 622. The virtual MSC 621 and/or the ad server 622 may analyze the SMS message, e.g., to selectively determine whether one or more additional content items, e.g., one or more advertisements, may be added to, inserted to, concatenated to, appended to and/or embedded within the SMS message. The determination may be based on, for example, one or more properties of the user of sender device 601, one or more properties of sender device 601, one or more properties of the user of recipient device 602, one or more properties of recipient device 602, and/or other data, e.g., current time, current date, advertisement quotas, demographic data, the original size of the SMS message, a maximum size limit for a modified SMS message, the space available within the SMS message for inclusion of advertisement(s). These parameters may be further used, for example, to selectively choose one or more advertisements,

which may be personally tailored to the user of sender device 601 and/or to the user of recipient device 602.

[0242] Based on the analysis, the virtual MSC 621 and/or the ad server 622 may selectively modify the SMS message, e.g., by adding to it or inserting into it one or more advertisements which may be stored in ad server 622; and may optionally convert the SMS message to another type of message, e.g., a MMS message. The modified message may be transmitted, by the virtual MSC 621 or the ad server 622, to a MSC 612 of the second network or to a SMS Center (SMSC) 623, which may transmit the modified message to recipient device 602; or may be transmitted to another server, e.g., a MMS Center (MMSC) 624 which may transmit the modified message to recipient device 602.

[0243] Optionally, the user of sender device 601 may not be charged, or may be charged a reduce fee, for sending the SMS/MMS/IM/Email message which is modified by system 600. Additionally or alternatively, optionally, the user of user of recipient device 602 may not be charged, or may be charged a reduce fee, for receiving the SMS/MMS/IM/Email message which is modified by system 600.

[0244] In some embodiments, the foreign HLR 650 of the second network may not provide, to the HLR 611 of the first network, an indication whether the user of recipient device 602 requested SMS/MMS modifications. In such case, the virtual MSC 621 may optionally include a front-end filter 640, to determine whether the user of recipient device 602 requested SMS/MMS modifications. If the determination result is positive, then the virtual MSC 621 and/or the ad server 622 may modify the SMS/MMS message, and the modified message may be transmitted, by the virtual MSC 621 or the ad server 622, to a MSC 612 of the second network or to a SMS Center (SMSC) 623, which may transmit the modified message to recipient device 602; or may be transmitted to a MMS Center (MMSC) 624 which may transmit the modified message to recipient device 602. Alternatively, if the determination result is negative, then the virtual MSC 621 may forward the original SMS/MMS message, substantially unmodified, to the MSC 612 for delivery to recipient device 602.

[0245] In some embodiments, optionally, ad server 622 may selectively modify the SMS message; may optionally convert it to another type of message, e.g., a MMS message; and may add to the converted MMS message one or more advertisements stored in ad server 622. The MMS message may be transmitted by the ad server 622 to MMS Center (MMSC) 623 of system 600, and the MMSC 623 may deliver the MMS message to recipient device 602. As a result, instead of receiving the original SMS message sent by sender device 601, the recipient device 602 may receive and/or present a MMS message having embedded therein an advertisement.

[0246] In some embodiments, the system may handle MMS messages, for example, utilizing a request-response mechanism. For example, a MMS service center may send, e.g., to a virtual MMS service center or a message modifier, a request to add an advertisement, optionally sending the original MMS message. The virtual MMS service center or message modifier may receive the request and the original MMS message, may process them, may insert the advertisement and optionally re-package the message, and send it back to the MMS service center for delivery to the recipient

device. This may allow, for example, a virtual MMS service center or a message modifier to operate in the route of the MMS message.

[0247] In some embodiments, SMS/MMS/IM/Email modifications may take into account, for example, a list or criteria indicating users, devices and/or operators which may be pre-approved or allowed to utilize the SMS/MMS/IM/Email modification service (“white-list”), and/or a list or criteria indicating users, devices and/or operators which may be disapproved or disallowed to utilize the SMS/MMS/IM/Email modification service (“black-list”). Optionally, access to the modification service may be granted only to “white-list” users, devices and/or operators, or may be disallowed to “black-list” users, devices and/or operators.

[0248] Some embodiments may include, for example, contextual advertising in mobile phones, in SMS/MMS/IM/Email, e.g., with respect to textual content and/or non-textual (e.g., graphical) content.

[0249] Some embodiments may utilize a taxonomy, for example, a pre-defined classification into categories, e.g., in a tree structure having “branches”, or other hierarchical structure. For example, a branch may be “games”, having sub-branches of “sports” and “arcade”; and the “sports” sub-branch may have sub-sub-branches of “basketball”, “football” and “tennis”. In some embodiments, an advertisement presented to a user, or inserted into a SMS/MMS/IM/Email message, may be selected based on taxonomy-based analysis. For example, if a user played a football game on his mobile phone, and further played a basketball game on his mobile phone, the system may present to this user, or insert into SMS/MMS/IM/Email messages that this user sends and/or receives, advertisements or content items which may be sports-related.

[0250] In some embodiments, text analysis of textual messages may be utilized to selectively target advertisements to a user of a mobile device. For example, if a user of a mobile device sends or receives a textual message having certain keywords (e.g., “football”, “football tickets”, “football agency”, or the like), then the system may modify the textual message, e.g., by selectively inserting or adding an advertisement related to that keyword (e.g., an advertisement for a football match, an advertisement for football tickets, or the like). In some embodiments, for example, an advertiser may associate advertisements or advertising campaigns with certain keywords, or to keywords that belong to a certain group or category.

[0251] In some embodiments, the system may map SMS/MMS/IM/Email context text to keywords. For example, a user may create and send a textual message “How about we see The Last Samurai tonight?”. Based on textual analysis, and/or identification of the phrase “The Last Samurai”, the system may map the textual message to a “movies” category, and/or to an “action movies” sub-category, thereby selecting advertisement that are related to this category or sub-category. Additionally or alternatively, based on identification of the word “tonight”, the advertisement selection process may be further fined-tuned, e.g., to select an advertisement for an action movie which is expected to play tonight (e.g., in the night-time of the current date), optionally in the geographical region in which the user is currently located and/or in the geographical region in which the user resides (e.g., based on subscriber’s personal information).

For example, the user may be presented with the message, or the original message may be modified to include the message, “See this movie tonight at 19:30 at the Paragon Theater in Times Square”. Optionally, the embedded message may include a reward or an incentive for the user, e.g., to act on the presented message, for example, by adding the message “Get free popcorn”.

[0252] In some embodiments, the system may perform multi-level parsing, for example, lexical, semantic, contextual, or the like. The lexical parsing may, for example, divide the content for words and phrases, e.g., using a stemming algorithm. The discrete words or phrases may be assigned weights, e.g., according to semantic and/or contextual parameters. For example, the phrase “How about we see The Last Samurai tonight?” may be associated with a semantic identifier of “action movie” and a time-related identifier of “tonight”, since the phrase “The Last Samurai” may be included in the taxonomy tree under the “movies/action movies” category. The system may further find “Samurai” in a “Japan/fashion” category”, yet the contextual analysis may assign a higher weight value to the “action movie” category.

[0253] In some embodiments, the contextual analysis may take into account a user’s age and/or demographic data. For example, if the user sends a textual message “Let’s bet on tonight’s match”, the system may check the user’s age (e.g., over 21 years old) before approving to add a gambling-related advertisement to the original message.

[0254] In some embodiments, a negative keywords process may be performed, for example, to avoid presentation of advertisement when the system determines that the presentation might be inappropriate. For example, if the user sends a message having a negative context, e.g., “my uncle has just died” or “I want a divorce”, the system may determine to avoid presenting any advertisements or a type of advertisements.

[0255] In some embodiments, the system may utilize image processing and/or image recognition algorithms to correlate a SMS/MMS/IM/Email message with one or more keywords, and may then use the keywords to select a matching advertisement to accompany the SMS/MMS/IM/Email message. This may include, for example, processing and/or image recognition of one or more files (e.g., image files or video files) which may be attached to or embedded within an original SMS/MMS/IM/Email message.

[0256] In some embodiments, a user of a mobile phone may send a MMS message which may be pre-prepared by the mobile phone operator or provider. For example, the user may select and send a pre-prepared “happy birthday” MMS message, a pre-prepared “happy anniversary” MMS message, or the like. The system may be configured such that a pre-prepared MMS message is pre-correlated with one or more keywords, and the system may utilize these keywords for advertisement selection. For example, if the user sends a pre-prepared “happy anniversary” MMS message, the system may add an advertisement related to celebrations, restaurants or flower shops.

[0257] In some embodiments, the system may select an advertisement based on the identity of the sender, based on the identity of the recipient, and/or based on a possible relation between the sender and the recipient. For example, if the sender sends a message to his mother, e.g., the message

starting with the words “Hi mom”, or addressed to “mom” in his phone book, then the message may be modified such that the mother may receive an advertisement of “gifts for your children” (e.g., an advertisement for a gift shop or a toys store). Other suitable algorithms may be used to select an advertisement based on the identity of the user and/or the recipient, the relationship between them, or other parameters.

[0258] In some embodiments, the system may determine to insert an advertisement to a message, or to refrain from inserting an advertisement to a message (e.g., to maintain the original message unmodified), based on an analysis taking into account whether one or more users is a subscriber of certain services. In one embodiment, for example, advertisements may be added to messages sent by devices owned by subscribers of a certain operator. In another embodiment, for example, advertisements may be not be added to messages sent by devices owned by subscribers of a certain operator, or messages sent by devices owned by subscribers of a certain operator may be maintained and delivered unmodified. In another embodiment, for example, advertisements may be added to messages sent by devices owned by subscribers having a certain subscription status, e.g., “low rate” or non-expensive payment plan. In another embodiment, advertisements may not be added to messages sent by devices owned by subscribers having a certain subscription status, e.g., “premium” subscribers, “gold” subscribers, users that are subscribed to a minimum number of services, or the like. In another embodiment, for example, advertisements may be added to messages sent by devices owned by subscribers having a low subscription cost, e.g., paying a monthly price lower than a certain threshold. In another embodiment, for example, advertisements may not be added to messages sent by devices owned by subscribers having a high subscription cost, e.g., paying a monthly price higher than a certain threshold. In another embodiment, for example, advertisements may be added to messages sent by devices owned by subscribers that opted-in (e.g., actively selected) to have their messages modified, or subscribers that did not opt-out from having their messages modified. In another embodiment, for example, advertisements may not be added to messages sent by devices owned by subscribers that did not opt-in (e.g., did not actively select) to have their messages modified, or subscribers that actively opted-out from having their messages modified. Other suitable criteria or conditions may be used to determine whether or not to modify a message by adding or inserting to the message an advertisement or other content.

[0259] In some embodiments, the system may determine to insert an advertisement to a message, or to refrain from inserting an advertisement to a SMS/MMS/IM/Email message (e.g., to maintain the original message unmodified), based on an analysis taking into account one or more properties of the SMS/MMS/IM/Email message, e.g., a length or size of the original message, a length or size of the original message, a length or size available for insertion of advertisement, or the like. For example, in one embodiment, a SMS message may have a maximum length of approximately 160 characters; the system may determine that a first original SMS message, e.g., having a length of approximately 100 characters, is suitable for modification and for insertion of an advertisement, since it allows to insert an advertisement having a length of approximately 60 characters; whereas the system may determine that a second

original SMS message, e.g., having a length of approximately 155 characters, is unsuitable for modification and for insertion of an advertisement, since it allows to insert an advertisement having a length of approximately 5 characters. For example, the system may determine to insert an advertisement to the original message, if the size of the original message is smaller than a certain threshold value, or if the size available for advertisement placement is greater than a certain threshold value.

[0260] FIG. 7 schematically illustrates a block diagram of a wireless communication system 700 of wireless context delivery in accordance with an embodiment of the invention. System 700 may include one or more wireless communication devices or stations, for example, a first wireless communication device which may be referred to as a sender device 701, and a second wireless communication device which may be referred to as a recipient device 702.

[0261] The user of sender device 701 may create, e.g., using sender device 701, a message. The message may include or may be, for example, a textual message, a graphical message, a SMS message, a MMS message, an Instant Messaging (IM) item, an Electronic Mail (Email) message, or the like. The SMS/MMS/IM/Email message may be intended to be sent from sender device 701 to recipient device 702, e.g., through a wireless communication server/gateway 710.

[0262] In some embodiments, server/gateway 710 may receive the message from sender device 701, and may modify the message by adding or inserting to the message an additional content item, e.g., an advertisement. This may be performed, for example, by a first server/gateway 710 that may handle an incoming communication from sender device 701, and/or by a second server/gateway 710 that may handle an outgoing communication towards recipient device 702. The additional content item may be selected, for example, utilizing an ad server 720, e.g., which may utilize an ad selection process similar to the operations described above. The modified message may be delivered by server/gateway 710 to recipient device 702, which may view the modified message, including the additional content item embedded therein.

[0263] In other embodiments, sender device 701 may modify the message created by its user, prior to sending the message to server/gateway 710. For example, sender device 701 may modify the message by adding or inserting to the message an additional content item, e.g., an advertisement. In one embodiment, the additional content item may be selected, for example, utilizing ad server 720, e.g., which may utilize an ad selection process similar to the operations described above; for example, sender device 701 may query (e.g., online) the ad server 720, may receive from ad server 720 a selected advertisement, and may insert or add the selected advertisement to the message, prior to sending the message to server/gateway 710. In another embodiment, sender device 701 may add or insert to the message a content item or advertisement selected or taken from a local (e.g., offline) cache 711 within sender device 701, e.g., storing one or more content items or advertisements. Sender device 701 may then send the modified message, instead of the original message created by the user, to server/gateway 710, which may deliver the modified message to the recipient device 702.

[0264] In yet other embodiments, sender device 701 may send the original message (e.g., created by the user of sender device 701), substantially unmodified, to server/gateway 710; the server/gateway 710 may deliver the original message, substantially unmodified, to recipient device 702; and recipient device 702 may receive the original message and may modify it prior to presenting the message to the user of recipient device 702. For example, recipient device 702 may modify the message by adding or inserting to the message an additional content item, e.g., an advertisement. In one embodiment, the additional content item may be selected, for example, utilizing ad server 720, e.g., which may utilize an ad selection process similar to the operations described above; for example, recipient device 702 may query (e.g., online) the ad server 720, may receive from ad server 720 a selected advertisement, and may insert or add the selected advertisement to the message, prior to presenting the message to the user of recipient device 702. In another embodiment, recipient device 702 may add or insert to the message a content item or advertisement selected or taken from a local (e.g., offline) cache 712 within recipient device 702, e.g., storing one or more content items or advertisements. Recipient device 702 may then present the modified message to the user of recipient device 702, instead of presenting the original message created by the user of sender device 701.

[0265] In some embodiments, local cache 711 of sender device 701, and/or local cache 712 of recipient device 702, may include one or more content items, e.g., advertisements. The content items may be, for example, pre-programmed, pre-installed, pre-fetched or pre-downloaded, e.g., from ad server 720.

[0266] In some embodiments, for example, a content item (e.g., an advertisement) may be selected to be added to an original message based on contextual analysis of the original message, based on a contextual analysis of a previous (e.g., non-current) message, based on a contextual analysis of a chain of messages (e.g., a chain of messages including the current message, a chain of messages excluding the current message, or the like), based on a contextual analysis of one or more previous message which were sent and/or received by sender device 701, based on a contextual analysis of one or more previous message which were sent and/or received by recipient device 702, based on one or more properties or characteristics of the user of sender device 701, based on one or more properties or characteristics of the user of recipient device 702, based on an analysis of prior behavior of the user of sender device 701, based on an analysis of prior behavior of the user of recipient device 702, based on one or more properties or characteristics of sender device 701, based on one or more properties or characteristics of recipient device 702, based on an analysis of prior operations of sender device 701, based on an analysis of prior operations of recipient device 702, based on off-line analysis or selection, based on online analysis or selection, a combination of some or all of these criteria, based on user indications regarding the type(s) or properties of advertisements or subjects in which the user is interested, and/or based on other suitable criteria. In one embodiment, the selection process may be non-contextual and/or non-targeted, for example, a “run-of-network”-type advertisement (e.g., a general advertisement, a non-targeted advertisement or campaign, a pseudo-random or random advertisement, or the like), may be added to the original message.

[0267] In some embodiments, a contextual analysis of the original message, and/or an analysis of user's properties and/or behavior, may be utilized to select the additional content item(s) or advertisement(s). In some embodiments, advertisements may be selected and/or added “on the fly”, online, dynamically, utilizing interception, on the sender side, on the recipient side, on the server/gateway side, or may be fetched offline, using local cache 711 or 721, in the background, or the like.

[0268] In some embodiments, sender device 701 may include a message client 731, and/or recipient device 702 may include a message client 732. The message clients 731 and/or 732 may include, for example, a hardware component and/or software component, able to send and/or receive a message, a textual message, a graphical message, a SMS message, a MMS message, an IM item, an Electronic Mail (Email) message, or the like. For example, the message clients 731 and/or 732 may be implemented as a SMS/MMS/IM/Email application, able to send messages, receive messages, compose or edit outgoing messages intended for transmission, present or view or playback incoming messages, delete previous messages, or the like. In some embodiments, message client 731 (732) may be able to fetch or obtain one or more content items or advertisements, e.g., using an online query utilizing ad server 720, and/or utilizing an offline operation utilizing local cache 711 (712).

[0269] In some embodiments, for example, message client 731 (732) may be installed in device 701 (702), and may operate as a substitute to other pre-installed message client applications, e.g., substituting an application pre-provided or pre-programmed by the manufacturer or seller of device 701 (702). In other embodiments, message client 731 (732) may be a wrapper application, a plug-in, an add-on, an envelope, or a front-end to a pre-programmed or pre-provided client application of device 701 (702). In other embodiments, message client 731 may be a part of a pre-provided application of device 701 (702), e.g., implemented as a module or SDK which may be compiled into the pre-provided application. Other suitable ways may be used to incorporate message client 731 (732) into device 701 (702).

[0270] In one embodiment, an advertisement or content item may be added to a current (e.g., most recent) message, based on a contextual analysis of the last (e.g., non-current) message, or based on a contextual analysis of one or more previous (e.g., non-current) messages. For example, recipient device 702 may receive four consecutive messages; recipient device 702 and/or server/gateway 710 may add to the fourth (e.g., last) message a content item (e.g., an advertisement) based on a contextual analysis of the third message, or of the first three messages. Other suitable analysis schemes may be used.

[0271] In some embodiments, the selection and/or the insertion of the content item (e.g., the advertisement) to a SMS/MMS/IM/Email message may be performed by a modifier 750, which may be a hardware component and/or a software component. In one demonstrative embodiment, as shown in FIG. 7, the modifier 750 may be included in the server/gateway 710, and may modify the message after the message is transmitted by sender device 701 and before the message is received by recipient device 702. In another embodiment, modifier 750 may optionally be included in

sender device **701**, shown as a modifier **750A**, and may modify the message before the message is transmitted by sender device **701**, e.g., once the user of sender device finishes to compose or edit the message and commands the sender device **701** to transmit the message. In yet another embodiment, modifier **750** may optionally be included in recipient device **702**, shown as a modifier **750B**, and may modify the message after the message is received by recipient device **702** and before the message is presented (e.g., to a user) on the recipient device **702**. In some embodiments, modifiers **750**, **750A** and/or **750B** may obtain the advertisement from a local (e.g., offline) cache (for example, local cache **711** or **712**), and/or from a remote (e.g., online) ad server (for example, ad server **720**).

[0272] In some embodiments, the modification of the message from an original message to a modified message may optionally include, for example, conversion or augmentation of the message from a first type to a second type. For example, in one embodiment, the original message may be a textual message, and the modified message may be a graphical message or a message having a textual component and a graphical component. In another embodiment, for example, the original message may be a SMS message, and the modified message may be a MMS message. Other suitable conversions may be used.

[0273] FIG. 8 schematically illustrates a block diagram of a wireless system **800** able to deliver content in accordance with an embodiment of the invention. System **800** may include one or more wireless communication devices or stations, for example, a first wireless communication device which may be referred to as a sender device **801**, and a second wireless communication device which may be referred to as a recipient device **802**. Optionally, a user of sender device **801** and a user of recipient device **802** may be subscribers of a one or more wireless communication networks of system **800**, e.g., operated by one or more wireless communication operators. In some embodiments, for example, system **800** may include two or more wireless networks.

[0274] The user of sender device **801** may create, e.g., using sender device **801**, a graphical and/or textual message, for example, a MMS message and/or an Instant Messaging (IM) message and/or an Electronic Mail (Email) message (which may be referred to herein as "original message"), intended to be sent from sender device **801** to recipient device **802**.

[0275] The communication route from sender device **801** to recipient device **802** may include one or more servers or intermediary gateways, spanning one or more wireless networks. For example, the original message may be sent by sender device **801** to a first server **810**, which may forward the original message to a second server **820**, which may deliver the original message to recipient device **802**. For example, first server **810** and/or second server **820** may include a MMS Center (MMS C), an IM server, an Email server, or the like.

[0276] In accordance with some embodiments of the invention, the original message may be modified prior to its presentation on recipient device **802**, e.g., by insertion of contextual and/or non-contextual advertisement or other content. The modification may be performed, for example, by sender device **801**, by the first server **810**, by the second

server **820**, and/or by recipient device **802**; and may optionally utilize one or more ad servers to select and/or insert the ad or content, e.g., an ad server **831** of the first network, and/or an ad server **832** of the second network.

[0277] For example, in some embodiments, sender device **801** and/or first server **810** may be operatively associated with ad server **831** of the first network. The ad server **831** may selectively provide an advertisement, or other content, intended for insertion to the original message, e.g., based on contextual analysis and/or non-contextual analysis of the original message, based on one or more properties or characteristics of sender device **801**, based on one or more properties or characteristics of the user of sender device **801**, based on one or more properties or characteristics of recipient device **802**, based on one or more properties or characteristics of the user of recipient device **802**, based on other data (e.g., date, time, etc.), or the like. The modified message may then be transferred from first server **810** to second server **820**, which may deliver the modified message to recipient device **802**. The recipient device **802** may present the modified message, e.g., including the inserted advertisement or other content.

[0278] In other embodiments, for example, sender device **801** and first server **810** may not modify the original message created by the user of sender device **801**. For example, recipient device **802** and/or second server **820** may be operatively associated with ad server **832** of the second network. The ad server **832** may selectively provide an advertisement, or other content, intended for insertion to the original message, e.g., based on contextual analysis and/or non-contextual analysis of the original message, based on one or more properties or characteristics of sender device **801**, based on one or more properties or characteristics of the user of sender device **801**, based on one or more properties or characteristics of recipient device **802**, based on one or more properties or characteristics of the user of recipient device **802**, based on other data (e.g., date, time, etc.), or the like. For example, the second server **820** may modify the original message and deliver the modified message to recipient device **802**; or the recipient device **802** may receive the original message substantially unmodified and modify the original message prior to its presentation. Then, recipient device **802** may present the modified message, e.g., including the inserted advertisement or other content.

[0279] FIG. 9 schematically illustrates a block diagram of a mobile-terminated multiple-network wireless system **900** able to deliver content in accordance with an embodiment of the invention. System **900** may include one or more wireless communication devices or stations, for example, a first wireless communication device which may be referred to as a sender device **901**, and a second wireless communication device which may be referred to as a recipient device **902**. Optionally, a user of sender device **901** may be a subscriber of a first wireless communication network, e.g., a network operated by a first wireless communication operator; whereas a user of recipient device **902** may be a subscriber of a second wireless communication network, e.g., a network operated by a second wireless communication operator.

[0280] The user of sender device **901** may create, e.g., using sender device **901**, a graphical and/or textual SMS message ("SMS message"), intended to be sent from sender

device **901** to recipient device **902**. The SMS message may be transmitted by sender device **901** to a Short Message Service Center (SMSC) **911** of the first network. The SMSC **911** may query or interrogate a Home Location Register (HLR) **913** of the first network, to determine whether recipient device **902** is active, and/or to determine the roaming location of recipient device **902**.

[0281] The HLR **913** of the first network may in turn query a foreign HLR **950** (e.g., of the second network), and may obtain a SMSC routing. Optionally, the foreign HLR **950** of the second network may indicate, to HLR **913** of the first network, the location or address of a SMSC **921** of the second network; this may be performed, for example, only with regard to subscribers that requested to have their SMS/MMS messages modified. Optionally, the foreign HLR **950** of the second network may provide to the HLR **911** of the first network, an indication whether the user of recipient device requested or allowed modification of SMS/MMS messages.

[0282] The SMSC **911** of the first network may transmit the SMS message to the SMSC **921** of the second network, which may be operatively connected to an ad server **922**. The SMSC **921** and/or the ad server **922** may analyze the SMS message, e.g., to selectively determine whether one or more additional content items, e.g., one or more advertisements, may be added to, inserted to, concatenated to, appended to and/or embedded within the SMS message. The determination may be based on, for example, one or more properties of the user of sender device **901**, one or more properties of sender device **901**, one or more properties of the user of recipient device **902**, one or more properties of recipient device **902**, and/or other data, e.g., current time, current date, advertisement quotas, demographic data, the original size of the SMS/MMS/IM/Email message, a maximum size limit for a modified SMS/MMS/IM/Email message, the space available within the SMS/MMS/IM/Email message for inclusion of advertisement(s). These parameters may be further used, for example, to selectively choose one or more advertisements, which may be personally tailored to the user of sender device **901** and/or to the user of recipient device **902**.

[0283] Based on the analysis, the SMSC **921** and/or the ad server **922** may selectively modify the original message, e.g., by adding to it or inserting into it one or more advertisements which may be stored in ad server **922**; and may optionally convert the SMS message to another type of message, e.g., a MMS message. The modified message may be transmitted, by the SMSC **921** or the ad server **922**, to a Mobile Switching Center (MSC) **912**, or to another type of server such as a MMS Center (MMSC) **924**, which may deliver the modified SMS/MMS message to recipient device **902**.

[0284] Optionally, the user of sender device **901** may not be charged, or may be charged a reduce fee, for sending the SMS/MMS/IM/Email message which is modified by system **900**. Additionally or alternatively, optionally, the user of recipient device **902** may not be charged, or may be charged a reduce fee, for receiving the SMS/MMS/IM/Email message which is modified by system **900**.

[0285] In some embodiments, the foreign HLR **950** of the second network may not provide, to the HLR **911** of the first network, an indication whether the user of recipient device

902 requested or approved SMS/MMS modifications. In such case, the SMSC **921** may optionally include a front-end filter **940**, to determine whether the user of recipient device **902** requested SMS/MMS modifications. If the determination result is positive, then the SMSC **921** and/or the ad server **922** may modify the SMS/MMS message, and may send the modified message to the MSC **912** or the MMSC **924** for delivery to recipient device **902**. Alternatively, if the determination result is negative, then the SMSC **921** may forward the original SMS message, substantially unmodified, to the MSC **912** for delivery to recipient device **902**.

[0286] In some embodiments, the modification of the message from an original message to a modified message may optionally include, for example, conversion or augmentation of the message from a first type to a second type. For example, in one embodiment, the original message may be a textual message, and the modified message may be a graphical message or a message having a textual component and a graphical component. In another embodiment, for example, the original message may be a SMS message, and the modified message may be a MMS message. Other suitable conversions may be used.

[0287] FIG. **10** is a schematic illustration of a wireless communication device **1070** in accordance with some embodiments of the invention. Device **1070** may include one or more components which may be similar or substantially identical to components of device **170** of FIG. **1**; for example, device **1070** may include local repository **171**, selector **172**, communication handler **173**, content client **174**, application **176**, server communicator **177**, push communicator **179**, reporter **181**, presentation service **182**, cache manager **183**, processor **184**, output unit **185**, input unit **186**, memory unit **187**, transmitter **191**, receiver **192**, and antenna **193**.

[0288] In some embodiments, device **1070** may operate as a recipient device and may receive, for example, a commercial content item, an advertisement, or an incoming SMS/MMS/IM/Email message having embedded therein a commercial content item or an advertisement ("incoming SMS/MMS/IM/Email message"). Device **1070** may present (e.g., display, show, play, playback, or the like) the incoming commercial content item/advertisement/SMS/MMS/IM/Email message, for example, using output unit **185**. Device **1070** may include, for example, a content repository **1099** allowing the device **1070** to store, or allowing the user of device **1070** to selectively store, incoming commercial content item/advertisement/SMS/MMS/IM/Email messages in their entirety, or portions or a selected portion of incoming commercial content item/advertisement/SMS/MMS/IM/Email message (e.g., a coupon, a discount coupon, a code, a barcode, or the like). Content repository **1099** may be implemented, for example, using a stand-alone component or unit, using a hardware and/or software component, using local repository **171**, using memory unit **187**, using an internal and/or external storage unit (e.g., a Flash memory card), or the like.

[0289] In one embodiment, for example, the user of device **1070** may select to save or store in content repository **1099** an entire incoming commercial content item/advertisement/SMS/MMS/IM/Email message, or a portion or a selected portion thereof. This may be performed, for example, after the incoming commercial content item/advertisement/SMS/

MMS/IM/Email message is presented to the user; while or during the presentation of the incoming commercial content item/advertisement/SMS/MMS/IM/Email message to the user; before presentation of the incoming commercial content item/advertisement/SMS/MMS/IM/Email message; and/or instead of presenting the incoming commercial content item/advertisement/SMS/MMS/IM/Email message to the user. For example, the user may be presented with a brief indication (e.g., a short textual message, a vibration, a ring, an audible sound or the like) that an incoming commercial content item/advertisement/SMS/MMS/IM/Email message is received; the user may select to save the incoming commercial content item/advertisement/SMS/MMS/IM/Email message (or a portion thereof) in content repository 1099 for subsequent presentation; or may select to view the incoming commercial content item/advertisement/SMS/MMS/IM/Email message and to save it in content repository 1099 for an additional subsequent presentation(s); or may select to view the incoming commercial content item/advertisement/SMS/MMS/IM/Email message and to delete it, e.g., avoid storing it in content repository 1099 for subsequent presentation. The user selection may be performed, for example, utilizing input unit 186, for example, in response to options presented to the user utilizing output unit 185.

[0290] Device 1070 may further include a content items browser 1098, for example, a software (e.g., embedded or non-embedded) client application allowing the user to selectively browse and/or view (e.g., present) one or more content items that are stored in content repository 1099, for example, to browse and/or view incoming commercial content item/advertisement/SMS/MMS/IM/Email messages (or portions thereof) that are stored in content repository 1099. In some embodiments, the content items browser 1098 may operate while device 1070 is online and/or while device 1070 is offline, e.g., may allow a user to selectively browse and/or view stored content items without dependence on the operational status or location of device 1070. Content items browser 1098 may further allow the user, for example, to selectively delete one or more content items stored in content repository. Content items browser 1098 may further allow the user, for example, to selectively send (e.g., forward) to another wireless communication device one or more content items stored in content repository.

[0291] In some embodiments, an incoming commercial content item/advertisement/SMS/MMS/IM/Email message may include a content item (e.g., an advertisement, a coupon, a barcode, a code, or the like) associated with a time stamp and/or a date stamp ("time/date stamp"). For example, an incoming commercial content item/advertisement/SMS/MMS/IM/Email message may include an expiration time/date stamp, such that the incoming commercial content item/advertisement/SMS/MMS/IM/Email message or a portion thereof may expire on a certain date or at a certain time, e.g., may not be presentable after a certain time/date, may be automatically deleted after a certain time/date, or the like. In some embodiments, content repository 1099 and/or content items browser 1098 may include, or may be associated with, a content items manager 1097, which may periodically examine the content items currently-stored in content repository 1099, and may delete or remove content items associated with a time/date stamp that expired or elapsed. Once deleted, the deleted content items may no longer be available for browsing or presenting through the content items browser 1098.

[0292] Content items browser 1098 may optionally allow the user to selectively view, or to search for or retrieve, only a certain type of stored content items. For example, content items browser 1098 may allow the user to selectively view content items that were received through only incoming SMS messages or through only incoming IM messages; may allow the user to search for content items by time or date or type; may allow the user to sort the stored content items according to various properties; may allow a user to search for content items that are associated with one or more keywords (e.g., "coupon" or "food"); may allow the user to selectively view only content items that are stored a pre-defined period of time (e.g., more than 24 hours); may allow the user to selectively view only content items that are expected to expire soon (e.g., expected to be deleted by content items manager 1097 in under two hours); or the like.

[0293] In some embodiments, the content item may be presented to the user utilizing the content client 174. Presented content items may include, for example, textual content items, animated content items, visual or graphical content items, images, photos, video content, sound or audio content, or a combination thereof.

[0294] In some embodiments, incoming content items (e.g., received by device 1070, or by device 170 of FIG. 1) may accommodate one or more requirements which may be set or pre-set by content client 174, e.g., size in bytes, fixed size, variable size, dimensions in pixels, color depth, file types, or the like. For example, device 1070 (or, for example, device 170 of FIG. 1) may request to receive (e.g., from the ad server) content items that have a certain property or characteristic.

[0295] In some embodiments, content items that may be included in an incoming SMS/MMS/IM/Email message, or may be presented through the content client 174, may be adapted as to not burden or annoy the user. For example, in some embodiments, a presented content item (e.g., an advertisement) may utilize only a portion of the screen (e.g., of the output unit 185), for example, approximately one half of the screen, approximately one third of the screen, approximately one quarter of the screen, approximately one or two lines of text on the screen, or the like. This may allow, for example, reduced intrusion or moderate intrusion on the user's flow of operations using the device 1070. In one embodiment, substantially the entire screen of device 1070 may be utilized to present the content item, e.g., to force an interrupt within the flow of operations of the user and/or to ensure gaining the user's attention to the presented content item.

[0296] In some embodiments, device 1070 (or, similarly, device 170 of FIG. 1) may include a user interface optionally having one or more configurable or programmable soft-key(s) 1096, for example, as part of input unit 186 (e.g., as part of a keypad or a keyboard) or a stand-alone component. The configurable soft-key(s) 1096 may include, for example, an input component (e.g., a key of a keypad, a key of a keyboard, a button, a clickable element, a touchable element, or the like) which may not have a hard-wired function or a pre-set function, and/or which may be selectively or dynamically configured or programmed or re-programmed (e.g., once, or periodically) to perform one or more functions. For example, soft-key 1096 of a first device 1070 may be configured to trigger (when pressed) a certain function or operation, whereas soft-key 1096 of a second device 1070

may be configured to trigger (when pressed) another function or operation. In one embodiment, optionally, soft-key **1096** may be configured to perform (when pressed) a set of pre-defined functions or operations, for example, present a content item and then save it, or present a content item and then delete it, or present a content item and then forward it, or the like. In some embodiments, soft-key **1096** may be located in proximity to a display unit of the device **1070**, e.g., immediately under or at a side of the display unit; in other embodiment, soft-key **1096** may be implemented using pre-existing keys or components of input unit **186** which may be configured or programmed to operate as soft-key **1096**.

[0297] In some embodiments, the user may utilize the soft-key **1096**, for example, to selectively perform one or more operations with regard to an incoming commercial content item/advertisement/SMS/MMS/IM/Email message or with regard to a content item embedded therein. For example, the user may receive an indication that an incoming commercial content item/advertisement/SMS/MMS/IM/Email message is received; the user may press or click on the soft-key **1096**, before and/or during and/or after the presentation of the incoming message or its content item, and may be presented with a set of operations from which the user may select (e.g., using the input unit **186**). The set of operations may include, for example: send a signal indicating a request to receive additional information about the presented content item; store or save the content item and/or the incoming message and/or a portion thereof (e.g., in the content repository **1099**); forward the content item and/or the incoming message and/or a portion thereof (e.g., to another wireless communication device or to another recipient); delete the content item and/or the incoming message; go to (e.g., virtually visit or browse or redirect to) a certain web-site (e.g., through a Uniform Resource Locator (URL) or other shortcut or pointer, which may be pre-provided with the content item); place a voice call to a certain phone number (e.g., which may be pre-provided with the content item); send a message to a certain destination (e.g., which may be pre-provided with the content item); fill a form (which may be included in the content item) and submit it; participate in a survey or a cast a vote; launch a certain application on the device **1070**; or one or more other operations or sets of operations.

[0298] In some embodiments, a first incoming content item may be selectively associated with a first set of selectable operations, whereas a second incoming content item may be selectively associated with a second, different, set of selectable operations. For example, a first incoming content item may be a textual advertisement, and may be associated with the options of 'save', 'delete', and 'forward'; whereas a second content item may be a graphical element (e.g., a discount coupon) which may not be associated with a 'forward' option but may be associated with a 'save' option, a 'delete' option, a 'visit website' option, and a 'request more information' option.

[0299] In some embodiments, the incoming content item may include indications or representations of one or more selectable operations which may be associated with the incoming content item. For example, a first incoming content item may include indications or representations that the first incoming content item is intended to be associated with a first set of user-selectable actions, e.g., options of 'save',

'delete', and 'forward'; whereas a second, different, incoming content item may include indications or representations that the second incoming content item is intended to be associated with a second set of user-selectable actions, e.g., options of 'save', 'delete', 'visit website', and 'request more information'.

[0300] In some embodiments, user-selectable operations may be associated with an incoming content item based on one or more properties or characteristics, for example, of the device **1070** and/or its user, and/or other data or parameters (e.g., date, time, location, or the like). For example, a first user-selectable operation may be available only once, e.g., may not be available again after the user selects it; a second user-selectable operation may be available only on certain days, or only for a limited period of time, or only during a certain time window; a third user-selectable operation may be available only for content items associated with a certain type or business logic (for example, 'save coupon' option may be available for a content item including a coupon and/or related to a food-industry vendor, whereas 'save coupon' option may not be available for a content item that does not include a coupon, e.g., an advertisement for a television program); a fourth user-selectable operation may be available only when the user or the device **1070** meets certain conditions, e.g., if the device **1070** is within a certain location (e.g., in proximity to a certain restaurant), or if the user performed or did not perform certain operations (e.g., if the user placed at least three phone calls in the last hour); or the like. Other suitable criteria and/or conditions may be used.

[0301] In some embodiments, one or more user-selectable actions may be based on, or may be related to, a certain client business logic. For example, a first user-selectable action associated with a first incoming content item, may be available only during a certain time and/or while the recipient device is within a certain geographical location. Additionally or alternatively, a certain user-selectable action may be available only until the user selects it, and may no longer be available in future instances even if same content item is subsequently presented again.

[0302] In some embodiments, optionally, content client **174** may embed the user-selectable options (or some of them), that are associated with an incoming content item (e.g., an advertisement), within or into a pre-existing menu or interface of the application **176** being executed. This may be performed, for example, instead of or in addition to providing a separate or stand-alone menu of user-selectable options. For example, in one embodiment, an incoming content item (e.g., an advertisement) may be presented by content client **174** which may be operatively associated with, or embedded with, a gaming application or IM client application, by adding the user-selectable options to a standard interface or menu of the gaming application or IM client application. For example, the user-selectable options that are associated with the incoming content item (e.g., the advertisement) may be presented in the context of the application **176** being executed on the device **1070**.

[0303] In some embodiments, optionally, the content client **174** may allow to embed the user-selectable options within the context of the application **176** in which the content client **174** embedded. For example, instead of presenting a dedicated menu of user-selectable options for the

presented content item, the user-selectable options may be embedded within a menu of the application 176 that the content client 174 is embedded in; accordingly, the user-selectable options may be presented in the context of the application 176.

[0304] FIG. 11 is a schematic flow-chart of a method of content delivery and presentation in accordance with some embodiments of the invention. The method may be implemented, for example, using one or more devices and/or systems as described herein. For example, the method may be used in conjunction with device 170 of FIG. 1, with device 1070 of FIG. 10, and/or other suitable wireless communication devices.

[0305] As indicated at box 1105, a user may operate the wireless communication device to launch an application, for example, a gaming application.

[0306] As indicated at box 1110, while the gaming application is loading, the wireless communication device may present a first advertisement, for example, a substantially full-screen advertisement or an advertisement occupying more than 80 percent or more than 90 percent of the available screen size. For example, box 1112 shows a demonstrative screen-shot of the full-screen advertisement which may be presented, optionally including an “options” user-selectable action which may be associated, for example, with a soft-key of the wireless communication device.

[0307] While the game is loading, and/or in response to the presentation of the first advertisement of box 1112, the user may select the “options” action, e.g., by pressing the soft-key associated with the “options” action, as indicated at box 1120.

[0308] In response, as indicated at box 1130, the wireless communication device may present a dedicated menu of one or more user-selectable options or actions which may be associated with the first advertisement. For example, box 1135 shows a demonstrative screen-shot of the presented menu; optionally including a “select” user-selectable action 1132 and/or a “play” user-selectable action 1134, which may be associated with one or more soft-keys of the wireless communication device.

[0309] For example, the user may select the “play” option, which may cause the wireless communication device to resume the gaming application, e.g., as indicated at box 1170 and onward. Alternatively, as indicated at box 1140, the user may select an option from the menu, e.g., the option “show map”.

[0310] In response, as indicated at box 1145, the wireless communication device may present an area map, showing or indicating one or more locations that may be associated with the first advertisement, e.g., location(s) of store(s) that are related to the first advertisement. For example, box 1160 shows a demonstrative screen-shot of the presented map, showing two store locations marked as “A” and “B”.

[0311] Optionally, a “back” user-selectable action 1162 may be included in the screen-shot of box 1162, for example, optionally associated with a soft-key of the wireless communication device. As indicated at box 1155, selecting the “back” action 1162 may bring the user back to screen-shot 1135.

[0312] Optionally, a “play” user-selectable action 1164 may be included in the screen-shot of box 1164, for example, optionally associated with a soft-key of the wireless communication device. As indicated at box 1150, selecting the “play” action 1164 may cause the wireless communication device to resume the gaming application, e.g., as indicated at box 1170 and onward.

[0313] As indicated at box 1170, the game may be loaded and may be ready for playing by the user. As indicated by arrow 1172, the operations of boxes 1120, 1130, 1140, 1145, 1150 and 1155 may be performed substantially in parallel to the loading process of the gaming application, and may not stop or delay the loading process.

[0314] In some embodiments, for example, if the loading of the gaming application is completed while the user views a presented advertisement, or while the user views a menu of options, the gaming application may wait for the user to select that the user wishes to resume the gaming application and play, and the gaming application need not interrupt the user. In other embodiments, for example, if the loading of the gaming application is completed while the user views a presented advertisement, e.g., if the user does not actively select an option associated with the advertisement but rather views the advertisement passively, then the gaming application may automatically begin. In one embodiment, even if the loading of the application is completed, the gaming application may utilize a delay period before it begins, e.g., to allow a minimum viewing time (e.g., five seconds) of the presented advertisement.

[0315] As indicated at box 1175, once the gaming application begins, for example, a game menu may be presented. For example, box 1180 shows a demonstrative screen-shot of the presented game menu. The game menu may include game-related options (e.g., start a new game, view high scores table, read instructions how to play the game, exit the gaming application, or the like). The screen-shot of box 1180 may optionally include a second advertisement, which may occupy only a portion of the screen of the wireless communication device, e.g., approximately 50 percent of the available screen of the wireless communication device. Optionally, a user-selectable “options” action 1182 may be included, for example, to allow presentation of one or more additional user-selectable actions that the user may perform in relation to or in connection with the second advertisement.

[0316] FIG. 12 is a schematic flow-chart of a method of content delivery and presentation in accordance with some embodiments of the invention. The method may be implemented, for example, using one or more devices and/or systems as described herein. For example, the method may be used in conjunction with device 170 of FIG. 1, with device 1070 of FIG. 10, and/or other suitable wireless communication devices.

[0317] As indicated at box 1205, a user of a wireless communication device may utilize an application, for example, may play a gaming application on the wireless communication device.

[0318] As indicated at box 1210, a triggering event may occur. For example, a level in the game may be completed, a goal or score in the game may be reached, the game may terminate, or the like.

[0319] As indicated at boxes 1220 and 1240, a first advertisement may be presented in response to a first triggering event, or a second advertisement may be presented in response to a second (e.g., different) triggering event.

[0320] For example, the user may complete a level in the game, and the first advertisement may be presented, as indicated at box 1220. Optionally, the first advertisement may occupy substantially the full-screen of the wireless communication device. For example, box 1230 shows a demonstrative screen-shot of the wireless communication device, which may optionally include a user-selectable “play” action 1232 and a user selectable “options” action 1234, optionally associated with two keys, respectively (e.g., optionally utilizing soft-keys).

[0321] In response to the first advertisement presented, the user may select the “play” action, as indicated at box 1265. As a result, the game may be resumed, or the gaming application may be resumed, e.g., as indicated at box 1268.

[0322] Alternatively, in response to the first advertisement presented, the user may select the “options” action, as indicated at box 1260. As a result, a menu of one or more user-selectable actions may be presented, as indicated at box 1270, including actions that may be associated with the first advertisement. For example, box 1275 shows a demonstrative screen-shot of the wireless communication device, including a menu of user-selectable actions, and optionally including a “play” action 1277 to allow the user to resume the game. For example, the options shown in the menu of box 1275, may be related to the first advertisement shown in box 1230.

[0323] Similarly, for example, the user may reach a certain score in the game, and the second advertisement may be presented, as indicated at box 1240. Optionally, the second advertisement may occupy substantially the full-screen of the wireless communication device. For example, box 1250 shows a demonstrative screen-shot of the wireless communication device, showing the advertisement; the display may optionally include a user-selectable “play” action 1252 and a user selectable “options” action 1254, optionally associated with two keys, respectively (e.g., optionally utilizing soft-keys). In some embodiments, for example, a scan-able barcode may be included in the advertisement; for example, the user may show the barcode to a vendor in order to receive a free item, a prize or a discount, and the vendor may scan the barcode utilizing a barcode reader or barcode scanner (e.g., associated with a cash register). Optionally, the entire message, or the advertisement, or the barcode portion, may be saved by the user (e.g., in a “virtual wallet” application, utilizing the content repository 1099 of FIG. 10) for subsequent retrieval (e.g., utilizing the content items browser 1098 of FIG. 10).

[0324] In response to the second advertisement presented, the user may select the “play” action, as indicated at box 1285. As a result, the game may be resumed, or the gaming application may be resumed, e.g., as indicated at box 1288.

[0325] Alternatively, in response to the second advertisement presented, the user may select the “options” action, as indicated at box 1280. As a result, a menu of one or more user-selectable actions may be presented, as indicated at box 1290, including actions that may be associated with the second advertisement. For example, box 1295 shows a

demonstrative screen-shot of the wireless communication device, including a menu of user-selectable actions; optionally including a “play” action 1292 to allow the user to resume the game, and a “back” option to allow the user to return to the second advertisement presented. The options shown in the menu of box 1295 may be related to the second advertisement shown in box 1250.

[0326] FIG. 13 is a schematic flow-chart of a method of content delivery and presentation in accordance with some embodiments of the invention. The method may be implemented, for example, using one or more devices and/or systems as described herein. For example, the method may be used in conjunction with device 170 of FIG. 1, with device 1070 of FIG. 10, and/or other suitable wireless communication devices.

[0327] As indicated at box 1310, a triggering event may occur in the wireless communication device, for example, an incoming SMS message may be received.

[0328] As indicated at box 1320, in response to the triggering event, an application may be launched or opened, e.g., a SMS viewer application may be launched. This may be performed, for example, automatically by the wireless communication device, and/or manually by the user of the wireless communication device.

[0329] As indicated at box 1330, the user may select to view the incoming SMS message.

[0330] As indicated at box 1340, the incoming SMS message may be presented, and a content item embedded within (e.g., an advertisement) may be presented as well, for example, on the screen of the wireless communication device. For example, box 1370 shows a demonstrative screen-shot of the screen of the wireless communication device, showing the incoming SMS message, followed by a textual advertisement. Optionally, a user-selectable “options” action 1372 may be presented, and/or a user-selectable “back” action 1374 may be presented, optionally associated with two, respective, keys of soft-keys of the wireless communication device.

[0331] As indicated at box 1350, for example, the user may select the “options” action. In response, as indicated at box 1360, a menu may be presented, showing one or more user-selectable options or actions, which may be associated with the content item (e.g., the advertisement) presented in box 1370. For example, box 1380 shows a demonstrative screen-shot of the screen of the wireless communication device, showing a menu having two portions: an upper portion showing selectable options related to the incoming SMS message (e.g., reply to the sender, forward the message, or delete the message), and a lower portion showing selectable options related to the content item (e.g., the advertisement) of box 1370 (e.g., show a special offer related to the advertisement, show a map of a location related to the advertisement, call a store or cinema or another destination related to the advertisement, buy tickets or goods related to the advertisement, or the like). For example, a user-selectable “select” action 1382 may be used to select an action from the menu, and a user-selectable “cancel” action 1384 (or a “back” action) may be used to navigate to a previous screen; the user-selectable actions may be associated, for example, with two respective keys or soft-keys of the wireless communication device.

[0332] FIG. 14 is a schematic flow-chart of relations between a delivery layer and a presentation layer in accordance with some embodiments of the invention. The relations may be implemented, for example, using one or more devices and/or systems as described herein. For example, the relations may be used in conjunction with device 170 of FIG. 1, with device 1070 of FIG. 10, and/or other suitable wireless communication devices. In some embodiments, for example, a delivery layer 1410 and a presentation layer may be used.

[0333] As indicated by box 1412, an incoming message may be, for example, in accordance with a standard type or protocol, for example, a SMS message, a MMS message, an IM message, or an Email message. The incoming message may include a content item, e.g., an advertisement. In one embodiment, as indicated by arrow 1432 and box 1422, the incoming message and the content item (e.g., the advertisement) included therein, may be presented using a standard presentation client of the mobile device, for example, a standard embedded or non-embedded client application, e.g., a mobile device SMS application, a mobile device MMS application, a mobile device IM application, or a mobile device Email application.

[0334] As indicated by box 1414, an incoming content item (e.g., an advertisement) may be independent of an incoming standard SMS/MMS/IM/Email message; for example, the incoming content item (e.g., the advertisement) may be a dedicated advertisement item, which may be delivered to the recipient device in a "raw" format or using a proprietary protocol, e.g., not within a standard SMS/MMS/IM/Email. In one embodiment, as indicated by arrow 1434 and box 1424, a mobile device application having a content client embedded within, may be used to present the incoming content item (e.g., the advertisement). For example, the application may be a gaming application or a utility application, having embedded therein a dedicated content client able to receive and present incoming content items (e.g., advertisements). The content client may be embedded in the application, for example, using a SDK, using a close-class, using a code portion or an object which may be compiled together with the application, or the like. Optionally, the content client embedded within the application may allow the user to perform one or more actions in relation to the incoming content item, for example, to select from a set of user-selectable options associated with the incoming content item, optionally utilizing one or more soft-keys of the mobile device to perform such selection.

[0335] In one embodiment, optionally, as indicated by arrow 1436, upon receiving an incoming SMS/MMS/IM/Email which includes a content item (e.g., an advertisement), the message and/or the content item (e.g., the advertisement) may be presented on the recipient device using a mobile device application having a content client embedded within. The content client may be embedded in the application, for example, using a SDK, using a close-class, using a code portion or an object which may be compiled together with the application, or the like. Optionally, the content client embedded within the application may allow the user to perform one or more actions in relation to the incoming content item, for example, to select from a set of user-selectable options associated with the incoming content item, optionally utilizing one or more soft-keys of the mobile device to perform such selection.

[0336] In some embodiments, an advertisement may be included within a standard type of messages, e.g., a SMS/MMS/IM/Email message. A standard or a proprietary content client in the mobile device may be used to present the message and the advertisement included therein, e.g., embedded in an application or non-embedded.

[0337] In some embodiments, an advertisement may be included within applications on the mobile device, e.g., on embedded or non-embedded mobile applications. For example, optionally, the advertisement may be delivered to the mobile device in accordance with a proprietary or non-standard protocol or format. The advertisement may be presented, for example, using a dedicated content client, which may be embedded within the context of a mobile device application (e.g., a gaming application, a utility application, or the like) in which the advertisement is intended to be presented. One or more user-selectable actions may be presented, e.g., using a dedicated or non-dedicated menu.

[0338] In some embodiments, a user-selectable action, for example, in response to a presented content item, may add, remove or modify data in a local repository of the mobile device (e.g., in content repository 1099 of FIG. 10). For example, a "save" action may save relevant data in the local repository; a "get coupon" action or a "get more information" action may request and receive additional data (e.g., representing a coupon) which may be stored in the local repository; or the like. The data stored in the local repository of the mobile device, may subsequently be presented, deleted, or the like (e.g., using content items browser 1098 of FIG. 10).

[0339] FIG. 15 is a schematic illustration of a wireless communication system 1500 able to deliver targeted advertisements using Wireless Application Protocol (WAP) in accordance with some embodiments of the invention. System 1500 may include, for example, a wireless communication device 1501, a WAP gateway 1502, and an ad server 1503. System 1500 may be utilized to deliver content of a WAP-site 1504 to device 1501.

[0340] Device 1501 may include one or more components which may be similar or substantially identical to components of device 170 of FIG. 1; for example, device 1070 may include local repository 171, selector 172, communication handler 173, content client 174, application 176, server communicator 177, push communicator 179, reporter 181, presentation service 182, cache manager 183, processor 184, output unit 185, input unit 186, memory unit 187, transmitter 191, receiver 192, and antenna 193. In some embodiments, for example, device 1501 may be used in conjunction with a wireless communication system which may be similar to system 100 of FIG. 1; for example, system 100 may include a WAP gateway which may be utilized for WAP communication, e.g., as described herein. For example, in system 100 of FIG. 1, device 170 may include a WAP browser or micro-browser able to present WAP-sites, WAP-pages and/or WAP content; for example, the WAP browser may be embedded in device 170, may be a download-able or installable module or application, may be implemented using hardware components and/or software components, and/or may otherwise be included in device 170 of FIG. 1.

[0341] In some embodiments, device 1501 may optionally include one or more components to allow device 1501 to

utilize WAP. For example, device **1501** may include a wireless modem **1521**, e.g., a Global System for Mobile communication (GSM) modem, which may be implemented using transmitter **191**, receiver **192**, and antenna **193**. Device **1501** may further include a browser **1523**, e.g., a micro-browser; and a WAP stack **1522** which may support one or more protocols, for example, Wireless Session Protocol (WSP), Wireless Transaction Protocol (WTP), Wireless Transport Layer Security (WTLS), Wireless Datagram Protocol (WDP), or the like.

[0342] In some embodiments, a user of device **1501** may select to view or to browse the content of a certain WAP-site, e.g., WAP-site **1504**. For example, the user of device **1501** may enter or input (e.g., using input unit **186**) an address of the WAP-site **1504** (e.g., in a format such as, for example, "wap.wapsite.com"); the user of device **1501** may click or double-click on a link, a hyper-link or a shortcut presented on device **1501** and linking to the WAP-site **1504**; or the user **1501** may otherwise select or input an identifier pointing to the WAP-site **1504**.

[0343] In some embodiment, prior to delivering to device **1501** the content of the requested WAP-site **1504**, and/or prior to presenting on device **1501** the content of the requested WAP-site **1504**, a WAP advertisement may be delivered and/or presented on device **1501**, e.g., using a "splash" item, a "splash screen", a "splash" window or screen portion, a "pop-up" or "pop-under" screen or screen portion or window, or the like. Then, after the WAP advertisement is delivered to and presented on device **1501**, the content of WAP-site **1504** may be delivered to and/or presented on device **1504**. In some embodiments, optionally, the WAP advertisement delivered to device **1501** and/or presented to the user of device **1501** may be selected from a repository **1505** of advertisements in accordance with one or more criteria, e.g., to selectively tailor the WAP advertisement to one or more properties of device **1501** and/or to one or more properties of the user of device **1501**.

[0344] In some embodiments, optionally, a user of device **1501** may search for a certain WAP-site, information, file, page, data item, or the like; for example, using a search mechanism, a search engine, a search program, or the like, e.g., by entering a search query. As result of the search, a search results page may be presented on device **1501**, for example, including links to various relevant WAP-sites. The user of device **1501** may then select a certain search result (e.g., a link), and may be presented with the "splash" item (e.g., WAP advertisement) prior to being directed to the WAP-site to which the actual search result (e.g., link) refers or points.

[0345] For example, based on the input by the user of device **1501**, device **1501** may transmit a request (e.g., a WDP request) to receive content from WAP-site **1504**. The request may include, for example, a Uniform Resource Identifier (URI), e.g., a Uniform Resource Locator (URL), a Uniform Resource Name (URN), or a Uniform Resource Characteristic (URC). The request may include, for example, one or more data items identifying WAP-site **1504** or corresponding to WAP-site **1504**, for example, a domain name associated with WAP-site **1504**, an IP address associated with a server of WAP-site **1504**, or the like.

[0346] The request transmitted by device **1501**, indicated by arrow **1511**, may be received by WAP gateway **1502**, for

example, directly or indirectly. In one embodiment, for example, the request may be delivered from device **1501** to WAP gateway **1502** utilizing one or more components, for example, a Mobile Switching Center (MSC), an access server, or the like.

[0347] In one embodiment, a WAP advertisement (e.g., a targeted WAP advertisement) may be delivered to device **1501** when device **1501** requests to view substantially any WAP-site **1504**, e.g., regardless of the specific WAP-site **1504** requested by device **1504**. In another embodiment, a WAP advertisement (e.g., a targeted WAP advertisement) may be delivered to device **1501** only if device **1501** requests to view a WAP-site **1504** which pre-approved to present WAP advertisements to wireless devices that request to access it (e.g., based on a pre-defined "white list" of WAP-sites that "opted-in" that WAP gateway **1502** deliver WAP advertisements to their viewers). In yet another embodiment, a WAP advertisement (e.g., a targeted WAP advertisement) may be delivered to device **1501** only if device **1501** requests to view a WAP-site **1504** which did not request to avoid presentation of WAP advertisements to wireless devices that request to access it (e.g., based on a pre-defined "black list" of WAP-sites that "opted-out" and requested that WAP gateway **1502** does not deliver WAP advertisements to their viewers). In still another embodiment, a WAP advertisement (e.g., a targeted WAP advertisement) may be delivered to device **1501** only if a user of device **1501** requested (e.g., "opted-in") to view WAP advertisements, or only if a user of device **1501** did not request to avoid viewing WAP advertisements (e.g., did not "opt-out"). In yet another embodiment, WAP gateway **1502** and/or ad server **1503** may determine whether or not to deliver a WAP advertisement (e.g., a targeted WAP advertisement) to device **1501** based on one or more other criteria or conditions, for example, based on a number of advertisements or WAP advertisements already delivered on device **1501**, based on a number of WAP advertisements already delivered to various users (e.g., various devices **1501**) that requested to view the WAP-site **1504**, taking into account a time of day or a date, or the like.

[0348] If the WAP gateway **1502** determines that a WAP advertisement (e.g., a targeted WAP advertisement) is to be delivered to device **1501**, then WAP gateway **1502** may redirect or re-route the request of device **1501** to ad server **1503**. The redirection or re-routing, indicated by arrow **1512**, may include, for example, transferring from WAP gateway **1502** to ad server **1503** an indication or a representation of the original request of device **1502**, and an instruction or an indication that a WAP advertisement is to be delivered to device **1502**. In some embodiments, the redirection or rerouting may further include one or more properties or identifiers of device **1501** which may be determined by WAP gateway **1502**, for example, MSISDN information of device **1501**, location information of device **1501**, CRM data related to device **1501** or to its user, or the like.

[0349] Ad server **1503** may select a WAP advertisement to be delivered to, and to be presented on, device **1501**. The WAP advertisement may be selected, for example, from advertisements repository **1505**, which may be included in server **1503** or may be operatively associated with server **1503**, as indicated by link **1515**.

[0350] In one embodiment, the WAP advertisement may be selected, for example, by taking into account one or more properties or characteristics of the user of device 1501, based on an analysis of prior behavior of the user of device 1501, one or more properties or characteristics of device 1501, an analysis of prior operations of device 1501, areas of interest indicated by the user of device 1501, CRM data associated with device 1501 or its user, or the like. In one embodiment, the selection process may be non-targeted, for example, a “run-of-network”-type WAP advertisement (e.g., a general WAP advertisement, a non-targeted WAP advertisement or campaign, a pseudo-random or random WAP advertisement, or the like), may be selected for delivery to device 1501.

[0351] In some embodiments, the WAP advertisement may be selected based on, or taking into account, information about the user of device 1501, information from or about (e.g., related to or associated with) the target WAP-site requested by device 1501, information from or about (e.g., related to or associated with) a certain WAP-page of the target WAP-site requested by device 1501, or the like. In one embodiment, for example, the user of device 1501 may log-in to a certain WAP-site 1504, which may store or otherwise include a profile or account associated with the user (or with the user's username and/or password), and the WAP advertisement may be selected based on, or taking into account, information which may be part of the user's profile or account with that WAP-site 1504.

[0352] In some embodiments, for example, the user of device 1501 may view a certain page of a WAP-site 1504, e.g., a page including headlines of sports news. The user of device 1501 may select, using device 1501, a link or other shortcut or pointer from that page, e.g., in order to read a selected story or article. As a result, prior to presenting the requested story or article, a WAP advertisement may be delivered to and presented on device 1501; for example, the WAP advertisement may be selected to be related to one or more topics associated with the viewed page and/or the requested page (e.g., a sports-related advertisement).

[0353] In some embodiments, a certain WAP advertisement may be selected and presented to a user of device 1501, based on an analysis taking into account one or more WAP advertisements previously delivered to or presented on device 1501, and optionally taking into account action(s) that the user of device 1501 performed in response to previously-presented WAP advertisements. For example, in one embodiment, a certain WAP advertisement may be selected for delivery to and presentation on device 1501 only if one or more other certain WAP advertisements were delivered to and/or presented on device 1501. In another embodiment, for example, a certain WAP advertisement may be selected for delivery to and presentation on device 1501 only if one or more other certain WAP advertisements were not delivered to and/or presented on device 1501. In yet another embodiment, a certain WAP advertisement may be selected for delivery to and presentation on device 1501 only if the user of device 1501 responded to (e.g., performed an action in response to) a certain previously-presented WAP advertisement. In some embodiments, WAP advertisements may be selected based on, or taking into account, information which may reside in a “cookie” file or a “cookie” item associated with device 1501 (e.g., a client-side “cookie” or a server-side “cookie”), for example, a “cookie” file storing

information about actions or operations that were previously performed on device 1501, information about WAP advertisements or other (e.g., non-WAP) advertisements that were previously presented on device 1501, information about preferences of the user of device 1501, or the like.

[0354] As indicated by arrow 1513, ad server 1503 may transmit a response to device 1501. The response may include, for example, a content item having therein the selected WAP advertisement. In one embodiment, the response may be transmitted from ad server 1503 to device 1501. In another embodiment, ad server 1503 may provide the selected content (e.g., the tailored WAP advertisement) to WAP gateway 1502, which may deliver or serve the selected content to device 1501.

[0355] In one embodiment, the served content item may include a link, a hyper-link or a shortcut to the WAP-site 1504, e.g., to allow a user of device 1501 to browse to WAP-site 1504 by clicking or otherwise selecting the link, hyper-link or shortcut, for example, utilizing a “manual” or user-activated redirecting mechanism. In another embodiment, the served content item may include a countdown script or mechanism and/or a redirection script or mechanism, such that an automatic redirection of device 1501 to WAP-site 1504 may be performed after a pre-defined time period (e.g., sixty seconds) elapses from the beginning of the presentation of the WAP advertisement on device 1501. In yet another embodiment, combined mechanisms may be used, for example, both a countdown mechanism and a hyperlink mechanism may be included; such that the user of device 1501 is redirected to WAP-site 1504 when the user selects the hyperlink or when the countdown terminates, according to the earlier. Other suitable redirection or re-routing mechanisms may be used.

[0356] In some embodiments, once the presentation of the WAP advertisement on device 1501 is terminated (e.g., the user selects the redirecting hyperlink, or the countdown to redirection terminates), device 1501 may be redirected to WAP-site 1504. For example, as indicated by arrow 1514, device 1501 may transmit a second request to view the content of WAP-site 1504.

[0357] In some embodiments, a suitable mechanism may be used to avoid a loop (e.g., an infinite loop) in which device 1501 is continuously served WAP advertisements but does not view the content of WAP-site 1504. For example, the response sent by ad server 1503 to device 1501 may include a selected WAP advertisement and a hyperlink pointing to the WAP-page requested by device 1501, and the hyperlink may include a tag or a parameter indicating (e.g., to WAP gateway 1502) that a WAP advertisement was already served or delivered to device 1501 in association with the request to view that WAP-page. The additional tag or parameter may be truncated or modified (e.g., by WAP gateway 1502) to allow re-routing to the WAP-page originally requested by device 1501.

[0358] For example, the first request (e.g., the original request) initially transmitted by device 1501 may be different from the second request transmitted by device 1501 after the presentation of the WAP advertisement on device 1501. In one embodiment, for example, the first request transmitted by device 1501 may include a URI pointing to WAP-site 1504; the response transmitted by ad server 1503 to device 1501 may include a content item able to redirect the device

1501 to WAP-site **1504**, such that the content item or the redirection mechanism may include an indication that a WAP advertisement was already served in association with the first request. For example, the redirection link or redirection mechanism delivered by ad server **1503** to device **1501** may have a tag or an indication embedded therein or appended thereto, indicating to WAP gateway **1502** that that a WAP advertisement was already served to device **1501** in association with the first request, and/or that WAP gateway **1502** need not re-route the second request to ad server **1503**, but rather that WAP gateway **1502** is requested to direct the connection to WAP-site **1504**. For example, the first request originally transmitted by device **1501** may include a URI such as, for example, "wap.wapsite.com/index.asp"; the response delivered by ad server **1503** to device **1501** may include a redirecting mechanism using a modified URI such as, for example, "wap.wapsite.com/index.asp?already-saw-ad=yes"; the second request transmitted by device **1501** to WAP gateway **1502** may include the modified URI; and the WAP gateway may determine, based on the tag included in the modified URI, that a WAP advertisement was already served to device **1501** in association with the first request. Other suitable mechanisms may be used, for example, a mechanism that creates, checks or modifies a "cookie" file or a "cookie" item stored in device **1501** indicating whether or not a WAP advertisement (or a number of WAP advertisements) were already presented on device **1501** in association with a certain request to access the WAP-site **1504**.

[0359] In other embodiments, non "splash screen" WAP advertisements may be delivered and/or presented to device **1501** in response to its request to access the WAP-site **1504**. For example, WAP-site **1504** may be operatively associated with ad server **1503**, and may dynamically insert WAP advertisements (e.g., targeted WAP advertisements) into the content (e.g., wap pages or wap content) served by WAP-site **1504**. For example, WAP-site **1504** may include (or, a server of WAP-site **1504** may host) a WAP-page (e.g., represented in HTML format, in WML format, or the like) having a script or a code to dynamically insert a WAP advertisement from ad server **1503**. Ad server **1503** may be operated, for example, to dynamically serve or insert WAP advertisements into WAP pages of WAP-site **1504** that are served to device **1501** (e.g., directly, or indirectly through WAP gateway **1502**), e.g., based on information related to device **1501** and/or based on information about the user of device **1501**.

[0360] In some embodiments, for example, device **1501** may transmit a request to access or view a WAP-page of a content server **1571**. For example, the request may be transferred from device **1501**, through WAP gateway **1502**, to content server **1571**. The content server **1571** may include a content page code **1572** to generate the code of the requested WAP-page. The content page code **1572** may optionally include redirect information, for example, redirecting to a dynamic "splash"-type page or WAP advertisement on ad server **1503**. The redirect information may be transferred back from content server **1571** to device **1501** (e.g., through WAP gateway **1502**). As a result, the browser **1523** of device **1501** may redirect and download the dynamic "splash"-type WAP advertisement from ad server **1503**. The ad server **1503** may select the WAP advertisement in accordance with suitable targeting information and/or capping information, and may serve a "splash"-type WAP advertisement (or a "splash"-type WAP-page including the selected advertisement) including a timer mechanism and/or

a link mechanism (e.g., using a parameter indicating that a WAP advertisement was served) to allow further redirection to the requested WAP-page on content server **1571**. In one embodiment, optionally, ad server **1503** may not serve an advertisement, for example, ad server **1503** may respond to device **1501** by providing a redirect code or a redirect link to the originally requested WAP-page.

[0361] In some embodiments, for example, device **1501** may transmit a request to access or view a WAP-page of a content server **1571**. For example, the request may be transferred from device **1501**, through WAP gateway **1502**, to content server **1571**. The content server **1571** may include a content page code **1572** to generate the code of the requested WAP-page. The content page code **1572** may optionally include one or more references to ad serving functions or to ad serving mechanisms (e.g., a reference to ad server **1503**). The content page code **1572** may be delivered from content server **1571** to device **1501** (e.g., through WAP gateway **1502**), and may be processed by browser **1523** of device **1501**. Browser **1523** may display the delivered content, and may execute the ad serving functions included in the delivered content. The ad serving functions may, for example, call the ad server **1503** to request one or more advertisements (e.g., banner advertisements) to be included in the WAP-page presented on device **1501**. Optionally, the call may include suitable targeting information and/or capping information, which may be used by ad server **1503** in the advertisement selection process. For example, the information may include information about the requested WAP-page, one or more categories or topics associated with the requested WAP-page, a "cookie" file or "cookie" item, formatting information associated with the advertisement and/or with the requested WAP-page, or the like. The ad server **1503** may select the WAP advertisement in accordance with suitable targeting information and/or capping information. The ad server **1503** may reply by generating, and transmitting to device **1501**, WML code corresponding to one or more advertisements. In one embodiment, optionally, ad server **1503** may not serve an advertisement, for example, ad server **1503** may not generate and/or may not deliver to device **1501** WML code corresponding to advertisement(s).

[0362] For example, device **1501** may transmit a request to access a page of WAP-site **1504**; in response, WAP-site **1504** may prepare and may send the requested wap page, which may include a selected (e.g., targeted) WAP advertisement. Optionally, WAP gateway **1502** may be used to transfer the request from device **1501** to WAP-site **1504**, to transfer the response from WAP-site **1504** to device **1501**, to re-format or re-package the content provided by WAP-site **1504** in order to accommodate one or more properties of device **1501**, or the like. Optionally, in one embodiment, WAP-site **1504** may be operatively associated (e.g., directly or indirectly) with ad server **1503**, as indicate by link **1517**; and/or WAP-site **1504** may directly serve the selected advertisement (e.g., selected by ad server **1503** from repository **1505**), e.g., as indicate by link **1518**.

[0363] In some embodiments, advertisements delivered using WAP to device **1501** may include, for example, textual content, audio content, graphic content, video content, informational items, coupons, promotion items, banner, banner ads, or the like. In some embodiments, WAP advertisements may be selected in accordance with one or more properties

of device **1501**, and/or in accordance with one or more properties of the viewed WAP-page of WAP-site **1501**. For example, in one embodiment, WAP-site **1504** may serve to device **1501** a content (e.g., a WAP WAP-page) having a certain font type, font size, or color; and the WAP advertisement(s) inserted into the served content (e.g., into the WAP WAP-page) may have an identical or a similar font type, font size, or color.

[0364] In some embodiments, WAP advertisements may be selected in order to accommodate one or more properties of device **1501**, or, in one embodiment, to substantially “best fit” device **1501** or its capabilities. For example, if device **1501** does not support presentation of graphic advertisements, then a non-graphic (e.g., textual) WAP advertisement(s) may be selected for delivery to and presentation on device **1501**. In contrast, if device **1501** supports presentation of graphic advertisements, then it may be determined to deliver to device **1501** a graphic WAP advertisement and not a textual WAP advertisement.

[0365] In some embodiments, WAP advertisements may be served to device **1501** within a WAP page, such that substantially no modification is performed to the original wap-content of the WAP-site **1504** that device **1501** requested to view. This may allow, for example, an improved user experience to the user of device **1501**.

[0366] In some embodiments, optionally, a WAP advertisement from WAP-site **1504** may not be limited to a single page or a certain page of WAP-site **1504**, and may be re-used when the user of device **1504** views other pages of WAP-site **1504**, or multiple pages of WAP-site **1504**. In one embodiment, for example, device **1501** may request to view a first page of WAP-site **1504**, and may be provided with the first page which may include a certain (e.g., targeted) WAP advertisement; device **1501** may then request to view a second page of WAP-site **1504**, and may be provided with the second page which may include the same WAP advertisement that was included in the first page. In another embodiment, for example, device **1501** may request to view a first page of WAP-site **1504**, and may be provided with the first page which may include a first (e.g., targeted) WAP advertisement; device **1501** may then request to view a second page of WAP-site **1504**, and may be provided with the second page which may include a second, different, WAP advertisement.

[0367] In some embodiments, WAP advertisements presented on device **1501** (e.g., embedded within a WAP-page of WAP-site **1504**, or presented as a “splash” screen prior to viewing the WAP-page of WAP-site **1504**) may be clickable, selectable, or interactive. In one embodiment, for example, selecting or clicking on a presented WAP advertisement may redirect the device **1501** to another WAP-page or another WAP-site. In some embodiments, one or more keys of device **1501** (e.g., “soft keys”) may be configured to allow the user of device **1501** to select from a menu of actions which may be associated with a certain WAP advertisement, e.g., as described above.

[0368] In some embodiments, WAP advertisements presented before or within a WAP-page may be in a language used by that WAP-page. For example, ad server **1503** may select a WAP advertisement by taking into account properties such as, for example, international or regional settings, language settings, character sets, text flow direction (e.g., left to right or right to left), or the like.

[0369] In some embodiments, WAP advertisements presented before or within a WAP-page may indicate to the user of device **1501** that the WAP advertisement is being loaded while the WAP advertisement is being loaded. In one embodiment, for example, a “progress bar” or a progress indicator may be used. In another embodiment, a first layer (e.g., indicating “advertisement is loading”) may be presented while the WAP advertisement is being downloaded to device **1501**, and a second layer (e.g., the WAP advertisement content) may be presented once the download is completed. In yet another embodiment, a textual message may be used to indicate that a graphical WAP advertisement is being downloaded or delivered, and the graphical WAP advertisement, once downloaded, may replace or overwrite the textual message. Other suitable progress indication or downloading indications may be used in conjunction with delivery of WAP advertisements.

[0370] In some embodiments, a WAP advertisement of a “splash” screen type, e.g., delivered to and presented on device **1501** prior to presentation of a requested WAP-page, may include multiple items, components, objects or parts. For example, in one embodiment, a first layer of a “splash” WAP advertisement may be followed (e.g., after a certain period of time) by a second layer of a “splash” WAP advertisement. In another embodiment, for example, multiple “splash” screens or layers may be used, e.g., using multiple redirecting mechanisms.

[0371] In one embodiment, WAP advertisements may be presented for a pre-defined period of time, e.g., a substantially constant period of time (e.g., 30 seconds, 60 seconds, or the like), and may optionally be presented in conjunction with a “manual” redirecting mechanism (e.g., allowing the user to redirect to the requested WAP-page by clicking a hyperlink or by “closing” the advertisement) and/or an “automatic” redirecting mechanism (e.g., using a timing mechanism that automatically redirects to the requested WAP-page when the pre-defined presentation period elapses). In another embodiment, various WAP advertisements may be presented to the user of device **1501** for various, different, periods of time; for example, a first WAP advertisement may selectively be presented to the user of device **1501** for a first period of time, whereas a second WAP advertisement may selectively be presented to the user of device **1501** for a second period of time. In some embodiments, various WAP advertisements may be associated with various presentation periods of time, e.g., a longer presentation time may be associated with a longer textual message, a shorter presentation time may be associated with a longer textual message, a longer presentation time may be associated with a WAP advertisement sponsored by a certain advertising entity, or the like. Other suitable criteria or conditions may be used to set, or to modify or configure, redirecting mechanisms from a WAP advertisement to a requested WAP-page. In one embodiment, for example, an automatic redirecting mechanism may be used when the user of device **1501** initiates a request to view a WAP-page and receives a “splash” type banner ad; in contrast, if the user of device **1501** selects (e.g., clicks) a presented WAP advertisement or requests to view more details about the WAP advertisement or to perform an action related to the WAP advertisement, an automatic redirecting mechanism (e.g., a timer until automatic refresh or reload) may not be used, and only a manual redirecting mechanism (e.g., user-activated by clicking a hyperlink) may be used.

[0372] In some embodiments, an automatic redirecting mechanism of a WAP advertisement may be reset or prolonged, for example, if one or more conditions are met. For example, in one embodiment, a WAP advertisement may be presented on device **1501**, utilizing a manual redirecting mechanism (e.g., allowing the user to proceed to the requested WAP-page by clicking a hyperlink) and further utilizing an automatic redirecting mechanism (e.g., a countdown timer which automatically redirects to the requested WAP-page when the presentation period elapses). In one embodiment, for example, the user may be inactive for a first portion of the presentation period (e.g., the first 50 seconds out of a total of 60 seconds of pre-defined presentation period), and may then perform an action (e.g., scroll down through the WAP advertisement). If the action is performed within a pre-defined time window, e.g., within the last 25 percent of the pre-defined presentation period, then the presentation period may be prolonged, reset or restarted upon such action.

[0373] In some embodiments, optionally, if the user of device **1501** attempts to reload or refresh a presented WAP advertisement (e.g., a “splash” screen type WAP advertisement), for example, using a refresh or reload operation of the browser **1523**, then the WAP advertisement may not reload, and instead the user may be redirected to the requested WAP-page. This may be performed, for example, using a “cookie” mechanism, or using a tag or other indication embedded in the URI of the presented WAP advertisement, to avoid multiple reloading or refreshing of a WAP advertisement, or to indicate that a reloading or refreshing operation is to be redirected to the requested WAP-page.

[0374] In some embodiments, substantially no WAP advertisements may be delivered and/or presented if it is determined that one or more conditions are met; for example, if it is determined that the user of device **1501** requests to access a WAP-page that does not exist, if it is determined that the user of device **1501** requests to access a WAP-page that includes content that is not supported by device **1501**, if it is determined that the user of device **1501** is unauthorized to access the requested WAP-page (e.g., if a wrong username or password are used, or if the user attempts to access a folder or a file which are not publicly shared), if it is determined that the requested WAP-page is blank, if it is determined that WAP-site **1504** is not responding (e.g., momentarily, or for a pre-defined period of time), if an error is detected (e.g., an “HTTP **404**” error, a “page not found” error, an “operation timed out” error), or the like.

[0375] In some embodiments, a WAP advertisement presented before or within a requested WAP-page may be associated with one or more user-selectable actions, e.g., that the user may select and device **1501** may perform in relation to the presented WAP advertisement. The actions may include, for example, visiting a WAP-site associated with the WAP advertisement (e.g., by following another hyperlink associated with the WAP advertisement or embedded therein); saving or locally storing a link (e.g., a “favorite” or a “bookmark”) pointing to a WAP-site related to the WAP advertisement; saving or locally storing a coupon or a promotion item included in the WAP advertisement; requesting and/or viewing additional information related to the WAP advertisement; requesting to see a map related to the content of the WAP advertisement; dialing a pre-defined phone number associated with the WAP advertisement;

sending an Email message, a SMS message, a MMS message or an IM message to a destination associated with the WAP advertisement; redirecting to, or opening, a pre-defined form which may be associated with the WAP advertisement and may be filled by the user of device **1501** (e.g., utilizing fields, radio buttons, checkboxes, drop-down menus, or other form elements) and submitted to a pre-defined destination (e.g., a URL or a Mobile Subscriber ISDN Number); locally saving the WAP advertisement, or a portion thereof, for subsequent (e.g., offline or online) viewing or playback; storing a “contact” associated with the WAP advertisement into a “phone book” application of device **1501**; storing an “event” and/or a “reminder” associated with the WAP advertisement into a “calendar” or “scheduler” application of device **1501**; or the like.

[0376] In some embodiments, multiple actions or multiple instances of a certain type of action may be supported in association with a WAP advertisement; for example, a WAP advertisement may be associated with a first action item allowing the user to dial a first phone number, and with a second action item allowing the user to dial a second, different, phone number.

[0377] In some embodiments, presentation of a WAP advertisement or selection of a user-selectable action associated therewith, may trigger a pre-defined automatic reply (“auto-reply”) mechanism (e.g., a server-side mechanism), for example, an SMS/MMS auto-reply mechanism. In other embodiments, dynamic data (e.g., within a presented WAP advertisement) may be used, and/or state-based WAP advertisements may be used.

[0378] In some embodiments, a first WAP advertisement may be associated with a first set of user-selectable actions, whereas a second, different, WAP advertisement may be associated with a second, different, set of user-selectable actions. In some embodiments, actions performed by the user in relation to a presented WAP advertisement may be logged or tracked, e.g., locally by device **1501** and/or remotely (e.g., utilizing WAP gateway **1502** or ad server **1503**). In some embodiments, the length of time period of presentation of WAP advertisement(s) may be logged or tracked, e.g., to allow a reporting that a first WAP advertisement is viewed (by a specific user, or on average) for a first time period, whereas a second WAP advertisement is viewed (by a specific user, or on average) for a second time period. In some embodiments, “cookie” files or items may be used in conjunction with presentation of WAP advertisements, for example, to allow reporting of logged actions, logged presentations, calculation or estimation of market “reach” data, or the like.

[0379] In some embodiments, WAP advertisements may be prepared, may be delivered, may be presented and/or may have properties, in accordance with one or more advertising or marketing standards or guidelines. For example, in one embodiment, WAP advertisements may be in accordance with guidelines of Mobile Marketing Association (MMA), e.g., a textual WAP advertisement may have no more than two lines of text, a textual WAP advertisement may not be more than 32 characters total, or the like.

[0380] In some embodiments, post-click tracking and reporting of WAP advertisements may be used. For example, a presented WAP advertisement may include a hyperlink to a WAP-page related to an entity or a product which is

advertised in the WAP advertisement. The user may click on the hyperlink, and the click-through information may be logged and tracked, for example, using server statistics, using a tag included in the clicked hyperlink, or the like.

[0381] In some embodiments, delivery and/or presentation of WAP advertisements may be performed by taking into account a pre-defined capping or quota. For example, in one embodiment, a pre-defined quota of WAP advertisements may be presented to various multiple users that request to view a certain WAP-site **1504**; for example, the WAP-site may have a capping of 500 impressions, such that not more than 500 impressions of WAP advertisements are delivered and presented to users that request to access that WAP-site. In another embodiment, a capping or a quota may be associated with a certain WAP-page of a WAP-site, or with a portion or section of a WAP-site. In yet another embodiment, user-related or device-side capping or quota may be used, for example, to limit the number of WAP advertisements presented to a certain user; for example, not more than a pre-defined number of WAP advertisements may be presented to a user within an hour or a day. In still another embodiment, WAP advertisement format capping may be used, for example, to allow presentation of WAP advertisements having pre-defined dimensions or formats, and to avoid presentation of WAP advertisements that exceed pre-defined dimensions or are not in accordance with a pre-defined format.

[0382] Although portions of the discussion herein may relate, for demonstrative purposes, to “WAP” advertisements, embodiments of the invention are not limited in this regard, and may be used, for example, in conjunction with non WAP advertisements, in conjunction with advertisements delivered using other wireless communication protocols or standards, or the like.

[0383] Although portions of the discussion herein may relate, for demonstrative purposes, to WAP “advertisements”, embodiments of the invention are not limited in this regard, and may be used, for example, in conjunction with other items which need not be advertisements, e.g., marketing materials, sales materials, offers, promotions, coupons or vouchers, promotional items, discount vouchers, gift vouchers, informational items, data, or the like.

[0384] Although portions of the discussion herein may relate, for demonstrative purposes, to delivery and/or presentation of WAP advertisements prior to delivery and/or presentation of WAP content (e.g., a requested WAP WAP-page of a WAP-site), embodiments of the invention are not limited in this regard, and may be used, for example, in conjunction with delivery and/or presentation of WAP advertisements after delivery and/or presentation of WAP content (e.g., a requested WAP WAP-page of a WAP-site), and/or in conjunction with delivery and/or presentation of WAP advertisements substantially in parallel to or simultaneously with delivery and/or presentation of WAP content (e.g., a requested WAP WAP-page of a WAP-site). Other suitable schedules or timing may be used for delivery and/or presentation of WAP advertisements, for example, substantially together with, before, or after delivery and/or presentation of WAP content (e.g., a requested WAP WAP-page of a WAP-site).

[0385] Portions of the discussion herein may be combined with other portions of the discussion herein, and portions of

embodiments described herein may be combined with other portions of embodiments described herein. For example, deliver, presentation and/or usage of WAP advertisements may utilize one or more features, properties, functions, devices and/or methods as described in detail in other portions of the discussion herein which may not specifically refer to WAP advertisements.

[0386] Some embodiments of the invention may be implemented by software, by hardware, or by any combination of software and/or hardware as may be suitable for specific applications or in accordance with specific design requirements. Embodiments of the invention may include units and/or sub-units, which may be separate of each other or combined together, in whole or in part, and may be implemented using specific, multi-purpose or general processors or controllers, or devices as are known in the art. Some embodiments of the invention may include buffers, registers, stacks, storage units and/or memory units, for temporary or long-term storage of data or in order to facilitate the operation of a specific embodiment.

[0387] Some embodiments of the invention may be implemented, for example, using a machine-readable medium or article which may store an instruction or a set of instructions that, if executed by a machine, for example, by system **100** of FIG. **1**, by ad server **110** of FIG. **1**, by communicator **150** of FIG. **1**, by device **170** of FIG. **1**, by control server **120** of FIG. **1**, or by other suitable machines, cause the machine to perform a method and/or operations in accordance with embodiments of the invention. Such machine may include, for example, any suitable processing platform, computing platform, computing device, processing device, computing system, processing system, computer, processor, or the like, and may be implemented using any suitable combination of hardware and/or software. The machine-readable medium or article may include, for example, any suitable type of memory unit (e.g., memory unit **118**, memory unit **159**, or database **140**), memory device, memory article, memory medium, storage device, storage article, storage medium and/or storage unit, for example, memory, removable or non-removable media, erasable or non-erasable media; writeable or re-writeable media, digital or analog media, hard disk, floppy disk, Compact Disk Read Only Memory (CD-ROM), Compact Disk Recordable (CD-R), Compact Disk Re-Writeable (CD-RW), optical disk, magnetic media, various types of Digital Versatile Disks (DVDs), a tape, a cassette, or the like. The instructions may include any suitable type of code, for example, source code, compiled code, interpreted code, executable code, static code, dynamic code, or the like, and may be implemented using any suitable high-level, low-level, object-oriented, visual, compiled and/or interpreted programming language, e.g., C, C++, Java, BASIC, Pascal, Fortran, Cobol, assembly language, machine code, or the like.

[0388] While certain features of the invention have been illustrated and described herein, many modifications, substitutions, changes, and equivalents may occur to those skilled in the art. It is, therefore, to be understood that the appended claims are intended to cover all such modifications and changes as fall within the true spirit of the invention.

What is claimed is:

1. A system comprising:
 - a server to receive a request transmitted by a wireless communication device using Wireless Application Protocol (WAP) to access a WAP-page of a WAP-site,
 - the server to select an advertisement based on a property selected from a group consisting of: a property of said wireless communication device, and a property associated with a user of said wireless communication device,
 - and the server to serve the advertisement to said wireless communication device using WAP in response to said request.
2. The system of claim 1, wherein said advertisement is included in said WAP-page, and wherein said server is to serve said WAP-page to said wireless communication device in response to said request.
3. The system of claim 1, wherein said server is to serve said advertisement to said wireless communication device separately from serving said WAP-page to said wireless communication device.
4. The system of claim 1, wherein said server is to serve said advertisement to said wireless communication device prior to serving said WAP-page to said wireless communication device.
5. The system of claim 1, wherein said advertisement comprises a code that when executed by said wireless communication device causes said wireless communication device:
 - to present said advertisement for a pre-defined time period; and
 - to redirect said wireless communication device to said WAP-page after said pre-defined time period elapses.
6. The system of claim 1, wherein said advertisement comprises a hyperlink that when selected by an input unit of said wireless communication device causes said wireless communication device to redirect said wireless communication device to said WAP-page.
7. The system of claim 1, wherein said advertisement comprises a code that when executed by said wireless communication device causes said wireless communication device:
 - to present said advertisement for a pre-defined time period;
 - to present a hyperlink on said wireless communication device; and
 - to redirect said wireless communication device to said WAP-page upon the earlier of:
 - when said pre-defined time period elapses, or when said hyperlink is selected by an input unit of said wireless communication device.
8. The system of claim 1, wherein said property of said wireless communication device comprises a presentation capability of said wireless communication device.
9. The system of claim 1, wherein said property associated with said user comprises a property selected from a group consisting of:
 - an age of said user,
 - a gender of said user,

- a profession of said user,
- an occupation of said user,
- a family status of said user,
- a location of said user,
- an operation previously performed by said user using said wireless communication device,
- an information item from Customer Relationship Management information of said user,
- an information associated with a content currently presented on said wireless communication device,
- a category associated with a requested WAP-site,
- a category associated with a currently-viewed WAP-site,
- a search query entered using said wireless communication device, and
- a search result presented on said wireless communication device.

10. The system of claim 1, wherein said server is to provide a progress indication corresponding to progress of delivery of said advertisement to said wireless communication device, and wherein said wireless communication device is able to present a progress representation based on said progress indication.

11. The system of claim 1, wherein said advertisement is selectively associated with one or more user-selectable operations, said server is to deliver to said wireless communication device a code that when executed by said wireless communication device causes said wireless communication device to present said one or more user-selectable operations, and said user wireless communication device comprises an input unit to select one of said one or more user-selectable operations.

12. The system of claim 11, wherein said wireless communication device comprises a soft-key to select an operation from the one or more user-selectable operations.

13. The system of claim 1, wherein said wireless communication device comprises a repository to locally store said advertisement in response to a command to save the advertisement.

14. The system of claim 1, wherein said wireless communication device comprises a repository to locally store said advertisement separately from said WAP-page in response to a command to save the advertisement.

15. The system of claim 1, wherein said advertisement comprises a banner advertisement included in said WAP-page.

16. The system of claim 11, wherein said one or more user-selectable operations comprise at least an operation selected from a group consisting of:

- accessing another WAP-page associated with the requested WAP-page,
- accessing another WAP-page associated with the requested WAP-site, storing a bookmark pointing to a WAP-site associated with the selected advertisement,
- locally storing a copy of at least a portion of the selected advertisement,
- locally storing a promotional item associated with the selected advertisement,

requesting to receive additional information associated with the selected advertisement,

requesting to view a map associated with the selected advertisement,

initiating a call to a pre-defined phone number associated with the selected advertisement,

sending a Short Message Service (SMS) message to a pre-defined destination associated with the selected advertisement,

submitting a pre-defined form associated with the selected advertisement,

storing in a phonebook database a contact item associated with the selected advertisement, and

storing in a calendar database an event item associated with the selected advertisement.

17. A method comprising:

receiving a request transmitted by a wireless communication device using Wireless Application Protocol (WAP) to access a WAP-page of a WAP-site;

selecting an advertisement based on a property selected from a group consisting of: a property of said wireless communication device, and a property associated with a user of said wireless communication device; and

serving the advertisement to said wireless communication device using WAP in response to said request.

18. The method of claim 17, wherein serving comprises:

serving an advertisement included in said WAP-page in response to said request.

19. The method of claim 17, wherein serving comprises:

serving said advertisement to said wireless communication device separately from serving said WAP-page to said wireless communication device.

20. The method of claim 17, wherein serving comprises:

serving said advertisement to said wireless communication device prior to serving said WAP-page to said wireless communication device.

21. The method of claim 17, wherein serving comprises:

serving an advertisement comprising a code that when executed by said wireless communication device causes said wireless communication device:

to present said advertisement for a pre-defined time period; and

to redirect said wireless communication device to said WAP-page after said pre-defined time period elapses.

22. The method of claim 17, wherein serving comprises:

serving an advertisement comprising a hyperlink that when selected by an input unit of said wireless communication device causes said wireless communication device to redirect said wireless communication device to said WAP-page.

23. The method of claim 17, wherein serving comprises:

serving an advertisement comprising a code that when executed by said wireless communication device causes said wireless communication device:

to present said advertisement for a pre-defined time period;

to present a hyperlink on said wireless communication device; and

to redirect said wireless communication device to said WAP-page upon the earlier of:

when said pre-defined time period elapses, or when said hyperlink is selected by an input unit of said wireless communication device.

24. The method of claim 17, further comprising:

providing a progress indication corresponding to progress of delivery of said advertisement to said wireless communication device; and

presenting a progress representation based on said progress indication.

25. The method of claim 17, further comprising:

selectively associating said advertisement with one or more user-selectable operations; and

delivering to said wireless communication device a code that when executed by said wireless communication device causes said wireless communication device to present said one or more user-selectable operations.

26. The method of claim 25, wherein delivering comprises:

delivering to said wireless communication device a code that when executed by said wireless communication device causes said wireless communication device to present one or more user-selectable operations selected from a group consisting of:

accessing another WAP-page associated with the requested WAP-page,

accessing another WAP-page associated with the requested WAP-site,

storing a bookmark pointing to a WAP-site associated with the selected advertisement,

locally storing a copy of at least a portion of the selected advertisement,

locally storing a promotional item associated with the selected advertisement,

requesting to receive additional information associated with the selected advertisement,

requesting to view a map associated with the selected advertisement,

initiating a call to a pre-defined phone number associated with the selected advertisement,

sending a Short Message Service (SMS) message to a pre-defined destination associated with the selected advertisement,

submitting a pre-defined form associated with the selected advertisement,

storing in a phonebook database a contact item associated with the selected advertisement, and

storing in a calendar database an event item associated with the selected advertisement.

27. The method of claim 17, wherein serving comprises:

serving a banner advertisement included in said WAP-page.

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