US 20080256216A1

(19) United States

(12) Patent Application Publication

AARTS

(10) Pub. No.: US 2008/0256216 A1

(43) Pub. Date: Oct. 16, 2008

(54) METHOD OF SUPPLYING ADVERTISING CONTENT

(75) Inventor: Robert AARTS, Espoo (FI)

Correspondence Address:
HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD, INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400 (US)

(73) Assignee: HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P.

(21) Appl. No.: 12/099,489

(22) Filed: Apr. 8, 2008

(30) Foreign Application Priority Data

Apr. 16, 2007 (EP) 07106253.3

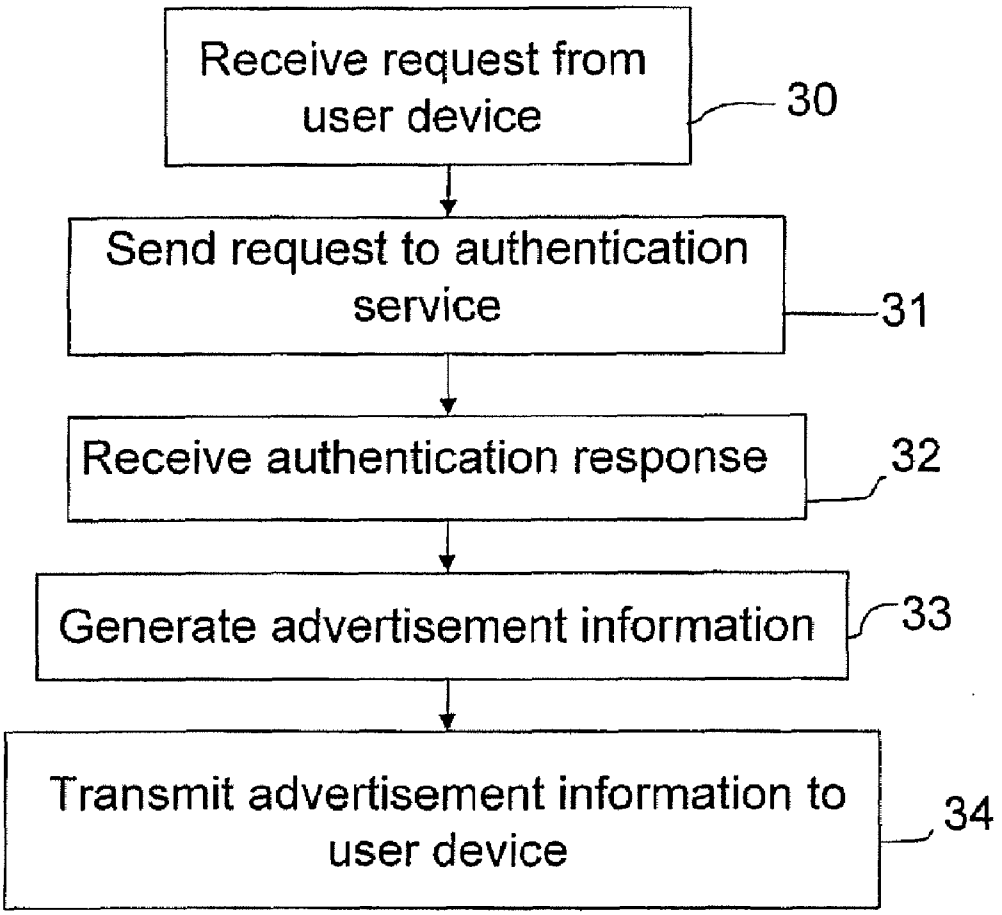
Publication Classification

(51) Int. Cl.
G06F 15/16 (2006.01)

(52) U.S. Cl. 709/217

(57) ABSTRACT

A method of supplying advertising content, a method comprising the steps of receiving content data, the data comprising metadata identifying an advertisement service, transmitting a data request to the advertisement service in accordance with the metadata, transmitting an authentication request to an authentication server, receiving an authentication response, the authentication response comprising user information, and transmitting advertisement information in accordance with the user information.



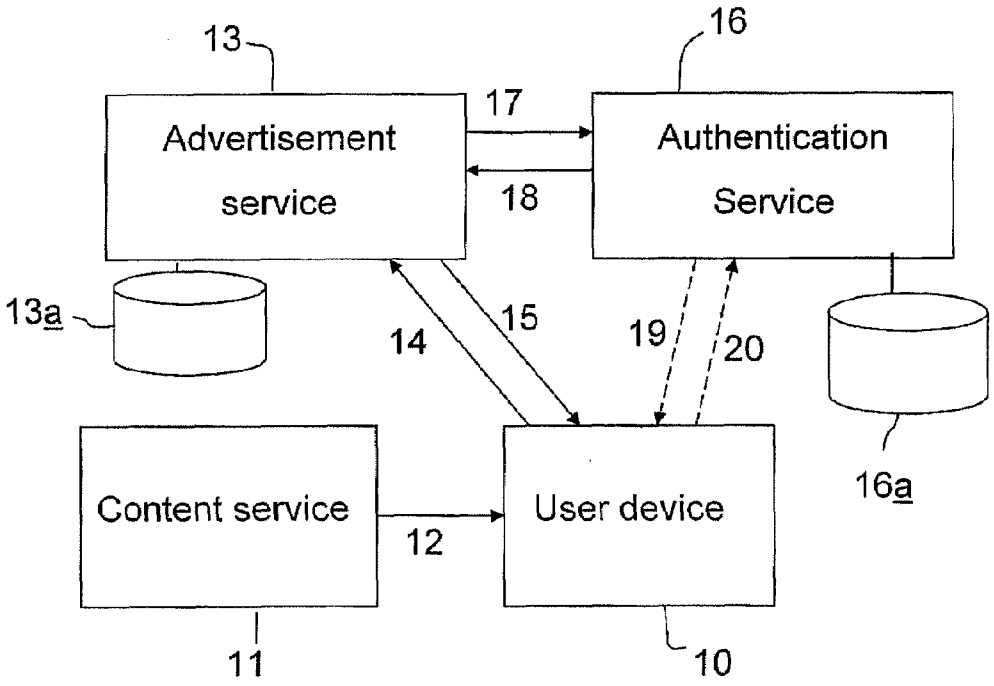

13
16
Advertisement service
17
18
Authentication Service
13a
14
15
19
20
16a
Content service
12
User device
11
10

Fig. 1

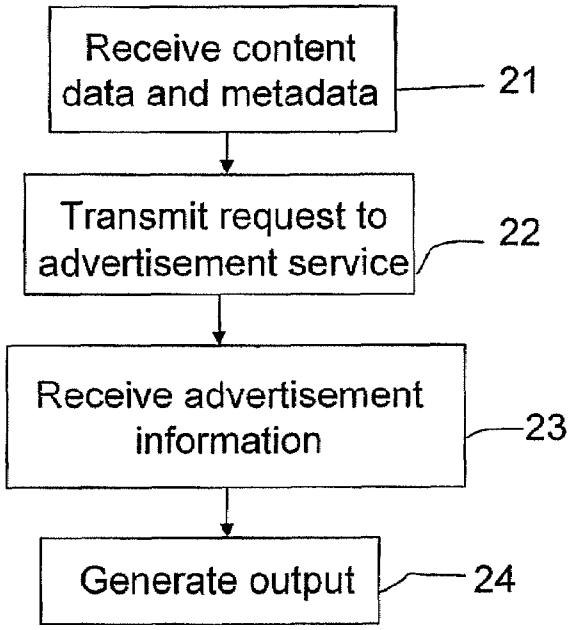

Receive content data and metadata
21
Transmit request to advertisement service
22
Receive advertisement information
23
Generate output
24

Fig. 2

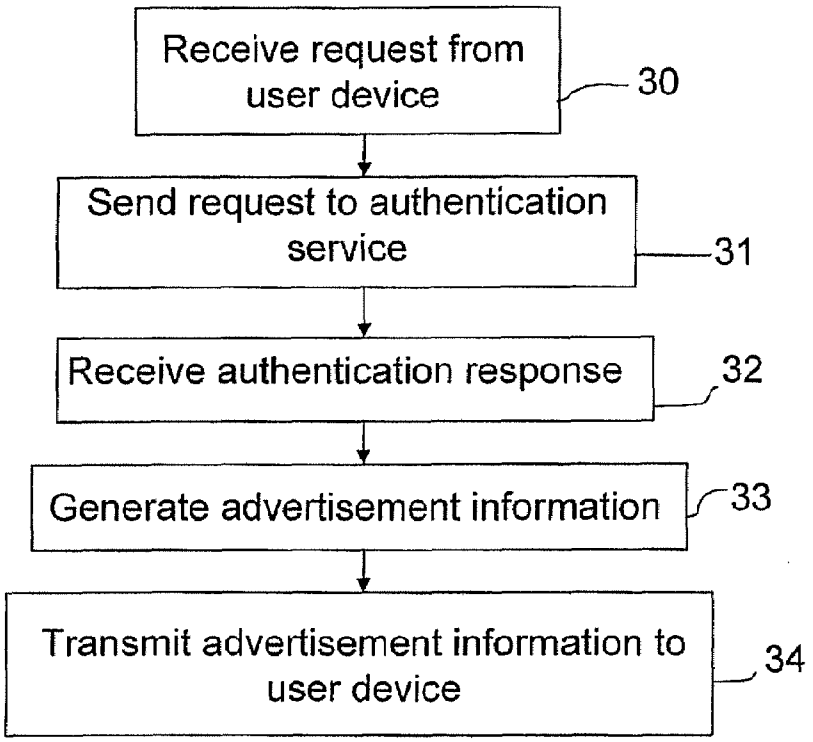

Receive request from user device
30
Send request to authentication service
31
Receive authentication response
32
Generate advertisement information
33
Transmit advertisement information to user device
34

Fig. 3

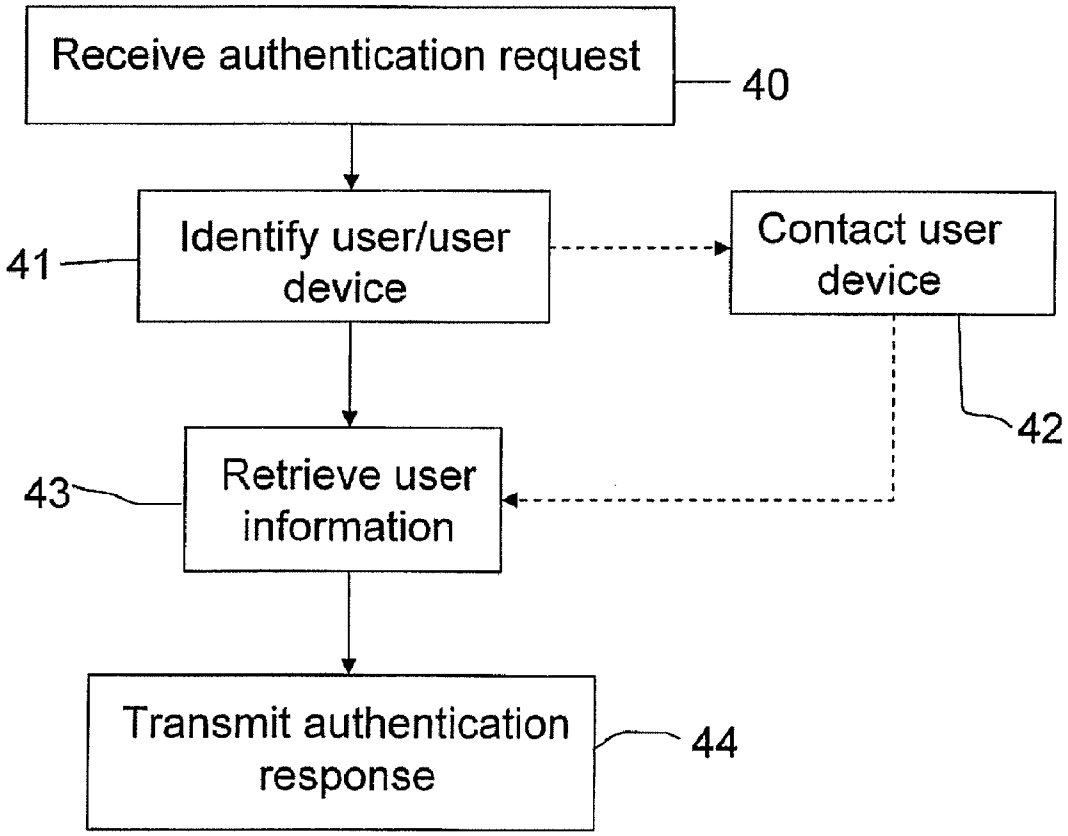

Receive authentication request
40
Identify user/user device
41
Contact user device
42
Retrieve user information
43
Transmit authentication response
44

Fig. 4

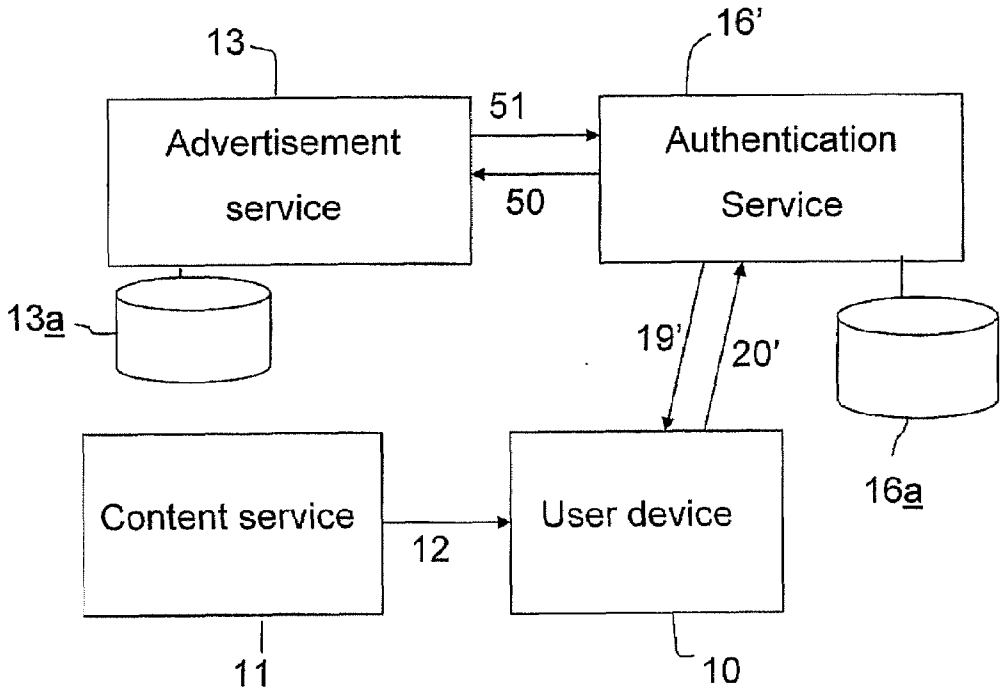

13
16'
Advertisement service
51
50
Authentication Service
13a
19'
20'
16a
Content service
12
User device
11
10

Fig. 5

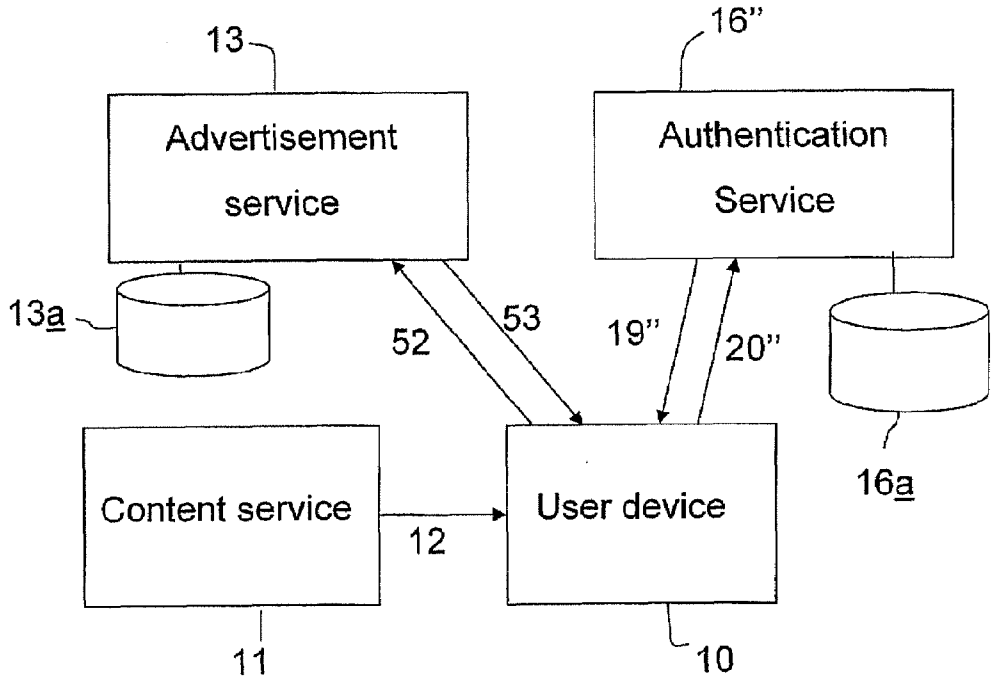

13
Advertisement service
16"
Authentication Service
13a
52
53
19"
20"
16a
Content service
12
User device
11
10

Fig. 6

METHOD OF SUPPLYING ADVERTISING CONTENT

DESCRIPTION OF INVENTION

[0001] This invention relates to a method of supplying advertising content and an apparatus for supplying advertising information, particularly but not exclusively for supplying advertising information in accordance with user information along with content information.

BACKGROUND OF THE INVENTION

[0002] The provision and display of advertisements to users of the internet is well known. It is further known to attempt to personalise the advertisements supplied to a particular user, in general by maintaining a user profile corresponding to some characteristics of the user, and supplying advertisement information in accordance with the user profile. The user profile information may simply categorise the user in accordance with demographic terms, such as age, gender or geographical location, or may be a more detailed profile based on the user's recorded browsing habits, purchasing patterns or indeed on information voluntarily submitted by a user.

[0003] Where such profiles are maintained and stored, there are potential problems with user privacy, in that personal or private information may be made available to third parties in a manner which is not desirable to the user. This is particularly the case where the user can be personally identified by information stored in the profile and made available to third party systems.

[0004] Another issue that arises in connection with providing advertisements is where the content information requested and received by the user is not in response to, for example, a single page request generated by the user, but is broadcast content information transmitted to a number of users. Such content data may for example comprise a Digital Video Broadcasting (DVB) broadcast, internet radio, podcasts, and other visual or audio content transmitted to a plurality of users. Where such broadcast content is provided to a large number of users, any advertisement transmitted with the content will of necessity be generic and non-personalised, although the advertisements may of course be selected in accordance with the transmitted content.

SUMMARY OF THE INVENTION

[0005] According to a first aspect of the invention, we provide a method of supplying advertising content, the method comprising the steps of receiving content data, the data comprising metadata identifying an advertisement service, transmitting a data request to the advertisement service in accordance with the metadata, transmitting an authentication request to an authentication server, receiving an authentication response, the authentication response comprising user information, and transmitting advertisement information in accordance with the user information.

[0006] The content data may comprise broadcast content data.

[0007] The step of transmitting an authentication request may comprise transmitting the authentication request to a federated authentication service.

[0008] The data request may be sent by a user device and the authentication service may communicate with the user device to verify the authentication request before transmitting the authentication response.

[0009] The method may further comprise the step of transmitting user device configuration information and the step of transmitting advertisement information may comprise transmitting advertisement information in accordance with the user device configuration information.

[0010] The user information may comprise demographic information corresponding to the user.

[0011] The method may comprise the step of receiving the advertisement information and generating an output in accordance with the advertisement information.

[0012] The method may comprise providing a persistent identifier corresponding to the user and tracking advertisement information sent to the user identified by the persistent identifier.

[0013] According to a second aspect of the invention, we provide an apparatus operable to perform the method according to the first aspect of the invention, the apparatus comprising a user device operable to generate an output in accordance with the content data and the advertisement data and an advertisement server operable to receive the data request from the user device, transmit an authentication request to an authentication service, receive an authentication response from the authentication service comprising user information, and retrieve advertisement information in accordance with the user information and transmit it to the user device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] An embodiment of the invention will now be described by way of example only with reference to the accompanying drawings, wherein:

[0015] FIG. **1** is a diagrammatic illustration of an apparatus embodying the present invention,

[0016] FIG. **2** is a flow chart showing a method of operating a user device,

[0017] FIG. **3** is a flow chart showing a method of authorising an advertisement service,

[0018] FIG. **4** is a flow chart showing a method of operating an authentication service,

[0019] FIG. **5** is a diagrammatic illustration of a further apparatus embodying the present invention, and

[0020] FIG. **6** is a diagrammatic illustration of a yet further apparatus embodying the present invention

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0021] Referring to FIG. **1**, a user device is shown generally at **10**. The user device may be any suitable apparatus operable to receive digital content information and present it to a user. The user device may therefore be a personal computer receiving streamed data or other content data from the Internet, but may alternatively be a wireless computing device, or an entertainment system such as a cable or satellite receiver, or any other appropriate device as required. The user device receives content information from a content service **11** as shown by arrow **12**. The content service again may be any suitable supplier data source, and so accordingly may be a web server serving a digital page transmission, a web server providing streamed audio or visual content, or a satellite or wireless broadcasting transmitting appropriate content information.

An advertisement service is shown at **13**. The advertised service stores advertisement information in store **13***a*, and may also track advertisement data sent to a particular user or device. The advertisement device is operable to receive a data request **14** from the user device **10** and return advertisement information as shown at **15** in accordance with the request. An authentication service is shown at **16** operable to receive an authentication request **17** from the advertisement service and return an authentication response **18**. The authentication service **16** has a store **16***a* in which information corresponding to identified users is held, to permit the authentication service **16** to perform the verification and supply user information. As shown by arrows **19** and **20**, the authentication service **16** may be operable to authenticate the user apparatus **10** in response to the authentication request **17** by communicating with the user device **10**.

[0022] The system of FIG. **1** operates as follows, With reference to FIG. **2**, at step **21** the user device **10** receives data including content information from the content service **11**, the content information comprising content data to be used in providing an output to the user, and metadata to enable appropriate advertisement information to be obtained. The metadata comprises a reference or pointer to the advertisement service **13**. At step **22**, the user device **10** therefore transmits a data request to the advertisement service **13** in accordance with the metadata received in the content information. At step **23**, the user device receives advertisement information from the advertisement service **13**, and at step **24** generates an output in accordance with the newly received content information and advertisement information.

[0023] The advertisement service operates as follows. At step **30**, the advertisement service **13** receives the data request from the user device **10**. At step **31**, the advertisement service **13** transmits an authentication request **17** to the authentication server **16**. This authentication request may, for example, comprise an identifier corresponding to the user device **10**, or any other information appropriate to enable the authentication service to identify the user device **10** such as network layer information. At step **32** the advertisement service **13** receives an authentication response from the authentication service **16**, the authentication response comprises information corresponding to a user of the user device **10**. Preferably, no identifying user information is provided, that is the user may not be identified from the transmitted information. The authentication service **16** transmits general information thus allowing an advertisement to be personalised to the user, such as age, gender, geographic information or any other information as appropriate. At step **33**, the advertisement service generates advertisement information in accordance with the received authentication information, and at step **34** transmits the advertisement information to the user device **10**.

[0024] As shown in FIG. **4**, the authentication service operates as follows. At step **40**, the authentication service **16** receives the authentication request **17** from the advertisement service **13**. At step **41**, the authentication service identifies the user or user device **10** from the information transmitted in the authentication request **17**. The data request sent by the user device to the advertisement service **13** may include any appropriate identifier information, identifying the user device **10** or identifying the user in a manner recognised by the authentication service **16**, and at step **41** the authentication service acts on the information to identify the user device **10** as appropriate. The information supplied in step **17** may be sufficient, or alternatively, as illustrated in step **42**, the authentication service **16** may communicate with the user device **10** to verify the authentication request, for example to verify the information contained in the authentication request **17** or otherwise verify or confirm the identity of the user device **10** or user. If the identification step **41**, or **42** is successful, then at step **43**, the authentication service **16** extracts appropriate user information from the user information store **16***a* and transmits the authentication response included in the user information to the advertisement service **13** as shown at step **44**.

[0025] Advantageously, the authentication service **16** comprises a federated authentication service such that the user information stored in the information store **16***a* may be made available to receive a plurality of separate, independent services. By providing the authentication service **16** as a federated authentication service, the advertisement service **13** does not need to access or maintain a specific user profile database for the purposes of controlling the advertisement information sent by the advertisement service **13**. Similarly, the user device **10** does not need to store the user profile information locally and transmit that information with every request sent to a service such as the advertisement service **13**. The method described herein thus permits the advertisement service **13** to obtain some user information without receiving information which identifies the user, and indeed no user information is transmitted back to the content service **11**. By providing a persistent identifier, the advertisement service **13** may track advertisements which have been sent to the user device **10** to reduce or avoid repeatedly sending the same advertisements.

[0026] Advantageously, as part of the data request **14**, the user device **10** can transmit user device configuration information, such that the advertisement service **13** is operable to transmit advertisement information **15** in an appropriate format or configuration to suit the user device **10**.

[0027] Accordingly, advertisement content is provided to a user device **10** along with suitable content information, but without compromising the privacy or releasing personal information of any user.

[0028] The system and method discussed above is advantageous in that the advertisement service **13** may operate with a number of different authentication services **16** and the content service **11** need not know about the authentication services **16**. However, in some circumstances, it may be preferable or desirable for the method steps to be performed by other entities of the system or in a different order as described above.

[0029] In the system of FIG. **5**, for example, the user device **10** receives content data and metadata as described above, but in this example the metadata comprises a pointer to authentications service **16'**. The user device **10** contacts authentication service **16'** as shown by arrow **20'**, and the authentication service **16'** authenticates the user device **10** as discussed above. In this example, however, the authentication device **16'** also contacts the advertisement service **13** as shown by arrow **50**, providing appropriate user information and possibly device information in a similar manner as in step **44** above. The authentication service **16'** receives the advertisement information as shown by arrow **51** and forwards it to the user device **10** for presentation to the user as shown by arrow **19'**.

[0030] In a further example as shown in FIG. **6**, the metadata comprises a pointer to authentication service **16"**, and the user device **10** contacts the authentication service **16"** as shown by arrow **20"**. The authentication service **16"** authenticates the user device **10** as discussed above, and as shown

buy arrow **19"** responds with instructions to contact the advertisement service **13**, where the instructions include the user information. The user device **10** then contacts the advertisement service **13** as shown by arrow **52**, supplying the user information, and receives the advertisement information as shown by arrow **53**.

[0031] The examples of FIGS. **5** and **6** may be desirable in some circumstances. For example, if the user device **10** comprises a mobile telephone receiving streamed content from a mobile telephone operator, it will be appropriate for the user device **10** to contact the authorisation service of the mobile telephone operator directly. This is advantageous in that fewer messages are transmitted, but may be disadvantageous in that the content service **11** must supply a reference to the authorisation service **16'**, **16"**.

[0032] When used in this specification and claims, the terms "comprises" and "comprising" and variations thereof mean that the specified features, steps or integers are included. The terms are not to be interpreted to exclude the presence of other features, steps or components.

[0033] The features disclosed in the foregoing description, or the following claims, or the accompanying drawings, expressed in their specific forms or in terms of a means for performing the disclosed function, or a method or process for attaining the disclosed result, as appropriate, may, separately, or in any combination of such features, be utilised for realising the invention in diverse forms thereof.

1. A method of supplying advertising content, the method comprising the steps of:

receiving content data, the data comprising metadata identifying an advertisement service,

transmitting a data request to the advertisement service in accordance with the metadata,

transmitting an authentication request to an authentication server,

receiving an authentication response, the authentication response comprising user information, and

transmitting advertisement information in accordance with the user information.

2. A method according to claim **1** wherein the content data comprises broadcast content data.

3. A method according to claim **1** wherein the step of transmitting an authentication request comprises transmitting the authentication request to a federated authentication service.

4. A method according to claim **1** wherein the data request is sent by a user device and wherein the authentication service communicates with the user device to verify the authentication request before transmitting the authentication response.

5. A method according to claim **1** comprising the step of transmitting user device configuration information and wherein the step of transmitting advertisement information comprises transmitting advertisement information in accordance with the user device configuration information.

6. A method according to claim **1** wherein the user information comprises demographic information corresponding to the user.

7. A method according to claim **1** comprising the step of receiving advertisement information and generating an output in accordance with the advertisement information.

8. A method according to claim **1** comprising the step of providing a persistent identifier corresponding to the user and tracking advertisement information sent to the user identified by the persistent identifier

9. An apparatus operable to perform a method according to claim **1**, the apparatus comprising a user device operable to generate an output in accordance with the content data and the advertisement, data and an advertisement server operable to receive the data request from the user device, transmit an authentication request to an authentication service, receive an authentication response from the authentication service comprising user information, retrieve advertisement information in accordance with the user information, and transmit the advertisement information to the user device.

6. A method according to any one of the preceding claims wherein the user information comprises demographic information corresponding to the user.

7. A method according to any one of the preceding claims comprising the step of receiving advertisement information and generating an output in accordance with the advertisement information.

8. A method according to any one of the preceding claims comprising the step of providing a persistent identifier corresponding to the user and tracking advertisement information sent to the user identified by the persistent identifier

9. An apparatus operable to perform a method according to any one of the preceding claims, the apparatus comprising a user device operable to generate an output in accordance with the content data and the advertisement, data and an advertisement server operable to receive the data request from the user device, transmit an authentication request to an authentication service, receive an authentication response from the authentication service comprising user information, retrieve advertisement information in accordance with the user information, and transmit the advertisement information to the user device.

* * * * *