(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
27 September 2007 (27.09.2007)

PCT

(10) International Publication Number
WO 2007/107702 A1

(51) International Patent Classification:
G06F 17/30 (2006.01)

(21) International Application Number:
PCT/GB2007/000880

(22) International Filing Date: 13 March 2007 (13.03.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0605578.4 20 March 2006 (20.03.2006) GB

(71) Applicant *(for all designated States except US)*: **SPEED-TRAP.COM LIMITED** [GB/GB]; Venture West, New Greenham Park, Newbury, Berkshire RG19 6HN (GB).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **GOLDSPINK, Lincoln, Mark, Vaughan** [GB/GB]; 6 Tornay Grove, North Baddesley, Southampton, Hampshire SO52 9NY (GB). **DUCKETT, Malcolm, John** [GB/GB]; Medstead Lodge, Wield Road, Medstead, Hampshire GU34 5LY (GB).

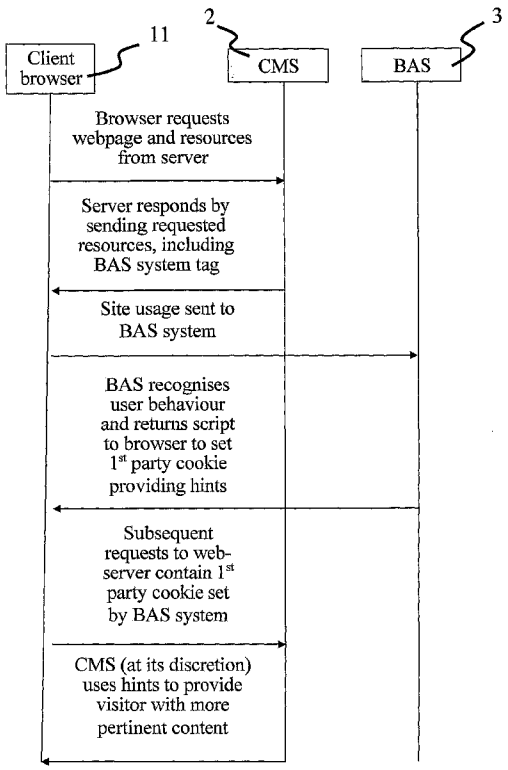
(74) Agents: **FAULKNER, Thomas, John** et al.; fJ Cleveland, 40/43 Chancery Lane, London WC2A 1JQ (GB).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL,

[Continued on next page]

(54) Title: CONTENT MANAGEMENT



(57) Abstract: Method for receiving tailored pages, providing tailored pages and apparatus therefore. By way of illustrating the method for receiving tailored pages within a browser running on a client device, comprises the steps of: i) browsing, in the browser, pages from a page server; ii) sending from an active page in the browser to a monitoring server, at least one monitoring message including information concerning at least one of: interactions with and performance of at least one page browsed within the browser running on the respective client device; iii) receiving in the active page, from the monitoring server, a control message including an instruction to generate a cookie within the browser including selected monitoring information; iv) generating said cookie within the browser; v) sending a message to the page server, which message includes said cookie including the respective selected monitoring information; and vi) receiving from the page server, at least one page content item selected in dependence on the selected monitoring information included in the cookie.

WO 2007/107702 A1

PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:
— *of inventorship (Rule 4.17(iv))*

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

CONTENT MANAGEMENT

This invention relates to website content management, in particular to methods and apparatus for communicating information concerning visitor behaviour to content management systems to allow the content to be controlled in dependence on current behaviour.

There has been a long standing desire to provide personalised websites to enhance customer experience. This demands that the web content server constructing the pages being viewed by the visitor (a content management system or "CMS") is able to select content that is appropriate to that visitor. To be really effective this process needs real time information on the behaviour or status of the user.

It is also recognised that the best way of evaluating and analysing visitor behaviour is by the collection of real time information from the client environment by "web analytic" or "e-business intelligence systems" and the analysis of this information to extract significant behaviour or changes in status. This may be behaviour or status changes occurring within the current session or life cycle information computed for the current visitor (for example recency – how recently the user visited the site previously, frequency – the regularity with which the user visits the site, latency – the average time between visits, etc). A system which provides such a combination of functions can be described as a behavioural analysis system or "BAS".

Traditionally the integration of CMS and BAS systems to provide effective relevant real time customisation has been complex and expensive to implement.

It is an object of this invention to provide apparatus and methods which provide a technical basis for achieving such integration.

According to a first aspect of the present invention there is provided a method for receiving tailored pages within a browser running on a client device, the method comprising the steps of:

browsing, in the browser, pages from a page server;

sending from an active page in the browser to a monitoring server, at least one monitoring message including information concerning at least one of: interactions with and performance of at least one page browsed within the browser running on the respective client device;

receiving in the active page, from the monitoring server, a control message including an instruction to generate a cookie within the browser including selected monitoring information;

generating said cookie within the browser;

sending a message to the page server, which message includes said cookie including the respective selected monitoring information; and

receiving from the page server, at least one page content item selected in dependence on the selected monitoring information included in the cookie.

Before the sending at least one monitoring message step, the method may comprise the step of the browser receiving a page from the page server that includes an instruction that causes the page to send a message to the monitoring sever. The message may comprise a request for a page component. The message may comprise the monitoring message.

According to a second aspect of the present invention there is provided a client device arranged under the control of software for receiving tailored pages within a browser running on the client device, the device being arranged to:

browse, in the browser, pages from a page server;

send from an active page in the browser to a monitoring server, at least one monitoring message including information concerning at least one of: interactions with and performance of at least one page browsed within the browser running on the respective client device;

receive in the active page, from the monitoring server, a control message including an instruction to generate a cookie within the browser including selected monitoring information;

generate said cookie within the browser;

send a message to the page server, which message includes said cookie including the respective selected monitoring information; and

receive from the page server, at least one page content item selected in dependence on the selected monitoring information included in the cookie.

According to another aspect of the present invention there is provided a method for providing pages with tailored content to browsers running on client devices comprising the steps of:

receiving at a monitoring server, from browsers running on client devices, monitoring messages including information concerning at least one of:

interactions with and performance of at least one page browsed within the browser running on the respective client device;

determining selected monitoring information based on the monitoring messages received at the monitoring server;

sending from the monitoring server, to active pages in the browsers, respective control messages including an instruction to generate a cookie within the browser including the respective selected monitoring information determined in the determining step;

receiving at a page server, the cookies generated by the browsers including the respective selected monitoring information; and

providing to the respective browsers at least one page content item selected in dependence on the selected monitoring information extracted from the respective cookie.

According to another aspect of the present invention there is provided a system for providing pages with tailored content to browsers running on client devices, the system comprising a page server and a monitoring server and being arranged under the control of software to:

receive at the monitoring server, from browsers running on client devices, monitoring messages including information concerning at least one of: interactions with and performance of at least one page browsed within the browser running on the respective client device;

determine selected monitoring information based on the monitoring messages received at the monitoring server;

send from the monitoring server, to active pages in the browsers, respective control messages including an instruction to generate a cookie within the browser including the respective selected monitoring information;

receive at the page server, cookies generated by the browsers including the respective selected monitoring information; and

provide to the respective browsers at least one page content item selected in dependence on the selected monitoring information extracted from the respective cookie.

According to a further aspect of the present invention there is provided a system for providing pages with tailored content to browsers running on client devices, the system comprising a page tailoring system and a monitoring system;

the monitoring system comprising a receive module for receiving, from browsers running on client devices, monitoring messages including information concerning at least one of: interactions with and performance of at least one page browsed within the browser running on the respective client device;

the monitoring system comprising a determination module for determining selected monitoring information based on the monitoring messages received at the monitoring system;

the monitoring system comprising a send module for sending, to active pages in the browsers, respective control messages including an instruction to generate a cookie within the browser including the respective selected monitoring information;

the page tailoring system comprising a receive module for receiving cookies generated by the browsers including the respective selected monitoring information; and

the page tailoring system comprising a tailoring module for selecting for supply to the respective browsers at least one page content item selected in dependence on the respective selected monitoring information.

According to another aspect of the present invention there is provided a method for setting first party cookies including monitoring information in browsers running on client devices comprising the steps of:

receiving at a monitoring system, from browsers running on client devices, monitoring messages including information concerning at least one of:

interactions with and performance of at least one page browsed within the browser running on the respective client device;

determining at the monitoring system selected monitoring information based on the monitoring messages received at the monitoring system;

sending from the monitoring system, to active pages in the browsers, respective control messages including an instruction to generate a cookie within the browser including the respective selected monitoring information determined in the determining step.

5

According to yet another aspect of the present invention there is provided a method for providing pages with tailored content to a browser running on a client device comprising the steps of:

receiving at a monitoring server, from a browser running on a client device, at

10 least one monitoring message including information concerning at least one of: interactions with and performance of at least one page browsed within the browser running on the client device;

determining selected monitoring information based on the monitoring message received at the monitoring server;

15 sending from the monitoring server, to an active page in the browser, a control message including an instruction to generate a cookie within the browser including the selected monitoring information determined in the determining step;

receiving at a page server, the cookie generated by the browser including the selected monitoring information; and

20 providing to the browser at least one page content item selected in dependence on the selected monitoring information extracted from the cookie.

Each of the methods above, where context allows, may comprise the further steps, before the above steps, of receiving, at the monitoring server, requests for page

components from pages being browsed within the browsers and sending, from the monitoring server, page components in response to those requests, which page components are arranged to cause the pages being browsed to send the monitoring messages.

Each of the messages referred to above may be HTTP messages, for example HTTP requests.

In each case referred to above a plurality of cookies may be generated by each page. That is to say there may be messages that include instructions to generate more than one cookie, and/or there may be a plurality of messages each including an instruction to generate one of a number of cookies.

Generally the page server will be in a different domain than the monitoring server. However using the technique of sending messages including instructions (typically HTTP messages including script - for example JavaScript or Visual Basic Script) to generate first party cookies within the page allows communication between the monitoring sever (which is in the "wrong" domain) and the page server which by definition is in the domain of the page being monitored and/or to be tailored.

The behaviour monitored and the precise nature of the monitoring information to be included in the cookie is not restricted by the current technique and is a matter for the monitoring techniques used. Similarly, the type of tailoring used is not

restricted by the current technique and is a matter for the tailoring techniques used.

Thus the present techniques provide a simple mechanism by which a content management system (a page server/page tailoring system) can be passed indications of the current status or current behaviour of a visitor browsing the site in real time by a behavioural analysis system (monitoring server/system). This can allow the content management system to select appropriate content to be displayed to the visitor to influence or respond to their behaviour or status.

The present techniques make use of first party cookies to provide a means of communication between the content management system and behavioural analysis system even though the behavioural analysis system is not necessarily a first party system. That is to say communication via first party cookies occurs even though the behavioural analysis system is not necessarily in the same domain as the content management system which is providing the web pages to the user.

The present techniques give various advantages:-

1. The system requires no back end integration with existing customer analysis systems.

2. Most content management systems commonly use first party cookies to retain or signal visitor status between the pages or sections of a site it is managing and this can facilitate implementation of the current techniques.

3. The ability to deploy behavioural analysis systems in domains other than that of the website being browsed (eg as an apparent third party) allows solutions to be provided in an application service provider model where the behavioural analysis system is not known or operated by the website owner.

The current techniques are not limited to use with PCs acting as the client device, but are suitable for use with any systems which have client devices running browsers which are able to browse web pages and make use of HTTP or a similar protocol which encompasses the concept of cookies.

Embodiments of the present invention will now be described, by way of example only, with reference to the accompanying drawings in which:

Figure 1 schematically shows architecture which may be used in methods and/or systems for providing tailored web pages;

Figure 2 shows a sequence diagram of client/server interactions in the operation of methods and/or systems for providing tailored web pages.

Figure 3 is a flow chart showing the processes carried out at a client device during the operation of a method/system for providing tailored web pages;

Figure 4 is a flow chart showing the processes carried out at a behavioural analysis system server in a method/system for providing tailored web pages; and

Figure 5 is a flow chart showing the processes carried out at a content management system server in a method/system for providing tailored web pages.

Figure 1 schematically shows architecture which may be used in a method and/or system for providing web pages having tailored content.

The architecture comprises a client device 1 which in this instance is a PC being used by a user to browse web pages. The client device 1 operates under the control of software and runs a browser 11 for viewing web pages 12 in a conventional way over the internet.

A content management system 2 including a page server 21 is provided for supplying web pages to requesting client devices 1. In the architecture shown in Figure 1 there is only a single client device 1 shown, but it will be appreciated that in practice there may be many client devices 1 each accessing web pages from the content management system 2. The content management system 2 is arranged to not only supply static or generic web pages to the client device 1, but also to provide pages having content which is tailored to the client device and/or user.

The content management system therefore comprises a server for tailoring web page content, this may be the page server 21, or a separate server 22 within the content management system 2.

The architecture also comprises a behavioural analysis system 3 which again is connected to the internet and may communicate with the client device 1. The behavioural analysis system 3 comprises a monitoring server 31 which is used for gathering monitoring information concerning the user's interaction with pages 12 running within the browser 11 on the client device 1.

To a large degree this monitoring operation is conventional and will make use of client side page tagging techniques. Such client side page tagging techniques, in themselves, are well understood and one such technique has been used for some time by the applicants. An early version of this technique is explained in detail in the Applicant's earlier applications WO01/69412 and WO01/69386. In such techniques it now typical to put some script (for example Java Script or Visual Basic Script) within a selection or each and every page of a web site. As each page is visited this script causes there to be communication with a server responsible for the collection of events describing users journeys/interactions with the website and managing any necessary interactions with the client. In the present architecture it is the behavioural analysis system 3 which comprises a server responsible for the collection of monitoring events.

In the present system and method, as will be described in more detail below, the behavioural analysis system 3 is arranged to analyse monitoring information from the interactions which go on at the client device 1 and under certain circumstances to identify selected monitoring information which it is considered may be useful for the customer management system 2 in determining which tailored content to provide to the client device 1. The analysis may be carried out by the monitoring server 31 or by a separate server 32 of the behavioural analysis system.

Where there is monitoring information which is determined would be useful to the content management system 2, this is communicated from the behavioural analysis system 3 to the content management system 2 by the mechanism of the behavioural analysis system 3 sending a message to a page 12 running within the browser 11 on the client device 1 containing an instruction to generate a cookie which includes the monitoring information. As this cookie is generated within the page 12 which was supplied by the content management system server 2, the cookie is a first party cookie within that domain. This means that once the cookie has been generated within the browser 11 then when there is further communication between the client device 1 and the content management system 2, the cookie will be included in the HTTP messages which are sent from the client device 1 to the content management system 2. Thus the monitoring information identified by the behavioural analysis system 3 as being potentially useful for providing tailored content to the client device 1/user will be delivered to the content management system 2. There it can be used to determine the content which is provided to the client device 1/user by virtue of supplying a new page 12

to the client device 1 and/or supplying particular page components/content to the client device 1.

The exact behaviour which is required to trigger the behaviour analysis system 3 into sending monitoring information to the content management system 2 via the technique described above is a matter of design choice. There is basically little or no limit to the types of behaviour which may be monitored and acted upon and similarly there is little or no limit to the type of data/information which can be communicated from the behaviour analysis system 3 to the content management system 2. There will, however, typically be practical limit on the volume of data which can be transmitted via this technique due to the volume of data which can be transmitted by setting one or more cookies i.e. by the allowed data size for cookies.

The following are examples of the monitoring information that could be included in a first party cookie set on the client device 1 in response to scripts sent by the behaviour analysis system 3:

- High value customer not visited for several months, high defection potential.
- Customer who has failed to successfully complete a registration form on more than two occasions within the current session.
- A customer whose behaviour suggests that they are engaged in fraudulent activity.

When cookies containing such information are received by the content management system 2, the action carried out is of course dependent on the set-up of the content management system 2. Again the present techniques provide little or no limitations on what actions may be carried out at that time. That is a matter for the set-up of the content management system 2.

However, by way of example, in response to information being received via the cookie that the customer is a high value customer that has not visited for several months the content management system 2 could deliver a new page 12 to the client device 1 or a page component to the existing page 12 offering the customer a special offer, money off if an order is placed, or a questionnaire requesting the user's input on what they need from the system or so on.

On the other hand if the message in the cookie suggests that the user is engaged in fraudulent activity this could be used to block access to certain information or block certain functionality usually available via that website.

Figure 2 shows a sequence diagram for client/server interactions between the client device 1, the content management system 2 and the behaviour analysis system 3.

First the browser requests a web page and resources from the content management system 2. In response to this, the customer management system 2 responds by sending the requested resources including a page tag relating to the behaviour

analysis system. Subsequent to this, site usage information is sent by the browser 11 to the behaviour analysis system 3. When the behaviour analysis system 3 recognises behaviour that it has been configured to report to the content management system 2, the behaviour analysis system 3 sends a script to the browser 11 to set a first party cookie providing monitoring information which can be considered as "hints" to the content management system 2. Then where there is subsequent communication between the browser 11 and the content management system 2, the request to the content management system 2 will include the first party cookie which in effect has been set up to include "hints" by the behaviour analysis system 3. Then in response to these "hints" the content management system 2 at its discretion may use the hints to provide the user, using the client browser 11, with more pertinent content.

Figure 3 shows a flow chart of processes which occur within the client device 1 during the overall process described above. In step 301 the client device browses a web page from the content management system 2. In step 302 a page supplied from the content management system 2 and active in the browser requests script from the behaviour analysis system 3. As a result of this, in step 303, the page within the browser receives the script and begins monitoring activity. In step 304 monitoring messages generated under control of the received script are sent to the behaviour analysis system 3. At some point in time in step 305, the page may receive a script to set a first party cookie including monitoring information which has been determined by the behaviour analysis system 3. In step 306 the page executes the script and sets the cookie which is a first party cookie as far as the

content management system 2 is concerned. In step 307 as the user interacts with the page in the browser 11 or navigates to another page in the same domain the browser responds appropriately and this causes in step 308, the browser 11 to send a request for another page or other content from the content management system 2. The first party cookie is sent along with this request. In step 309 the browser receives further page content or a new page which may be tailored in response to the content of the cookie sent to the content management system 2.

Figure 4 shows a flow chart of processes which occur at the behaviour analysis system 3 as part of the overall process described above. In step 401 the behaviour analysis system 3 receives a request for monitoring script from a page in a browser 11. In step 402 the behaviour analysis system 3 sends the appropriate script to the page. In step 403 the behaviour analysis system receives monitoring messages from the browser and logs and analyses these monitoring messages as appropriate.

In step 404 the behaviour analysis system 3 determines that there is selected monitoring information which may be of use to the content management system 2 in dependence on the information which has been received via the monitoring messages.

As a result of this, in step 405 the behaviour analysis system 3 sends a script to the page in the browser 11 to generate a cookie including the selected monitoring information.

Figure 5 shows a flow chart of processes which take place in the content management system 2 as part of the overall process described above.

In step 501 the content management system 2 receives a request for a page from a browser 11 running in a client device 1.

In step 502 the content management system 2 supplies the appropriate page to the browser 11. This process of supplying pages in response to requests continues. At some point in time the content management system 2 receives a further request from the browser 11 accompanied by a first party cookie including monitoring information which has been identified as potentially important by the behaviour analysis system 3. In step 504 the content management system uses the content of the cookie to determine content to be sent to the browser 11. In step 505 the content management system 2 supplies tailored page content to the browser running in the client device 1.

It will be appreciated that in the present technique, although a client device 1 might often be a personal computer running a browser such as MS Internet Explorer, the techniques will also function with the client device being any device 1 running a browser which is able to receive pages, makes use of HTTP or a similar protocol and can execute script to produce cookies which can accompany requests. Thus, for example, the client device might comprise an embedded browser and might comprise a set-top box, a mobile telephone or similar device.

It will be appreciated that the content management system and behaviour analysis system may each comprise a plurality of computers/servers and thus there may be indirect or direct sending and receiving of messages between the page server and the client device and between the monitoring server and the client device. Moreover, some functions, analysis and processing of each system or each "server" may be carried out by different computers – the expressions system and "server" should be construed broadly to cover these possible arrangements. In some situations the content management system may run on the same machine or set of machines as the behaviour analysis system.

It will be appreciated that the present invention may be embodied in a method as described above, a system as described above, a computer arranged under the control of software to operate as a client device as described above, a content management system as described above or a behaviour analysis system as described above. The present invention may also be embodied in at least one computer program comprising code portions which are arranged to cause at least one computer to carry out a method described above and/or act as a system or apparatus as described above. The computer program may be carried on computer readable media comprising for example a CD-Rom, a DVD-Rom, a flash memory device, a hard drive, a signal or so on.

CLAIMS:

1. A method for receiving tailored pages within a browser running on a client device, the method comprising the steps of:

browsing, in the browser, pages from a page server;

sending from an active page in the browser to a monitoring server, at least one monitoring message including information concerning at least one of: interactions with and performance of at least one page browsed within the browser running on the respective client device;

receiving in the active page, from the monitoring server, a control message including an instruction to generate a cookie within the browser including selected monitoring information;

generating said cookie within the browser;

sending a message to the page server, which message includes said cookie including the respective selected monitoring information; and

receiving from the page server, at least one page content item selected in dependence on the selected monitoring information included in the cookie.

2. A method according to claim 1 which comprises, before the sending at least one monitoring message step, the step of the browser receiving a page from the page server that includes an instruction that causes the page to send a message to the monitoring server.

3. A method according to claim 2, in which the message, which the instruction is to cause to generate, comprises a request for a page component.

4. A method according to claim 2 or 3, in which the message, which the instruction is to cause to generate, comprises the monitoring message.

5. A method according to any preceding claim in which each of the messages referred to above is an HTTP message, for example an HTTP request.

6. A method according to any preceding claim in which a plurality of cookies are generated by each page.

7. A method according to any preceding claim in which the control message includes instructions to generate more than one cookie.

8. A method according to any preceding claim in which more than one control message is received in the active page, each control message including an instruction to generate one of a number of cookies.

9. A client device arranged under the control of software for receiving tailored pages within a browser running on the client device, the device being arranged to:

browse, in the browser, pages from a page server;

send from an active page in the browser to a monitoring server, at least one monitoring message including information concerning at least one of: interactions with and performance of at least one page browsed within the browser running on the respective client device;

receive in the active page, from the monitoring server, a control message including an instruction to generate a cookie within the browser including selected monitoring information;

generate said cookie within the browser;

send a message to the page server, which message includes said cookie including the respective selected monitoring information; and

receive from the page server, at least one page content item selected in dependence on the selected monitoring information included in the cookie.

10. A method for providing pages with tailored content to browsers running on client devices comprising the steps of:

receiving at a monitoring server, from browsers running on client devices, monitoring messages including information concerning at least one of:

interactions with and performance of at least one page browsed within the browser running on the respective client device;

determining selected monitoring information based on the monitoring messages received at the monitoring server;

sending from the monitoring server, to active pages in the browsers, respective control messages including an instruction to generate a cookie within the browser including the respective selected monitoring information determined in the determining step;

receiving at a page server, the cookies generated by the browsers including the respective selected monitoring information; and

providing to the respective browsers at least one page content item selected in dependence on the selected monitoring information extracted from the respective cookie.

11. A system for providing pages with tailored content to browsers running on client devices, the system comprising a page server and a monitoring server and being arranged under the control of software to:

receive at the monitoring server, from browsers running on client devices, monitoring messages including information concerning at least one of:

interactions with and performance of at least one page browsed within the browser running on the respective client device;

determine selected monitoring information based on the monitoring messages received at the monitoring server;

send from the monitoring server, to active pages in the browsers, respective control messages including an instruction to generate a cookie within the browser including the respective selected monitoring information;

receive at the page server, cookies generated by the browsers including the respective selected monitoring information; and

provide to the respective browsers at least one page content item selected in dependence on the selected monitoring information extracted from the respective cookie.

12. A system for providing pages with tailored content to browsers running on client devices, the system comprising a page tailoring system and a monitoring system;

the monitoring system comprising a receive module for receiving, from browsers running on client devices, monitoring messages including information concerning at least one of: interactions with and performance of at least one page browsed within the browser running on the respective client device;

the monitoring system comprising a determination module for determining selected monitoring information based on the monitoring messages received at the monitoring system;

the monitoring system comprising a send module for sending, to active pages in the browsers, respective control messages including an instruction to generate a cookie within the browser including the respective selected monitoring information;

the page tailoring system comprising a receive module for receiving cookies generated by the browsers including the respective selected monitoring information; and

the page tailoring system comprising a tailoring module for selecting for supply to the respective browsers at least one page content item selected in dependence on the respective selected monitoring information.

13. A method for setting first party cookies including monitoring information in browsers running on client devices comprising the steps of:

receiving at a monitoring system, from browsers running on client devices, monitoring messages including information concerning at least one of: interactions with and performance of at least one page browsed within the browser running on the respective client device;

determining at the monitoring system selected monitoring information based on the monitoring messages received at the monitoring system;

sending from the monitoring system, to active pages in the browsers, respective control messages including an instruction to generate a cookie within the browser including the respective selected monitoring information determined in the determining step.

14. A method for providing pages with tailored content to a browser running on a client device comprising the steps of:

receiving at a monitoring server, from a browser running on a client device, at least one monitoring message including information concerning at least one of: interactions with and performance of at least one page browsed within the browser running on the client device;

determining selected monitoring information based on the monitoring message received at the monitoring server;

sending from the monitoring server, to an active page in the browser, a control message including an instruction to generate a cookie within the browser including the selected monitoring information determined in the determining step;

receiving at a page server, the cookie generated by the browser including the selected monitoring information; and

providing to the browser at least one page content item selected in dependence on the selected monitoring information extracted from the cookie.

15. A method according to any preceding claim in which the page server is in a different domain than the monitoring server.

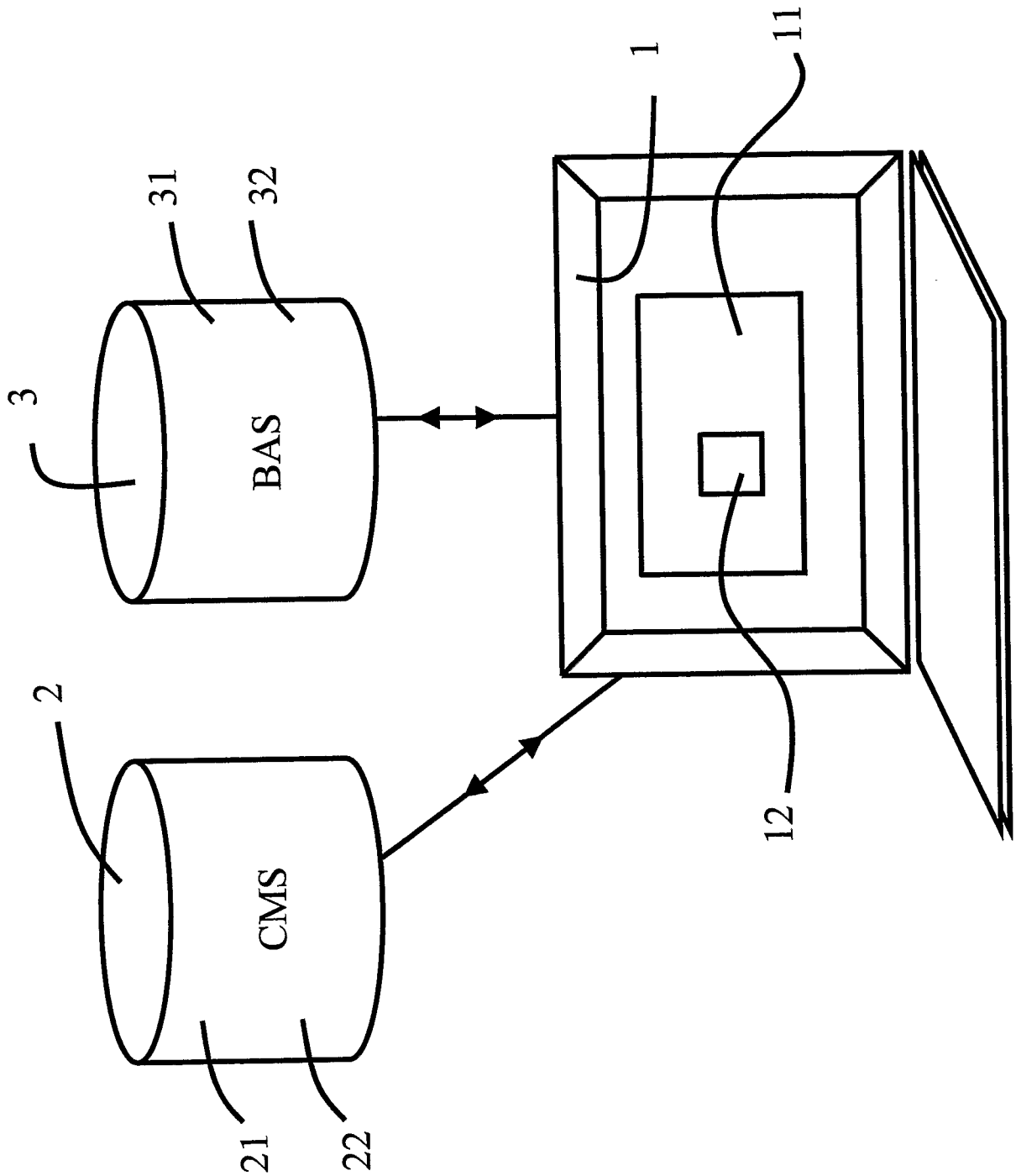


Fig. 1

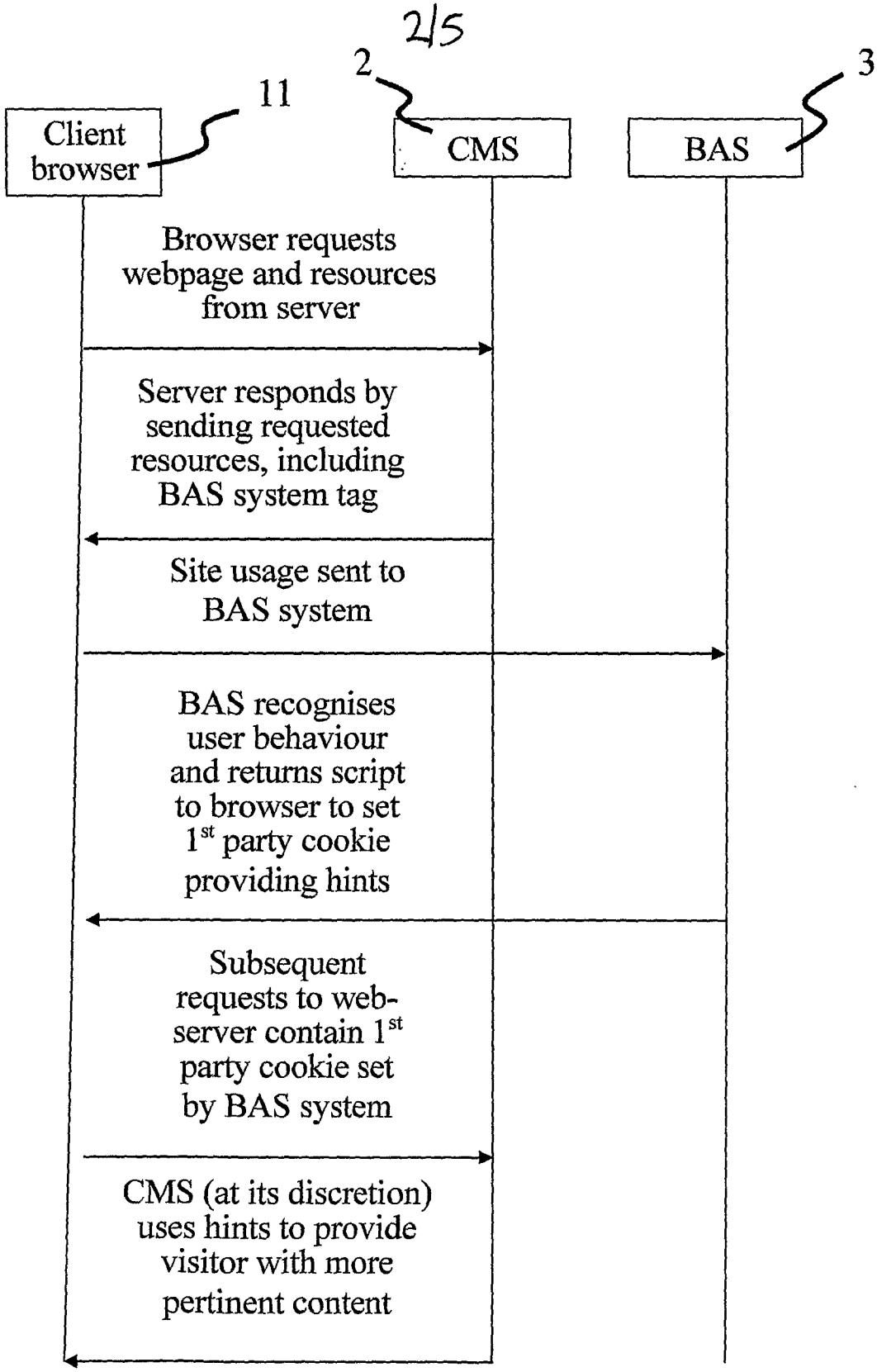

Client browser
11
CMS
2
BAS
3
Browser requests webpage and resources from server
Server responds by sending requested resources, including BAS system tag
Site usage sent to BAS system
BAS recognises user behaviour and returns script to browser to set 1st party cookie providing hints
Subsequent requests to web-server contain 1st party cookie set by BAS system
CMS (at its discretion) uses hints to provide visitor with more pertinent content

Fig. 2

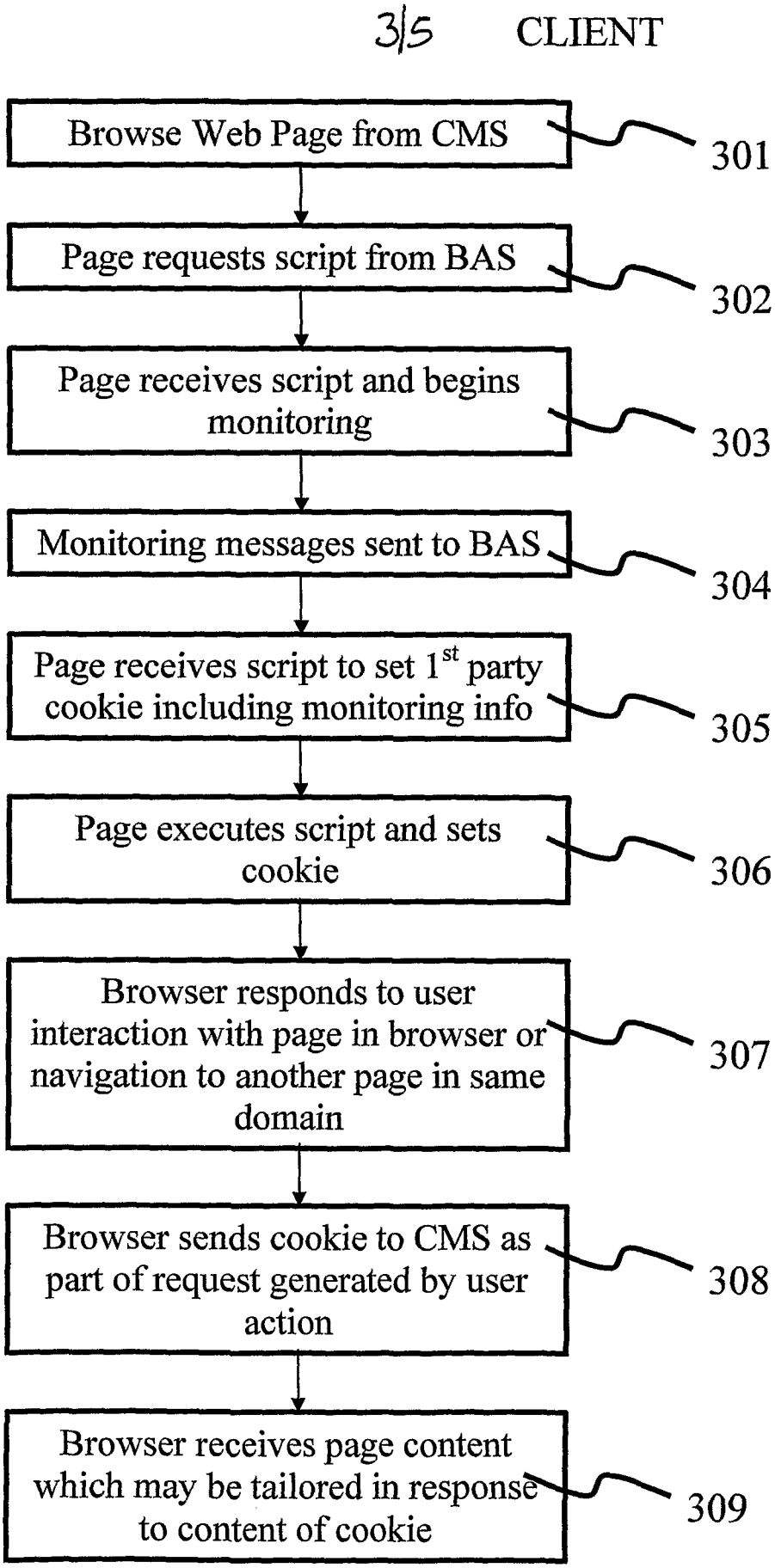

CLIENT
Browse Web Page from CMS
301
Page requests script from BAS
302
Page receives script and begins monitoring
303
Monitoring messages sent to BAS
304
Page receives script to set 1st party cookie including monitoring info
305
Page executes script and sets cookie
306
Browser responds to user interaction with page in browser or navigation to another page in same domain
307
Browser sends cookie to CMS as part of request generated by user action
308
Browser receives page content which may be tailored in response to content of cookie
309

Fig. 3

415

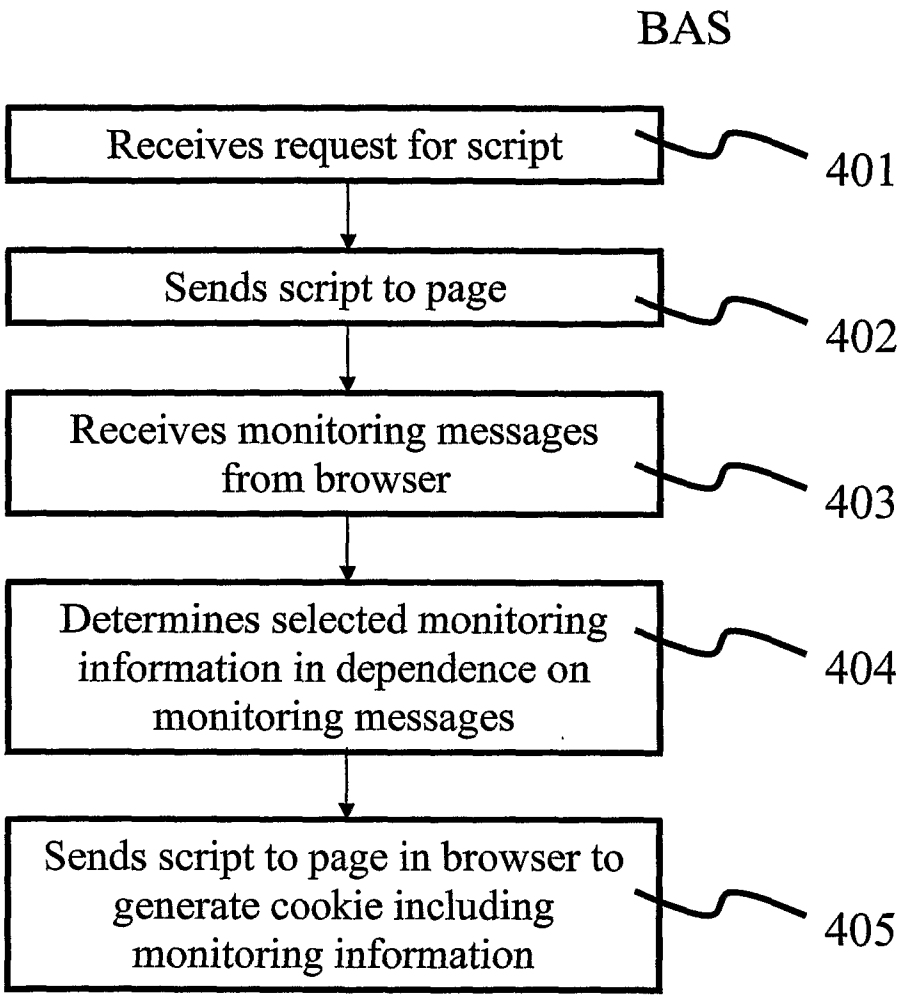

BAS
Receives request for script
401
Sends script to page
402
Receives monitoring messages from browser
403
Determines selected monitoring information in dependence on monitoring messages
404
Sends script to page in browser to generate cookie including monitoring information
405

Fig. 4

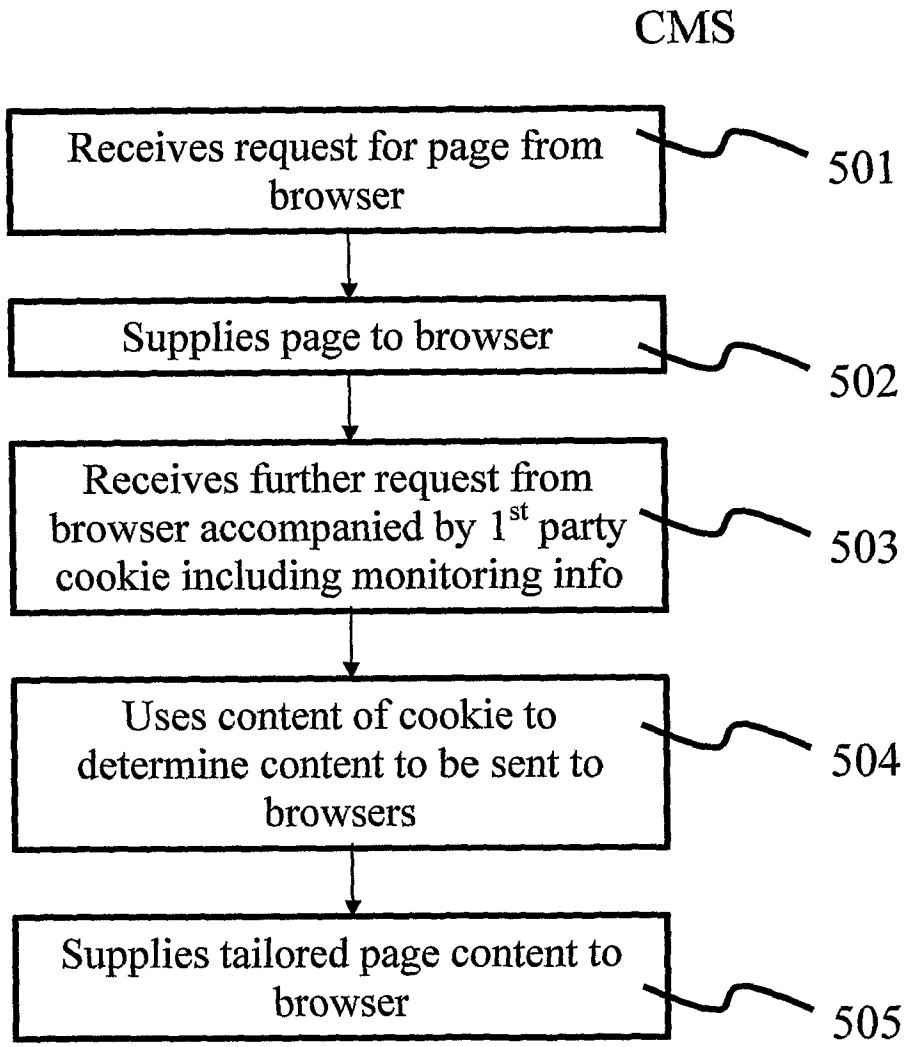

CMS
Receives request for page from browser
501
Supplies page to browser
502
Receives further request from browser accompanied by 1st party cookie including monitoring info
503
Uses content of cookie to determine content to be sent to browsers
504
Supplies tailored page content to browser
505

Fig. 5

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2007/000880

A. CLASSIFICATION OF SUBJECT MATTER
INV. G06F17/30

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06F

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

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/44869 A (WEBTRENDS CORP [US]) 6 June 2002 (2002-06-06) abstract page 3, line 29 - page 4, line 17 page 9, line 8 - page 11, line 5; figures 2,3 ----- -/--	1-15

[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
22 May 2007	30/05/2007

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Barieux, Marc

Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2007/000880

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FENSTERMACHER K D ET AL: "Mining Client-Side Activity for Personalization" PROCEEDINGS OF THE 4TH IEEE INTERNATIONAL WORKSHOP ON ADVANCED ISSUES OF E-COMMERCE AND WEB-BASED INFORMATION SYSTEMS, 26 June 2002 (2002-06-26), - 28 June 2002 (2002-06-28) pages 191-198, XP010595226 Newport Beach, CA, USA ISBN: 0-7695-1567-3 abstract paragraph 2.6. "Client-Side Monitoring Today" paragraph 3. "Goals for Client-Side Monitoring" paragraph 5. "Framework Applications"	1-15
X	EIRINAKI M ET AL: "Web Mining for Web Personalization" ACM TRANSACTIONS ON INTERNET TECHNOLOGY, ACM, NEW YORK, NY, US, vol. 3, February 2003 (2003-02), pages 1-27, XP002982908 ISSN: 1533-5399 abstract paragraph 2 "Web Personalization" paragraph 3 "User Profiling" paragraph 4.5 "Web Usage Mining"	1-15

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/GB2007/000880

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0244869 A	06-06-2002	AU 4178602 A	11-06-2002
		CA 2427678 A1	06-06-2002
		EP 1340132 A2	03-09-2003