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(54) Title: A SERVER FOR SELECTING TAG DATA

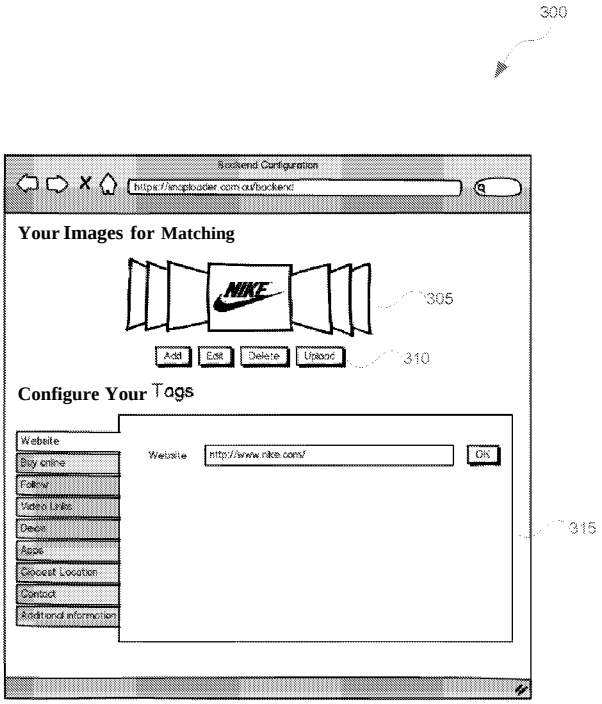

Figure 3

(57) Abstract: There is provided a server (205) for selecting tag data, the server (205) comprising a processor (1000) for processing digital data, a memory device for storing digital data including computer program code, the memory device being operably coupled to the processor (1000), and a network interface (170) for sending and receiving digital data across a network (180), the network interface (170) being operably coupled to the processor (1000); wherein, in use, the processor (1000) is controlled by the computer program code to receive, via the network interface (170), configuration data comprising at least reference image data representing at least one reference image in relation to tag data representing at least one tag, receive, via the network interface (170), image data representing an image capture; recognise the at least one reference image in accordance with the image data; and select the tag data.

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A SERVER FOR SELECTING TAG DATA

Field of the Invention

The present invention relates to a server for selecting tag data. The invention has been developed primarily for use with mobile computing devices and will be described hereinafter with reference to this application. However, it will be appreciated that the invention is not limited to this particular field of use.

Background of the Invention

Brand managers on the like continue seeking ways in which to increase customer engagement and traditionally rely on advertising, including print media and the like. However, existing arrangements have failed to take advantage of the technical capabilities of provided by mobile computing devices such as smart phones and the like in increasing customer engagement, providing information in relation to brands, products and services and the like

It is to be understood that, if any prior art information is referred to herein, such reference does not constitute an admission that the information forms part of the common general knowledge in the art, in Australia or any other country.

Summary

The invention seeks to provide a server for selecting tag data which will overcome or substantially ameliorate at least some of the deficiencies of the prior art, or to at least provide an alternative.

According to one aspect, there is provided a server for selecting tag data, the server comprising a processor for processing digital data,

a memory device for storing digital data including computer program code, the memory device being operably coupled to the processor, and wherein, in use, the processor is controlled by the computer program code to receive, via the network interface, configuration data comprising at least reference image data representing at least one reference image in relation to tag data representing at least one tag, receive, via the network interface, image data representing an image capture; recognise the at least one reference image in accordance with the image data; and select the tag data.

Preferably, the processor is further controlled by the computer program code to recognise the at least one reference image in accordance with the similarity algorithm.

Preferably, the similarity algorithm comprises a best match algorithm.

Preferably, the similarity algorithm comprises a correlation algorithm.

Preferably, the similarity algorithm is rotational angle invariant.

Preferably, the similarity algorithm is colour invariant.

Preferably, the at least one reference image is a plurality of reference images and wherein the processor is further controlled by the computer program code and the configuration data to select a primary image from the plurality of reference images.

Preferably, the processor is further controlled by the computer program code to associate the tag data with an user account associated with the image data.

Preferably, the processor is further controlled by the computer program code to receive, via the network interface, authentication credentials data representing authentication credentials for the account; and serve, via the network interface, the tag data.

Preferably, the processor is further controlled by the computer program code to serve, via the network interface, the tag data.

Preferably, the tag data represents tag information and wherein the processor is further controlled by the computer program code to send, via the network interface, tag update data representing updated tag information.

Preferably, the tag data represents a URL.

Preferably, the tag data represents a product or service.

Preferably, the tag data further represents a URL at which the product or service may be purchased.

Preferably, the tag data represents a social platform action.

Preferably, the social platform action comprises a follow social platform action.

Preferably, the tag data represents a video.

Preferably, the tag data comprises video data representing the video.

Preferably, the tag data comprises a URL from which video data representing the video may be downloaded.

Preferably, the tag data represents a deal.

Preferably, the tag data further represents a deal coupon for use with the deal.

Preferably, the tag data represents a downloadable software application.

Preferably, the tag data further represents a unique application ID for the application.

Preferably, the tag data comprises location data representing the location.

Preferably, the tag data comprises contact information data representing contact information.

Preferably, the contact information comprises at least one of e-mail, telephone, Street address and Postal contact information.

Other aspects of the invention are also disclosed.

Brief Description of the Drawings

Notwithstanding any other forms which may fall within the scope of the present invention, preferred embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

Fig. 1 shows a computing device for selecting tag data on which the various embodiments described herein may be implemented in accordance with an embodiment of the present invention;

Fig. 2 shows a system for selecting tag data in accordance with an embodiment of the present invention;

Fig. 3 shows an exemplary graphical user interface allowing a brand manager to configure configuration data comprising at least one reference image in relation to tag data representing at least one tag in accordance with an embodiment of the present invention;

Fig. 4 shows an exemplary interface allowing for the upload of a plurality of reference images in accordance with an embodiment of the present invention;

Figs. 5, 6, and 7 show an exemplary interface allowing for the configuration of tag data;

Figs. 8 and 9 show exemplary mobile computing device interfaces allowing a user to capture an image of a brand, product or service and receive a tag associated with the brand, product or service in accordance with an embodiment of the present invention; and

Fig. 10 shows various tag functionality in accordance with an embodiment of the present invention..

Description of Embodiments

It should be noted in the following description that like or the same reference numerals in different embodiments denote the same or similar features.

Computing device 100

Fig. 1 shows a computing device 100 on which the various embodiments described herein may be implemented. It should be noted that the computing device 100 may take on different embodiments depending on the application, including those substantially shown in figure 2. That is, the computing device 100 may take the embodiment of a server 205 (as described in further detail below), mobile computing device 210 (as also described in further detail below) or computer terminal 215 (also described in further detail below).

As will become apparent from the description herein, the computing device 100 and system 200 (as described in further debt below) is adapted for allowing users, using computing devices such as mobile computing device 210 and the like to capture images from magazines, billboards and

other marketing material for the purposes of image recognition by the server 205 so as to collect a set of electronic "tags" (as will be described in further detail below) relating to various brands.

In particular the steps the selecting tag data may be implemented as computer program code instructions executable by the computing device 100. The computer program code instructions may be divided into one or more computer program code instruction libraries, such as dynamic link libraries (DLL), wherein each of the libraries performs a one or more steps of the method. Additionally, a subset of the one or more of the libraries may perform graphical user interface tasks relating to the steps of the method.

The device 100 comprises semiconductor memory 110 comprising volatile memory such as random access memory (RAM) or read only memory (ROM). The memory 100 may comprise either RAM or ROM or a combination of RAM and ROM.

The device 100 comprises a computer program code storage medium reader 130 for reading the computer program code instructions from computer program code storage media 120. The storage media 120 may be optical media such as CD-ROM disks, magnetic media such as floppy disks and tape cassettes or flash media such as USB memory sticks.

The device further comprises I/O interface 140 for communicating with one or more peripheral devices. The I/O interface 140 may offer both serial and parallel interface connectivity. For example, the I/O interface 140 may comprise a Small Computer System Interface (SCSI), Universal Serial Bus (USB) or similar I/O interface for interfacing with the storage medium reader 130. The I/O interface 140 may also communicate with one or more human input devices (HID) 160 such as keyboards, pointing devices, joysticks and the like. The I/O interface 140 may also comprise a computer to computer interface, such as a Recommended Standard 232 (RS-232) interface, for interfacing the device 100 with one or more personal computer (PC) devices 190. The I/O interface 140 may also comprise an audio interface for communicate audio signals to one or more audio devices 1050, such as a speaker or a buzzer.

The device 100 also comprises a network interface 170 for communicating with one or more computer networks 180. The network 180 may be a wired network, such as a wired Ethernet™ network or a wireless network, such as a Bluetooth™ network or IEEE 802.11 network. The network 180 may be a local area network (LAN), such as a home or office computer network, or a wide area network (WAN), such as the Internet or private WAN.

The device 100 comprises an arithmetic logic unit or processor 1000 for performing the computer program code instructions. The processor 1000 may be a reduced instruction set computer (RISC) or complex instruction set computer (CISC) processor or the like. The device 100 further comprises a storage device 1030, such as a magnetic disk hard drive or a solid state disk drive.

Computer program code instructions may be loaded into the storage device 1030 from the storage media 120 using the storage medium reader 130 or from the network 180 using network interface 170. During the bootstrap phase, an operating system and one or more software applications are loaded from the storage device 1030 into the memory 110. During the fetch-decode-execute cycle, the processor 1000 fetches computer program code instructions from memory 110, decodes the instructions into machine code, executes the instructions and stores one or more intermediate results in memory 100.

In this manner, the instructions stored in the memory 110, when retrieved and executed by the processor 1000, may configure the computing device 100 as a special-purpose machine that may perform the functions described herein.

The device 100 also comprises a video interface 1010 for conveying video signals to a display device 1020, such as a liquid crystal display (LCD), cathode-ray tube (CRT) or similar display device.

The device 100 also comprises a communication bus subsystem 150 for interconnecting the various devices described above. The bus subsystem 150 may offer parallel connectivity such as Industry Standard Architecture (ISA), conventional Peripheral Component Interconnect (PCI) and the like or serial connectivity such as PCI Express (PCIe), Serial Advanced Technology Attachment (Serial ATA) and the like.

System 200

Fig. 2 shows a system 200 of computing devices 100 on which the various embodiments described herein may be implemented. It should be noted that the system 200 as shown in figure 2 is exemplary only, describing a preferred implementation and wherein the server 205 is in communication with one or more mobile computing devices 210 across the Internet 230. In this manner, and as will be described in further detail below, the server 205 is adapted to receive image data captured by the mobile computing device 210 so as to be able to recognise a brand or the like so as to select tag data representing one or more tags. Also, the system comprises a brand manager terminal 215 for use by a brand manager or the like for configuring the tags and reference images.

However, it should be noted that the system 200 may be implemented by other technical arrangements and topologies. For example, the mobile computing device 210 need not necessarily be mobile. Furthermore, while the system architecture represented is a preferred embodiment wherein mobile computing devices 210 communicates with the server 210 across the Internet, it should be noted that in less preferred embodiment, the functionality described herein may be implemented by a standalone computing device 100 wherein, for example, the

mobile computing device 210 comprises the reference image database 220. However, it should be noted that such an implementation is a less preferred implementation at least for reasons of reference image database 220 size limitations, reference image update-ability and the like.

Server 205

Preferred embodiments will now be described with reference to the server 205. In this preferred embodiments, the server 205 comprises web server functionality at least for the purposes of allowing configuration by brand managers and the like.

Specifically, the server 205 is adapted for selecting tag data. The server 205 comprises a processor 1000 for processing digital data, a memory device (110, 1030 or 220) for storing digital data including computer program code, the memory device being operably coupled to the processor 1000, and a network interface 170 for sending and receiving digital data across a network 180 (230), the network interface 170 being operably coupled to the processor 1000.

The server 205 is adapted to receive, via the network interface 170, configuration data comprising at least reference image data representing at least one reference image in relation to tag data representing at least one tag.

Specifically, referring to figure 3, there is shown an exemplary graphical user interface 300 rendered within a browser application, allowing a brand manager or the like, using brand manager terminal 215 to configure the configuration data. Specifically, the interface 300 allows the brand manager to upload at least one reference image for the purposes of image recognition in the manner described below. For example, were the brand manager representing Nike, the brand manager would upload various reference images comprising the Nike Swoosh and the like. Specifically, the brand manager, using image controls 310 may upload, edit and delete a plurality of images 305.

Using another example where the brand manager represents Coca-Cola, reference is made to the exemplary graphical user interface 400 as substantially shown in figure 4 wherein it is apparent that the brand manager has uploaded a plurality of reference images comprising the Coca-Cola logo. As will become apparent from the description below, the reference images are used by the server 205 for selecting tags upon receipt of image data from a mobile computing device 210, such as wherein a user, using their smart phone, takes an image of a can of Coca-Cola. As such, the brand manager would upload a plurality of images representing different styles of Coca-Cola logo, including certain from perhaps orientations and of differing colour (although in embodiments below, the image recognition algorithm is adapted for being rotational angle and colour invariant).,

Returning now to figure 3, and the brand manager using the brand manager terminal 250 and having uploaded at least one reference image, the brand manager is now able to configure tag data in relation to the reference images. Specifically, the interface 300 comprises a tag configuration portion 315 allowing the brand manager to configure a plurality of electronic tags in relation to the reference images 305. As is apparent, the tag configuration portion 305 comprises a series of tags or aspects/functionality of a tag. As will become apparent from the description below, the server 205 is adapted to serve, or associate with a mobile computing device 210 at least one tag configured using tag configuration portion 315 upon receipt of an image from a user match in at least one of the reference images 305.

It should be noted that in one embodiment, the system 200 is adapted to allow a brand manager to upload bulk reference image and tag data, especially advantageous for brand managers having a large number of products and/or services. Furthermore, the system 200 may be adapted to allow the duplication of tag data so as to increase efficiency in creating similar tags in relation to other reference images.

It should be noted that the term "tags" as used herein should not be construed in any technically limiting manner, especially on account of the number of different technical implementations that may be employed in implementing tags. Generally, the term "tag" may be construed as an electronic association to a brand, product, service or the like allowing customers to engage with brands, products and service providers. Specifically, by utilising the mobile computing device 220, preferably executing a custom mobile application, the user is able to capture images of various brands, products and services in the marketplace so as to collect tags (i.e. create associations) for later engagement. For example, a person may view and advert for Chanel number 5 in a magazine, and using a mobile computing device 210 capture an image of the advert from the magazine. As such, upon receipt of the image by the server 205 from the mobile computing device 210, the server 205 is adapted to recognise the appropriate Chanel reference image from the reference image database 210 so as to select the Chanel tag from the tag date. In this manner, the user has now "collected" a tag which may be employed for a variety of subsequent engagements, including receiving further information in relation to the perfume, including the website for the perfume, where to buy the perfume, social interaction credentials and the like.

In implementing the association of a user with a tag, the server 205 may be adapted in a variety of manners, including sending tag data (such as in XML format) to the mobile computing device 210 for storage by the mobile computing device. Alternatively, the server 205 may simply relate the tag data with a user account of the server 205 such that a user using the mobile computing

device 210 may authenticate with the server 205 for the purposes of viewing and managing there are collected tags.

Specifically, the tag configuration portion 315 comprises a series of tabs each relating to a tag or an aspect/dunctionality of a tag. Differing tags or aspects of tags will be described in further detail below with reference to figure 10, however, with reference to figure 5, 6 and 7, there are shown differing views of the tag configuration portion 315 allowing the brand manager to configure different tags or tag aspects. Specifically, referring to figure 5, there is shown the interface 315 allowing the brand manager to configure the website URL and a URL for buying the product. Specifically, in the example provided, the brand manager has provided the URL for the Coca-Cola Australia website and an Australian website where the user may purchase Coca-Cola.

Turning to figure 6, there is shown the tag configuration portion 315 allowing the brand manager to configure the closest location and contact for the product. Specifically, using the example in provided in figure 6, the tag configuration portion 315 allows the brand manager to specify the address of the head office. As is apparent, the tag configuration portion 315 allows the brand manager multiple addresses, each of which may be bulk uploaded by way of CSV upload.

Referring to figure 7, there is shown the tag configuration portion 315 allowing the brand manager to configure one or more deals in relation to a tag. As such, users having such a tag will be alerted to periodic deals. As is apparent from the interface, the brand manager can enter a URL at which the sale takes place, a URL from which coupons may be obtained and the like. It should be noted that the system 200 is adapted for updating tag information so as to, using the present example, be able to update a deal tag with periodic deals. There are a number of manners in which the server 205 may update a tag, including by sending updated tag data to the mobile computing device including by push or pull upon request or by simply presenting the updated tag data upon the user authenticating with the server.

Referring now to figure 8, there is shown an exemplary interface of the mobile computing device 210. As is apparent, the user employs the image capture device of the mobile computing device 210 to capture an image 805 of a shoe displaying the Nike emblem. Once the user has framed the image 805, the user activates the button 810 in order to send the image data to the server for recognition so as to receive the Nike tag. It should be noted that the user may capture images or barcodes from a variety of marketing material, including magazines, billboards, actual products and the like. The barcodes may be a ID barcode or a 2D barcode. In yet another embodiment, near field communication (NFC) tags and other radio-frequency identification (RFID) tags may also be used. Of course, other forms of computer readable medium may also be used. In an exemplary embodiment, the barcode may comprise such as a uniform resource locator (URL)

corresponding to, for example, a promotional product webpage. It should be appreciated that the barcode may also comprise other forms of information to be availed of by the user. Also, each instance of the barcode may be configured to correspond to unique information. For example, the barcode in each copy of the same magazine may correspond to a unique URL for the purpose of prize draw. Such configuration is also useful for scenarios where each barcode may be availed of only once for statistical purpose.

Furthermore, it should be noted that the mobile computing device 210 need not necessarily send the actual image data to the server 205 but may instead send compressed image data suitable primarily for the purposes of matching.

As such, upon receipt of the image data from the mobile computing device 210 by the client computing device 205, the client computing device 205 is adapted to recognise from the reference image database 220, at least one reference image comprising the Nike Swoosh. As such, having recognised at least one reference image from the reference image database 220, the server 205 is adapted to associate the appropriate Nike tag with the user, such as by sending the tag data back to the mobile computing device 210 for storage, or alternatively associating the Nike tag with the account of the user of the mobile computing device 210.

There are a number of manners by which the server 205 may recognise the at least one reference image. Preferably, the server 205 employs a similarity algorithm to select the most appropriate reference image or group of reference images. The similarity algorithm may comprise a correlation algorithm which may furthermore be adapted to be rotational angle invariant and colour invariant so as to provide greater recognition capabilities. Preferably, the server 205 is adapted to rate each reference image in accordance with the similarity with the image data and select the best match reference image.

Primarily, so as to ensure greater accuracy, a brand manager will provide only those plurality of reference images as are provided in the marketplace. As such, were the brand manager conducting a print media magazine campaign, the brand manager would upload only those reference images as printed within the magazines.

As such, and referring specifically now to figure 9, there is shown the mobile computing device 210 displaying the matched tag 905. As is evident from the exemplary embodiment of figure 9, it is apparent that the server 205 has recognised the Nike tag data and therefore the mobile computing device 210 displays the Nike tag. As is also apparent, the interface furthermore comprises the tag aspects/functionality as were configured by the brand manager using the tag configuration portion 315 in the manner described above. As such, as is evident from the embodiment, beneath the image representation of a tag 905, there are provided the various tag aspects 910 allowing for customer engagement. As is apparent, the tag aspects 910 allow the user

to select an appropriate tag aspect/function, such as to browse to the website of the tag and the like.

It should be noted that the mobile computing device 210 maybe adapted to store multiple tags of the user in a logical manner, allowing the user to browse there are collected tags by category and the like. Once a particular tag is selected, the exemplary interface as substantially shown in figure 9 would be displayed allowing the user to initiate any of the functionality provided with the tag.

It should be noted that in one embodiment, the system 200 is adapted to allow users to share tags, such as by providing an e-mail address or name of a registered user. In this manner, the user may send the Nike tag data to a friend such that the friend may take advantage of a sale.

Reference is now made to figure 10 showing exemplary functionality provided by a tag. It should be appreciated that such functionality described in figure 10 is exemplary only and is specifically not limited to the embodiment shown. It should be noted that such functionality would be provided in association with a tag as substantially shown in figure 9 wherein the user may select an appropriate function and 910 for initiation.

The tag functionality comprises functionality 1005a allowing a user to browse to a website associated with the tag. In this manner, a brand manager may configure the configuration data with an appropriate URL such that users may browse to a website to receive further information in relation to the brand, product or service.

The tag functionality further comprises software application functionality 1005b allowing a user to download an application associated with a tag. In this manner, the Nike brand manager may configure the configuration data with software application identification data so as to allow a user to download an application from one or more application stores.

The tag functionality further comprises offer functionality 1005c providing information in relation to offers and deals. As such, the Nike brand manager may configure the configuration data to alert users as to current sales, deals and the like. The tag may comprise a URL to a website where the deal may be available, coupon websites where a coupon may be obtained and the like. In this embodiment, and as with tags in general, the system 200 is adapted to allow the dynamic updating of tag data so as to allow those users who have already a tag in relation to a brand to receive updated information, such as deal data. In one embodiment, prior to displaying a tag, or at least at periodic intervals, the mobile computing device 210 maybe adapted to send a request to the server 210 to ascertain any updated tag data.

The tag functionality further comprises a video functionality 1005d providing for video data to be obtained by a user. In this manner, the Nike brand manager may provide a promotional video

to those users having the Nike tag. The system 200 may provide the video data in a number of manners, including by providing a URL to a video data resource.

The tag functionality further comprises location functionality 1005e allowing a user having a tag to find the closest location for the brand, product or service. As alluded to above, the configuration data may be configured with street addresses of various outlets of a brand, product or service such that in use, the mobile computing device 210 maybe adapted to, using a GPS device, navigate to the closest location. As alluded to above, should a location case, the system 200 may be adapted to dynamically update the location data associated with a tag.

The tag functionality further comprises contact nationality 1005f providing contact information for users so as to be able to contact a brand manager, product provider or service provider. The contact information may comprise various contact information including e-mail, telephone, fax, postal and street address information.

The tag functionality further comprises social sharing functionality 1005g allowing users to share tags or tag information using social and communication platforms. For example, the Nike brand manager may configure the tag data so as to allow the user to e-mail the Nike tag to a friend, or post information relating to Nike on the user's social wall.

The tag functionality further comprises follow functionality 1005h allowing a user to follow a social feed. In this manner, the Nike brand manager may configure the tag data so as to allow the user to receive periodic updates (Tweets were Twitter is employed, for example) in relation to Nike.

The tag functionality further comprises more information functionality 1005i allowing a user to obtain further information in relation to a brand, product or service. For example, the Nike brand manager the configured the tag data with more information in relation to the Nike brand, a Nike product, service or the like. For example, referring to the exemplary embodiment given in figure 8 were the user captures an image of a Nike shoe, the Nike brand manager may configure the configuration data to provide more information in relation to the particular shoe shown. In this manner, it should be noted that the more information data may be configured in relation to each reference image, wherein each reference image may correlate with a particular product or service.

Yet further, the tag functionality further comprises a buy online functionality 1005j allowing a user to purchase a product or service. For example, the Nike brand manager may configure the tag data with a URL of a website where a user may purchase a Nike product or service.

Tag Updatability

As alluded to above, in one embodiment, the tags referred to herein are updatable by the system 200 including at the request of the brand manager using the brand manager terminal 215, and other users of the system. In this manner, as opposed to a tag presenting static unchanging information to a user of the mobile computing device 210, the tag is able to present dynamic information to the user which is updated from time to time in accordance with the manner required.

One example, a tag for a particular brand may represent a sale event at certain intervals. In this manner, those users who have the tag for Nike for example, may receive periodic notifications of sale events for Nike products and the like. Of course, any other information in relation to tag may be updated dynamically, such as the contact details of a particular brand, product and service information and the like.

There are a number of manners in which tags may be updated. In one embodiment, the mobile computing device 210 is adapted to periodically poll the server 205 to ascertain those tags which have been updated, in a "pull" manner.

In another embodiment, in a "push" manner, the server 205 may send updated tag information to one or more mobile computing devices 210 by utilising a suitable push technology. In this "push" manner, necessary polling by the mobile computing device 210 is not required.

In updating tag information, the server 210 maybe adapted to replace the tag data in its entirety, or simply send the updated data for inclusion within the existing tag data.

Interpretation

Bus

In the context of this document, the term "bus" and its derivatives, while being described in a preferred embodiment as being a communication bus subsystem for interconnecting various devices including by way of parallel connectivity such as Industry Standard Architecture (ISA), conventional Peripheral Component Interconnect (PCI) and the like or serial connectivity such as PCI Express (PCIe), Serial Advanced Technology Attachment (Serial ATA) and the like, should be construed broadly herein as any system for communicating data.

In accordance with:

As described herein, 'in accordance with' may also mean 'as a function of and is not necessarily limited to the integers specified in relation thereto.

Composite items

As described herein, 'a computer implemented method' should not necessarily be inferred as being performed by a single computing device such that the steps of the method may be performed by more than one cooperating computing devices.

Similarly objects as used herein such as 'web server', 'server', 'client computing device', 'computer readable medium' and the like should not necessarily be construed as being a single object, and may be implemented as a two or more objects in cooperation, such as, for example, a web server being construed as two or more web servers in a server farm cooperating to achieve a desired goal or a computer readable medium being distributed in a composite manner, such as program code being provided on a compact disk activatable by a license key downloadable from a computer network.

Database:

In the context of this document, the term "database" and its derivatives may be used to describe a single database, a set of databases, a system of databases or the like. The system of databases may comprise a set of databases wherein the set of databases may be stored on a single implementation or span across multiple implementations. The term "database" is also not limited to refer to a certain database format rather may refer to any database format. For example, database formats may include MySQL, MySQLi , XML or the like.

Wireless:

The invention may be embodied using devices conforming to other network standards and for other applications, including, for example other WLAN standards and other wireless standards.

Applications that can be accommodated include IEEE 802.11 wireless LANs and links, and wireless Ethernet.

In the context of this document, the term "wireless" and its derivatives may be used to describe circuits, devices, systems, methods, techniques, communications channels, etc., that may communicate data through the use of modulated electromagnetic radiation through a non-solid medium. The term does not imply that the associated devices do not contain any wires, although in some embodiments they might not. In the context of this document, the term "wired" and its derivatives may be used to describe circuits, devices, systems, methods, techniques, communications channels, etc., that may communicate data through the use of modulated electromagnetic radiation through a solid medium. The term does not imply that the associated devices are coupled by electrically conductive wires.

Processes:

Unless specifically stated otherwise, as apparent from the following discussions, it is appreciated that throughout the specification discussions utilizing terms such as "processing", "computing", "calculating", "determining", "analysing" or the like, refer to the action and/or processes of a computer or computing system, or similar electronic computing device, that manipulate and/or transform data represented as physical, such as electronic, quantities into other data similarly represented as physical quantities.

Processor:

In a similar manner, the term "processor" may refer to any device or portion of a device that processes electronic data, e.g., from registers and/or memory to transform that electronic data into other electronic data that, e.g., may be stored in registers and/or memory. A "computer" or a "computing device" or a "computing machine" or a "computing platform" may include one or more processors.

The methodologies described herein are, in one embodiment, performable by one or more processors that accept computer-readable (also called machine-readable) code containing a set of instructions that when executed by one or more of the processors carry out at least one of the methods described herein. Any processor capable of executing a set of instructions (sequential or otherwise) that specify actions to be taken are included. Thus, one example is a typical processing system that includes one or more processors. The processing system further may include a memory subsystem including main RAM and/or a static RAM, and/or ROM.

Computer-Readable Medium:

Furthermore, a computer-readable carrier medium may form, or be included in a computer program product. A computer program product can be stored on a computer usable carrier medium, the computer program product comprising a computer readable program means for causing a processor to perform a method as described herein.

Networked or Multiple Processors:

In alternative embodiments, the one or more processors operate as a standalone device or may be connected, e.g., networked to other processor(s), in a networked deployment, the one or more processors may operate in the capacity of a server or a client machine in server-client network environment, or as a peer machine in a peer-to-peer or distributed network environment. The one or more processors may form a web appliance, a network router, switch or bridge, or any machine capable of executing a set of instructions (sequential or otherwise) that specify actions to be taken by that machine.

Note that while some diagram(s) only show(s) a single processor and a single memory that carries the computer-readable code, those in the art will understand that many of the components described above are included, but not explicitly shown or described in order not to obscure the inventive aspect. For example, while only a single machine is illustrated, the term "machine" shall also be taken to include any collection of machines that individually or jointly execute a set (or multiple sets) of instructions to perform any one or more of the methodologies discussed herein.

Additional Embodiments:

Thus, one embodiment of each of the methods described herein is in the form of a computer-readable carrier medium carrying a set of instructions, e.g., a computer program that are for execution on one or more processors. Thus, as will be appreciated by those skilled in the art, embodiments of the present invention may be embodied as a method, an apparatus such as a special purpose apparatus, an apparatus such as a data processing system, or a computer-readable carrier medium. The computer-readable carrier medium carries computer readable code including a set of instructions that when executed on one or more processors cause a processor or processors to implement a method. Accordingly, aspects of the present invention may take the form of a method, an entirely hardware embodiment, an entirely software embodiment or an embodiment combining software and hardware aspects. Furthermore, the present invention may take the form of carrier medium (e.g., a computer program product on a computer-readable storage medium) carrying computer-readable program code embodied in the medium.

Carrier Medium:

The software may further be transmitted or received over a network via a network interface device. While the carrier medium is shown in an example embodiment to be a single medium, the term "carrier medium" should be taken to include a single medium or multiple media (e.g., a centralized or distributed database, and/or associated caches and servers) that store the one or more sets of instructions. The term "carrier medium" shall also be taken to include any medium that is capable of storing, encoding or carrying a set of instructions for execution by one or more of the processors and that cause the one or more processors to perform any one or more of the methodologies of the present invention. A carrier medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media.

Implementation:

It will be understood that the steps of methods discussed are performed in one embodiment by an appropriate processor (or processors) of a processing (i.e., computer) system executing instructions (computer-readable code) stored in storage. It will also be understood that the invention is not limited to any particular implementation or programming technique and that the invention may be implemented using any appropriate techniques for implementing the functionality described herein. The invention is not limited to any particular programming language or operating system.

Means For Carrying out a Method or Function

Furthermore, some of the embodiments are described herein as a method or combination of elements of a method that can be implemented by a processor of a processor device, computer system, or by other means of carrying out the function. Thus, a processor with the necessary instructions for carrying out such a method or element of a method forms a means for carrying out the method or element of a method. Furthermore, an element described herein of an apparatus embodiment is an example of a means for carrying out the function performed by the element for the purpose of carrying out the invention.

Connected

Similarly, it is to be noticed that the term connected, when used in the claims, should not be interpreted as being limitative to direct connections only. Thus, the scope of the expression a device A connected to a device B should not be limited to devices or systems wherein an output of device A is directly connected to an input of device B. It means that there exists a path between an output of A and an input of B which may be a path including other devices or means. "Connected" may mean that two or more elements are either in direct physical or electrical

contact, or that two or more elements are not in direct contact with each other but yet still co-operate or interact with each other.

Embodiments:

Reference throughout this specification to "one embodiment" or "an embodiment" means that a particular feature, structure or characteristic described in connection with the embodiment is included in at least one embodiment of the present invention. Thus, appearances of the phrases "in one embodiment" or "in an embodiment" in various places throughout this specification are not necessarily all referring to the same embodiment, but may. Furthermore, the particular features, structures or characteristics may be combined in any suitable manner, as would be apparent to one of ordinary skill in the art from this disclosure, in one or more embodiments.

Similarly it should be appreciated that in the above description of example embodiments of the invention, various features of the invention are sometimes grouped together in a single embodiment, figure, or description thereof for the purpose of streamlining the disclosure and aiding in the understanding of one or more of the various inventive aspects. This method of disclosure, however, is not to be interpreted as reflecting an intention that the claimed invention requires more features than are expressly recited in each claim. Rather, as the following claims reflect, inventive aspects lie in less than all features of a single foregoing disclosed embodiment. Thus, the claims following the Detailed Description of Specific Embodiments are hereby expressly incorporated into this Detailed Description of Specific Embodiments, with each claim standing on its own as a separate embodiment of this invention.

Furthermore, while some embodiments described herein include some but not other features included in other embodiments, combinations of features of different embodiments are meant to be within the scope of the invention, and form different embodiments, as would be understood by those in the art. For example, in the following claims, any of the claimed embodiments can be used in any combination.

Specific Details

In the description provided herein, numerous specific details are set forth. However, it is understood that embodiments of the invention may be practiced without these specific details. In other instances, well-known methods, structures and techniques have not been shown in detail in order not to obscure an understanding of this description.

Terminology

In describing the preferred embodiment of the invention illustrated in the drawings, specific terminology will be resorted to for the sake of clarity. However, the invention is not intended to

be limited to the specific terms so selected, and it is to be understood that each specific term includes all technical equivalents which operate in a similar manner to accomplish a similar technical purpose. Terms such as "forward", "rearward", "radially", "peripherally", "upwardly", "downwardly", and the like are used as words of convenience to provide reference points and are not to be construed as limiting terms.

Different Instances of Objects

As used herein, unless otherwise specified the use of the ordinal adjectives "first", "second", "third", etc., to describe a common object, merely indicate that different instances of like objects are being referred to, and are not intended to imply that the objects so described must be in a given sequence, either temporally, spatially, in ranking, or in any other manner.

Comprising and Including

In the claims which follow and in the preceding description of the invention, except where the context requires otherwise due to express language or necessary implication, the word "comprise" or variations such as "comprises" or "comprising" are used in an inclusive sense, i.e. to specify the presence of the stated features but not to preclude the presence or addition of further features in various embodiments of the invention.

Any one of the terms: including or which includes or that includes as used herein is also an open term that also means including at least the elements/features that follow the term, but not excluding others. Thus, including is synonymous with and means comprising.

Scope of Invention

Thus, while there has been described what are believed to be the preferred embodiments of the invention, those skilled in the art will recognize that other and further modifications may be made thereto without departing from the spirit of the invention, and it is intended to claim all such changes and modifications as fall within the scope of the invention. For example, any formulas given above are merely representative of procedures that may be used. Functionality may be added or deleted from the block diagrams and operations may be interchanged among functional blocks. Steps may be added or deleted to methods described within the scope of the present invention.

Although the invention has been described with reference to specific examples, it will be appreciated by those skilled in the art that the invention may be embodied in many other forms.

Industrial Applicability

It is apparent from the above, that the arrangements described are applicable to the mobile software application industries.

Claims

1. A server for selecting tag data, the server comprising:

a processor for processing digital data,

a memory device for storing digital data including computer program code, the memory device being operably coupled to the processor, and

a network interface for sending and receiving digital data across a network, the network interface being operably coupled to the processor; wherein, in use, the processor is controlled by the computer program code to:

receive, via the network interface, configuration data comprising at least reference image data representing at least one reference image in relation to tag data representing at least one tag,

receive, via the network interface, image data representing an image capture;

recognise the at least one reference image in accordance with the image data; and

select the tag data.

2. A server as claimed in claim 1, wherein the processor is further controlled by the computer program code to recognise the at least one reference image in accordance with the similarity algorithm.

3. A server as claimed in claim 2, wherein the similarity algorithm comprises a best match algorithm.

4. A server as claimed in claim 2, wherein the similarity algorithm comprises a correlation algorithm.

5. A server as claimed in claim 2, wherein the similarity algorithm is rotational angle invariant.

6. A server as claimed in claim 2, wherein the similarity algorithm is colour invariant.

7. A server as claimed in claim 1, wherein the at least one reference image is a plurality of reference images and wherein the processor is further controlled by the computer program code and the configuration data to select a primary image from the plurality of reference images.

8. A server as claimed in claim 1, wherein the processor is further controlled by the computer program code to associate the tag data with a user account associated with the image data.

9. A server as claimed in claim 8, wherein the processor is further controlled by the computer program code to:

receive, via the network interface, authentication credentials data representing authentication credentials for the account; and

serve, via the network interface, the tag data.

10. A server as claimed in claim 1, wherein the processor is further controlled by the computer program code to serve, via the network interface, the tag data.

11. A server as claimed in claim 1, wherein the tag data represents tag information and wherein the processor is further controlled by the computer program code to send, via the network interface, tag update data representing updated tag information.

12. A server as claimed in claim 1, wherein the tag data represents a URL.

13. A server as claimed in claim 12, wherein the tag data represents a product or service.

14. A server as claimed in claim 12, wherein the tag data further represents a URL at which the product or service may be purchased.

15. A server as claimed in claim 1, wherein the tag data represents a social platform action.

16. A server as claimed in claim 15, wherein the social platform action comprises a follow social platform action.

17. A server as claimed in claim 1, wherein the tag data represents a video.

18. A server as claimed in claim 17, wherein the tag data comprises video data representing the video.

19. A server as claimed in claim 17, wherein the tag data comprises a URL from which video data representing the video may be downloaded.

20. A server as claimed in claim 1, wherein the tag data represents a deal.

21. A server as claimed in claim 20, wherein the tag data further represents a deal coupon for use with the deal.

22. A server as claimed in claim 1, wherein the tag data represents a downloadable software application.

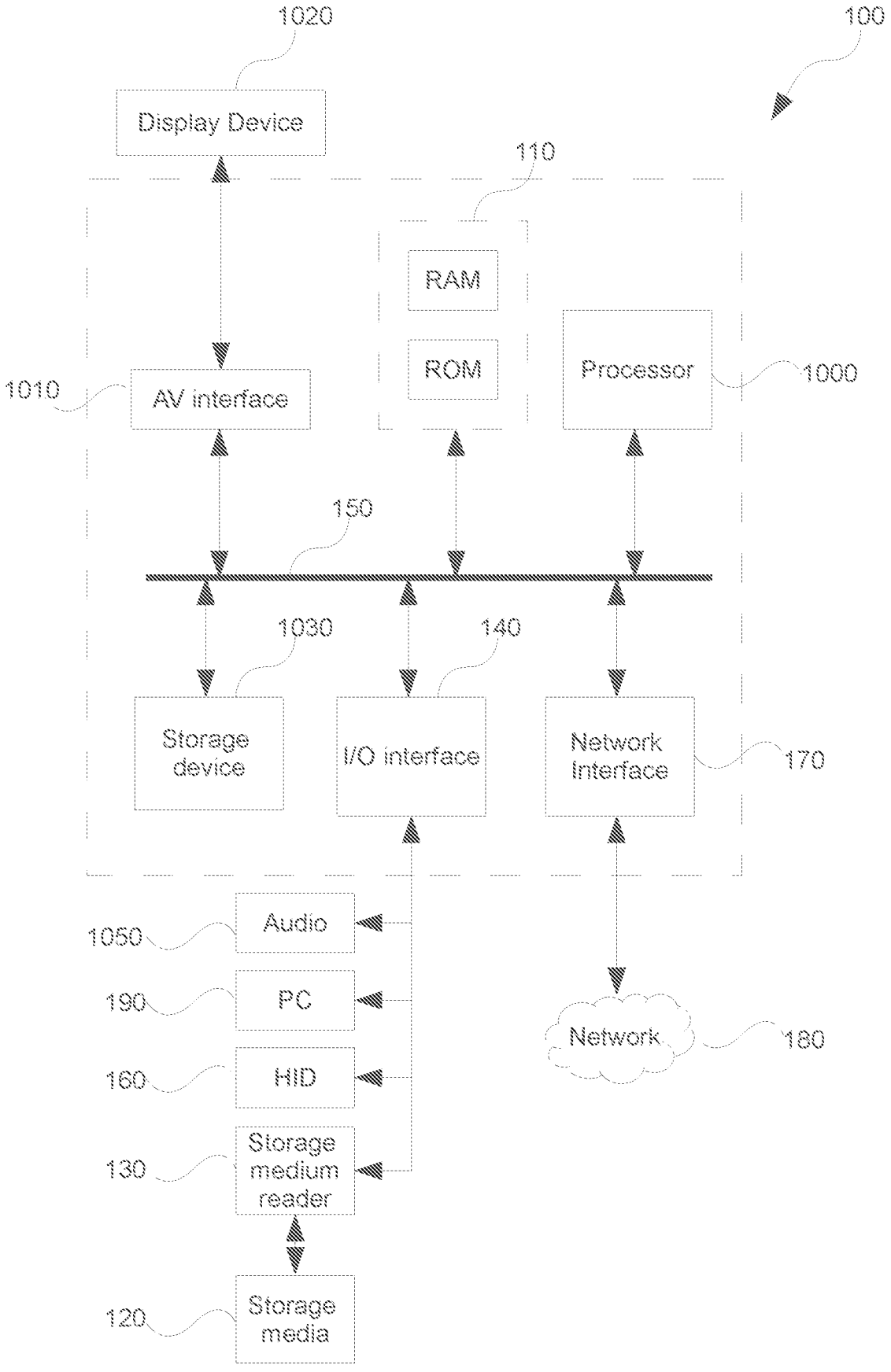
23. A server as claimed in claim 22, wherein the tag data further represents a unique application ID for the application.

24. A server as claimed in claim 1, wherein the tag data comprises location data representing the location.

25. A server as claimed in claim 1, wherein the tag data comprises contact information data representing contact information.

26. A server as claimed in claim 25, wherein the contact information comprises at least one of e-mail, telephone, Street address and Postal contact information.

27. A server as claimed in claim 1, wherein the tag data represents additional information.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Storage medium reader
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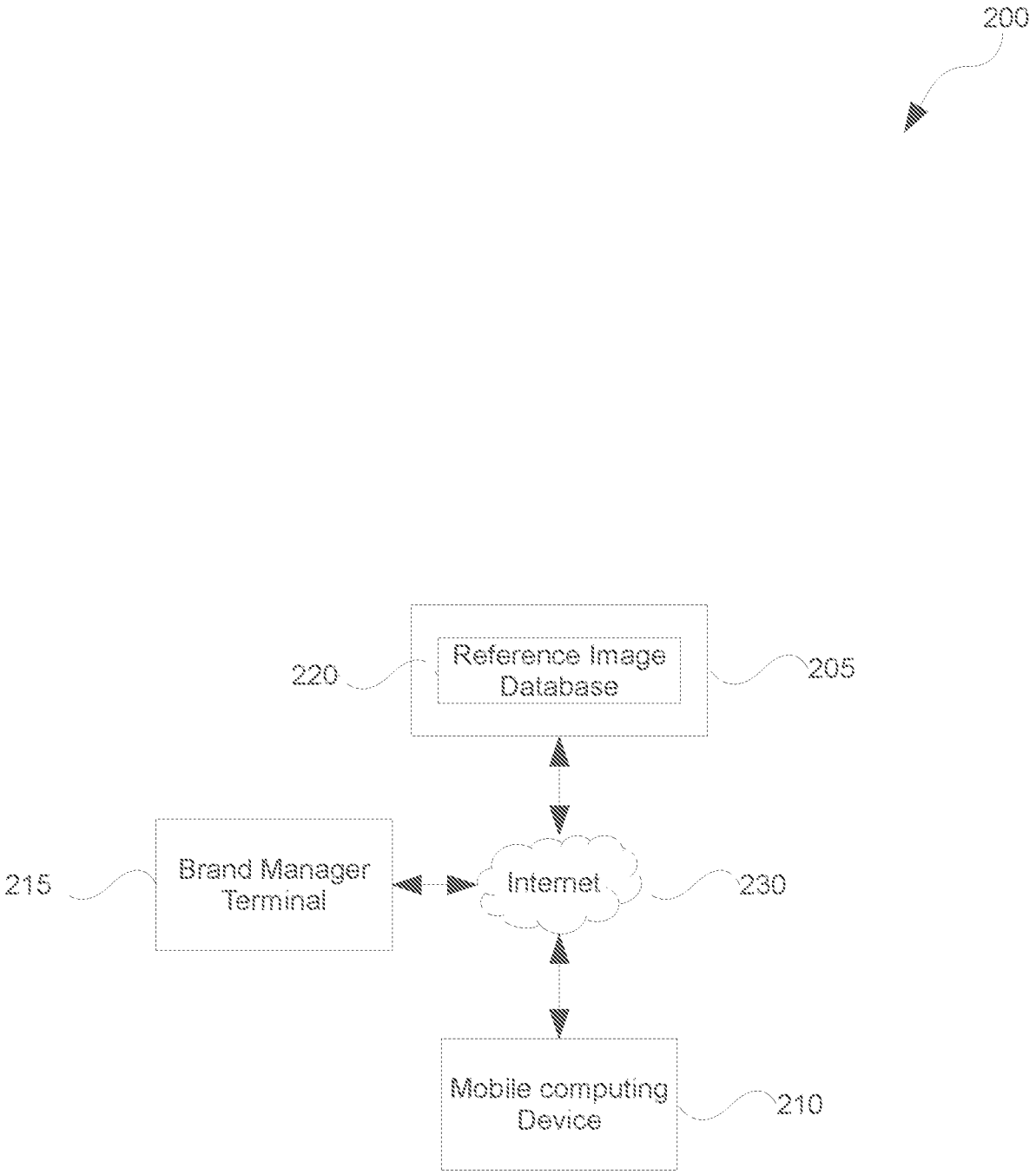
Storage media

Figure 1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Mobile computing Device
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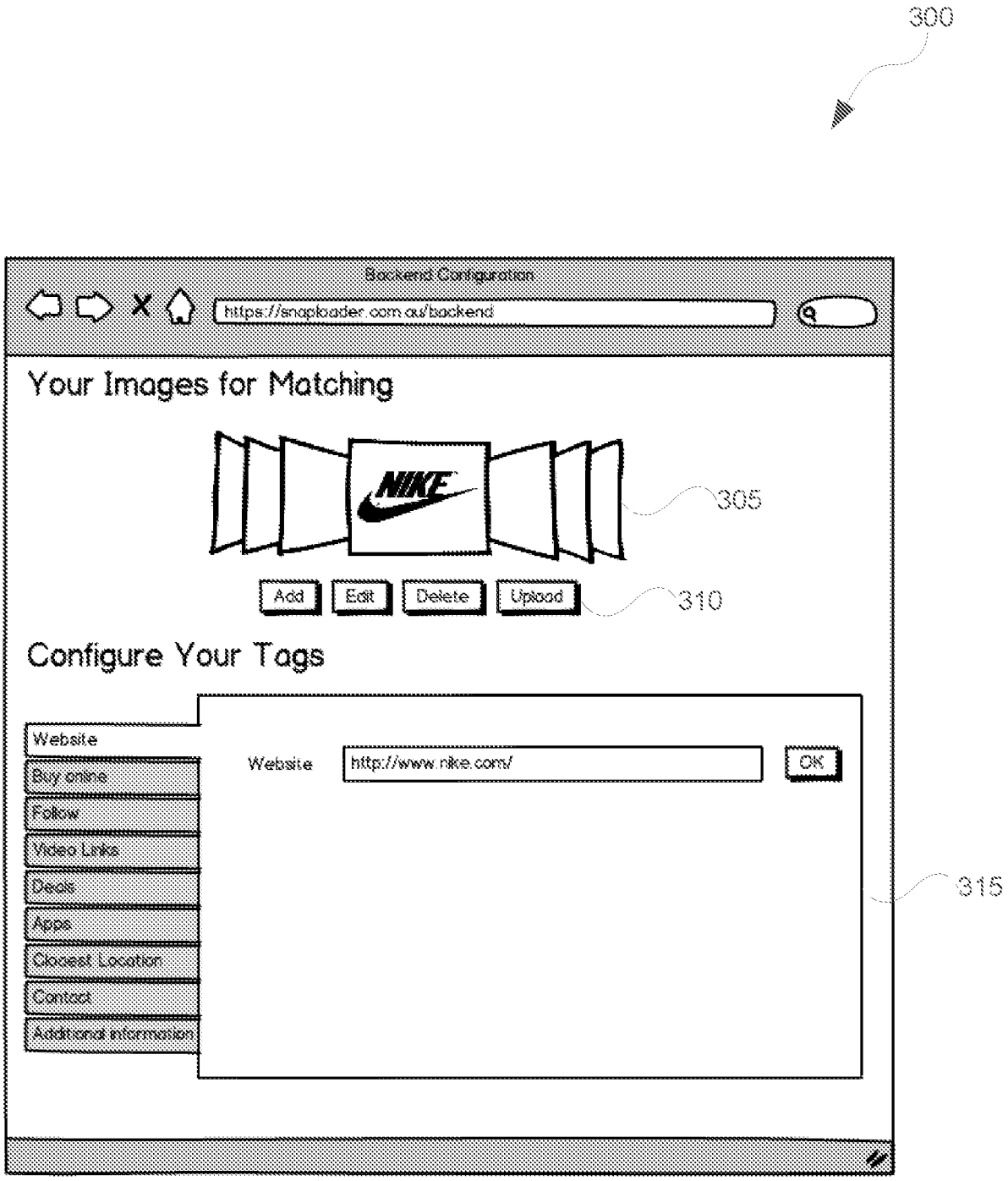
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Figure 3

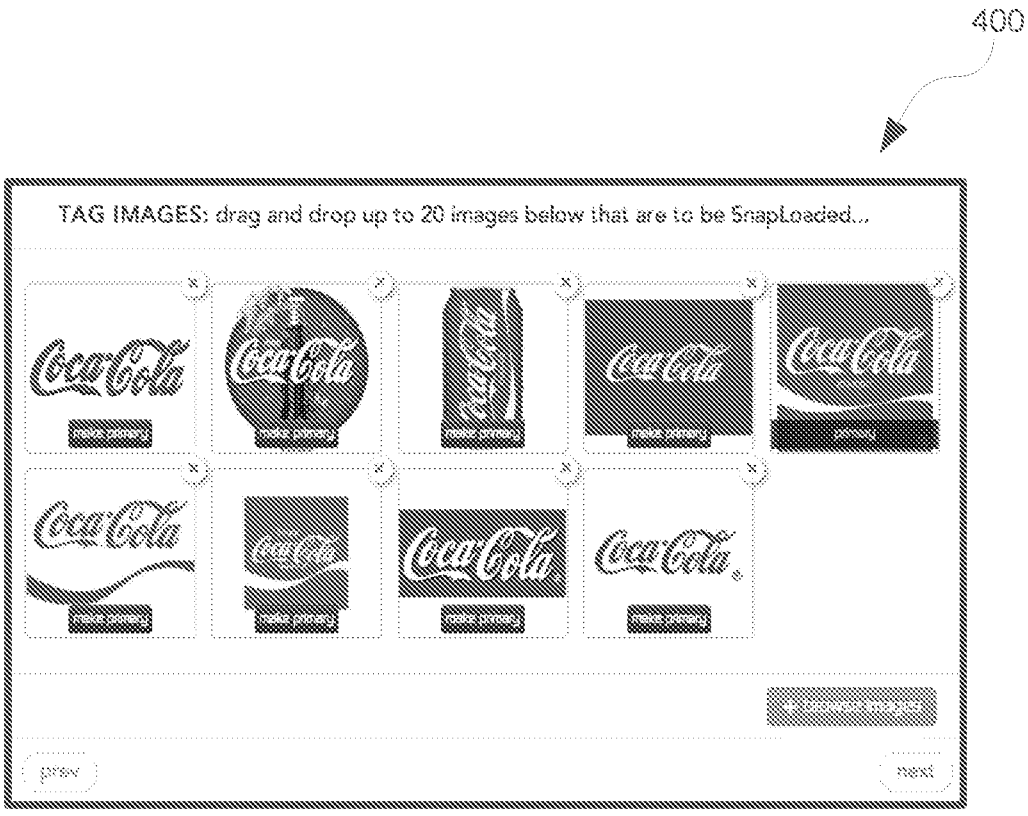
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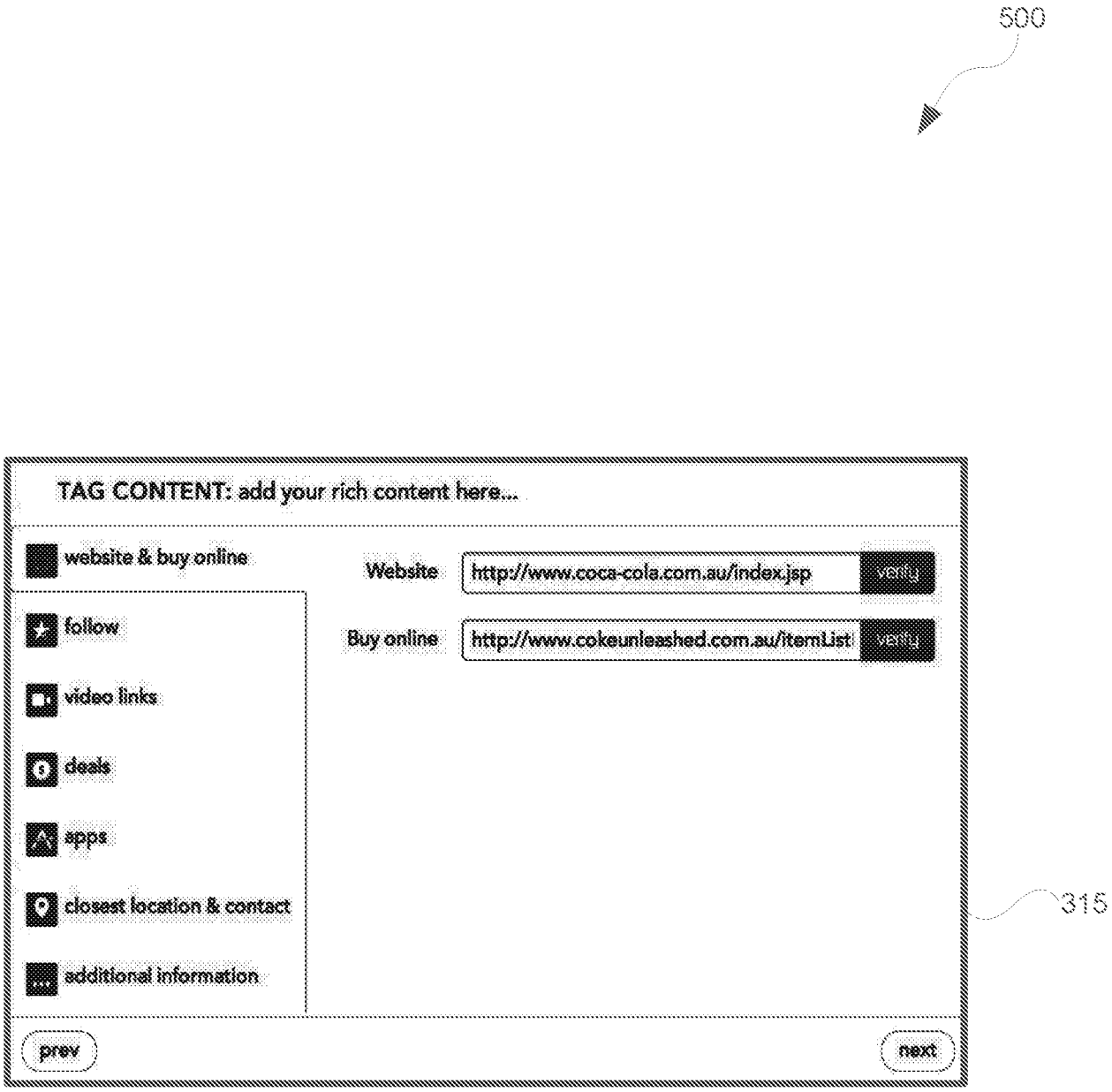
Figure 4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additional information
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Figure 5

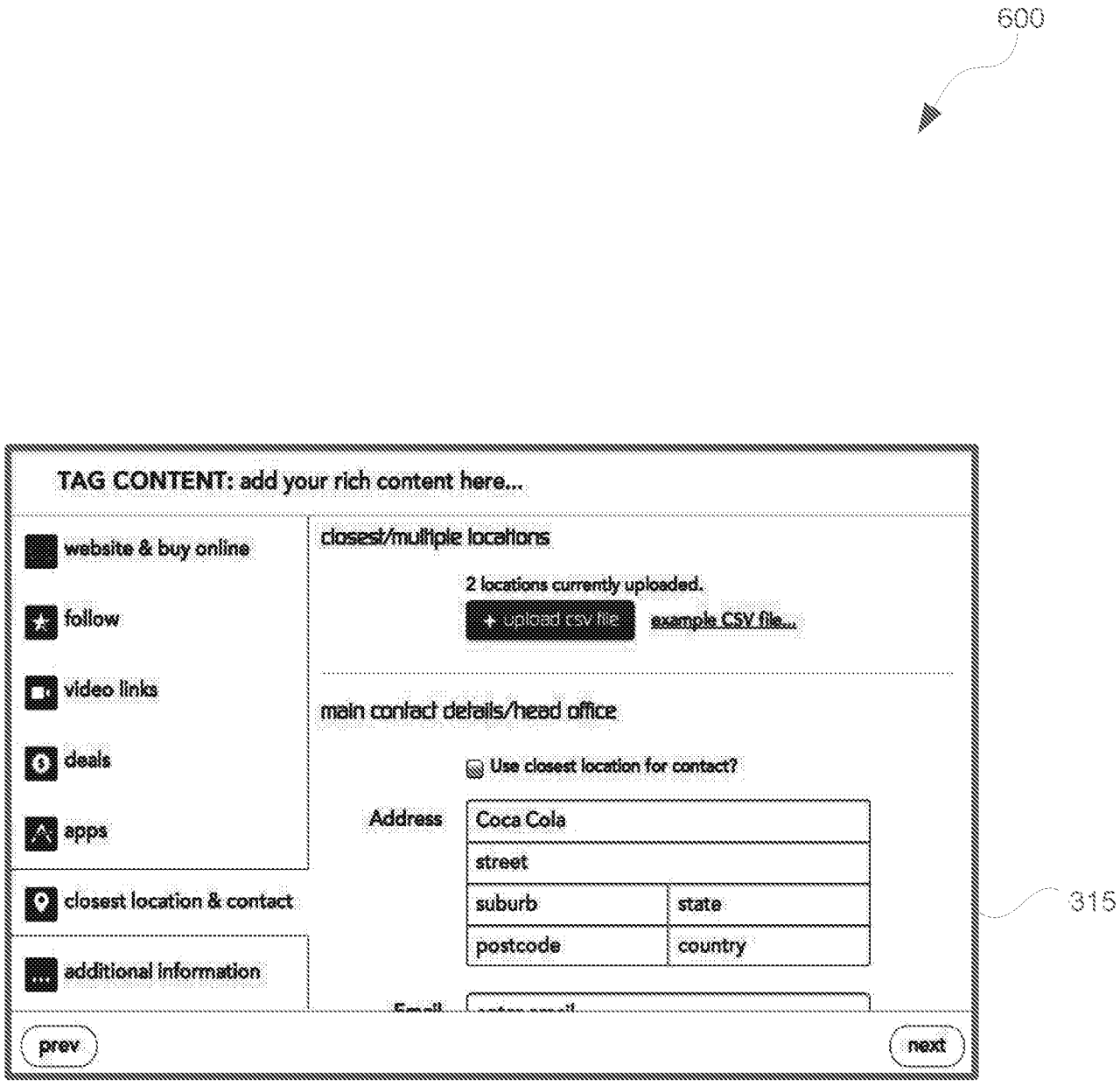
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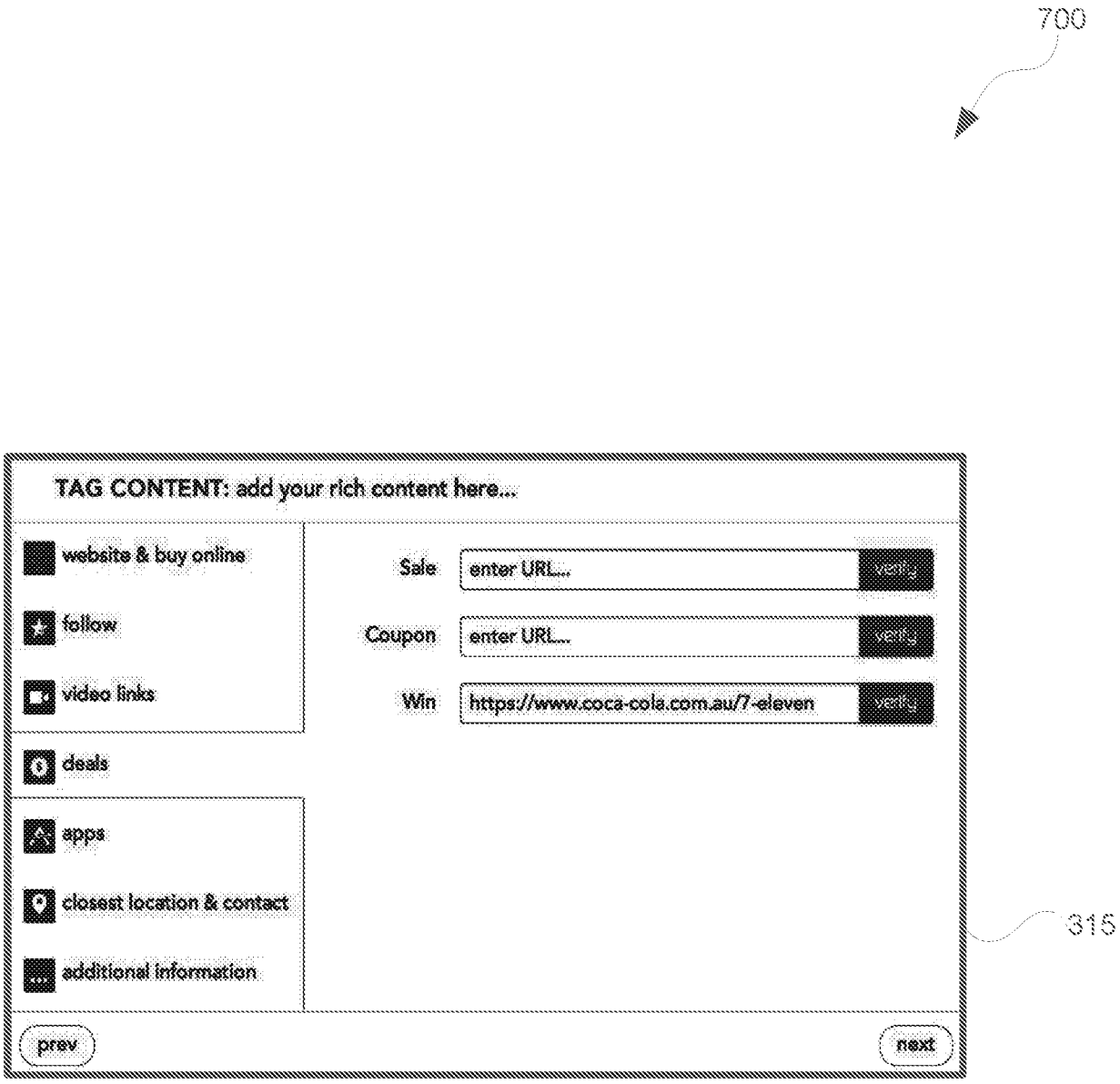
Figure 6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closest location & contact
additional information
Sale
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Figure 7

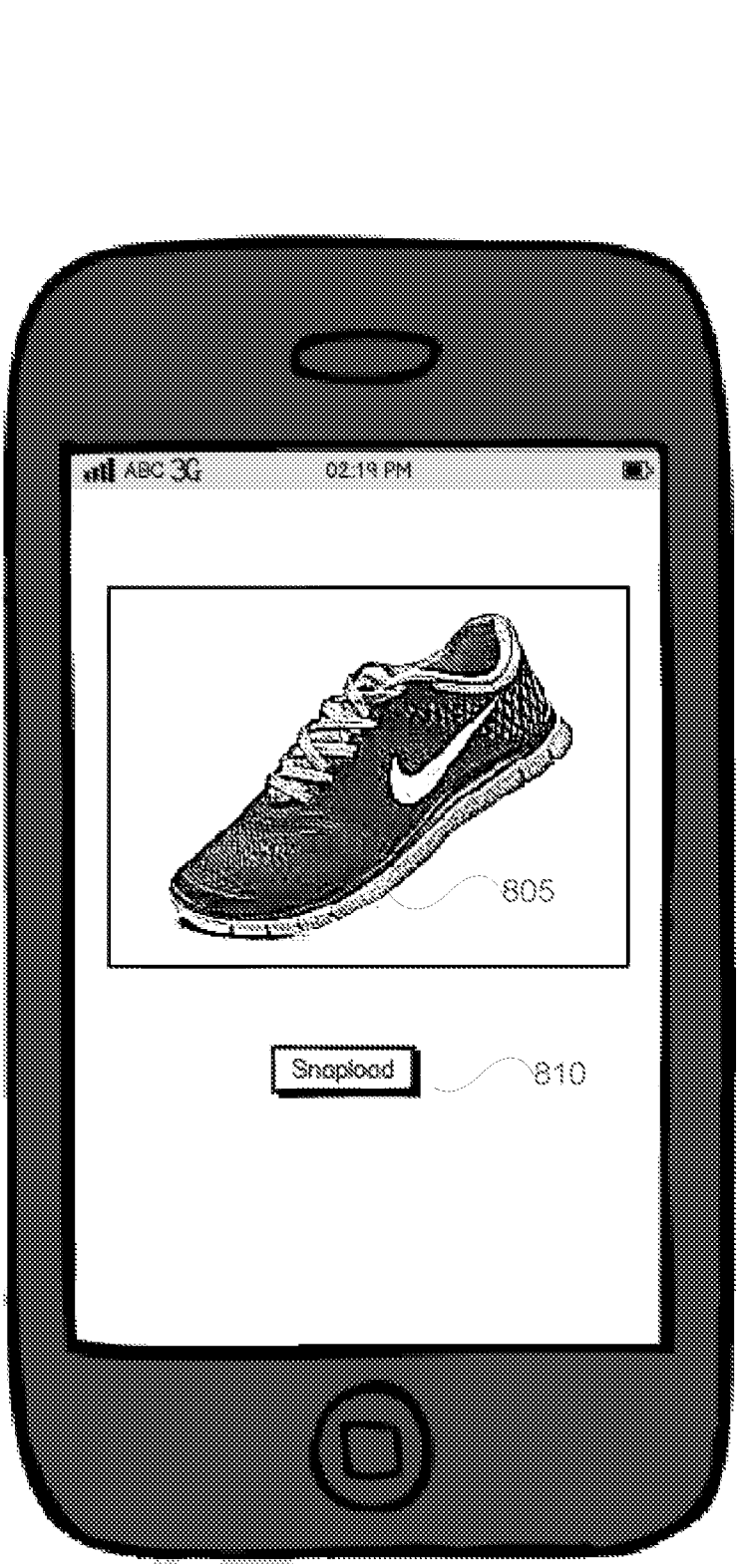


Figure 8

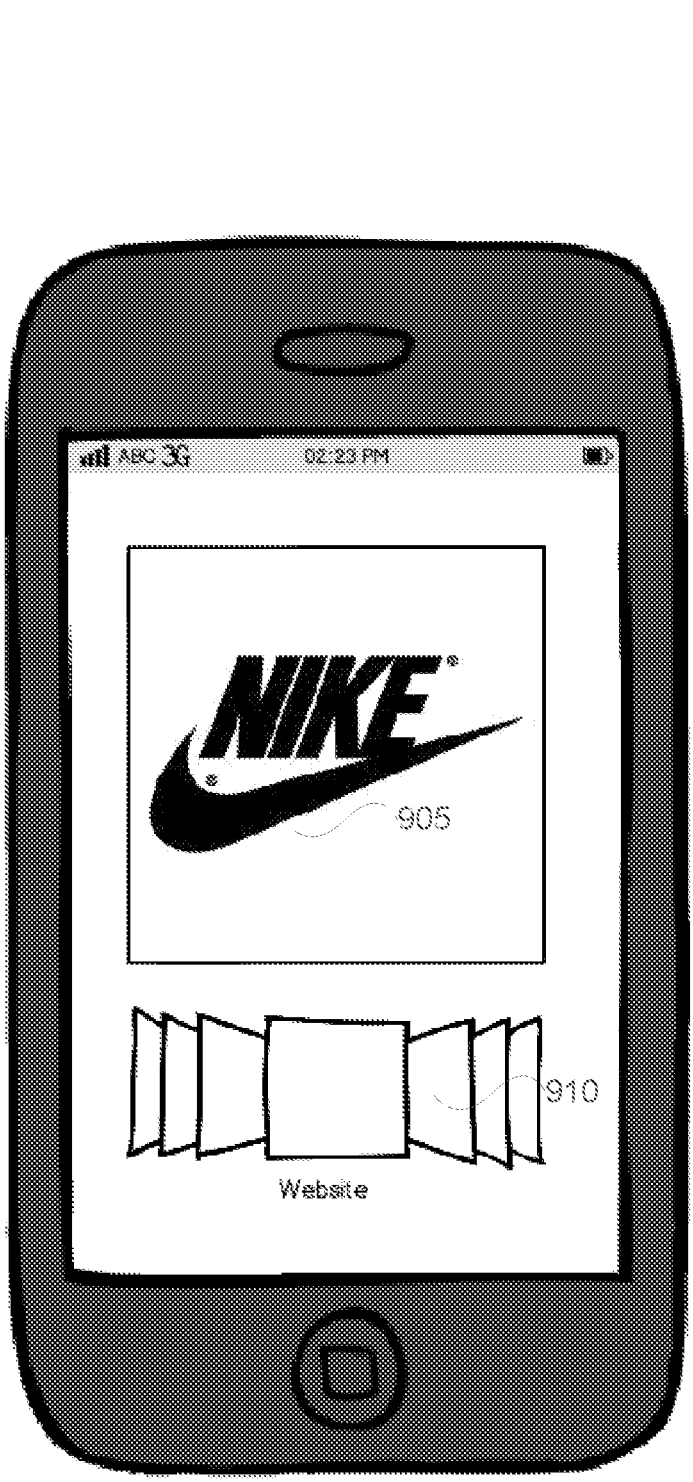
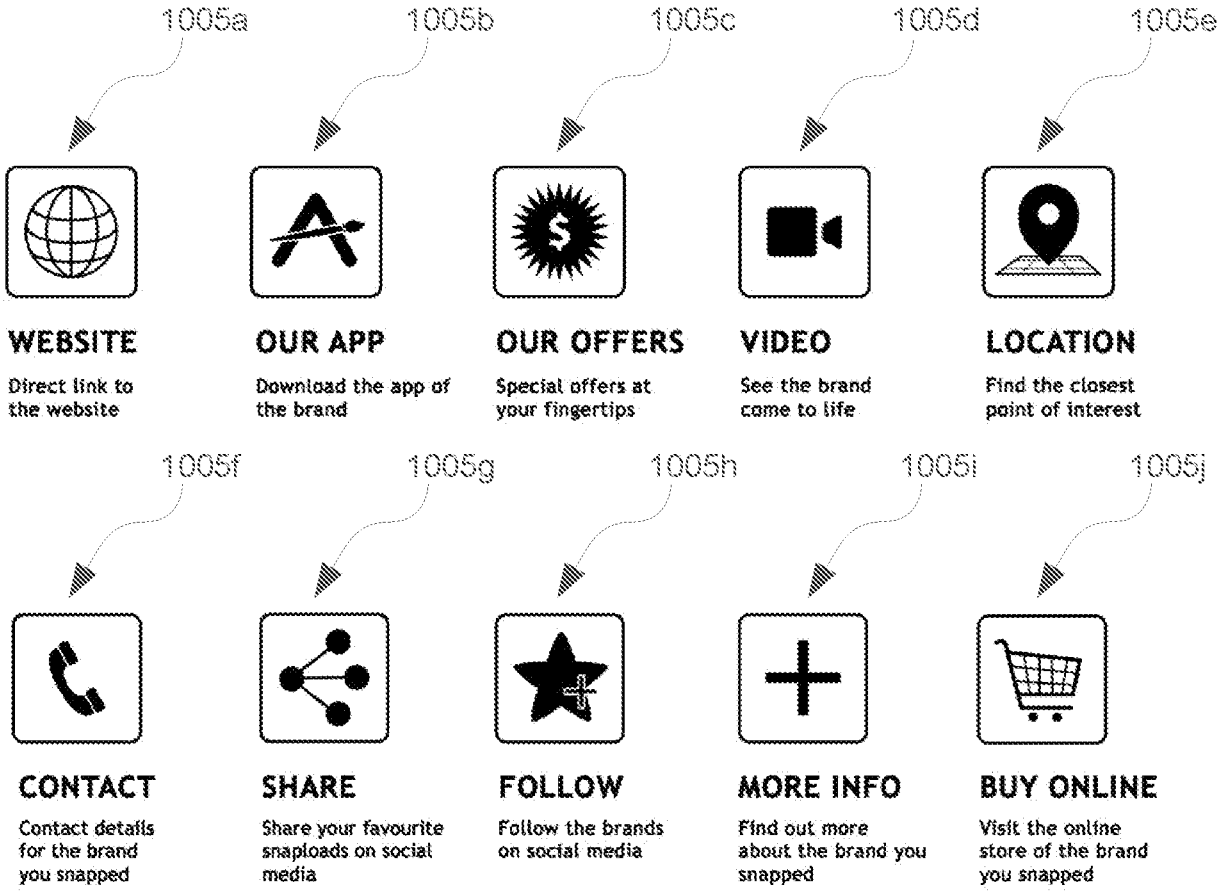


Figure 9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1005b
1005c
1005d
1005e
WEBSITE
Direct link to the website
OUR APP
Download the app of the brand
OUR OFFERS
Special offers at your fingertips
VIDEO
See the brand come to life
LOCATION
Find the closest point of interest
1005f
1005g
1005h
1005i
1005j
CONTACT
Contact details for the brand you snapped
SHARE
Share your favourite snaploads on social media
FOLLOW
Follow the brands on social media
MORE INFO
Find out more about the brand you snapped
BUY ONLINE
Visit the online store of the brand you snapped

Figure 10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2013/001057

A. CLASSIFICATION OF SUBJECT MATTER

G06K 9/68 (2006.01) G06T 7/00 (2006.01) G06F 17/30 (2006.01)

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)

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 practicable, search terms used)

EPODOC, WPI and FREE PATENTS ONLINE:

tag, metadata, meta information, image recognition, image identification, brand, logo, product, social network, best match, correlate, similar, rotate, colour with similar terms and synonyms.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	Documents are listed in the continuation of Box C	

[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 application or patent 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)

"0" 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
13 January 2014	11 December 2013
Name and mailing address of the ISA/AU	**Authorised officer**
AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA Email address: pct@ipaustralia.gov.au Facsimile No.: +61 2 6283 7999	Boris Cetinich AUSTRALIAN PATENT OFFICE (ISO 9001 Quality Certified Service) Telephone No. 0399359619

INTERNATIONAL SEARCH REPORT C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		International application No. **PCT/AU2013/001057**
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 2010/0103277 A1 (LEEBOW) 29 April 2010 abstract, paragraphs 15, 21, 28-29, 33, 41 and 53-60 as above	1, 8-10, 12-16, 20-21 and 24-27 2-6
X Y	US 2012/0229625 A1 (CALMAN et al.) 13 September 2012 abstract, paragraphs 57-69 and 98 as above	1, 7, 10-11, 17-19 and 22-23 2-6
Y	US 2010/0086213 A1 (MOMOI et al.) 08 April 2010 paragraph 159	2
Y	US 2009/0185746 A1 (MIAN et al.) 23 July 2009 paragraph	3
Y	US 5,060,282 A (MOLLEY) 22 October 1991 abstract	4
Y	WO 2011/061709 A1 (NOKIA CORPORATION et al.) 26 May 2011 abstract	5
Y	US 8,103,097 B2 (FINLAYSON) 24 January 2012 col. 1, line 43 to col. 2. line 3	6
P,X	US 8,438,163 B2 (LI et al.) 07 May 2013 abstract, col.6 lines 47-56, col. 10, lines 45-55 and col. 12, line 29 to col. 13, line 22	1-27
P,X	US 2013/0044959 A1 (MITCHELL et al.) 21 February 2013 paragraphs 26-28, 44, 48 and 55-63	1-27

INTERNATIONAL SEARCH REPORT Information on patent family members	International application No. **PCT/AU2013/001057**

This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document/s Cited in Search Report		Patent Family Member/s	
Publication Number	**Publication Date**	**Publication Number**	**Publication Date**
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		US 2008077595 A1	27 Mar 2008
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		US 2013229537 A1	05 Sep 2013
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		US 8571888 B2	29 Oct 2013
		US 2012230557 A1	13 Sep 2012
		US 8582850 B2	12 Nov 2013
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		US 8611601 B2	17 Dec 2013
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		US 2012230577 A1	13 Sep 2012
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		US 20122311425 A1	13 Sep 2012
		US 20122311814 A1	13 Sep 2012
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		US 2012233033 A1	13 Sep 2012
		US 2012233070 A1	13 Sep 2012

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

INTERNATIONAL SEARCH REPORT Information on patent family members	International application No. **PCT/AU2013/001057**

This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document/s Cited in Search Report		Patent Family Member/s	
Publication Number	**Publication Date**	**Publication Number**	**Publication Date**
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		EP 1520397 B1	18 Sep 2013
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		US 8103097 B2	24 Jan 2012
		US 2012121178 A1	17 May 2012
		US 8467605 B2	18 Jun 2013
		WO 03094505 A2	13 Nov 2003
US 8438163 B2	07 May 2013	None	
US 2013/0044959 A1	21 Feb 2013	None	

End of Annex

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.