

SYSTEM AND METHOD FOR CAPTURING AN IMAGE AND OBTAINING INFORMATION REGARDING THE IMAGE

Field of the Invention

This invention relates to a system and method for capturing an image and obtaining information regarding the image and refers particularly, though not exclusively, to such a system and method for capturing an image from a television or other image source and using a telecommunications enabled apparatus to obtain information relating to the image.

Reference to Related Application

Reference is made to our earlier-filed Singapore patent application number 200405362-5 filed 24 September 2004 for "Authentication System and Method", the contents of which are hereby incorporated by reference.

Background of the Invention

Advertising is now a global industry. In many instances, though, user interaction is not possible, and users cannot readily, and speedily, obtain information relating to the product being advertised. Furthermore, normally separate and unrelated action is required for following-up a promotion, offer, initiating a commercial transaction, or the like.

Summary of the Invention

In accordance with a first aspect there is provided a method for capturing an image using an apparatus and obtaining information regarding the image, the image containing a tag. The method comprises capturing the image using the apparatus; sending the captured image to a server; the server processing the image to extract therefrom the tag, and processes the tag to extract therefrom data; the server conducting a match search for the extracted data with stored data in its database; and upon a match being made, the server sending a response message to the apparatus.

According to a second aspect there is provided a method for capturing an image using an apparatus and obtaining information regarding the image, the image containing a tag, the method comprising capturing the image using the apparatus; sending the captured image to a server. This enables the server to process the image to extract therefrom the tag, and to process the tag to extract data therefrom; and conduct a match search for the extracted data

with stored data in its database. The apparatus then receive a response message from the server.

According to a further aspect there is provided a method for capturing an image using an apparatus and obtaining information regarding the image, the image containing a tag, the method comprising receiving from the apparatus the captured image; processing the captured image to extract therefrom the tag, and processing the tag to extract data therefrom; conducting a match search for the extracted data with stored data in a database; and upon a match being made, sending a response message to the apparatus.

According to a penultimate aspect there is provided a system for capturing an image using an apparatus and obtaining information regarding the image, the image containing a tag, the system comprising the apparatus for capturing the image and sending the captured image to a server; the server being for processing the captured image to extract therefrom the tag, and processing the tag to extract therefrom data, and conducting a match search for the extracted data with stored data in its database; and, upon a match being made, sending a response message to the apparatus.

The apparatus may be selected from a mobile telephone with built in digital camera, a digital camera with built-in telecommunications ability, and a digital camera operatively connected to a telecommunications-enabled computer.

The captured image may be sent to the server using a system selected from MMS, SMS, email, and to a URL of the server.

The tag may comprise a first section comprising a visual guide for identifying a location of the tag, and a second-section comprising data of the tag. The data contain an identifier for the tag. The data may be also encrypted.

The processing of the tag by the server may comprise any required decryption. The response message may comprise at least one of: information regarding a product promoted by the tag, an offer, a redemption message, a confirmation of receipt of an order, a confirmation of placement of the order, and a prize draw result.

The image may be displayed on at least one of: television screen, motion picture screen, billboard, computer monitor, a screen of a laptop, notebook or tablet computer; a screen of a portable computing device, a personal digital assistant, mobile or cellular telephone, book, magazine, newspaper, newsletter, and another printed publication.

According to another aspect there is provided a tag for use in advertising, the tag comprising a first comprising a visual guide for identifying a location of the tag, and a second section containing data. The data may comprise an identifier for the tag. The data may also be encrypted. A tag as claimed in claim 15, wherein the data also contains an identifier for the tag.

The visual guide may comprise a regular geometric shape with a central dot. The regular geometric shape may be a circle, the dot being concentric with the circle. The second section may comprise a border, all data being within the border, the border being joined to the visual guide by a link. The tag may further comprise a third section comprising a brand or logo.

According to a final aspect there is provided a computer usable medium comprising a computer program code that is configured to cause a process or to execute one or more functions to perform the method described above.

Brief Description of the Drawings

In order that the invention may be fully understood and readily put into practical effect, there shall now be described by way of non-limitative example only a preferred embodiment of the present invention, the description being with reference to the accompanying illustrative drawings in which:

Figure 1 is a schematic perspective view of apparatus for use in the preferred embodiment,

Figure 2 is a schematic overall view of the process of the preferred embodiment;

Figure 3 is front views of three preferred forms of tag;

Figure 4 is a flow chart of the process of the preferred embodiment at the transmission site;
and

Figure 5 is a flow chart of the process of the preferred embodiment at a reception site.

Detailed Description of the preferred Embodiments

To refer to Figure 1, there is shown an apparatus 10 for displaying an image 12. The apparatus 10 may be:

- (a) billboard;
- (b) movie screen;
- (c) television screen;
- (d) computer monitor
- (e) a screen of a laptop, notebook or tablet computer; or
- (f) a screen of a portable device such as, for example a personal digital assistant, mobile or cellular telephone, or the like.

Alternatively, the image 12 may be in a book, magazine, newspaper, newsletter, or other printed publication. The image 12 may be of a performer, or a product, or of a brand. The image includes or comprises a tag 14.

As shown, the tag 14 may be in a plurality of sections. There may be a first section 26 containing two concentric circles 11, 13 that define the location of the tag 14 in a given area, even when the image is captured from a distance and the capturing may include a background; and a second section 28 containing data. The two concentric circles may be a circle with a concentric dot.

For a server 22 to easily locate the tag 14 and its data, a circle 11 with a black dot 13 at its centre is the easiest geometric figure that can be located at any angle. However, it may be any regular geometric shape such as, for example, an equilateral triangle, a square, regular pentagon, regular hexagon, regular heptagon, regular octagon, and so forth. A regular shape is preferred as all sides are of equal length thus making it the same when viewed from all sides. The dot will be at the geometric centre of the geometric shape.

The second section 28 may contain other data, and some or all of the data 21 may be encrypted. The encryption process may be performed by a server 22. The data in second section 28 may be a hash of the image 12. Data 21 may be in the form of encrypted dots, images of faces, image of brands, and so forth.

The tag 14 may have a third section 24 comprising the brand or logo being promoted.

The second section 28 has a border 19 and all data 21 is contained within the border 19. First section 26 is joined to second section 28 by a link 23. In this way when first section 24 is detected, a search of its perimeter 25 will find link 23. Link 23 is followed to border 19. Within border 19 is the data 21.

The image 12 is to be captured by a digital camera 16 that is operatively connected to a computer 18 able to send the captured image over the Internet to a URL of server, or by MMS, SMS or email; or by a camera-equipped telephone 20 able to send the captured image by MMS or SMS; or a by digital camera that has a telecommunications module able to send the captured image by SMS or MMS.

The tag 14 of Figure 3(b) is suitable for being printed whereas that of Figure 3(c) is suitable for motion pictures, television, video, and so forth. The tag 14 of Figure 3(a) is suitable for all purposes.

As shown in Figures 2 to 5, the tag 14 may be created for a particular advertising campaign, event or promotion. In this case the well know "TIGER BEER™" is being used during a sporting event being broadcast over television. The tag 14 is as described above.

As shown in Figure 2 and 4 the tag 14 is created by creating the image 30 used for third section 24 (30). The data 21 to be inserted in second section 28 determined (31) by server 22 and, if required, encrypted (32) as described above. The tag 14 is then "assembled" or created. It is then embedded (34) so that it can be broadcast or displayed (35) during transmissions of the television signal.

The second section 28 may also contain other data such as, for example, an identifier for the tag 14 (38). The identifier may be changed by server 22 each time the tag 14 is broadcast or displayed by incrementing or otherwise changing the identifier (36) then re-transmitting or displaying the tag (37).

The data 21 may be any required data. The identifier for the tag 14 may be changed for each broadcast of the advertisement containing the tag 14. Therefore, during all or part of an advertising campaign it is possible to track the effectiveness of the placement and/or the advertisement by responses from viewers.

The data 21 may include an order identifier so that the tag 14 may be used to initiate a commercial transaction. If the data 21 contains an order identifier, the server 22 proceeds to process the order in accordance with known techniques.

The tag 14 identifier may have a limited life, the limit being linked to the proposed length of the advertising campaign.

The data 21 may also contain data for a specific activity. In this way, when conducting an event such as, for example, an on-line search, the tag 14 becomes a matter tag for that activity. For example, if the tag 14 appears in a movie or an advertisement for a movie, upon the image being sent to the server 22, the server 22 can search for related matters including, but not limited to one or more of:

1. movies with the same:
 - (a) actor(s),
 - (b) director,
 - (c) producer,
 - (d) subject,
 - (e) and so forth; or
2. related:
 - (a) products,
 - (b) promotional products, or
 - (c) merchandise.

At the reception end (Figures 2 and 5), the tag 14 is displayed on the apparatus 10 as is shown on Figures 2 (40). An image of the tag 14 is broadcast and camera 16 or telephone 20 is used to capture (41) an image of tag 14. This captured image may be close up, or at a distance depending on the resolution of camera 16 and telephone 20.

The captured image is then sent to server 22 using a mobile operator or Internet 30 (42). The server 22 receives the image (43) and locates the tag 14 within the image by locating the first section 26 in the image. It then locates the data 21 in tag 14 and, if required, decrypts the data 21 (44). The server 22 then matches the data 21 with the data in its database 32 (45). The match may include the matching of the identifier of the tag 14. Upon a match being

made, the server 22 sends a message to the telephone 20/computer 18 (46). The message may contain one or more of:

- (a) information and/or for audio for display/reproduction on telephone 20/computer 18;
- (b) an offer;
- (c) a redemption message;
- (d) prize draw result;
- (e) confirmation of receipt of an order;
- (f) confirmation of placement of the order;
- (g) and so forth.

The message is finally received at the telephone 20/computer 18 (47) and is displayed and/or reproduced.

Whilst there has been described in the foregoing description preferred embodiments of the present invention, it will be understood by those skilled in the technology that many variations or modifications in details of design or construction or operation may be made without departing from the present invention.

The Claims

1. A method for capturing an image using an apparatus and obtaining information regarding the image, the image containing a tag, the method comprising:
 - (a) capturing the image using the apparatus;
 - (b) sending the captured image to a server;
 - (c) the server processing the captured image to locate therein the tag, and from the tag extracting data;
 - (d) the server conducting a match search for the extracted data with stored data in its database;
 - (e) upon a match being made, the server sending a response message to the apparatus.
2. A method for capturing an image using an apparatus and obtaining information regarding the image, the image containing a tag, the method comprising:
 - (a) capturing the image using the apparatus;
 - (b) sending the captured image to a server for enabling the server to:
 - (i) process image to locate therein the tag and to extract data from the tag;
 - (ii) conduct a match search for the extracted data with stored data in its database;
 - and
 - (c) the apparatus receiving a response message from the server,
3. A method for capturing an image using an apparatus and obtaining information regarding the image, the image containing a tag, the method comprising:
 - (a) receiving from the apparatus the captured image;
 - (b) processing captured image to locate the tag therein and processing the tag to extract data therefrom;
 - (c) conducting a match search for the extracted data with stored data in a database;
 - and
 - (d) upon a match being made, sending a response message to the apparatus.
4. A method as claimed in any one of claims 1 to 3, wherein the apparatus is selected from the group consisting of: a mobile telephone with built in digital camera, a digital camera

with built-in telecommunications ability, and a digital camera operatively connected to a telecommunications enabled computer

5. A method as claimed in any one of claims 1 to 4, wherein the image is displayed on at least one selected from the group consisting of: television screen, motion picture screen, billboard, computer monitor, a screen of a laptop, notebook or tablet computer; a screen of a portable computing device, a personal digital assistant, mobile or cellular telephone, book, magazine, newspaper, newsletter, and another printed publication.
6. A method as claimed in any one of claims 1 to 5, wherein the captured image is part of an advertisement and is sent to the server using a system selected from the group consisting of: MMS, SMS, email, and to a URL of the server.
7. A method as claimed in any one of claims 1 to 6, wherein the tag comprises:
 - (a) a first section containing a visual guide for identifying a location of the tag in the captured image; and
 - (b) a second-section containing the data.
8. A method as claimed in claim 7, wherein the data contains an identifier for the tag.
9. A method as claimed in claim 7 or claim 8, wherein the data is also encrypted by the server.
10. A method as claimed in any one of claims 7 to 9, wherein the visual guide comprises a regular geometric shape with a central dot.
11. A method as claimed in claim 10, wherein the regular geometric shape is a circle, the dot being concentric with the circle.
12. A method as claimed in any one of claims 7 to 11, wherein the second section comprises a border, all data being within the border, the border being joined to the visual guide by a link.

13. A method as claimed in any one of claims 7 to 12, the tag further comprising a third section comprising a brand or logo.
14. A method as claimed in any one of claims 1 to 13, wherein the response message comprises at least one selected from the group consisting of:
 - (a) information regarding a product promoted by the tag;
 - (b) an offer;
 - (c) a redemption message;
 - (d) a prize draw result;
 - (e) a confirmation of receipt of an order; and
 - (f) a confirmation of placement of the order.
15. A tag for use in advertising, the tag comprising:
 - (a) a first section containing a visual guide for identifying a location of the tag in a captured image; and
 - (b) a second-section containing data.
16. A tag as claimed in claim 15, wherein the data also contains an identifier for the tag.
17. A tag as claimed in claim 15 or claim 16, wherein the data is also encrypted.
18. A tag as claimed in any one of claims 15 to 17, wherein the visual guide comprises a regular geometric shape with a central dot.
19. A tag as claimed in claim 18, wherein the regular geometric shape is a circle, the dot being concentric with the circle.
20. A tag as claimed in any one of claims 15 to 19, wherein the second section comprises a border, all data being within the border, the border being joined to the visual guide by a link.

21. A tag as claimed in any one of claims 15 to 20, the tag further comprising a third section comprising a brand or logo.
22. A system for capturing an image using an apparatus and obtaining information regarding the image, the image containing a tag, the system comprising:
- (a) the apparatus for capturing the image and sending the captured image to a server;
 - (b) the server being for extracting the tag from the image and processing the tag to extract therefrom data; conducting a match search for the extracted data with stored data in its database; and, upon a match being made, sending a response message to the apparatus.
23. A system as claimed in claim 22, wherein the apparatus is selected from the group consisting of: a mobile telephone with built in digital camera, a digital camera with built-in telecommunications ability and a digital camera operatively connected to a telecommunications enabled computer.
24. A system as claimed in claims 22 or claim 23, wherein the captured image is sent to the server using a system selected from the group consisting of: MMS, SMS, email, and to a URL of the server.
25. A system as claimed in any one of claims 22 to 24, wherein the tag comprises:
- (a) a first section containing a visual guide for identifying a location of the tag in the captured image; and
 - (b) a second-section containing the data.
26. A system as claimed in claim 25, wherein the data also contains an identifier for the tag.
27. A system as claimed in claim 25 or claim 26, wherein the data is encrypted.
28. A system as claimed in any one of claims 22 to 27, wherein the response message comprises at least one selected from the group consisting of:
- (a) information regarding a product promoted by the tag;

- (b) an offer;
- (c) a redemption message;
- (d) a prize draw result;
- (e) a confirmation of receipt of an order; and
- (f) a confirmation of placement of the order.

29. A system as claimed in any one of claims 22 to 28, wherein the image is displayed on at least one selected from the group consisting of: television screen, motion picture screen, billboard, computer monitor, a screen of a laptop, notebook or tablet computer; a screen of a portable computing device, a personal digital assistant, mobile or cellular telephone, book, magazine, newspaper, newsletter, and another printed publication.

30. A computer usable medium comprising a computer program code that is configured to cause a process or to execute one or more functions to perform the method of any one of claims 1 to 14.