

What Is Claimed Is

- 1 1. A computer-executed method, comprising:
2 receiving, by a computer from a terminal of a first user, a two-dimensional
3 code generation request comprising service data, which comprises at least an
4 identifier of the first user;
5 obtaining a human-recognizable picture;
6 associating the obtained picture with the identifier of the first user and
7 storing the association between the obtained picture and the identifier of the first
8 user;
9 encrypting a combination of the service data and the obtained picture to
10 obtain encrypted data;
11 generating a two-dimensional code based on the encrypted data; and
12 providing the two-dimensional code and the obtained picture to the first
13 user, thereby facilitating the first user to display the two-dimensional code and the
14 obtained picture when providing services.
15
16
17 2. The method according to claim 1, wherein providing the two-
18 dimensional code and the obtained picture to the first user comprises:
19 generating a service code by superposing the obtained picture and the two-
20 dimensional code; and
21 providing the service code to the first user.
22
23 3. The method according to claim 2, wherein the obtained picture is a
24 picture readable by a two-dimensional code identification apparatus.

1 4. The method according to claim 2, wherein the obtained picture is
2 located inside the two-dimensional code.

3 5. The method according to claim 4, wherein an area occupied by the
4 obtained picture in the two-dimensional code is determined based on an error
5 correction level of the two-dimensional code.

6 6. The method according to claim 1, wherein the obtained picture
7 comprises one or more of: a pattern, a character, a number, and a symbol.

8 7. The method according to claim 1, wherein a possibility of the
9 obtained picture being associated with an identifier of a different user is lower
10 than a predetermined value.

11 8. The method according to claim 7, wherein the obtained picture
12 belongs to a picture library comprising a number of pictures greater than a
13 predetermined value.

14 9. The method according to claim 1, further comprising:
15 receiving, from a terminal of a second user, two-dimensional code
16 information and a picture, wherein the two-dimensional code information and the
17 picture are obtained by the terminal of the second user scanning a service code;
18 determining a user identifier and a picture based on the received two-
19 dimensional code information;
20 comparing the determined picture and the received picture; and
21 outputting a verification result of the service code based on an outcome of
22 the comparison.

23

1 10. The method according to claim 9, wherein comparing the
2 determined picture and the received picture comprises determining a similarity
3 between the determined picture and the received picture, and wherein outputting
4 the verification result comprises:
5 in response to the similarity being lower than a predetermined threshold,
6 outputting a result indicating that the verification fails.

7 11. The method according to claim 10, wherein outputting the
8 verification result further comprises:
9 in response to the similarity being greater than a predetermined threshold,
10 identifying, based on previously stored associations between user identifiers and
11 pictures, a picture corresponding to the determined user identifier;
12 in response to the identified picture does not match the received picture,
13 outputting a result indicating that the verification fails.

14 12. The method according to claim 11, further comprising:
15 in response to the identified picture matches the received picture,
16 transmitting service data associated with the determined user identifier to the
17 second user.
18

19 13. The method according to claim 9, wherein determining the user
20 identifier and the picture comprises decrypting content data associated with the
21 two-dimensional code information.
22

23 14. The method according to claim 9, wherein determining the picture
24 comprises identifying, based on previously stored associations between user
25 identifiers and pictures, a picture corresponding to the determined user identifier,

1 and wherein comparing the determined picture and the received picture comprises
2 determining whether the identified picture matches the received picture.

3
4 15. A computer system, comprising:
5 a processor;
6 a storage device coupled to the processor and storing instructions, which
7 when executed by the processor cause the processor to perform a method, the
8 method comprising:
9 receiving, by a computer from a terminal of a first user, a two-
10 dimensional code generation request comprising service data, which
11 comprises at least an identifier of the first user;
12 obtaining a human-recognizable picture;
13 associating the obtained picture with the identifier of the first user
14 and storing the association between the obtained picture and the identifier
15 of the first user;
16 encrypting a combination of the service data and the obtained
17 picture to obtain encrypted data;
18 generating a two-dimensional code based on the encrypted data;
19 and
20 providing the two-dimensional code and the obtained picture to the
21 first user, thereby facilitating the first user to display the two-dimensional
22 code and the obtained picture when providing services.

23
24 16. The computer system according to claim 15, wherein providing the
25 two-dimensional code and the obtained picture to the first user comprises:
26 generating a service code by superposing the obtained picture and the two-
27 dimensional code; and
28 providing the service code to the first user.
29

1 17. The computer system according to claim 16, wherein the obtained
2 picture is a picture readable by a two-dimensional code identification apparatus.

3 18. The computer system according to claim 16, wherein the obtained
4 picture is located inside the two-dimensional code.

5 19. The computer system according to claim 18, wherein an area
6 occupied by the obtained picture in the two-dimensional code is determined based
7 on an error correction level of the two-dimensional code.

8 20. The computer system according to claim 15, wherein the obtained
9 picture comprises one or more of: a pattern, a character, a number, and a symbol.

10 21. The computer system according to claim 15, wherein a possibility
11 of the obtained picture being associated with an identifier of a different user is
12 lower than a predetermined value.

13 22. The computer system according to claim 21, wherein the obtained
14 picture belongs to a picture library comprising a number of pictures greater than a
15 predetermined value.

16 23. The computer system according to claim 15, wherein the method
17 further comprises:
18 receiving, from a terminal of a second user, two-dimensional code
19 information and a picture, wherein the two-dimensional code information and the
20 picture are obtained by the terminal of the second user scanning a service code;
21 determining a user identifier and a picture based on the received two-
22 dimensional code information;

1 comparing the determined picture and the received picture; and
2 outputting a verification result of the service code based on an outcome of
3 the comparison.

4 24. The computer system according to claim 23, wherein comparing
5 the determined picture and the received picture comprises determining a
6 similarity between the determined picture and the received picture, and wherein
7 outputting the verification result comprises:
8 in response to the similarity being lower than a predetermined threshold,
9 outputting a result indicating that the verification fails.

10 25. The computer system according to claim 24, wherein outputting
11 the verification result further comprises:
12 in response to the similarity being greater than a predetermined threshold,
13 identifying, based on previously stored associations between user identifiers and
14 pictures, a picture corresponding to the determined user identifier;
15 in response to the identified picture does not match the received picture,
16 outputting a result indicating that the verification fails.

17 26. The computer system according to claim 25, wherein the method
18 further comprises:
19 in response to the identified picture matches the received picture,
20 transmitting service data associated with the determined user identifier to the
21 second user.

22 27. The computer system according to claim 23, wherein determining
23 the user identifier and the picture comprises decrypting content data associated
24 with the two-dimensional code information.

1 28. The computer system according to claim 23, wherein determining
2 the picture comprises identifying, based on previously stored associations
3 between user identifiers and pictures, a picture corresponding to the determined
4 user identifier, and wherein comparing the determined picture and the received
5 picture comprises determining whether the identified picture matches the received
6 picture.