ON-LINE AUTHENTICATION REGISTRATION SYSTEM

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Verification Start

Provide on-line registration form on a web-site to registrant

At least partially completing registration form

Registrant supplies registrant's telephone number

A verification system telephone number supplied to Registrant

Establish telephonic connection between registrant and verification system

Registration code communicated to registrant

Registration code input into on-line registration form, or verification system

Verification End

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ABSTRACT

The invention provides a process for verifying an on-line registration by telephone. A registrant at least partially completes an on-line registration form at a web-site. During the registration process, the registrant either provides his telephone number, or a verification system telephone number is provided to the registrant. A telephonic connection is established between the registrant and the verification system. A registration code is communicated to the registrant, either through the web-site or via the telephonic connection. The registration code is then input into either the on-line registration form or by telephone into the verification system.
Verification Start

Provide on-line registration form on a web-site to registrant

At least partially completing registration form

Registration Code Communicated to registrant

Registration code input into on-line registration form, or verification system

Verification End

FIG. 1
Verification Start

200. User fills out an on-line web registration and is prompted to enter his phone number.

202. User prompted to enter phone number and clicks "Next" to continue, to complete registration.

204. User is advised that the automated system will now call his telephone number entered for verification, or an SMS will be sent to the number entered.

206. Phone rings or SMS message received.

208. User answers the phone (or reads SMS), get a greeting and a code to enter onto the "On-line web Registration and Verification" form.

210. User enters the code correctly.

214. Registration is complete user gets message: "You have been verified and can now log in".

Verification End
Verification Start

User fills out an on-line web registration and is prompted to enter his phone number

User given a 3 digit code that needs to be entered on the phone key pad when called

Phone rings

No

User answers the phone, gets a greeting and prompted: "Enter Code Now"

Yes

User enters the code correctly

Registration not accepted

Please try again (user allowed limited attempts)

Registration is complete user gets message: "You have been verified and can now log in"

Verification End

FIG. 3
Verification Start

User fills out an on-line web registration, enters his phone number and told that he is now getting an SMS message

The SMS prompts the user to call a telephone number to receive a "Code" in order to complete the on-line registration

User calls

Registration is not accepted

User gets a code

Please try again, (user allowed limited attempts)

User enters code correctly into on-line web registration form

Registration is complete user gets message: "You have been verified and can now log in"

Verification End

FIG. 4
Verification Start

User fills out an online web registration, enters his phone number and is told that he is now getting an SMS message

The SMS provides a "code" and prompts the user to call a telephone number to enter the "Code" in order to complete the online registration

Registration is not accepted

User calls

Yes

Registration is complete. User gets message: "You have been verified and can no log in"

Verification End

FIG. 5
User fills out an on-line web registration and is given a code

User is prompted to call a telephone number to complete verification now

User calls

User gets a greeting and prompted: "Enter Code Now"

User enters the code correctly

Registration is complete: user gets message: "You have been verified and can now log in"
Verification Start

User fills out an on-line web registration, prompted to call a telephone number, receive a "Code" in order to complete the on-line registration.

User calls

Registration is not accepted

Yes

User gets a code

Please try again, (user allowed limited attempts)

No

User enters code correctly into on-line web registration form

Registration is complete

user gets message: "You have been verified and can now log in"

Verification End

FIG. 7
ON-LINE AUTHENTICATION REGISTRATION SYSTEM

BACKGROUND OF THE INVENTION

[0001] The present invention generally relates to on-line or web-site registration. More particularly, the present invention relates to a process for verifying an on-line registration by a telephone connection separate from the on-line connection between the web-site and potential registrant.

[0002] With the increasing popularity of the Internet, and web-site surfing and usage, both commercial and personal, it has become increasingly popular to require users to register at the web-site in order to obtain information from the web-site, order goods through the web-site, etc. In some instances, the owners of the web-site wish to use the registrant's registration information to selectively target promotions, advertisements, etc. to the registrant and thus get a secondary gain in addition to having the registrant visit the web-site or use the services provided through the web-site. In other instances, the registrant's registration information is not used whatsoever, but instead, the registration information is kept completely confidential and is used only for the purposes of allowing the registrant to enter the web-site and obtain information or goods and services through the web-site.

[0003] Authentication is fundamental to every Internet transaction. Individuals and businesses who wish to engage in trade on-line must authenticate themselves by reliably establishing their identity, and presenting credentials as proof of that identity. However, when doing business on the Internet, potential registrants often register with untraceable or false e-mail addresses and phone numbers. This can compromise the intended purpose of the registration, create a breach of security and constitute fraud on the web-site owners.

[0004] Accordingly, there is a continuing need for a method of verifying a registrant's identity, such as through the registrant's telephone number. The present invention fulfills this need and provides other related advantages.

SUMMARY OF THE INVENTION

[0005] The present invention resides in a process for verifying an on-line registration by communicating with the registrant via telephone in addition to the on-line connection. The process generally comprises providing a web-site having an on-line registration form to a registrant. The registrant at least partially completes the on-line registration form. A telephonic connection is then established between the registrant and the verification system utilizing input or feedback from the web-site. A registration code is communicated to the registrant, and a registration code is subsequently inputted into at least one of the on-line registration forms or the verification system.

[0006] In one embodiment, the registrant provides a registrant telephone number, typically, while completing the on-line registration form at the web-site. The telephone verification system then contacts the registrant via the registrant telephone number.

[0007] In one form of this embodiment, the registration code is communicated to the registrant via the web-site before the registrant telephone number is called. The registrant can then input the registration code into the verification system by telephone when the registrant telephone number is called. This can be done by voice or keypad entry.

[0008] In another form of the embodiment, the registration code is communicated to the registrant by telephone when the registrant telephone number is called. The registration code is then input by the registrant into the on-line registration form, or otherwise at the web-site as part of the registration process.

[0009] In yet another form of this embodiment, the registrant is sent an electronic message, such as a Short Message Service (SMS message), using the registrant telephone number. Preferably, the registrant is informed via the website that the electronic message is being sent to the registrant via the telephone number. The electronic message may include a verification system telephone number for the registrant to call to receive the registration code, and subsequently input it into the on-line registration form; or the registration code is provided to the registrant at the web-site and the electronic message includes a verification system telephone number for the registrant to call to input the registration telephone number, such as by using voice or keypad entry.

[0010] In another embodiment, the registrant is provided a verification systems telephone number at the web-site. In one form of this embodiment, the registration code is communicated to the registrant at the web-site, and the registrant input the registration code by telephone when the verification telephone number is called, such as by voice or keypad entry using a telephone. Alternatively, the registration code is communicated to the registrant by telephone when the registrant calls the verification system telephone number, and the registration code is input into the on-line registration form.

[0011] Other features and advantages of the present invention will become apparent from the following more detailed description, taken in connection with the accompanying drawings which illustrate, by way of example, the principals of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] The accompanying drawings illustrate the invention. In such drawings:

[0013] FIG. 1 is a flow chart depicting the steps of the general methodology of the present invention;

[0014] FIG. 2 is a flow chart depicting the steps of one embodiment of the present invention;

[0015] FIG. 3 is a flow chart depicting the steps taken in another embodiment of the present invention;

[0016] FIG. 4 is a flow chart depicting the steps in yet another embodiment of the present invention;

[0017] FIG. 5 is a flow chart depicting the steps taken in still another embodiment of the present invention;

[0018] FIG. 6 is a flow chart depicting the steps taken in another embodiment of the present invention; and

[0019] FIG. 7 is a flow chart depicting the steps in yet another embodiment of the present invention.
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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0020] As shown in the accompanying drawings, for purpose of illustration, the present invention resides in a process for verifying an on-line registration utilizing a telephone connection separate from the on-line connection in order to verify the identity of the registrant.

[0021] With reference to FIG. 1, the process in general comprises providing an on-line registration form to a potential registrant at a web-site (100). The registrant at least partially completes a portion of the registration form (102). At the web-site, the registrant is prompted to supply his telephone number (104), or a verification system telephone number is supplied to the registrant and the registrant is prompted to call this number (106). A telephonic connection is established between the registrant and the verification system (108). During the registration process, a registration code is communicated to the registrant (110). The registration code is then input into the on-line registration form, or otherwise at the web-site, or into the verification system by telephone (112). The verification and authentication process is completed and the user is allowed to log into the web-site.

[0022] As described above, a present problem with on-line registrations is that the registrant often registers with untraceable and false e-mail addresses and telephone numbers. The present invention provides a process for verifying an on-line registration, or that at least the true identity of the registrant’s telephone number so as to provide an additional layer of security and reduce fraud.

[0023] With reference now to FIG. 2, in one embodiment, the verification process begins by the registrant at least partially completing the on-line web registration form (200). At the web-site, the registrant is prompted to enter the registrant’s telephone number (202). The registrant is advised that the automated system will now call his telephone number in search for verification (204). If the telephone does not ring, indicating that the potential registrant has provided an untraceable or false telephone number, the user is once again prompted to enter his telephone number (202). However, if the phone rings and a connection is established between the registrant and a verification system (206), the registrant answers the telephone and obtains a greeting and a registration code to enter into the on-line web-site registration and verification form (208). The registrant is then given the opportunity to enter the registration code, typically a three digit code into the on-line registration form (210). If a registrant does not correctly enter the code, the registrant is given another opportunity to do so (212). Typically, the registrant will be given a limited number of attempts to enter the registration code. This prevents potential registrants from attempting to enter a registration code by trial and error without providing the correct telephone number in order to obtain the correct registration code via telephone. However, if the registrant enters the code correctly, the registration is complete and the registrant obtains a message, such as “you have been verified and can now log in” (214) or the like. The registrant is then given access to the web-site or the services of the web-site for which registration is required. The authentication and verification process is concluded.

[0024] With reference now to FIG. 3, yet another verification and authentication process embodying the present invention is illustrated. The registrant completes, at least partially, an on-line web registration form, and during the registration process is prompted to enter his telephone number (300). The registrant is then given, at the web-site, a registration code that needs to be entered by phone when the registrant is called (302). A telephonic connection is then established (304) by calling the telephone number provided by the registrant (304). If the phone does not ring and a telephonic connection is not established, the registration is not accepted (306), and the registrant may then be prompted again to register his telephone number (300).

[0025] However, if the phone rings and a telephonic connection is established, the registrant answers the phone and gets a greeting which includes a prompting to enter the registration code obtained at the web-site (308). The registrant is then given the opportunity to enter the registration code by telephone (310), such as by speaking into the phone such that the verification system of the invention is enabled with speech recognition software, or by entering the code via keypad or the like. If the registration code is not entered correctly (312), the user or the registrant is given another opportunity to correctly enter the code. Preferably, as described above, the registrant is given a limited number of opportunities to insert the registration code correctly, such as two or three attempts, before the telephonic connection is disconnected and the registrant must begin the registration process over again. This is primarily to conserve system resources. However, if the registrant correctly enters the code via telephone, the registration is complete and the registrant typically obtains a message such as “you have been verified and can now log in” (314) or the like indicating that the authentication and verification process has ended and that the registrant is given access to the web-site for the particular services for which registration was initiated.

[0026] With reference now to FIG. 4, in yet another process for verifying an on-line registration embodying the present invention is shown. The registrant at least partially completes an on-line web registration form and is prompted to enter his telephone number. Typically, in this embodiment, the registrant is informed at the web-site that he is now getting an electronic message. In a particularly preferred embodiment, the electronic message is Short Message Service (SMS) message which is a service for sending messages of up to a predetermined number of characters to mobile phones that use the Global System for Mobile (GSM) communication. Although the electronic message can also comprise an e-mail message, instant messaging, or the like, SMS messages are preferred, but they do not require that the mobile phone be active and within the range, and can be held for a number of days until the phone is active and within range. The SMS messages can be sent to digital phones from a web-site equipped with appropriate software and hardware such as PC Link, or even from one digital phone to another.

[0027] After the registrant has at least partially filled out the on-line web registration form, and entered his telephone number (400), the electronic message is sent to the registrant, prompting him to call a telephone number to receive a registration code in order to complete the on-line registration (402). The registrant is then given the opportunity to call the verification system (404). If the registrant does not, the registration is not accepted (406), and the registration and verification process ends. However, if the registrant calls the number given in the electronic message, the registrant is
communicated a registration code (408). After obtaining the registration code, the registrant is given the opportunity to input the registration code correctly into the on-line web registration form (410). If the registrant does not correctly enter the registration code, the registrant is typically given additional opportunities to do so again (412). Preferably, as described above, the registrant is allowed a limited number of attempts to correctly enter the registration code. Typically, the registration code is short, such as three characters, so as to provide hundreds if not thousands of possible registration codes, but which is easy to write down and remember when properly obtained.

[0028] If the registrant correctly enters the registration code into the on-line registration form at the web-site, registration is complete and the registrant typically obtains message such as “you have been verified and can now log in” (414), which ends the verification and authentication process and enables the registrant to access the web-site or services provided to the web-site for which registration is required.

[0029] With reference now to FIG. 5, a similar process to that of FIG. 4 is illustrated. In order to begin the verification and authentication process, the registrant is first presented an on-line registration form at the web-site, and during the registration process is prompted to enter his telephone number. Preferably, the registrant is informed that he will be getting an electronic message shortly (500). Similar to that described above, the message is preferably an SMS message, but can comprise other types of message services, such as e-mail messages, instant messaging, voice messaging, etc.

[0030] In this embodiment, the electronic message provides the registrant a registration code and prompts the registrant to call a verification system telephone number to enter the registration code in order to complete the on-line registration (502). The registrant is then given an opportunity to call the telephone number (504). If the registrant does not call the telephone number (506), the registration is unaccepted and the registration process ends. However, if the registrant does call the telephone number provided in the electronic message, the registrant is given the opportunity to enter the code correctly via telephone (508). This can incur in a variety of ways. Typically, the system will be enabled with speech recognition software or the like such that the registrant can simply speak the registration code into the telephone when calling the number. However, the system can also be devised such that the telephone keypad or the like is used to enter the previously communicated registration code. If the registrant does not correctly enter the code (510), the registrant is typically given a limited number of additional attempts to correctly enter the registration code. However, if the registrant correctly enters the registration code by telephone, registration is completed and the registrant typically obtains a message such as “you have been verified and can now log in” (512), thereby ending the verification and authentication process and enabling the registrant to complete the registration process, log into the web-site or obtain the necessary services that the registration requires.

[0031] With reference now to FIG. 6, yet another embodiment of the process of the present invention is found. In order to initiate the registration, verification and authentication process, the registrant first at least partially completes or fills out an on-line web-site registration form, and is given a registration code at that time (600). The registrant is prompted to call a telephone number provided at the web-site to complete the verification (602).

[0032] The registrant is then given the opportunity to call the verification system telephone number previously provided at the web-site (604). If the registrant does not call the telephone number, the registration is not accepted (606) and the registration process ends. However, if the registrant does call and establish a telephonic connection between himself and the verification system, the registrant gets a greeting and is prompted to “enter registration code now” (608) or the like.

[0033] The registrant then enters the registration code provided at the web-site via telephone (610). If the registrant does so incorrectly (612) the registrant is given additional opportunities to do so. However, such opportunities are usually limited, as described above. If the registrant does enter the code correctly, such as by voice or keypad entry using the telephone, the registration is complete and the registrant typically obtains a message such as “you have been verified and can now log in” (614) so as to end the verification and authentication process. With the registration complete and the telephone number of the registrant verified, the registrant is given access to the web-site, or services offered through the web-site for which registration was acquired.

[0034] With reference now to FIG. 7, an embodiment similar to that of FIG. 6 is illustrated wherein in order to begin the registration and verification process, the registrant at least partially fills out an on-line registration form at a web-site. The registrant is prompted to call a telephone number of a verification system in order to receive a registration code in order to complete the on-line registration (700). The verification system telephone number is provided to the registrant at the web-site.

[0035] The registrant then calls the verification system telephone number (702). If the registrant does not (704), the registration is not accepted and the registration process ends. However, if the registrant does call the given verification system telephone number, the registrant is given a registration code (706).

[0036] The registrant then uses the registration code communicated by telephone and is given the opportunity to correctly enter the registration code into the on-line web registration form (708) at the web-site. If the registration code is not correctly entered, the registrant is typically given additional attempts to correctly do so (710). However, these attempts are typically limited in number so as to prevent fraud as unscrupulous registrants might attempt to randomly enter a registration code into the registration form at the web-site in an attempt to gain access without actually calling the verification system telephone number. It will be appreciated that by calling the verification system telephone number, the registrant's telephone number can typically be obtained by caller identification or the like. If the registrant correctly enters the registration code into the on-line registration form, registration is completed and the registrant obtains a message, typically, to the effect of “you have not been verified and can now log in” (712), thereby ending the verification and registration process.

[0037] Those skilled in the art will appreciate that in all of the previously described embodiments, a telephone connec-
tion is established between the verification system and the potential registrant in order to either obtain a registration code or to input a registration code. This method of telephone verification, in real-time, provides an additional layer of security, and thereby reduces fraud. A system can be automated such as to work twenty-four hours a day without the need to train employees or have staff on hand in order to create the telephone connection and complete registration.

Although several embodiments have been described in detail for purposes of illustration, various modifications may be made without departing from the scope and spirit of the invention.

What is claimed is:

1. A process for verifying an on-line registration, comprising the steps of:
   - providing a web-site having an on-line registration form to a registrant;
   - at least partially completing the on-line registration form, including providing a registrant telephone number;
   - establishing a telephonic connection with the registrant via the registrant telephone number by sending the registrant an electronic message using the registrant telephone number;
   - communicating a registration code to the registrant; and
   - inputting the registration code into at least one of the on-line registration form or a telephone verification system.

2. The process of claim 1, wherein the electronic message comprises a short message service (SMS) message received by registrant’s telephone.

3. The process of claim 1, including the step of informing the registrant via the web-site that the electronic message is being sent to the registrant via the registrant telephone number.

4. The process of claim 1, wherein the electronic message includes a verification system telephone number for the registrant to call to receive the registration code.

5. The process of claim 4, wherein the registration code is input into the on-line registration form after receiving it from the verification system.

6. The process of claim 1, wherein the communicating step includes the step of communicating the registration code to the registrant at the web-site, and wherein the electronic message includes a verification system telephone number for the registrant to call to input the registration number.

7. The process of claim 6, wherein the registration code is input by telephone using voice or key pad entry.

8. A process for verifying an on-line registration, comprising the steps of:
   - providing a web-site having an on-line registration form to a registrant;
   - at least partially completing the on-line registration form, including providing a registrant telephone number;
   - informing the registrant via the web-site that an electronic message is being sent to the registrant via the registrant telephone number;
   - establishing a telephonic connection with the registrant via the registrant telephone number by sending the registrant a short message service (SMS) electronic message using the registrant telephone number;
   - communicating a registration code to the registrant; and
   - inputting the registration code into at least one of the on-line registration form or a telephone verification system.

9. The process of claim 8, wherein the electronic message includes a verification system telephone number for the registrant to call to receive the registration code.

10. The process of claim 9, wherein the registration code is input into the on-line registration form after receiving it from the verification system.

11. The process of claim 8, wherein the communicating step includes the step of communicating the registration code to the registrant at the web-site, and wherein the electronic message includes a verification system telephone number for the registrant to call to input the registration number.

12. The process of claim 11, wherein the registration code is input by telephone using voice or key pad entry.

13. A process for verifying an on-line registration, comprising the steps of:
   - providing a web-site having an on-line registration form to a registrant;
   - at least partially completing the on-line registration form;
   - prompting the registrant to call a verification system telephone number provided at the web-site;
   - communicating a registration code to the registrant; and
   - inputting the registration code into at least one of the on-line registration form or a telephone verification system.

14. The process of claim 13, wherein the communicating step comprises communicating the registration code to the registrant at the web-site before the registrant calls the verification system telephone number.

15. The process of claim 14, wherein the inputting step comprises inputting the registration code by telephone when the verification telephone number is called.

16. The process of claim 15, wherein the registration code is input by voice or key pad entry using a telephone.

17. The process of claim 13, wherein the communicating step comprises communicating the registration code to the registrant by telephone when the registrant calls the verification system telephone number.

18. The process of claim 17, wherein the registration code is input into on-line registration form.

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