Abstract

Continuous and automatic update and display of email and other information using a screen saver on a display vehicle, for notification of received email (602), and other information (604) to multiple users of a single computer or similar device. The system delivers regular and timely information on a scheduled, hands-free basis directly to a display including but not limited to a user's computer monitor, Web TV screen, or any other display used with an information appliance. This information is comprised of new email messages (602) and advertisements (603), having a plurality of protocols. The system is a combination of user software and server-side services to allow a computer to automatically connect providers and retrieve updates of the information to be displayed. Email notification (602) and advertising content (603) are then displayed as a screen saver or other icon (601) without end user intervention.
| AL | Albania                        | ES | Spain                        | LS | Lesotho                      |
| AM | Armenia                       | FI | Finland                      | LT | Lithuania                    |
| AT | Austria                        | FR | France                       | LU | Luxembourg                   |
| AU | Australia                      | GB | Gabon                        | LV | Latvia                       |
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SYSTEM AND METHOD FOR SIGNALING RECEIPT OF DATA ON A DISPLAY

This application claims the priority of US provisional applications: 60/128,607, 60/131,429, and 60/142,998.

Technical Field

The present invention pertains to a system and method for signaling receipt of data on a visual display. More specifically, the present invention pertains to an automated system and method for receiving email and other internet information and displaying a notice of receipt of that information on a visual display vehicle. As such, the present invention allows downloading of email and other internet information, having a variety of protocols, without the need for user intervention.

Background of the Invention

There are various systems and methods for receiving email and other internet information. The process of obtaining this email and other information required user intervention to access the source of this information, such as an online service provider, select the data to be downloaded, and then repeat the process for any other email accounts a user or multiple users may have.

Summary of the Invention

In accordance with the present invention, email and other information such as advertising is continually and automatically updated and displayed, using a screen saver or icon format, on a single computer screen or other display vehicle. The system is a combination of client software and
server-side services to allow a client computer to
automatically connect to an online service provider, and any
number of independent content providers, and retrieve data, in
the form of email and other information, to be displayed.
Email notifications and advertising content is then displayed
without end-user intervention.

The system utilizes a computer, or other similar
mechanism, commonly known in the art to be comprised of
computer processors, storage units, software configurations or
programs, and display vehicles. A computer processor,
commonly known in the art for processing data and information
is utilized throughout the system. Additionally, a first
software configuration (or program), for creating and
utilizing user information profiles to be used in the access
of communication networks, is stored on a storage unit, one
example of which is a computer hard drive. The user
information profiles can contain a variety of information.
Typically, the user information profile will contain
information directed towards an Internet email account, which
may include passwords for accessing the accounts and various
security preferences. The communication networks accessed can
be a variety of networks known in the art, one example of
which is the World Wide Web. Additionally, the communication
networks can be comprised of a variety of Internet information
service providers, such as America Online (AOL). The system
is capable of retrieving information that utilizes a variety of
protocols, from the various service providers and
communication networks. A protocol is commonly known by those skilled in the art as a set of standards that computers use to communicate with each other and to exchange information. One such example of a protocol is Post Office Protocol (or POP3). The system also utilizes a transmission unit that is connected to the communication networks. The transmission unit can be any one of a variety of units known in the art for allowing computers to access the Internet, one example of which is a modem. The transmission unit allows the computer to transmit information to and from the computer and the communication networks, utilizing the user profile information contained in the first storage unit. A second storage unit, such as a hard drive or portion of a hard drive, stores any information retrieved from the communication networks. A second software configuration (or program) automatically processes the information stored on the storage unit into a visual format, and displays the information on a display vehicle. The display vehicle can be one of any number of devices known in the art for displaying information from a computer processor, examples of which are a computer monitor, a television, or other similar device.

In the preferred embodiment, the system is preconfigured by a user, or multiple users, with email account information. This account information includes which service providers each account is directed to, any appropriate passwords for accessing the accounts, and the manner in which the service providers are accessed. Subsequently, the system communicates
with an information service provider, or if necessary
establishes a connection to the service providers, for
automated downloading of the email and other information
previously configured, at predetermined intervals.
Thereafter, the system displays rotating advertisements and
indicates whether or not any of the configured email accounts
have new messages on the screen saver or icon. This
information is periodically updated at set intervals, so as to
periodically update the information displayed on the
screensaver or icon.

In another embodiment, the system enters a screen saver
mode when the client computer is idle, and communicates with
an information service provider, or if necessary establishes a
connection to the service providers, for automated downloading
of the email and other information previously configured.
This connection occurs at predetermined intervals regardless
of whether the system is in a screen saver mode. Thereafter,
the system displays rotating advertisements and indicates
whether or not any of the configured email accounts have new
messages on the screen saver. This information is
periodically updated at set intervals, so as to periodically
update the information displayed on the screensaver.

In a third embodiment, the system displays a notice of
new email and information as an icon, rather than a full
screen saver.

In accordance with one aspect of the invention, the
configuration process includes user security preferences that
allow a user to determine what information displayed on the
screensaver is accessible by other users. The security
preferences can include but are not necessarily limited to
displaying number of emails received, displaying subject
fields of emails, and showing email information, wherein the
e-mail information is comprised of an email sender, a subject
field, and a text field.

Brief Description of the Drawings

The present invention will be more fully appreciated by
consideration of the following detailed description which
should be read in light of the accompanying drawing in which:

FIG. 1 is a flow chart illustrating one embodiment of the
process used to configure the system to receive email.

FIG. 2 is a flow chart illustrating one embodiment of the
process used to connect to the information service provider.

FIG. 3 is a flow chart illustrating one embodiment of the
process used to retrieve email and other information from the
various service providers.

FIG. 4 is a flow chart illustrating one embodiment of the
overall execution of the present invention.

FIG. 5 is a flow chart illustrating one embodiment of the
display cycle for displaying updated information on the
screensaver.

FIG. 6 is an example of a screen saver display that
integrates the email and other information obtained from the
various information service providers.
Detailed Description

Referring to FIG. 1, there is shown a flow diagram illustrating the configuration of the system to retrieve data from the information service providers. Each block in FIG. 1 identifies the operations required of a user to provide the information necessary for the present invention to perform its function of retrieving information from an information service provider.

The process begins in step (101), in which a user inputs email account information, comprising an email address, a user name, and email server information. The email account information is then stored on a local storage unit in step (102). The user then inputs various security preferences and passwords in step (103), which are stored on the local storage unit in step (104). The process repeats in step (105), until such time as all users have entered the appropriate information, wherein the configuration process ends in step (106).

Referring now to FIG. 2, there is shown a flow diagram illustrating the automated connection process for connection to a communication network. The connection begins in step (201), in which the system determines whether or not the connection method is an online service. If a NO result is obtained, indicating the system is not connected to the internet by an online service connection method, the system utilizes an OS-level networking to connect to the internet in step (202). If a YES result is obtained, indicating an online
service is the connection method, the system enters step (203) in which a user name and password is retrieved from the storage unit containing the information configured in steps (101-106). The information retrieved in step (203) is then used in step (204) to use the exposed functionality of the online service to connect the modem to the online service and sign on. The exposed functionality of the online service provider is the means by which the online service provider allows access to its system, and is well known by those skilled in the art. The connection process is then completed in step (205).

Referring now to FIG. 3, there is shown a flow diagram illustrating the automated retrieval of email and other information from the communication network. The retrieval begins in step (301) where the user email information previously configured in steps (101-106) is retrieved from the local storage unit described in step (102). A determination is then made in step (302) as to whether or not the local system is connected to the appropriate network. If the determination is NO, then the system connects to the appropriate network in step (303), disconnecting from the current network if necessary. If the determination is YES, then the system retrieves email in step (304), from the accounts configured in steps (101-106). User email security preferences, previously entered in step (103), are retrieved in step (305). A notice of information received is then displayed in step (306) based on preferences entered in step
(103). A determination is then made to assure all accounts have been checked. If the determination is NO, then the process returns to step (301) until all accounts have been checked. If the determination is YES, the retrieval process ends in step (308).

Referring now to FIG 4., there is shown a flow diagram illustrating one embodiment of the process for providing notice of receipt of new email and other information. The process begins when a determination is made in step (401) as to the completion of an update interval since the last content update, wherein the content is data retrieved by the system from the information service providers. An update interval is a predetermined time interval that defines a time span in which the system is not retrieving data. When that time span has expired, the system repeats the necessary steps for retrieving data by communicating with the information service providers. The length of the time interval may be preconfigured into the software itself during manufacture, or set by the user. If the determination made in step (401) is NO, a further determination is made in step (402) as to whether the screen saver mode is enabled. If the determination of step (402) is NO, the system enters step (404), wherein the system waits until one complete interval has passed before connecting to an online service provider or ISP in step (405). If the determination of step (402) is YES, the display cycle is reset in step (403), until such time as one complete interval has passed in step (404).
If the determination made in step (401) is YES, a connection is made in step (405) to an online service using OS networking or online service providers, as described in steps (201-205). Promotional information, such as advertisements, news, weather, sports, or financial information, are then retrieved in step (406), which are then stored in the local storage unit for use between updates in step (407). All email accounts are then checked for new messages in step (408), as described in steps (301-308). A determination is then made in step (409), as to whether any new messages are on the email server. If the determination is NO, then another determination is made in step (402) as to whether the screen saver mode is enabled. If the determination of step (409) is YES, the new messages are appended to a local inbox of the email account in step (410). The system then disconnects from the online service provider in step (411).

Referring now to FIG. 5, there is shown a flow diagram illustrating the cycle for displaying notice of received email and information. The cycle begins in step (501) wherein inbox icons for appropriate email accounts are updated according to information received in steps (301-308). The icons are automatically updated by utilizing an appropriate program segment, or software configuration. Static of the display features, such as advertising banners, are initialized in step (502). The static features of the display are those features that do not change between update intervals, and can include information such as advertising banners or other information.
A consecutive advertisement and display effect is selected in step (503), which is subsequently displayed on the display vehicle in step (504). The system waits, in step (505) until one complete interval has passed, described in steps (401-411), at which time step (506) repeats steps (503-505).

Referring now to FIG. 6, there is shown an example of one embodiment of the screen saver display which integrates notice of email messages received (602), advertisements (603), and other information (604). As shown, various email accounts are shown as icons (601), which further comprise indications of user accounts (605) and recipients of email (606).

Various modifications and adaptations of the present invention will be apparent to persons skilled in the art. For example, variations as to the information displayed indicating notice of received email can be made, to include the sender of email and the subject matter of the email. Additionally, the physical appearance of the icons presented in the screen saver may vary according to user preference. Accordingly, it is intended that the invention be limited only by the appended claims.
We claim:

1. A data processing system for signaling receipt of data on a display, comprising:
   (a) a computer processor;
   (b) a first software configuration having at least one user information profile for accessing a communication network;
   (c) a first storage unit for storing said user information profile;
   (d) a transmission unit connected to said communication network for automated transmittal of data from said communication network according to said user information profile;
   (e) a second storage unit for storing said data;
   (f) a second software configuration for automated processing of said data into a visual format; and
   (g) a display vehicle for displaying said visual format.

2. The data processing system of claim 1 wherein said profile contains preferences for accessing said communication network, said preferences comprised of a user Internet account information, a user password, and a user security preference.

3. The data processing system of claim 1 wherein said data is transmitted by a plurality of Internet protocols.
4. The data processing system of claim 1 wherein said software configuration includes designation of an event upon whose occurrence said user information profile is to be transmitted to said communication network to retrieve said data.

5. The data processing system of claim 4 wherein said event is a prescribed time interval.

6. The data processing system of claim 1 wherein said visual display format is a screen saver having a plurality of icons signaling receipt of data.

7. The data processing system of claim 1 wherein said automated transmission unit connects to the communication network after a prescribed time interval has passed and thereafter disconnects after said data is retrieved.

8. A system for signaling receipt of data on a visual display vehicle, comprising:

   (a) a first program segment for configuring at least one email account to retrieve data from at least one information source;

   (b) a second program segment for automated retrieval of data from an Internet communication network utilizing a plurality of Internet protocols;

   (c) a third program segment for automated storage of said data; and
(d) a fourth program segment for automated display of said data on a display cycle.

9. The system of claim 8 wherein said email account utilizes at least one Internet email protocol comprised of a POP3 protocol or other email protocols.

10. The system of claim 8 wherein said data is comprised of one or more of email, advertisements, news, sports, weather, and financial information.

11. The system of claim 10 wherein a portion of said email is selectively displayed according to a prescribed user profile.

12. The system of claim 11 wherein said user profile is comprised of a user password and a user security preference.

13. The system of claim 12 wherein said user security preference is comprised of displaying number of emails received, displaying subject fields of emails, and showing email information, said email information comprised of an email sender, an email recipient, a subject field, and a text field.

14. The system of claim 8 wherein said data is displayed as a screen saver having a plurality of icons that correspond to said email accounts, said icons displaying the number of emails received into said email accounts.

15. The system of claim 8 wherein said data is displayed as an icon indicating receipt of new email.
16. The system of claim 8 wherein said display cycle updates static features of the display at a predetermined interval, said static features comprising icons indicating receipt of email.

17. The system of claim 8 wherein said second program segment automatically connects to said Internet communication network, retrieves said data, and thereafter disconnects from said Internet communication network.

18. The system of claim 8 wherein said Internet communication network is comprised of a telephone network, an online service network, and an OS-level network.

19. A method for operating a personal computer having a visual display, comprising the steps of:
   (a) configuring the personal computer with email profiles for a plurality of users;
   (b) automatically connecting the personal computer to at least one Internet information source;
   (c) automatically retrieving user email for said users from said Internet information sources;
   (d) storing user email retrieved from said Internet information sources on a storage device; and
   (e) displaying a notice of received email on a visual display.

20. The method of claim 19 wherein said email profile is stored on a local storage device and is comprised of at
least one email account, a user security preference and a
user password.

21. The method of claim 20 wherein said security preference
is comprised of displaying email information, displaying
number of messages, and displaying subject fields, said
email information comprised of an email sender, an email
recipient, a subject field, and a text field.

22. The method of claim 19 wherein connection to said
Internet information source is automated and set to connect
at prescribed intervals, retrieve emails, store emails on
said storage device, and subsequently disconnect upon
completion of transfer of emails.

23. The method of claim 19 wherein said notice of received
email is displayed as a screen saver having a plurality of
icons that correspond to said plurality of email accounts,
said icons displaying the number of emails received into
said email accounts.

24. The method of claim 23 wherein said notice is displayed
as said screen saver after a predetermined time of user
inactivity has passed.

25. The method of claim 19 wherein said notice of received
email is displayed as an icon indicating the number of
emails received by said user.

26. The method of claim 19 further comprising the step of
retrieving one or more of advertising banners, news, sports,
weather, and financial information from said Internet information source.
Configuration Process Begin

101
User inputs Email information (Name, Email address, Email server information, etc.)

Store user information on local storage device

102

User inputs security preferences (options include Hide all Email information from other users, show number of messages to all users, show message subject fields to all users, or hide nothing from all users) and sets user password, if necessary

103

Store user security preferences on local storage device

104

Have all users entered information?

105
No

Yes

106
Configuration Process End

FIG. 1
Connection Process Begin

201

Is online service the connection method?

Yes

203

Retrieve user name and password from configuration file.

No

202

Use OS-level networking to connect to the Internet (i.e. Windows Dial-up Networking)

204

Use exposed functionality (API) of online service to connect the modem to the online service and sign on.

205

Connection Process End

FIG. 2
Email retrieval Process Begin

301 Retrieve User Email information from local storage device

302 Is local system currently connected to appropriate network?

No

303 Connect to appropriate network, disconnecting from current network, if necessary

Yes

304 Retrieve Email from configured account(s)

305 Retrieve User Email security preferences from local storage device

306 Display report based on user preferences and display mode (icon or full-screen)

307 Have all configured users' accounts been checked?

No

308 Email retrieval Process End

FIG. 3
Program Starts

401 Has one complete update interval passed since last Content Update?

402 Is screen-saver mode enabled?

403 Initiate Display Cycle Reset

404 Wait remaining time until one complete interval has passed

405 Connect to Online Service/ISP using OS networking or Online Service API (See Diagram 3)

406 Retrieve Promotional Content (Ads, etc.)

407 Store content for use between updates.

408 Check all Email accounts for new messages

409 Are any new messages on Email server?

410 Append messages to local inbox.

411 Disconnect from Online Service/ISP
Entry point for "Display Cycle Reset"

Cycle Starts

Update inbox icons for all appropriate mailboxes. 501

Initialize any static features on the display (tickers, etc.) 502

503
Select next consecutive advertisement and associated display effect.

504
Display advertisement on screen.

505
Wait remaining time until one complete interval has passed

Repeat until screen saver mode is interrupted 506

FIG. 5
# INTERNATIONAL SEARCH REPORT

## A. CLASSIFICATION OF SUBJECT MATTER

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<td>345/348, 339, 334, 329, 335; 348/7</td>
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## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

| U.S. | 345/348, 339, 334, 329, 335; 348/7; 709/217, 218, 219 |

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)

DIALOG. IEEIEEE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
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<td>Y</td>
<td>US 5,819,284 A (FARBER et al) 06 October 1998; abstract, col. 1, lines 28-67</td>
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[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

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Date of the actual completion of the international search

15 JUNE 2000

Date of mailing of the international search report

06 JUL 2000

Name and mailing address of the ISA/US Commissioner of Patents and Trademarks

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Authorized officer

RAYMOND BAYERL

Telephone No. (703) 305-9789

Form PCT/ISA/210 (second sheet) (July 1998)
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<th>Relevant to claim No.</th>
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<tbody>
<tr>
<td>A</td>
<td>BORT, JULIE. Being Pushy - Pushware Implementations are great add-ons to intranet solutions. VARBUSINESS 1997, n 1309, PG71. June 1997.</td>
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