

**SYSTEMS AND METHODS FOR CREATING
A CUSTOM COMPUTER ENVIRONMENT**

FIELD OF THE INVENTION

[0001] This invention relates generally to computer hardware and software and more particularly to methods and systems for creating a custom computer environment.

BACKGROUND OF THE INVENTION

[0002] Developing software to allow a rich user experience on a variety of different computers is currently difficult or impossible. This is due in part to a wide variety of Internet browser applications, browser plug-ins, security settings, cookie handling methods, and a variety of other features that differ from system to system. A web developer cannot currently expect all users to access an Internet application from within the same environment, and thus must design software to be compatible with the most basic systems to ensure all users can use the application. This prevents developers from taking advantage of the features offered by more advanced software environments for fear that many users will not be able to use the end product.

[0003] Additionally, a key challenge in providing a rich user experience is to provide users with a way to take their custom experience with them and have it replicated on

other machines without intrusion on the host machine and without requiring sophisticated technical skills on the part of the user to install or modify each new machine. Furthermore, users have a tendency to develop routines based on a software environment existing on their primary machines and may find themselves confused or disoriented and inadequately served when trying to perform the same routine tasks on other computers exhibiting a different user environment.

[0004] It is also desirable to be able to customize the experience a computer user has based on the characteristics and needs of the user. For example, a fun-looking environment with large fonts, big icons, a simple interface, along with restricted Internet access and high security, would be desirable for young children. Business users on the other hand, may desire custom software applications, unrestricted Internet access, Internet links to financial and news services, and other features unique to their business needs. Currently, there is not an effective way to satisfy these needs with a single device, or to allow the custom features for one user to be transferred from computer to computer.

[0005] Additionally, current methods for providing intangible services such as subscriptions over the

Internet are inadequate. For example, an online news provider may provide premium content to users who have a yearly subscription. Currently, most subscription services are sold by providing merely a username and password that authorizes access to the paid-for content. Merely providing a username and password to customers who purchase a subscription is undesirable because the customer does not receive anything tangible or concrete and may be left without a sense of having received something of value when subscribing to the service. Additionally, the customer must often remember login information to access the service, and a customer can freely give their password to non-paying users.

[0006] There is a need, therefore, for methods, systems, or devices that can provide a uniform environment independent of the particular hardware or software configuration of the underlying computer and that can allow the user to transfer the custom environment easily between different computers. It is also desirable to have a device that will provide customers with an appealing and tangible object they can associate with a subscription or other intangible service to improve the marketability of such services. It is further desirable that such a device not leave evidence of its use or alter a computer's configuration once the device is removed from

the computer. The use of such a device should preferably not require administrative privileges or a lengthy setup processes.

SUMMARY

[0007] One embodiment of the present invention provides a portable USB device in an appealing housing that is configured to provide a custom environment for a computer user which the user can transfer between multiple computers. Such an exemplary embodiment provides an environment configured to allow full access to online content with no additional effort from the user in terms of downloading and configuring browser plugins, configuring an internet connection, remembering login names and passwords, remembering web addresses, preferences, etc.

[0008] This illustrative embodiment is mentioned not to limit or define the invention, but to provide one example of an embodiment of the invention to aid understanding thereof. Illustrative embodiments are discussed in the Detailed Description, and further description of the invention is provided there. Advantages offered by the various embodiments of the present invention may be further understood by examining this specification.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] Figure 1 illustrates an exemplary environment in which embodiments of the invention may be used;

[0010] Figure 2 illustrates an exemplary device in accordance with one embodiment of the present invention;

[0011] Figure 3 illustrates an exemplary housing for the current device;

[0012] Figure 4 an alternate view of the exemplary housing illustrated in Figure 3;

[0013] Figure 5 illustrates an exemplary user interface according to one embodiment of the invention;

[0014] Figure 6 illustrates another exemplary user interface according to another embodiment of the invention;
and

[0015] Figure 7 illustrates another exemplary user interface according to another embodiment of the invention.

DETAILED DESCRIPTION

Exemplary System

[0016] Embodiments of the present invention may operate in many different systems or environments. Figure 1 illustrates one exemplary system in which the invention may be used. The exemplary system illustrated in Figure 1 comprises a device 100 configured to provide a custom computer environment. The device 100 can be housed within a key chain device as illustrated in Figure 1 to allow it to be easily carried by the user 140. The user 140 can use the device 100 to access programs, subscription services, and Internet content on a variety of computer devices 150a-c. The computer devices 150a-c can represent, for example, the user's 140 home computer, office computer, and a portable computer. One advantage of the device 100 is that it can operate on any computer device to create the same environment for the user 140. Thus, regardless of the computer device available to the user 140, the user 140 can access desired Internet applications, media content, subscription services, personal data, emails, etc. in a uniform manner without having to configure or adjust settings on the computer devices 150a-c.

Exemplary Devices

[0017] Figure 2 illustrates a more detailed view of the device 100. According to the embodiment illustrated in Figure 2, the device 100 comprises a housing 102 containing a Universal Serial Bus (USB) device 104. The housing 102 can be configured to visually express the functionality of the device 100, to offer additional functionality to the device 100, or to enhance the desirability of the device 100. For example, if the device 100 is designed to provide a custom internet browsing environment for accessing online news content, the housing can resemble a miniature newspaper or other suitable news-related item. Alternatively, the housing 102 can be configured to provide additional functionality to the device 100. For example, according to one embodiment, the housing 102 can comprise a utility device such as a bottle opener, screwdriver, LED light, level, or other similar device designed to impart some functional utility to the device 100 independent from its use in a computer system.

[0018] According to one embodiment, the utility of the device 100 can be configured to correspond to the services or products of an entity promoting the device 100. For example, a beverage distributor could provide an embodiment of the device 100 with housing 102 configured as a bottle opener as

illustrated in Figures 3 and 4. The exemplary device 300 illustrated in Figures 3 and 4 comprises an opening portion 302, a body portion 304, a cap portion 306, and an attachment portion 308. The opening portion 302 illustrated in Figure 3 is configured to open beverage tops. The cap portion is designed to conceal the USB connection member 310 extending from the body portion 304. In use, the device 300 as illustrated in Figure 3 can be attached to a key ring by way of attachment member 308 and used to conveniently open beverage bottles. The cap portion 306 can then be removed to allow access to the USB connection member 310 as illustrated in Figure 4.

[0019] Including a functional item together with the device 100 can increase the appeal to customers. For example, such a device could be distributed as a marketing technique that would appeal to customers because of the useful design and would allow customers to employ the device at a computer system to access advertising or information content associated with the distributor.

[0020] In addition to providing increased utility for the device 100, the housing 102 can be configured to represent a character designed to appeal to a target audience. For example, the housing 102 can be configured to represent a popular cartoon character, sports figure, or movie star that

would appeal to an audience targeted by a distributor of the device 100. The character embodied by the housing 102 could further represent the underlying computer environment created by the device. For example, a housing 102 configured to represent a cartoon character could be included in an embodiment of the device 100 designed to provide a user interface friendly to children with enhanced Internet security features, etc.

[0021] Returning now to Figure 2, the USB device 104 is configured to plug into a USB port on a computer and create a custom user experience on the computer. It will be appreciated that while the embodiments discussed herein employ a universal serial bus connection mechanism, other embodiments of the present invention could employ other methods or protocols for communicating with a host computer. For example, devices according to the present invention could employ Bluetooth connectivity or similar connectivity protocols.

[0022] According to the embodiment illustrated in Figure 2, the USB device 104 contains internal memory 106. The memory may be of any suitable type including flash memory. The internal memory 106 can be divided into a read only portion and a read-write portion. The read only portion can be useful particularly for virus detection or elimination software in order to avoid corruption upon interaction with an infected

system. The exemplary memory 106 illustrated in Figure 1 comprises a storage portion 110, an auto start module 120, and an application module 130. According to other embodiments, memory 106 can comprise other applications, modules, or program code configured to provide a custom computer environment.

[0023] According to the exemplary embodiment illustrated in Figure 1, the storage portion 110 contains a personal information manager 112. The personal information manager 112 can store and control access to such information as user names, user passwords, bookmarks, links to web addresses, cookies, and other suitable information allowing the device 100 to track and recreate a user environment custom to the user 140 and as modified by the user 140. For example, the personal information manager 112 may store access information such as passwords and usernames to enable the user 140 to access an online subscription service. The personal information manager 112 may also store information to facilitate web browsing or Internet navigation. For example, the user 140 may save bookmarks to certain web pages and visit sites that generate cookies specific to the user 140 while browsing the Internet with the device. The personal information manager 112 can store the bookmarks and cookies so that they are available to the user 140 even if the user 140 accesses the Internet through a

different computer device. In addition to storing bookmarks and cookies generated by browsing on a system employing the device 100, the personal information manager 112 can extract cookie information and bookmarks from existing Internet browser applications loaded on a computer device in which the system is employed.

[0024] In addition to the personal information manager 112, the exemplary memory 106 illustrated in Figure 2 comprises an auto start module 120. The auto start module 120 includes program code configured to allow applications, such as the application module 130, to execute automatically upon insertion of the USB device 104 into one of the computer devices 150a-c. Accordingly to one embodiment, the auto start module 120 can be configured to allow execution of applications contained on the USB device 104 without administrative privileges on the host computer device 150.

[0025] For example, the user 140 may desire to access information from a subscription service, such as an online news source, while on a work computer that the user 140 is not authorized to configure or install software on. The auto start module 120 can be configured to allow the user 140 to access the desired service or information via the application module 130 on the USB device 104 without requiring any changes

on the host computer 150a that would necessitate administrative authorization or permission to install new software. Moreover, the user 140 can access the application module 130 on the device 100 regardless of whether a browser application is installed on the work computer, or of the type of browser application that may be available. In this way, a user can access all the personal information, applications, and settings saved on the device 100, regardless of which host computer is available, what software may be on it, or whether the user has permission to change the computer's administrative settings.

[0026] In addition to being able to install programs without the need for administrative privileges, the auto start module 120 can be configured to permit removal of the device 100 without leaving evidence on the host computer that it was used to execute programs or applications from the device 100. For example, the user 140 may desire to access personal financial information, or an Internet gaming service, while at work, but may not want to leave behind personal information or evidence of the transaction. The auto start module 120 can permit such applications to run on the work computer from the device 100 in such a way that there is no evidence on the computer of the transactions conducted using the work computer, and so that there is no record on the computer of the content

accessed with the device 100. Additionally, the employment of the auto start module 120 provides the advantage that a user can enjoy a custom experience without modifying the underlying host computer. In this way the underlying host computer remains more stable over time and less likely to suffer problems from frequent configuration changes.

[0027] In addition to the auto start module 120, memory 106 can comprise program applications, such as the application module 130 illustrated in Figure 2. The exemplary application module 130 illustrated in Figure 2 represents an Internet browser application and includes a connection component 131, a plugin component 132, a security component 134, a media component 136, and an email component 138.

[0028] The connection component 131 comprises software as may be needed to supply an Internet connection. For example, the connection component 131 can include dial-in information and settings necessary to leverage a modem on one of the computer devices 150a-c to access a network such as the Internet. According to one embodiment, the device 100 can comprise hardware such as a WIFI network adaptor or other suitable network adaptor configured to allow Internet access on a device not otherwise supplied with network hardware or configured to access the Internet. In this way, the device 100

can provide easy access to the Internet even on a computer device not previously configured to access the Internet.

[0029] The plugin component 132 comprises software modules as may be needed to access content available on the Internet, such as Quicktime, Shockwave, Micromedia, Flash, RealPlayer, Real Audio, Windows Media Player, Adobe Acrobat, Win Zip, or other suitable modules. By including such software modules as may be needed to receive content on the Internet, the plugin component 132 can enable the user 140 to easily view a variety of applications, data formats, and media content without hassling with the installation of all the required individual components separately. In addition to plugin components, the browser application 130 can comprise large image files, graphics, or other files needed for a particular application that would be slow or difficult to download over a network connection. In this way, software developers can take advantage of large files that will already reside on the device 100 to provide data rich programs without burdening a user's network connection or slowing program performance.

[0030] In addition to the plugin component 132, the exemplary browser application 130 illustrated in Figure 2 comprises a security component 134. The security component 134 includes software measures, such as a firewall application,

antivirus protection, spyware, malware protection, content filters, or other suitable software resources to enhance the experience of the user 140. For example, the user 140 can be a young child, in which case, it may be desirable to allow access to certain content on the Internet, but to filter out undesirable content and prevent the user 140 from engaging in communication that could be harmful. Such functionality can be achieved by way of the security component 134. Additional security functionality of the device 100 is discussed in connection with other embodiments described more fully below.

[0031] In addition to the security component 134, the application 130 can comprise a media component 136. The exemplary media component 136 illustrated in Figure 2 can comprise voice recognition software, text to speech conversion software, MP3 or MPeg4 media rendering software, or other suitable components for presenting media on the computer device 150. For example, according to one embodiment, the media component 136 can comprise a text to speech engine capable of presenting the user 140 with a human-like voice reading a script, instructions, or other similar dialogue upon insertion of the device 100 into the computer device 150. Additionally, the media component 136 can comprise software which would enable the user 140 to interact with the device 100 through voice

commands. For example, the media component 136 can comprise voice recognition software capable of allowing such functionality.

[0032] In addition to media component 136, the application module 130 can comprise an email component 138. The email component 138 can comprise software configured to allow a user ready access to emails, instant messaging, chat and other network communication systems. According to one embodiment, the email module 138 can be configured to allow pop access such that a user's emails will be imported onto the device 100 for ready display when the user inserts the device 100 into a computer. There are various ways in which an email program can be configured to operate on the device 100. According to one embodiment, the email program can include enhanced features. The enhanced features can comprise, for example, an identification of the availability status of instant messenger contacts corresponding to email authors or recipients. For example, when a sender of email message is online while the user 140 is also online, the name of the sender can be highlighted, underlined, or otherwise marked to indicate that that sender is available for instant messaging contact. The email component 138 can further be configured to allow easy initiation of an

instant messaging session with the sender upon selection of the sender's name by the user 140.

[0033] An additional enhanced feature can include improved access to photographs or other image files sent via email. For example, the email component 138 can be configured to allow low resolution thumbnail images of pictures or graphics attached to emails to be imported initially so that a user may browse and select the desired images for further downloading. For example, a user may receive emails with very large images and not desire to burden a network connection or spend the time downloading the entire files. The device 100 can allow the user to see preview thumbnail images of the available pictures and select only those that the user desires for further download. In addition to providing a thumbnail image, the email component 138 can be configured to interface with an online service for storing or printing the images or pictures. For example, software contained in the email component 138 can allow a user to select a thumbnail image with a single click and have the corresponding image automatically printed by an online service and mailed to the user.

[0034] Additionally, the email component 138 can be configured to comprise part of a custom home page for a user. For example, upon insertion of the device 100 into a computer

device, a home page can be displayed comprising email messages, selected news articles, files frequently accessed by the user, and other material as may be customized for the user 140.

Exemplary Uses

[0035] According to one exemplary embodiment, the device 100 can be used as a distribution channel for select content. For example, a company wanting to distribute information such as product catalogs, shareholder reports, or marketing materials, can send out embodiments of the device 100 containing the desired information, or configured to access the desired information from an online source. For example, a jewelry store could distribute to its shareholders an embodiment of the device 100 encased in a housing configured to represent a piece of jewelry, or designed to include a small jeweler's loop, for example. Such a design can enhance the physical appeal of the device and peak users' interests to make it more likely that they will use it. After receiving the device, users can insert it into a computer device to access content such as the exemplary user interface 500, which can include easy access to company information such as stock performance along with helpful graphics, charts, etc. According to one embodiment, the user interface 500 can display information in a robust format

providing a rich user experience by relying on plugins or other software components residing on the device 100.

[0036] According to another exemplary embodiment, a user with a relationship with a service provider, such as a healthcare provider or a auto manufacturer, for example, can use the device 100 to help manage service activities. For example, the device 100 can be configured to provide tips, scheduling, advice, product updates, communication from a manufacturer or service provider, and other information in a clear, controlled, uniformly structured and interactive format.

[0037] According to another exemplary embodiment, the device 100 can be used to supply subscribers to an Internet service provider with access to Internet services. For example, one embodiment of the device can be configured to provide a user environment similar to the exemplary environment 600 illustrated in Figure 6. The exemplary environment 600 illustrated in Figure 6 comprises an email access interface 602, a media access interface 604, and news interface segments 606, 608, and 610. Because the device 100 contains a known environment for executing software programs, the interface 600 can provide a rich user experience. For example, the media access interface 604 can be configured to quickly provide a preview of media content received in email messages displayed in the email access

interface 602 while a download of the full media content takes place in the background giving a user of a slower internet connection the perception of faster internet access.

[0038] In addition to presenting users with the exemplary environment 600, the device 100 can be configured to provide an Internet connection by either including the needed hardware, such as a wireless network adapter for example, or by containing a connection module configured to utilize an existing modem on a computer device. According to one embodiment, the device 100 can execute the necessary system changes to connect the computer device to the Internet. This can enable a user to simply insert the device 100 into a computer device and enjoy Internet access even if the computer device was not previously set up to access the Internet, or was missing a necessary component such as a wireless network adapter.

[0039] According to another embodiment, the device 100 can be used to provide security diagnostic enhancement and repair functionality. For example, the device 100 can include diagnostic scanning software such as spyware scanning software, virus scanning software, and other software configured to identify malware on one of the computer devices 150a-c. According to one embodiment, such security enhancing and scanning software can be stored on a read only portion of

the memory 106 in order to prevent corruption of the software upon introduction into an infected computer device 150. An embodiment of the device 100 configured to provide security features could comprise a housing portion 102 configured to reflect the diagnostic or treatment functionality of the device. For example, the device can be configured to resemble a capsule or other medical item.

[0040] In addition to scanning the computer device 150a to identify potential viruses, spyware, or other problems, the device 100 can be configured to provide recommended solutions, links to applications available on the Internet, and installation of native applications residing on the device 100 to repair or address the identified problems. To facilitate interaction with the security diagnostic and enhancing software, the device 100 can be configured to provide a user interface 700 as illustrated in Figure 7. The exemplary environment 700 illustrated in Figure 7 comprises security assessment level indicator 702 and security enhancement options 704. According to other embodiments, other security applications or interface components can be employed. According to the illustrated embodiment, the security assessment level indicator 702 provides a quick and easy to understand visual representation of a security status of a computer into which the

device 100 is inserted. This allows a user to easily test and diagnose a computer without the installation of new software or downloading potentially harmful programs over a network connection.

[0041] By providing security and diagnostic and enhancement software on a storage device physically present at one of the computer devices 150a-c, embodiments of the present invention have several advantages over similar security software applications available over the Internet. For example, security enhancement and diagnostic software available over the Internet may require a browser to be configured to allow active X programs to access system files outside of the browser environment. Allowing Internet applications to access system files poses a security threat and is thus undesirable for a program designed to enhance security. Embodiments of the device 100 can be configured to run without requiring a change in a browser configuration to allow active X programs or other Internet applications to access system files and thus can allow a system to remain in a more secure configuration.

Conclusion

[0042] While the above description contains many specifics, these specifics should not be construed as

limitations on the scope of the invention, but merely as exemplifications of the disclosed embodiments. Those skilled in the art will envision any other possible variations that are within the scope of the invention.