Title: APPLICATION SPECIFIC CONNECTION MODULE

Abstract: Embodiments of the present invention comprise an application-driven connection module that maintains network connectivity to at least one application server and enables only intended applications to operate between the client and the server.
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APPLICATION SPECIFIC CONNECTION MODULE

CROSS-REFERENCE TO RELATED APPLICATIONS


FIELD OF THE INVENTION

[0002] The invention relates generally to computing, telecommunication, and electronic devices. More specifically, the invention relates to network connectivity.

BACKGROUND OF THE INVENTION

[0003] More and more individuals require connectivity to networks such as the Internet for an ever-increasing variety of reasons. The recent advent of sufficiently small processing power, memory, display and battery endurance, coupled with an increasing presence of wireless communications services, has allowed mobile computing to be accomplished more effectively and efficiently, whether on a notebook or laptop computer, a Personal Digital Assistant ("PDA"), telecommunications devices, or other platforms. The increasing ubiquity of mobile computing and the need for connectivity, primarily wireless connectivity, has led to the proliferation of portable computers capable of connecting to networks in a variety
of ways. These portable computers often contain at least one interface to several types of networks such as LANs, dial up modems, Wi-Fi wireless local area networks (WLANs), and wireless wide area networks (WWANs).

[0004] Historically, portable electronic devices and plug in components offering connectivity to at least one network have lacked the functionality to efficiently and effectively manage resources and network connections. These devices have failed to deal adequately with issues such as managing continuous connectivity using multiple connection options without excessive user interaction. Devices, software, or business arrangements have not been available that offer consumers convenient and flexible connectivity options as explained in more detail in U.S. non-provisional application no. [55132/316925], entitled “Systems and Methods for Enhancing and Optimizing a User’s Experience on an Electronic Device,” filed concurrently herewith, which is incorporated herein in its entirety by reference. Moreover, prior devices, software, and business arrangements do not offer secured, software-solution specific connectivity.

SUMMARY OF THE INVENTION

[0005] Certain embodiments of the present invention provide a connection module such as a telecom battery. This module may include an interface for connection to an electronic device, a transceiver for communicating with a plurality of networks, a communication manager for establishing network connections, and an access module for maintaining airtime allotments for the plurality of networks.

[0006] Certain embodiments of the present invention relate to an application-driven connection module that includes an amount of network connectivity, a transport service module, and an access module that maintains communication with an application server and enables only certain intended software to operate between
the client and the server. Certain embodiments of the present invention relate to methods of extending an application to extra-internet environment through application-driven connection modules.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] These and other features, aspects, and advantages of the present invention are better understood when the following Detailed Description is read with reference to the accompanying drawings, wherein:

[0008] FIG. 1 illustrates a functional block diagram of a system in accordance with one embodiment of the present invention;

[0009] FIGS. 2a-c illustrate various connection modules in accordance with certain embodiments of the present invention;

[0010] FIG. 3 illustrates a flow diagram of a method in accordance with one embodiment of the present invention; and

[0011] FIG. 4 illustrates a functional block diagram of a system in accordance with one embodiment of the present invention.

DETAILED DESCRIPTION OF SPECIFIC EMBODIMENTS

[0012] Certain embodiments of the present invention are physical connection modules, also referred to as telecom batteries. These devices are used to add network connectivity capability to an electronic device such as a mobile computer, a PDA, a digital camera, a music player, or a vending machine by providing at least one connection to one or more networks, whether physical connections or wireless. A connection module may provide connections by including the necessary software,
hardware, and/or airtime to connect to one or more carrier networks. The connection module may also be used to add additional network connectivity capabilities to an electronic device already having some network connectivity abilities. Certain embodiments of the present invention relate to application-driven connection modules that allow clients to have network connectivity to an application server and enable only the intended software application to operate between the clients and the server.

Exemplary Client Devices, Systems, and Environments

[0013] FIG. 1 illustrates a functional block diagram of client devices 120a-120n operating in network environments in accordance with various embodiments of the present invention. Client devices 120a-120n may be used by users 110a-110n for a variety of purposes and reasons. In addition to local system resource requirements, a client device 120a may have various remote access or network connection requirements. For example, a user, such as user 110a using client device 120a, may desire to use or run local applications 128 residing in the memory 126 of the user’s client device 120a or may desire to remotely run applications or retrieve information residing on remote devices accessible on or through various networks 105. A server 140 may provide an application that is made available to clients, such as client 120a, through connection module devices, such as connection module 130.

[0014] In general, a client device 120a-n and a server 140 may use any suitable type of processor-based platform 124, 144, and typically will include a processor 122 coupled to a computer-readable medium, such as memory 124, and include hardware and user interface components. The computer readable medium can contain program code that can be executed by the processor. It can be used to store information and applications such as client applications 128 in the case of the client 120a and server applications 148 in the case of the server 140. The client device 120a and server may
also each include an operating system that controls the system resources and provides a user interface.

[0015] The client devices 120a-n themselves may have differing characteristics. The client devices 120a-n may include cell phone devices, mobile phone devices, smart phone devices, pagers, notebook computers, personal computers, digital assistants, personal digital assistants, digital tablets, laptop computers, Internet appliances, blackberry devices, Bluetooth devices, standard telephone devices, fax machines, other suitable computing devices, or virtually any other suitable electronic device. Additional components in the client devices may differ and provide various functionalities.

[0016] The networks 105 are not limited to any particular type of network nor are they limited to a single network. For example, the networks 105 could include the Internet, a LAN, a WAN, a private network, a virtual network, and/or any combination of network types. The client device 120a-120n and server 140 may be connected to networks 105 in a variety of ways. Such connections may be through virtually any type of network, line, or wireless connection type. For example, the connection access options 138 could involve local area networks ("LANs"), dial up modems, Wi-Fi, wireless local area networks (WLANs), wireless wide area networks (WWANs), or cellular.

[0017] A connection module 130 may provide connection options 138 that allow the client 120a to connect to the networks 105. The connection options 138 may allow access on a number of networks and/or through a number of network connectivity providers. Thus, generally, a connection module 130 may be a module used to add network connectivity capability to an electronic device by providing or facilitating one or more connections to one or more networks, whether through a physical connection or a wireless connection. A connection module 130 may provide,
allow, or support Internet access over wireless and/or wired connections. The connection module 130 may include one or more transceivers for wireless connections. A connection module 130 generally will include, among other things, memory 132 and software or hardware to allow and/or manage network connectivity. The memory 132 may include information about the amount of network connectivity available 134 (e.g. airtime) and applications to manage the connections such as a connection manager 136. The connection module 130 may include network connectivity components such as telecommunications components and may be used to add additional network connectivity options to a client 120a already having some network connectivity abilities.

Connection Module

[0018] FIGs. 2a, 2b and 2c depict various connection modules 204, 210, 220 that may be inserted into, attached to, or otherwise made a part of a client device 202. The connection module 210 illustrated in FIG. 2b includes time available 212 and a connection manager 214. The connection module 220 illustrated in FIG. 2c shows a connection module according to certain embodiments that may include a variety of different functional components, including a device interface 222, a communication module 226, an access module 228, and/or a system resource module 230. A physical connection module may have an interface for physically connecting to an electronic device, a communication module for establishing network connectivity, and an access module for monitoring and/or controlling network connectivity. The connection module may also include one or more transceivers 224. Different embodiments of a connection module according to the present invention may include some or all of these components as well as additional components and functionality.

[0019] FIG. 3 shows one aspect of the present invention as a method of adding network connectivity capability 300 to an electronic device. This method 300
involves using a connection module in an electronic device to connect the electronic device to a network using an available connection.

[0020] Block 302 illustrates installing a connection module capable of connecting to a network through a plurality of connections. The connection module may be installed in the electronic device at time of assembly of the electronic device (i.e. during manufacture), by a subsequent supply chain member (i.e. as an add-on component) prior to end customer purchase, or by the end customer or user (i.e. by separate purchase). The connection module may be integrally associated or inserted with other hardware components, such as part of a processing chip of an electronic device, or may be removably inserted like a PCMCIA card.

[0021] In block 304, the electronic device is connected to the network through one of the connections available on the connection module. The connection module could offer multiple connection types of the same or different types of communications or it could offer only one type. In this block, a connection is established through one of the available connections.

[0022] A connection module may include an amount of network connectivity. For example, a connection module could store a variable with an amount of network connectivity time (e.g. in minutes) or a variable with an amount of network connectivity data transmission potential (e.g. in Megabytes). As network connectivity is used, the variable value may be decreased accordingly. As a more specific example, a connection module could include an amount of network connectivity in the form of an amount of airtime (e.g. prepaid airtime, airtime associated with a customer account, etc.). The ability of the connection module to include an amount of network connectivity or airtime has many technical and commercial advantages. Specifically, a connection module provider can use this ability to add value to the services provided by a telecommunication network carrier. These value added
aspects include the ability to simplify payment, to simplify use of the services, and to bundle multiple connection options together. Accordingly, a connection module provider may act as a reseller of airtime for one or more telecommunication network carrier and add value to the services provided by these carriers. For example, the provider of the connection module can buy airtime at a flat rate from a wireless carrier, and then meter or sell the airtime per minute at a marked up rate as capacity with a connection module. The connection module can include a set capacity for airtime corresponding to a dollar amount regardless of which carriers the connection module chooses to select for various calls or communications. Alternatively, the user can buy the connection module with an account for which he or she provides his or her credit card number; whenever it is running low on airtime, the connection module can access the user’s credit card account and pre-purchase a set or desired increment of time. The connection module can also have access to a number of credit card accounts of the user, and may choose which account to use depending on factors having to do with the credit card accounts such as interest rate, frequent user credits, promotions, and other relevant factors.

[0023] A connection module provides advantages in the area of payment because the payment for the network connectivity services can be associated with the cost of the connection module. The purchaser of the connection module is able to pay for the services in a manner that is most convenient for her. For example, a purchaser may select a connection module that has prepaid network connectivity services for one, six, twelve, or twenty-four months. Another purchaser may select a connection module that has airtime or network connectivity charges that are paid periodically based on usage. These charges can be automatically billed to the purchaser’s credit card.

[0024] A connection module may also provide value added advantages by improving the ease of use of the network connectivity services. When a connection
module includes the necessary software, hardware, and amount of network connectivity, these components can be managed to provide a convenient, simple to use, interface for the user. A resource manager can provide this management ability and user interface. A connection module may also add value by bundling multiple connection options together into one device. Users require access to networks at different times, in different places, and in different ways. A connection module can include multiple network connectivity options to account for a user’s various needs. In addition, a connection module may coordinate and manage the use of these options.

[0025] A connection module may also be called a telecom battery because it may be plugged into or included as part of an electronic device. Used in this manner, a connection module is analogous to an electric battery. Just as an electric battery can be plugged into an electronic device to add electricity to the device, a connection module may be plugged into an electronic device to add network connection capability such as, for example, a PCMCIA card. For example, a plug-in type connection module can be bought by an end consumer at a retail outlet and plugged into the user’s PDA, computer, or other electronic device, adding telecommunication ability to the device. Alternatively, rather than plugging into an electronic device, a connection module can be included as a component of an electronic device prior to sale of the device to the consumer. For example, if the connection module is included in a PDA by the PDA manufacturer or OEM, the product may have telecommunication ability available at the time of purchase. Such communication ability may be associated with one or more accounts with one or more telecommunication providers.

[0026] Connection modules can also be specialized for certain applications. A variety of different connection modules satisfy various functions of specific applications just as there are different sizes and power levels of electric batteries. For
example, the telecommunication requirements of a given digital camera may be very
different than the telecommunication requirements of a PDA. Different connection
modules may be used to satisfy these different requirements.

[0027] Connection modules also allow network connectivity costs to be
minimized to the requirements of the application and allow these cost savings to be
passed on to the users. One example is to price the connection module based on the
imposition on network capacity that the specific application will require. For smaller
data amounts and slower speed requirements a cheaper connection module can be
offered. Likewise, if the data direction is in the up link direction a cheaper
connection module may be offered if network connectivity costs in that direction are
less expensive to provide.

[0028] One connection module embodiment provides for the packaged sale of
telecommunication with either general or application specific telecommunication
capabilities. The price of the connection modules may reflect the length of time the
connection module will provide telecommunications. For example, a one-month
connection module, a six-month connection module, a twelve-month connection
module, and a twenty-four-month connection module may be available at different
prices. The price of the connection module may also reflect the application for which
the connection module will be used or the user's preferences. One user may prefer
higher speeds for a given application than another. Another user may prefer lower
costs to higher speeds.

[0029] A connection module may be sold in the same stores that sell portable
computers and other electronic devices. This provides convenience for a customer
who can purchase a connection module at the same store she purchased her notebook
computer. The connection module can be packaged as an electronic device and a
compact disc that allows the connection module to be used for the purchase period.
For example, the compact disc can allow use of a connection module for one, six, twelve, or twenty-four months depending on the user’s preference. These four time periods are used for purposes of demonstration and are not meant to limit the invention. Other time periods and marketing promotions are envisioned. The sale of network connectivity capability and capacity as part of a hardware component allows all of the sales and marketing advantages inherent in hardware promotion to be used in addition to the sales and marketing techniques available for telecommunications and other network connectivity services.

[0030] In certain embodiments, the connection manager can be viewed as a battery of prepaid or pre-acquired network connectivity. The consumer expends the network connectivity (for example the time available 212 shown in FIG. 2b) stored on the connection module when the user or an application running on the user’s device connects to the network through the connection manager. It should be noted that sign-on, and/or authorization, authentication may be accomplished automatically and/or without the user’s input or knowledge. The amount of network connectivity (e.g. time available) that is consumed by network connectivity may depend on a variety of factors. For example, the amount of network connectivity consumed may depend upon the type of connection (WWAN, WLAN, LAN, Dial-up, etc.), usage time, and amount of data, time-of-day usage, among other factors. Accordingly, some access may be free, some access cheap, and other access expensive in terms of usage of the stored network connectivity. A user may view the current status of the amount of network connectivity remaining on the connection module and may be notified when the amount of network connectivity remaining hits a low threshold or is close to expiration. The user may choose to refill, recharge, or otherwise re-acquire network connectivity on the connection module. Connection to the network may be automatic or the user may select from connection options effecting the connection characteristics (speed, etc.) and connection module (use of the stored amount of
network connectivity). Accordingly, one of the many advantages of certain embodiments of the connection module is to make Internet access simple for a consumer by allowing automatic connection and network sign-on, providing consumer electronics with connection modules with a stored amount of network connectivity, and by providing an improved user experience. Other advantages result from the use of certain embodiments of the connection module with certain embodiments of the resource manager.

A resource manager, such as the resource manager discussed in U.S. Patent Application no. [55132/316925] to Sanda, entitled "Systems and Methods for Enhancing and Optimizing a User's Experience on an Electronic Device," filed concurrently herewith, the entirety of which is incorporated herein by reference, may also be used to facilitate the use of a connection module to provide a connection to a network through changing network connectivity connection types. An electronic device may have multiple network communication options. These options may be provided by a connection module and/or by other components of the electronic device. The resource manager can control and utilize an appropriate network communication option automatically, based on user-defined criteria, or upon approval by the user after presenting the user with an array of options. In addition, the resource manager may be used to maintain a connection using several data streams or packet streams and can filter or accelerate the flow of data based on the requirements of the application to provide optimal connection to the network. In other words, the user can experience a continuous or near continuous connection to the network in accordance with their preferences even when the resource manager is adjusting, managing, and switching among different network communication options. For example, as a mobile user moves about using a portable electronic device containing a connection module, different network communication options may become available.
or preferable. The resource manager can switch to an appropriate connection when it becomes available or preferable with or without the user’s interaction.

[0032] The resource manager may also facilitate the ability of an application specific connection module on a more general-purpose machine. Accordingly, the resource manager can deal with the potential problem of an application specific connection module being used to provide network connectivity for another purpose on a general-purpose electronic device. Specifically, the resource manager has the ability to restrict the user’s access to the more general functions that may be available on an electronic device while the connection module is in use. This may be accomplished, for example, by using a user interface that does not allow the user to access applications outside of the user interface. The user is locked-out of restricted functions.

Process for Remote Control and Regulation

[0033] There are many remote control and remote monitoring advantages that result when a resource manager is used with a connection module. These advantages include the ability to manage upgrades on remote portable devices, the ability to monitor and use location information for the portable device, the ability to remotely control applications, and the ability to enable and simplify data recovery and continuity when a telecommunication channel is interrupted.

[0034] The resource manager allows for the management of upgrades on remote portable devices in a secure environment. This upgrade functionality extends across all applications. The resource manager can keep track of the applications available on a remote device, keep track of the providers of those applications, keep track of when the applications are changed and when upgrades are available, and keep track of how different upgrades are performed. With these capabilities, the resource manager can perform upgrades on a push or pull basis. The remote portable device can recognize
and initiate its own upgrade procedure or an upgrade can be initiated elsewhere on the network. For example, a company wishing to roll out a new software upgrade to all of its sales associates in the field can initiate and manage such an upgrade using the resource manager. The company can also use the resource manager to send upgrades out to a specific remote machine by using the connection module to identify the appropriate remote portable device.

[0035] Using a resource manager with a connection module may provide the ability to monitor the location of a remote portable device. This location information is useful to both the remote, portable device itself and to companies wishing to track the location of their portable computers in the field. The remote, portable device can use the location information on the device and on its local applications. For example, a resource manager can use this information to change the time when a time zone is crossed. As another example, a resource manager can change the telecommunications options or preferences as the user’s location changes.

[0036] Companies may also use the location information available with the use of connection modules. For example, when remote portable devices are accessing a company’s network, a resource manager on each of these devices can communicate the location information to appropriate company personnel or devices. This location information can be used in a variety of ways by the company, such as identifying which sales associate or field technician is currently closest to one of the company’s clients or customers. Such information may be very useful in the event of a customer emergency that required, for example, a visit from a technician to perform tests using a specific diagnostic software application. The company can identify both an appropriate field technician in the proximate location to the emergency and can also determine whether the portable device carried by that person contained the necessary diagnostic software.
[0037] Using a resource manager with a connection module may also provide the ability to remotely control a portable device associated with a company. For example, the company can use a resource manager to ensure that the portable device is not used to download pornography. As another example, in the event the portable device is stolen or an employee carrying a portable device is terminated, a resource manager can be used to remotely delete confidential information saved on the portable device.

Process for Data Recovery

[0038] A resource manager may also provide data recovery and protection against the loss of data. This ability is useful when a resource manager is used with a connection module. A resource manager may capture information in the event that a telecommunication channel is interrupted or discontinued. For example, if a removable connection module is pulled out while a user is working on a remote network application, the resource manager may capture and/or save the information. When another connection to the network is established, the resource manager provides the captured information. This data recovery function prevents or at least minimizes data loss associated with lost and interrupted connections.

[0039] Furthermore, this function allows for the continuous use of network applications even through changing communication channels. The resource manager accomplishes this function by capturing the necessary information when a connection through one connection option is terminated and restoring the data to the application when another connection is established to the network through the same or another connection option. These features offer the additional benefits of simplifying the user’s experience by automating a continuous network connection.

Application Driven Connection Module
Referring now to FIG. 4, certain embodiments of the present invention relate to an application-driven connection module 430 that maintains network connectivity with at least one application server 440 over networks 405 and enables only the intended software applications 422, 442 to operate between the client 420 and the server(s) 440. For example, in certain embodiments the connection module includes an amount of network connectivity, a transport service module for enabling network connectivity to at least one server through one of a plurality of connection types, and an access module that enables one application offered by the at least one server, wherein the network connectivity is limited to access related to the at least one application.

In certain embodiments the connection module 430 will include a transport service module 432, e.g. 3G-WCDMA, Cellular, PHS, and Wi-Fi (802.11x), and an access module 434. The connection module 430 may optionally contain one or more transceivers 436. In other embodiments the communication module 430 does not contain a transceiver, but instead uses transceivers and/or other connection devices associated with the client 420. The connection module may include an amount of network connectivity (e.g. prepaid airtime) as with other connection modules described herein. The amount of network connectivity may be tailored to particular application requirements.

In certain embodiments, the connection module enables and allows only software or application specific network connectivity within a corporate network through the use of an access module configured to only allow access to one or more specified application server(s) in that corporate network.

In certain embodiments, the access module is set to only operate on an end-to-end basis maintaining maximum security utilizing firewall and port controls between the client (outside of the corporate Intranet) and the application server in the
corporate data center. Accordingly, the client is virtually connected within the Intranet or LAN even though it is physically located on the outside. Personal firewall, VPN, and virus detection systems may be integrated with the access functionality platform. Thus, connection to the corporate servers via any desired transports may be restricted such that such connection is only allowed or enabled when a secured environment is fully established and confirmed. A secured environment may include the protection of the client and servers from virus, intrusion and/or attack.

[0044] In certain hosted embodiments, corporate servers will be physically hosted by a third party other than the user and the business entity operating the Intranet, although the third party and business entity operating the Intranet may be connected through a dedicated line. Other configurations of hosted security or ASP configuration are of course possible. In certain embodiments, the server resides at a data center operated by the connection module provider. In other embodiments, the server resides at the provider of the application.

[0045] The connection module of certain embodiments enables the intended application to operate between the client and the server. In addition to limiting access to only the software, the access module enables the remote user access to the corporate applications as if he/she was in the office by integrating network connectivity control, application access control, port control, authentication, etc. The access module may be used to control the access of the user to other solutions on the client. In this manner, the cost of the transport service can be priced according to the data transport requirement of the application. The access module may also use optimization tools to improve the user experience. For example, optimization tools may be based upon various accretion techniques and/or provide ease of use in network hopping and auto-authentication.
Methods of Extending an Application to Extra-Intranet Environments

[0046] Certain embodiments of the present invention relate to methods of extending an application to an extra-intranet environment (i.e. outside a corporate network or domain) through application-driven connection modules. These methods may enable software companies who market software applications to enhance and extend the reach of their products to extra-intranet environments. For example, the use of document sharing software, which controls access at a central location for selected data files, may be extended to users who are not directly connected to the corporate network on which the central location resides. In this illustrative scenario, each user to whom the software provider's customer wishes to extend remote access to the central location would be given a branded connection module. The connection module could have the ability to provide integrated Wi-Fi, WWAN, and/or LAN connectivity, and/or could take advantage of the network interface modules that exists on the remote device. In certain embodiments, the connection module physically connects to the remote device via a USB, PCMCIA, Bluetooth, or other existing interface. The connection module could take over the communications infrastructure and user interface of the remote device and provide connectivity only to the network resource and software to which it was configured to provide access and allow operating system resource access only to those services and applications to which it was configured to allow access. Once access to the shared resource and software is complete, the connection module could be removed from the remote device and the remote device would return to its normal state. In the process of this activity, the connection module could consume portions of its pre-paid network connectivity allotment, and provide the ability to "recharge" the amount of pre-paid network connectivity when depleted (possibly through a web interface).
[0047] As another example, in certain embodiments, the application-driven connection module might be used to package a hardware-independent email service (such as "Blackberry" service) which would work on any telecommunications platform. In other words, a user of an email service could purchase the service from a company independent of a particular communications platform. That user could obtain connection modules that operate on specific platforms. When the user wishes to use the email service, the user could insert the appropriate connection module into the remote device. The connection module could take over the communications infrastructure, security infrastructure, and user interface of the remote device to allow the email service to operate. Once finished, the user could remove the telecom battery and the remote device would return it its normal operation. Based on the user’s usage, the telecom battery could expend a portion of the network connectivity, and would allow the user the ability to “recharge” the battery as required.

*Alternative Embodiments*

[0048] The structures and processes described above illustrate exemplary embodiments of inventive concepts included in the present invention. Other systems and processes are possible. While the invention has been described in detail with particular references to these particular embodiments, variations and modifications can be affected within the spirit and scope of the invention as described in this document.
CLAIMS

That which is claimed:

1. A connection module for use with a client device, the connection module comprising:
   an amount of network connectivity;
   a transport service module for enabling network connectivity to at least one server through one of a plurality of connection types; and
   an access module that enables at least one application offered by the at least one server;
   wherein the network connectivity is limited to access related to the at least one application.

2. The connection module of claim 1, wherein the at least one application is a single application.

3. The connection module of claim 1, further comprising at least one transceiver.

4. The connection module of claim 1, wherein the connection module does not include a transceiver.

5. The connection module of claim 1, wherein the network connectivity is pre-paid airtime.

6. The connection module of claim 5, wherein the price of the prepaid airtime is based on requirements of the at least one application.

7. The connection module of claim 1, wherein the access module further provides security for the provision of the at least one application.

8. The connection module of claim 7, wherein the access module provides security using a firewall.

9. The connection module of claim 7, wherein the access module provides security using port controls.
10. The connection module of claim 7, wherein the access module provides security using a VPN.

11. The connection module of claim 1, wherein the access module only enables network connectivity when a secured environment is confirmed.

12. A system comprising a client device and at least one server wherein the client device is connected to a connection module comprising:
   an amount of network connectivity;
   a transport service module for enabling network connectivity to the at least one server through one of a plurality of connection types; and
   an access module that enables at least one application offered by the at least one server,
   wherein the network connectivity is limited to access related to the at least one application.

13. The system of claim 12, wherein the at least one server is part of a corporate network and the client device is located outside of the corporate network.

14. The system of claim 12, wherein the client device is virtually connected to a corporate network containing the at least one server.

15. The system of claim 12, wherein
   the at least one application relates to a first entity; and
   the at least one server is physically hosted by a second entity.

16. The system of claim 14, wherein the first entity and second entity are connected by a dedicated line.

17. The system of claim 12, wherein the at least one server reside at a data center.

18. The system of claim 17, wherein the data center is operated by a connection module provider.

19. The system of claim 17, wherein the data center is operated by a provider of the at least one application.
20. The system of claim 12, wherein the at least one application is a single application.

21. The system of claim 12, wherein the access module optimizes performance of the application.

22. A method of providing an application comprising:
   providing a server offering an application for use by at least one client device, wherein the server is connected to an Intranet;
   providing a client device located remote to the Intranet; and
   providing a connection module at the client device, the connection module comprising an amount of network connectivity, a transport service module for enabling network connectivity to the server and an access module that allows access to only one application.

23. The method of claim 22, wherein the application is document sharing software, wherein the application controls access to selected files.

24. A method of selling an application comprising selling client software, server software, and at least one application-driven connection module under the same brand name.

25. The method of claim 23, wherein the software, the server software, and the at least one application-driven connection modules are sold as a package.

26. The method of claim 24, wherein the connection module includes prepaid airtime.

27. The method of claim 25, further comprising selling additional airtime to recharge the connection module.
302
INSTALL A CONNECTION MODULE IN AN ELECTRONIC DEVICE

304
CONNECT THE ELECTRONIC DEVICE TO NETWORK THROUGH ONE OF THE COMMUNICATION CHANNELS AVAILABLE ON CONNECTION MODULE

FIG. 3
FIG. 4
### Documents Considered to Be Relevant

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of Document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to Claim No.</th>
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<tr>
<td>X</td>
<td>WO 00/78004 A (ALCATEL INTERNETWORKING, INC) 21 December 2000 (2000-12-21)</td>
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**Further documents are listed in the continuation of box C.**

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**Date of the actual completion of the International search**

4 November 2005

**Date of mailing of the International search report**

16/11/2005

**Name and mailing address of the ISA**

European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk

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Kopp, K
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