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data locations and services. Read/write permissions can be granularized to the file level, if desired.

The data storage system 710 includes a number of storage methodologies 812 for handling and processing data. For example, one methodology enables large numbers of users to organize files and documents around many projects simultaneously. Data of any kind and size can be uploaded to a common shared workspace or board. Varying levels of access can be provided to the uploaded data. Other methodologies are associated with storing the data, archiving the data, data warehousing, library data, and an idea registry for tracking that aspect of the companies intellectual capital. The storage system 710 facilitates the storage and access of metadata libraries that link hierarchical and non-hierarchical LDAP folders.

As indicted hereinabove, the management tool operates seamlessly with existing computing system applications, and existing system services. For example, the conventional system services can include at least the following: e-mail, collaboration and groupware services 814 having an associated e-mail, collaboration and groupware storage system 816; voice switching services 818 (e.g., telephone and paging functions) having an associated voice data storage system 820; and multimedia services 822 having an associated multimedia storage system 824. The storage system 816, 820, and 824 can connect to the storage system 710 to facilitate data transfer and storage in accordance with the various methodologies of the storage system 710.

A user of the users node 706 can also access the e-mail/collaboration/groupware services 814, voice switching services 818, and multimedia services 822 indirectly through the services system 704 using a multi-user data manipulation engine, e.g., OLAP (On-Line Analytical Processing). Alternatively, the user can access these services 814, 818, and 822 directly over the network 702, but shown separately as a communication link 826, and through the services 708 without using the multi-user engine.

The user can also access the services 704, other services 814, 818, and 822, and data storage system 704 over the global communications network 712 via a link 828. This is facilitated through the user browser by directing the browser to a website using a URL (Uniform Resource Locator) or through an alternative link 830.

The management tool is browser-based and incorporates a strong-encryption scheme (e.g., using 128-bit SSL (secure socket layer) protocol). This means that data transmitted between the user computer and the services server is substantially secure. Furthermore, data shall not be cached, which means that there is no information footprint left on the user computer after the user logs off. The user can access data securely from virtually any network node using any type of browser. The data is stored encrypted on the storage system 710.

Referring now to FIG. 9, there is illustrated a diagram of a general structure of the management tool system 900. The structure starts at a high level with the user at a user level 902. The user level 902 is next associated with a context level 904 that defines all contexts in which the user can be included. Under the context level 904 is a web level 906 that associates one or more of the webs with one or more of the contexts of the context level 904. A boards level 908 underlies the webs level 906 and provides associations of the many boards with one or more of the webs. An applications level 910 facilitates associating one or more applications with a board designated at the board level 908. A database/folders level 912 underlies the applications level 910, and facilitates storing at least data, tables, and context information generated from the upper levels in folders, in the form of, e.g., files, at an associated underlying file level 914. A linking protocol 916 provides cross-level communication for facilitating all aspects of data processing and communication at all levels of the data management system 900.

Referring now to FIG. 10, there is a level flow diagram 1000 illustrating the hierarchy of the present invention for associating one or more users 1002, context 1004, applications 1006, and folders 1008 with data 1010. The approach is for file storage pointers of an application to be dynamic, governed initially by the folder within which the application is launched. Additionally, the file storage pointers are then accessible and acted upon by the same application from any folder in the system. This is a dynamic non-linear implementation.

Traditional collaborative technologies, like groupware, allow groups of users to take action on the same file substantially simultaneously. However, in preparation for such capabilities, all users must have compatible versions of the same application that is to be used for working with the file. The context for any folder is limited to a one-to-

many and many-to-one relationship. Essentially, the folder possesses a singular context to the directory tree in which it resides.

In contrast, the disclosed architecture assumes that the highest contextual level is that of an entity consisting of a group of users forming a many-to-many architecture. The users create and use the files within the context of the workspaces or boards of one or more users, which may or may not have web relationships. In this implementation, the board is similar in function to a folder in conventional LDAP systems.

The user then uses a suite of applications within a board, with any file created being immediately associated with the user, that board, any other board desired, and the application. In other words, by the person doing simply his/her work, an enormous amount of metadata about the context(s) for that work is captured automatically. Additionally, the system indexes the content to facilitate the other ways in which the users of the system might want to search on that file in the future – ways and future contexts which are not and cannot be known by the users in advance and certainly are not facilitated by conventional systems.

The system facilitates the use of an array of applications that act independently of the boards from which they were launched, and those boards are capable of being ordered in a myriad of collections of relationships (i.e., webs). The applications can traverse the webs to the boards associated with the information.

In addition to a macro view obtained by webs and boards, the user can also create familiar hierarchical folders within any board. These are virtual folders, in that their storage is governed by the process described above. No data is physically stored in these folders. Finally, any file or group of files can be associated with any other file in the system, allowing the users of the system infinite flexibility in determining dynamic associations among the macro/micro components of the system.

Referring now to FIG. 11, there is illustrated a system 1100 operational in accordance with the present invention. The system 1100 includes a data management platform 1102 suitable for accommodating any number conventional operating systems (OS) 1104 (also denoted OS₁, OS₂, OS₃, ..., OS_N). The system 1100 also facilitates the use of a single data storage system 1106 suitable for use with any of the operating systems 1104, whereas conventionally, a given OS may require a certain data storage file

structure. The platform 1102 is OS-independent, and provides a single point of contact for multiple users and resources 1108.

Referring now to FIG. 12, there is illustrated a design integration chart 1200 of the disclosed invention. At the core of the system is a data management tool 1202 that facilitates all of the outlying features and capabilities. The tool 1202 facilitates, at a second layer 1204, one interface (via a browser), one application (the tool itself), one data store (associate with the management tool), and one search mechanism for finding any data element of the data store. Of course, any third party applications typically have their own search tool to search for files and folders that may also be used. At a third layer 1206, the system 1200 facilitates a secure operating environment, a scalable environment, and web-based. Moreover, the system 1200 can be implemented on any software and/or hardware platform, accommodate access from any device, and bridge to third party applications and devices. At an outer layer 1208, the system 1200 facilitates one or more instances of the following: users, contexts, workflows, projects, user-defined topics, priorities, file types, and tools. The system 1200 also is suitable for use with e-mail, facsimile, and instant messaging subsystems, multimedia services, and voice systems (e.g., phone and paging data).

The system 1200 captures and catalogs data automatically. Users, projects, permissions and communication tools can be readily configured, along with the exchange of voce information, data, and video data seamlessly. As users collaborate, the system 1200 captures context information, and automatically records when and how data is shared, who updated the data, how often the data was accesses, what additional information the data was linked to, etc. Meeting information can be stored automatically, including, but not limited to, who attended, the documents shared, instant messages captured, handouts used, slide presented, etc. A later search can retrieve this information along with the context(s) within which the data was generated and used.

The system 1200 enables larger numbers of users to organize communications around many projects substantially simultaneously. It can relate those projects to one another using whatever workflow model(s) are required, and dynamically assign modular communications tools (e.g., e-mail, voice mail, fax, teleconferencing, document sharing, etc.) to those many projects as desired. The system 1200 automatically indexes that

information within the context(s) in which it is received and used. This way, when a user searches the system 1200 for information, the user not only gets the information sought, but also can see how the information is currently being used by other users and project groups in the whole system. Traditionally, if a document was to be associated with seven different projects, for example, the document would be stored in seven different file locations and version control could be a significant problem. In accordance with the present invention, the document is seamlessly linked to all seven projects. Thus, only one version exists, and version control is much easier to address.

The disclosed system architecture is suited to relational and object database structures for use on a large scale. The data management tool uses both relational and object storage approaches to facilitate at least Internet-based data communications.

Referring now to FIG. 13, there is illustrated one implementation of a platform system 1300 in accordance with the present invention. The platform system 1300 includes the capability of third-party application integration, security cameras and other devices for data input, project and workflow management and, file and document sharing. The platform system 1300 also accommodates online meetings between logged-in users, and teleconferencing between the users, if desired. The teleconferencing can be initiated using the platform system 1300.

Referring now to FIG. 14, there is illustrated a general system configuration 1400 of the present invention. The system 1400 includes a platform 1402 that hosts at least the data management tool, here called a web application server 1404. The server 1404 provides a common layer to underlying services that include a database server 1406, a VRU (voice response unit) 1408 (also called an interactive VRU or IVRU) and mass storage system 1410. The VRU 1408 facilitates interactive calling features for a user via remote touchtone signals and to voice data to the caller such that the caller can make choices in response to predetermined options presented by the system.

The platform 1402 can utilize at least one multi-channel data communication connection 1412 (e.g., T1, DS3) into the VRU subsystem 1408 for communicating voice information and interacting with features of the platform 1402. As indicated previously, the invention can accommodate user communication from virtually any accessible network node. To facilitate such an interface, the platform 1402 can include a processor

1414 suitable for XML (eXtensible Markup Language), XSLT (XML Stylesheet Language: Transformations), and SSL processing. The processor 1414 can also access web-based services utilizing SOAP (Simple Object Access Protocol). SOAP employs XML syntax to send text commands across the network using HTTP (HyperText Transport Protocol). Thus, there is a high-speed connection 1416 (e.g., broadband) that interfaces to the processor layer 1414 for use with multiple communication exchanges with remote users disposed on the global communication network 712. The remote users can access the platform system 1402 via a SSL connection 1418 using portable wired/wireless devices 1420, and by way of the associated browsers 1422.

10 Referring now to FIG. 15, there is illustrated a screenshot of a management tool window 1500 of a browser (e.g., Internet Explorer by Microsoft Corporation) used as a user interface to facilitate user interaction with meeting information in accordance with the present invention. The window 1500 includes an address field 1502 that indicates the default protocol and URL address for accessing the data management system of the present invention. Here, HTTP is used to access the server via network. The “https:”
15 indicates the connection will be to a secure port instead of a default web port. The window 1500 also includes a user area 1504 that indicates the name of the user logged into the system. There is also provided a topic area 1506 that lists the various boards associated with the user-defined topics. Here, the user has defined two topics: a Topic 1
20 and a Topic 2.

The window 1500 also includes an application (or services) area 1508 that lists many applications selectable by the user while in this particulate window 1500. The applications presented to the user from this window 1500 include but are not limited to the following: Message, Calendar, Task, Phone, Search, Meet, Contact, Compile,
25 Discuss, Files, Notes, Division, News, Ideas, Vote, Manage Board, Change, Password, Print, Help, Tutorial, and Logout. Depending on the user permissions provided by an administrator, the user may see more or fewer applications.

Here, the Meet application option is selected to allow user interaction with setting up a meeting related to projects of the user. The Meet application option further includes
30 List and Create sub-options. When the List sub-option is selected, a center viewing area 1510 is used to present board, context, web address and other information so that the user

can review the existing board and context information related to setting up a meeting. Selection the Create sub-option allows the user to create a meeting in associated with one or more of the boards and make changes to existing board relationships and contexts. Other user-selectable options are provided such that the user can Join in a session with one or more other users, Move data to Archive, Select all objects, set a Reminder for himself or herself, and Delete boards.

The Messaging option allows the user to give out an e-mail address of a project work area, enabling senders to send the messages to right place. Thus, the user no longer needs to manually move the messages to the appropriate folders once received in a personal message inbox. Additionally, incoming faxes are routed to the appropriate board for storage and review. Keywords and phrases in the fax are automatically indexed. Later retrieval is accommodated simply by performing a search for the keywords or phrases. Moreover, a given board can be assigned a fax number. Thus, all faxes coming in can be routed to that number, and on to the associated board.

The Vote option allows the company and organizations to communicate and gather opinions by way of voting. A question can be entered, and the users selected to whom the question(s) should be posed.

Referring now to FIG. 16, there is illustrated a screenshot of a management tool window 1600 of a browser used as a user interface to facilitate user interaction with unified messaging, including e-mail, voice mail and fax information in accordance with the present invention. The window 1600 includes many of the same fields and informational areas of the previous windows (e.g., areas 1502, 1504, 1506, and 1508 of window 1500 of FIG. 15). Here, the Message option is selected to allow user interaction with various forms of messaging support by the disclosed management architecture. The Message option further includes an instant messaging (IMessage) sub-option, in this particular implementation.

When the Email-Inbox sub-option is selected, the center viewing area 1510 is used to present the user's messaging inbox folders. The user can then open these folders to view the e-mail, voice mail and fax messages stored therein. The center viewing area 1510 also includes a drop-down menu 1602 that allows the user to select form a variety

of different folders (e.g., Main, Drafts) of the e-mail system. The user can also create and sign messages with a digital signature.

As before, other user-selectable options are provided such that the user can manipulate messaging information, including, but not limited to, Select All, Delete, Acknowledge, Remind Me, Remove, Move/Copy, Forward, and Get External Mail.

There is also provided a News link that allows the user to link to the latest corporate and/or division news.

Referring now to FIG. 17, there is illustrated a screenshot of a management tool window 1700 of a browser used as a user interface to facilitate user interaction with a board management option in accordance with the present invention. The window 1700 includes many of the same fields and informational areas of the previous windows (e.g., areas 1502, 1504, 1506, and 1508 of window 1500 of FIG. 15). Here, the Manage Board option is selected to allow user interaction with various forms of user management of boards. The associated sub-options allow the user to Edit the board attributes, and set permission levels thereto, in this particular implementation. Of course, many different additional or different options can be provided (in this window and other windows), at the discretion of the administrator. The system allows for new attributes to be added to this option as the need arises.

The center viewing area 1510 presents general board attributes 1702 of the user (e.g., user name, data, and time), and several fields for entering user information, including in this implementation, but not limited to, board description, board name, board nickname, board e-mail address, external e-mail properties (e.g., POP server, user name, an password), fax information (e.g., incoming fax number for the board and incoming fax PIN), and voice mail information (e.g., incoming voice mail number and incoming voice mail PIN).

Referring now to FIG. 18, there is illustrated a screenshot of a management tool window 1800 of a browser used as a user interface to facilitate user interaction with a phone option in accordance with the present invention. The window 1800 includes many of the same fields and informational areas of the previous windows (e.g., areas 1502, 1504, 1506, and 1508 of window 1500 of FIG. 15). The sub-options include Call

History, Call Setup, Quick Call, Meet Me, and List. The central viewing area 1510 for this window 1800 simply includes a listing of phone-related events for the given user.

As before, other user-selectable options are provided such that the user can manipulate phone information, including, but not limited to, Select All, Delete, Acknowledge, and Remind Me. In addition, as with the other windows, there is include an Agenda area 1802 for presenting any agenda information of a meeting or upcoming event.

Referring now to FIG. 19, there is illustrated a screenshot of a management tool window 1900 of a browser used as a user interface to facilitate user interaction with a files option in accordance with the present invention. The window 1900 includes many of the same fields and informational areas of the previous windows (e.g., areas 1502, 1504, 1506, and 1508 of window 1500 of FIG. 15). Here, the sub-options include List, Upload, Deleted, and Check In. Thus, data can at least be listed, uploaded to the system and/or a board, deleted form the system and/or board, and checked in from a previous checkout process.

The window 1900 includes the central viewing area 1510 for viewing information requested or selected for presentation. There is also a user control area 1902 that facilitates listing user documents that are checked out of the system or board. There is also provided a dropdown menu 1904 for selecting from a number of folder viewing options.

Other user-selectable options are provided such that the user can manipulate documents, including, but not limited to, Select All, Delete, Acknowledge, Remind Me, Remove, Move/Copy, Check Out and Download.

Referring now to FIG. 20, there is illustrated a screenshot of a management tool window of a browser used as a user interface to facilitate user interaction with a user context in accordance with the present invention. Here, the My Context option was selected while in the Meet application option. Thus, the context information of the user is posted within the meeting space. The window 2000 also includes many of the same fields and informational areas of the previous windows (e.g., areas 1502, 1504, 1506, and 1508 of window 1500 of FIG. 15). Here, the sub-options associated with Meet include List and Create. Thus, data can at least be listed and created in accordance with the

associated need. Note that other data can also be accessed and presented within an application option, for example, My Profile will show the user profile data.

The window 2000 includes the central viewing area 1510 for viewing information requested or selected for presentation. Here, the user has selected the presentation of the user context information, which also includes board information and relationships. For example, board names Board1, Board2, and Board3 are listed, along with the hosts, User (the current user) for Board1, and User2 for both boards Board2 and Board3. The web name is also listed for the collection of these three boards.

There is a Special Projects Web listed, and the associated parent/child relationships of the associated boards. For example, Board6 is a parent to Board4, and Board4 is also a parent to Board2.

Other user-selectable options are provided for the Meet option, such as Join, Move to Archive, Select All, Delete, Acknowledge, and Remind Me.

These are but only a few of the numerous windows employed to facilitate user interaction, input, and control of the management tool system. Many other windows are provided to support, for example, printing, user help, communications security, presenting user documents to other users, metering user performance, dialog and discovery forums, calendar functions, task functions, leadership tools, file system management, user context, telephone services, e-mail, voicemail, faxes, video conferencing, web conferencing, security video, reverse 911, voice broadcasting, first response unified messaging capabilities, specialized APIs, software development kit, conduct and store meetings, organizing personal contact information, enterprise webs, chat sessions, intellectual notes and ideas, workflows, compilations, user profiles, news, searching, user alerts, integration of third-party users and resources, multimedia information, user permissions, system configuration, and wireless portable device interfaces, just to name a few.

Referring now to FIG. 21, there is illustrated a block diagram of a computer operable to execute the disclosed architecture. In order to provide additional context for various aspects of the present invention, FIG. 21 and the following discussion are intended to provide a brief, general description of a suitable computing environment 2100 in which the various aspects of the present invention may be implemented. While the

invention has been described above in the general context of computer-executable instructions that may run on one or more computers, those skilled in the art will recognize that the invention also may be implemented in combination with other program modules and/or as a combination of hardware and software.

5 Generally, program modules include routines, programs, components, data structures, etc., that perform particular tasks or implement particular abstract data types. Moreover, those skilled in the art will appreciate that the inventive methods may be practiced with other computer system configurations, including single-processor or multiprocessor computer systems, minicomputers, mainframe computers, as well as
10 personal computers, hand-held computing devices, microprocessor-based or programmable consumer electronics, and the like, each of which may be operatively coupled to one or more associated devices.

 The illustrated aspects of the invention may also be practiced in distributed computing environments where certain tasks are performed by remote processing devices
15 that are linked through a communications network. In a distributed computing environment, program modules may be located in both local and remote memory storage devices.

 A computer typically includes a variety of computer-readable media. Computer-readable media can be any available media that can be accessed by the
20 computer and includes both volatile and nonvolatile media, removable and non-removable media. By way of example, and not limitation, computer readable media can comprise computer storage media and communication media. Computer storage media includes volatile and nonvolatile, removable and non-removable media implemented in
25 any method or technology for storage of information such as computer readable instructions, data structures, program modules or other data. Computer storage media includes, but is not limited to, RAM, ROM, EEPROM, flash memory or other memory technology, CD-ROM, digital video disk (DVD) or other optical disk storage, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or any
30 other medium which can be used to store the desired information and which can be accessed by the computer.

Communication media typically embodies computer-readable instructions, data structures, program modules or other data in a modulated data signal such as a carrier wave or other transport mechanism, and includes any information delivery media. The term "modulated data signal" means a signal that has one or more of its characteristics set or changed in such a manner as to encode information in the signal. By way of example, and not limitation, communication media includes wired media such as a wired network or direct-wired connection, and wireless media such as acoustic, RF, infrared and other wireless media. Combinations of the any of the above should also be included within the scope of computer-readable media.

10 With reference again to FIG. 21, there is illustrated an exemplary environment 2100 for implementing various aspects of the invention that includes a computer 2102, the computer 2102 including a processing unit 2104, a system memory 2106 and a system bus 2108. The system bus 2108 couples system components including, but not limited to, the system memory 2106 to the processing unit 2104. The processing unit
15 2104 may be any of various commercially available processors. Dual microprocessors and other multi-processor architectures may also be employed as the processing unit 2104.

The system bus 2108 can be any of several types of bus structure that may further interconnect to a memory bus (with or without a memory controller), a peripheral bus, and a local bus using any of a variety of commercially available bus architectures. The
20 system memory 2106 includes read only memory (ROM) 2110 and random access memory (RAM) 2112. A basic input/output system (BIOS) is stored in a non-volatile memory 2110 such as ROM, EPROM, EEPROM, which BIOS contains the basic routines that help to transfer information between elements within the computer 2102,
25 such as during start-up. The RAM 2112 can also include a high-speed RAM such as static RAM for caching data.

The computer 2102 further includes an internal hard disk drive (HDD) 2114 (*e.g.*, EIDE, SATA), which internal hard disk drive 2114 may also be configured for external use in a suitable chassis (not shown), a magnetic floppy disk drive (FDD) 2116, (*e.g.*, to
30 read from or write to a removable diskette 2118) and an optical disk drive 2120, (*e.g.*, reading a CD-ROM disk 2122 or, to read from or write to other high capacity optical

media such as the DVD). The hard disk drive 2114, magnetic disk drive 2116 and optical disk drive 2120 can be connected to the system bus 2108 by a hard disk drive interface 2124, a magnetic disk drive interface 2126 and an optical drive interface 2128, respectively. The interface 2124 for external drive implementations includes at least one or both of Universal Serial Bus (USB) and IEEE 1394 interface technologies.

The drives and their associated computer-readable media provide nonvolatile storage of data, data structures, computer-executable instructions, and so forth. For the computer 2102, the drives and media accommodate the storage of any data in a suitable digital format. Although the description of computer-readable media above refers to a HDD, a removable magnetic diskette, and a removable optical media such as a CD or DVD, it should be appreciated by those skilled in the art that other types of media which are readable by a computer, such as zip drives, magnetic cassettes, flash memory cards, cartridges, and the like, may also be used in the exemplary operating environment, and further, that any such media may contain computer-executable instructions for performing the methods of the present invention.

A number of program modules can be stored in the drives and RAM 2112, including an operating system 2130, one or more application programs 2132, other program modules 2134 and program data 2136. All or portions of the operating system, applications, modules, and/or data can also be cached in the RAM 2112.

It is appreciated that the present invention can be implemented with various commercially available operating systems or combinations of operating systems.

A user can enter commands and information into the computer 2102 through one or more wired/wireless input devices, *e.g.*, a keyboard 2138 and a pointing device, such as a mouse 2140. Other input devices (not shown) may include a microphone, an IR remote control, a joystick, a game pad, a stylus pen, touch screen, or the like. These and other input devices are often connected to the processing unit 2104 through an input device interface 2142 that is coupled to the system bus 2108, but may be connected by other interfaces, such as a parallel port, an IEEE 1394 serial port, a game port, a USB port, an IR interface, etc.

A monitor 2144 or other type of display device is also connected to the system bus 2108 *via* an interface, such as a video adapter 2146. In addition to the monitor 2144,

a computer typically includes other peripheral output devices (not shown), such as speakers, printers etc.

The computer 2102 may operate in a networked environment using logical connections *via* wired and/or wireless communications to one or more remote computers, such as a remote computer(s) 2148. The remote computer(s) 2148 may be a workstation, a server computer, a router, a personal computer, portable computer, microprocessor-based entertainment appliance, a peer device or other common network node, and typically includes many or all of the elements described relative to the computer 2102, although, for purposes of brevity, only a memory storage device 2150 is illustrated. The logical connections depicted include wired/wireless connectivity to a local area network (LAN) 2152 and/or larger networks, *e.g.*, a wide area network (WAN) 2154. Such LAN and WAN networking environments are commonplace in offices, and companies, and facilitate enterprise-wide computer networks, such as intranets, all of which may connect to a global communication network, *e.g.*, the Internet.

When used in a LAN networking environment, the computer 2102 is connected to the local network 2152 through a wired and/or wireless communication network interface or adapter 2156. The adaptor 2156 may facilitate wired or wireless communication to the LAN 2152, which may also include a wireless access point disposed thereon for communicating with the wireless adaptor 2156. When used in a WAN networking environment, the computer 2102 can include a modem 2158, or is connected to a communications server on the LAN, or has other means for establishing communications over the WAN 2154, such as by way of the Internet. The modem 2158, which may be internal or external and a wired or wireless device, is connected to the system bus 2108 *via* the serial port interface 2142. In a networked environment, program modules depicted relative to the computer 2102, or portions thereof, may be stored in the remote memory/storage device 2150. It will be appreciated that the network connections shown are exemplary and other means of establishing a communications link between the computers may be used.

The computer 2102 is operable to communicate with any wireless devices or entities operably disposed in wireless communication, *e.g.*, a printer, scanner, desktop and/or portable computer, portable data assistant, communications satellite, any piece of

equipment or location associated with a wirelessly detectable tag (*e.g.*, a kiosk, news stand, restroom), and telephone. This includes at least Wi-Fi and Bluetooth™ wireless technologies. Thus, the communication may be a predefined structure as with conventional network or simply an ad hoc communication between at least two devices.

5 Wi-Fi, or Wireless Fidelity, allows connection to the Internet from a couch at home, a bed in a hotel room or a conference room at work, without wires. Wi-Fi is a wireless technology like a cell phone that enables such devices, *e.g.*, computers, to send and receive data indoors and out, and anywhere within the range of a base station. Wi-Fi networks use radio technologies called IEEE 802.11 (a, b, g, etc.) to provide secure,
10 reliable, fast wireless connectivity. A Wi-Fi network can be used to connect computers to each other, to the Internet, and to wired networks (which use IEEE 802.3 or Ethernet). Wi-Fi networks operate in the unlicensed 2.4 and 5 GHz radio bands, with an 11 Mbps (802.11b) or 54 Mbps (802.11a) data rate or with products that contain both bands (dual band), so the networks can provide real-world performance similar to the basic 10BaseT
15 wired Ethernet networks used in many offices.

 What has been described above includes examples of the present invention. It is, of course, not possible to describe every conceivable combination of components or methodologies for purposes of describing the present invention, but one of ordinary skill in the art may recognize that many further combinations and permutations of the present
20 invention are possible. Accordingly, the present invention is intended to embrace all such alterations, modifications and variations that fall within the spirit and scope of the appended claims. Furthermore, to the extent that the term “includes” is used in either the detailed description or the claims, such term is intended to be inclusive in a manner similar to the term “comprising” as “comprising” is interpreted when employed as a
25 transitional word in a claim.

CLAIMS

What is claimed is:

1. A system that facilitates the management of data, comprising a unified horizontal data management tool for at least many-to-many functionality, the tool facilitating data communications, data organization, data processing, and data storage.
2. The system of claim 1, the data management system structures data according to a user who generated the data.
3. The system of claim 1, the data management system structures data according to the context in which the data was generated.
4. The system of claim 1, the tool provides links to enterprise leadership priorities.
5. The system of claim 1, the tool performs communications tasks substantially simultaneously with reminding a user associated work priorities.
6. The system of claim 1, the tool automatically stores contextual information relating to an item of communication and utilizes that contextual information in performance of communication tasks.
7. The system of claim 1, the tool integrates two or more different applications into a common application, the different applications comprising telephony, unified messaging, decision support, document management, portals, chat, collaboration, search, vote, relationship management, calendar, personal information management, profiling, directory management, executive information systems, dashboards, cockpits, tasking, meeting and, web and video conferencing.

8. The system of claim 1, the tool provides a structure that defines relationships between and among complex collections of data.

9. The system of claim 1, the tool automates workflow between and among multiple entities.

10. The system of claim 1, the tool facilitates data storage using at least one of relational and object storage methodologies.

11. The system of claim 1, the tool facilitates collaboration among a plurality of users across a plurality of projects, the tool dynamically assigns at least one communications tool to at least one of the plurality of projects.

12. The system of claim 11, at least one communications tool includes one or more of e-mail, voicemail, fax, teleconferencing, instant message, chat, contacts, calendar, task, notes, news, ideas, vote, web and video conferencing, and document sharing.

13. The system of claim 1, the tool includes a plurality of applications, wherein at least one of the plurality of applications includes file storage pointers that are dynamic, and associated initially with a board within which the at least one application is launched.

14. The system of claim 13, the board storage pointers can be acted upon from another board by the same application.

15. A computer employing the system of claim 1.

16. A computer readable medium having stored thereon computer executable instructions for carrying out the system of claim 1.

17. The system of claim 1, the tool facilitates an encrypted environment wherein at least one of data communications and data storage is encrypted.

18. A system that facilitates the management of data, comprising:
a context component that captures context information associated with a user in a first context; and
a tracking component that tracks a change of the user from the first context to a second context, and automatically associates at least a portion of the context information with the second context.

19. The system of claim 18, the context component is associated with a board that is a collection of data and application functionality related to a user-defined topic.

20. The system of claim 18, the context component is associated with a web that is a collection of interrelated boards, the web maintains the location of data of the respective boards when one or more of the interrelated boards are moved into a different board interrelationship, whether within the web or to another web.

21. The system of claim 18, the context information includes a relationship between a user and at least one of an application, application data, and user environment.

22. The system of claim 18, the context component captures context information of the first context and context information related to one or more other contexts.

23. The system of claim 22, the context information of the one or more other contexts is at least one of stipulated by the user, and suggested automatically by the system based upon various search and association criteria set by the user.

24. The system of claim 18, wherein data created in the first context can be associated with data created in the second context.

25. The system of claim 18, the context information is tagged to data when the data is created.

26. A method of facilitating data management, comprising:
creating data within a user environment using an application; and
automatically associating to a user of the user environment, information related to the data, the application and the user environment.

27. The method of claim 26, further comprising,
tracking movement of the user from the user environment to a second user environment; and
associating at least one of the data and the application with the second user environment such that the user can employ the application and data from the second environment.

28. The method of claim 26, further comprising capturing context information of the user.

29. The method of claim 26, further comprising indexing content of the environment such that a plurality of users can access the content from a plurality of user environments.

30. The method of claim 26, the data is in the form of at least files and documents.

31. The method of claim 26, the least one of the data and the application is associated automatically with the second user environment.

32. The method of claim 26, further comprising accessing the user environment using a browser.

33. The method of claim 26, further comprising communicating with the user environment using a TCP/IP communication protocol.

34. The method of claim 26, further comprising locating the user environment from a remote location using a URL address.

35. The method of claim 26, further comprising accessing the user environment via a portable wireless device.

36. A method of facilitating data management, comprising:
providing a plurality of user environments;
ordering two or more of the user environments in a number of different collections of the user environments;
providing a plurality of applications to generate and process data in the user environments, the data of a user environment is associated with that environment;
and
traversing the collections of the user environments with one or more of the applications to locate the data associated therewith.

37. The method of claim 36, the step of traversing is performed using a webslice that includes traversal information for locating the data associated with a given user environment.

38. The method of claim 37, the traversal information includes at least a collection ID, a user environment ID, and a routing path to the location of the environment data.

39. The method of claim 36, the collections, user environments, and associated data carry both hierarchical and non-hierarchical associations simultaneously within the applications.

40. A computer-readable medium having computer-executable instructions for performing a method of facilitating data management, the method comprising:

- creating data within a user environment using an application;
- automatically associating to a user of the user environment, information related to the data, the application and the user environment;
- tracking movement of the user from the user environment to a second user environment; and
- associating at least one of the data and the application with the second user environment such that the user can employ the application and data from the second environment.

41. A system that facilitates the management of data, comprising:
means for creating data within a user environment using an application;
means for associating to a user of the user environment, information related to the data, the application and the user environment;
means for tracking movement of the user from the user environment to a second user environment; and
means for associating at least one of the data and the application with the second user environment such that the user can employ the application and data from the second environment.

42. A graphical user interface that facilitates the management of data in a many-to-many methodology, the user interface facilitating at least data communications, data organization, data processing, and data storage, the interface comprising:
an input component for receiving data management information, the data management information associated with,
capturing context information associated with a user in a first context;
tracking a change of the user from the first context to a second context;
and
automatically associating at least a portion of the context information with the second context;
and
a presentation component for presenting a portion of the data management information to facilitate user interaction therewith.

43. The interface of claim 42, the data management information includes a context interface for configuring a user context, a web, and a board.

44. The interface of claim 42, the data management information includes an interface for accessing an application that facilitates at least one of telephony, unified messaging, decision support, document management, portals, chat, collaboration, search, vote, relationship management, calendar, personal information management, profiling, directory management, executive information systems, dashboards, cockpits, tasking, meeting and, web and video conferencing.