

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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Unified Patents, LLC,  
Petitioner,

v.

Motion Offense, LLC,  
Patent Owner.

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IPR2020-00705  
U.S. Patent No. 10,013,158

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**DECLARATION OF PETER ALEXANDER, PH.D.  
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW**

April 3, 2020

## TABLE OF CONTENTS

I.	INTRODUCTION .....	1
A.	Engagement .....	1
B.	Qualifications .....	1
C.	Information Considered.....	4
II.	BASIS FOR OPINIONS .....	5
A.	Level Of Ordinary Skill In The Art.....	5
B.	Obviousness.....	7
III.	THE '158 PATENT .....	10
A.	Overview .....	10
B.	Specification.....	10
1.	Background .....	10
2.	Network Communications .....	11
3.	Publishing Node Functionality .....	14
4.	Publishing node Interfaces.....	19
5.	The First Message .....	23
6.	Client Node Functionality.....	30
7.	Client Node Interface .....	33
8.	Data Object Requests .....	38
9.	Server File Storage.....	41
C.	Priority Date .....	42
IV.	Claim Construction.....	43
V.	PRIOR ART REFERENCES .....	44

A.	Do .....	44
B.	Shapiro.....	48
C.	RFC 2822 .....	50
VI.	Summary of Grounds.....	51
A.	Ground 1 – Do and Shapiro.....	51
VII.	'158 PATENT CLAIM ANALYSIS.....	51
A.	Ground 1 .....	51
1.	Claim 3 .....	51
2.	Claim 4.....	95
3.	Claim 5 .....	98
4.	Claim 6.....	99
5.	Claim 7 .....	102
6.	Claim 8.....	106
7.	Claim 9.....	108
8.	Claim 10.....	108
9.	Claim 11 .....	109
10.	Claim 13.....	110
VIII.	Availability for Cross Examination.....	111
IX.	Secondary Considerations of Nonobviousness .....	112
X.	Right to Supplement .....	112
XI.	Conclusion .....	112
	Attachment A .....	114

## **I. INTRODUCTION**

### **A. Engagement**

1. My name is Peter Alexander. I have been retained by Petitioner Unified Patents, LLC (“Unified”) as an expert to provide my opinions on technical matters in the above-captioned case relating to U.S. Patent 10,013,158 (the “’158 Patent”). I have no personal interest in the outcome of the case. While I am compensated on a per hour basis for my analysis and testimony, my compensation is in no way contingent on the contents of my opinions or the outcome of these proceedings. I make this declaration based upon personal knowledge.

2. This declaration provides my expert opinion regarding claims 3-11 and 13 of the ’158 Patent (the “Challenged Claims”).

3. I make this declaration based upon my personal knowledge. I am over the age of 21 and otherwise competent to make this declaration.

### **B. Qualifications**

4. My academic credentials include a Ph.D. from the Massachusetts Institute of Technology in Electrical Engineering, a Master’s degree from the University of Illinois (Urbana) in Electrical Engineering, and a Bachelor’s degree in Electrical Engineering from the University of Canterbury (New Zealand). My Curriculum Vitae, attached in Appendix I, lists my prior engagements where I have testified as

an expert witness for at least the past 4 years, and a list of my publications authored in at least the past 10 years.

5. I have worked in computer system development for over 35 years. In the course of my software development career, I led the development of numerous software products that involved file sharing between networked workstations.

6. While working for Fibronics International in the early 1990s, I was responsible for numerous Internet technology products that involved distributed Internet nodes communicating with central servers, including file sharing servers. For example, I was responsible for the development of software products for TCP/IP and Unix-related networking applications. These products performed routing and bridging functions for Internet packets across Ethernet and FDDI fiber networks.

7. In addition, a suite of Internet-protocol software packages was developed for integration of mainframes with other Fibronics TCP/IP LAN and WAN products. Networking software developed for mainframe computers included: TCP/IP protocol stack; Network File System (server) package; File Transfer Protocol (FTP) server module; Simple Mail Transfer Protocol (SMTP); 3270 terminal emulators; and, X-windows client functionality.

8. The Network File Server application was the result of a nine-month development effort involving a team of six software developers. The complete

design, including all architectural components, was formulated from the original NFS specifications, and the resulting concept was implemented from scratch in C++. A parallel research study of the competing Andrew File System was also carried out.

9. I have led the development of three commercial Web sites during my career.

The server systems I have implemented used various Web server platforms and technologies, including Microsoft ASP technology, Java server technology, IIS Web servers, Tomcat and Apache servers, IBM WebSphere application servers, Oracle databases, and Microsoft SQLServer databases.

10. While at CareerPath.com I developed a web site involving dynamic page content using Java middle tier servlets, Java Beans, JSP presentation components, and Oracle database technology. The web site included a feed management system, written using server-side Java parsing technology, to processes Web job postings harvested from Web spider technology, and an FTP-based backend system to transfer job posting files from approximately 100 different remote locations at different newspaper offices.

11. While at Synticity, Inc., I developed a web server, based on the Tomcat open source code from the Apache Consortium that included integrated end-user script-based customization (using the open source Python interpreter). XML objects were used extensively to represent web server data structures in the core

implementation. The web site implemented back-end functionality to support file sharing, such as user uploads via FTP.

### **C. Information Considered**

12. In forming my analysis and opinions, I have reviewed the Challenged Claims, their prosecution histories, and the following references<sup>1</sup>:

Exhibit 1001	U.S. Patent No. 10,013,158 (“’158 patent”)
Exhibit 1003	File History of U.S. Patent No. 10,013,158 (“’158 File History”)
Exhibit 1004	U.S. Patent Application No. 15/724,235 (“’235 Application”)
Exhibit 1005	U.S. Patent Application No. 13/624,906 (“’906 Application”)
Exhibit 1006	U.S. Patent Application No. 13/626,635 (“’635 Application”)
Exhibit 1007	U.S. Patent Application No. 14/274,623 (“’623 Application”)
Exhibit 1008	U.S. Patent Application Publication No. 2008/0320397 A1 (“Do”)
Exhibit 1009	U.S. Patent Application Publication No. 2005/0234864 A1 (“Shapiro”)
Exhibit 1010	Internet Message Format Standard, April 2001

13. My analysis and opinions set forth in this declaration are based on my education, professional training, and industry experience as well as thorough consideration of the ’158 patent (Ex. 1001), the prior art references (Exs. 1008-1010) discussed in Section IV below, and the state of the art at the time of the ’158 patent’s priority date. My understanding of the relevant law is based on my

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<sup>1</sup> For all exhibits except for Exhibit 1003 (File History of U.S. Patent No. 10,013,158), citations to the exhibit corresponds to the applicable document’s page, paragraph, figure, or column number. Citations to Exhibit 1003 are to that exhibit’s stamped page number.

discussions with counsel for Unified and prior engagements as an expert in patent proceedings.

## **II. BASIS FOR OPINIONS**

14. My opinions set forth below are based on my education, training, experience, and the content of the references considered. My understanding of the relevant law, as discussed below, is based on my discussions with counsel for Unified.

### **A. Level Of Ordinary Skill In The Art**

15. My opinions are provided based on what a person of ordinary skill in the art (“POSITA”) in the technical field of the invention would have understood at and before the earliest effective filing date of the Challenged Claims.

16. I have been informed and understand that the content of a patent and prior art should be interpreted the way a POSITA would have interpreted those references at the time of the invention of the patent using the ordinary and customary meanings of the claim terms. I understand that the person of ordinary skill in the art is a hypothetical concept referring to one who thinks along the lines of conventional wisdom at the time.

17. The relevant field of the ’158 patent relates to file sharing between network connected nodes. The ’158 patent addresses the need for a node having directories



containing stored files to publish directories for sharing with another network node. The claims of the '158 Patent recite the use of an email sent to a second node (referred to herein as the "client node") from a first node (referred to herein as the "publishing node").

18. Based on my experience, a POSITA in this field of the computing industry would be familiar with file storage at network nodes and the transfer of files between nodes. A POSITA would also be familiar with the concept of mounting a remote file (at the publishing node) by representing the remote file within the local file hierarchy of the client node.

19. Such POSITA would have had a bachelor's degree in electrical engineering, computer engineering, computer science, or a related subject, and one to two years of work experience in file storage, directory mounts, and file transmission in a distributed network environment, or a related field. I note that a higher level of education (e.g., a Master's degree) may make up for less work experience, and additional work experience (e.g., 5-6 years) may make up for less education.

20. The basis for my familiarity with the level of ordinary skill is my interaction with large numbers of workers in the computing field who were at this level of skill. In reaching this opinion as to the hypothetical POSITA, I have considered the types of problems encountered in the art, the prior art solutions to those problems, the pace at which innovations are made, the sophistication of the

technology, and the educational level and professional capabilities of workers in the field.

**B. Obviousness**

21. I have been informed and understand that subject matter claimed in a patent is obvious under 35 U.S.C. § 103 if a person of ordinary skill in the art at the time the alleged invention was made would have had reason to combine or modify the disclosures of one or more prior art references to arrive at the claimed subject matter.

22. I have been informed and understand that, under the doctrine of obviousness, a claim is unpatentable if the differences between the invention and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. A person of ordinary skill in the art is presumed to have knowledge of the relevant prior art at the time of the invention.

23. I have been informed and understand that obviousness is based on the scope and content of the prior art, the differences between the prior art and the claim, the level of ordinary skill in the art and secondary indicia of obviousness and non-obviousness to the extent such indicia exist.

24. I have been informed and understand the determination of whether the asserted claims would have been obvious to a person of ordinary skill in the art

and, therefore, invalid, is not governed by any rigid test or formula. A determination that a claim is obvious is, instead, based on a common-sense determination that the claimed invention is merely a combination of known limitations to achieve predictable results. Any of the following rationales are acceptable justifications to conclude that a claim would have been obvious: (1) the claimed invention is simply a combination of known prior art methods to yield predictable results; (2) the claimed invention is a simple substitution of one known element for another to obtain predictable results; (3) the claimed invention uses known techniques to improve similar devices (methods, or products) in the same way; (4) the claimed invention applies a known technique to a known device (method, or product) ready for improvement to yield predictable results; (5) the claimed invention was “obvious to try”—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (6) there is known work in one field of endeavor that may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art; or, (7) there is some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill in the art to modify the prior art reference to combine prior art teachings to arrive at the claimed inventions.

25. I have been informed and understand that a claim may be obvious in light

of a single reference, without the need to combine references, if the elements of the claim that are not found in the reference can be supplied by the common sense or knowledge of one of ordinary skill in the art or taught in different areas of the single reference.

26. I have been informed and understand that an analysis of whether a claimed invention is obvious must not rely on a hindsight combination of prior art. The analysis must proceed in the context of the time of the invention or claimed priority date and consider whether the invention as a whole would have been obvious to a person of ordinary skill in the art, taking into consideration any interrelated teachings of the prior art, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine any known elements in the fashion claimed by the patent at issue.

27. I understand that certain objective indicia can be important evidence regarding whether a patent is obvious or nonobvious. Such indicia include: commercial success of products covered by the patent claims; a long-felt need for the invention; failed attempts by others to make the invention; copying of the invention by others in the field; unexpected results achieved by the invention as compared to the closest prior art; praise of the invention by the infringer or others

in the field; the taking of licenses under the patent by others; expressions of surprise by experts and those skilled in the art at the making of the invention; and the patentee proceeded contrary to the accepted wisdom of the prior art.

### **III. THE '158 PATENT**

#### **A. Overview**

28. The '158 patent is titled “Methods, systems, and computer program products for sharing a data object in a data store via a communication.” *See* Ex. 1001. It issued on July 3, 2018, from U.S. Patent Appl. No. 15/724,235 (“’235 Application,” Ex. 1004), which was filed on Oct. 3, 2017.

29. The '235 Application is a continuation-in-part of application No. 14/274,623 (Ex. 1007), filed on May 9, 2014, now abandoned, which is a continuation-in-part of application No. 13/626,635 (Ex. 1006), filed on September 25, 2012, now abandoned, and a continuation-in-part of application No. 13/624,906 (Ex. 1005), filed on September 22, 2012, now abandoned.

#### **B. Specification**

##### **1. Background**

30. The '158 patent describes a system for sharing folders and the contents of folders between two network nodes using network communications protocols. A “file explorer interface” allows for display of representations of shared files stored

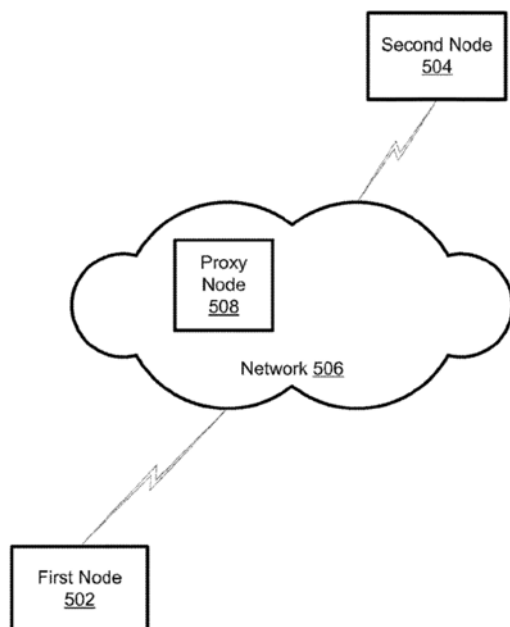
on a remote network node (e.g., the node referred to herein as the ***publishing node***). An email message transmitted from the remote storage node stores objects such as files stored in folders. The email is sent to another node (referred to herein as a ***client node***) without a stored file attachment.

Methods, apparatuses, and systems are described for sharing a folder and any contents (e.g. file(s)) thereof, via at least one communication. In an aspect, the folder and any contents (e.g. file(s)) thereof may be shared through a specific combination of capabilities or operations involving an email message and a file explorer interface without an attachment included with the at least one email message.

Ex. 1001 at Abstract.

## 2. Network Communications

31. Figure 5 from the '158 Patent describes a communication network linking two network nodes: a first node 502 and a second node 504.

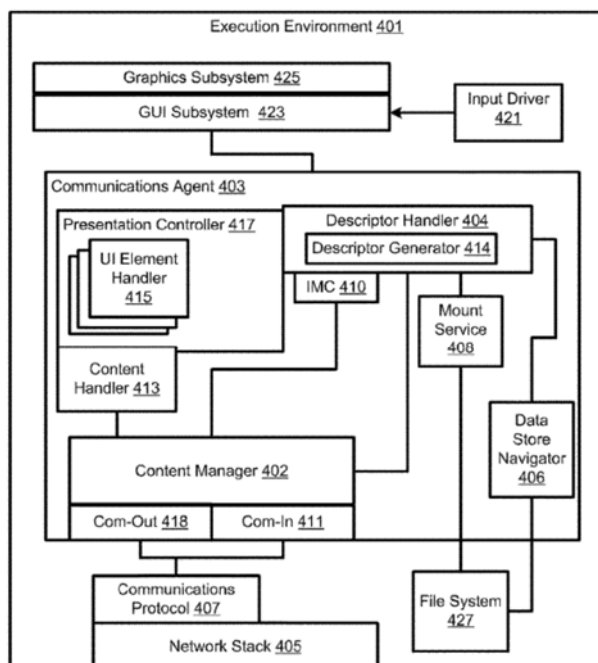


*Id.* Figure 5

32. Each of the nodes provides an execution environment denoted 401; a communications agent 403 for first node 502 and communications agent 403 for the second node 504 operate in the respective execution environments.

Communications agents 403 such as illustrated in FIG. 4, respectively operating in execution environment 401 of first node 502 and in execution environment 401 of second node 504 in FIG. 5 may interoperate via respective network stacks 405. Communications agents 403 may communicate via one or more communications protocols. FIG. 4 illustrates communications protocol component 407 exemplifying a subsystem for exchanging data via network 506 according to one or more communications protocols, such as simple mail transfer protocol (SMTP), an instant messaging protocol, and/or a real-time voice and/or video protocol. A communication between communications agents 403 in execution environment 401 of first node 502 and execution environment 401 of second node 504 may include more than one type of data and may use one or more communications protocols in exchanging one or more types of data via network 506.

*Id.* at 17:10-26.



*Id.* Figure 4 (execution environments 401 containing communications agents 403).

33. As described in the passage above from the '158 Patent, the agents communicate via a network 506 using various communications protocols such as SMTP for email. The communications agent 403 of Figure 4 above transmits and receives data via the “Communications Protocol 407” component and the “Communications Stack 405” component.

34. The challenged claims 3-11 and 13 of the '158 Patent also recite the receiving of network transmissions containing HTML<sup>2</sup> components to provide

<sup>2</sup> HTML - HyperText Markup Language.



interfaces at each of the first and second nodes. For example, the recited first node receives HTML web pages to create a first and a second interface:

(3c) cause, at a first node, display of at least one first interface with a first user interface element, utilizing first hypertext markup language-equipped code that is sent via at least one network;

Ex. 1001 at 44:24-27.

(3e) cause, at the first node, display of at least one second interface with a second user interface element, utilizing second hypertext markup language-equipped code that is sent via the at least one network;

'158 Patent at 44:32-35.

35. Similarly, for claim 7 of the '158 Patent, a third HTML interface is recited:

cause, at the second node, display of the at least one folder, utilizing third hypertext markup language-equipped code

*Id.* at 45:27-29.

36. A POSITA would understand HTML to be a language for expressing the content of a user interface display. The delivery of HTML content could, for example, be delivered to participating nodes from a centralized web server using the request-response paradigm implemented by web browsers and web servers.

### 3. Publishing Node Functionality

37. The '158 Patent claims recite a simple file sharing system involving a “***publishing node***,” which provides physical access to files stored in a folder hierarchy, either locally or at a network attached storage server, and a “***client node***” that is capable of “mounting” a file stored at or accessible by the ***publishing***

*node*<sup>3</sup>. The mount operation consists of creating a visual representation of the remote file or directory and displaying such a representation within the “file explorer” display of a local *client node* directory hierarchy.

38. The SUMMARY specification section and claim 3 refer to storage of data objects, e.g., files stored in a folder hierarchy, either locally or at a network attached storage server accessible by a first network node. This node, referred to here as the *publishing node*, provides access to a physical copy of one or more files available for mounting by other remote nodes (referred to as *client node*).

39. Claim element 3c recites an HTML web page providing a first user interface to a user at the first node, i.e., the *publishing node*.

(3c) cause, at a first node, display of at least one first interface with a first user interface element, utilizing first hypertext

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<sup>3</sup> The '158 Patent specification “DETAILED DESCRIPTION” section uses the opposite system terminology of a first node providing a user with the capability of mounting a file stored at or accessible from a second node. In this portion of the specification, the second node containing or having access to the stored file or directory of files first publishes a mount point to the second node. A user at the first node then receives the mount information and proceeds to mount the remote second node file or directory using local file explorer capabilities. In contrast, the CLAIMS, such as challenged claims 3-11 and 13, recite a second node display of “representations” of files stored at or accessible by a first node, such that selection of a representation at the second node causes a particular file accessible to the first node to be displayed at the second node. As a further confusion factor, the “SUMMARY” section of the '158 Patent at 2:5-6:55 appears to follow the same system terminology as the claims. To avoid potential nomenclature confusion the claimed second node will be referred to as a “*client node*” while the claimed first node will be referred to as the file “*publishing node*.”

markup language-equipped code that is sent via at least one network;

40. The web page representing the first user interface provides a means for capturing user input indicating a folder to be shared.

(3d) receive, from the first node via the at least one network, an indication of at least one folder via the first user interface element, utilizing the at least one first interface;

41. Similarly, a second HTML page component provides a means for capturing user input concerning an email address and a request to share the designated folder.

(3e) cause, at the first node, display of at least one second interface with a second user interface element, utilizing second hypertext markup language-equipped code that is sent via the at least one network;

(3f) receive, from the first node via the at least one network, indicia associated with at least one email address via the second user interface element, utilizing the at least one second interface;

(3g) receive, from the first node via the at least one network, an indication to share the at least one folder;

42. As a result of user entry of the folder identity, the email address indicia, and the request to share the folder, an email is generated and sent to the second node of the system (the *client node*), without attaching a file contained in the shared folder.

(3h) based on the receipt of the indication of the at least one folder, the indicia associated with the at least one email address, and the indication to share the at least one folder via the at least one network; generate at least one email message identifying the at least one folder and including a reference to the at least one folder, without including at least one file in the at least one folder as an attachment of the at least one email message;

(3i) send, to a second node via the at least one network, the at least one email message, without including the at least one file in

the at least one folder as an attachment of the at least one email message;

43. These same steps are identified in the SUMMARY specification section.

This portion of the specification also identifies the first node as the ***publishing node***, and the second node as the ***client node***.

cause, at a first node, display of at least one first interface with a first user interface element, utilizing first hypertext markup language-equipped code that is sent via at least one network;

receive, from the first node via the at least one network, an indication of at least one folder via the first user interface element, utilizing the at least one first interface;

cause, at the first node, display of at least one second interface with a second user interface element, utilizing second hypertext markup language-equipped code that is sent via the at least one network;

receive, from the first node via the at least one network, indicia associated with at least one email address via the second user interface element, utilizing the at least one second interface;  
receive, from the first node via the at least one network, an indication to share the at least one folder;

based on the receipt of the indication of the at least one folder, the indicia associated with the at least one email address, and the indication to share the at least one folder via the at least one network; generate at least one email message identifying the at least one folder and including a reference to the at least one folder, without including at least one file in the at least one folder as an attachment of the at least one email message;

send, to a second node via the at least one network, the at least one email message, without including the at least one file in the at least one folder as an attachment of the at least one email message;

*Id.* at 2:19-44.

44. As noted earlier, the remaining portions of the specification use different terminology to describe the roles of the *publishing node* and the *client node*. An example of this reversal of terminology is seen on Figure 2B shown below. In this disclosure, reference is made to a “mount descriptor” sent from a second node (i.e., a *publishing node*) to the “first communication agent,” i.e., sent to a *client node*.

45. Figure 2B is confined to the role of the *publishing node* in creating and sending a mount descriptor. Figure 2A discussed later describes the role of the *client node*, i.e. the claimed second node.

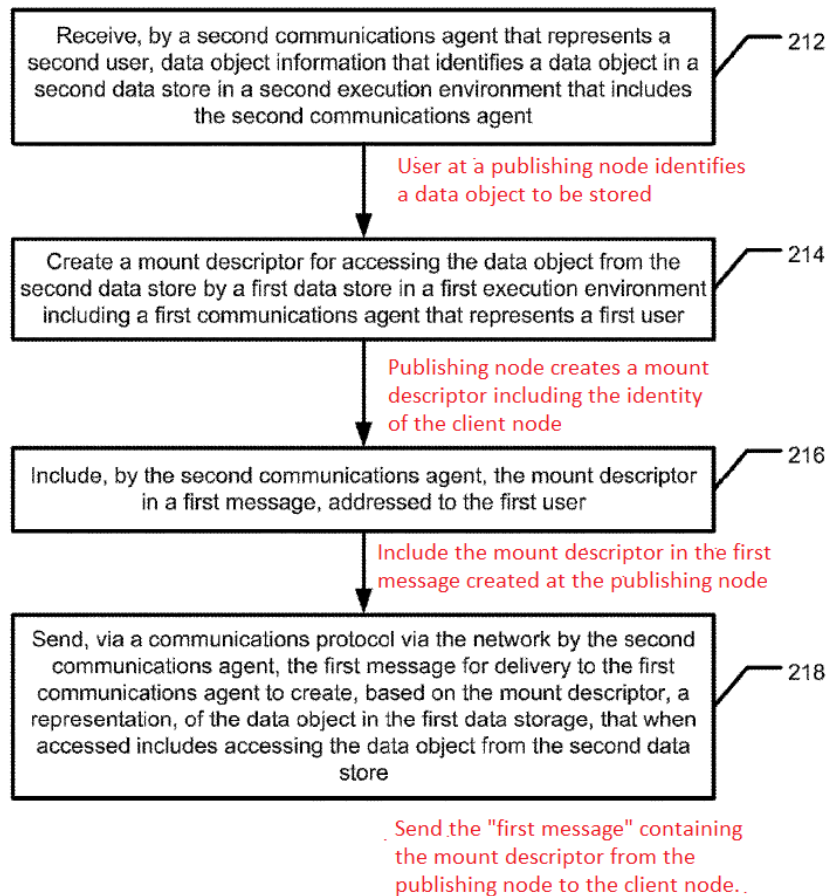


FIG. 2B

Ex. 1001, Figure 2B describing the role of the ***publishing node*** (first node of the claim language). (Annotations in red added.)

#### 4. Publishing node Interfaces

46. The ***publishing node*** user interfaces provide the ability to view the local file structure and select a file or folder to share with the client node. The user interface at the publishing node provides a navigation window UI element 646d that enables a user to locate one or more data objects in a local or network server attached data store. The '158 Patent describes an edit window presented at the ***publishing node***:

FIG. 6D, illustrates an edit window UI element 602d that, in an aspect, may be presented by communication agent 403 in execution environment 401 of second node 504 in response to a user input to create a new email. In an aspect, a user of communications agent 403 operating in execution environment 401 of second node 504 may provide input corresponding to attach mount UI element 644d in edit window UI element 602d.

*Id.* at 28:3-10.

47. The ***publishing node*** user interface also provides a navigation window user interface element 646d.

A corresponding UI element handler component 415 may operate to invoke data store navigator component 406 to present a navigation window UI element 646d to locate one or more data objects in response to user interaction. Data store navigation component 406 may interoperate with one or more UI element handlers 415, directly or indirectly via descriptor handler component 404, in an aspect, to present the navigation window UI element 646d and its contents.

*Id.* at 28:10-18.

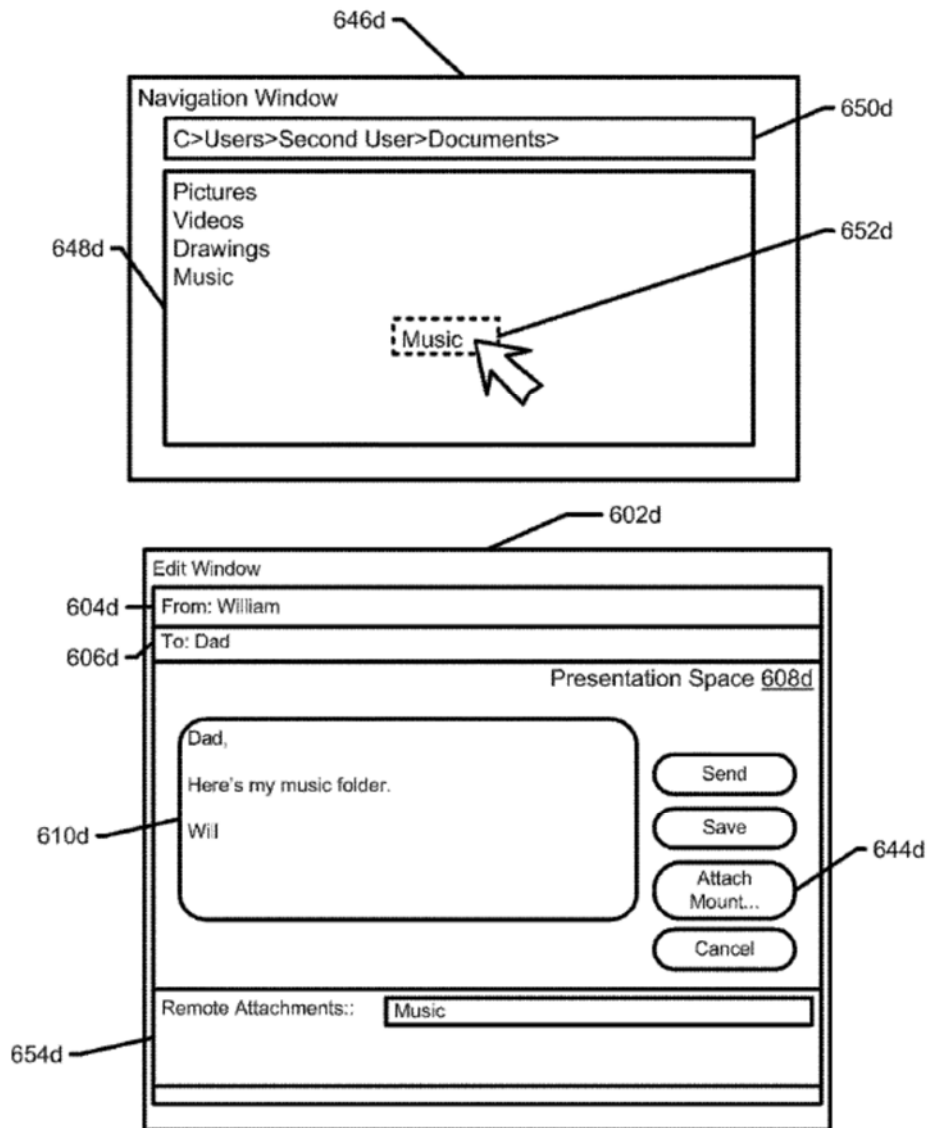


FIG. 6D

*Id.* Figure 6D.

48. As described by the '158 Patent, the navigation window may be used to locate and select objects included in the *publishing node* data store or a network data store attached to the *publishing node*. Representations of stored objects are displayed in the “content pane UI element 648d” and selected by a user.



Navigation window UI element 646d is presented to receive data object information in response to user input to identify a data object in a data store of execution environment 401 of second node 504. A folder content pane UI element 648d in navigation window UI element 646d is presented including representations of one or more data objects at a location, identified in a path UI element 650d.

*Id.* at 28:19-25.

49. A pointer is available to a user to drag and drop displayed representations, such as the representation of a “music” folder. Information relating to the selected item is made available to descriptor handler component 404.

A pointer UI element 652d illustrates a drag and drop operation of a "Music" folder represented in contents pane UI element 648d, dropped on edit window UI element 602d. In response, to detecting the drag and drop operation by one or more UI element handler components 415, data store navigator component 406 may interoperate with the one or more UI element handle components 415 to provide data object information identifying the data object to descriptor handler component 404.

*Id.* at 28:19-34.

50. Further disclosures concerning the *publishing node* show that a mount descriptor is created that will be sent to and used by the *client node* (first node of the specification)

Returning to FIG. 2B, a block 214 illustrates that the method further includes creating a mount descriptor for accessing the data object from the second data store by a first data store in a first execution environment including a first communications agent that represents a first user. Accordingly, a system for sharing a data object in a data store via a communication includes means for creating a mount descriptor for accessing the data

object from the second data store by a first data store in a first execution environment including a first communications agent that represents a first user.

*Id.* at 28:35-45.

For example, the arrangement in FIG. 3B, includes descriptor generator component 314 that is operable for creating a mount descriptor for accessing the data object from the second data store by a first data store in a first execution environment including a first communications agent that represents a first user. FIG. 4 illustrates descriptor generator component 414 as an adaptation and/or analog of descriptor generator component 314 in FIG. 3B. One or more descriptor generator components 414 operate in an execution environment 401. The system for sharing a data object in a data store via a communication includes one or more processors and logic encoded in one or more tangible media for execution by the one or more processors that when executed is operable for creating a mount descriptor for accessing the data object from the second data store by a first data store in a first execution environment including a first communications agent that represents a first user. In FIG. 4, descriptor generator component 414 is illustrated as a component of communications agent 403.

*Id.* at 28:45-63.

## **5. The First Message**

51. The publishing node processing described above causes the creation of a mount descriptor:

Data objects located and/or otherwise identified by data object information received by descriptor handler component 404 may be identified to descriptor generator component 414 to construct and/or otherwise create a mount descriptor identifying the data objects. A descriptor handler component may be a type of content handler component that operates to process data object information to create a mount descriptor that conforms to a

schema for creating and/or otherwise constructing a valid mount descriptor.

*Id.* at 29:8-16.

52. The mount descriptor generator component 414 at the ***publishing node*** (first node of the claims) creates a mount descriptor to be transmitted to the ***client node*** (second node of the claims).

Descriptor generator component 414 in execution environment 401 of second node 504 may provide the mount descriptor to content manager component 402 to include and/or otherwise identify the mount descriptor in a communication with execution environment 401 of first node 502, such as an email and/or instant message.

*Id.* at 29:24-29.

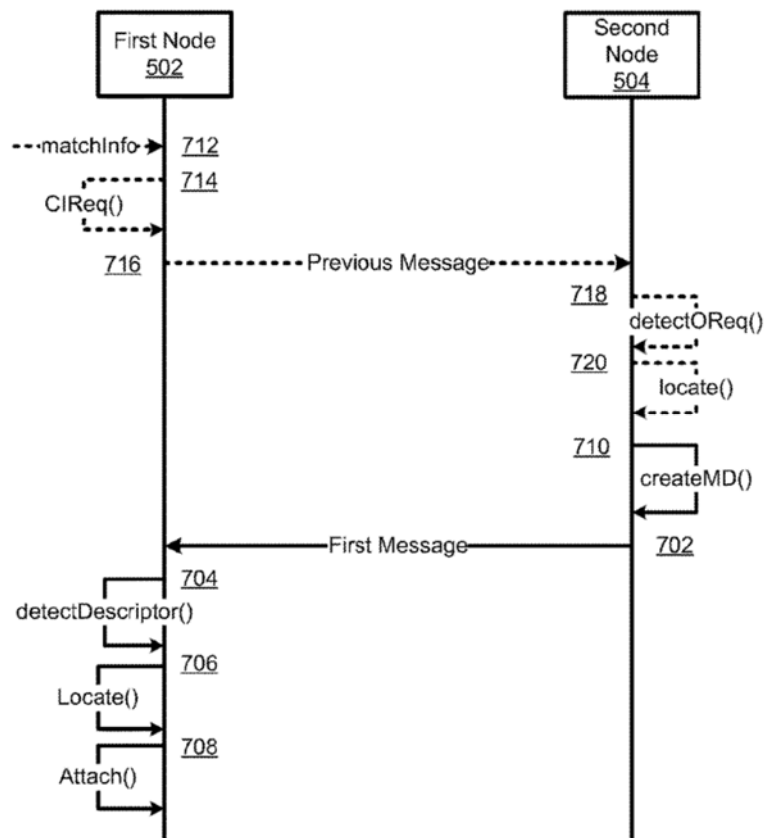
53. The '158 Patent specification discloses a ***first message*** sent from the ***publishing node*** (first node of the claims) to the ***client node*** (second node of the claims). See, e.g. Figure 2B above referring to ***first message***. The “first message 702” depicted in the Figure 7 flow chart includes a “mount descriptor.”

FIG. 7 includes a data flow message that illustrates a first message 702, including a mount descriptor, received via network 506 by execution environment 401 including and/or otherwise provided by first node 502. First message 702 is sent via a communications protocol by a communications agent 403 in execution environment 401 including and/or otherwise provided by second node 504.

*Id.* at 21:23-29<sup>4</sup>.

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<sup>4</sup> As noted, this portion of the specification identifies the first node as having the ***client node*** functionality, and the second node having the ***publishing node*** functionality.



*Id.* Figure 7.

FIG. 7 includes a data flow that illustrates a detect descriptor data flow 704 that may be internal to execution environment 401 of first node 502 and/or that may include a message received via network 506 by first node 502. In an aspect, detect descriptor data flow 704 may illustrate a data flow to descriptor handler component 404 operating in execution environment 401 of first node 502. A mount descriptor may be identified to and/or otherwise provided to descriptor handler component 404. Content handler component 402, operating as described with respect to block 202 of FIG. 2A, may identify and/or otherwise provide a mount descriptor to a descriptor handler component 404.

*Id.* at 22:21-32<sup>5</sup>.

<sup>5</sup> As noted, this portion of the specification identifies the first node as having the **client node** functionality, and the second node having the **publishing node** functionality.

54. The '158 Patent specification further elaborates on the makeup of the “first message.” For example, it may comprise an email message, a portion of which may include a MIME-type identifier that identifies a corresponding part of the email as a mount descriptor and/or otherwise identifies the part for routing to descriptor handler component 404.

Content manager component 402 may provide some or all of the data in a received message, such as first message 702, to descriptor handler component 404. Descriptor handler component 404 may identify and/or otherwise detect a mount descriptor in the message sent from the execution environment 401 of second node 504. Content manager component 402 may interoperate with descriptor handler component 404 in identifying the mount descriptor. The mount descriptor may be identified for processing by descriptor handler component 404 by content manager component 402 according to a schema for the message. For example, a portion of an email message may include a MIME-type identifier that identifies a corresponding part of the email as a mount descriptor and/or otherwise identifies the part for routing to descriptor handler component 404 in communications agent 403 in execution environment 401 of first node 502.

*Id.* at 22:33-49.

55. Fig. 8A illustrates an example of a message sent to the *client node*:

Thus, content manager component 402 operating in execution environment 401 of first node 502 may receive data, such as sent via first message 702, which includes a mount descriptor. FIG. 8A includes an exemplary content portion 800a of an email message. Content portion 800a includes a user readable message portion 802a and a mount descriptor portion 804a described in more detail below. The received communication may include a message addressed to a user represented by communications agent 403 in execution environment 401 of first node 502.

56. Element 804A shown in Figure 8A is an example of the “mount descriptor portion” of the message.

800a

```
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary="--toOo---OoOt-----"

--toOo---OoOt-----
Content-Type: text/plain
Dad,

See attached.
Love,
William
--toOo---OoOt-----
Content-Type: application/mount-desscriptor

smb://SecondNode/Music
http://firstuser@secondnode.tld/users/seconduser/documents/media/music/
ftp://SecondNode/music/
--toOo---OoOt-----
```

Fig. 8A

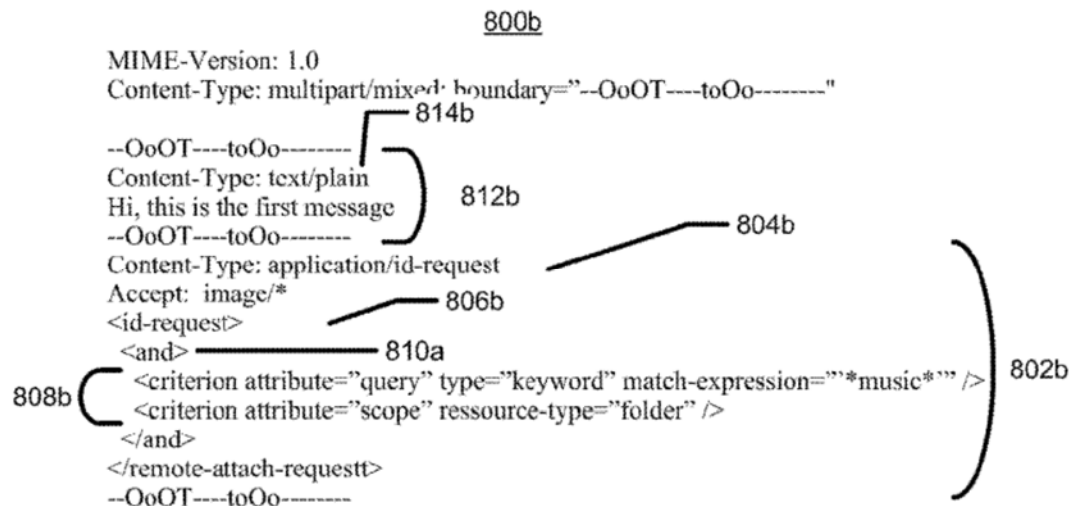
*Id.* Figure 8A.

FIG. 8A includes an exemplary content portion 800a of an email message. Content portion 800a includes a user message portion 802a and a mount descriptor portion 804a described in more detail above. FIG. 8A illustrates an "application/mount-descriptor" MIME type identifier that may be defined to identify a schema for content including one or more mount descriptors. FIG. 8A illustrates a mount descriptor 804a including two identifiers for the "Music" folder. A first identifier 808a illustrates a Samba URL for accessing the "Music" folder via a Samba file sharing system. The second identifier 810a illustrates a WebDAV HTTP URL that may allow a receiving node to access the identified data object via a WebDAV server operating in and/or available to an execution environment sending the mount descriptor 804a. An FTP URL 812a illustrates a file transfer protocol (FTP) that may allow a receiving node to access the identified data object via a FTP server operating in and/or available to an execution environment sending the mount descriptor 804a

*Id.* at 30:6-24

In FIG. 8B, a portion of an email communication 800b is illustrated formatted as a multipart/mixed content type including data object request portion 802b. A data object request portion of a communication may be identified as a data object request by its location in the communication and/or by an identifier or markup element, such as a MIME type identifier. A data object request may be detected based on content included in the message and/or based on metadata such as content-type header 804b identifying a MIME type identifier, such as "application/id-request", which may be defined for representing one or more matching criteria in a data object request. The "application/id-request" MIME type identifier is exemplary. Other MIME type identifiers exist and/or may be defined to identify a data object request in a communication.

*Id.* at 34:6-20.



*Id.* Figure 8B

FIG. 8B illustrates an "application/id-request" MIME type identifier that may be defined to identify a schema for an XML-based language for specifying id-request XML documents. FIG. 8B illustrates id-request document 806b. Id-request document 806b, as illustrated, includes criterion tag elements 808b corresponding to the form elements in a user interface FIG. 6A.

A criterion tag element 808b identifies a matching criterion name, such as "query" indicating that the criterion is a query expression or a portion thereof. A "type" attribute identifies a schema with the identifier "keyword" for the expression. The criterion tag element 808b identifies a value for a query "\*music\*" in a match-expression attribute. Another criterion tag element 808b specifies a scope query specified in the first criterion tag element. FIG. 8B illustrates an "and" tag 810b indicating that all the matching criteria must be met for identifying a data object. An "or" tag (not shown) may be defined by a schema for id-request documents. Other operator elements and operator precedence may be defined by the schema. Grouping elements for managing operator precedence, such as parenthesis element, may be defined by the schema.

*Id.* at 34:38-58.

57. The communication of the mount descriptor may be implemented according to various communications protocols, including an email communication.

The communications protocol may include a protocol specified for exchanging at least one of an email, an instant message, a short messaging service message (SMS), a multi-media message (MMS), an audio message, a video message, and an attachment. First message 702 may include a user readable message from the user of execution environment 401 of second node 504. Receiving first message 702 may include detecting the mount descriptor in first message 702 along with the user readable message.

*Id.* at 21:38-47.

FIG. 7 includes a data flow message that illustrates a detect data object request (detectOReq) data flow 718 that may be internal to execution environment 401 of second node 504 and/or may include interoperation with another node via a network. With respect to FIG. 4, detect data object request data flow 718 may correspond to a data exchange and/or other interoperation between content handler component 402 and descriptor handler



component 404 to detect and/or otherwise process the data object request received in previous message 716 by execution environment 401 of first node 504. FIG. 7 further includes a data flow message that illustrates a locate message 720, that may be included in an aspect of the method illustrated in FIG. 2B, for locating one or more data objects based on the data object request. The data object request may include and/or otherwise identify a matching criterion. The matching criterion may be identified based on match information identified by the communicant represented by execution environment 401 of first node 502. The one or more data objects may be located and/or otherwise identified by determining a data object or data objects that match the matching criterion. The data object(s) may be in a data store in and/or otherwise accessible to execution environment 401 of second node 504, such as one or more files in a file system of execution environment 401 of second node 504. Locate message 720 may be internal to execution environment 401 of second node 504 and/or may include a message exchanged with a remote device, such as database server and/or a network attached storage device providing storage locations for some or all of a file system of execution environment 401 of second node 504.

*Id.* at 35:55-36:17.

## 6. Client Node Functionality

58. The '158 Patent claims recite a simple file sharing system involving a “***publishing node***,” which provides access to physical storage of files in a folder hierarchy, and a “***client node***” that is capable of “mounting” a file stored at or accessible to the ***publishing node***<sup>6</sup>. The mount operation consists of creating a

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<sup>6</sup> The '158 Patent specification “detailed description” section uses the system terminology of a first node providing a user with the capability of mounting a file stored at a second node. In this portion of the specification, the second node containing the stored file or directory of files first publishes a mount point to the

visual representation of the remote file or directory and displaying such a representation within the “file explorer” display of a local directory hierarchy.

59. The SUMMARY specification section and claim 3 refer to storage of data objects at a first network node. This node, referred to here as the ***publishing node***, contains or has access to a physical copy of one or more files available for mounting by other remote nodes (referred to as “***client node***”).

60. Claim element 3j recites an HTML web page providing a first user interface to a user at the first node.

(3j) based on the receipt of the indication of the at least one folder, the indicia associated with the at least one email address, and the indication to share the at least one folder via the at least one network; cause, utilizing particular code configured to be stored on a storage at the second node and further configured to cooperate with a file explorer interface, creation of a representation of the at least one folder in a location among one or more folders on the file explorer interface, where the storage at the second node does not store the at least one file when the creation of the representation of the at least one folder is caused;

---

second node. A user at the second node then receives the mount information and proceeds to mount the remote second node file or directory using local file explorer capabilities. In contrast, the claims, such as challenged claims 3-11 and 13, recite a “second node” display of “representations” of files stored on a first node, such that selection of a representation at the second node causes a particular file stored at the first node to be mounted and displayed at the second node. As a further confusion factor, the “SUMMARY” section of the ’158 Patent form 2:5-6:55 appears to follow the same system terminology as the claims. To avoid potential nomenclature confusion the claimed second node will be referred to as a “**client node**” while the claimed first node will be referred to as the “**publishing node**.”

(3k) cause, at the second node, display of the representation of the at least one folder in the location among the one or more folders on the file explorer interface;

(3l) detect, at the second node, an indication to open the at least one file in the at least one folder; and

(3m) in response to detection of the indication to open the at least one file in the at least one folder, cause retrieval of the at least one file via the at least one network for permitting display of the at least one file at the second node.

based on the receipt of the indication of the at least one folder, the indicia associated with the at least one email address, and the indication to share the at least one folder via the at least one network;

cause, utilizing particular code configured to be stored on a storage at the second node and further configured to cooperate with a file explorer interface, creation of a representation of the at least one folder in a location among one or more folders on the file explorer interface, where the storage at the second node does not store the at least one file in the at least one folder when the creation of the representation is caused;

cause, at the second node, display of the representation of the at least one folder in the location among the one or more folders on the file explorer interface;

detect, utilizing the file explorer interface at the second node, an indication to open the at least one file in the at least one folder;

and in response to detection of the indication to open the at least one file in the at least one folder, cause retrieval of the at least one file via the at least one network for permitting display of the at least one file utilizing the file explorer interface at the second node.

*Id.* at 2:44-64.

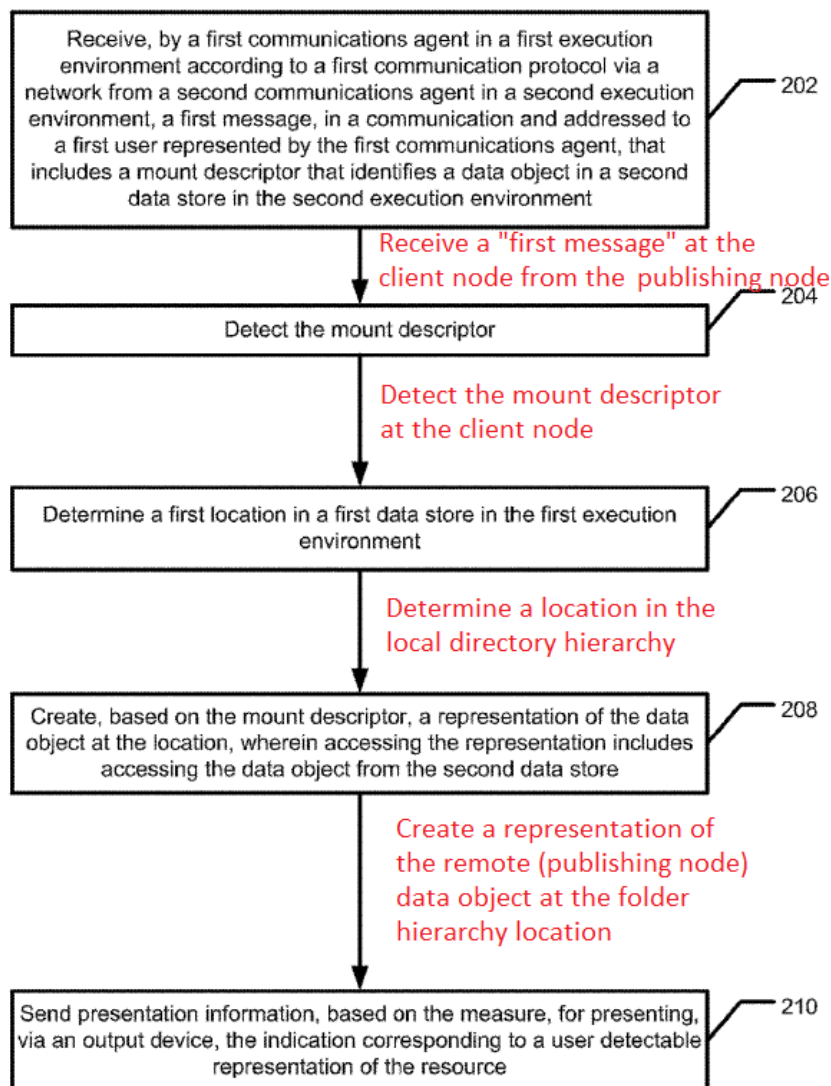


FIG. 2A Present the remote object representation to the user

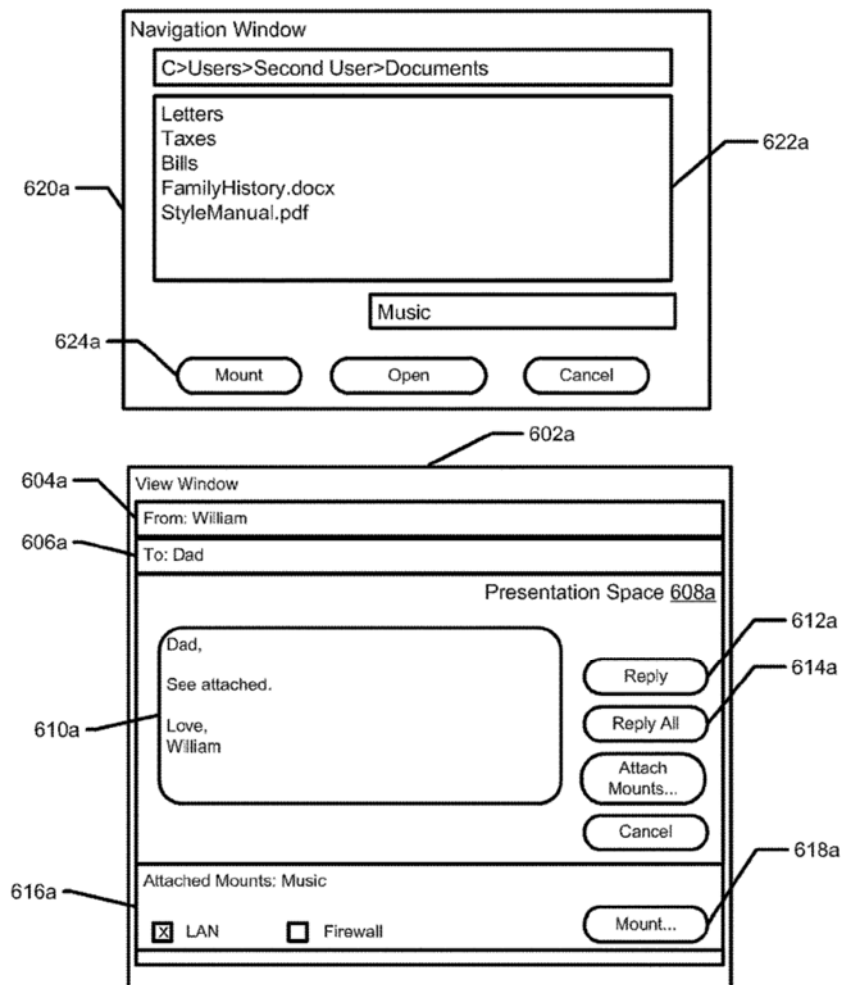
Ex. 1001, Figure 2A describing the role of the *client node* (second node of the claim language).

## 7. Client Node Interface

61. The following description relates to the *client node*, referred to as the second node in the claims (and as the first node in the core specification).

FIG. 6A illustrates a view window UI element 602a as an exemplary user interface that may be presented by communications agent 403 operating in execution environment 401 of first node 502 to present data received in a communication, such as first message 702, from execution environment 401 of second node 504.

*Id.* at 23:15-20.



*Id.* Figure 6A.

62. The user interface depicted in Figure 6A shows a mounted folder referred to as the “Music” folder that was mounted as a result of a received “first message.”

FIG. 6A illustrates an attached mounts UI element 616a identifying, based on the mount descriptor in first message 702, a "Music" folder as a mountable folder from a data store of execution environment 401 of second node 504.

*Id.* at 23:33-37.

63. The mounted folder is a folder that is physically located at or connected via the network to the ***publishing node***, i.e., the first node referred to in the claims.

64. The specification first node user interface provides a mount control., i.e., "mount UI element 624a," that, when activated by a user, instructs the local communication agent in the first node to attach the second node object identified in the mount descriptor ( navigation window 602b) to a location in the ***client node*** (second node of the claims) data store.

FIG. 6A illustrates a mount UI element 624a allowing a user to provide user input(s) to instruct communications agent 403 in execution environment 401 of first node 502 to request that a data object identified in the mount descriptor be attached to a location, identified in navigation window UI element 602b, in the data store in execution environment 401 of first node 502.

*Id.* at 23:55-61.

65. I note that the data store of the ***client node*** is used to store a reference to a ***publishing node*** data object identified in the mount descriptor, not the data object itself.

66. In the displayed example, William sends Dad a music mount descriptor.

The *client node* (specification first node 502) presents a view window Figure 6B.

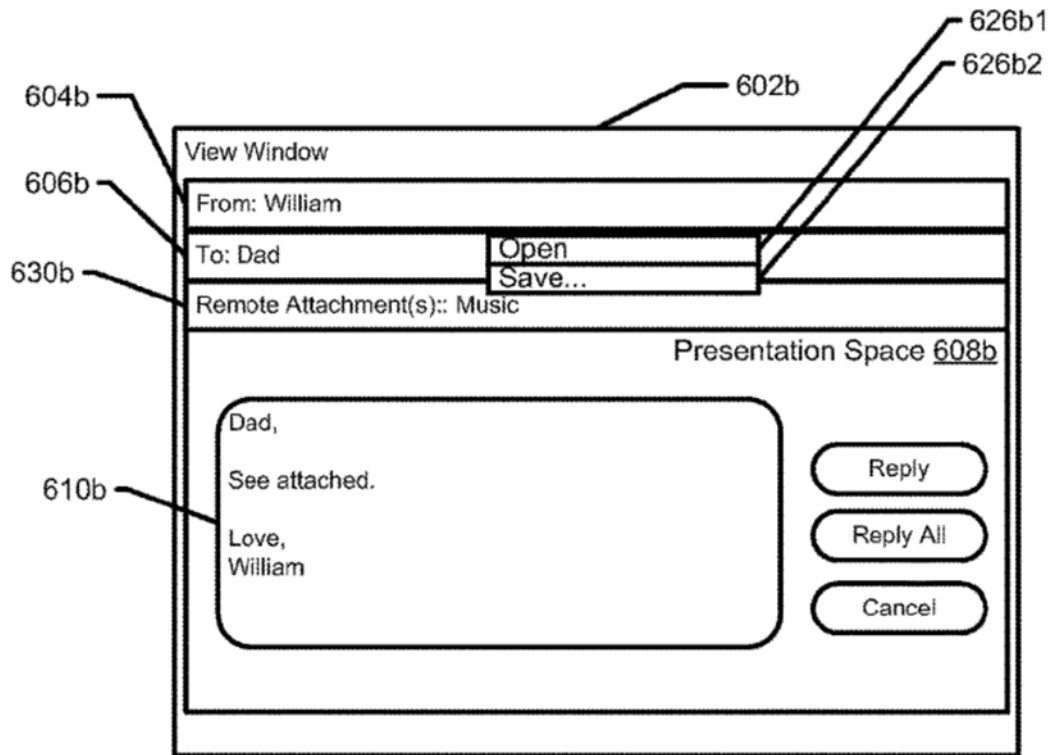
The *client node* user can select menu items “save” and “open.”

In response to detecting the mount descriptor in first message 702, execution environment 401 of first node 502 may present a view window UI element 602b in FIG. 6B including data received in the first message 702 to a user of execution environment 401 of first node 502 as described with respect to FIG. 6A. Context menu 626b provides *UI elements to allow the user to instruct execution environment 401 of first node 502 to retrieve a data object, in response to an input corresponding to "Open" menu UI element 626b1*, identified in a mount descriptor received from execution environment 401 of second node 504. Context menu 626b provides UI elements to allow the user to instruct execution environment 401 of first node 502 to attach and/or otherwise mount a representation of a data object, in response to an input corresponding to "Save . . . " menu UI element 626b2, identified in a mount descriptor at a location in the data store of execution environment 401 of first node 502.

*Id.* at 24:7-23.

67. The “Open” menu command results in the file being retrieved and displayed.

The “Save” command results in a “mount,” i.e., the file identity is attached to the local directory tree – but not opened. (i.e., the mount identity is saved).



*Id.* Figure 6B.

FIGS. 6A-H illustrate various user interfaces, some of which include window UI elements 602 presentable in a presentation space of a display device, such as output device 130 in FIG. 1. A window UI element 602 may include a contactor UI element 604 for presenting an identifier of a communicant in the role of a contactor in a communication represented by the window UI element 602. A window UI element 602 may also include a contactee UI element 606 for presenting one or more contactee identifier(s) identifying one or more communicants in the role of contactee(s) in the communication. A presentation space 608 may be included in each window UI element 602 for presenting a user message UI element 610 that may present a user message from one user to another. A presentation space 608 may also be provided for presenting one or more UI elements that correspond to user inputs for exchanging data in and/or otherwise managing a communication.



*Id.* at 18:20-36<sup>7</sup>.

68. As one can see in figure 6A of the '158 Patent, various user interface fields are provided, including a “contactor UI element 604” showing the sender of a message, and the “contactee UI element 606” identifying a message recipient. The presentation space 608 allows for display of messages exchanged between two users.

69. Figure 6A also illustrates an “attached mount,” representing an object stored at or accessible by the ***publishing node*** (first node of the claims) represented at the ***client node*** (second node of the claims) user interface as an available object. In the referenced example, the object is a folder stored at or accessible to the ***publishing node*** (the claimed first node).

FIG. 6A illustrates an attached mounts UI element 616a identifying, based on the mount descriptor in first message 702, a "Music" folder as a mountable folder from a data store of execution environment 401 of second node 504.

*Id.* at 23:33-37 (emphasis added).

## 8. Data Object Requests

70. As depicted in Figure 7 of the '158 Patent, a data object request message may be received at the file ***publishing node***. In this portion of the specification,

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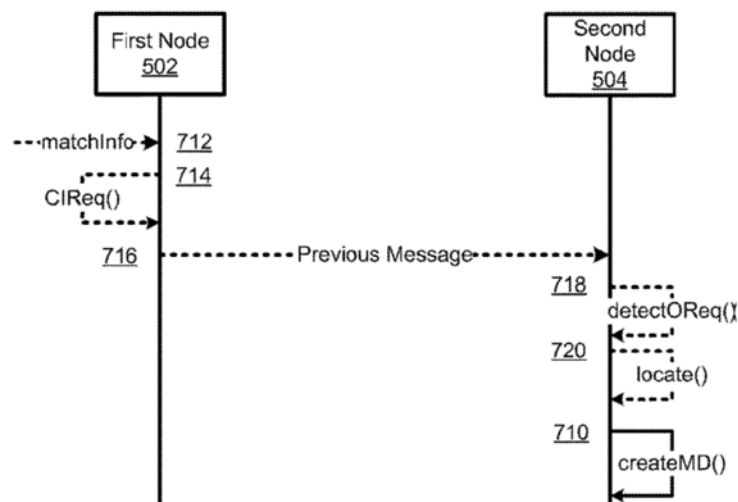
<sup>7</sup> As noted, this portion of the specification identifies the first node as having the ***client node*** functionality, and the second node having the ***publishing node*** functionality.

the *publishing node* is referenced as the second node, and the *client node* is referenced as the first node:

The data object(s) may be in a data store in and/or otherwise accessible to execution environment 401 of second node 504, such as one or more files in a file system of execution environment 401 of second node 504. Locate message 720 may be internal to execution environment 401 of second node 504 and/or may include a message exchanged with a remote device, such as database server and/or a network attached storage device providing storage locations for some or all of a file system of execution environment 401 of second node 504.

*Id.* at 36:6-17 (emphasis added).

71. As seen in Figure 7, a



*Id.* Figure 7 (partial view).

The data object request may include match information identifying a matching criterion for locating and/or otherwise identifying a data object to be mounted. With respect to FIG. 4 and FIG. 5, execution environment 401 of first node 502 may request a mount descriptor from execution environment 401 of second node 504. FIG. 7 includes a data flow message that illustrates a match information data flow 712 that may occur at

least partially in execution environment 401 of first node 502 and/or may include a message (not shown) received via network 506 by execution environment 401 of first node 502. Match information data flow 712 may represent, in FIG. 4, a data flow to an identify mount constructor (IMC) component 410 operating in execution environment 401 of first node 502. The data flow may be via descriptor handler component 404.

*Id.* at 32:6-20.

72. Data requests are sent to the file ***publishing node*** as messages such as the “detectOReq” detect object request.

FIG. 7 includes a data flow message that illustrates a detect data object request (detectOReq) data flow 718 that may be internal to execution environment 401 of second node 504 and/or may include interoperation with another node via a network. With respect to FIG. 4, detect data object request data flow 718 may correspond to a data exchange and/or other interoperation between content handler component 402 and descriptor handler component 404 to detect and/or otherwise process the data object request received in previous message 716 by execution environment 401 of first node 504. FIG. 7 further includes a data flow message that illustrates a locate message 720, that may be included in an aspect of the method illustrated in FIG. 2B, for locating one or more data objects based on the data object request. The data object request may include and/or otherwise identify a matching criterion. The matching criterion may be identified based on match information identified by the communicant represented by execution environment 401 of first node 502. The one or more data objects may be located and/or otherwise identified by determining a data object or data objects that match the matching criterion.

*Id.* at 35:55-36:8.

## 9. Server File Storage

73. The specification of the '158 Patent generally emphasizes a system wherein a ***publishing node*** provides user interfaces and stores files “in a data store in a second execution environment.” See, e.g., '158 Patent Figure 2B and 21:4-6.

74. The node “execution environment” is disclosed in the block diagram of Figure 1.

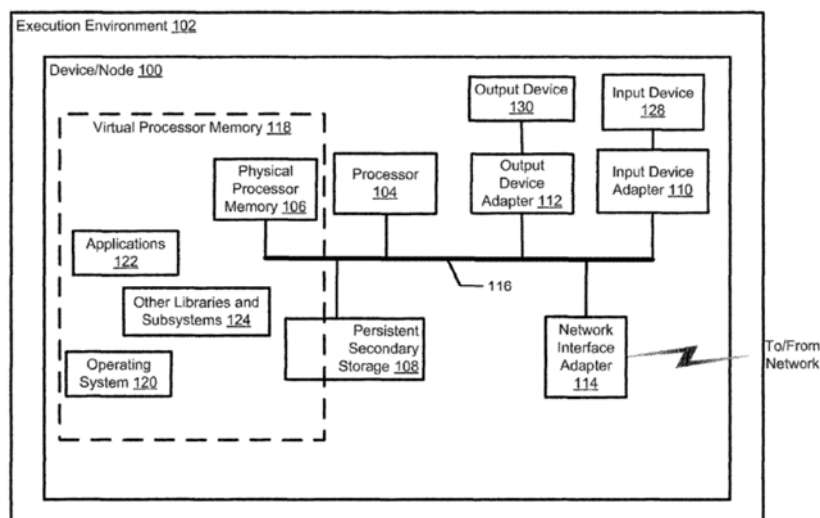


FIG. 1

*Id.* Figure 1 (node execution environment 102).

75. Although the specification literally identifies a “second data store in a second execution environment,” the claims themselves may be interpreted more broadly. For example, claim 15 recites a “server,” not shown in Figure 1 above as part of the “node execution environment,” that stores “the at least one folder and the at least one file” of claim element 3h.

Claim 15. The apparatus of claim 14, wherein the apparatus is configured such that the at least one folder and the at least one

file are stored and synchronized utilizing at least one server,  
and...

*Id.* at 45:66-46:2.

76. Claim 15 depends from claims 14 and 3. Hence, the scope of claim 3 encompasses storage of the at least one file and the at least one folder on a server separate from the claimed first node.

77. This aligns with the specification statement identifying a location message to locate a file stored on a server separate from the ***publication node*** (i.e., “second node” of the specification body or first node of claims).

FIG. 7 includes a data flow message that illustrates a detect data object request (detectOReq) data flow 718 that may be internal to execution environment 401 of second node 504 and/or may include interoperation with another node via a network.

*Id.* at 35:55-59.

The data object(s) may be in a data store in and/or otherwise accessible to execution environment 401 of second node 504, such as one or more files in a file system of execution environment 401 of second node 504. Locate message 720 may be internal to execution environment 401 of second node 504 and/or may include a message exchanged with a remote device, such as database server and/or a network attached storage device providing storage locations for some or all of a file system of execution environment 401 of second node 504.

*Id.* at 36:6-17. (Emphasis added.)

### C. **Priority Date**

78. The '158 Patent is a continuation-in-part of application No. 14/274,623 (Ex. 1007), filed on May 9, 2014, which is a continuation-in-part of application No.

13/626,635 (Ex. 1006), filed on Sep. 25, 2012, now abandoned, and a continuation-in-part of application No. 13/624,906 (Ex. 1005), filed on Sep. 22, 2012, now abandoned.

79. I have not opined on whether the any of the applications support the Challenged Claims. Rather, for the purposes of this declaration, I have been asked to assume September 22, 2012 is the earliest possible priority date.

#### **IV. CLAIM CONSTRUCTION**

80. I understand that the claims of a patent define the alleged invention.

Construing claim terms involves determining how a POSITA understands such claim terms at the time of the alleged invention. This is done by considering the intrinsic evidence: the language of the claims, the specification, and the prosecution history. I understand that extrinsic evidence such as dictionary definitions may be relied on to show how a POSITA would have understood a certain term, if the intrinsic evidence of the patent does not define the term, and the extrinsic evidence is not contrary to the intrinsic evidence.

81. I provide my comments below to illustrate how a POSITA would construe the following claim terms. Claim terms not specifically discussed below have their plain and ordinary meaning.

## V. PRIOR ART REFERENCES

### A. Do

82. Ex. 1008, US Patent Application Publication No. US 2008/0320397 to Anh Do et al., entitled “Integrated Sharing of Electronic Documents” and published on December 25, 2008 (“Do”), is prior art.

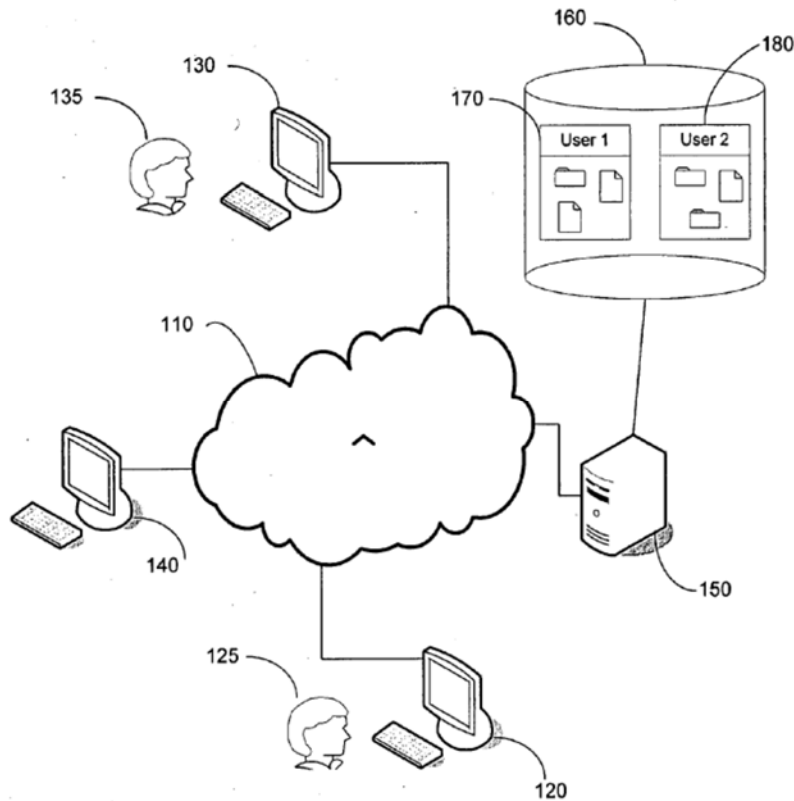
An online service that allows multiple users to share electronic documents over a computer network. Each user may access the online system after specifying the user's credentials, after which the user may view the user interface specific to that user. The user interface may contain multiple panes, such as a navigation pane and a work pane. The navigation pane may list files owned by the user and may also list files shared with the user by other users. A user may select a file in the navigation pane to view the contents of the file in the work pane. A user may also select a file to share with other users, and the shared file will automatically appear in the other users' interfaces. A user may additionally share a file with a user not registered with the system, and the unregistered user may access the file through a generic interface or may register and then view the file.

Ex. 1008 at Abstract.

83. Do discloses the use of a central server capable of implementing web server functionality. The user interface is comprised of web pages sent as HTTP pages from server 150.

After authentication, the online service may present the first user's interface, which first user 125 may view on the display of computer 120. To create such an interface, server 150 may render the interface in a format that can be displayed by computer 120.

Ex. 1008 at 0042 (emphasis added).



Ex. 1008 Figure 1.

84. Do discloses a user interface utilizing first hypertext markup language as a language to create component interface elements.

As one example, computer 120 may be configured with a web browser that displays HTTP pages and server 150 may render the interface as one or more HTTP pages. Using a browser-based interface may allow a user to access artifacts on server 150 from any computer that supports such a browser. However, any suitable format may be used to exchange information between a user computer and the online web service.

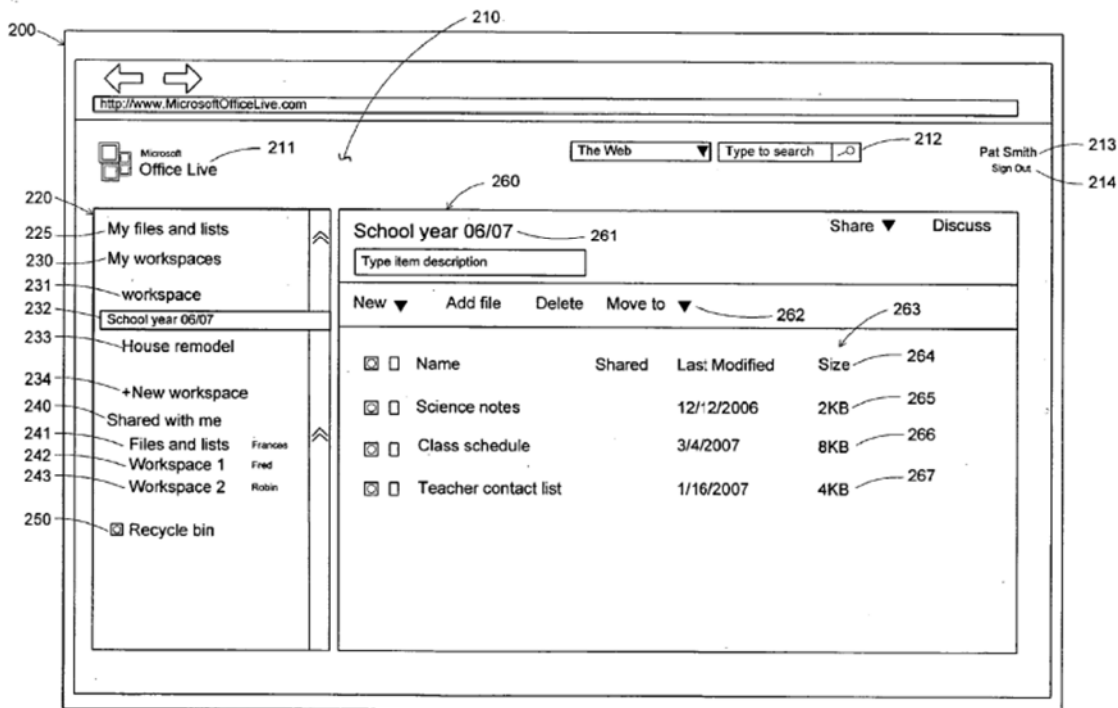
*Id.*

85. The user interface disclosed by Do allows a user at a publishing node to select an “artifact” that may be shared with other users:



[0051] A user may select an artifact from list 263 presented on work pane 260 to view the contents of the artifact. FIG. 3 shows the user interface of FIG. 2 after the user has selected artifact "Science notes" 265 from work pane 260. Work pane 360 may display the title 361 of artifact "Science notes" 265. Artifact "Science notes" 265 is a word processing documents and work pane 360 may present controls 362 appropriate for editing a word processing document. Work pane 360 may also present the contents 363 of artifact "Science notes" 265 in WYSISYG format, and the user may be able edit the contents 363 of the artifact.

*Id.* at [0051].



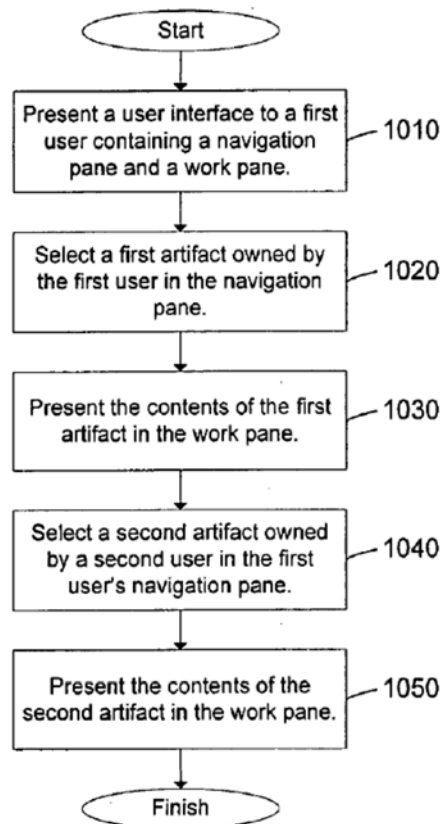
**FIG. 2**

*Id.* Figure 2.

86. The workflow for a user to select and publish shared artifacts is depicted in Figure 10 of Do.

[0066] FIG. 10 shows a process whereby the online service presents a user with the contents of artifacts in the context of the user's interface.

*Id.* at [0066].



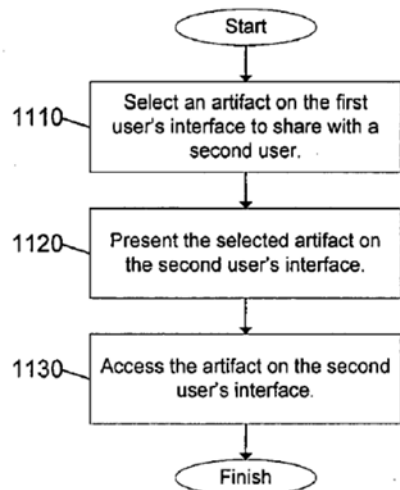
**FIG. 10**

*Id.* Figure 10.

87. The first user of Do selects and publishes an artifact, which is sent to a second user.

[0069] FIG. 11 shows a process whereby a first user of the online service shares an artifact with a second user of the online service.

*Id.* at [0069].



**FIG. 11**

*Id.* Figure 11.

## **B. Shapiro**

88. Ex. 1009, US Patent Application Publication No. US 2005/0234864 to Aaron Shapiro, entitled “Systems and Method for Improved Data Sharing and Content Transformation,” published on October 20, 2005 (“Shapiro”), is prior art.

A user’s personal computer can be turned into a personal network Server for easily sharing personal digital information with other people using a wide variety of devices. There are a variety of alternative ways in which Such file sharing on the user's computer can be implemented, such as with a client-side Server approach, a hosted Server approach, and an automated publish approach. Depending upon a variety of factors, the requested shared data may be intelligently and dynamically transformed to better fit the requesting party's needs. Programming interfaces are available to third parties that allow for access to the Shared data and for providing customized instructions on what to do when transforming the data.

Ex. 1009, Abstract.

89. As discussed above, Shapiro discloses a system that permits a user's personal computer to act as a server. Shapiro summarizes historical prior art methods of sharing files between computers. For example, Shapiro describes prior art methods that required emails to be sent between computers, with the emails having attached files.

[0008] Another known method of sharing files or personal digital information is via electronic mail communication and their associated attached files. The user sends an email and attaches the file to be shared. The email message recipient receives the email and shared file via an email server. This tends to be a more direct mechanism for sharing such information than the conventional centralized server approach where the user later requests the shared file.

*Id.* at [0008] (emphasis added).

90. But, as Shapiro explains, sharing files between computers using email attachments has undesirable side effects.

[0052] An icon shown in an email application (e.g., Microsoft OUTLOOK) of the user's personal computer gives users the ability to email files through file sharing. Rather than sending a file attachment, a link to the user's shared content is placed in the email message. This eliminates the need to transmit the actual content, thus ensuring the email message will not be rejected due to size restrictions on the recipients email account.

Ex. 1009 at [0052] (emphasis added).

### C. RFC 2822

91. Ex. 1010, RFC 2822 was published on April 2001. (Available at <https://tools.ietf.org/html/rfc822>.)

This standard specifies a syntax for text messages that are sent between computer users, within the framework of "electronic mail" messages. This standard supersedes the one specified in Request For Comments (RFC), "Standard for the Format of ARPA Internet Text Messages", updating it to reflect current practice and incorporating incremental changes that were specified in other RFCs

Ex. 1010, Abstract.

92. It was well known at the priority date of the '158 Patent that email recipients could be identified by a combination of fields including the recipients actual email address and an alias. For example, RFC 2822 at section 3.4 provides a set of defining specifications for the recipient field of an email.

93. An example of this recipient format is shown below for a person named "Mary Smith" with email address "mary@example.net."

```
From: John Doe <jdoe@machine.example>
Sender: Michael Jones <mjones@machine.example>
To: Mary Smith <mary@example.net>
Subject: Saying Hello
Date: Fri, 21 Nov 1997 09:55:06 -0600
Message-ID: <1234@local.machine.example>
```

```
This is a message just to say hello.
So, "Hello".
----
```

*Id.* p. 42.

## **VI. SUMMARY OF GROUNDS**

### **A. Ground 1 – Do and Shapiro**

94. In my opinion, the combination of Do (Ex. 1008) in view of Shapiro (Ex. 1009), as understood by a POSITA at the time of the '158 Patent's priority date, renders claims 3-11 and 13 of the '158 patent obvious under 35 U.S.C. §103.

## **VII. '158 PATENT CLAIM ANALYSIS**

### **A. Ground 1**

#### **1. Claim 3**

##### **a. *(Pre) An apparatus, comprising:***

95. Do relates to an online service that allows multiple users to share electronic documents over a computer network.

An online service that allows multiple users to share electronic documents over a computer network. Each user may access the online system after specifying the user's credentials, after which the user may view the user interface specific to that user. The user interface may contain multiple panes, such as a navigation pane and a work pane. The navigation pane may list files owned by the user and may also list files shared with the user by other users. A user may select a file in the navigation pane to view the contents of the file in the work pane. A user may also select a file to share with other users, and the shared file will automatically appear in the other users' interfaces. A user may additionally share a file with a user not registered with the system, and the unregistered user may access the file through a generic interface or may register and then view the file.

Ex. 1008, Abstract.

**b. (3a) at least one non-transitory memory storing instructions; and**

96. Do discloses the use of a non-transitory memory for storing computer instructions.

In this respect, the invention may be embodied as a computer readable medium (or multiple computer readable media) (e.g., a computer memory, one or more floppy discs, compact discs, optical discs, magnetic tapes, flash memories, circuit configurations in Field Programmable Gate Arrays or other semiconductor devices, etc.) encoded with one or more programs that, when executed on one or more computers or other processors, perform methods that implement the various embodiments of the invention discussed above. The computer readable medium or media can be transportable, such that the program or programs stored thereon can be loaded onto one or more different computers or other processors to implement various aspects of the present invention as discussed above.

*Id.* at [0086].

**c. (3b) one or more processors in communication with the at least one non-transitory memory, wherein the one or more processors execute the instructions to:**

97. Do discloses processors in communication with one or more non-transitory memories, configured so as to execute computer instructions:

In this respect, the invention may be embodied as a computer readable medium (or multiple computer readable media) (e.g., a computer memory, one or more floppy discs, compact discs, optical discs, magnetic tapes, flash memories, circuit configurations in Field Programmable Gate Arrays or other semiconductor devices, etc.) encoded with one or more programs that, when executed on one or more computers or other processors, perform methods that implement the various embodiments of the invention discussed above. The computer readable medium or media can be transportable, such that the

program or programs stored thereon can be loaded onto one or more different computers or other processors to implement various aspects of the present invention as discussed above.

*Id.* at [0086].

- d. *(3c) cause, at a first node, display of at least one first interface with a first user interface element, utilizing first hypertext markup language-equipped code that is sent via at least one network;*
  - i. *utilizing first hypertext markup language-equipped code sent via at least one network*

98. Do discloses the use of a central server capable of implementing web server functionality. The user interface is comprised of web pages sent as HTTP pages from server 150.

After authentication, the online service may present the first user's interface, which first user 125 may view on the display of computer 120. To create such an interface, server 150 may render the interface in a format that can be displayed by computer 120.

Ex. 1008 at [0042] (emphasis added).

99. A POSITA would understand that HTTP<sup>8</sup> represents the conventional application level transport protocol for web pages delivered to a browser from a web server. Therefore, Do discloses a user interface utilizing first hypertext markup language as a language to create component interface elements.

As one example, computer 120 may be configured with a web browser that displays HTTP pages and server 150 may render the interface as one or more HTTP pages. Using a browser-based interface may allow a user to access artifacts on server 150 from any computer that supports such a browser. However, any

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<sup>8</sup> HyperText Transfer Protocol.



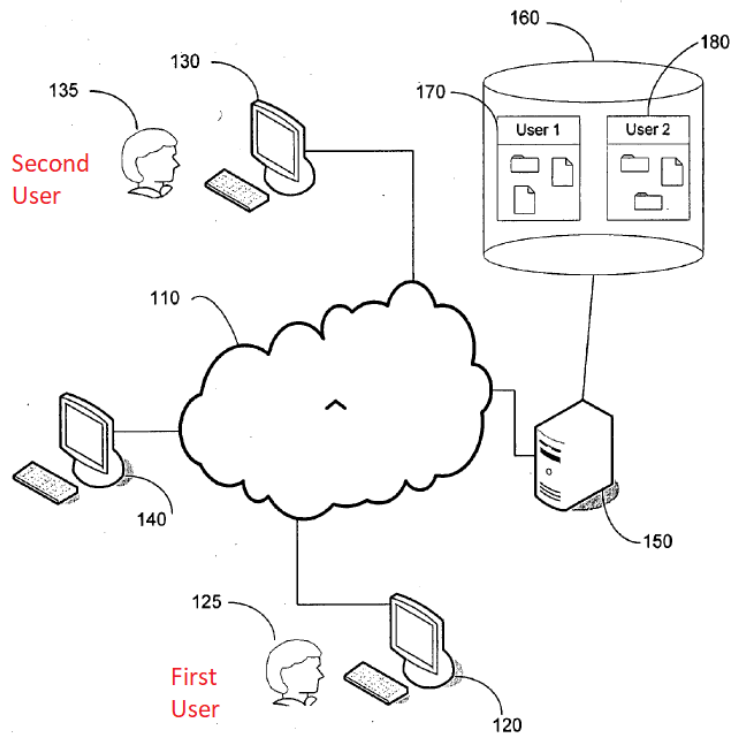
suitable format may be used to exchange information between a user computer and the online web service.

*Id.*

ii. *cause, at a first node, display of at least one first interface*

100. Do discloses a central server 150 that may be accessed using a web browser.

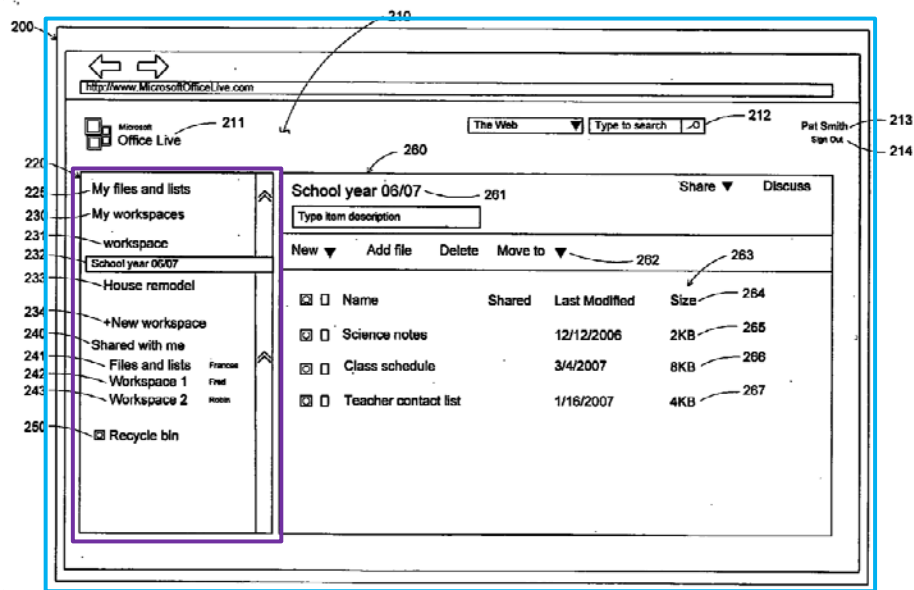
Figure 1 of Do discloses nodes 120, 130, and 140 communicating via network 110 with server 150.



Ex. 1008, FIG. 1 (annotated).

101. A first interface is displayed at the representative node 120 available to a “first user 125.” The first user node satisfies the “first node” of claim 3 of the ’158 Patent, i.e., the *publishing node*.

[0043] FIG. 2 shows an example of a user interface 200 that may be presented to first user 125. User interface 200 may present one or more types of information to a user and receive one or more types of commands or other information from the user during interactions with the online service. The interface may present information that allows the user to manipulate artifacts and to interact collaboratively.



Ex. 1008, FIG. 2 (annotated).

[0042]: In operation, first user 125 may access the online service from computer 120 and authenticate herself to online service with credentials, such as a username and password. After authentication, the online service may present the first user's interface, which first user 125 may view on the display of computer 120.

*Id.* at [0042] (emphasis added).

To create such an interface, server 150 may render the interface in a format that can be displayed by computer 120. The specific format is not critical to the invention. As one example, computer 120 may be configured with a web browser that displays HTTP pages and server 150 may render the interface as one or more HTTP pages. Using a browser-based interface may allow a user

to access artifacts on server 150 from any computer that supports such a browser. However, any suitable format may be used to exchange information between a user computer and the online web service.

*Id.* (emphasis added).

**iii. *with a first user interface element***

102. The user interface shown in Do Figure 2 contains various panels that represent different “interface elements.”

In some embodiments, the interface may be organized into one or more panes, each containing a subset of information presented to the user and command objects accessible by the user.

*Id.* at [0043].

- e. ***(3d) receive, from the first node via the at least one network, an indication of at least one folder via the first user interface element, utilizing the at least one first interface;***

103. Do discloses interfaces that are capable of displaying “artifacts.” As noted in the excerpt reproduced below, an artifact is a representation of content. The “artifact content” may be in different forms. For example, an artifact may represent a workspace such as "School year 06/07" containing other artifacts, and the workspace “artifact contents” would be a listing of the contained artifacts in the work pane 260.

[0050] In FIG. 2, first user 125 has selected artifact "School year 06/07" 232 in the navigation pane 220, and thus the contents of artifact "School year 06/07" 232 may be presented in work pane 260. Artifact "School year 06/07" 232 is a workspace that contains other artifacts, so work pane 260 may present the artifacts contained within the workspace. For example, as shown

in FIG. 2, work pane 260 may present a list 263 of the artifacts contained within the workspace.

*Id.* at [0050].

104. In an alternative example, an artifact may represent a document (such as "Science notes") and the "artifact contents" are displayed in work pane 360 as a word processing document.

[0051] A user may select an artifact from list 263 presented on work pane 260 to view the contents of the artifact. FIG. 3 shows the user interface of FIG. 2 after the user has selected artifact "Science notes" 265 from work pane 260. Work pane 360 may display the title 361 of artifact "Science notes" 265. Artifact "Science notes" 265 is a word processing documents and work pane 360 may present controls 362 appropriate for editing a word processing document.

*Id.* at [0051].

**i. *utilizing the at least one first interface***

105. Do discloses a first user 125 selecting a folder to be shared with other users.

[0035] How the information contained in an artifact is displayed may depend on the type of an artifact. For example, if the selected artifact is a workspace or a folder, the work pane may display a representation of the artifacts contained within the workspace or folder. This information may be presented in the form of a list, may be presented as icons, or may be presented in any other suitable fashion.

*Id.* at [0035] (emphasis added).

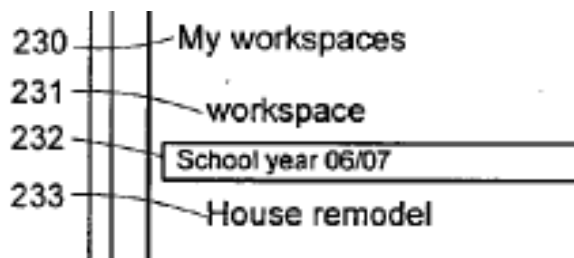
[0045] User interface 200 may also contain a navigation pane 220. Navigation pane 220 may present the first user 125 with information about artifacts accessible to her. The manner in which the list of artifacts is presented to a user is not a limiting feature of the invention, and the artifacts may be presented in any suitable manner. Navigation pane 220 may present artifacts

owned by first user 125 and may also present artifacts owned by other users which have been shared with first user 125. In FIG. 2, artifacts owned by first user 125 are presented in a list with the title “My files and lists” 225 and a list with the title “My workspaces” 230. Artifacts shared with first user 125 are presented in a separate list with the title “Shared with me” 240. The artifacts contained within list 225, list 230, and list 240 need not be presented separately and may instead be combined into one list or presented in any other suitable manner.”

*Id.* at [0045] (emphasis added).

- ii. ***receive, from the first node via the at least one network, an indication of at least one folder via the first user interface element***

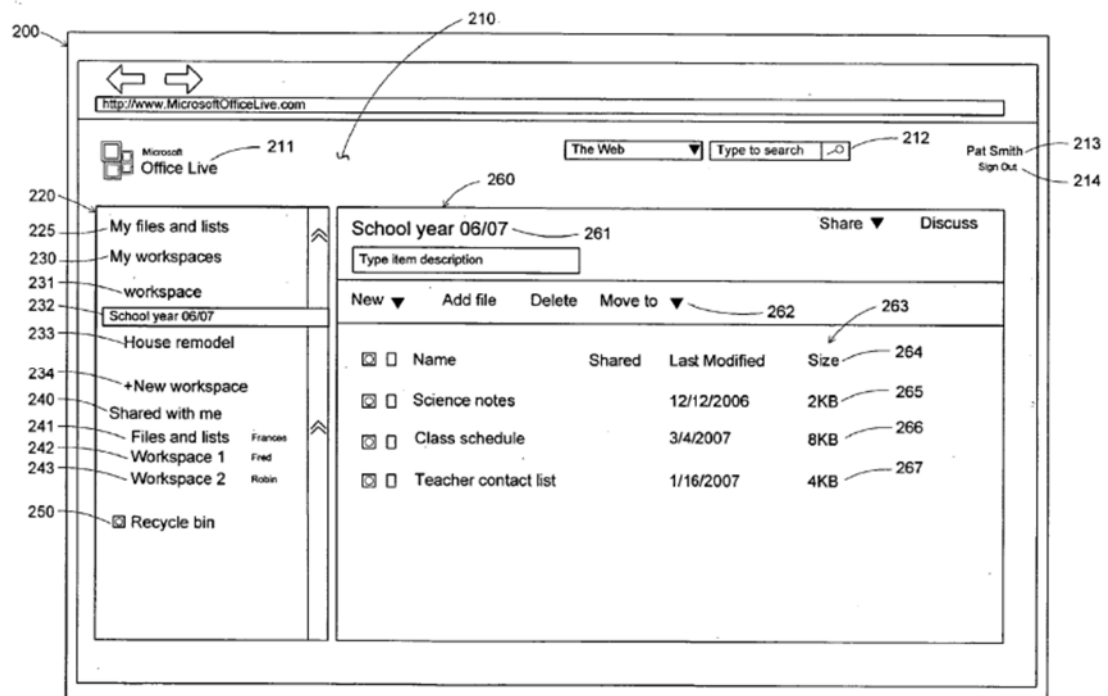
106. A display referred to as “My workspaces” presents artifacts owned by the first user 125. The artifacts include “workspace” 231, “School year 06/07” 232, and “House remodel” 233. Each of these artifacts represent a folder containing files as seen in the selection of artifact “School year 06/07” 232 depicted in figure 2.



*Id.* Figure 2 (partial view showing workspaces “School year 06/07 and “House remodel”).

[0047]: “The list “My workspaces” 230 presents three artifacts owned by first user 125. The artifacts are named “workspace” 231, “School year 06/07” 232, and “House remodel” 233. In this example, the artifact “School year 06/07” 232 has been selected by first user 125 and is highlighted to indicate that is has been

selected. The list “My workspaces” 230 may also present controls that allow first user 125 to create new artifacts, delete artifacts, and perform other operations to facilitate the organization of artifacts. For example, a control “New workspace” 234 may allow first user 125 to create a new artifact and a control “Recycle bin” 250 may allow first user 125 to delete an artifact or remove an artifact from the list.



**FIG. 2**

*Id.* Figure 2.

107. Furthermore, Do describes the structure of stored artifacts in terms of files and folders:

[0031] In comparison, the online service may automatically add the shared artifact to the recipient's navigation pane, and further, the online service may allow the recipient to organize the shared artifacts to his or her liking. Further, the shared artifact may appear without distractions caused by accessing the artifact in the context in which it is stored. For example, an artifact may be stored in a folder within a directory structure that contains other

folders and other artifacts. The other folders and files may be irrelevant to the recipient. Presenting a representation of an artifact in the context of the recipient's interface allows the artifact to be presented without distractions that could be caused by presenting the artifact in the context in which the artifact is stored.

*Id.* at [0031].

108. Thus, the limitation of “an indication of at least one folder via the first user interface element” is disclosed by the user selection.

- f. ***(3e) cause, at the first node, display of at least one second interface with a second user interface element, utilizing second hypertext markup language-equipped code that is sent via the at least one network;***
  - i. ***utilizing second hypertext markup language-equipped code sent via the at least one network***

109. Do discloses the use of a central server capable of implementing web server functionality. The user interface is comprised of web pages sent as “HTTP pages” from server 150.

After authentication, the online service may present the first user's interface, which first user 125 may view on the display of computer 120. To create such an interface, server 150 may render the interface in a format that can be displayed by computer 120.

*Id.* at [0042] (emphasis added).

110. A POSITA would understand that HTTP<sup>9</sup> represents the conventional application level transport protocol for web pages delivered to a browser from a

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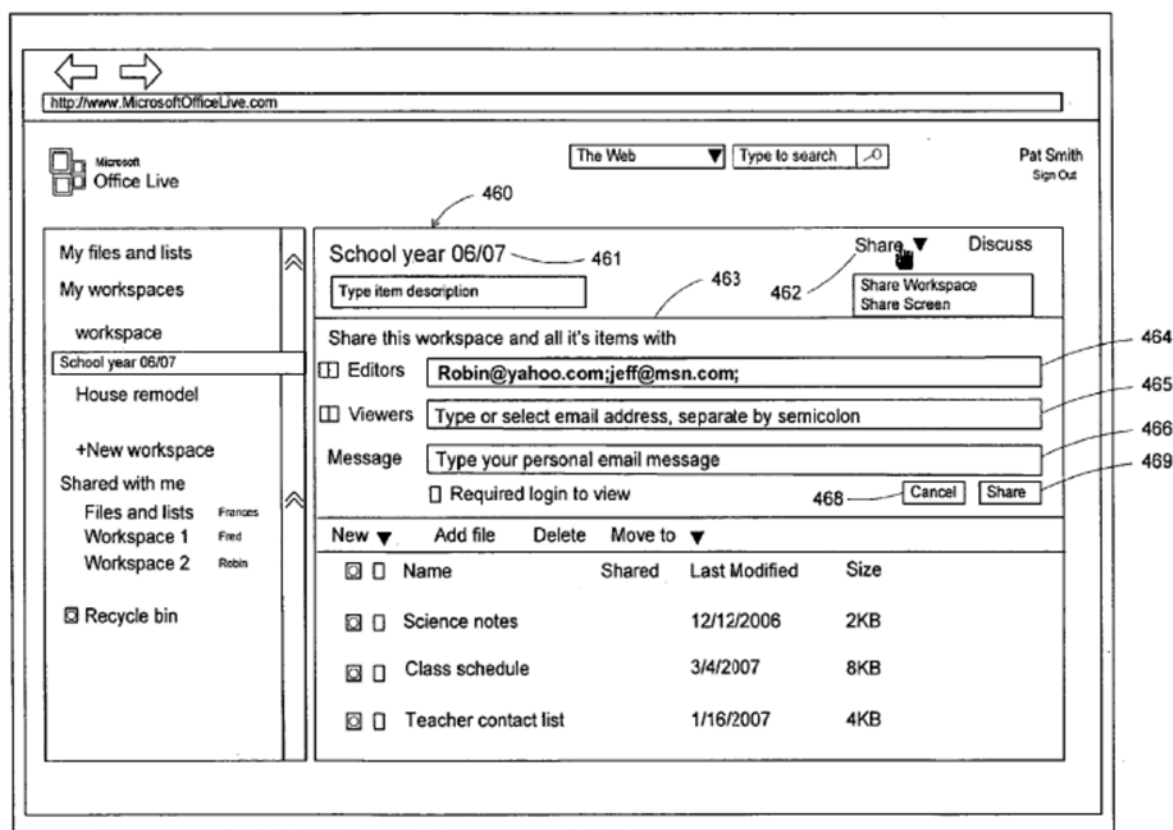
<sup>9</sup> HyperText Transfer Protocol.

web server. Therefore, Do discloses a user interface utilizing first hypertext markup language as a language to create component interface elements.

As one example, computer 120 may be configured with a web browser that displays HTTP pages and server 150 may render the interface as one or more HTTP pages. Using a browser-based interface may allow a user to access artifacts on server 150 from any computer that supports such a browser. However, any suitable format may be used to exchange information between a user computer and the online web service.

*Id.*

111. As seen in Do's Figure 4, a second user interface is made available to the first user, i.e., at the *publishing node* (the claimed first node).



**FIG. 4**

*Id.* Figure 4.

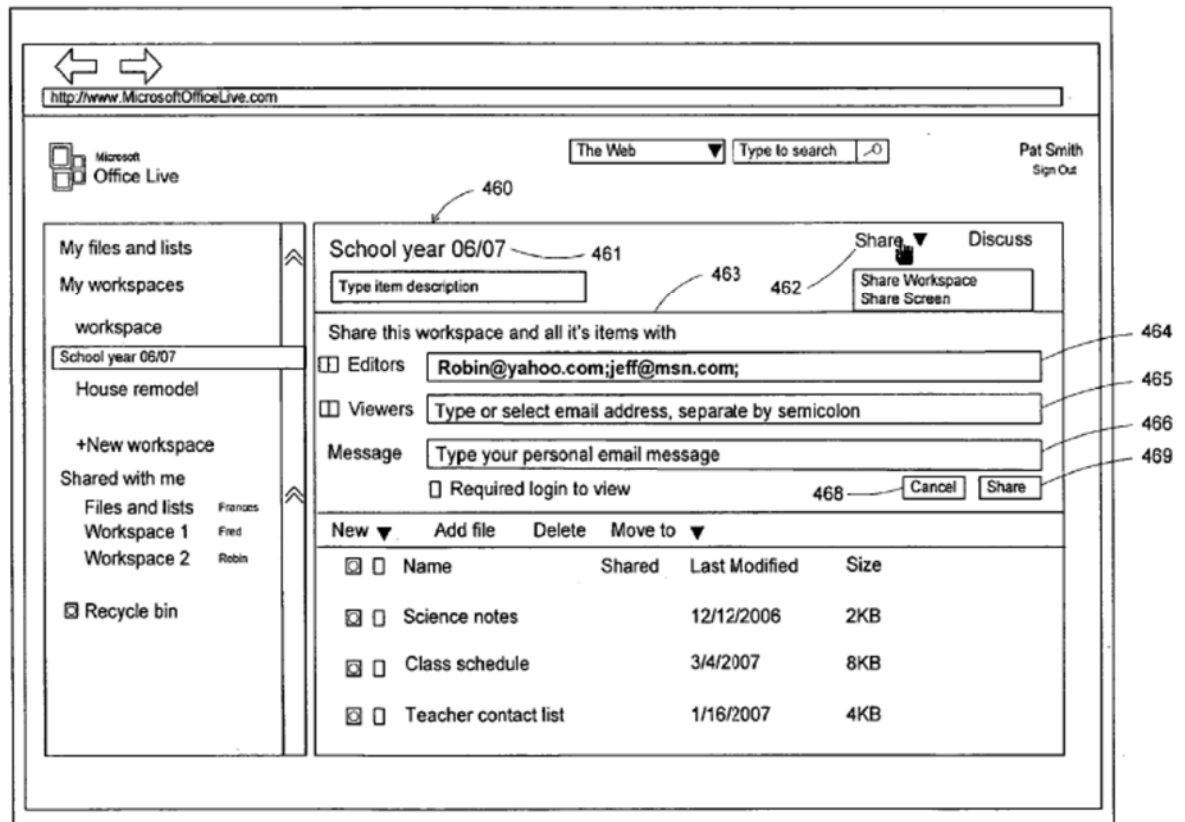


ii. *cause, at the first node, display of at least one second interface with a second user interface element*

112. Do discloses a second interface that provides interface controls to share an artifact:

[0054] As another example of a command sequence by a user that results in sharing of an artifact, FIG. 4 shows work pane 460 after first user 125 has selected a control 462 to share workspace “School year 06/07” 232 with other users. Work pane 460 presents a group of controls 463 that first user 125 can use to share artifact “School year 06/07” 232 with other users. In control 464, first user 125 may list other users who are to be allowed to edit artifact “School year 06/07” 232. First user 125 may specify the other users via a username, email address, or any other means for identifying the other users. In control 465, first user 125 may similarly list other users who are to be allowed to view artifact “School year 06/07” 232. Another control 466 allows first user 125 to specify a message that is to be sent to the other users with whom artifact “School year 06/07” 232 is being shared. Other controls could also be used to specify how artifact “School year 06/07” 232 is to be shared. For example, sharing users could be allowed to further share the artifact with other users or could be prohibited from doing so. Once first user 125 has completed entering the information about how artifact “School year 06/07” 232 is to be shared, first user 125 may select control 469 to complete the process or may select control 468 to cancel the process.

*Id.* at [0054] (emphasis added).



**FIG. 4**

*Id.* Figure 4.

- g. *(3f) receive, from the first node via the at least one network, indicia associated with at least one email address via the second user interface element, utilizing the at least one second interface;*
- i. *receive, from the first node via the at least one network, indicia associated with at least one email address*

113. Once the attribute is selected by the first user, email indicia may be entered to identify a recipient client.

If first user 125 completes the process, a message, such as an email message, may be sent to the users with whom the artifact is being shared, and the artifact may automatically appear in the navigation pane of the other users' interfaces.

*Id.* at [0054].

114. Do relies on email messages to send shared artifact parameters to a client node.

In block 1110, the first user may be able to identify the second user by an identifying characteristic of the online service, such as an identification number or username. In block 1210, the first user may have to identify the second user with a different identifying characteristic, such as an email address.

*Id.* at [0074].

[0075] At block 1220, the second user is notified that the first user has shared an artifact with the second user. Any appropriate method could be used for notification, such as an email message sent to the second user. The notification may include any relevant information such as the identity of the first user, the artifact being shared, instructions describing how the second user can access the shared artifact, and instructions describing how the second user can register with the online service.

*Id.* at [0075].

115. In order to generate an email containing the shared artifact information, the first user must specify “indicia associated with at least one email address,” including for example the email address of the recipient or recipients, i.e., the client nodes receiving the shared artifacts.

The first user may indicate the identity of the second user by an email address and the online service may inform the second user that an artifact has been shared with him or her by sending an email to that address. The email received by the second user may contain a message, may contain directions or instructions for accessing the shared artifact, and alternatively or additionally may include a web address with which the second user may be able to access the artifact.

*Id.* at [0037] (emphasis added).

116. Figure 4 from Do describes the requirement for a user to specify the email addresses of one or more client recipients.

[0054] As another example of a command sequence by a user that results in sharing of an artifact, FIG. 4 shows work pane 460 after first user 125 has selected a control 462 to share workspace “School year 06/07” 232 with other users. Work pane 460 presents a group of controls 463 that first user 125 can use to share artifact “School year 06/07” 232 with other users. In control 464, first user 125 may list other users who are to be allowed to edit artifact “School year 06/07” 232. First user 125 may specify the other users via a username, email address, or any other means for identifying the other users. In control 465, first user 125 may similarly list other users who are to be allowed to view artifact “School year 06/07” 232. Another control 466 allows first user 125 to specify a message that is to be sent to the other users with whom artifact “School year 06/07” 232 is being shared. Other controls could also be used to specify how artifact “School year 06/07” 232 is to be shared. For example, sharing users could be allowed to further share the artifact with other users or could be prohibited from doing so. Once first user 125 has completed entering the information about how artifact “School year 06/07” 232 is to be shared, first user 125 may select control 469 to complete the process or may select control 468 to cancel the process. If first user 125 completes the process, a message, such as an email message, may be sent to the users with whom the artifact is being shared, and the artifact may automatically appear in the navigation pane of the other users' interfaces.

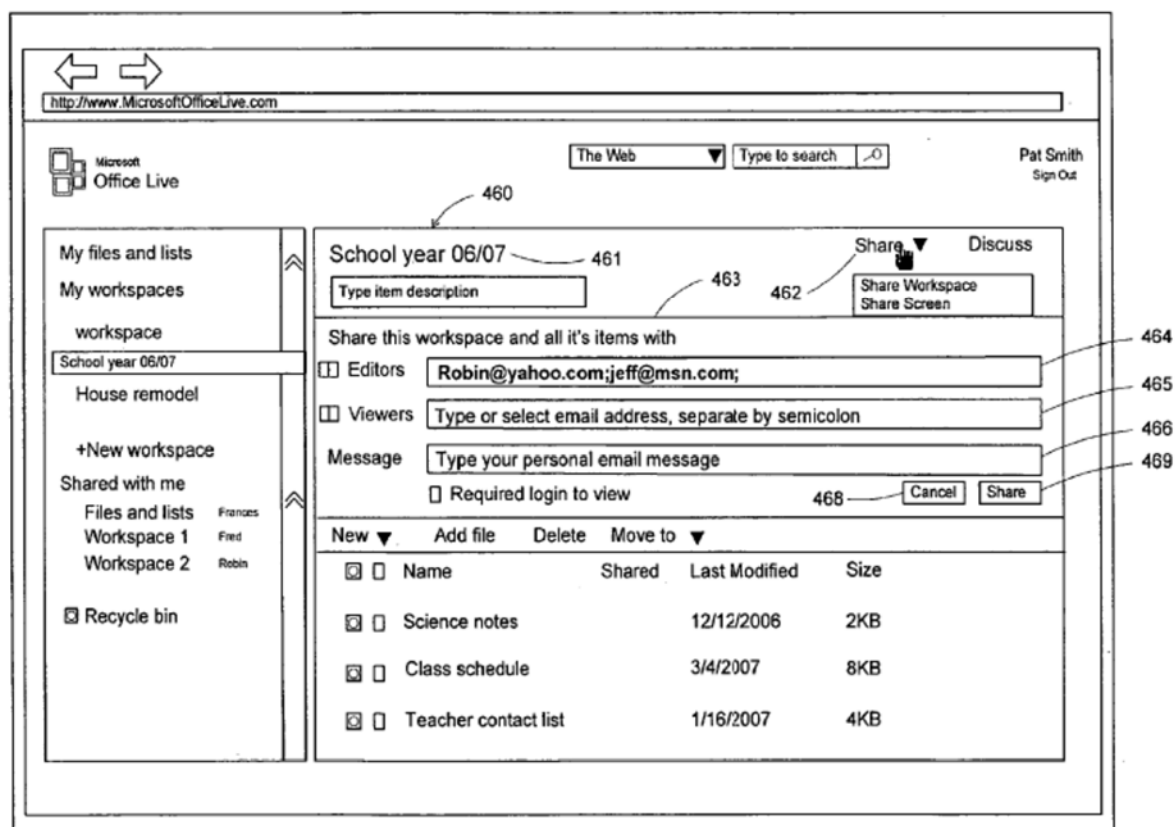
*Id.* at [0054] (emphasis added).

117. The limitation “indicia associated with at least one email address” can simply be indication or representation of the recipient’s mailbox address itself.

The specification of the '158 patent does not preclude the email address itself being an alias to the user's email address.

ii. *via the second user interface element, utilizing the at least one second interface*

118. Figure 4 of Do represents a second interface available to the first user. Do discloses a second user interface element in Figure 4. Text boxes shown as elements 464 and 465 in Figure 4 allow a first user to “type or select email address, separated by semicolon.”



**FIG. 4**

*Id.* Figure 4.

[0054] As another example of a command sequence by a user that results in sharing of an artifact, FIG. 4 shows work pane 460

after first user 125 has selected a control 462 to share workspace “School year 06/07” 232 with other users. Work pane 460 presents a group of controls 463 that first user 125 can use to share artifact “School year 06/07” 232 with other users. In control 464, first user 125 may list other users who are to be allowed to edit artifact “School year 06/07” 232. First user 125 may specify the other users via a username, email address, or any other means for identifying the other users. In control 465, first user 125 may similarly list other users who are to be allowed to view artifact “School year 06/07” 232. Another control 466 allows first user 125 to specify a message that is to be sent to the other users with whom artifact “School year 06/07” 232 is being shared. Other controls could also be used to specify how artifact “School year 06/07” 232 is to be shared. For example, sharing users could be allowed to further share the artifact with other users or could be prohibited from doing so. Once first user 125 has completed entering the information about how artifact “School year 06/07” 232 is to be shared, first user 125 may select control 469 to complete the process or may select control 468 to cancel the process. If first user 125 completes the process, a message, such as an email message, may be sent to the users with whom the artifact is being shared, and the artifact may automatically appear in the navigation pane of the other users' interfaces.

*Id.* at [0054].

- h. (3g) receive, from the first node via the at least one network, an indication to share the at least one folder;**

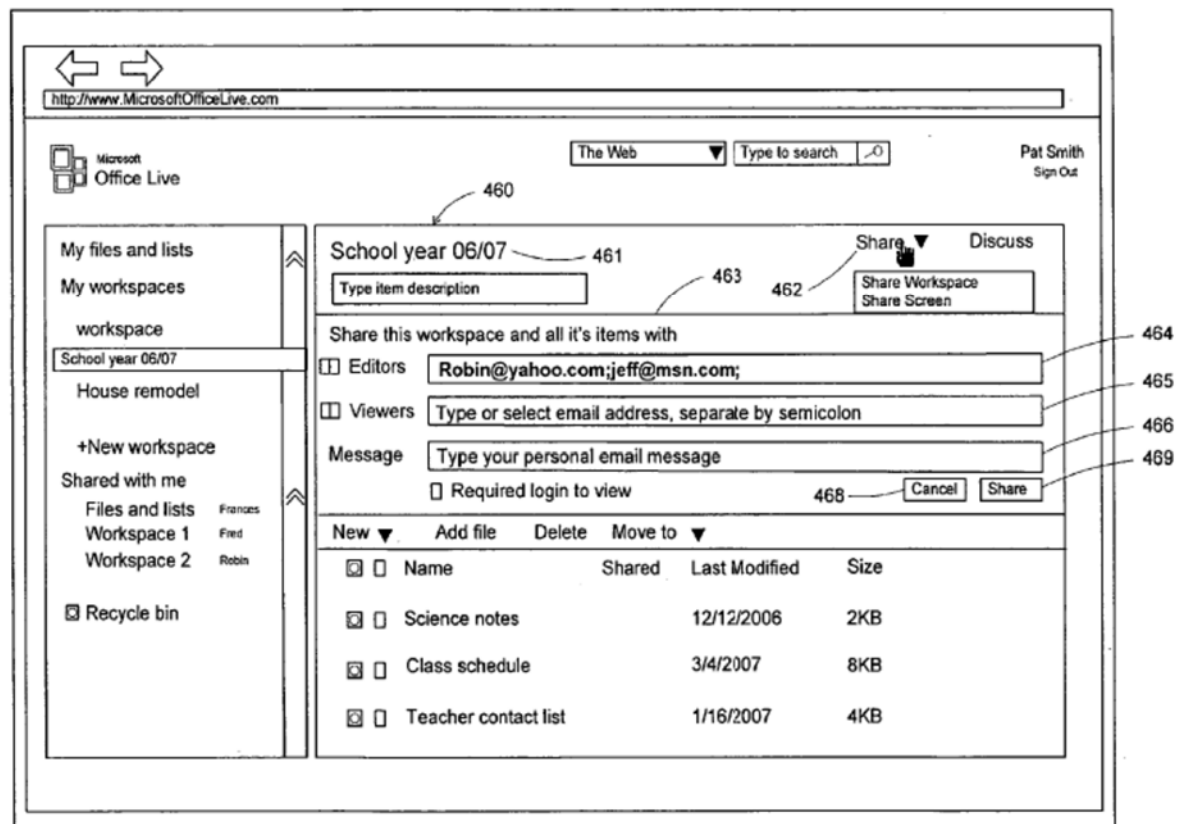
119. Do discloses first user actions that provide an indication to share a folder represented by an artifact. Figure 4 from Do represents an interface from which the user can provide an indication to share a folder.

[0054] As another example of a command sequence by a user that results in sharing of an artifact, FIG. 4 shows work pane 460 after first user 125 has selected a control 462 to share workspace “School year 06/07” 232 with other users. Work pane 460

presents a group of controls 463 that first user 125 can use to share artifact “School year 06/07” 232 with other users. In control 464, first user 125 may list other users who are to be allowed to edit artifact “School year 06/07” 232. First user 125 may specify the other users via a username, email address, or any other means for identifying the other users.

*Id.* at [0054].

120. Specifically, Do discloses the use of control 469 to indicate sharing with other users.



**FIG. 4**

*Id.* Figure 4.

121. FIG. 4 is a sketch of a first user's interface presenting a panel that allows the first user to share an artifact with other users. See [0014]. Element 469 represents

a “share” button on the interface that allows a first user to provide an indication to share the at least one folder. Alternatively, clicking the “cancel” button does not provide an indication to share with other users.

Once first user 125 has completed entering the information about how artifact “School year 06/07’ 232 is to be shared, first user 125 may select control 469 to complete the process or may select control 468 to cancel the process. If first user 125 completes the process, a message, such as an email message, may be sent to the users with whom the artifact is being shared, and the artifact may automatically appear in the navigation pane of the other users interfaces.

*Id.* at [0054].

- i. ***(3h) based on the receipt of the indication of the at least one folder, the indicia associated with the at least one email address, and the indication to share the at least one folder via the at least one network; generate at least one email message identifying the at least one folder and including a reference to the at least one folder, without including at least one file in the at least one folder as an attachment of the at least one email message;***
  - i. ***based on the receipt of the indication of the at least one folder, the indicia associated with the at least one email address, and the indication to share the at least one folder via the at least one network***

122. Claim element 3.h recites the receipt of three components:

- (1) the indication of the at least one folder (see claim element 3.d).
- (2) the indicia associated with the at least one email address (see claim element 3.f).
- (3) the indication to share the at least one folder via the at least one network (see claim element 3.g).



123. See analysis for claim elements 3.d, 3.f and 3.g showing the user interaction with a first and a second interface at the publishing node, *i.e.*, the claimed first node.

124. Do discloses that, based on the receipt of the three items listed above, the system “generate[s] at least one email message identifying the at least one folder and including a reference to the at least one folder.”

ii. ***generate at least one email message identifying the at least one folder and including a reference to the at least one folder***

125. Do discloses generating an email containing a link to a web page. For example, claims 17 and 18 of Do recite a generated email:

17. The method of claim 16, wherein the second user (135) is notified by an email message.

18. The method of claim 17, wherein the email message includes a link to a web page where the second (135) user can view the contents of the at least one artifact (232) before registering with the online service.

*Id.* at claims 17 and 18.

126. A POSITA would understand that when a user sends an email message which includes a link to a web page for viewing a file, the file itself would not also be included in the email. It would be counter intuitive for the user to also attach a copy of the file in the same email as a link to the file. The attachment of the file to such an email would be redundant and unnecessary.

127. The specification of Do discloses the generation of an email.

[0037] However, in some instances, a first user may desire to share an artifact with a second user who is not registered with the online service and therefore has no account or associated credentials. Accordingly, the online service may support sharing of artifacts with users who have not subscribed to the service and therefore do not have credentials. The first user may indicate the identity of the second user by an email address and the online service may inform the second user that an artifact has been shared with him or her by sending an email to that address. The email received by the second user may contain a message, may contain directions or instructions for accessing the shared artifact, and alternatively or additionally may include a web address with which the second user may be able to access the artifact. The second user may also choose to become a registered user, receiving credentials with which the user can access his or her own user interface. Once the second user registers, then the second user may access the online service using his or her credentials to access an interface and the shared artifact may automatically be listed in the second user's navigation pane without any further action by the first or second user.

*Id.* at [0037].

**iii. *without including at least one file in the at least one folder as an attachment of the at least one email message***

128. To the extent “*generat[ing] at least one email message identifying the at least one folder and including a reference to the at least one folder, without including at least one file in the at least one folder as an attachment of the at least one email message*” is not explicitly described in Do, the Shapiro reference discloses this element.

[0050] The integration module 301 integrates the sharing functionality throughout the operating system of the user's personal computer 101 and other applications on the user's personal computer 101. The functionality of the integration module 301 may also include one or more of the following:

Ex. 1009 at [0050].

[0052] An icon shown in an email application (e.g., Microsoft OUTLOOK) of the user's personal computer gives users the ability to email files through file sharing. Rather than sending a file attachment, a link to the user's shared content is placed in the email message. This eliminates the need to transmit the actual content, thus ensuring the email message will not be rejected due to size restrictions on the recipients email account.

*Id.* at [0052] (emphasis added).

129. Do would have been motivated to examine the prior art publication of Shapiro, which also discloses various methods of file sharing such as “push,” “pull,” and “peer-to-peer.” Shapiro highlights the disadvantages of an email “push” implementation.

### **Motivation to Combine Do and Shapiro**

#### **a) Do teaches away from sending to and storing at a client node**

130. The Do invention expresses the objective of providing an alternative to storage of files on individual computers.

Prior to widespread use of computer networks, computer users would generally store their files on a disc, either a hard disc that is internal to the computer or a floppy or external disc that can be separate from the computer.

Ex. 1008 at [0001].

131. The Do invention suggests the use of a central storage location for files so that remote computers can access files via a network connection.

[0002] As networking became more prevalent, computer users were more likely to store files on a server to which the computer

could connect over a network. Storing files on a remote server provides users with several benefits. For example, users can store backup copies of their files on a remote server. If the computer crashes or a disaster, such as a flood or a fire occurs, users can recover their data files. Users who store their files on servers may also be able to access their files from multiple locations without having to carry a disc with them. For example, users may be able to access their files from any computer with an Internet connection.

*Id.* at [0002].

The online service may then use this information to provide access to the shared artifact and to present an appropriate interface to each recipient, including a representation of the shared artifact. In such an embodiment, an e-mail notifying each recipient may be sent by the online service, though the e-mail may be sent by the user who initiated the sharing or from any other suitable source.

Ex. 1008 at [0055].

132. Hence, Do teaches that files being shared with other users is facilitated through the use of a central storage server, rather than sending such files to the individual client nodes for storage locally.

**b) Shapiro Identifies Disadvantages of “Push” Mechanisms Based on Email attachments**

133. Shapiro points out that the “push” email approach of file sharing, wherein the shared file is sent as an email attachment, creates its own set of problems.

Namely a "push" model for sharing the user's personal digital information may result in a user “forcing the information to be shared onto the recipient whether the recipient wants the information or not.” Shapiro also points out that the email

approach “becomes an impractical file sharing solution when dealing with large sized files and large numbers of files.”

[0008] Another known method of sharing files or personal digital information is via electronic mail communication and their associated attached files. The user sends an email and attaches the file to be shared. The email message recipient receives the email and shared file via an email server. This tends to be a more direct mechanism for sharing such information than the conventional centralized server approach where the user later requests the shared file. However, the email approach of file sharing is not without its own set of problems. Indeed, this email approach uses a "push" model for sharing the user's personal digital information. By doing so, the user may be forcing the information to be shared onto the recipient whether the recipient wants the information or not. Additionally, the email approach becomes an impractical file sharing solution when dealing with large sized files and large numbers of files.

Ex. 1009 at [0008] (emphasis added).

134. Shapiro instead advocates for a “pull” distribution model, such that the email notification of sharing comprises placing a link to the shared content in the email rather than attaching the file itself.

[0052] An icon shown in an email application (e.g., Microsoft OUTLOOK) of the user's personal computer gives users the ability to email files through file sharing. Rather than sending a file attachment, a link to the user's shared content is placed in the email message. This eliminates the need to transmit the actual content, thus ensuring the email message will not be rejected due to size restrictions on the recipients email account.

*Id.* at [0052] (emphasis added).

135. Once again identifies the deficiency of file size limitations when the entire file is sent as an attachment. A POSITA would have been motivated to avoid the

“push” architectural concepts alluded to in Do and Shapiro in favor of a “pull” file distribution mechanism that transfers a link by some means such as inside an email body, without transmitting the actual file contents.

### **Other Motivating Factors**

#### **c) Do’s disclosures of multi-user editing would not be feasible with local file storage**

136. A POSITA would also realize the advantage of not sending files to recipient client nodes expressed by Do in the excerpts above; that is, delivering copies of files to the recipient client nodes results in a loss of coherence with the original versions of the files emanating from the publishing node. In particular, Do provides permissions to multiple users to allow editing of a single word processing document. See discussion below.

137. Moreover, the disclosures of the Do reference focus on the distribution of artifacts to client nodes, and do not mention distribution of file content. For example, Do’s embodiments include the automatic listing of an artifact in a second user’s navigation pane.

Once the second user registers, then the second user may access the online service using his or her credentials to access an interface and the shared artifact may automatically be listed in the second user's navigation pane without any further action by the first or second user.

Ex. 1008 at [0037].

#### **d) Do discloses the editing of word processing files at a local node**

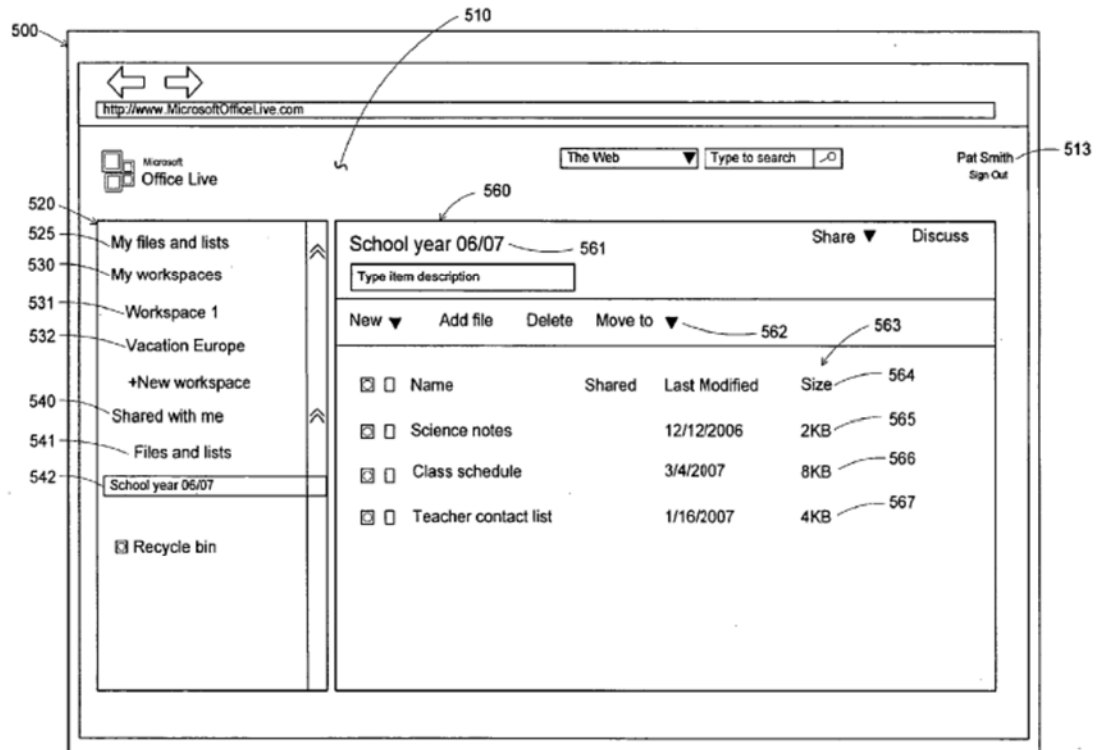
138. Figure 5 of Do is representative of an interface for a “second user,” i.e., the interface seen at a claimed second node. At paragraphs 0056-59, Do describes the user interface available to a second user as depicted in Figure 5<sup>10</sup>.

FIG. 5 shows an example of a user interface for second user 135 that may appear when second user 135 accesses her user interface following the sharing of artifact "School year 06/07" 232. Second user's interface may have a header pane 510 that indicates her name or username 513. Her interface may also have a navigation pane 520 that presents artifacts owned by her and artifacts shared with her. As before, the artifacts may be presented in a list "My files and lists" 525, a list "My workspaces" 530, and a list "Shared with me" 540. The online service may automatically render the user interface with a list "Shared with me" 540 including artifact "School year 06/07" 542 without requiring any action by second user 135 to include the shared artifact in her user interface.

*Id.* at [0056].

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<sup>10</sup> Paragraph 0057 refers to Figure 4, but identifies elements of Figure 5.



**FIG. 5**

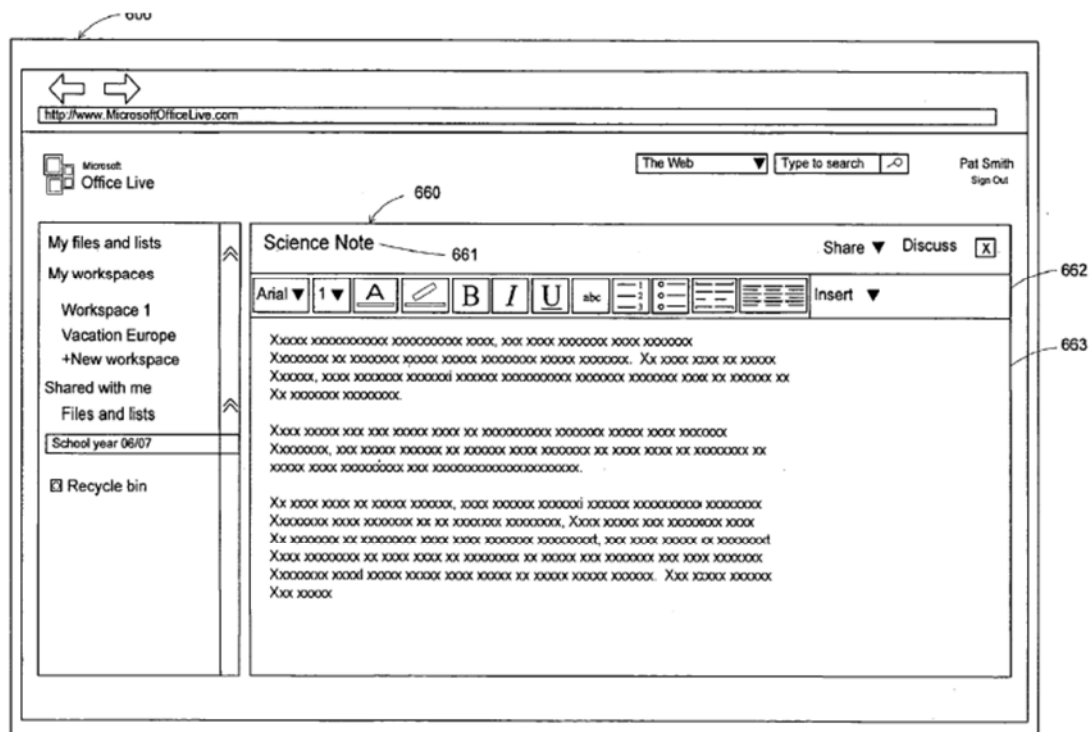
*Id.* Figure 5.

[0057] Second user's user interface 500 may also have a work pane 560. As described above, second user 135 may view the contents of her artifacts in work pane 560 by selecting one of her artifacts from list "My workspaces" 530. Second user 135 may also view the contents of artifacts shared with her from her "Shared with me" list 540. In the example of FIG. 4, second user 135 has selected artifact "School year 06/07" 542 in her navigation pane 520. The contents of artifact "School year 06/07" 542 are then presented in work pane 560 of second user's interface 500. The sharing of artifact "School year 06/07" 542 is thus integrated into the context of second user's interface 500. Second user 135 may not need to leave the context of her own user interface to view the contents of artifact "School year 06/07" 542, even though artifact "School year 06/07" 542 is owned by first user 125. Second user 135 may view artifacts shared with her in the same manner as her own artifacts.

*Id.* at [0057].



139. Figure 6 illustrates the result of a second user selecting the artifact “Science notes,” which as discussed previously represents a word processing document. See Do paragraphs 0050 and 0051 discussed for claim element 3.d. As one can see, the panel 663 contains the display of a textual document, i.e., the content corresponding to the artifact “Science notes.”



**FIG. 6**

*Id.* Figure 6.

[0058] From work pane 560, second user 135 may select artifact "Science notes" 565 in order to view the contents of artifact "Science notes" 565. FIG. 6 shows an example of second user's interface 600, after second user 135 selects artifact "Science notes" 565. The contents of artifact "Science notes" 565 are then presented in work pane 660 of second user's interface 600. As before, the sharing of artifact "Science notes" 565 is integrated into the context of second user's interface 600, and second user

135 does not need to leave the context of her own user interface to view the contents of the artifact.

*Id.* at [0058].

140. Do goes on to describe the editing of the textual document displayed in work pane 660.

[0059] In editing the contents of artifact "Science notes" 565, second user 135 may wish to discuss changes to the artifact with first user 125. The online service may also allow users to discuss artifacts in the context of the user's interface in the form of an online chat. An online chat allows a user to enter to enter a comment and for the comment to automatically and immediately appear on the other users' interfaces. Other users may similarly enter comments for all other users to see. FIG. 7 shows one possible embodiment where second user 135 discusses artifact "Science notes" 565 with other users. From her user interface 700, second user 135 may use control 701 to begin discussing artifact "Science notes" 565. In response to selecting control 701, user interface 700 may present another panel 702 where second user 135 can enter comments and read other users' comments. For example, panel 702 may include a control 703 whereby second user 135 can enter comments about artifact "Science notes" 565. After second user 135 enters a comment, second user's comment may automatically and immediately appear on the user interfaces of other users who are discussing artifact "Science notes" 565. Second user 135 may also view recent comments by other users in panel 702. For example, box 704 shows a comment by a user with a user name "Francis" and box 705 shows a comment by a user with a user name "Robin." Panel 702 may also include other controls relevant to discussing artifact "Science notes" 565. For example, control 706 may allow a user to view previous comments about artifact "Science notes" 565.

*Id.* at [0059].

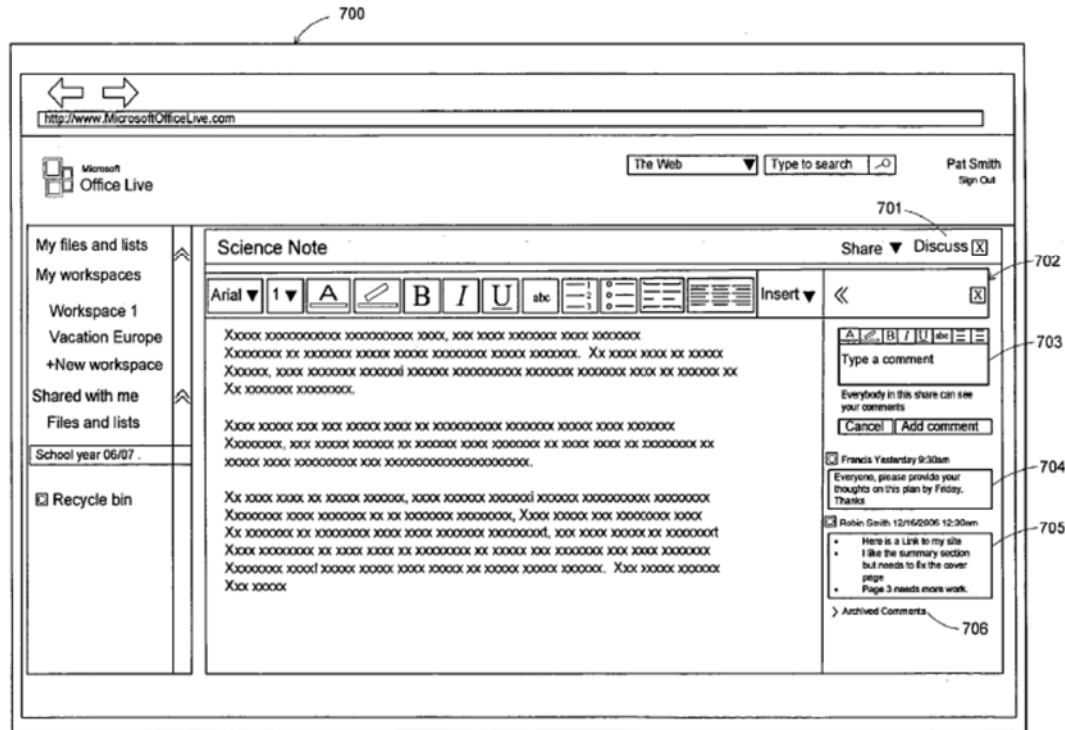


FIG. 7

*Id.* Figure 7.

**e) The Do assignment of access rights and edit permissions is not feasible for locally distributed files**

141. The Do system allows multiple users to be designated the right to edit a single document represented by a shared artifact, in addition to the owner (i.e. publisher) of the artifact.

[0061] Information in database 810 may also define one or more users who should be permitted to access the artifact and the level of access each user is to be permitted. For example, column 823 may contain a unique identification number of the user who owns the artifact. The owner of an artifact may be determined by the online service. For example, the user creating an artifact may become the owner of the artifact. Column 824 may contain a list of one or more users who have permission to view and edit the artifact. Column 825 may contain a list of one or more users who have permission to only view the artifact.

*Id.* at [0061] (emphasis added).

142. See also Figures 8 and 9 of Do illustrating tables for access rights assigned to users with different “user IDs.”

143. A POSITA would appreciate that with multiple users having the ability to edit a word processing document, there would need to maintain a single shared copy of the document. As such, Do does not suggest nor teach explicitly, the copying of files from a *publishing node* to the local storage memory of a *client node*, nor does Do suggest any feasible possibility for multi-user editing other than not copying the original document file and not sending a copy of the original file by email to other users..

- j. *(3i) send, to a second node via the at least one network, the at least one email message, without including the at least one file in the at least one folder as an attachment of the at least one email message*

144. Claim element 3.i adds the limitation of *sending* the generated email message.

- i. *without including the at least one file in the at least one folder as an attachment of the at least one email message*

145. See analysis for claim element 3.h regarding “generate at least one email message identifying the at least one folder and including a reference to the at least one folder, without including at least one file in the at least one folder as an attachment of the at least one email message.”

- ii. *send, to a second node via the at least one network, the at least one email message*

146. Do discloses the sending of an email containing details of an artifact to be shared.

[0075] At block 1220, the second user is notified that the first user has shared an artifact with the second user. Any appropriate method could be used for notification, such as an email message sent to the second user. The notification may include any relevant information such as the identity of the first user, the artifact being shared, instructions describing how the second user can access the shared artifact, and instructions describing how the second user can register with the online service. The notification may also include a token that uniquely identifies the sharing transaction. The token could be a number, a sequence of characters, or anything else that could be used to uniquely identify the sharing transaction.

Ex. 1008 at [0075] (emphasis added).

- k. *(3j) based on the receipt of the indication of the at least one folder, the indicia associated with the at least one email address, and the indication to share the at least one folder via the at least one network; cause, utilizing particular code configured to be stored on a storage at the second node and further configured to cooperate with a file explorer interface, creation of a representation of the at least one folder in a location among one or more folders on the file explorer interface, where the storage at the second node does not store the at least one file when the creation of the representation of the at least one folder is caused;*
  - i. *based on the receipt of the indication of the at least one folder, the indicia associated with the at least one email address, and the indication to share the at least one folder via the at least one network*

147. Claim element 3.j recites the receipt of three components:

- (1) the indication of the at least one folder (see claim element 3.d).
- (2) the indicia associated with the at least one email address (see claim element 3.f).
- (3) the indication to share the at least one folder via the at least one network (see claim element 3.g).

148. See analysis for claim elements 3.d, 3.f and 3.g showing the user interaction with a first and a second interface at the publishing node, i.e., the claimed first node.

149. Do discloses that, based on the receipt of the three items listed above, code is executed at the client node (the claimed second node) “creation of a representation of the at least one folder.”

- ii. ***cause, utilizing particular code configured to be stored on a storage at the second node and further configured to cooperate with a file explorer interface creation of a representation of the at least one folder in a location among one or more folders on the file explorer interface***

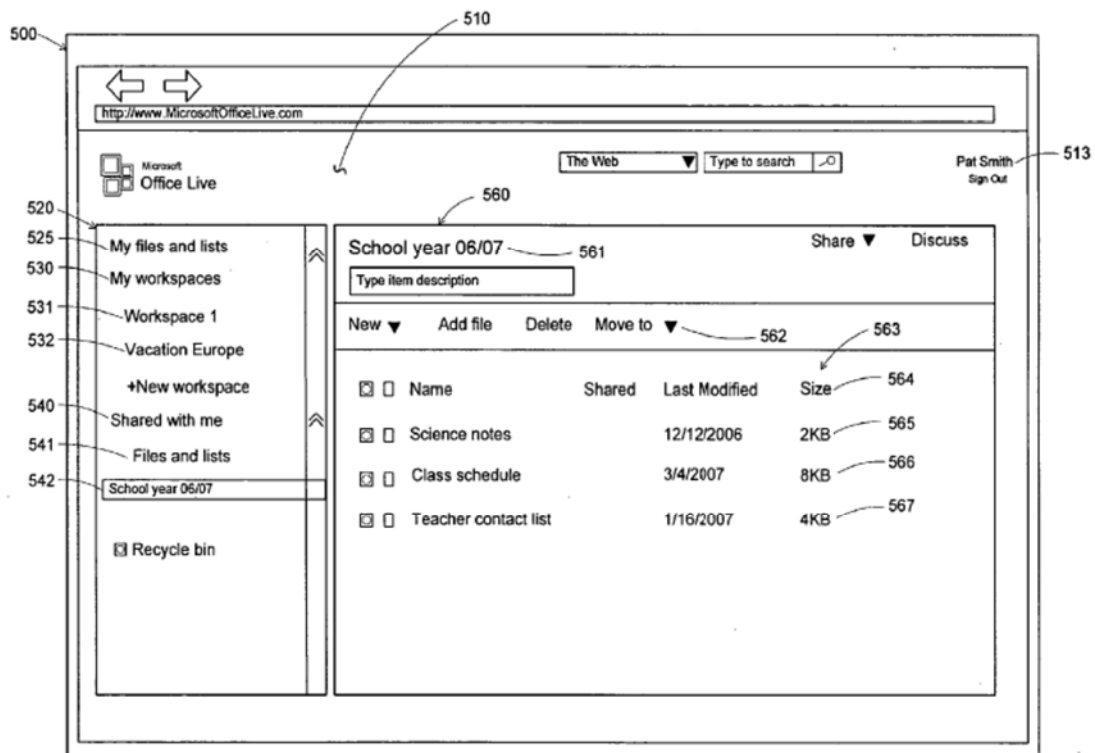
150. Do discloses a file explorer interface at the second node (***client node***).

[0055] In the embodiment illustrated, information input by the user is captured by the online service and used to record information, such as in database 160 (FIG. 1), indicating that a second user is to be given access to the shared artifact. The online service may then use this information to provide access to the shared artifact and to present an appropriate interface to each recipient, including a representation of the shared artifact. In such an embodiment, an e-mail notifying each recipient may be sent by the online service, though the e-mail may be sent by the user who initiated the sharing or from any other suitable source.

*Id.* at [0055].

[0056] In the example of FIG. 4, first user 125 shared artifact "Schoolyear 06/07" 232 with a user having the email address "Robin.RTM.yahoo.com." In this example, this e-mail may be the email address of second user 135. FIG. 5 shows an example of a user interface for second user 135 that may appear when second user 135 accesses her user interface following the sharing of artifact "School year 06/07" 232. Second user's interface may have a header pane 510 that indicates her name or username 513. Her interface may also have a navigation pane 520 that presents artifacts owned by her and artifacts shared with her. As before, the artifacts may be presented in a list "My files and lists" 525, a list "My workspaces" 530, and a list "Shared with me" 540. The online service may automatically render the user interface with a list "Shared with me" 540 including artifact "School year 06/07" 542 without requiring any action by second user 135 to include the shared artifact in her user interface.

*Id.* at [0056].



*Id.* Figure 5.

151. Do discloses the creation of a representation of a file or folder “in a location among one or more folders on the file explorer interface.”

[0072] An example of an interface is shown in FIG. 5, where the shared artifact is "School year 06/07" 542, but any suitable interface could be used. If the second user is viewing the second user's interface at the time that the first user shares the artifact with the second user, then the shared artifact may be automatically added to the second user's interface while the second user is viewing it. If the second user is not viewing the second user's interface at the time that the first user shares the artifact with the second user, then the shared artifact may automatically appear in the second user's interface the next time the second user accesses his or her interface. At block 1130, the second user selects the shared artifact to view the contents of the shared artifact in the context of the second user's interface. An example of an interface is shown in FIG. 5, but any suitable interface could be used.

*Id.* at [0072] (emphasis added).

152. The artifact "School year 06/07" represents a workspace that contains several artifacts including artifacts representing files or additional folders. The shared artifact "School year 06/07" 542 is integrated into the context of second user's interface 500. i.e., integrated into the file second user's file explorer interface.

[0057] Second user's user interface 500 may also have a work pane 560. As described above, second user 135 may view the contents of her artifacts in work pane 560 by selecting one of her artifacts from list "My workspaces" 530. Second user 135 may also view the contents of artifacts shared with her from her "Shared with me" list 540. In the example of FIG. 4, second user 135 has selected artifact "School year 06/07" 542 in her navigation pane 520. The contents of artifact "School year 06/07"



542 are then presented in work pane 560 of second user's interface 500. The sharing of artifact "School year 06/07" 542 is thus integrated into the context of second user's interface 500. Second user 135 may not need to leave the context of her own user interface to view the contents of artifact "School year 06/07" 542, even though artifact "School year 06/07" 542 is owned by first user 125. Second user 135 may view artifacts shared with her in the same manner as her own artifacts.

*Id.* at [0057] (emphasis added).

As before, the sharing of artifact "Science notes" 565 is integrated into the context of second user's interface 600, and second user 135 does not need to leave the context of her own user interface to view the contents of the artifact.

*Id.* at [0058].

153. Do discloses the creation of a representation in a file explorer interface:

[0031] In comparison, the online service may automatically add the shared artifact to the recipient's navigation pane, and further, the online service may allow the recipient to organize the shared artifacts to his or her liking. Further, the shared artifact may appear without distractions caused by accessing the artifact in the context in which it is stored. For example, an artifact may be stored in a folder within a directory structure that contains other folders and other artifacts. The other folders and files may be irrelevant to the recipient. Presenting a representation of an artifact in the context of the recipient's interface allows the artifact to be presented without distractions that could be caused by presenting the artifact in the context in which the artifact is stored.

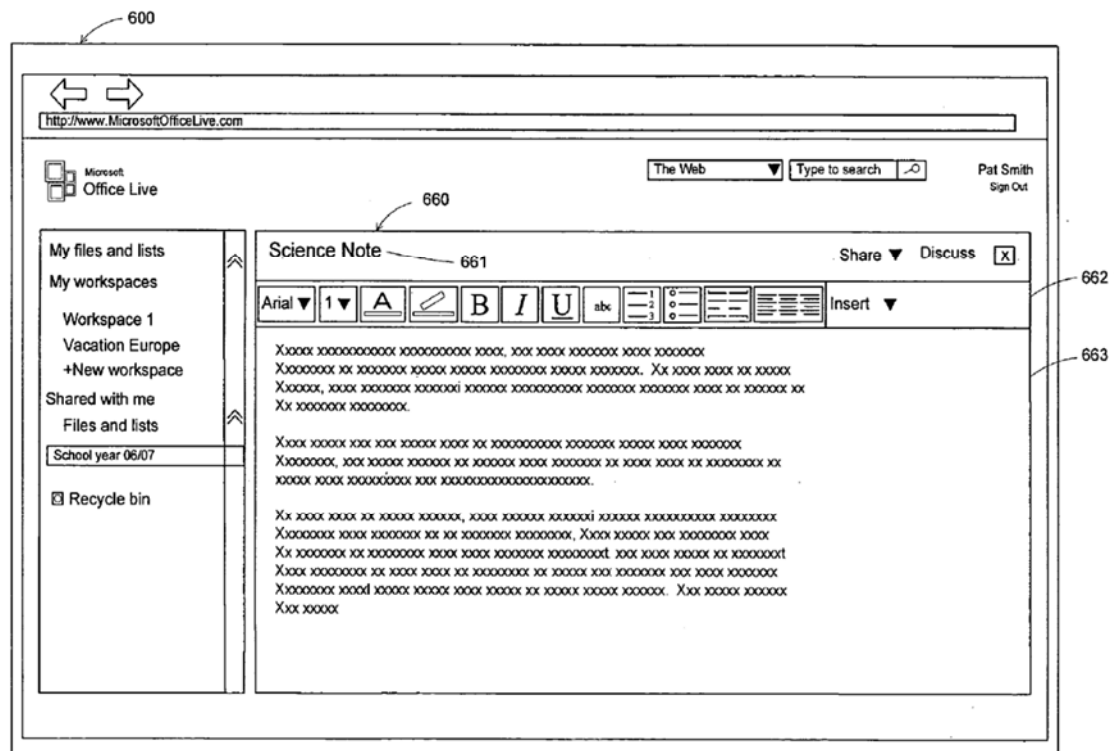
*Id.* at [0031].

[0035] How the information contained in an artifact is displayed may depend on the type of an artifact. For example, if the selected artifact is a workspace or a folder, the work pane may display a representation of the artifacts contained within the

workspace or folder. This information may be presented in the form of a list, may be presented as icons, or maybe presented in any other suitable fashion.

*Id.* at [0035].

154. Figure 6 illustrates the display of a shared artifact in a file viewing window.



*Id.* Figure 6.

- iii. *where the storage at the second node does not store the at least one file when the creation of the representation of the at least one folder is caused*

155. The analysis provided for claim element 3h in section V.B.9 pertaining to the claim limitation “including a reference to the at least one folder, without including at least one file in the at least one folder as an attachment of the at least one email message” establishes that the system of Do would be strongly motivated to not attach a file being shared to an email sent to a client user.

156. Similarly, the “sending” claim element 3i discussed in section VII.A.1.j is performed by Do without attaching a file to the sent email.

157. Accordingly, the second node of this claim element will not receive an attached file and will not be capable of satisfying “*storage at the second node [that] does not store the at least one file when the creation of the representation of the at least one folder is caused.*”

158. See analysis in sections VII.A.1.i and VII.A.1.j, which are included here by reference.

- l. (3k) cause, at the second node, display of the representation of the at least one folder in the location among the one or more folders on the file explorer interface;**

159. Figure 5 of Do is representative of an interface for a “second user,” i.e., the interface seen at a claimed second node. At paragraphs 0056-59, Do describes the user interface available to a second user as depicted in Figure 5<sup>11</sup>.

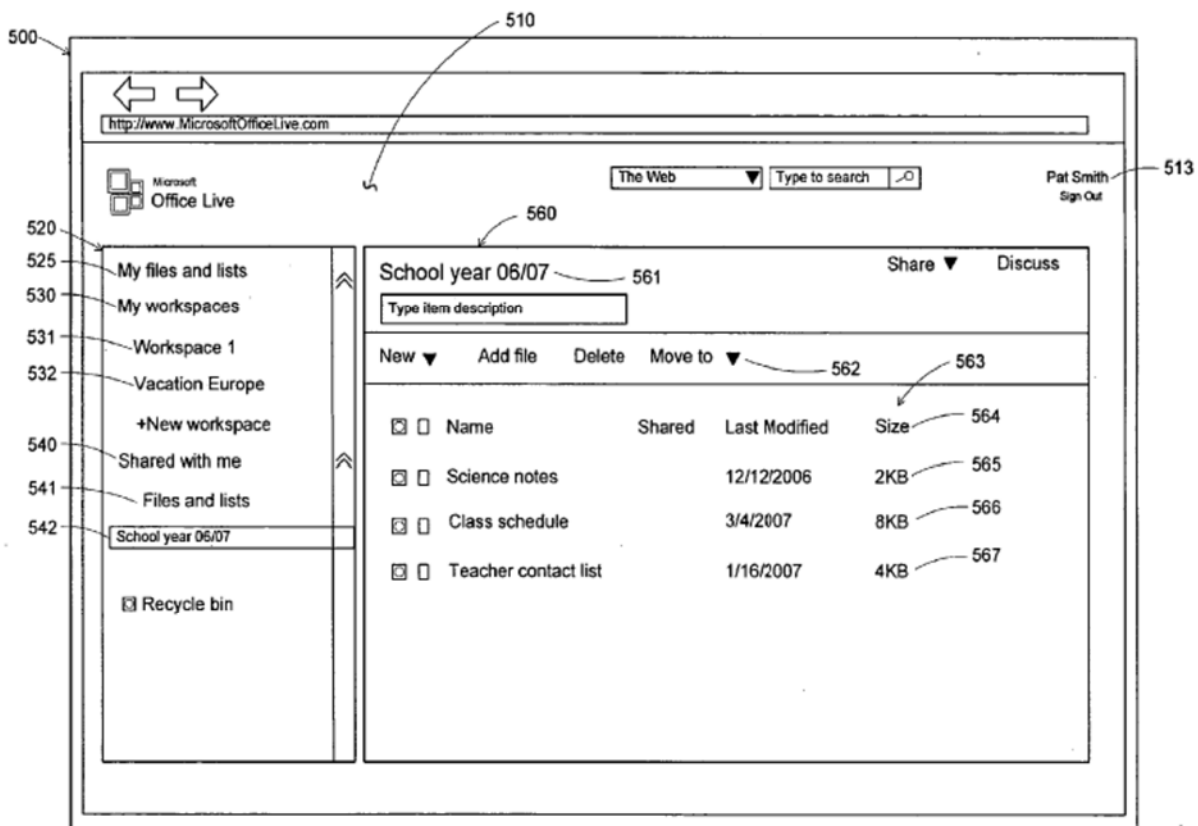
FIG. 5 shows an example of a user interface for second user 135 that may appear when second user 135 accesses her user interface following the sharing of artifact "School year 06/07" 232. Second user's interface may have a header pane 510 that indicates her name or username 513. Her interface may also have a navigation pane 520 that presents artifacts owned by her and artifacts shared with her. As before, the artifacts may be presented in a list "My files and lists" 525, a list "My workspaces" 530, and a list "Shared with me" 540. The online service may automatically render the user interface with a list "Shared with me" 540 including artifact "School year 06/07" 542 without requiring any

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<sup>11</sup> Paragraph 0057 refers to Figure 4, but identifies elements of Figure 5.

action by second user 135 to include the shared artifact in her user interface.

*Id.* at [0056].



**FIG. 5**

*Id.* Figure 5.

[0057] Second user's user interface 500 may also have a work pane 560. As described above, second user 135 may view the contents of her artifacts in work pane 560 by selecting one of her artifacts from list "My workspaces" 530. Second user 135 may also view the contents of artifacts shared with her from her "Shared with me" list 540. In the example of FIG. 4, second user 135 has selected artifact "School year 06/07" 542 in her navigation pane 520. The contents of artifact "School year 06/07" 542 are then presented in work pane 560 of second user's interface 500. The sharing of artifact "School year 06/07" 542 is thus integrated into the context of second user's interface 500.

Second user 135 may not need to leave the context of her own user interface to view the contents of artifact "School year 06/07" 542, even though artifact "School year 06/07" 542 is owned by first user 125. Second user 135 may view artifacts shared with her in the same manner as her own artifacts.

*Id.* at [0057].

- m. *(3l) detect, at the second node, an indication to open the at least one file in the at least one folder; and*

160. Do discloses a second user selecting a file to view based on the displayed user interface representation of the file. Figures 11 and 12 illustrate the selection of an artifact displayed on the second user's interface for a registered user and a user who is not registered respectively.

161. With reference to Figure 11, Do discloses a second user providing an indication of a file to be displayed based on selection of an artifact representation displayed in the second user's interface.

[0072] An example of an interface is shown in FIG. 5, where the shared artifact is "School year 06/07" 542, but any suitable interface could be used ... [a]t block 1130, the second user selects the shared artifact to view the contents of the shared artifact in the context of the second user's interface. An example of an interface is shown in FIG. 5, but any suitable interface could be used.

*Id.* at [0072] (emphasis added).

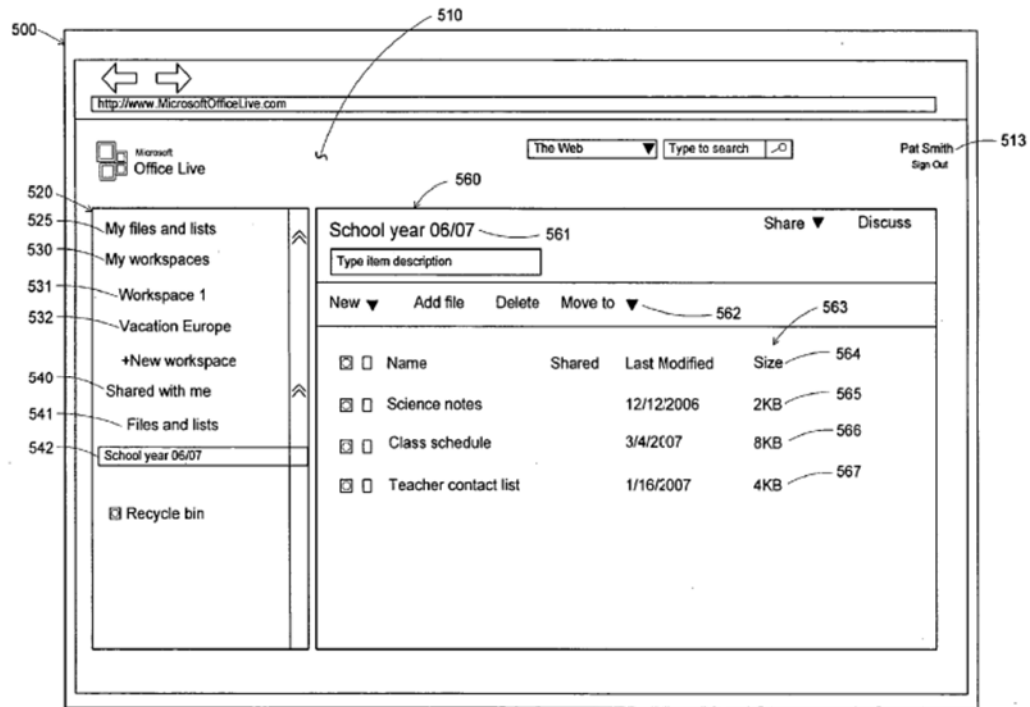
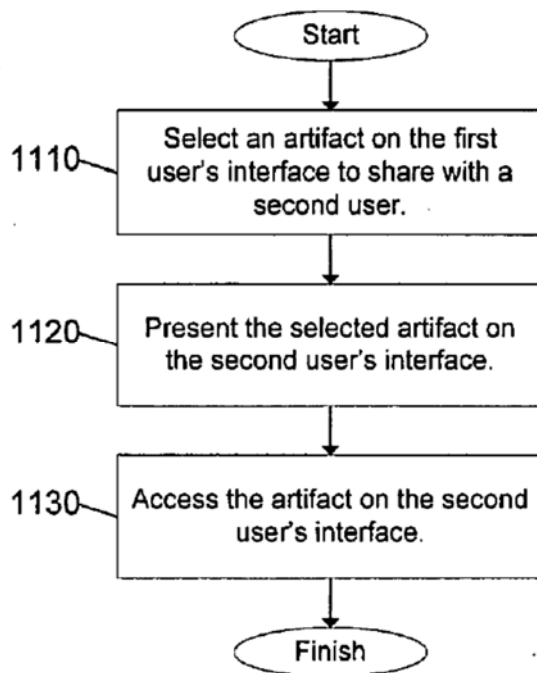


FIG. 5

Id. Figure 5.



Do Figure 11.

162. Do describes the selection and display of the contents of a file on the second user's display.

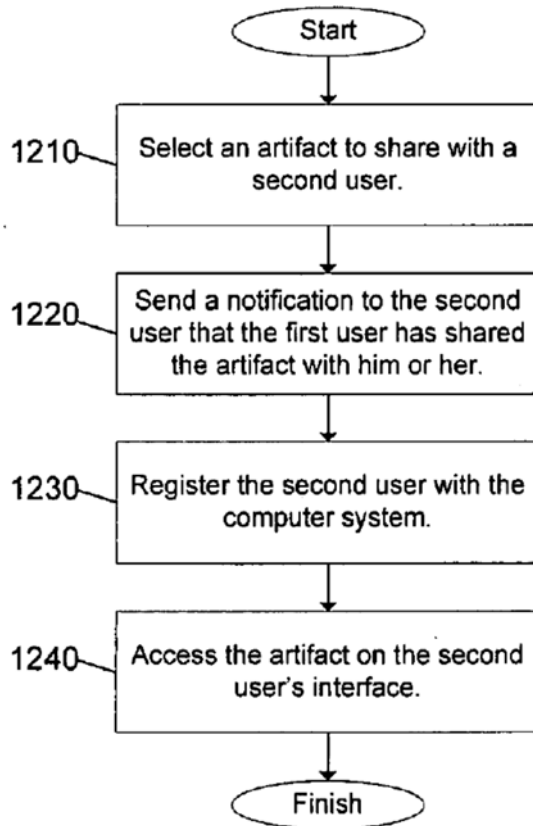
As before, the sharing of artifact "Science notes" 565 is integrated into the context of second user's interface 600, and second user 135 does not need to leave the context of her own user interface to view the contents of the artifact.

*Id.* at [0058].

[0078] The online service may then render a user interface for the second user and automatically include the file shared by the first user in the second user's interface. At block 1240, the second user accesses the second user's interface. The file shared by the first user will automatically appear in the second user's interface. An example of an interface is shown in FIG. 5, where the shared artifact is "School year 06/07" 542, but any suitable interface could be used. The second user may then be able to select the shared artifact and view the contents of the shared artifact in the context of the second user's interface.

*Id.* at [0078] (emphasis added).

163. Hence, as identified in the Figure 12 flowchart element 1240, the second user selects the shared artifact and views the contents of the shared artifact in the second user's interface.



*Id.*, Figure 12.

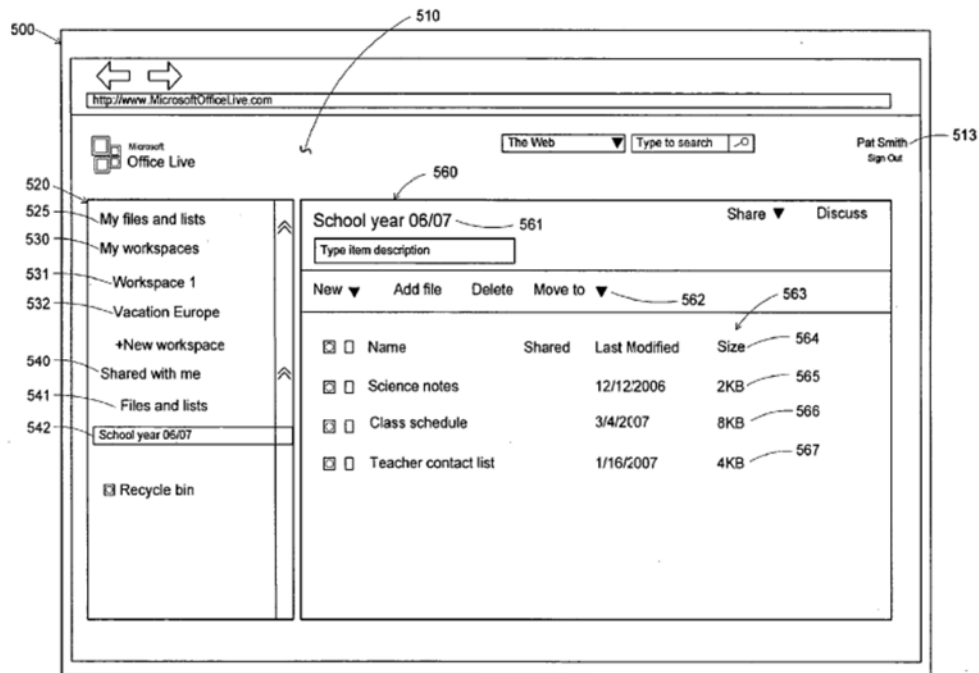
- n. *(3m) in response to detection of the indication to open the at least one file in the at least one folder, cause retrieval of the at least one file via the at least one network for permitting display of the at least one file at the second node.*

164. With reference to Figure 11, Do discloses a second user providing an indication of a file to be displayed based on selection of an artifact representation displayed in the second user's interface.

[0072] An example of an interface is shown in FIG. 5, where the shared artifact is "School year 06/07" 542, but any suitable interface could be used ... [a]t block 1130, the second user selects the shared artifact to view the contents of the shared artifact in the context of the second user's interface. An example of an interface is shown in FIG. 5, but any suitable interface could be used.

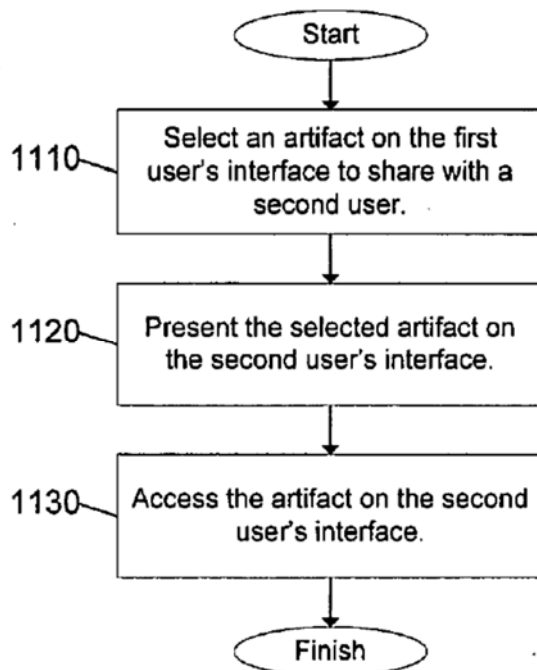


*Id.* at [0072] (emphasis added).



**FIG. 5**

*Id.* Figure 5.



*Id.* Figure 11.

165. Do describes the selection and display of the contents of a file on the second user's display.

As before, the sharing of artifact "Science notes" 565 is integrated into the context of second user's interface 600, and second user 135 does not need to leave the context of her own user interface to view the contents of the artifact.

*Id.* at [0058].

[0078] The online service may then render a user interface for the second user and automatically include the file shared by the first user in the second user's interface. At block 1240, the second user accesses the second user's interface. The file shared by the first user will automatically appear in the second user's interface. An example of an interface is shown in FIG. 5, where the shared artifact is "School year 06/07" 542, but any suitable interface could be used. The second user may then be able to select the shared artifact and view the contents of the shared artifact in the context of the second user's interface.

*Id.* at [0078] (emphasis added).

166. Hence, as identified in the Figure 12 flowchart element 1240, the second user selects the shared artifact and views the contents of the shared artifact in the second user's interface.

167. Thus, the second user satisfies the limitation of “*in response to detection of the indication to open the at least one file in the at least one folder.*”

## 2. Claim 4

**The apparatus of claim 3, wherein the apparatus is configured such that the indicia associated with the at least one email address**

**includes an alias associated with the at least one email address.**

168. The email indicia shown on the user's file explorer interface is the email address of the recipient of the artifacts being shared. In the screen shot depicted in figure 4 of Do, one user is identified as having an email address robin@yahoo.com.

However, in some instances, a first user may desire to share an artifact with a second user who is not registered with the online service and therefore has no account or associated credentials. Accordingly, the online service may support sharing of artifacts with users who have not subscribed to the service and therefore do not have credentials. The first user may indicate the identity of the second user by an email address and the online service may inform the second user that an artifact has been shared with him or her by sending an email to that address. The email received by the second user may contain a message, may contain directions or instructions for accessing the shared artifact, and alternatively or additionally may include a web address with which the second user may be able to access the artifact. The second user may also choose to become a registered user, receiving credentials with which the user can access his or her own user interface. Once the second user registers, then the second user may access the online service using his or her credentials to access an interface and the shared artifact may automatically be listed in the second user's navigation pane without any further action by the first or second user.

*Id.* at [0037].

169. The '158 Patent also points to email indicia that is in the form of an alias.

See e.g., '158 Patent 15:17-21, 19:18-38 and Figure 6A referring to aliases

“William” and “Dad.”

170. It was well known as of the '158 patent priority date that email recipients could be identified by a combination of fields including the recipients actual email address and an alias. For example, RFC 2822 at section 3.4 provides a set of defining specifications for the recipient field of an email.

#### **3.4. Address Specification**

Addresses occur in several message header fields to indicate senders and recipients of messages. An address may either be an individual mailbox, or a group of mailboxes.

address	=	mailbox / group
mailbox	=	name-addr / addr-spec
name-addr	=	[display-name] angle-addr
angle-addr	=	[CFWS] "<" addr-spec ">" [CFWS] / obs-angle-addr
group	=	display-name ":" [mailbox-list / CFWS] ";" [CFWS]
display-name	=	phrase
mailbox-list	=	(mailbox *(", " mailbox)) / obs-mbox-list
address-list	=	(address *(", " address)) / obs-addr-list

Ex. 1010 at 15-16 (section 3.4).

addr-spec	=	local-part "@" domain
local-part	=	dot-atom / quoted-string / obs-local-part
domain	=	dot-atom / domain-literal / obs-domain
domain-literal	=	[CFWS] "[" *([FWS] dcontent) [FWS] "]" [CFWS]

*Id.* at 17 (section 3.4).

171. The RFC 2822 specification excerpts provided above for the recipient field include an optional “display-name,” representing an alias, and the “addr-spec” representing the email address.

A mailbox receives mail. It is a conceptual entity which does not necessarily pertain to file storage. For example, some sites may choose to print mail on a printer and deliver the output to the addressee's desk. Normally, a mailbox is comprised of two parts: (1) an optional display name that indicates the name of the recipient (which could be a person or a system) that could be displayed to the user of a mail application, and (2) an addr-spec address enclosed in angle brackets ("<" and ">"). There is also an alternate simple form of a mailbox where the addr-spec address appears alone, without the recipient's name or the angle brackets. The Internet addr-spec address is described in section 3.4.1.

*Id.* at 16 (section 3.4).

172. An example of this recipient format is shown below for a person named “Mary Smith” with email address “mary@example.net.”

```
From: John Doe <jdoe@machine.example>
Sender: Michael Jones <mjones@machine.example>
To: Mary Smith <mary@example.net>
Subject: Saying Hello
Date: Fri, 21 Nov 1997 09:55:06 -0600
Message-ID: <1234@local.machine.example>

This is a message just to say hello.
So, "Hello".
----
```

*Id.* at p. 42.

173. It would have been obvious for a POSITA to combine the teachings of the Internet Message Format specification RFC 2822 with the Do reference.

### 3. Claim 5

**The apparatus of claim 3, wherein the apparatus is configured such that the indicia associated with the at least one email address includes the at least one email address.**

174. The indicia disclosed by Do that is associated with the email address is the email address of the recipient or recipients. See discussion of claim element 3f in section VII.A.1.g.

175. The email indicia shown on the user's file explorer interface is the email address of the recipient of the artifacts being shared. In the screen shot depicted in figure 4 of Do, one user is identified as robin@yahoo.com.

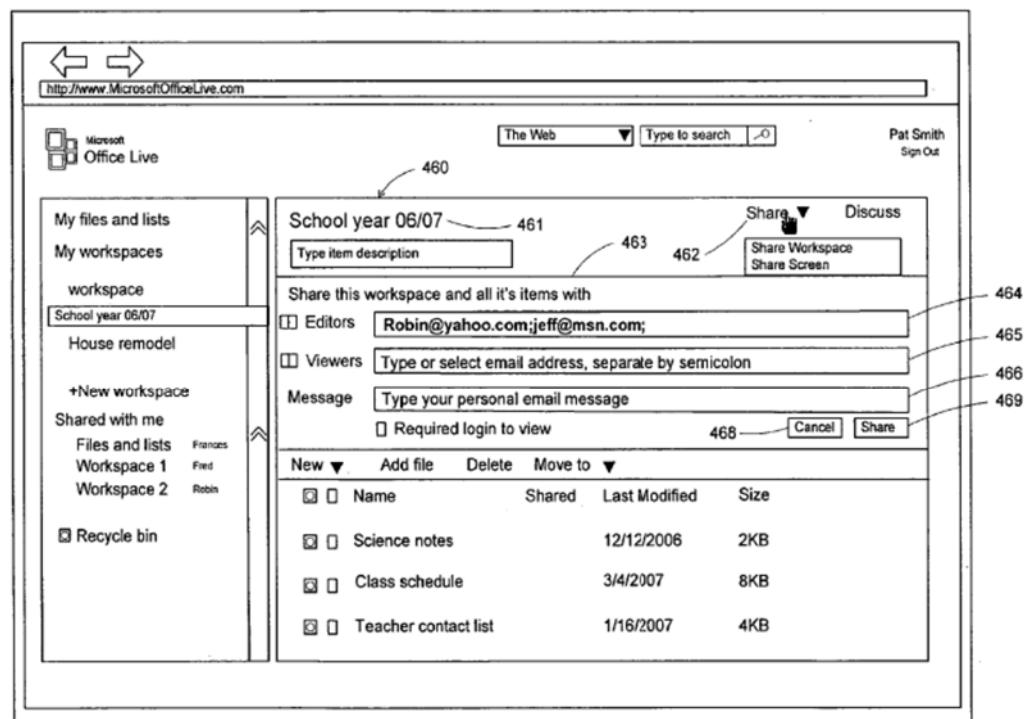


FIG. 4

Ex. 1008, Figure 4.

#### 4. Claim 6

**The apparatus of claim 3, wherein the apparatus is configured such that the at least one first interface and the at least one second interface are separate windows that are displayed utilizing a single web page.**

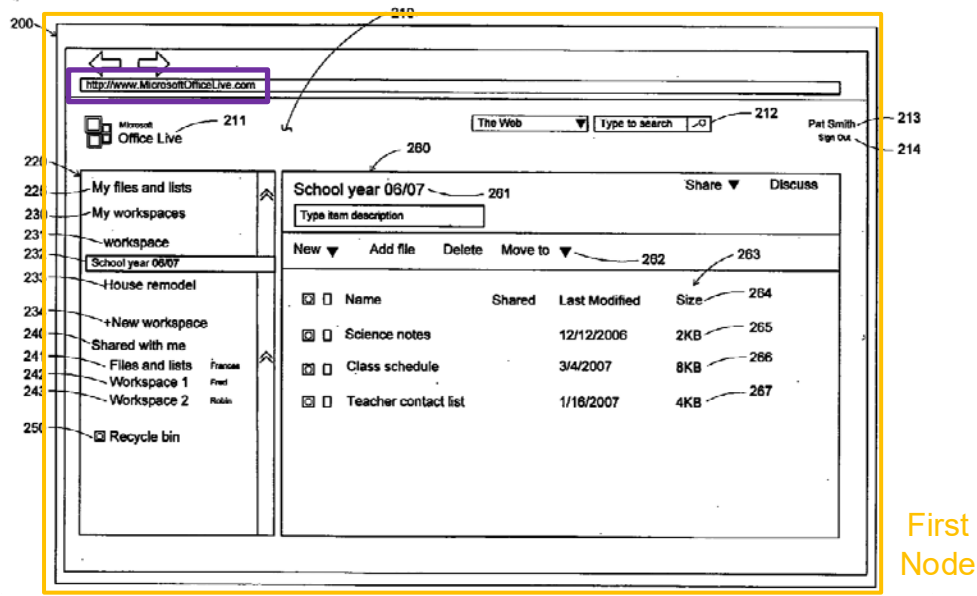
176. Figure 2 of Do and the accompanying description of Figure 2 identifies a first interface that is displayed at the first user interface utilizing a single web page:. Figure 4 of Do and the accompanying description of Figure 4 identifies a second interface that is displayed at the first user interface utilizing the single web page:

In operation, first user 125 may access the online service from computer 120 and authenticate herself to online service with credentials, such as a username and password. After authentication, the online service may present the first user's interface, which first user 125 may view on the display of computer 120. To create such an interface, server 150 may render the interface in a format that can be displayed by computer 120. The specific format is not critical to the invention. As one example, computer 120 may be configured with a web browser that displays HTTP pages and server 150 may render the interface as one or more HTTP pages. Using a browser-based interface may allow a user to access artifacts on server 150 from any computer that supports such a browser. However, any suitable format may be used to exchange information between a user computer and the online web service.

*Id.* at [0042].

FIG. 2 shows an example of a user interface 200 that may be presented to first user 125. User interface 200 may present one or more types of information to a user and receive one or more types of commands or other information from the user during interactions with the online service. The interface may present information that allows the user to manipulate artifacts and to interact collaboratively. In some embodiments, the interface may be organized into one or more panes, each containing a subset of information presented to the user and command objects accessible by the user.

*Id.* at [0043].

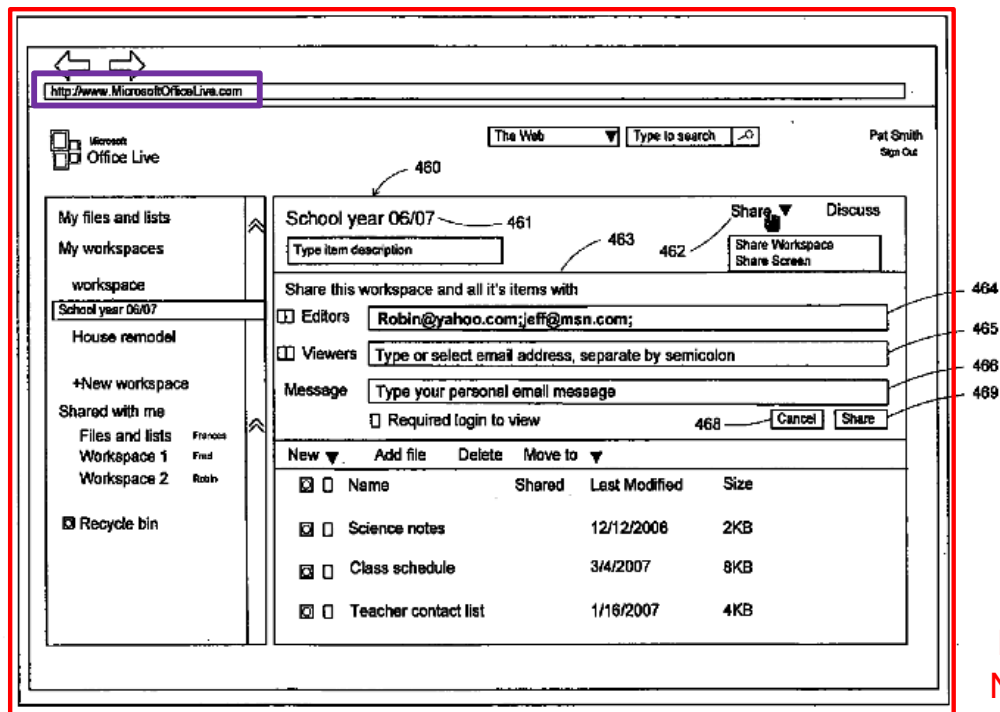


Ex. 1008, FIG. 2 (annotated).

[0054] As another example of a command sequence by a user that results in sharing of an artifact, FIG. 4 shows work pane 460 after first user 125 has selected a control 462 to share workspace “School year 06/07” 232 with other users. Work pane 460 presents a group of controls 463 that first user 125 can use to share artifact “School year 06/07” 232 with other users. In control 464, first user 125 may list other users who are to be allowed to edit artifact “School year 06/07” 232. First user 125 may specify the other users via a username, email address, or any other means for identifying the other users. In control 465, first user 125 may similarly list other users who are to be allowed to view artifact “School year 06/07” 232. Another control 466 allows first user 125 to specify a message that is to be sent to the other users with whom artifact “School year 06/07” 232 is being shared. Other controls could also be used to specify how artifact “School year 06/07” 232 is to be shared. For example, sharing users could be allowed to further share the artifact with other users or could be prohibited from doing so. Once first user 125 has completed entering the information about how artifact “School year 06/07” 232 is to be shared, first user 125 may select control 469 to complete the process or may select control 468 to cancel the process.



*Id.* at [0054].



First  
Node

Ex. 1008, FIG. 4 (annotated).

177. As one can see from the URL <http://www.MicrosoftOfficeLive.com>, which is common to both interfaces depicted in Figures 2 and 4, the two user interfaces are in “separate windows that are displayed utilizing a single web page.”

## 5. Claim 7

**The apparatus of claim 3, wherein the one or more processors execute the instructions to: receive, from the second node via the at least one network, an indication of a selection of the reference to the at least one folder; and cause, at the second node, display of the at least one folder, utilizing third hypertext markup language-equipped code.**

- a. *The apparatus of claim 3, wherein the one or more processors execute the instructions*

178. See element 3.a-3.c discussing the apparatus of claim 3, wherein the one or more processors execute instructions.

- b. *receive, from the second node via the at least one network, an indication of a selection of the reference to the at least one folder*

179. The second node of Do provides an interface 500 with a work pane 560, as seen in Do Figure 5. The second user selects artifacts from the list of “shared with me” items.

Second user's user interface 500 may also have a work pane 560. As described above, second user 135 may view the contents of her artifacts in work pane 560 by selecting one of her artifacts from list “My workspaces” 530. Second user 135 may also view the contents of artifacts shared with her from her “Shared with me” list 540. In the example of FIG. 4, second user 135 has selected artifact “School year 06/07” 542 in her navigation pane 520.

*Id.* at [0057] (emphasis added).

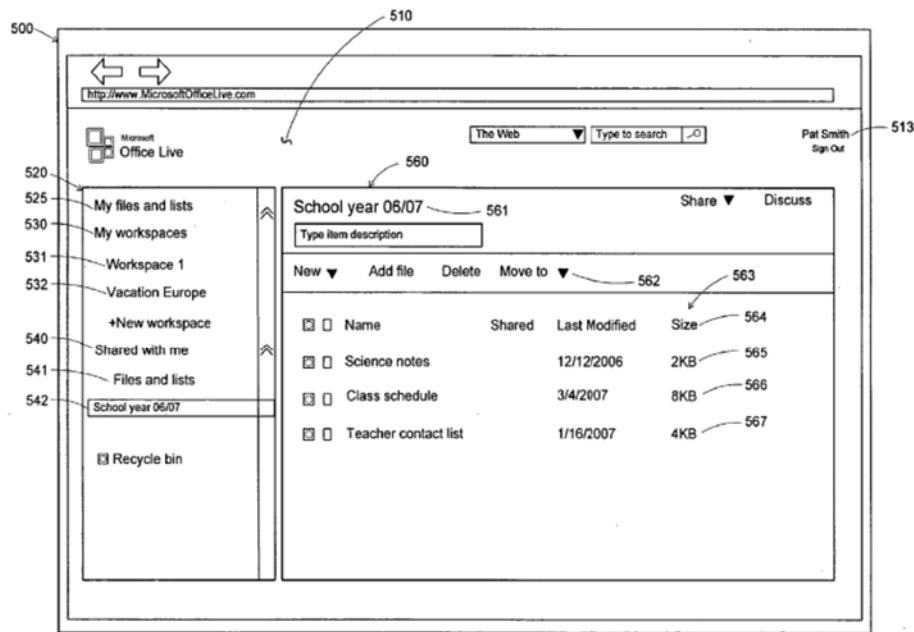


FIG. 5

Id. Figure 5.

**c. cause, at the second node, display of the at least one folder**

180. Following the selection of artifact “School year 06/07” 542 in navigation pane 520, the second user is provided with a displayed list of the files contained in the folder artifact “School year 06/07” 542.

The contents of artifact “School year 06/07” 542 are then presented in work pane 560 of second user's interface 500. The sharing of artifact “School year 06/07” 542 is thus integrated into the context of second user's interface 500. Second user 135 may not need to leave the context of her own user interface to view the contents of artifact “School year 06/07” 542, even though artifact “School year 06/07” 542 is owned by first user 125. Second user 135 may view artifacts shared with her in the same manner as her own artifacts.

Id. at [0057].

d. *utilizing third hypertext markup language-equipped code*

181. Figure 5 of Do illustrates that the second user interface is a web page that displays hypertext markup language coded content.

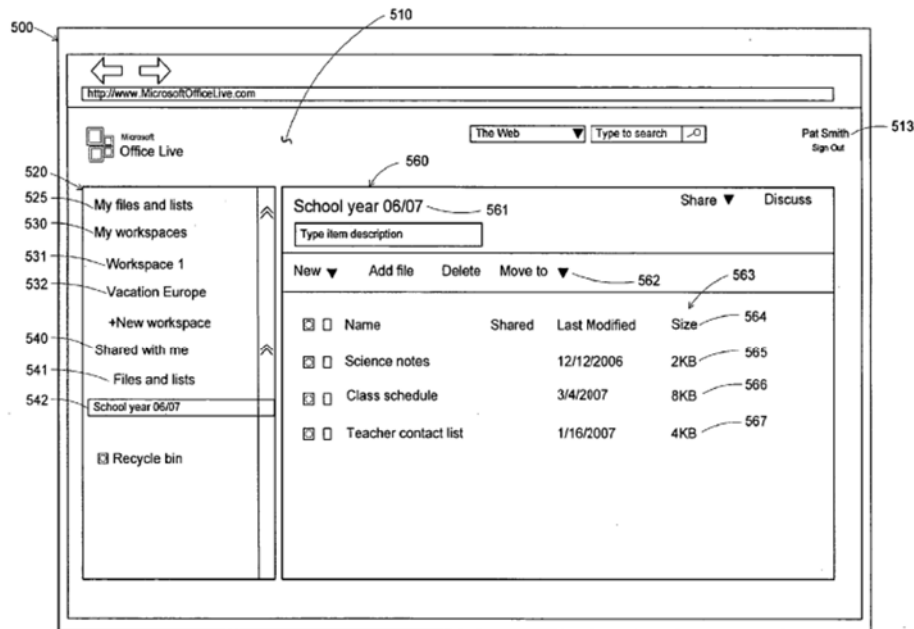
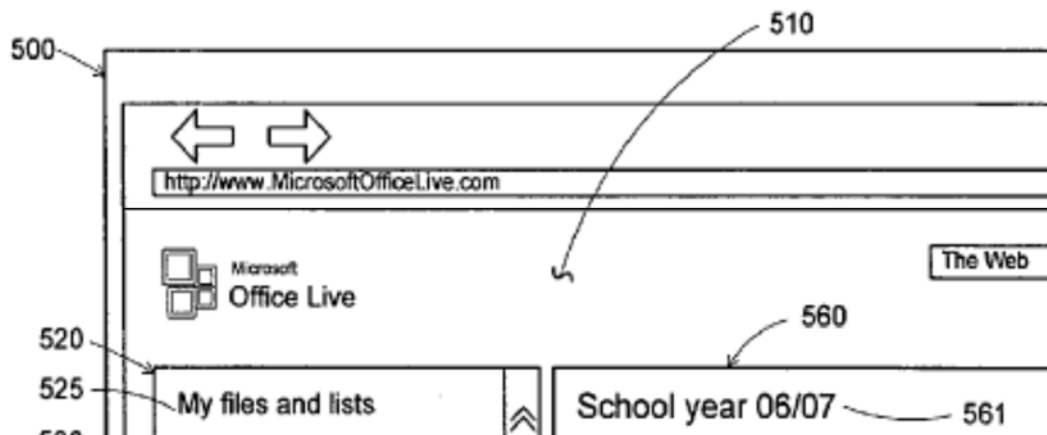


FIG. 5

*Id.* Figure 5.



*Id.*, Figure 5 (partial view).

182. Do discloses a common user interface that is utilized by both a first user publishing links to shared artifacts, and a second user who can view the contents of such artifacts. See, e.g., Ex. 1008 at [0006]-[0008]. The common interface is implemented using a web browser displaying pages retrieved from a server using the HTTP protocol. A POSITA would understand that such web pages would be comprised of hypertext markup language-equipped code.

To create such an interface, server 150 may render the interface in a format that can be displayed by computer 120. The specific format is not critical to the invention. As one example, computer 120 may be configured with a web browser that displays HTTP pages and server 150 may render the interface as one or more HTTP pages. Using a browser-based interface may allow a user to access artifacts on server 150 from any computer that supports such a browser. However, any suitable format may be used to exchange information between a user computer and the online web service.

Do at [0042] (emphasis added).

## 6. Claim 8

**The apparatus of claim 3, wherein the apparatus is configured such that the location among the one or more folders at the second node is based on user input received via the at least one first interface at the first node.**

183. Do teaches that a first user can select an artifact for sharing with a second user.

[0056]: “In the example of FIG. 4, first user 125 shared artifact “School year 06/07” 232 with a user having the email address “Robin@yahoo.com.” In this example, this e-mail may be the email address of second user 135.

*Id.* at [0056].

The second user receives the artifact information and the files and folders that make up the artifact are displayed in a location within the second user's user interface "among the one or more folders at the second node." The arrangement of the artifact folders and files is determined from input received from the first user. FIG. 5 shows an example of a user interface for second user 135 that may appear when second user 135 accesses her user interface following the sharing of artifact "School year 06/07" 232. Second user's interface may have a header pane 510 that indicates her name or username 513. Her interface may also have a navigation pane 520 that presents artifacts owned by her and artifacts shared with her. As before, the artifacts may be presented in a list "My files and lists" 525, a list "My workspaces" 530, and a list "Shared with me" 540. The online service may automatically render the user interface with a list "Shared with me" 540 including artifact "School year 06/07" 542 without requiring any action by second user 135 to include the shared artifact in her user interface.

*Id.* at [0056].

Second user's user interface 500 may also have a work pane 560. As described above, second user 135 may view the contents of her artifacts in work pane 560 by selecting one of her artifacts from list "My workspaces" 530. Second user 135 may also view the contents of artifacts shared with her from her "Shared with me" list 540. In the example of FIG. 4, second user 135 has selected artifact "School year 06/07" 542 in her navigation pane 520. The contents of artifact "School year 06/07" 542 are then presented in work pane 560 of second user's interface 500. The sharing of artifact "School year 06/07" 542 is thus integrated into the context of second user's interface 500. Second user 135 may not need to leave the context of her own user interface to view the contents of artifact "School year 06/07" 542, even though artifact "School year 06/07" 542 is owned by first user 125. Second user 135 may view artifacts shared with her in the same manner as her own artifacts.

*Id.* at [0057].

184. Do discloses that a “description of an interface” is sent to the second user by the first user.

[0071] At block 1120, the online service may communicate to any computer through which the second user accesses the online service a rendering a user interface that includes the shared artifact. This interface may be communicated in any suitable way. For example, it may be communicated by providing an update to a previously presented interface or may be incorporated in the description of an interface sent to the second user when the second user next accesses the online service. Regardless of how the interface is communicated, the shared artifact may appear automatically in the interface of the second user.

*Id.* at [0071].

7. **Claim 9**

**The apparatus of claim 8, wherein the apparatus is configured such that the location among the one or more folders at the second node is determined by user input at the first node.**

185. Claim 9 is insubstantially different from claim 8. See analysis for claim 8.

8. **Claim 10**

**The apparatus of claim 3, wherein the apparatus is configured such that the location among the one or more folders at the second node is automatically determined.**

186. Figure 5 of Do illustrates the automatic placement of a shared artifact in the second user’s user interface.

In the example of FIG. 4, first user 125 shared artifact “School year 06/07” 232 with a user having the email address “Robin@yahoo.com.” In this example, this e-mail may be the email address of second user 135. FIG. 5 shows an example of a

user interface for second user 135 that may appear when second user 135 accesses her user interface following the sharing of artifact “School year 06/07” 232. Second user's interface may have a header pane 510 that indicates her name or username 513. Her interface may also have a navigation pane 520 that presents artifacts owned by her and artifacts shared with her. As before, the artifacts may be presented in a list “My files and lists” 525, a list “My workspaces” 530, and a list “Shared with me” 540. The online service may automatically render the user interface with a list “Shared with me” 540 including artifact “School year 06/07” 542 without requiring any action by second user 135 to include the shared artifact in her user interface.

*Id.* at [0056] (emphasis added).

[0072] An example of an interface is shown in FIG. 5, where the shared artifact is "School year 06/07" 542, but any suitable interface could be used. If the second user is viewing the second user's interface at the time that the first user shares the artifact with the second user, then the shared artifact may be automatically added to the second user's interface while the second user is viewing it.

*Id.* at [0072] (emphasis added).

## 9. Claim 11

**The apparatus of claim 3, wherein the apparatus is configured such that the at least one folder is identified as a result of search criteria received from a user.**

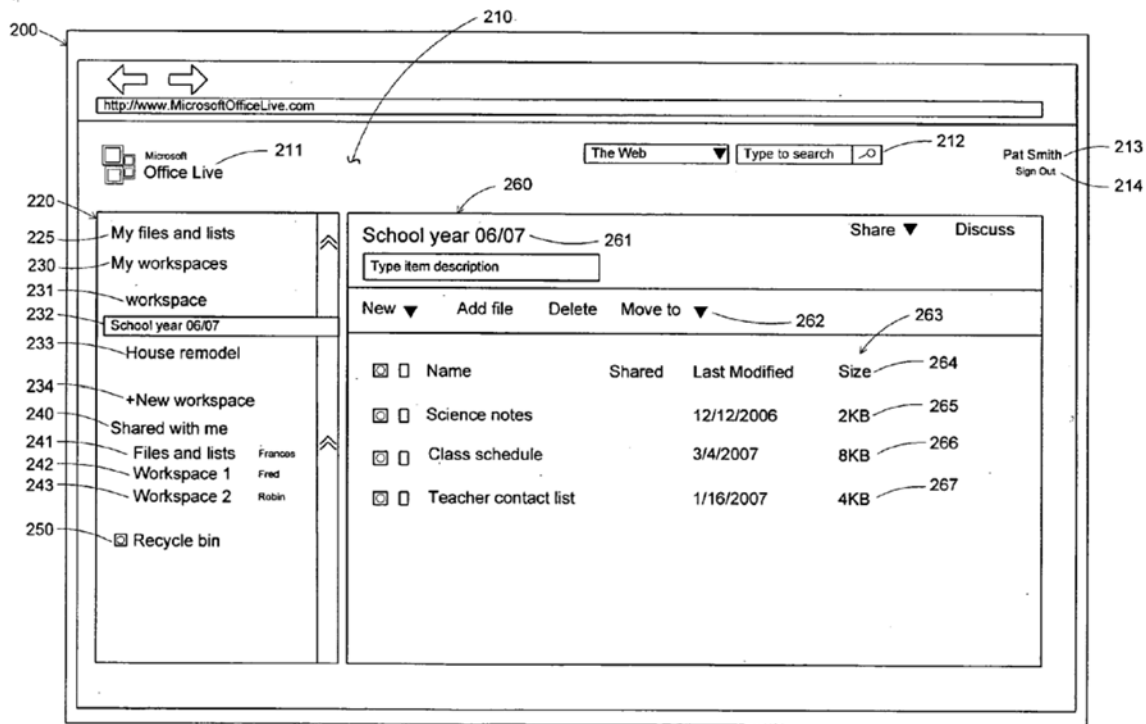
187. Do discloses a search function that permits a first user to identify artifacts, i.e., folders that are to be shared with a second user.

Header pane 210 may also contain a search box 212 that allows users to conduct searches. With search box 212, a user may be able to search the contents of his or her own artifacts, may be able to search the contents of other users' artifacts, or may be able to conduct other searches, such as searches of the Internet.



*Id.* at [0044] (emphasis added).

188. Figure 5 from Do illustrates the search box 212 in the top right hand portion of display panel 210.



**FIG. 2**

*Id.*, Figure 2.

#### 10. Claim 13

**The apparatus of claim 3, wherein the apparatus is configured such that the indication of the at least one folder is capable of being received in response to a first single user input, the indicia associated with the at least one email address is capable of being received in response to a second single user input that immediately follows the first single user input, and the indication to share the at least one folder is capable of being received in response to a third single user input that immediately follows the second single user input.**

- a. *the indication of the at least one folder is capable of being received in response to a first single user input*

189. See analysis for claim element 3d in section VII.A.1.e.

- b. *the indicia associated with the at least one email address is capable of being received in response to a second single user input that immediately follows the first single user input*

190. See analysis for claim element 3f in section VII.A.1.g. The receipt of the email indicia immediately follows the first user input to provide an indication of a folder to be shared.

- c. *the indication to share the at least one folder is capable of being received in response to a third single user input that immediately follows the second single user input.*

191. See analysis for claim element 3g in section VII.A.1.h. The receipt of the indication to share immediately follows the second user input to provide indicia associated with the at least one email address.

## **VIII. AVAILABILITY FOR CROSS EXAMINATION**

192. In signing this declaration, I recognize that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I also recognize that I may be subject to cross examination in the case and that cross examination will take place within the United States. If cross examination is required of me, I will appear for cross

examination within the United States during the time allotted for cross examination.

**IX. SECONDARY CONSIDERATIONS OF NONOBVIOUSNESS**

193. Based on my review of the '706 Patent and knowledge of the subject matter, it is my opinion that the record is devoid of any meaningful evidence of secondary considerations of non-obviousness. I am unaware of any other evidence that would overcome the evidence of obviousness presented herein.

**X. RIGHT TO SUPPLEMENT**

194. I reserve the right to supplement my opinions in the future to respond to any arguments that the Patent Owner raises and to take into account new information as it becomes available to me.

**XI. CONCLUSION**

195. For the reasons discussed above, I believe that a POSITA would have understood the above-discussed prior art references to describe the subject matter recited in the claims of the Challenged Claims.

196. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false

statements and the like are punishable by fine or imprisonment, or both, under  
Section 1001 of the Title 18 of the United States Code.

Date: April 3, 2020

A handwritten signature in cursive script that reads "Peter Alexander". The signature is written in black ink and is positioned above a horizontal line.

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Peter Alexander, Ph.D.

# **ATTACHMENT A**

## **PETER ALEXANDER, Ph.D.**

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Corona del Mar, CA 92625  
Office (949) 760 9990 Cell (949) 554 3934  
email: peter.alexander@roadrunner.com

### **EDUCATION**

Ph. D., Electrical Engineering, Massachusetts Institute of Technology, 1971  
MS, Electrical Engineering, University of Illinois, 1967  
BS, Electrical Engineering, University of Canterbury, New Zealand, 1965

### **PROFESSIONAL AFFILIATIONS & AWARDS**

Fulbright Scholar, 1965  
National Science Foundation – Small Business Innovation Research, 1988  
Dept. of Energy – Small Business Innovation Research, 1988  
Member Association of Computing Machinery (ACM)  
Member IEEE Computer Society

### **PROFESSIONAL EXPERIENCE - SUMMARY**

- Technical Expertise - Computer software design, development & deployment
- Forensic data acquisition and analysis
- Microsoft Visual Studio component and application design
- Web integration of authentication services, streaming media services, ad displays, content feeds
- Implementation of real-time and media streaming systems
- Architecture and design of complex business systems involving database back ends
- Oracle 8i, 9i, SQL Server 2000, and DB2 database technology.
- Java, C, C++, Visual Basic, assembly language programming
- Embedded microprocessor designs
- Network equipment design and manufacture (LAN cards, routers, bridges)

- Security, authentication, networking, firewalls, hacking countermeasures, backups, archives and service level agreements for customer-outsourced data.

### **DOMAIN EXPERTISE - Client-server and web-based software applications**

- ERP systems – financial, distribution, manufacturing, SF automation applications (Platinum Software)
- eCommerce - Secure web transactions, authentication (InfrastructureWorld.com, Syntricity, Inc.)
- Semiconductor manufacturing – yield analysis, semiconductor defect analysis (Syntricity, Inc.)

### **PROFESSIONAL EXPERIENCE**

#### **1. 2003 to Present Independent Computer Consultant**

Independent computer technology consultant since February 2003, offering advisory services for information technology organizations, venture capital groups and the legal profession. Services have been provided for projects in the following areas:

- **Computer software development contracts for Internet and client-server software implementation.**
- Disaster recovery for large scale IT operations.
- Definition of product design and market positioning for a “distance learning” product designed to enable training of employees via a web server application.
- Forensic analysis of computer data and electronic discovery from computer disks.
- Definition of a web-based eCommerce system to provide secure business transactions. Developed architectural plans and database schema for Oracle database implementation.
- Provided technical consulting services regarding the behavior of certain scripts used for a mIRC chat server (Jedi 2.1). Analyzed the internal architecture of the Jedi relay chat system. At issue was the behavior of a Jedi server when a remote user (client) uploaded a file for distribution to other clients. Analyzed the upload scripts and formed a preliminary opinion regarding the functional behavior of the code.

- Provided research on spyware products that are downloaded to a user's client computer while browsing the web. Determined the behavior and installation mechanisms for this class of spyware products and provided consulting on ways of removing them.
- Provide consulting services to eBusiness clients for the creation of SOAP integration of database services. Provided planning assistance for a large, ASP (Active Server Pages) web site to implement live business information feeds.
- Analyzed web application server prototypes from Apache Software Foundation reference implementations such as the Apache HTTP server project, Jakarta Tomcat Project (J2EE Servlet and JSP Web container), Turbine a servlet-based application framework, and the Velocity Template Engine reference designs

**2. 2001 to 2003      Syntricity, Inc., San Diego, CA  
Vice President Technical Operations**

Syntricity is a supplier of application software to the semiconductor industry. Its customers include Intel, Sun Microsystems, Broadcom, Qualcomm and Conexant. Products are installed on Unix and NT 4.0 web servers at the customer site as Intranet solutions (Enterprise), or on Unix servers at the Syntricity data center, which offers an ASP style subscription services.

Developed a large capacity warehouse architecture and deployable warehouse solution to support defect, FBM, lot history, non-lot equipment, and other data storage requirements to support analysis of yield and production forecasts from test data acquired in the semiconductor manufacturing environment. This system was built on Oracle 8i and 9i commercial RDBMS products. Implemented a comprehensive set of statistical analysis tools including multivariate regression and confidence level testing to facilitate yield trend and production scheduling for semiconductor manufacturers. Developed a messaging transaction system - "Integration Server" for WIP/MES back-end business processes. Various technologies were incorporated including: RMI, JMS input queue and JNDI for naming services.

The design was implemented with Oracle 9.2 loader and schema validation technology and required user ETL data to be formatted as XML documents. Java 2 SE was the implementation platform language. The web server, based



on the Tomcat open source code from the Apache Consortium, was enhanced to provide comprehensive access control according to user class, and included integrated end-user script-based customization (using the open source Python interpreter). XML objects were used extensively to represent web server data structures in the core implementation. High volume datalog insertion (ETL) back-end functionality was implemented for user uploads via FTP. An earlier generation C-coded CGI version was also supported. All products developed were web server solutions, with access via a standard browser. Responsible for creating and managing design teams as well as quality assurance, configuration management, technical hosting operations, and technical documentation groups. Responsible for product functional specifications, source code control, defect tracking, configuration/build management, and application validation.

Responsible for a team of 40 people across four groups that included software engineering, database design, quality assurance and technical operations. Java 2 was the implementation platform language, and Oracle 8.1.6 was used for the warehouse database. All products were designed as web server solutions, with access via a standard browser. Responsible for creating and managing design teams as well as quality assurance, configuration management, technical hosting operations and technical documentation groups. Detailed understanding of source code control, defect tracking, configuration management and build tracking.

Customers using the hosting subscription center run under contractual Service Level Agreements (SLA). The ASP hosted service is currently implemented on an E4800 Sun application server running Solaris 8, connected to an Oracle database server (Oracle 8.1.6). Storage totaling approximately 1 Terabyte is provided through a combination of the EMC Clarion System 1 storage arrays (Raid-5) accessed via fiber channel, and network attached storage using the Network Appliances NetApp devices. Veritas SANPoint Foundation Suite HA for Solaris is used as the storage management tool.

**3. 2000 to 2001      InfrastructureWorld, San Francisco, CA  
Chief Technology Officer**

InfrastructureWorld, a spin off from Bechtel Enterprises, offered services through a collaborative web site for large-scale construction projects. Managed development staff of 10, and operational staff of 3 to create,

enhance and maintain the live web site. Responsible for a new web server implementation based on NT4.0 and Windows 2000 technologies, to support authentication through certificates, user access control via authenticated account login, SSL extranet connections and document encryption. Investigated Public Key/Private Key encryption authentication mechanisms before selecting Windows NT integrated challenge/response authentication as the preferred authentication technique.

Each business client was hosted as a separate virtual web site with secure access to content that described the client's projects offered for bid. Functionality included insurance and financing RFP's, document management, and project collaboration. In addition, each web site offered integration of multimedia content for promotion of client projects, including steaming video and audio content. Implemented a secure data access system using native NT operating system authentication services. All documents and files were transmitted via 128-BIT SSL using server-side certificates for server authentication to the client browser. Automatic virus scanning and cleaning was implemented for all documents and files uploaded by users to the web server. The operational web server site was implemented with a two-tier server configuration using Raid (redundant) storage.

**4. 1999 to 2000 CareerPath.com, Los Angeles, CA  
Senior Vice President, Technology**

Management of Operations and Development teams. Lead the company's Web site re-architecture project, providing higher levels of Web server and Oracle database performance. Implementation of methodologies for project management, code review, quality assurance, and defect tracking. Managed the operations group (40) supporting the production Web site, encompassing wide area networking, Unix administration, Oracle DBA support, HTML authoring and quality assurance teams. Managed the software development staff (25) which created new technology infrastructure and dynamic page content using Java middle tier servlets, Java Beans, JSP presentation components, and Oracle technology. Object oriented programming techniques were applied through use case analysis.

Created a feed management system, written using server-side Java parsing technology, to processes Web job postings harvested from Web spider technology. Later enhancements included development of a Content Management system (using XML page representation), vertical affiliate co-

branding system, transparent registration and login across a federation of partnership Web sites, and a comprehensive on-line reports server.

**5. 1999 Charles Schwab Online Trading, Phoenix, AZ  
Independent Consultant**

This project involved disaster recovery cold site planning for the Charles Schwab Online Web Trading facility. The web capability was capable of handling 200,000+ concurrent users and was implemented with 300 load-sharing IBM gateway servers working behind eight Cisco Catalyst 7500 routers. The traffic was distributed across the front line servers and routed to an ensemble of 200 middle tier servers, which manage the business objects and execute the trades. In the third tier, customer financial and demographic data was maintained on a group of seven IBM mainframes running DB2. A design was formulated that gives the Schwab organization a contingency backup system in the event of catastrophic failure of the main site.

**6. 1997 to 1999 Platinum Software Corp., Irvine, CA  
(Re-named as Epicor Software Corp)  
Vice President, Development**

Reported to the President until 7/1/98, then reporting to the Executive VP of Product/Marketing. Member of the Executive Committee (top 8 executives in Platinum).

Managed a team of about 100 contributors working on Windows NT-based Client-Server systems. The Department was organized into five functional groups each headed by a Director-level manager, and includes ERP application development, technology/tools development, Windows/DOS legacy systems, QA and documentation teams.

This scope of the development effort encompassed the Platinum ERP client-server product suites, which include financial and distribution applications. These applications, based on Microsoft SQL Server technology, are implemented within a two-tier tool set, and involved 500 tables and more than 2000 stored procedures. Responsibilities also included all ERP integration tools and application content. The ERP integration suite allows remote transaction integration of customer relationship management, sales force automation, distribution, manufacturing, and financial applications, as

well as OLAP business intelligence reporting via client-side components and Microsoft DSS.

Direct management of teams deploying MS Message Queue, MS Transaction Server, MS SQL Server 6.5 and 7.0, NT 4.0, XML, and business object technology. Successfully launched a high-volume test group to establish performance of the client-server products under stress, and to determine their scalability. Built an architectural team to design and implement 3 tier, thin-client framework, using Java business objects running on an application server. Established effective methodologies for fostering cooperation in development projects requiring the participation of geographically remote design and development teams.

Developed a pure Java client-server system to support an end user form builder application. The objective of this project was to demonstrate an application server-centric 3-tier architecture. Application servers are dispensers of services, and a Java compilation service was the central technology being demonstrated. The pilot development provided building blocks to support a broad variety business object models, forms architectures, and rules engines. (JDK 1.1)

A full-functionality GUI in Java was also developed, along with a Java-based Customization Workbench, built, using the form class metaphor, which is familiar to users of Visual Café, JBuilder, or J++ 6.0. The Java Swing classes were used in the implementation.

Created a prototype OLAP decision support analysis system. The Platinum Info Report pack contained OLAP cubes specific to the Platinum ERA financial, distribution and manufacturing data. OLAP cubes were implemented on top of core Platinum applications to enable multi-dimensional analysis on key business drivers such as sales activity. Reports contained in the Info Report Pack were designed to leverage graphical, WYSIWYG reporting and analysis capabilities of Crystal Info, a third party reporting package, including: presentation-quality formatting, charts, graphs, drill-down, top “N” analysis, search, sort and criteria selection.

7.     **1994 to 1996           Quixote Corp., Chicago, IL**  
          **Vice President, Technology (Reporting to the**  
          **President of Legal Technologies, Inc.)**

Legal Technologies, a subsidiary of the Quixote Corp., was formed as a consortium of four companies operating in the legal vertical market to address law office automation, and related legal services.

Formulated opinions and strategies for technology-related products being considered for acquisition or development by the company. Assisted the corporate legal counsel in the interpretation of patent claims for the purpose of defending or initiating lawsuits. Participated in negotiations with plaintiffs to bring about resolution of legal conflicts.

Managed teams developing Windows client-server database applications for the legal/judicial markets. These products involved MFC C++ and Visual Basic 4.0, NT/SQL Server and Btrieve technology.

Development of video deposition applications. Encoding of VHS tapes from video depositions into MPEG using Real Magic encoders. Annotation of video to allow rapid search of content and synchronization of video to the written transcript. The user was provided with the ability to jump to a specific page and line in the written transcript with automated tracking to the correct location in the displayed video. Similarly, the rolling video stream would automatically scroll the text display.

**8. 1989 to 1992      Fibronics International, Lowell, MA  
General Manager, Spartacus subsidiary**

Successfully developed software products for TCP/IP and Unix-related networking applications. These products performed routing and bridging functions for Internet packets, at data rates of up to 100Mbps across FDDI fiber networks. Technology involved embedded C-coded Intel RISC CPU's and Motorola 68K series microprocessors. In addition, a suite of Internet-protocol software packages was developed for integration of mainframes with other Fibronics TCP/IP LAN and WAN products. Networking software developed for mainframe computers included: TCP/IP protocol stack; Network File System (server) package; File Transfer Protocol (FTP) server module; Simple Mail Transfer Protocol (SMTP); 3270 terminal emulators; X-windows client functionality.

The NFS application was the result of a nine month development effort involving a team of six software developers. The complete design, including all architectural components, was formulated from Sun Microsystems documentation, and the resulting concept was implemented from scratch in

C++. A parallel research study of the competing Andrew File System was also carried out. The NFS product was deployed by several large Fibronics customers.

**9. 1982 to 1988 Numerix Corporation, Newton, MA  
President/CEO**

Founder and CEO of a high-technology computer company with 130 employees. Led the company from its startup in May 1982 through rapid growth. Revenues grew from \$0 to \$10M in three years.

Supervised a software and hardware development team of 50 people, and a total employee headcount of 130. Lead contract negotiations with vendors, partners and investors. Intimately involved with product engineering, quality assurance and field reliability problems.

**10. 1975 to 1981 CNR, Inc., Newton, MA  
Vice President**

Managed software and hardware design teams for defense-related projects. These included: real-time data acquisition using microprocessor systems, real-time communications channel simulators, embedded Intel and Motorola microprocessor systems, designs for the application of the Global Positioning System to air traffic control, synchronization of the DOD world-wide communication system using atomic clocks to facilitate the distribution of a high-precision time reference.

**11. 1972 to 1975 Univ. of Auckland - New Zealand  
Asst. Prof., EE**

Performed teaching and graduate research responsibilities for electrical engineering and computer science. Taught graduate level courses on control systems, communication systems, microprocessors and integrated circuit design. Taught undergraduate courses involving electromagnetic theory, electronic circuit design and mathematics

**LITIGATION RELATED EXPERIENCE**

- **Patent Litigation.** Contributions made to numerous patent infringement cases, three of which required participation in claim construction for

- Markman hearings, including courtroom assistance to attorneys during claim construction. Authored three infringement and three validity rebuttal reports in support of plaintiffs, as well as numerous non-infringement and invalidity reports on behalf of defendants. Testified in deposition as an expert in patent cases regarding claim construction, infringement and invalidity.
- **Software contract disputes.** Analysis of desktop, Internet, and client-server software projects to determine adherence to industry-standard software development processes, and to evaluate architectural design decisions. Contributions made to numerous cases, including court testimony in two, and deposition testimony in four others.
  - **Forensic analysis.** Provided forensic analysis of Internet and computer hard drive technology to recover deleted computer data and determine algorithms. Performed analysis of peer-to-peer file sharing servers for government agencies.

#### A. Jury Testimony

##### 1. **Radware, Inc. v. F5 Networks, Inc.**

**U.S. District Court, Northern District of California, San Jose Div.**

Case No. 5:13-cv-02024 RMW

Matter:	Load balancing of ISP connections to multi-homed networks.
Technical Issues:	Use of ISP cost and measured route characteristics to dynamically select ISP paths for network traffic.
Responsibilities:	Invalidity report including assembly and configuration of a router test bed illustrating aspects of the claims using 1997 technology. Wrote non-infringement rebuttal report. Testified in deposition May 7, 2015. Testified in Jury trial in San Jose, CA on March 7-8, 2016.
Disposition:	Jury verdict of validity for the asserted claims.
Law Firms:	Perkins Coie LLP, Seattle, WA.
Opposing counsel:	McDermott Will & Emery LLP, Menlo Park, CA.

##### 2. **Google, Inc. v. Beneficial Innovations, Inc. v. Advanced Publications, Inc., et al.**

**U.S. District Court, Eastern District Texas, Marshall Division.**  
Civil Action Nos. Case No.: 2:11-cv-229-JRG-RSP.

Matter: Ad server technology integration with Google publisher websites.

Technical Issues: Implementation of ad tags for targeted advertising. Use of HTTP cookies for user information.

Responsibilities: Wrote technology tutorial report concerning ad delivery and the historical use of cookie technology. Testified in deposition Nov. 18, 2013. Testified in Jury trial in Marshall, TX on January 22, 2014.

Disposition: Jury verdict in favor of Google Inc. and award of damages to Google.

Law Firms: Kilpatrick Townsend, Atlanta, GA, Kecker & van Nest, San Francisco, CA, for defendant Google, Inc.

Opposing counsel: Murphy Rosen Meylan & Davitt LLP, Santa Monica, CA.

**3. Advanced Ground Information Systems v. Life360, Inc.**

**U.S. District Court, Southern District of Florida**  
Case 9:14-cv-80651-DMM

Matter: Tracking of users of handheld devices and formation of user communities.

Technical Issues: Prior art analysis of patents disclosing related technology including GPS, smart phone implementation and graphical display of community users.

Responsibilities: Wrote invalidity report Dec. 2014. Testified in deposition Jan. 30, 2015. Testified in jury trial March 12, 2015.

Disposition: Jury verdict in favor of Google Inc. and award of damages to Google.

Law Firms: Jury found non-infringement on all four patents.

Opposing counsel: Kenyon & Kenyon LLP, NY.

**4. VirnetX v. Cisco Systems, Inc.**

**U.S. District Court, Eastern District of Texas, Tyler Division**



Civil Action No. 6 6:10-cv-417.

Matter: Virtual Private Networks using cryptographic methods.

Technical Issues: Internet telephony, Secure Sockets Layer, authentication and encryption techniques using Public Key, Digital Certificates, secure domain name services.

Responsibilities: Invalidity report and trial testimony for ‘135, ‘504/‘211 and ‘759 patent claims asserted against Cisco’s Any Connect, Easy VPN and telephony voice over IP products. Testified in deposition July 27, 2012 and VirnetX v. Cisco Inc. jury trial March 11-12, 2013 regarding invalidity.

Disposition: Jury determined Cisco’s products to be non-infringing and the asserted claims valid.

Law Firms: Desmarais LLP, New York for defendant Cisco Systems, Inc.

Opposing counsel: McKool Smith P.C., Dallas, TX.

## **5. VirnetX v. Apple Inc.**

**U.S. District Court, Eastern District of Texas, Tyler Division**  
Civil Action No. 6 6:10-cv-417.

Matter: Virtual Private Networks using cryptographic methods.

Technical Issues: Internet telephony, Secure Sockets Layer, authentication and encryption techniques using Public Key, Digital Certificates, secure domain name services.

Responsibilities: Invalidity report and trial testimony for ‘135, ‘504/‘211 and ‘151 patent claims asserted against Apple’s VPN Anywhere and FaceTime products. Testified in deposition July 27, 2012 and VirnetX v. Apple Inc. jury trial Nov., 2012 regarding invalidity.

Disposition: Jury determined Apple’s products to be infringing and the asserted claims valid.

Law Firms: Desmarais LLP, NY, Williams Morgan Amerson, Houston, TX, Ropes & Gray, New York for defendant Apple Inc.

Opposing counsel: McKool Smith P.C., Dallas, TX.

**6. WhitServe LLC, v. Computer Packages, Inc.**

**US District Court, Southern District of Connecticut.**

Civil Action No. 3:06CV01935 (AVC)

Matter: Patent infringement - web document services.

Technical Issues: Analysis of MS Access VBA, ASP, .NET code and web technology.

Responsibilities: Prepare non-infringement and invalidity reports on behalf of defendant Computer Packages, Inc. Testified in deposition regarding invalidity and non-infringement reports, Sept. 2007. Testified in jury trial May, 2010 regarding invalidity and non-infringement.

Disposition:

Law Firms: Fitzpatrick, Cella, Harper & Scinto, New York, for defendant CPI.

Opposing counsel: St. Onge Steward Johnson & Reens, CT

**7. Data Treasury Corporation v. Wells Fargo, The Clearing House Payments Co., et al.**

**U.S. District Court, Eastern District of Texas, Marshall Division**

Civil Action No. Civil Action No. 2:06-CV-72 (Hon. David Folsom)

Matter: eCommerce patent litigation.

Technical Issues: eCommerce software; data encryption and authentication technology including IPsec, PGP, SSL, key exchange and Message Authentication Codes; TCP/IP networking.

Responsibilities: Invalidity report, non-infringement report. Deposition testimony December, 2009. Testified in jury trial on behalf of defendant. The Clearing House March 24, 2010 regarding non-infringement.

Disposition: Work completed March 2010. The Court ruled in favor of The Clearing House regarding the post trial motions as to non-infringement and joint liability with Viewpointe. The jury found joint infringement for US Bank and The Clearing House as joint defendants, which was upheld by the Court.

Law Firms: Fitzpatrick, Cella, Harper & Scinto, New York, and Sullivan & Cromwell LLP for defendant Clearing House Payments.

Opposing counsel: Ostrow Kaufman Frankl, New York, Ward & Smith, TX, Nix Patterson Roach, TX.

**8. epicRealm Licensing, LLC (Parallel Networks) v. Autoflex Leasing, Franklin Covey, Clark Consulting, Herbalife of America, Various Inc.**

**U.S. District Court, Eastern District of Texas, Marshall Division**  
 Civil Action Nos. 5:07-CV-125, 5:07-CV-126, 5:07-CV-135 (Hon. David Folsom)

Matter: Web technology patent litigation.

Technical Issues: Web site implementation

Responsibilities: Retained by Franklin Covey, Co., Clark Consulting, Inc., Herbalife of America, Various, Inc. Researched specific non-infringement issues; wrote declaration on support of motion to dismiss, and testified in deposition Dec., 2007 regarding that declaration. Testified in deposition regarding non-infringement by Herbalife (June 2008) and Various Inc., (July 2008). Testified in jury trial on behalf of defendant FriendFinder in the jury trial Parallel Networks v. Various, FriendFinder August 20, 2008 regarding non-infringement and non-infringing alternatives.

Disposition: Work completed November, 2008.

Law Firms: Vedder Price, Chicago, IL; Jones Day, New York, NY; Pepper Hamilton, Boston, MA, Fenwick & West, San Francisco, for defendants.

Opposing counsel: Baker Botts.

**9. Dell USA, LP v. Lucent Technologies, Inc**

**US District Court, Eastern District of Texas, Sherman Division**  
Civil Action No. C.A. 4:03-cv-347. (Hon. Richard A. Schell.)

Matter: Patent infringement - configurator applications for manufacturing.  
Technical Issues: Analysis of configurator algorithms, software automation.  
Responsibilities: Invalidity and non-infringement report on behalf of defendant Lucent Technologies. Testified in deposition regarding non-infringement and invalidity, Sept. 2007. Testified in jury trial on Jan. 29-30, 2008 regarding non-infringement and invalidity.  
Disposition: Jury returned a verdict in favor of Lucent Technologies for non-infringement.  
Law Firms: Kirkland & Ellis, LLP, New York, NY, for defendant.  
Opposing counsel: Haynes & Boone, Dallas, TX.

**10. Orion IP LLC v. Mercedes-Benz USA et al**

**US District Court, Eastern District of Texas, Tyler Division.**  
Civil Action No. 6:05-cv-322 (Hon. Leonard Davis)

Matter: Patent Infringement – automated proposal generation.  
Technical Issues: Technology and analysis for web sites.  
Responsibilities: Wrote non-infringement report regarding Hyundai Motor America web sites. Testified in deposition regarding non-infringement report. Testified in jury trial, May 24, 2007 regarding non-infringement, primarily for the ‘342 patent.  
Disposition: For the contested ‘342 patent the jury found in favor of Hyundai Motor Corporation for non-infringement.  
Law Firms: Jackson Walker L.L.P., Dallas, TX for defendant  
Opposing counsel: Williams, Morgan & Amerson, P.C., and Wong, Cabello, Lutsch, Rutherford & Brucculeri, LLP, Houston, TX.

**B. International Trade Commission Testimony**

**1. Microsoft Corp. v. Motorola, Inc.**

**United States International Trade Commission, Washington, DC.**

Investigation No. 337-TA-744 (Hon. Theodore R. Essex)

Matter: Mobile phone operating system and database technology.

Technical Issues: Android OS software implementation for Motorola Droid mobile telephones. Implementation of notification and telephony subsystems. Analysis of contact management database.

Responsibilities: Research infringement issues, review source code for Motorola Droid phone implementations. Wrote non-infringement rebuttal and invalidity reports for three patents. Testified in deposition June, 2011. Provided direct testimony Witness Statement at ITC Hearing Aug. 22, 2011. Microsoft counsel declined to cross examine.

Disposition: Completed activities in Aug. 2011.

Law Firms: Quinn Emanuel, New York, for defendant.

Opposing counsel: Sidley Austin, Washington DC.

**2. Nokia Corporation v. Apple, Inc.**

**United States International Trade Commission, Washington, DC.**

Investigation No. 337-TA-701 (Hon. E.J. Gildea)

Matter: Mobile phone and music player software technology.

Technical Issues: Software implementation for Apple iPhone, iPad and iMac telephony, camera architecture and user interface functionality.

Responsibilities: Research infringement issues, review source code for iPhone. Wrote infringement and validity rebuttal reports for two patents and infringement report for camera architecture patent. Testified in deposition Oct. 5-6, 2010. Testified in ITC Hearing Dec. 1-2, 2010.

Disposition: Completed work in December 2010. Settlement reached June 2011.

Law Firms: Alston-Bird, Washington DC, for Complainant Nokia Corp.

Opposing counsel: Wilmer Hale, Palo Alto, CA.

**3. Pioneer Electronics (USA), Inc. v. Garmin Corporation**

**United States International Trade Commission, Washington, DC.**

Investigation No. 337-TA-694 (Hon. C.C. Charneski)

Matter: Computerized navigation using GPS.  
Technical Issues: Source code analysis for Garmin GPS navigation devices.  
Responsibilities: Research non-infringement issues, review source code. Wrote infringement reports for three patents. Testified in deposition regarding infringement in June, 2010. Testified in open court hearing Sept. 16-17, 2010 regarding infringement and claim construction.  
Disposition: Completed work in Sept. 2010.  
Law Firms: Finnegan Henderson Farabow Garrett & Dunner, Washington DC, for Complainant Pioneer.  
Opposing counsel: Adduci, Mastriani & Schaumbert LLP, Washington DC.

**4. Honeywell International Inc. v. Pioneer Corporation, Pioneer Electronics et al.**

**United States International Trade Commission, Washington, DC.**

Investigation No. 337-TA-657 (Hon. Theodore R. Essex)

Matter: Computerized navigation using GPS and inertial systems.  
Technical Issues: Source code for GPS signal processing.  
Responsibilities: Research non-infringement issues, review source code. Wrote Non-infringement reports for two patents. Testified in deposition April, 2009 and June 10, 2009. Testified in open court hearing June 11, 2009 regarding non-infringement of '132 and '286 patents by Pioneer Corp.  
Disposition: Work completed June 2009. The Court ruled for non-infringement for both the '132 and '286 patents.

Law Firms: Finnegan Henderson Farabow Garrett & Dunner, DC,  
for Respondent Pioneer.  
Opposing counsel: Robbins, Kaplan, Miller, Ciresi, Los Angeles.

**C. Patent Trial & Appeal Board IPR and CBM Declarations**

**1. Salesforce.com, Inc. v. VirtualAgility, Inc.**

**U.S. Patent & Trademark Office, Patent Trial & Appeal Board.**  
PTO Case No. CBM Petition Case CBM2013-00024.

Matter: Software for modeling and managing projects and  
other business or financial activities.  
Technical Issues: Formulation of object models and hierarchical data  
structures containing model entities.  
Responsibilities: Wrote declaration in support of a petition for Covered  
Business Method Review concerning U.S. Patent No.  
8,095,413 addressing petition arguments regarding  
non-statutory subject matter and analysis of relevant  
prior art. The PTAB granted petitioner  
Salesforce.com, Inc. a covered business review.  
Testified in deposition Jan. 10, 2014.  
Disposition: PTAB Final Decision determined the Virtual Agility  
patent claims unpatentable Under 35 U.S.C. § 101 as  
directed to non-patentable subject matter and  
anticipated by prior art.  
Law Firms: Wilson Sonsini Goodrich & Rosati, Seattle WA and  
Austin TX for petitioner salesforce.com.  
Opposing counsel: Gonsalves Law Firm, VA and Law Offices of Cecil  
Key, LLC, VA

**2. Fidelity NIS – DataTreasury Corporation**

**U.S. Patent & Trademark Office, Patent Trial & Appeal Board.**  
PTO Case No. CBM Petition Cases CBM2014-00020 and CBM2014-  
00021.

Matter: eCommerce patents.  
Technical Issues: eCommerce software; data encryption and  
authentication technology including IPsec, PGP,

SSL, key exchange and Message Authentication Codes; TCP/IP networking.

Responsibilities: Services provided to Fidelity. Wrote declaration in support of a petition for PTAB Review – filed October 25, 2013.

Disposition: The PTAB final decision on April 29, 2015 found that the claims of the '137 and '988 patents are directed toward ineligible subject matter and are unpatentable under 35 U.S.C. § 101. The PTAB also found that claims 1-67 of the '137 patent and claims 1–41, 51–69 of the '988 patent are unpatentable under 35 U.S.C. § 112, for lack of written description.

Law Firms:

Opposing counsel: Hershkovitz & Associates, PLLC, Alexandria, VA.

### **3. Motorola Mobility LLC v. Intellectual Ventures 1 LLC**

#### **U.S. Patent & Trademark Office, Patent Trial & Appeal Board.**

Case: IPR Case 2014-00500

Matter: Transmitted messages containing embedded location identifiers to access data sources external to the message.

Technical Issues: Detailed analysis of Web browser behavior acting on web pages containing embedded URLs and Web browser implementation of HTTP re-direct commands.

Responsibilities: Declaration covering prior art in the timeframe of 1994-95. Testified in depositions October 22, 2014 and March 19, 2015.

Disposition: PTAB Final Decision determined the asserted patent claims were invalid as anticipated by two different prior art systems.

Law Firms: Kilpatrick Townsend Stockton LLP for petitioner Motorola Mobility.

Opposing counsel: Knobbe, Martens, Olson & Bear LLP, CA.

### **4. American Express, BBVA Compass Bank et al v. Maxim Integrated Products, Inc.**



**U.S. Patent & Trademark Office, Patent Trial & Appeal Board.**

Case: Case CBM2015-00098, CBM2015-00101, CBM2015-00102.

Matter: POS smart cards used as electronic cash wallets providing secure communications using public key cryptography.

Technical Issues: Encryption, co-processors, computer architecture.

Responsibilities: Declaration to support CBM petition. Analysis regarding U.S.C. 35 § 103.invalidity.

Disposition: PTAB Decision to Institute Trial for '510, '013 and '095 patents entered Oct., 2015.

Law Firms: White & Case, McKenna Long Aldridge, Faevre Baker Daniels, Hunton Williams, King & Spalding for petitioning group.

Opposing counsel:

**5. Nautilus Hyosung Inc. v. Diebold, Inc., et al.**

**U.S. Patent & Trademark Office, Patent Trial & Appeal Board.**

Case: Case CBM2016-00034.

Matter: Removal of confidential information printed on an ATM check deposit receipt.

Technical Issues: Analysis of prior art systems for claims of US Patent 7,314,163.

Responsibilities: Declaration to support CBM petition. Analysis regarding 35 U.S.C. § 101 eligible subject matter and U.S.C. 35 § 102/103.invalidity.

Disposition: Petition submitted to PTAB Feb. 12, 2016. PTAB Decision to Institute Trial for '163 patent entered August 22, 2016. Deposed on Nov. 8<sup>th</sup>, 2016.

Law Firms: Fish & Richardson, Washington DC for petitioner Nautilus Hyosung.

Opposing counsel:

**6. Southside Bank et al v St Isidore Research LLC.**

**U.S. Patent & Trademark Office, Patent Trial & Appeal Board.**

Cases: CBM2016-00026, CBM2016-00027, IPR2016-01586, IPR2016-01587.

Matter: Systems for verifying, authenticating, and providing notification of a transaction such as a financial transaction, using for example two phase authentication.

Technical Issues: Analysis of prior art systems for claims of US Patents 8,589,271 and 7,904,360.

Responsibilities: Declarations to support CBM and IPR petitions. Analysis regarding 35 U.S.C. § 101 eligible subject matter and U.S.C. 35 § 102/103.invalidity.

Disposition: PTAB Decision to Institute Trial for '271 and '360 patents entered August 1, 2016. Settlement reached following IPR Petitions.

Law Firms: DLA Piper, Polsinelli, Kelly Hart, Andrews Kurth for petitioners Southside Bank et al.

Opposing counsel:

## **7. Askeladden LLC. v Finnavaions LLC**

**U.S. Patent & Trademark Office, Patent Trial & Appeal Board.**  
Case: IPR2016-01906.

Matter: Implementation of a financial assistant to intercept transaction data from an online transaction with a merchant and transmission of data to a personal management program.

Technical Issues: Analysis of prior art systems for claims of US Patent 8,132,720.

Responsibilities: Declaration to support IPR petitions. Analysis regarding U.S.C. 35 § 102/103.invalidity.

Disposition: PTAB Decision to Institute Trial for '720 patent entered April 4, 2017.

Law Firms: Maynard, Cooper & Gale P.C. for petitioner Askeladden LLC.

Opposing counsel:

## **8. Askeladden LLC. v Purple Leaf. LLC.**

**U.S. Patent & Trademark Office, Patent Trial & Appeal Board.**  
Case: IPR2016-01720, IPR2016-01722

Matter: Systems using wireless devices to make payments for transactions, including the authorizing of payment instructions to the payee and receiving confirmation the payment amount was received.

Technical Issues: Analysis of prior art systems for claims of US Patents 8,527,407 and 8,744,963.

Responsibilities: Declarations to support IPR petitions. Analysis regarding U.S.C. 35 § 102/103.invalidity.

Disposition: PTAB Decision to Institute Trial for '407 and '963 patents entered Feb. 27, 2017.

Law Firms: Maynard, Cooper & Gale, P.C., New York and Goodwin Proctor, LLP New York.

Opposing counsel:

## **9. Master Card v William Grecia**

### **U.S. Patent & Trademark Office, Patent Trial & Appeal Board.**

Case: IPR2017-00793

Matter: Transformation of a user access request for cloud-based digital media content into a computer readable authorization permission token.

Technical Issues: Analysis of prior art systems for claims of US Patent 8,887,308.

Responsibilities: Declarations to support IPR petition. Analysis regarding U.S.C. 35 § 103.invalidity.

Disposition: Institution Denied.

Law Firms: Seyfarth Shaw, Boston, MA.

Opposing counsel:

## **10. Unified Patents, Inc. v SoftVault Systems. Inc.**

### **U.S. Patent & Trademark Office, Patent Trial & Appeal Board.**

Case: IPR2017-01788

Matter: Systems for protecting and controlling personal computers and/or components installed in or attached to PCs. Use of a remote server and hardware agents embedded within the circuitry that controls the

	various devices within a PC thereby providing protection when the PC is stolen.
Technical Issues:	Analysis of prior art systems for claims of US Patent 6,249,868.
Responsibilities:	Declarations to support IPR petition. Analysis regarding U.S.C. 35 §102 invalidity.
Disposition:	Settled prior to PTAB decision.
Law Firms:	McDermott Will and Emery, DC.
Opposing counsel:	

## **D. Markman Hearing Testimony**

### **1. MasterObjects v. Google, Inc.**

**U.S. District Court, Northern District California, Oakland Division**  
Civil Action No. C 11-1054 PJH (Hon. Phyllis J. Hamilton)

Matter:	Patent infringement accusing Google Instant and related Google products of infringement.
Technical Issues:	Analysis of Google technology such as Google Instant that provide increasingly relevant search content in response to lengthening query strings input by a user.
Responsibilities:	Assisted in claim construction. Presented a technology tutorial to the Court on Jan. 11, 2013 in support of the Markman Hearing.
Disposition:	Defendant Google, Inc. obtained a favorable claim construction on key terms. Plaintiff appealed the Court's Markman Ruling. Work completed January 2013.
Law Firms:	Kasowitz, Benson, Torres, Friedman LLP for defendant Google, Inc.
Opposing counsel:	Hosie Rice LLP, San Francisco, CA.

### **2. McKesson Information Solutions v. Epic Systems Corp.**

**U.S. District Court, Northern District, Georgia, Atlanta Division**  
Civil Action No. 1:06-cv-2965 (Hon. Jack T. Camp)

Matter:	Patent infringement - web-based services.
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Technical Issues: Analysis of web technology.  
 Responsibilities: Assisted in claim construction. Testified in deposition regarding contributions to claim construction, Sept. 2007. Provided assistance with technology tutorial entered into evidence at Markman Hearing, July 2, 2008. Testified in deposition regarding infringement, February, 2009.  
 Disposition: Motion For Summary Judgment regarding non-infringement in favor of defendant Epic Systems. Work completed March 2009.  
 Law Firms: Kilpatrick Stockton LLP, Atlanta, GA, for defendant Epic.  
 Opposing counsel: Womble Carlyle Sandridge & Rice PLLC, Charlotte, NC.

## **E. Deposition Testimony**

### **1. Williamson/AtHome Bondholders v. Google, Inc.**

**U.S. District Court, Northern District of California.**

Civil Action No. 3:15-cv-00966-BLF

Matter: Implementation of online banner ad delivery and tracking systems using cache defeating techniques.  
 Technical Issues: Evaluation of cache avoidance methodologies employed in early Internet ad delivery systems.  
 Responsibilities: Research implementation of AdForce, DoubleClick and NetGravity systems deployed in the late 1990s and wrote invalidity report based on these systems. Testified in deposition Aug. 9, 2018.  
 Disposition: Current.  
 Law Firms: Keker, Van Nest & Peters, San Francisco for defendant Google, Inc.  
 Opposing counsel: Weil, Gotshal, Manges LLP, CA.

### **2. Rothschild Connected Devices Innovations, Inc. v. The Coca-Cola Company**

**U.S. District Court, Northern District of Georgia**

Civil Action No. 1:16-CV-1241-TWT

Matter: Networking of drink dispensers offering customized drinks.

Technical Issues: User registration and interaction with Coca-Cola dispensers via and Internet network connections.  
Internet packet trace analysis.

Responsibilities: Research implementation of Coca-Cola Freestyle system. Invalidity and Non-infringement rebuttal report. Testified in deposition August 3, 2018.

Disposition: Current.

Law Firms: Alston Bird, Atlanta for defendant Coca-Cola.

Opposing counsel: Carey Rodriguez Milian Gonya, LLP, FL.

### **3. EMG Technology LLC v. The Vanguard Group, Inc.**

#### **U.S. District Court, Eastern District of Texas**

Civil Action No. 6:12-cv-543

Matter: Web site and user interface implementation for mobile devices.

Technical Issues: Reformatting of web site HTML content into XML markup language formats to support the creation of web sites servicing mobile devices having limited computational and display resources.

Responsibilities: Invalidity report covering prior art in the timeframe of 1999. Testified in deposition March 26, 2014.

Disposition: Joint Stipulation of Dismissal based on Autozone's successful MSJ of non-infringement.

Law Firms: Fish Hoffman Sigler, Bass Berry & Sims, LeClairRyan for defendants J. C. Penney, Corp., AutoZone, Inc., and Coach, Inc. respectively.

Opposing counsel: Jeffer Mangels Butler and Mitchell, LLP, CA.

### **4. Walker Digital LLC v. Google, Inc.**

#### **U.S. District Court, District of Delaware**

Civil Action No. 1:11-cv-00318-LPS

Matter: Web site implementation for publication of personal information.

Technical Issues: Implementation of social media websites including Google +.  
Responsibilities: Research implementation of Google+. Non-infringement rebuttal report. Testified in deposition January 31, 2014.  
Disposition: Work completed Jan. 2014.  
Law Firms: White & Case LLP, Palo Alto for defendant Google, Inc.  
Opposing counsel: Potter Anderson & Corroon LLP, DE.

**5. Implicit Networks, Inc. v. Juniper Networks, Inc.**

**U.S. District Court, Northern District of California**  
Civil Action No. C 10-4234 SI.

Matter: Internet packet processing for firewalls and gateways.  
Technical Issues: Implementation of router firewall and security services functionality on routers and security appliances. Analysis of packet flows for various Internet protocols.  
Responsibilities: Research implementation of Juniper's M series router and Multi-services PIC products from source code. Non-infringement rebuttal report. Testified in deposition Oct. 16, 2012.  
Disposition: Juniper prevailed on a summary judgment motion. Work completed February 2013.  
Law Firms: Irell & Manella LLP, Newport Beach, CA for defendant Juniper.  
Opposing counsel: Hosie Rice LLP, San Francisco, CA.

**6. Wireless Ink Corp. v. Facebook Inc., Google, Inc.**

**U.S. District Court, Southern District of New York**  
Civil Action Nos. 10 Civ. 1841, 11 Civ. 1751. (Hon. P. Kevin Castel.)

Matter: Web site implementation for mobile devices.  
Technical Issues: Implementation of websites providing content to desktop computers and mobile smartphones. Delivery of multimedia content to browsers.

Responsibilities: Research implementation of YouTube, Google+ and Google Docs implementations. Non-infringement rebuttal report. Testified in deposition Sept. 24, 2012.

Disposition: Work completed 2012. I understand that Google was successful in a MSJ for non infringement.

Law Firms: White & Case LLP, New York, for defendant Google, Inc.

Opposing counsel: Pitcock Law Group, New York.

**7. E-Contact Technologies LLC v. Apple, Inc., Google, Inc. et al.**

**US District Court, Eastern District of Texas, Beaumont Division**  
Civil Action No. 1:11-CV-426.

Matter: Word processing applications with archival storage.

Technical Issues: Word search and document editing.

Responsibilities: Analysis of patent claims to support claim construction brief on behalf of joint defense group. Prepared declaration regarding means plus function structure and claim indefiniteness. Testified in deposition regarding claim construction issues, Sept. 5, 2012.

Disposition: Work completed Sept. 2012.

Law Firms: Wilson Sonsini Goodrich & Rosati, CA, Fish & Richardson, CA, for defendants Google and Apple respectively.

Opposing counsel: Antonelli, Harrington & Thompson LLP, Houston, TX.

**8. Adobe Systems, Inc. v. Wowza Media Systems, Inc., et al.,**

**U.S. District Court, Northern District of California, Oakland Division**  
Civil Action No. CV-11-02243 CW

Matter: Communications protocols for delivery of Adobe proprietary multimedia formats.

Technical Issues: Real-time Multimedia Protocol (RTMP), Secure Sockets Layer, authentication and encryption techniques, Internet communications.



Responsibilities: Testified in deposition August 30, 2012 regarding claim construction declaration. Wrote infringement report regarding Wowza technology and rebuttal validity expert opinion. Testified in deposition on Feb. 11, 2013 and April 26 2013 regarding validity/infringement of patents.

Disposition: Settled.

Law Firms: Latham & Watkins LLP, Los Angeles for plaintiff Adobe Systems, Inc.

Opposing counsel: Kirkland & Ellis, Chicago.

## **9. Eolas Technologies, Inc. v. Google, Inc.**

### **U.S. District Court, Eastern District of Texas, Tyler Division**

Civil Action No. 6:09-cv-00446-LED.

Matter: Multimedia Display in Web Browsers.

Technical Issues: Behavior of web browsers when displaying video and other multimedia content. Analysis of Google AJAX JavaScript implementation, YouTube web site video delivery, Chrome and Android browser technology, and browser plugin architecture.

Responsibilities: Wrote non-infringement report covering 34 different Google products including Android, Chrome, YouTube, Gmail, Search Suggest, Maps, Circles, Talk Plugin Video Accelerator, Documents, Presentation and Spreadsheets. Testified in deposition Jan. 6, 2012.

Disposition: The jury found the '906 and '985 patents to be invalid during the Invalidity phase of the trial. Work completed Feb. 2012.

Law Firms: Ropes & Gray, Palo Alto, CA, for defendant Google.

Opposing counsel: McKool Smith, TX.

## **10. Augme/Modavox, Inc. v. Tacoda Inc., AOL .**

### **U.S. District Court, Southern District of New York**

Civil Action No. 07-CV-7088 (CM)(CWG) Judge Colleen McMahon.

Matter: eCommerce patent litigation.

Technical Issues: Implementation of Internet browser and server technology.

Responsibilities: Research JavaScript and web page tracking non-infringement issues, assist with claim construction. Testified in support of Tacoda motion for summary judgment, April, 2011.

Disposition: Work completed Sept. 2012.

Law Firms: Orrick, Herrington & Sutcliffe LLP, New York, for defendant.

Opposing counsel: Shaub & Williams LLP, LA, Goodwin Procter, New York.

**11. Juxtacomm Technologies v. Ascential Software, Microsoft Corp., IBM Corporation**

**United States District Court, Eastern District Texas.**  
Civil Action No. 2:07-CV-359 LED

Matter: Data Warehouse patent dispute.

Technical Issues: SOA software implementation, ETL database technology.

Responsibilities: Analyze IBM products in preparation for non-infringement report. Wrote invalidity comparison report regarding IBM's prior art data warehouse products. Wrote non-infringement report. Testified in deposition July, 2009 regarding non-infringement and prior art products.

Disposition: Case settled October 2009.

Law Firms: Fitzpatrick, Cella, Harper & Scinto, New York, Kirkland & Ellis, LLP, New York, NY, for defendant IBM.

Opposing counsel: Akin Gump Straus Hauer and Feld, LLP. Ward & Smith, TX.

**12. Madison Tyler Holdings, LLC., et al v. Financial Asset Trading & Technology of California, LLC, et al.**

**JAMS Arbitration**

JAMS Ref. No. 1220038462 (Justice Richard Neal)

Matter: Misappropriation of Trade Secrets, financial market trading software.

Technical Issues: Examine code and algorithms in Java application re-write of market-maker trading functionality for similarity with original Python code base.

Responsibilities: Perform duties as a neutral, Court-appointed technical expert. Review Java and Python code bases for similarities. Perform automated and manual code comparisons. Wrote technical report on findings and testified in deposition June, 2009.

Disposition: Settled July 2009. Work completed July 2009.

Law Firms: LathamWatkins, Los Angeles, Storch Amini & Munves, PC, Paul, Weiss, Rifkind, Wharton & Garrison LLP, New York, Skadden Arps, Los Angeles, Bird, Marella, Boxer, Wolpert, Nessim, Century City, CA, Irell & Manella, Los Angeles.

Opposing counsel:

**13. Irise v. Axure Software Solutions, Inc., Integrated Electrical Services, Inc.**

**U.S. District Court, Central District of California, Western Division.**

Case No. 08-CV-03601 SJO (JWJx) Hon. S. James Otero.

Matter: Patent litigation regarding rapid software prototyping tools.

Technical Issues: Microsoft .NET source code implementation analysis.

Responsibilities: Research non-infringement issues, review source code. Wrote Invalidity and Non Infringement reports; testified in deposition June, 2009.

Disposition: Settled Sept., 2009.

Law Firms: Orrick, Herrington & Sutcliffe, LLP, Irvine CA, for defendant Axure.

Opposing counsel: Knobbe, Martens, Olson & Bear, LLP.

**F. Has also served as an expert during the last five years:**

**1. Leon Stambler v. Amazon.com, Inc., et al.**

**U.S. District Court, Eastern District of Texas, Marshall Division**

Civil Action No. 2:09-cv-310.

Matter: Authentication of POS transactions using cryptographic methods.

Technical Issues: Point-of-Sale cryptography, Secure Sockets Layer, authentication and encryption techniques using Public Key, Digital Certificates, Smart Cards and Symmetric Key cryptography.

Responsibilities: Wrote invalidity report regarding the Stambler '302 and '148 patents and non-infringement report regarding Newegg web site implementation.

Disposition: Settled 2013.

Law Firms: Zarian, Midgley & Johnson PLLC, and Webb Law Firm, for defendant NewEgg, Inc.

Opposing counsel: Ward & Smith Law Firm, Longview, TX.

## **2. Vasudevan Software, Inc., v. IBM Corporation**

**U.S. District Court, Northern District of California, San Jose Division**  
Civil Action No. 5:09-Cv-05897.

Matter: Database integration for OLAP.

Technical Issues: Installation of database and OLAP analysis technology. Implementation of MS SQL Server and IBM DB2 technology.

Responsibilities: Review technology issues.

Disposition: Settled Sept. 2011.

Law Firms: Kirkland & Ellis, NY, for defendant IBM.

Opposing counsel: Susman Godfrey LLP, Seattle, WA.

## **3. Leon Stambler v. J.P. Morgan Chase, First Tennessee**

**U.S. District Court, Eastern District of Texas, Marshall Division**  
Civil Action No. 2:08-CV-204.

Matter: Authentication of POS transactions using cryptographic methods.

Technical Issues: Point-of-Sale cryptography, Secure Sockets Layer, authentication and encryption techniques using Public

Key, Digital Certificates, Smart Cards and Symmetric  
Key cryptography.  
Responsibilities: Wrote invalidity report regarding the Stambler '302  
and '148 patents.  
Disposition: Settled May, 2010.  
Law Firms: Andrews Kurth, Dallas, TX, for defendants First  
Tennessee Bank and Compass Bank.  
Opposing counsel: Ward & Smith Law Firm, Longview, TX.