

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ADOBE INC.,

Petitioner

v.

PETER HENRIK PEDERSEN,

Patent Owner

Case IPR2023-00986

U.S. Patent No. 6,965,920

DECLARATION OF PHILIP GREENSPUN
U.S. PATENT NO. 6,965,920
CLAIMS 1-11, 14-18

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I, Philip Greenspun, declare as follows:

I. BACKGROUND AND QUALIFICATIONS

1. In forming my opinions, I have relied on my education and experience as described below. A copy of my *curriculum vitae* is attached as EX1012 and provides additional details on my qualifications and experience.

2. I earned a Ph.D. in Electrical Engineering and Computer Science from Massachusetts Institute of Technology in 1999. I also obtained a Bachelor of Science Degree in Mathematics from Massachusetts Institute of Technology in 1982 and a Master of Science Degree in Electrical Engineering and Computer Science from Massachusetts Institute of Technology in 1993.

3. My Ph.D. thesis concerned the engineering of large online Internet communities.

4. I have authored five computer science textbooks, including Software Engineering for Internet Applications (MIT Press) and Database Backed Web Sites (Macmillan).

5. I have served as an independent member of various advisory and corporate boards, mostly for technology companies. For example, I joined the corporate board of an MIT materials science spin-off in late 2005 during a \$550,000

seed capital phase. I stepped down when the company secured \$10 million in venture capital in mid-2007.

6. I have previously served as an expert witness for Amazon.com, IBM, Microsoft, Xerox, Google, and Samsung, among others, in patent proceedings.

7. I began working full-time as a computer programmer in 1978, developing a database management system for the Pioneer Venus Orbiter at the National Aeronautics and Space Administration's Goddard Space Flight Center.

8. I developed my first computer-supported mapping applications in the mid-1980s, starting with an anti-tank warfare simulator for the U.S. Department of Defense (as a subcontractor to Textron). I also developed a computer system for supporting civil engineering, especially earthmoving, that included a digital three-dimensional map. The latter system was the topic of my Master's thesis at MIT and also U.S. Patents 5,150,310 and 5,964,298 ("Integrated civil engineering and earthmoving system").

9. I developed my first program using a relational database management system in 1994. It was a Web interface to the Children's Hospital Oracle RDBMS version 6. This enabled doctors at the hospital to view patient clinical data using any computer equipped with a Web browser.

10. In 1995, I led an effort by Hearst Corporation to set up an infrastructure for Internet applications across all their newspaper, magazine, radio, and television properties. This infrastructure included a classified ad system that tracked user reputations. I also built discussion forums, user comment facilities, moderation systems, publishing workflow systems, contest systems, email marketing tools, and polling systems.

11. Between 1995 and 1997, I significantly expanded the photo.net online community that I had started, in 1993, in order to help people teach each other to become better photographers. I began distributing the source code behind photo.net to other programmers as a free open-source toolkit, called “ArsDigita Community System.”

12. The photo.net site enabled users to upload photos as attachments to discussion forum postings. Beginning in 1999, the site included a complete photo-sharing system along the lines of Flickr.

13. In May 1997, Macmillan published my first textbook on Internet Application development, “Database Backed Web Sites.” The “Case Studies” chapter of this book includes a description of a system to enable users to sign up to receive email updates from Web publishers. The same chapter also describes a system in which users can receive reminders via email regarding friends’ birthdays.

Another example in this chapter is a discussion forum system in which users can sign up for email alerts of new postings matching specified keywords and can also specify the frequency with which updates are sent.

14. In 1997, I started a company, ArsDigita, to provide support and service for the free open-source toolkit. Between 1997 and the middle of 2000, I managed the growth of ArsDigita to 80 people, almost all programmers, and \$20 million per year in annual revenue. This involved supervising dozens of software development projects. As the founder, CEO, and chief technical employee of the company, I personally developed functional specifications and Web page flows that determined the user experience. One of the modules that I worked on was a complete web-based email system¹, similar in capability to the Hotmail system described below. Another module that related to messaging is a chat module, also known as instant messaging.²

15. As part of photo.net or ArsDigita, I supervised the design and construction of modules for content management, user directories, data warehousing, online file storage and sharing, email distribution, ticket tracking, social bookmarking, and project management.

¹ See <https://philip.greenspun.com/ancient-history/webmail/>

² See <https://philip.greenspun.com/doc/chat>

16. Between 2000 and the present, I have done software development projects for philip.greenspun.com and photo.net, two online services. In addition, I developed postclipper.com, a database-backed Web application that works in conjunction with Facebook to allow parents to produce electronic baby books based on photographs previously included in Facebook posts.

17. Separately from this commercial and public work, I have been involved, as a part-time teacher within the Department of Electrical Engineering and Computer Science, educating students at MIT in how to develop Internet Applications. In the Spring of 1999, I taught 6.916, Software Engineering of Innovative Web Services, with Professors Hal Abelson and Michael Dertouzos. In the Spring of 2002, this course was adopted into the standard MIT curriculum as 6.171. I wrote 15 chapters of a new textbook for this class, "Software Engineering for Internet Applications." This book was published on the Web at <http://philip.greenspun.com/seia/> starting in 2002 and 2003 and also in hardcopy from MIT Press in 2006. I am the sole author of a supplementary textbook for the class, "SQL for Web Nerds," a succinct SQL programming language tutorial available only on the Web at <http://philip.greenspun.com/sql/>. I am also one of the creators and teachers of a three-day intensive course in developing database applications. We teach this class periodically at MIT.

18. I periodically teach a database programming class at Harvard Medical School. Students have access to a relational database of more than 5 billion insurance claims and write SQL programs to try to identify correlations and trends. I taught this course most recently in March 2021. I am currently teaching an Information Security class at Florida Atlantic University.

II. MATERIALS REVIEWED

19. I am not an attorney and offer no legal opinions, but in my work, I have had experience studying and analyzing patents and patent claims from the perspective of a person skilled in the art.

20. In preparing this declaration, I reviewed the '920 patent, including the claims of the patent in view of the specification, and I have reviewed the prosecution history of the '920 patent, as well as numerous prior art and technical references from the time of the alleged invention. I have also reviewed the Plaintiff's Responsive Claim Construction Brief, the Plaintiff's Claim Construction Sur-Reply, and the court's Claim Construction Order filed in *Pedersen v. Mailgun Technologies, Inc.*, No. W-21-CV-01153-ADA (W.D. Tex.). In addition, I have reviewed the following exhibits to the '920 patent IPR petition:

Exhibit No.	DESCRIPTION
1001	U.S. Patent No. 6,965,920 to Peter Henrik Pedersen ("'920 patent")
1003	File History of U.S. Patent Application 09/904,270 that issued as the '920 Patent

Exhibit No.	DESCRIPTION
1004	U.S. Patent No. 6,741,992 to McFadden (“McFadden”)
1005	U.S. Patent No. 6,633,630 to Owens et al. (“Owens”)
1007	<i>Pedersen v. Mailgun Technologies, Inc.</i> , No. 6:21-cv-01153-ADA, Dkt. 23 (W.D. Tex., Sep. 12, 2022)
1008	<i>Pedersen v. Mailgun Technologies, Inc.</i> , No. 6:21-cv-01153-ADA, Dkt. 33 (W.D. Tex., Oct. 19, 2022)
1013	Malone et al., <i>Semi-Structured Messages are Surprisingly Useful for Computer-Supported Coordination</i> (1986)
1014	Kreistle, <i>Teach Yourself Lotus Notes 4</i> (1996)
1015	Longergan & Freeland, <i>Lotus Notes R5 For Dummies</i> (1999)
1016	Boone, <i>Concept Features in Re:Agent, an Intelligent Email Agent</i> (1998)
1017	Terry, <i>A Tour Through Tapestry</i> (1993)
1018	Liscano et. al., <i>A System for the Seamless Integration of Personal Messages using Agents Developed on a Lotus Notes Platform</i> (1996)
1019	U.S. Patent No. 5,937,161 to Mulligan et al. (“Mulligan”)
1020	Article titled “On the Net: Filtering the Email Storm” (1998)

21. I have been asked to consider whether McFadden or the combination of McFadden and Owens render obvious certain claims of the ’920 patent. I have also been asked to consider the state of the art and the prior art available before the time the ’920 patent was filed. My opinions are provided in this declaration.

22. I have been informed that Mr. Peter Henrik Pedersen purports to own the ’920 patent, but I provide no opinion with respect to patent ownership. To the best of my knowledge, I have no financial interest in the ’920 patent and, to the best of my recollection, I have had no contact with Mr. Pedersen. Other than as an

investor in Vanguard index funds, I do not hold any stock in Adobe Inc. or any affiliate or subsidiary thereof.

23. I am a salaried employee of Fifth Chance Media LLC, which I understand is being compensated for my work in this matter. I am not an owner of Fifth Chance Media LLC, and my compensation is not contingent on the outcome of this matter or the specifics of my testimony. Fifth Chance Media LLC is being compensated for my work as an expert on an hourly basis. My compensation is not dependent on the outcome of these proceedings or the content of my opinion.

III. RELEVANT LEGAL STANDARDS

24. I am not an attorney. For the purposes of this declaration, I have been informed about certain aspects of the law that are relevant to forming my opinions. My understanding of the law is as follows:

25. Petitioner's counsel has informed me that a patent claim can be considered to have been obvious to a person of ordinary skill in the art (POSITA) at the time the application was filed. This means that, even if all of the requirements of a claim are not found in a single prior art reference, the claim is not patentable if the differences between the subject matter in the prior art and the subject matter in the claim would have been obvious to a person of ordinary skill in the art at the time the application was filed.

26. Petitioner's counsel has informed me that a determination of whether a claim would have been obvious should be based upon several factors, including, among others:

- the level of ordinary skill in the art at the time the application was filed;
- the scope and content of the prior art; and
- what differences, if any, existed between the claimed invention and the prior art.

27. Petitioner's counsel has informed me that a single reference can render a patent claim obvious if any differences between that reference and the claims would have been obvious to a person of ordinary skill in the art. Alternatively, the teachings of two or more references may be combined in the same way as disclosed in the claims, if such a combination would have been obvious to one having ordinary skill in the art. In determining whether a combination based on either a single reference or multiple references would have been obvious, it is appropriate to consider, among other factors:

- whether the teachings of the prior art references disclose known concepts combined in familiar ways, and when combined, would yield predictable results;

- whether a person of ordinary skill in the art could implement a predictable variation, and would see the benefit of doing so;
- whether the claimed elements represent one of a limited number of known design choices, and would have a reasonable expectation of success by those skilled in the art;
- whether a person of ordinary skill would have recognized a reason to combine known elements in the manner described in the claim;
- whether there is some teaching or suggestion in the prior art to make the modification or combination of elements claimed in the patent; and
- whether the innovation applies a known technique that had been used to improve a similar device or method in a similar way.

28. Petitioner's counsel has informed me that one of ordinary skill in the art has ordinary creativity and is not an automaton. Petitioner's counsel has informed me that in considering obviousness, it is important not to determine obviousness using the benefit of hindsight derived from the patent being considered.

29. Petitioner's counsel has informed me that under specific circumstances whereby a secondary reference is not being used to teach a limitation but rather to explain the teachings of a primary reference, a specific motivation to combine need

not be identified; however, in the case of the combination of art discussed in this declaration, a specific motivation to combine is present and I have identified it.

IV. TECHNOLOGY BACKGROUND

A. State of the Art at the Priority Date of the '920 Patent

30. Modern email systems enabling person-to-person and mailing-list email communications date to the 1970s. By the early 1980s, at least some users felt that they were receiving too many irrelevant messages and that important messages were not highlighted. In a 1986 paper entitled “Semi-Structured Messages are Surprisingly Useful for Computer-Supported Coordination,” Thomas Malone and colleagues at the Massachusetts Institute of Technology identified “the information sharing problem.” EX1013, 104. This was the problem of “disseminating information to the people who will find it useful without distracting others who will find no value in its contents.” *Id.* Malone recognized that this problem “is likely to become increasingly important as it becomes both technically and economically feasible to send electronic messages and other documents to large numbers of possible recipients.” *Id.* To address this problem, Malone built a mid-1980s system called “The Information Lens.” *Id.*, 102. In this system, senders could elect to provide additional structure to a message, e.g., a separate field for the topic of a proposed meeting. *See id.*, 103. This separate field facilitated the automatic filtering

of messages for recipients. *Id.*, 104 (“Receivers can speci[fy] rules to automatically filter and classify their incomin[g] messages into folders...”).³

31. Malone provides examples of “rules” in Figure 4:

³ I retrieved the Malone paper from the ACM Digital Library and the scan of this nearly 40-year-old document has some missing characters on the right edge of the page. The dropped letters on the edge of the page do not interfere with a POSITA’s ability to understand the paper.

Figure 4
Sample rules

(a) **IF** Message type: Action request
 Action deadline: Today, Tomorrow
 THEN *Move to: Urgent*

(b) **IF** Message type: Meeting announcement
 Day: Not Tuesday
 THEN *Delete*

(c) **IF** Message type: Request for information
 Subject: AI, Lisp
 THEN *Show*

(d) **IF** From: Silk, Siegel
 THEN *Set Characteristic: VIP*

IF Message type: Action request
 Characteristics: VIP
 THEN *Move to : Urgent*

(e) **IF** Message type: NYT Article
 Subject: Computer
 THEN *Move to: Computers*

IF Message type: NYT Article
 Subject: Movies
 THEN *Move to: Movies*

IF Message type: NYT Article
 Article date: < Today
 Characteristics: Not MOVED
 THEN *Delete*

IF Message type: NYT Article
 Characteristics: Not MOVED and Not DELETED
 THEN *Move to: NYT Articles*

Id., Fig. 4

As shown, Malone contemplated “rules” to automatically file, delete, display, and modify the characteristics of received messages. *Id.*,

32. Lotus Notes is an example of a commercially successful system to manage messages according user rules. Tracing its roots to a University of Illinois system on the PLATO mainframe in the 1970s, on which founder Ray Ozzie had worked, Notes was released to corporate America in 1989. Notes eventually offered email, contact management, calendar, to-do lists, document creation and sharing, news and mailing-list distribution, and customized tools to support the specialized needs of particular companies.

33. *Teach Yourself Lotus Notes 4* (MIS Press 1996) by Bill Kreisle describes Notes as “a tool to collect, organize, and share knowledge and information” and explains that knowledge is collected “by storing it in Databases of Documents.” EX1014, 10-11. Access to a Database may be limited to specific users or groups of users. *Id.*, 15-16. Kreisle further describes Agents, “user-created programs that automate or streamline common user processes” including by finding new information of interest in a database:

In this workflow, an Agent runs automatically on the server, checking any new Documents for her name or the name of her product. If it finds new Documents that match the search conditions, it sends the user a message using mail enabling. This saves the user from having to open the database every day to search for new Documents that may interest her.

Id., 18-19.

34. Notes also implements email functions, whereby emails can be sent to either an individual or a group, or a combination of individuals and groups. *Id.*, 258. Kriesle discloses that emails are treated as Documents within a notes Database, and therefore all the tools that can be used with other kinds of documents and databases can be used with email. *Id.*, 253. Such tools include “Simple Agents” that can “scan a database and move documents to specific folders or Views based on their contents.” *Id.*, 367. In other words, it would be possible with Notes circa 1996 to filter email messages (Documents within a Notes Database) and classify them into folders.

35. *Lotus Notes R5 for Dummies Quick Reference* (IDG 1999) by Stephen R. Londergan and Pat Freeland, another Lotus Notes reference, explains that users can subscribe to a Headlines database and receive emails for items that match various criteria, e.g., meeting invitations or completed to-do items. EX1015, 167. Londergan teaches filtering documents/emails by newness and whether keywords are present:

A Notes newsletter is a memo, sent to selected recipients, that contains links to documents newly arrived in a database. You can set a newsletter agent (macro) to scan the database daily for new documents that contain specified words.

Id., 169. This filtering may be performed on text content. *Id.*, 170 (“If appropriate, click the Add Search button, and then enter the text you want the agent to search for

in documents”). As explained above, email in Notes is treated simply as another database of documents and, therefore, the above disclosures are applicable to email messages.

36. Academic efforts in this area continued in parallel with commercial systems. For example, “Concept Features in Re:Agent, an Intelligent Email Agent” (1998) by Gary Boone describes a computer program that can automatically classify emails. EX1016, 141. The paper also provides a history of email filtering technologies:

The current generation of email filtering packages, including Elm Filter [27], Ishmail [11], and Procmail [26], requires user-written rules to interpret and sort email. For example, when Procmail, which uses regular expressions, finds a match in a specified line of text, the email is forwarded, appended to a mailbox file, or piped to another program. Rule-based systems can be challenging for users due to the difficulty of not only determining the rule that achieves the desired result, but also writing it with the correct syntax.

Id., 142. The Elm Filter paper that Boone cites dates from 1988. *Id.*, 148. Procmail is an email program that was first released in 1990.

37. “A Tour Through Tapestry” (1993) by Douglas B. Terry describes a Xerox PARC system designed to deal with “people feeling overloaded with the flood of available information while at the same time feeling insufficiently informed.” EX1017, 21. To solve this problem, the paper describes a Tapestry system which maintains a “user profile describing the user’s personal interests as a set of queries

or *filters*.” *Id.* The system further maintains a database containing articles, including articles pulled from a “NetNews bulletin board system,” which may be regarded as a wide-distribution mailing list. *Id.* Items from the database that “match a user’s filter profile are mailed to the user as electronic mail messages.” *Id.* For example, Terry describes a user filter in which articles including the keyword “AppleSearch” are forwarded to the user. *Id.*, 25-26. The user is thus subscribed to the NetNews mailing list, as mediated by the user’s filters.

38. The academic and commercial worlds met in November 1996 with “A System for the Seamless Integration of Personal Messages using Agents Developed on a Lotus Notes Platform” by Ramiro Liscano et. al. EX1018. This paper, published as part of the Proceedings of the 1996 conference of the Centre for Advanced Studies on Collaborative Research (CASCON ’96) purported to “introduce a seamless messaging system for the management of personal messages,” including “voice, fax, and/or e-mail messages.” *Id.*, 1. The system operated according to “high-level rules” specified by a user and was operable to mediate between different messaging environments. *Id.* The system was implemented on the Lotus Notes platform. *Id.*

39. The Liscano system is structured as shown in Figure 1:

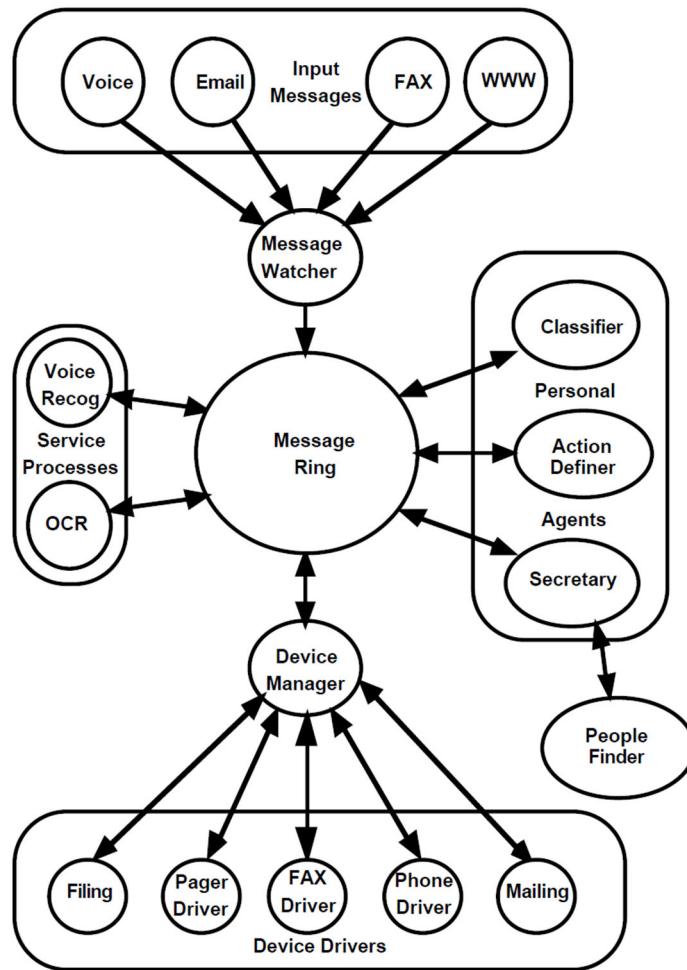


Figure 1. System Architecture

It includes a “Message Watcher” capable of handling different types of message inputs and a “Device Manager” capable of handling different types of message outputs. *Id.*, Fig. 1. “Agents” including a “Classifier Agent” and a “Action Definer Agent” are capable of implementing user-defined filters. *Id.*, Fig. 1, 3-4. In one example, user specified rules may cause certain kinds of messages to be filed in a particular collection. *Id.*, 6 (“IF List Messages ACTION (file “listmsgs.mail”)”).

40. A server-based filter designed for handling conventional email messages is described in U.S. Patent 5,937,161 (“Mulligan”), filed April 12, 1996. EX1019. The system architecture is provided in Fig. 2:

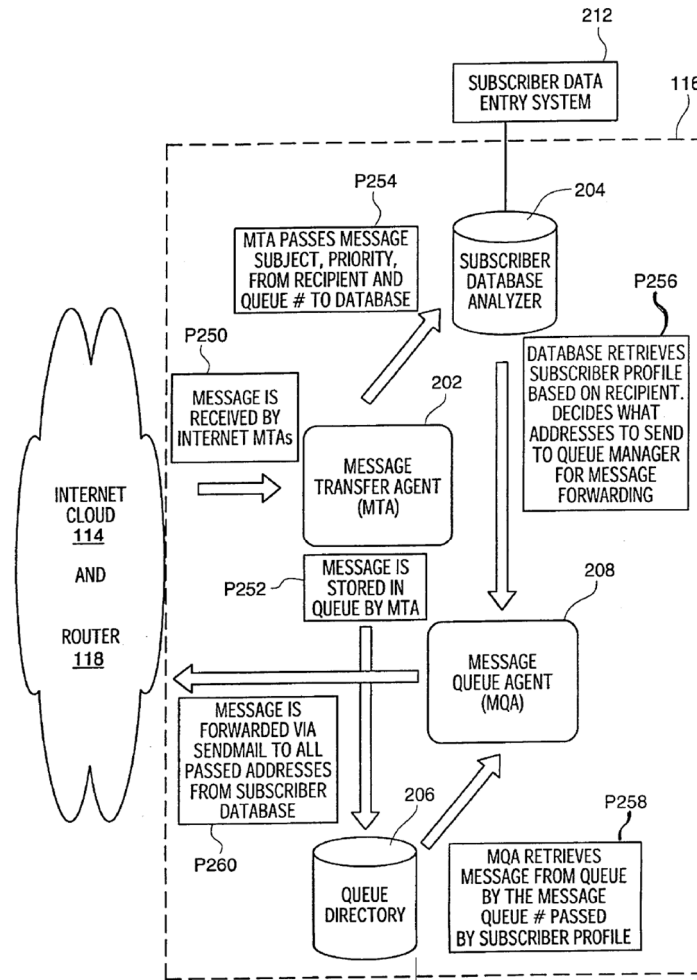


FIG. 2

41. A subscriber profile database governs the behavior of the system. Mulligan gives examples of filtering by the identity of the individual messengers, e.g., to delete messages from an “overzealous sales representative” (*Id.*, 7:7-10) or

to forward messages from specific senders in the form of pager notifications or facsimile transmissions. *Id.* 6:42-54, 6:64-7:4.

42. An article titled “On the Net: Filtering the Email Storm” (Online Magazine, 1998) describes some capabilities of popular desktop email clients.⁴ EX1020. Eudora, a desktop email client dating to the 1980s, is described as offering filters based on any field, including the identity of the sender (“From”):

To create filters in Eudora, choose Filters from the Tools drop-down menu. Choose New to create a new filter, and then specify whether it is for incoming or outgoing messages. In defining the filter, Eudora includes fields for To, From, Subject, CC, Reply-to, Any Header, Any Recipient, or even the body. The Any Header is especially useful when the address of a list or other sender appears in different parts of the header depending on the nature or type of message.

Id., 3. As a specific example, “all messages from bestclient@somewhere. corn could be transferred to an Urgent folder with a copy sent to a Bestclientbackup folder.” *Id.* The article further notes that other popular desktop email tools, such as Microsoft Outlook, offer similar filtering capabilities. *Id.*

43. In summary, a person of ordinary skill in the art in the year 2000 would have been familiar with various kinds of groupware messaging systems in which messages could be sent to individuals or to mailing lists, and in which users could

⁴ I downloaded this article from the Nexis service.

define filters. A POSITA would have been familiar with commercially available server-based and client-based (desktop) email filtering systems that allow filtering by, among other properties, message sender and message content. A POSITA would have also been familiar with agents capable of performing a range of tasks, e.g., classifying messages and filing them according to content. A POSITA would also have been familiar with unified messaging environments in which information would be combined from email, facsimile transmissions, conventional voice telephone calls, and various digital Internet systems, such as USENET newgroups and the World Wide Web. Lastly, a POSITA would have been familiar with the capabilities of Lotus Notes, a popular commercial system at the time.

B. Databases and Database Management Systems

44. The '920 patent refers to databases. This term is used by POSITAs in two different ways. First, "database" may refer to an organized collection of information, e.g., a library card catalog, a list of employees at a company and their respective titles, salaries, and mailing addresses, or an inventory of products available at a retailer. Second, "database" may refer to a database management system (DBMS), which is a combination of hardware and software to facilitate storage, searching, and access to organized collections of information. Familiar

examples of DBMS systems include Microsoft Access, Microsoft SQL Server, and the Oracle Database. These latter tools organize databases into tables.

45. POSITAs may use the term “database” to refer to all of the records stored by a DBMS, to a subset of those records (e.g. a table), or to the DBMS itself. An Oracle relational DBMS, for example, has the capability to store tens of thousands of distinct tables. A POSITA might refer to the entire installation as “the database” or refer to a single table or a set of related tables holding customer orders as “the orders database.” For larger collections of data, the term “database” may be used to refer to tables distributed among multiple DBMS systems and/or physical servers.

46. This range of possible meanings does not render the term “database” ambiguous, as the meaning is generally clear to a POSITA in context.

V. Level of Ordinary Skill in the Art

47. It is my understanding that factors defining the level of ordinary skill in the art include: (1) the types of problems encountered in the art; (2) the prior art solutions to those problems; (3) the rapidity with which innovations are made; (4) the sophistication of technology; and (5) the educational level of active workers in the field.

48. Using these factors and based on my own experience in industry in the 1990s and early 2000s, a person of ordinary skill in the art at the claimed priority date of the '920 patent would have had (1) a bachelor's degree in computer science (or a related field), or equivalent work experience, and (2) at least two years of work experience building groupware and messaging systems. More education can supplement practical experience and vice versa. On the priority date of the '920 patent (July 12, 2000), I possessed more than ordinary skill in the field of the '920 patent. However, I am familiar with the skills and knowledge of those I would have considered to be of ordinary skill in the art at this time because I considered the backgrounds of the engineers and technicians relevant to the '920 patent whom I supervised and had other professional associations with in the past.

VI. The '920 Patent

49. The '920 patent is directed to providing centralized management of how messages are delivered from messengers to recipients. EX1001, Abstract. The '920 patent explains that there is a problem in the art with respect to “inefficient mass communication means, such as spam e-mail, and household delivered promotion materials (‘junk mail’).” *Id.*, 1:58-62. These communications may result in the delivery of relevant information, “but at the wrong time or in the wrong place.” *Id.*, 1:64-2:1.

50. The '920 patent recognizes that these problems have motivated rule-based message management systems, citing to U.S. 5,765,033 ("Miloslavsky") and U.S. 6,182,118 ("Finney"). *Id.*, 2:9-25. However, the '920 patent claims that Miloslavsky does not allow recipients and senders "direct access to the rule set and the ability to redefine the sets [*sic.*] parameters." *Id.*, 2:9-16. The '920 patent further claims that Finney allows a recipient to access the rule set. However, "the system of Finney does not provide for a sender of a message being able to define any parameters." *Id.*, 2:16-25.

51. Thus, the '920 patent asserts that it discloses an advancement over the prior art in allowing both recipients and messengers to define recipient profiles having rules to manage messages. *Id.*, 2:26-42 ("Therefore, it would be beneficial to have an electronic message management system where each individual recipient could access a rule set and maintain the parameters of his/her own message profile... Additionally, it would be useful[] for messengers to be able to submit not only message content, but also individual and group recipient profiles or identifications to the central message management system rule set").

52. To implement this system, the '920 patent discloses a Message Management Server 50:

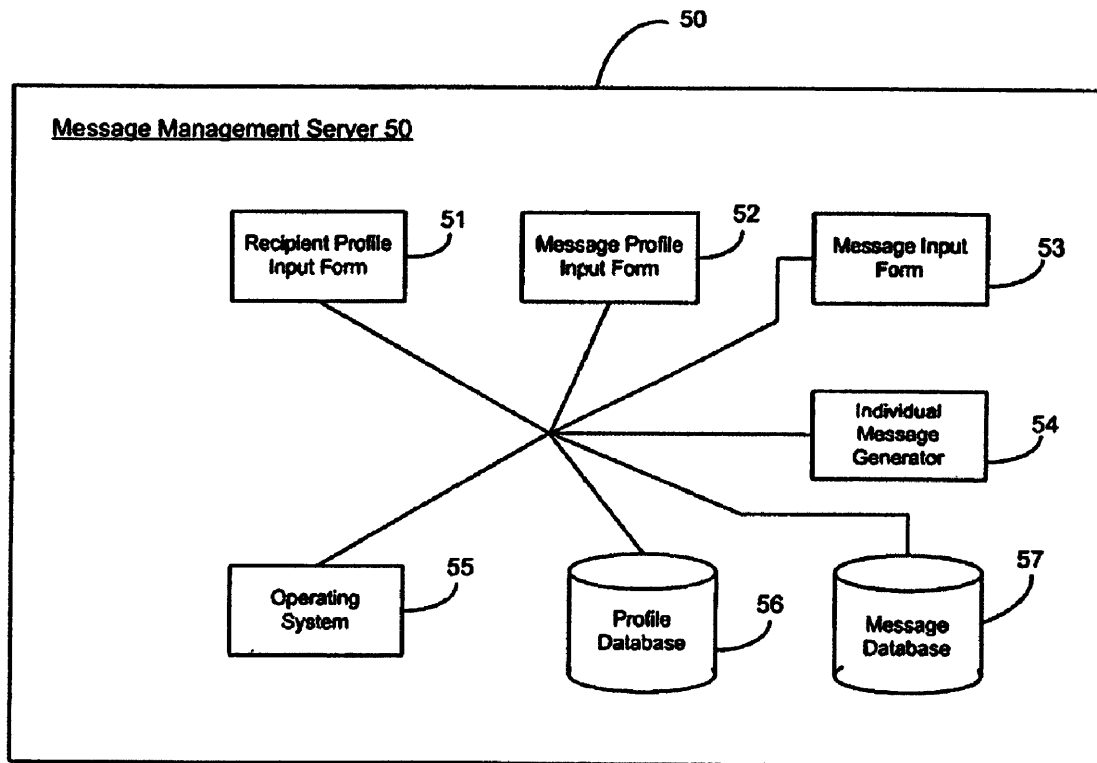


Fig. 2

Id., Fig. 2

As illustrated in Figure 2 and described in the specification, the server is composed of “a recipient profile software application which includes a recipient profile input form 51” (*Id.*, 6:32-34), “a messenger profile software application, which includes a messenger profile input form 52” (*Id.*, 6:42-44), “a message input software application, which includes a message input form 53” (*Id.*, 6:53-55), an “operating system software 55” (*Id.*, 7:1-4), an “individual message generator 54” (*Id.*, 6:63-67), and “profile 56 and message 57 databases” (*Id.*).

53. As illustrated by Figure 2, the recipient profile input form 51 is operable to receive information input through the recipient's computer system to be stored in the profile database 56. *Id.*, 6:32-41. The messenger profile input form 52 similarly receives information through the messenger's computer system, which is also stored in the profile database 56. *Id.*, 6:42:51. The "message input form 53" also receives information input through the messenger's computer system, but stores the information in the message database 57. *Id.*, 6:53-62. The "individual message generator 54 then "generates an individual messages for each recipient, based on the combination of recipient and messenger profile parameters and messages entered." *Id.*, 6:63-67.

54. The '920 patent discloses different parameters to control the manner in which the individual message generator generates an individual message. For example, the '920 patent discloses that a recipient may specify "how messages must be distributed, where to receive the specified message and the type of message devices to transmit the messages." *Id.*, 7:65-8:3. Messages may also be configured to be sent "[a]t the appropriate time." *Id.*, 8:53-58. A recipient may also "specify[] one or more messengers" and enter "data about how messages must be distributed" specific to each messenger. *Id.*, 7:60-8:3.

55. Claim 1 of the '920 patent claims an electronic message management system comprising a database and electronic computer system, that system further comprising a recipient profile application, a messenger profile application, a message input application, and an individual message generator. *Id.*, Claim 1. The recipient profile data in claim 1 includes delivery parameters of “where, when and how specific types of messages from specific messengers are delivered to the recipient.” *Id.*

VII. Claim Construction

56. I have reviewed Patent Owner’s claim construction positions in *Pedersen v. Mailgun Technologies, Inc.*, where I understand the Patent Owner asserted that the terms of the '920 patent should be given their “plain and ordinary meaning.” EX1007, 4, 5, 7, 8. The court mostly concurred, giving each term its plain and ordinary meaning except for one term in claim 12 of the '920 patent (not challenged here) which the court determined to be indefinite. EX1008. I understand that the United States Patent and Trademark Office interprets claim terms in an *inter partes* review proceeding from the viewpoint of one of ordinary skill in the art at the time of the invention. I understand that claim terms are generally given their plain and ordinary meaning as understood by one of ordinary skill in the art in light of the patent specification and the prosecution history. In applying the prior art to the

claims of the '920 patent, I have interpreted the claim terms consistent with the terms' plain and ordinary meaning, as a person of ordinary skill in the art would understand them, as of the time of the alleged invention of the '920 patent.

VIII. THE PRIOR ART

A. McFadden

57. U.S. Patent 6,741,992 (“McFadden”) describes a “[f]lexible rule-based information system” that “allows information originators, administrators, recipients, and requesters (collectively, “users”) to control and influence the flow of and access to information.” EX1004, Abstract.

58. The structure of the McFadden system, and its interaction with outside users, is illustrated in Figure 1:

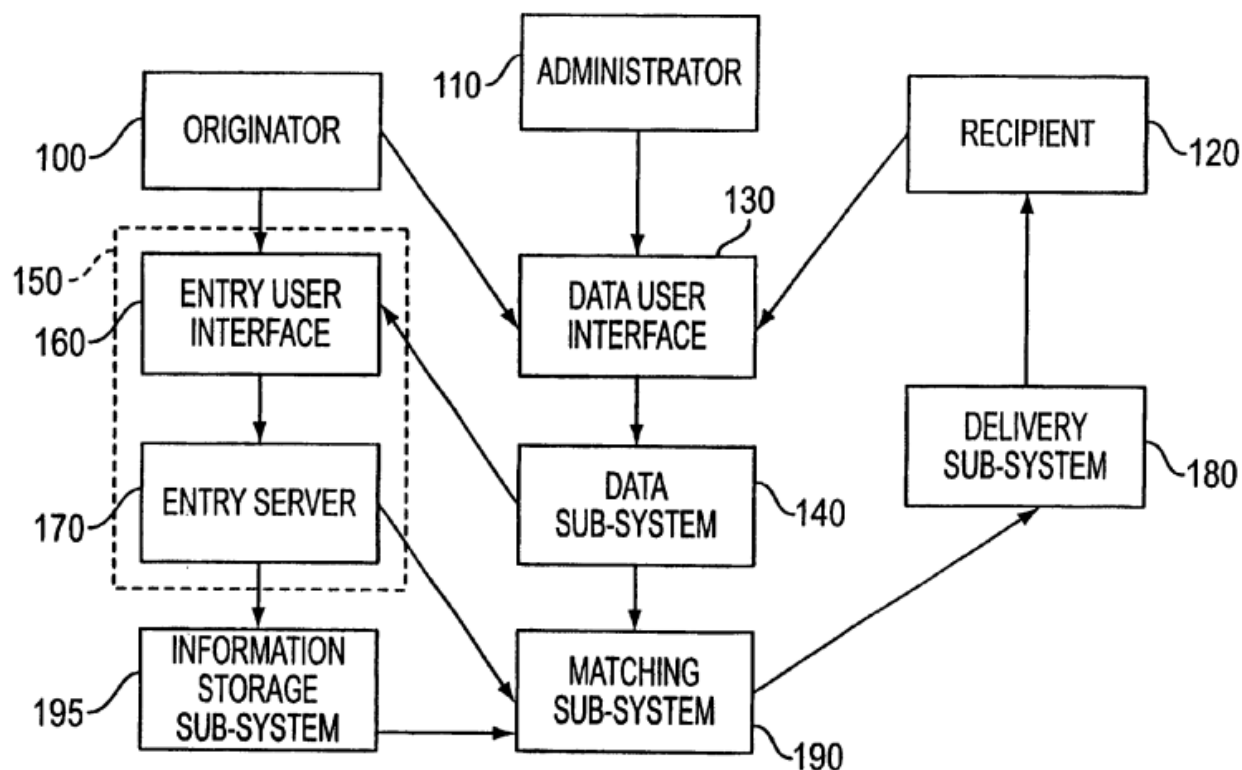


FIG. 1

Id., Fig. 1.

The originator 100 and recipient 120 are users that interact with the system of McFadden through the entry user interface 160 and the data user interface 130. *Id.*, 4:2-7. McFadden explains that the data user interface is operable to receive “profile rules” and “profile data” from recipients and messengers. *Id.*, 6:33-35, 6:66-7:1. The entry user interface is operable to receive a “message” and “message rules” from messengers. *Id.*, 6:5-9, 6:28-29. Data entered into the data user interface of

McFadden is stored in a data sub-system 140 operable to store profile data and rule data. *Id.*, 4:66-5:3, Fig. 1 (showing, via directional arrow, data received through the data user interface 130 being stored in the data sub-system 140). Data entered into the entry user interface is stored in an information storage sub-system 195 operable to store message data and message rules data. *Id.*, 5:44-49, Fig. 1 (showing, via directional arrows, data received through the entry user interface 160 being stored in the information storage sub-system 195).

59. The rules of the McFadden system consist of “one or more Boolean conditions.” *Id.*, 6:43-45. The condition “is constructed by selecting an operand and—depending on the operand—selecting a single reference, two references, or a reference and a value.” *Id.*, 6:45-47. The user further selects actions to be performed if the condition evaluates to “true” and other actions to be performed if the condition evaluates to “false.” *Id.*, 6:56-59. Available actions may include “actions for ranking, categorizing, including, excluding, flow control (jump to another rule), etc.” *Id.*, 6:59-62.

60. The rules and other data of the data sub-system 140 and information storage sub-system 195 are then utilized by the matching sub-system 190 to match the message with recipients for the message. McFadden discloses that, when an originator enters a message, the message is stored in a message database 410. *Id.*,

10:53-56. The matching sub-system then retrieves the message along with “rules for identifying the interested recipients.” *Id.*, 5:58-61, 10:56-61. These rules include system rules, message rules, and profile rules, and are used “for properly routing the message.” *Id.*, 10:53-61. In particular, the rules are used to refine a “list of recipients” for the message. *Id.*, 7:7:49-56. Finally, the matching sub-system 190 passes the message to the delivery sub-system 180 to transmit the message. *Id.*, 7:42-44, 7:57-67.

B. Owens

61. U.S. 6,633,630 (“Owens”) describes “a variety of filter and forward options” that allow senders and receivers of messages to manage their communications. EX1005, Abstract. These filter and forward options are stored in a rules database and “define a set of rules to be applied to inbound and outbound messages so that messages are sent and received in accordance with the preferences of the senders and receivers.” *Id.*, 15:43-49, Abstract.

62. The process begins when a message sender “composes the message on the computer 20, supplies an identifier for the message receiver (such as a member number), and sends the message.” *Id.*, 7:22-24. The message then arrives at the receiver’s mailbox, where filter and forward options are applied. *Id.*, 6:6-9.

63. Many different filter and forward options are disclosed in Owens depending on the form of the inbound message. For example, options for an inbound email message are show in Figure 8:

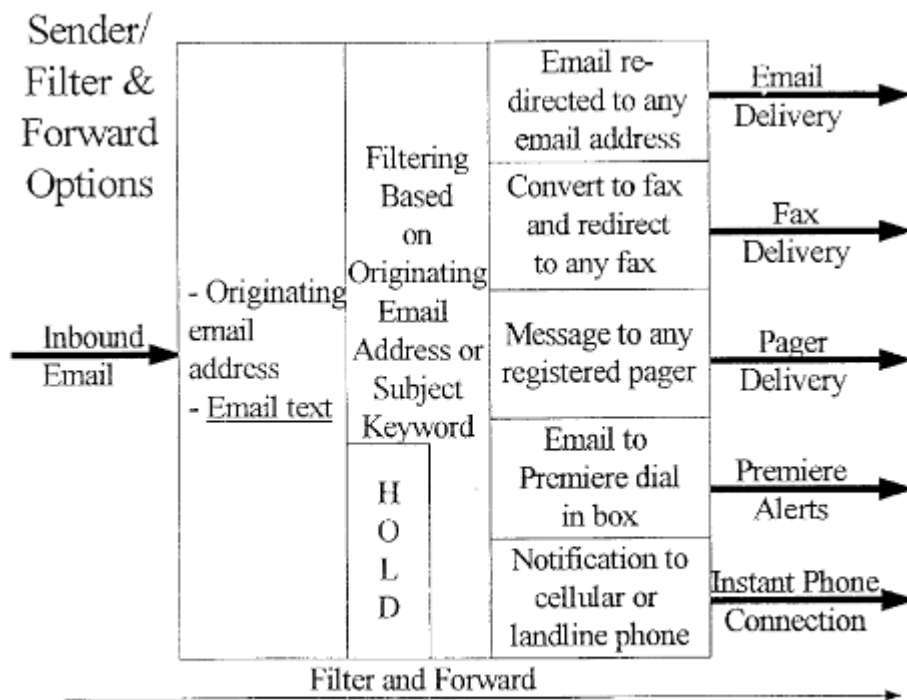


Figure 8

Id., Fig. 8

As shown, the filtering options include “Based on Originating Email Address.” *Id.* The forward options allow the user to specify a forwarding address. *Id.*, 12:9-12, Fig. 8. Users may also specify the medium of transmission, including by instructing the system to forward an e-mail as a fax. *Id.*, 12:19-20, Fig. 8. Users may also govern the time of transmission, including by specifying that the receiver should be

“notified immediately of an inbound message” or that the message should be “stored... for later retrieval.” *Id.*, 10:24-31.

IX. The Challenged Claims Are Obvious

A. Ground 1: McFadden Renders Claims 1-11 and 14-18 Obvious

1. Claim 1

a) An electronic message management system comprising:

64. To the extent the preamble is limiting, McFadden discloses or renders obvious an “electronic message management system.” McFadden discloses a system: “a system for information processing, delivery, and access with applications to information in *electronic* format.” EX1004, 1:21-32 (emphasis added). McFadden further discloses that it is concerned particularly with messages, explaining that “objects of the present invention are achieved by a method and system for distributing information between an originator and at least one end-user.” *Id.*, 2:7-10. In particular, “[t]he originators generate messages..., then optionally specify rules indicating the type of recipients they would like to reach.” *Id.*, 3:1-3. Because the system of McFadden is directed to managing the distribution of messages through user-specified rules, a POSITA would understand that McFadden discloses a message management system.

65. Thus, McFadden discloses or renders obvious this limitation.

b) an electronic computer system in operative communication with a global digital communications network, and

66. McFadden discloses or renders obvious “an electronic computer system in operative communication with a global digital communications network.” McFadden discloses “a system for information processing, delivery, and access with applications to information in electronic format.” EX1004, 1:21-32. Figure 1 of McFadden shows the structure of this system. *Id.*, Fig. 1, 3:66-4:25. It includes “data storage” and “sub-systems” such as “entry 150, data 140, information storage 195, matching 190, [and] delivery 180.” *Id.*, 3:56-65, Fig. 1 (showing relationships between different sub-systems). These sub-systems may interact with users such as originators, administrators, recipients, or requesters, through a “computer user interface” for interaction with humans. *Id.*, 4:14-19. A POSITA would understand that the system disclosed in McFadden is an electronic computer system for numerous reasons. That the McFadden system interacts with users through a “computer user interface” indicates that it must be an electronic computer system.

67. The electronic computer system of McFadden and its sub-systems are also capable of interacting with users using “Internet- and network-accessible client components operating in a web-browser.” EX1004, 4:14-27 (“All sub-systems interacting” with users have user interface with Internet accessible client

components). These client components communicate with server components “using secure and non-secure Internet, network, and distributed object protocols.” *Id.*, 4:25-29. A POSITA would understand that “Internet” is an example of a “global digital communications network.” Thus, the electronic computer system of McFadden is in communication with a global digital communications network (the Internet).

68. Thus, McFadden discloses or renders obvious this limitation.

c) an electronic message management database in operative communication with the computer system; the electronic computer system having

69. McFadden discloses or renders obvious “an electronic message management database in operative communication with the computer system.” As illustrated in Figure 1, the system of McFadden includes an information storage sub-system 195 and data sub-system 140:

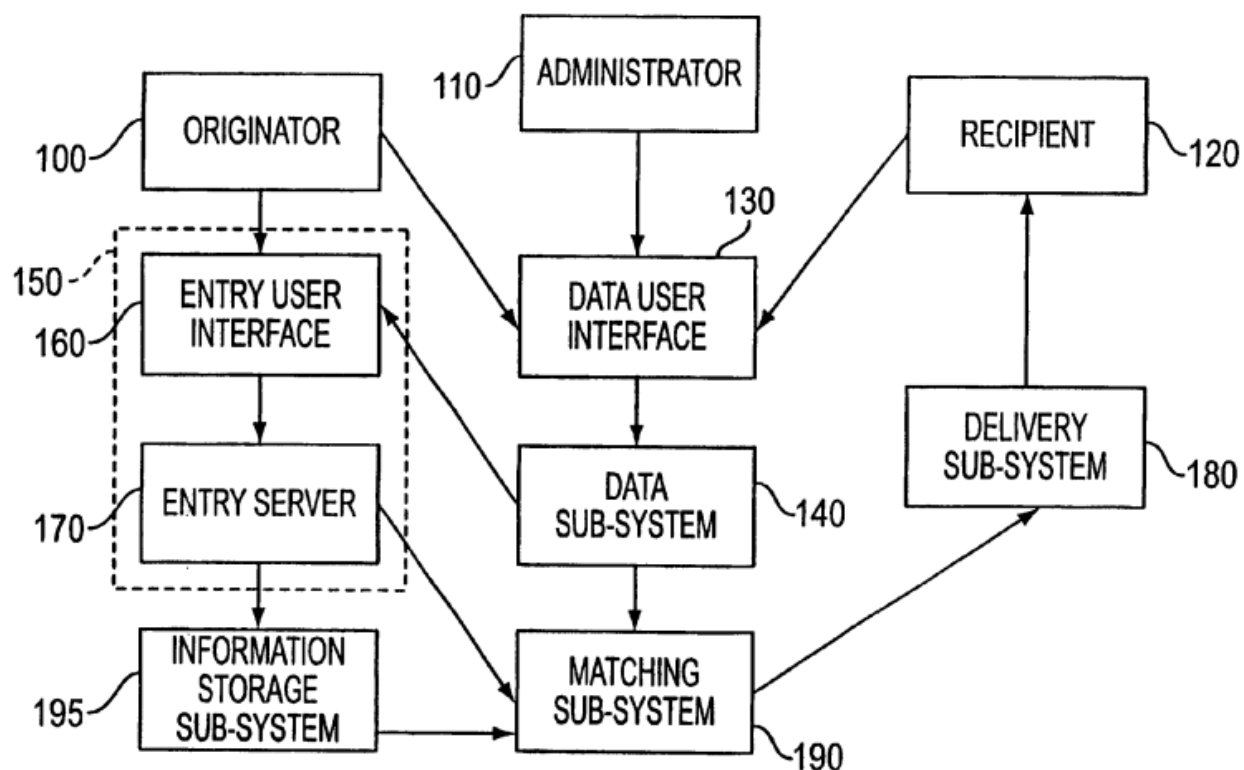


FIG. 1

EX1004, Fig. 1.

These sub-systems in combination represent the claimed “electronic message management database.” The directional arrows illustrate the operative communication between these sub-systems and the other computer systems of McFadden. For example, the data sub-system 140 and the information storage sub-system 195 communicate with user interfaces 130 and 160, the entry server 170, and the matching sub-system 190 (which matches messages with intended recipients).

Id., Fig. 1, 7:52-55, 10:53-61.

70. A POSITA would understand that the information storage sub-system 195 and data sub-system 140 store message management data, and thus comprise an “electronic message management database.” In particular, “message rules” from the messenger and “profile rules” from recipients are stored in the information storage sub-system 195 and data sub-system 140. *Id.*, 10:44-48, 11:51-54, 5:33-36, 7:52-55, Figs. 3, 4. “[M]essage rules to reflect the originator’s target audience.” *Id.* at 10:44-48, 11:51-54 (specifying message rules for specific recipients). McFadden discloses that Message rules are stored in the message rules database 420 of information storage sub-system 195. *Id.* at Fig. 4. Additionally, “profile rules” used to “further refine” the recipients for a message are stored in the rule database 330 of the data sub-system 140. *Id.* at 5:33-34, 7:52-55, Figs. 1, 3. Figure 1 illustrates via directional arrows how the matching sub-system 190 is in communication with both the information storage sub-system 195 to obtain message rules and the data sub-system 140 to obtain profile rules as part of the process of generating an individual message. *Id.*, 5:33-36, 7:52-55, 10:53-61, Figs 1, 3, 4. Thus, the information storage sub-system 195 and the data sub-system 140 together store the message management information used to manage the flow of messages in McFadden. Together, the two sub-systems constitute the claimed “electronic message management database.”

71. Alternatively, it would have been obvious to organize the information storage sub-system 195 and the data sub-system 140 as a single system representing the electronic message management database. McFadden explains that “[a]ny or all of the sub-systems could be combined without changing the nature or functioning of the system.” *Id.*, 12:13-15. This is consistent with the understanding of a POSITA, who would understand that the exact organization of data between different databases, and different parts of the same database, are routine design choices which would not affect the functionality of the system. A POSITA would be motivated to combine data storage systems in order to reduce the complexity of the system and increase the efficiency of database access operations. It would have thus been obvious to a POSITA to organize the databases of McFadden as a single electronic message management database.

72. Thus, McFadden discloses or renders obvious this limitation.

- d) the electronic computer system having... a recipient profile application for receiving recipient profile data from recipients via the global network and storing the recipient data in the database,**

73. McFadden discloses or renders obvious “a recipient profile application for receiving recipient profile data from recipients via the global network and storing the recipient data in the database.”

74. In particular, McFadden describes a “data user interface 130” operating in the recipient’s web browser with the properties of the recipient profile application. EX1004, 6:33-37, 4:21-25, Fig. 1. McFadden explains that recipients may enter profile data (including profile rules) via interface 130. EX1004, 10:27-34 (recipients may “enter profile data into the system using data user interface 130”), 6:33-37 (“recipients 100 . . . may enter profile rules,” where “[e]ntry of profile rules data occurs via a data user interface.”); Fig 1 (arrow from recipient 120 to data user interface 130). A POSITA would understand that the data user interface is a “recipient” profile application because it executes in the recipient’s browser. Thus, in McFadden, the recipient profile application (data user interface running in the recipient’s web-browser) receives recipient profile data from recipients.

75. McFadden further describes a “rule construction form,” that operates as part of the data user interface 130. EX1004, 6:33-43. This rule construction form is recipient-specific, and accordingly further discloses a profile application specific to the recipient. *Id.* In particular, the form is recipient-specific because it is generated based on the recipient’s selection of profile topics. *Id.* When a user enters profile data, the user must select topics from a set of “profile-specific topics.” *Id.*, 6:35-38. The selected topics are “used to create the rule construction form,” and thus the contents of the form “will depend on the topics selected.” *Id.*, 6:38-42.

From this disclosure, a POSITA would understand that the form presented is specific to the recipient based on the recipient's prior selections. The user then uses the form to enter "one or more Boolean conditions" consisting of operands and references. *Id.*, 6:42-46. Thus, in McFadden, the recipient profile application (interface 130 with recipient's rule construction form) receives recipient profile data (profile rules data comprising Boolean conditions) from recipients.

76. McFadden further explains that the data user interface "comprises client and server components" with "Internet- and network-accessible client components" operating in, for example, "a web-browser." EX1004, 4:21-25. These client and server components "interact using secure and non-secure Internet... protocols." *Id.*, 4:25-27. From this disclosure, a POSITA would understand that the client and server components are configured to operate in a manner well known in the art whereby a client application executes in a web-browser on a user's device and is connected to a server component over the Internet. In this scenario, a POSITA would understand that the data user interface receives profile data from a recipient, the client component of the data user interface, including through a web browser accessing the internet, and transmits the profile data from the client component to the server component via the Internet. Thus, in McFadden, the recipient profile data is received from recipients via the global network (the Internet).

77. McFadden further discusses storing recipient profile data received from the user interface in a database. The relationship between the recipient, the data user interface, and the data sub-system is illustrated in Figure 1:

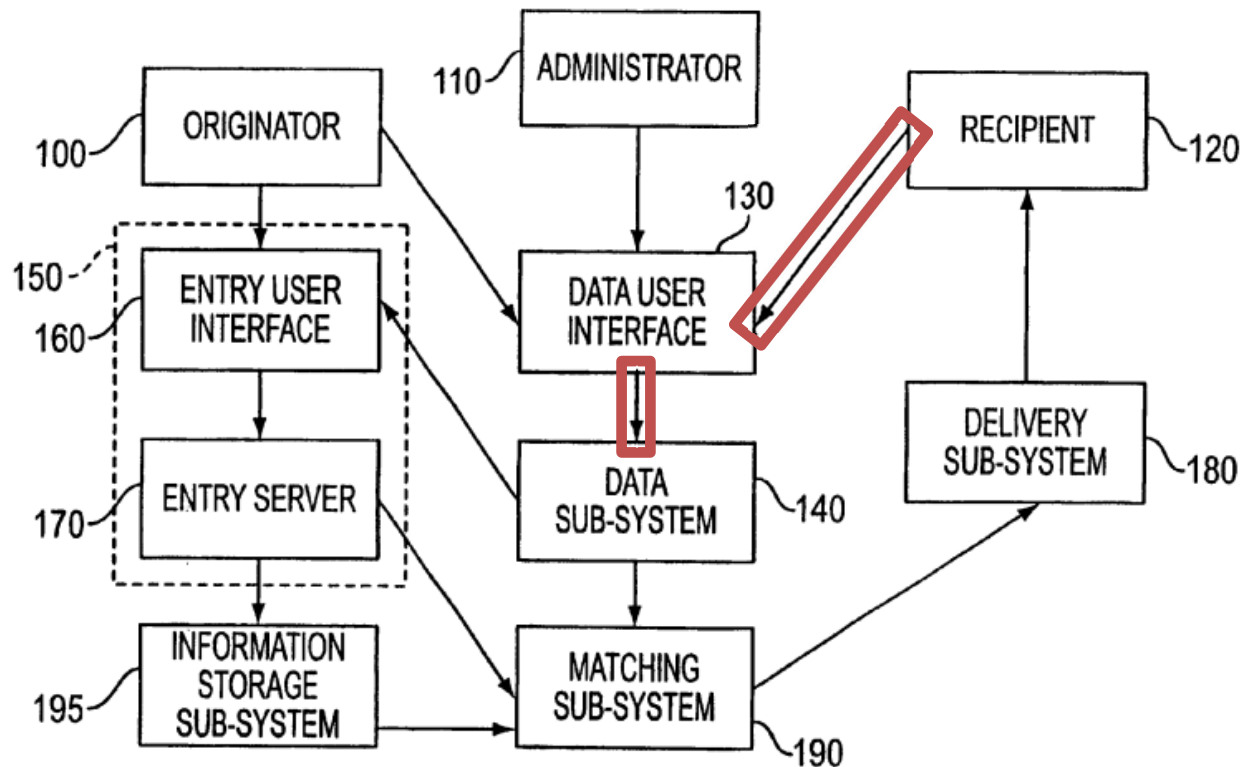


FIG. 1

EX1004, Fig. 1 (annotations added).

A POSITA would understand that the directional arrow pointing from the recipient (labeled 120) to the data user interface (labeled 130) represents a transfer of data from the recipient to the data user interface. Furthermore, a POSITA would understand that the directional arrow pointing from the data user interface to the data

sub-system (labeled 140) represents a transfer of data from the data user interface to the data sub-system. In the context of the disclosures in the specification, a POSITA would understand that the data being transferred from the recipient to the data user interface to the data sub-system includes profile rules data. *Id.*, 6:33-36 (“In a preferred embodiment, all users (i.e., originators 100, administrators 110, recipients 120, and/or requesters 200) may enter profile rules. Entry of profile rules data occurs via a data user interface”). McFadden further explains that the operation of the data sub-system “involves storage and indexed retrieval of data.” *Id.*, 8:36-38. Furthermore, Figure 3 of McFadden shows that the data sub-system includes a profile database 310 and rule database 330 for storing profile data and profile rules:

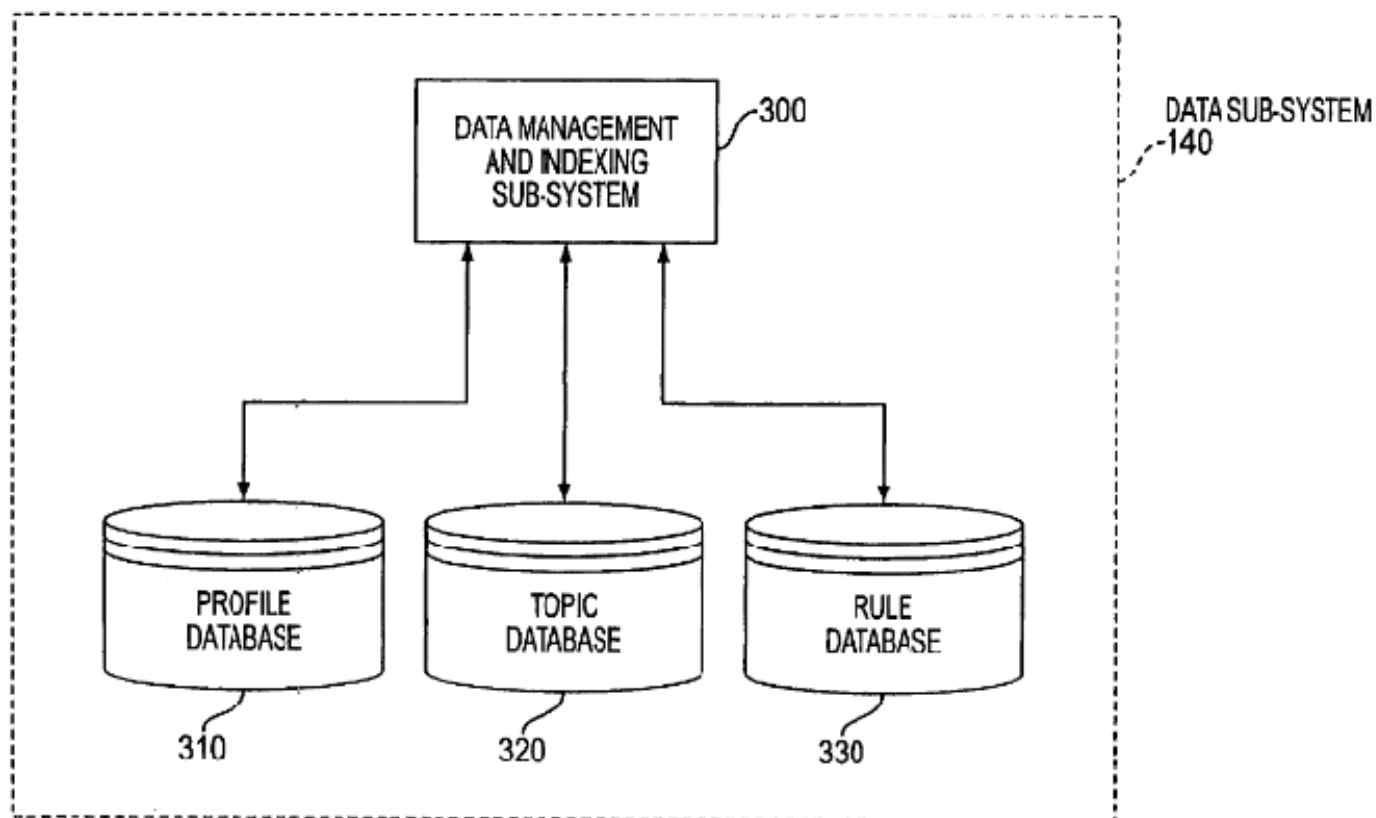


FIG. 3

Id., Fig. 3.

78. From these disclosures, and in combination with earlier disclosures regarding the relationship between the data user interface 130 and the data sub-system 140, a POSITA would understand that profile data and associated profile rules sent from the data user interface 130 to the data sub-system 140, as shown in Figure 1, is stored in the profile database 310 and rule database 330 of data sub-system 140, shown in Figure 3. EX1004, Fig. 1, 3, 5:31-35, 10:53-61 (“rules for identifying the interested recipients are retrieved from rule database 330”). Thus,

the recipient profile data (profile rules data) is stored in an electronic message management database (data sub-system). Because, as previously explained, data sub-system 140 is a part of the electronic message management database (collectively, data sub-system 140 and information storage sub-system 195), a POSITA would understand that the recipient profile rules are stored in the claimed electronic message management database.

79. Thus, McFadden discloses or renders obvious this limitation.

- e) **the profile data including delivery parameters specified by a recipient of where, when and how specific types of messages from specific messengers are delivered to the recipient,**

80. McFadden discloses or renders obvious “the profile data including delivery parameters specified by a recipient of where, when and how specific types of messages from specific messengers are delivered to the recipient.”

81. McFadden discloses that “recipients 120... may enter profile rules.” EX1004, 6:33-36. Profile rules are entered via a “rule construction form” and “used to route a message to a proper recipient.” *Id.*, 6:39-43, 10:29-31, 10:55-62. The profile rules determine where to send the message, including by picking between transmitting to an e-mail address, a fax machine, or an address via postal mail. *Id.*, 7:61-65 (“Messages may be transmitted via e-mail, fax, postal mail”). The profile rules also determine how to send a message, including by sending the message to a

special file or other device. *Id.*, 7:57-66 (“This information will be used to determine how to transmit the message to its recipient 120”; messages may be sent to “a special file or other device”). The profile rules also determine when to send messages to the recipient, including by sending a message immediately or logging the message for later retrieval. *Id.*, 7:61-66 (transmitted immediately or logged “for later retrieval”). Thus, a POSITA would understand that these profile rules may include delivery parameters on where, how, and when messages are to be delivered to the recipient.

82. Additionally, McFadden discloses that recipient profile rules may indicate specific types of messages and specific messengers. McFadden discloses that a user’s set of profile rules may indicate “what types of posts, and from whom, he would like to receive.” *Id.*, 11:59-60. For example, a recipient may set rules to receive or not receive “posts requesting legal information from medical professionals with[] advanced degrees.” *Id.*, 11:60-67. A POSITA would understand “posts requesting legal information” as defining a specific type of message which a recipient may choose to receive, and “medical professions with[] advanced degrees” as defining specific messengers which a recipient may choose to receive messages from. Additionally, and as discussed in Section IV.A above, a POSITA would understand that a conventional rule for email filtering would include the possibility of filtering based on whether a message had been sent by a particular

messenger. Thus, profile rules may include delivery parameters regarding specific types of messages and specific messengers.

83. McFadden discloses the rule construction form allows the recipient to create “Profile Rules” specifying “from whom[] he would like to receive” messages. *Id.*, 11:59-60. McFadden’s “rule construction procedure allows a user to specify one or more Boolean conditions.” EX1004, 6:43-45. A Boolean condition can employ any “operands for character and numeric data” along with “contains,” “starts with,” or “ends with.” *Id.*, 6:50-55. It would be obvious to a POSITA that a recipient could create a profile rule in McFadden by using a Boolean condition having the messenger’s name or email address along with “contains.” This rule would operate with respect to that specific messenger. Additionally, a POSITA would understand that identification and filtering on the basis of a specific messenger was a standard capability in commercially available email tools at the time. *See* Section IV.A. Thus, a POSITA would understand that McFadden discloses or renders obvious profile rules that may include delivery parameters for specific messengers.

84. Thus, McFadden discloses or renders obvious this limitation.

- f) **the electronic computer system having... a messenger profile application for receiving messenger profile data from messengers via the global network and storing the messenger data in the database, including messenger identifying data,**

85. McFadden discloses or renders obvious “a messenger profile application for receiving messenger profile data from messengers via the global network and storing the messenger data in the database, including messenger identifying data.”

86. In particular, McFadden describes a “data user interface 130” operating in the messenger’s web-browser. EX1004, 6:33-36, 4:21-25. McFadden explains that “all users” including “originators 100” may enter profile data (including profile rules) via the data user interface 130. EX1004, 10:27-34 (messengers may “enter profile data into the system using data user interface 130.”), 6:33-37 (“originators 100 . . . may enter profile rules,” where “[e]ntry of profile rules data occurs via a data user interface.”); Fig 1 (arrow from originator 100 to data user interface 130). McFadden further explains that “[e]ntry of profile rules data occurs via a data user interface.” *Id.*; *see also id.*, 10:27-28 (“In step 600, users enter profile data into the system using data user interface 130”); Fig 1 (arrow from originator 100 to data user interface 130). Thus, in McFadden, the messenger profile application (data user interface 130 in the originator’s web browser) receives messenger profile data from

messengers (originators). A POSITA would understand that the data user interface is a “messenger” profile application because it executes in the originator’s browser. Thus, in McFadden, the messenger profile application (data user interface running in the originator’s web-browser) receives messenger profile data from recipients.

87. McFadden further describes a “rule construction form,” that operates as part of the data user interface 130. EX1004, 6:33-43. This rule construction form is messenger-specific, and accordingly further discloses a profile application specific to the messenger. *Id.* In particular, the form is messenger-specific because it is generated based on the messenger’s selection of profile topics. *Id.* When a user enters profile data, the user must select topics from a set of “profile-specific topics.” *Id.*, 6:35-38. The selected topics are “used to create the rule construction form,” and thus the contents of the form “will depend on the topics selected.” *Id.*, 6:38-42. From this disclosure, a POSITA would understand that the form presented is specific to the messenger based on the messenger’s prior selections. The user then uses the form to enter “one or more Boolean conditions” consisting of operands and references. *Id.*, 6:42-46. Thus, in McFadden, the messenger profile application (interface 130 with messenger’s rule construction form) receives messenger profile data (profile data comprising Boolean conditions) from messengers.

88. McFadden further explains that the data user interface “comprises client and server components” with “Internet- and network-accessible client components” operating in, for example, “a web-browser.” EX1004, 4:21-25. These client and server components “interact using secure and non-secure Internet... protocols.” *Id.*, 4:25-27. From this disclosure, a POSITA would understand that the client and server components are configured to operate in a manner well known in the art whereby a client application executes in a web-browser on a user’s device and is connected to a server component over the Internet. In this scenario, the data user interface receives profile data from a messenger at the client component of the data user interface, including through a web browser via the Internet. Thus, in McFadden, the messenger profile data is received from messengers via the global network (the Internet).

89. McFadden further discusses storing messenger profile data received from the user interface in a database. The relationship between the originator, the data user interface, and the data sub-system is illustrated in Figure 1:

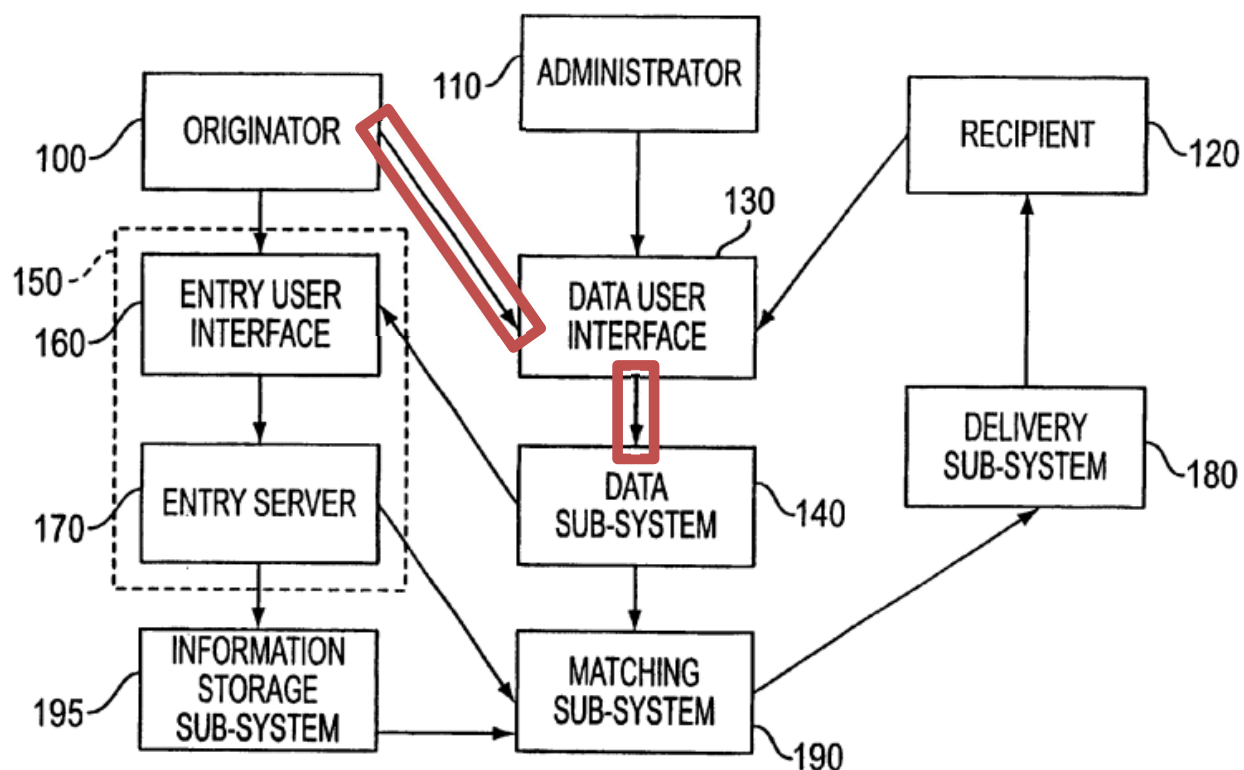


FIG. 1

EX1004, Fig. 1 (annotations added).

A POSITA would understand that the directional arrow pointing from the originator (labeled 100) to the data user interface (labeled 130) represents a transfer of data from the originator to the data user interface. Furthermore, a POSITA would understand that the directional arrow pointing from the data user interface to the data sub-system (labeled 140) represents a transfer of data from the data user interface to the data sub-system. In the context of the disclosures in the specification, a POSITA would understand that the data being transferred from the originator to the data user

interface to the data sub-system includes profile data. *Id.*, 6:33-36 (“In a preferred embodiment, all users (i.e., originators 100, administrators 110, recipients 120, and/or requesters 200) may enter profile rules. Entry of profile rules data occurs via a data user interface”). McFadden further explains that the operation of the data sub-system “involves storage and indexed retrieval of data.” *Id.*, 8:36-38. Furthermore, Figure 3 of McFadden shows that the data sub-system includes a profile database 310 and rule database 330 for storing profile data and profile rules:

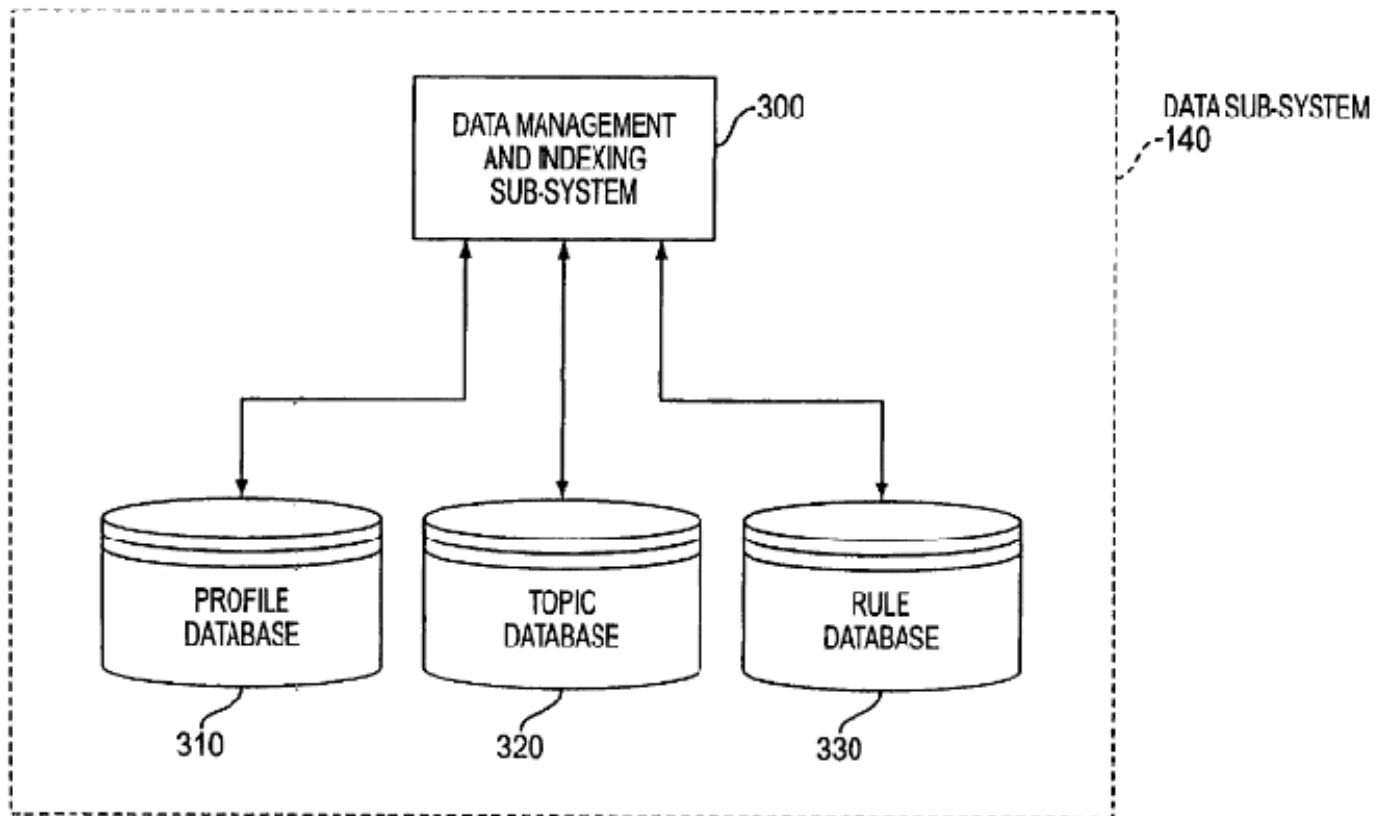


FIG. 3

Id., Fig. 3.

90. From these disclosures, and in combination with earlier disclosures regarding the relationship between the data user interface and the data sub-system, a POSITA would understand that profile data and rules data sent from the data user interface to the data sub-system, as shown in Figure 1, is stored in the databases of the data sub-system 140 of Figure 3. EX1004, 10:30-33 (“at the start of the operation by a particular originator, the profile data about that originator is retrieved from profile database 310 of data sub-system 140”); Figs. 1, 3. Because, as previously explained, data sub-system 140 is a part of the electronic message management database (collectively, data sub-system 140 and information storage sub-system 195), a POSITA would understand that the messenger profile rules are stored in the claimed electronic message management database.

91. Regarding “messenger identifying data,” McFadden discloses that profile database 310 contains profile data about “a particular originator.” EX1004, 10:30-33 (“In step 602, at the start of the operation by a particular originator, the profile data about that originator is retrieved from profile database 310 or data sub-system 140.”); *see also* 7:7-10 (users enter “profile configuration data,” where “this configuration data will be entered first and used to determine the set of topics available to each user”). This profile data specific to a particular originator is used to present a set of topics that originator. *Id.*, 10:33-35. A POSITA would understand

that profile configuration data about a “particular originator” must contain identifying data regarding the originator that the profile configuration data is associated with. Without proper identifying data, the system of McFadden would not be able to determine and retrieve the profile configuration data for a particular originator. Thus, the messenger profile data received by the data user interface and stored in the database must necessarily include messenger identifying data.

92. Thus, McFadden discloses or renders obvious this limitation.

g) the electronic computer system having... a message input application for receiving message files from a messenger via the global network and storing the message files in the database, and

93. McFadden discloses or renders obvious “a message input application for receiving message files from a messenger via the global network and storing the message files in the database.”

94. In particular, McFadden describes an “entry sub-system 150” with the properties of the message input application. EX1004, 4:1-4. The entry sub-system 150 both receives message files from a messenger through an entry user interface 160 and stores the message files in a database through an entry server 170, as shown in in Figure 1:

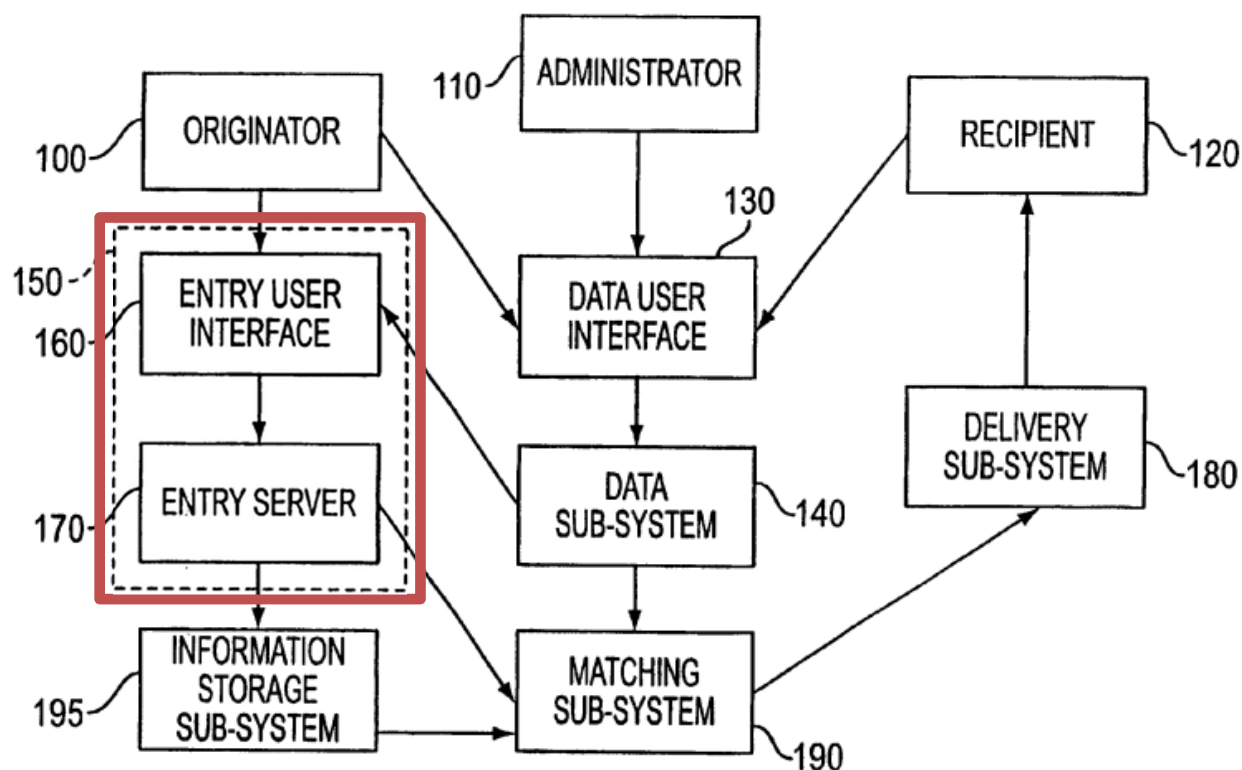


FIG. 1

EX1004, Fig. 1 (annotations added).

95. The diagram shows a box labeled “150” (used to denote the entry sub-system) containing the entry user interface and entry server. *See id.*, 3:61-65. McFadden explains that a messenger “provid[es] information to an entry sub-system 150.” *Id.*, 4:2-4. Information is received via the “entry user interface 160,” a component of the entry sub-system through which a messenger “enters the information into the system.” *Id.*, 10:17-20. The information received may

comprise “messages” that “move through the system from originator 100 to entry sub-system 150.” *Id.*, 4:45-48; *see also id.*, 10:40-42.

96. The entry sub-system then stores messages received in the “information storage sub-system 195.” *Id.*, 5:58-61. Figure 6 illustrates this process, where at step 608, “the originator enters a message.” *Id.*, 10:40-42. Then, at step 610, “the message is stored in the database 410 of information storage sub-system 195.” *Id.*, 10:53-56. McFadden explains that the information storage sub-system “handles requests for content as-well as the addition and updating of content.” *Id.*, 5:43-46. Figure 4 shows that the information storage sub-system contains two databases, a messages and content database 410 and a message rules database 420:

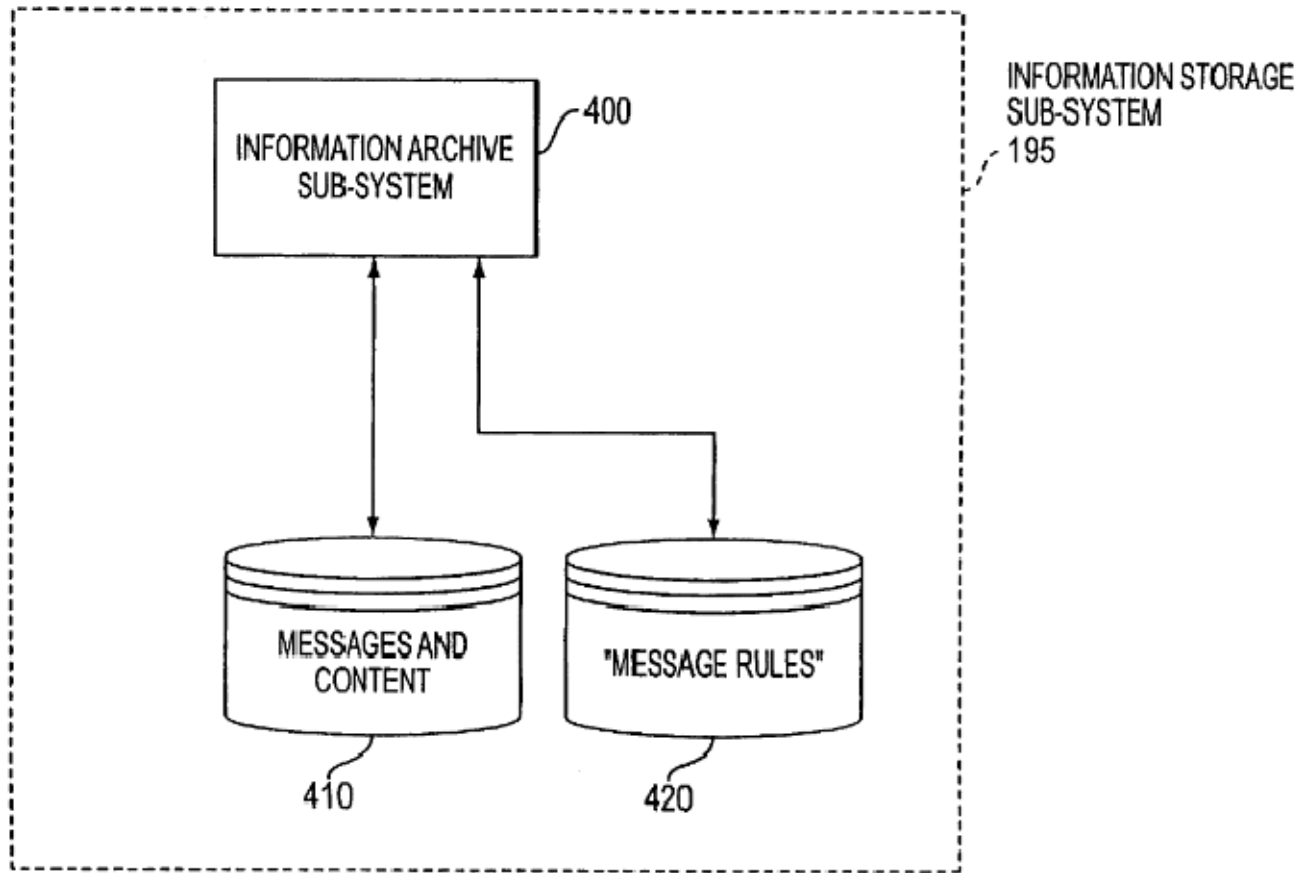


FIG. 4

Id., Fig. 4.

97. Because, as previously explained, information storage sub-system 195 is a part of the electronic message management database (collectively, data sub-system 140 and information storage sub-system 195), a POSITA would understand that the messages received by the entry sub-system are stored in the claimed electronic message management database.

98. In addition, the “message input application” in McFadden may include an entry form. *Id.*, 5:18-22 (“The user interfaces that are part of the entry 150 . . . for adding messages use the topic display information to construct the forms presented to users.”). The message entry form presented to the messenger will depend on topics previously selected by the messenger. *Id.*, 6:11-14.

99. McFadden further discloses that messages are received from messengers via the global network (the Internet). McFadden discloses that the components which interact with originators and other users “comprise[] client and server components” with “Internet- and network-accessible client components” operating in, for example, “a web-browser.” EX1004, 4:21-25. These client and server components “interact using secure and non-secure Internet... protocols.” *Id.*, 4:25-27. From this disclosure, a POSITA would understand that the entry sub-system receives messages from a messenger at the entry user interface, which is the client component of the entry sub-system, including through a web browser, and transmits the messages from the entry user interface to the entry server via the Internet.

100. McFadden further discloses that these messages may be in the form of “structured information” in Extensible Markup Language (“XML”) or Standardized General Markup Language (“SGML”). *Id.*, 4:45-52. A POSITA would recognize

XML and SGML as file formats used to store structured data that are well known in the art. Thus, a POSITA would understand that the messages received by the entry sub-system of McFadden may be in the form of XML or SGML “message files.”

101. Thus, McFadden discloses or renders obvious this limitation.

- h) the electronic computer system having... an individual message generator in communication with the database and operative to access and utilize data and files from the database to generate an individual message to be sent to the recipient specified by the messenger via the global communications network according to the delivery parameters, and**

102. McFadden discloses or renders obvious “an individual message generator in communication with the database and operative to access and utilize data and files from the database to generate an individual message to be sent to the recipient specified by the messenger via the global communications network according to the delivery parameters.”

103. In particular, McFadden discloses a “matching sub-system 190.” EX1004, 5:58-64. The matching sub-system is in communication with the database (the data sub-system and the information storage sub-system) as illustrated by Figure 1:

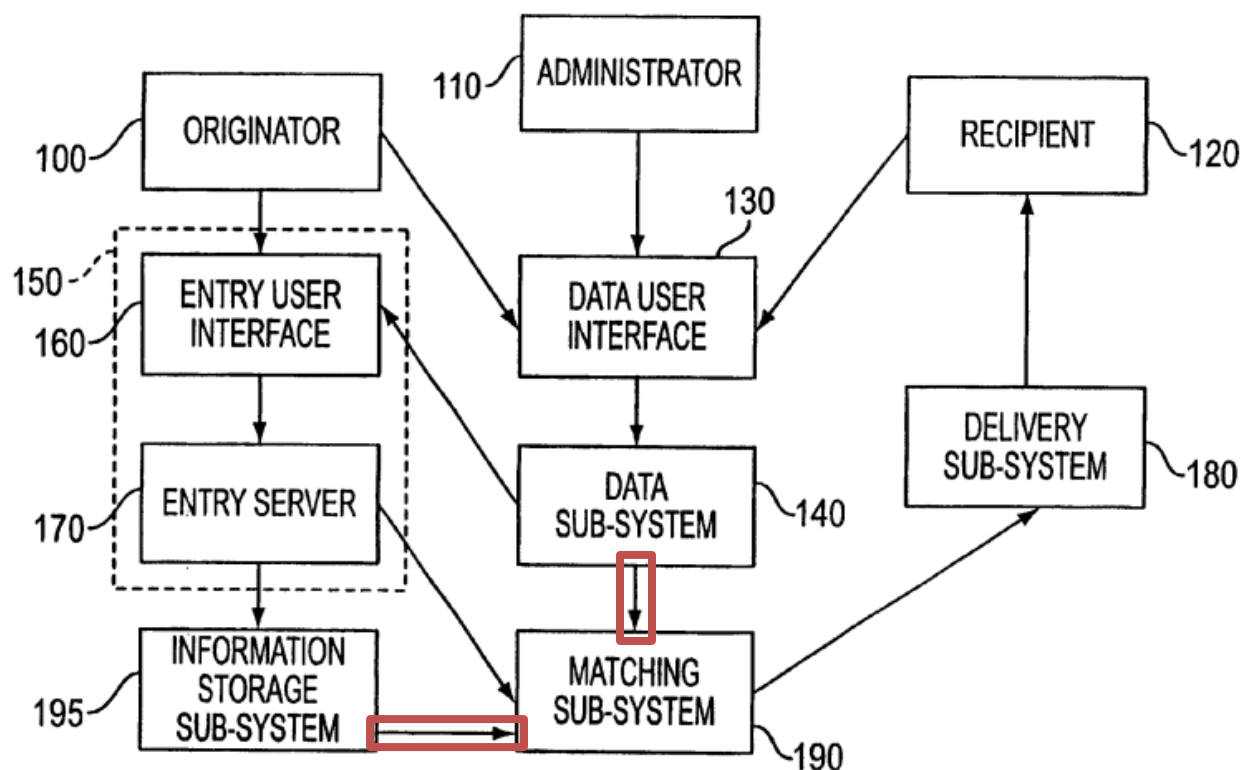


FIG. 1

EX1004, Fig. 1.

To generate the individual message, Figure 1 shows via directional arrows that the matching sub-system 190 receives data from the information storage sub-system 195 and the data sub-system 140. From information storage sub-system 195, the matching sub-system 190 then retrieves the message from storage, applying message rules to messages to identify the recipient(s) for the message. *Id.*, 7:42-58, 10:53-60, 11:51-58, Fig. 1, Fig. 4. Additionally, the matching sub-system 190 may also receive “profile rules” from the data sub-system 140 in order to “further refine” the

recipients for the message. *Id.*, 5:33-36, 7:52-55, Figs 1, 3. A POSITA would understand that an “individual” message comprises message content paired with recipient information. The creation of an individual message is required by the system of McFadden due to the possibility that a particular recipient may receive a message by fax or postal mail, for example. *Id.*, 7:57-65. Thus, by retrieving the stored message and then applying the stored rules to identify the recipient(s) of the message, the matching sub-system generates the individual message(s).

104. As discussed, the stored messages in McFadden may be in XML or SGML file format. *Id.*, 4:45-52. A POSITA would understand XML and SGML files to be message “files”. Accordingly, the matching sub-system 190 is in communication with the database and utilizes data and files from the database to generate an individual message to be sent.

105. After the matching sub-system 190 generates the individual message, the matching sub-system 190 works with the delivery sub-subsystem to send the message in accordance with the delivery parameters. EX1004, Fig. 1 (arrows from the database to matching sub-system 190, which then provides delivery parameters to delivery sub-subsystem 180), 7:57-59 (“delivery sub-system 180 receives a list of recipients and a message from the matching sub-system 190”), 7:57-67 (delivery in accordance with recipient delivery parameters).

106. McFadden also discloses generating an individual message to be sent to the recipient specified by the messenger. McFadden explains that the originator may enter a message “which he desires to send to interested recipients.” EX1004, 10:40-42. Accordingly, the originator may enter “message rules to reflect the originator’s target audience.” *Id.*, 10:44-48, 11:51-57 (specifying message rules for specific recipients), *see also id.*, 14:9-12 (“and whereby, a message provider will be able to select a set of computer users that the message provider would like to receive the message”). McFadden teaches message rules are used “for properly routing the message” and “for identifying the interested recipients.” EX1004, 10:53-61. The message rules “will be attached to the message as it flows through the system and are stored with or in parallel with the message in the information storage.” EX1004, 6:28-33. The matching sub-system generates messages with attached message rules indicating the recipients specified by the messenger. *Id.*, 7:42-58, 10:53-60, Fig. 1, Fig. 4.

107. In addition, McFadden discloses a rule construction form that allows the messenger to specify the recipient(s) in the message rule. For example, McFadden discloses a “rule construction procedure [that] allows a user to specify one or more Boolean conditions.” EX1004, 6:43-45. In McFadden, a Boolean condition can employ any “operands for character and numeric data” along with

“contains,” “starts with,” or “ends with.” *Id.*, 6:50-55. It would be obvious for a POSITA that an originator in McFadden could create a message rule by using a Boolean condition having the recipient’s name or email address along with “contains.” This rule would operate to specify that recipient. Accordingly, a POSITA would understand that McFadden discloses or renders obvious a message where the messenger specifies recipients for the message.

108. Further, in McFadden, messages are transmitted via the global network (the Internet). McFadden discloses that messages may be transmitted “via e-mail” and “Internet protocols.” EX1004, 7:57-65. McFadden also discloses that the components which interact with recipients “comprise[] client and server components” with “Internet- and network-accessible client components” operating in, for example, “a web-browser.” EX1004, 4:21-25. These client and server components “interact using secure and non-secure Internet... protocols.” *Id.*, 4:25-27. From these disclosures, a POSITA would understand that McFadden may send a message to a recipient via the Internet.

109. Alternatively, a POSITA would understand that the matching sub-system 190 and the delivery sub-system 180 of McFadden could be combined into a single matching-delivery sub-system with the functionality of both. McFadden already contemplates that “[a]ny or all of the sub-systems could be combined

without changing the nature or functioning of the system.” *Id.*, 12:13-15. Furthermore, the delivery sub-system 180 receives data only from the matching sub-system, as illustrated in Figure 1. EX1004, Fig. 1 (showing data flowing from matching sub-system to delivery sub-system). Because the functions performed by the delivery sub-system have no other data dependencies, a POSITA would understand that moving the functions of the delivery sub-system into the matching sub-system to form a combined system would be a straightforward modification of McFadden which could be executed with a reasonable expectation of success. A POSITA would be motivated to make this modification to reduce data transfers between different sub-systems and thereby improve the efficiency and speed of the system.

110. A combined sub-system with both matching and delivery functions could represent the claimed individual message generator. The combined sub-system generates the individual message to be sent and then sends the message in accordance with the delivery parameters. EX1004, 10:61-65 (matching to a recipient, then delivery), 7:42-56 (the matching function operable to access and utilize data and files from the database), 7:57-67 (delivery in accordance with recipient delivery parameters). Thus, McFadden discloses or renders obvious this limitation.

i) the electronic computer system having... a message management server operating system; and

111. McFadden discloses or renders obvious “a message management server operating system.” McFadden discloses that the matching sub-system “is a multi-threaded and distributed sub-system. It is implemented as a continually operating computer process or service on at least one server.” EX1004, 4:41-43. Regarding other sub-systems, McFadden discloses that they may “support a scaleable number of connections. This means that a large number of users can be connected to the entry 150, data 140, delivery 180, and direct request 210 sub-systems simultaneously. The maximum number is limited only by the bandwidth utilized by the process and the size and number of computer servers running the system portion of the process.” *Id.*, 4:33-40. From the disclosures that the sub-systems of McFadden are implemented as “process[es]” and may be “multi-threaded,” a POSITA would understand that these sub-systems are implemented as programs managed by conventional operating systems on general-purpose server computers. Such general-purpose server computers invariably run an operating system, e.g., Linux or Microsoft Windows. In particular, the concepts of a “computer process” and “service” as disclosed above, refer to structures rooted in and managed by an operating system.

112. Thus, McFadden discloses or renders obvious this limitation.

- j) **the message management database including recipient and messenger profile databases for storing recipient and messenger profile data respectively, and a message database for storing message data files.**

113. McFadden discloses or renders obvious “the message management database including recipient and messenger profile databases for storing recipient and messenger profile data respectively, and a message database for storing message data files.”

114. As I explained above, the information storage sub-system 195 and data sub-system 140 in combination constitute the claimed “electronic message management database.” *See* Section IX.A.1.c. These sub-systems (140 and 195) each contain collections of information that can be characterized as databases. EX1004, Fig. 3 (showing the data sub-system containing a profile database 310, a topic database 320, and a rule database 330), Fig 4 (showing the information storage sub-system containing a messages and content database 410 and a message rules database 420), 4:66-5:3; 5:43-48. As I noted in Section IV.B above, a “database” within a DBMS may simply be a table or set of related tables.

115. As shown in Figure 4, McFadden discloses a “messages and content database 410” as part of the information storage sub-system 195. This messages and content database 410 represents the claimed message database:

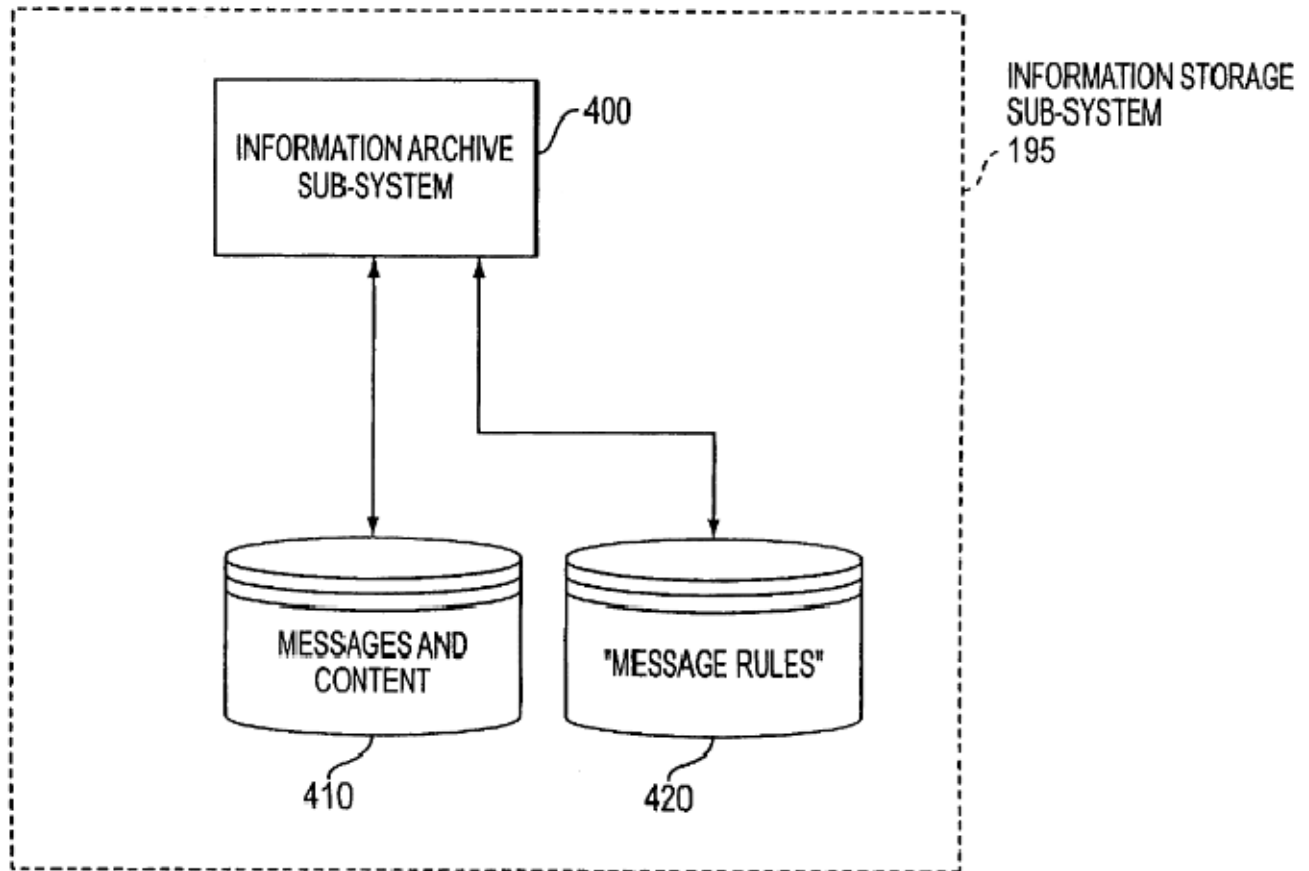


FIG. 4

Id., Fig. 4.

116. McFadden explains that message data received from the entry sub-system is stored in “information storage sub-system 195.” EX1004, 5:58-61; Section IX.A.1.g, above. As discussed, the stored messages in McFadden may be in XML or SGML file format (*id.*, 4:45-52), and a POSITA would understand these XML and SGML files to be “message files.”

117. As shown in Figure 3, McFadden discloses a “profile database” and “rule database” that form parts of the data sub-system 140:

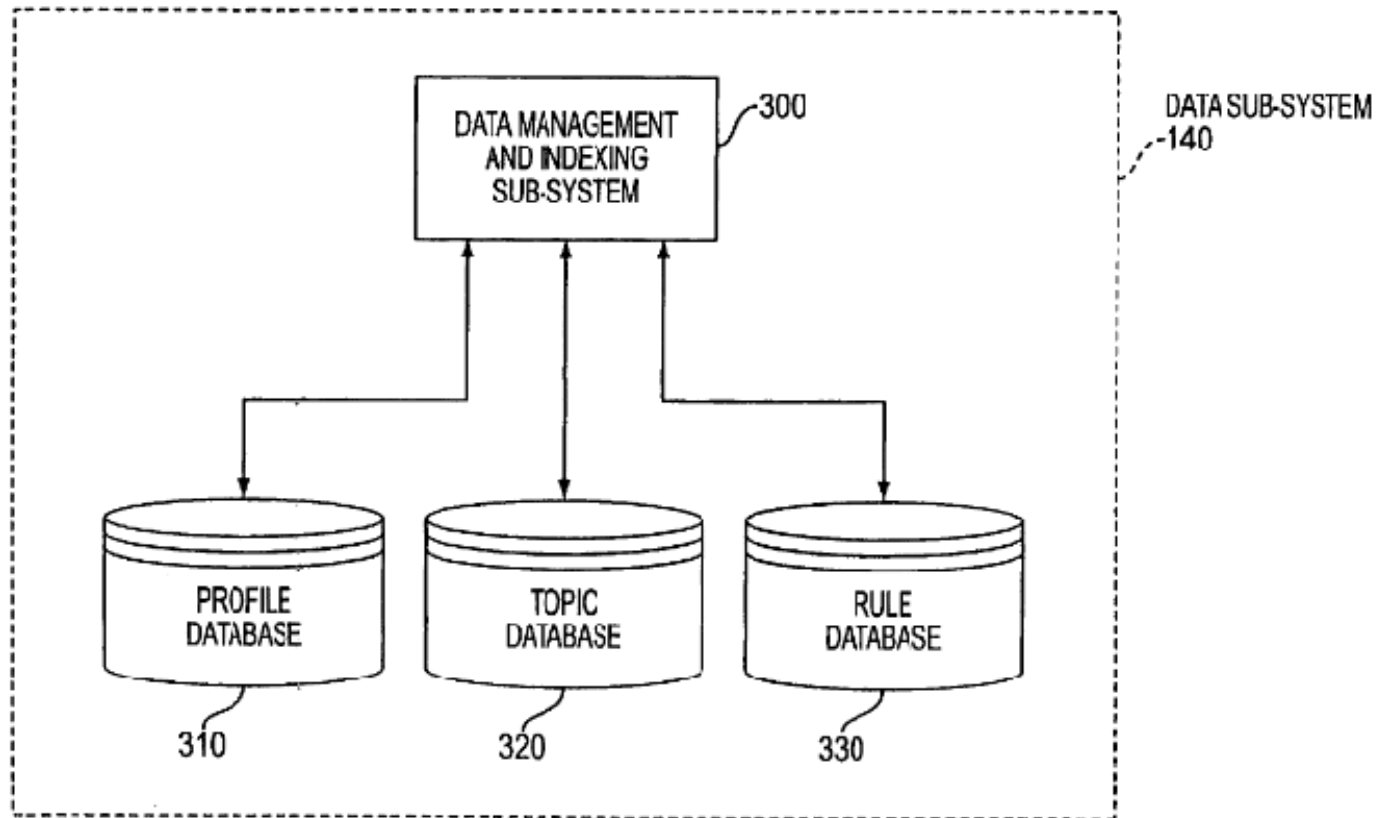


FIG. 3

Id., Fig. 3.

118. Profile data for recipients and messengers are stored in each of these databases. *Id.*, 10:53-61; Section IX.A.1.d and IX.A.1.f, above. These databases constitute either a recipient profile database or a messenger profile database, or both.

119. Alternatively, profile database 310 may be the claimed messenger profile database and rule database 330 may be the claimed recipient profile database.

In the process illustrated by Figure 6, profile data about an originator is retrieved “from profile database 310” in step 602. EX1004, 10:30-33, Fig. 6. This profile data is used to present a set of topics to the originator. *Id.*, 10:33-35 (“In step 604, a set of topics is then presented to the originator on the basis of the obtained profile data in step 602.”). Later, at step 612, “[t]he rules for identifying the interested recipients are retrieved from rule database 330,” including “profile rules of the potential recipients.” *Id.*, 10:56-61; *see also id.* 5:31-35 (“rules contained in the rule database 330” include “profile rules” from recipients). From these disclosures, a POSITA would understand that the profile database 310 may store messenger profile data, while the rule database 330 may store recipient profile data. Because the profile database 310 stores messenger profiles, it may be the claimed messenger profile database. Because the rule database 330 stores recipient profile rules, it may be the claimed recipient profile database. As shown in Figure 3, both are databases within the data sub-system, which in turn is a component of the claimed “electronic message management database.”

120. Alternatively, it would have been obvious to a POSITA that profile rules data for messengers and for recipients could be stored in different subparts or tables of either the profile database 310 or the rule database 330. A POSITA would understand that data can be divided among different databases, subparts, or tables

without changing the nature or functioning of the system. A “database” may simply be a table or set of related tables. A POSITA would have understood that databases are routinely organized into subparts, and that the exact organization of data among different subparts of a database are routine design choices that do not affect the overall function of the system. Dividing recipient and profile data between different databases, subparts or tables within a single database would have been a straightforward design change which could easily be implemented by one skilled in the art with a reasonable expectation of success.

121. Thus, McFadden discloses or renders obvious this limitation.

2. Claim 2

- a) The electronic message management system of claim 1, wherein the recipient profile application includes a global network interactive recipient profile input form, the recipient profile input form being accessible to a recipient computer via the global digital communications network.**

122. McFadden discloses or renders obvious “[t]he electronic message management system of claim 1, wherein the recipient profile application includes a global network interactive recipient profile input form, the recipient profile input form being accessible to a recipient computer via the global digital communications network.”

123. McFadden discloses or renders obvious the electronic message management system of claim 1. *See* Section IX.A.1, above. Furthermore, McFadden discloses the recipient profile application includes a “rule construction form” with the properties of the global network interactive recipient profile input form. EX1004, 6:33-55. The recipient enters profile rules using the rule construction form to construct a rule, including by specifying “Boolean conditions.” *Id.*

124. McFadden explains that the “[e]ntry of profile rules data occurs via a data user interface.” *Id.*, 6:35-37. Because entry of profile rules data occurs via the data user interface, and the user enters profile rules data by constructing a rule using a rule construction form, a POSITA would understand that the rule construction form is a component of the data user interface. In particular, in light of the disclosure that the client component of the data user interface may operate in a web browser, a POSITA would understand the rule construction form as a kind of user interface element, displayable in a web browser, through which the user can submit data. User interface elements of this kind are well known in the art of web applications, and

indeed, the HTML standard for web pages includes a FORM tag for this very purpose.⁵

125. McFadden further explains that the data user interface “comprises client and server components” with “Internet- and network-accessible client components” operating in, for example, “a web-browser.” EX1004, 4:21-25. The data user interface may interact both “with humans” and with computer agents as “an application programming interface.” *Id.*, 4:14-19. From this disclosure, a POSITA would understand that the rule construction form, as a component of the data user interface, is accessible to a recipient computer over the Internet via a web browser. As explained previously, the Internet is a “global digital communications network.”

126. McFadden also discloses that the rule construction form presented by the data user interface is specific to the recipient. EX1004, 6:38-43. In particular, the rule construction form is generated based on the recipient’s selection of profile topics. *Id.* McFadden explains that, for each rule a user enters via the data user interface, the user “selects topics from a set of available topics.” *Id.*, 6:35-38. The form presented to the user “will depend on the topics selected” because the selected

⁵ See <https://www.ietf.org/rfc/rfc1866.txt>, the 1995 HTML 2.0 standard, page 39.

topics are “used to create the rule construction form.” *Id.*, 6:38-43. Thus, the form presented is specific to the recipient based on the recipient’s selections.

127. Thus, McFadden discloses or renders obvious this limitation.

3. Claim 3

- a) **The electronic message management system of claim 1, wherein the messenger profile application includes a global network interactive messenger profile input form, the messenger profile input form being accessible to a messenger computer via the global digital communications network.**

128. McFadden discloses or renders obvious “[t]he electronic message management system of claim 1, wherein the messenger profile application includes a global network interactive messenger profile input form, the messenger profile input form being accessible to a messenger computer via the global digital communications network.”

129. McFadden discloses or renders obvious the electronic message management system of claim 1. *See* Section IX.A.1, above. Furthermore, McFadden discloses the messenger profile application includes a “rule construction form” with the properties of the global network interactive messenger profile input form. EX1004, 6:38-42. The messenger enters profile rules using the rule construction form to construct a rule, including by specifying “Boolean conditions.” *Id.*, 6:42-44.

130. McFadden explains that the “[e]ntry of profile rules data occurs via a data user interface.” *Id.*, 6:35-37. Because entry of profile rules data occurs via the data user interface, and the user enters profile rules data by constructing a rule using a rule construction form, a POSITA would understand that the rule construction form is a component of the data user interface. In particular, in light of the disclosure that the client component of the data user interface may operate in a web browser, a POSITA would understand the rule construction form as a kind of user interface element, displayable in a web browser, through which the user can submit data. User interface elements of this kind are well known in the art of web applications. (As noted above, the FORM tag was available in the HTML standard no later than 1995.)

131. McFadden further explains that the data user interface “comprises client and server components” with “Internet- and network-accessible client components” operating in, for example, “a web-browser.” EX1004, 4:21-25. The data user interface may interact both “with humans” and with computer agents as “an application programming interface.” *Id.*, 4:14-19. From this disclosure, a POSITA would understand that the rule construction form, as a component of the data user interface, is accessible to a messenger computer over the Internet via a web browser. As explained previously, the Internet is a “global digital communications network.”

132. McFadden also discloses that the rule construction form presented by the data user interface is specific to the messenger. EX1004, 6:38-43. In particular, the rule construction form is generated based on the messenger's selection of profile topics. *Id.* McFadden explains that, for each rule a user enters via the data user interface, the user "selects topics from a set of available topics." *Id.*, 6:35-38. The form presented to the user "will depend on the topics selected" because the selected topics are "used to create the rule construction form." *Id.*, 6:38-43. Thus, the form presented is specific to the messenger based on the messenger's selections.

133. Thus, McFadden discloses or renders obvious this limitation.

4. Claim 4

- a) The electronic message management system of claim 1, wherein the message input application includes an interactive global network message input form, the message input form being accessible to a messenger computer via the global communications network.**

134. McFadden discloses or renders obvious "[t]he electronic message management system of claim 1, wherein the message input application includes an interactive global network message input form, the message input form being accessible to a messenger computer via the global communications network."

135. McFadden discloses or renders obvious the electronic message management system of claim 1. *See* Section IX.A.1, above. Furthermore,

McFadden discloses the message input application includes an “entry form” with the properties of the interactive global network message input form. EX1004, 6:5-16 (“The entry user interface 160 gets profile data about the originator 100 and based on that profile makes available a set of topics that the originator 100 can select to describe the message”), 5:15-22 (“The user interfaces that are part of the entry 150 . . . for adding messages use the topic display information to construct the forms presented to users”). McFadden explains, and a POSITA would understand, that the entry sub-system 150 and the entry user interface 160 present this entry form to the originator as part of the process of entering a message. *Id.*

136. McFadden further explains that the entry user interface “comprises client and server components” with “Internet- and network-accessible client components” operating in, for example, “a web-browser.” EX1004, 4:21-25. The entry user interface may interact both “with humans” and with computer agents as “an application programming interface.” *Id.*, 4:14-19. From this disclosure, a POSITA would understand that the entry form, as a component of the entry user interface, is accessible to a messenger computer over the Internet via a web browser. As explained previously, the Internet is a “global digital communications network.”

137. Thus, McFadden discloses or renders obvious this limitation.

5. Claim 5

- a) **The electronic message management system of claim 1, wherein the recipient profile application further comprises a network interface and a recipient profile editor for receiving recipient profile data from a recipient computer via the global network interface and for manipulating the recipient profile database to store the recipient profile data.**

138. McFadden discloses or renders obvious “[t]he electronic message management system of claim 1, wherein the recipient profile application further comprises a network interface and a recipient profile editor for receiving recipient profile data from a recipient computer via the global network interface and for manipulating the recipient profile database to store the recipient profile data.”

139. McFadden discloses or renders obvious the electronic message management system of claim 1. *See* Section IX.A.1, above. McFadden further discloses that the recipient profile application (data user interface) comprises “client and server components” that “interact using secure and non-secure Internet, network, and distributed object protocols.” EX1004, 4:21-27. A POSITA would understand that, for the client and server components to communicate via “Internet, network, and distributed object protocols,” these components necessarily have a global network interface.

140. Regarding the recipient profile editor, McFadden discloses that the recipient profile application comprises a recipient profile editor to receive profile data via the network interface. In particular, McFadden discloses “profile editors,” alongside “rule constructors” and “display devices,” as components that make use of “[t]opic display data.” *Id.*, 7:36-41. Topic display data, including “profile topics,” is information that “describes how an instance of a topic will be displayed singularly or in a form editor or rules editor.” *Id.*, 5:9-14, 7:37-39 (“Topic display data include data to be used by the rule constructors, profile editors, message editors and display devices”). Topics are selected by a recipient to define and edit profile data through the data user interface. *Id.*, 6:33-38; *see also* Section IX.A.1.d. McFadden explains that “[e]ntry of profile rules data occurs via a data user interface.” EX1004, 6:35-36. Thus, a POSITA would understand the profile editor to be a component of the data user interface. Bolstering this understanding is the discussion of the profile editors alongside rule constructors which, as previously discussed, comprise user interface components of the data user interface. Thus, a POSITA would understand that profile editors are a component of the data user interface operable to display topics using topic display data in order to allow users to edit profile rules.

141. As explained in Section IX.A.1.d, a POSITA would understand that the data user interface receives profile rules data from a recipient at the client component via the Internet (global network).

142. Furthermore, the profile editor of the data user interface is operable to “interact[] with other sub-systems” in McFadden to store profile data. EX1004, 4:27-29. As illustrated in Figure 1, the data user interface primarily interacts with the data sub-system 140:

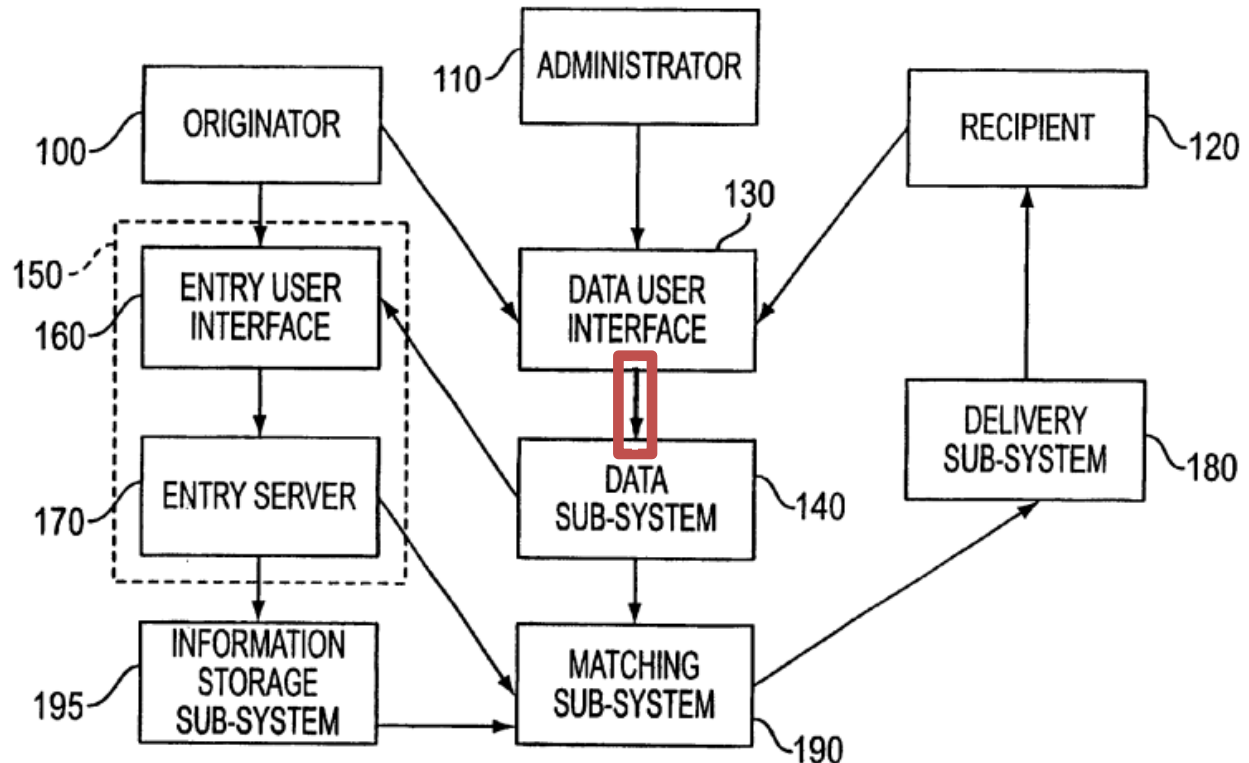


FIG. 1

EX1004, Fig. 1 (annotations added).

A POSITA would understand that the directional arrow pointing from the data user interface (labeled 130) to the data sub-system (labeled 140) represents a transfer of data from the data user interface to the data sub-system for storage. In the context of the disclosures in the specification, a POSITA would understand that the data being transferred from the data user interface to the data sub-system includes profile rules data. McFadden explains that the operation of the data sub-system 140 “involves storage and indexed retrieval of data.” *Id.*, 8:36-38. Furthermore, Figure 3 of McFadden shows that the data sub-system 140 includes a “PROFILE DATABASE” 310 to store profile data and a “RULE DATABASE” 330 to store profile rules:

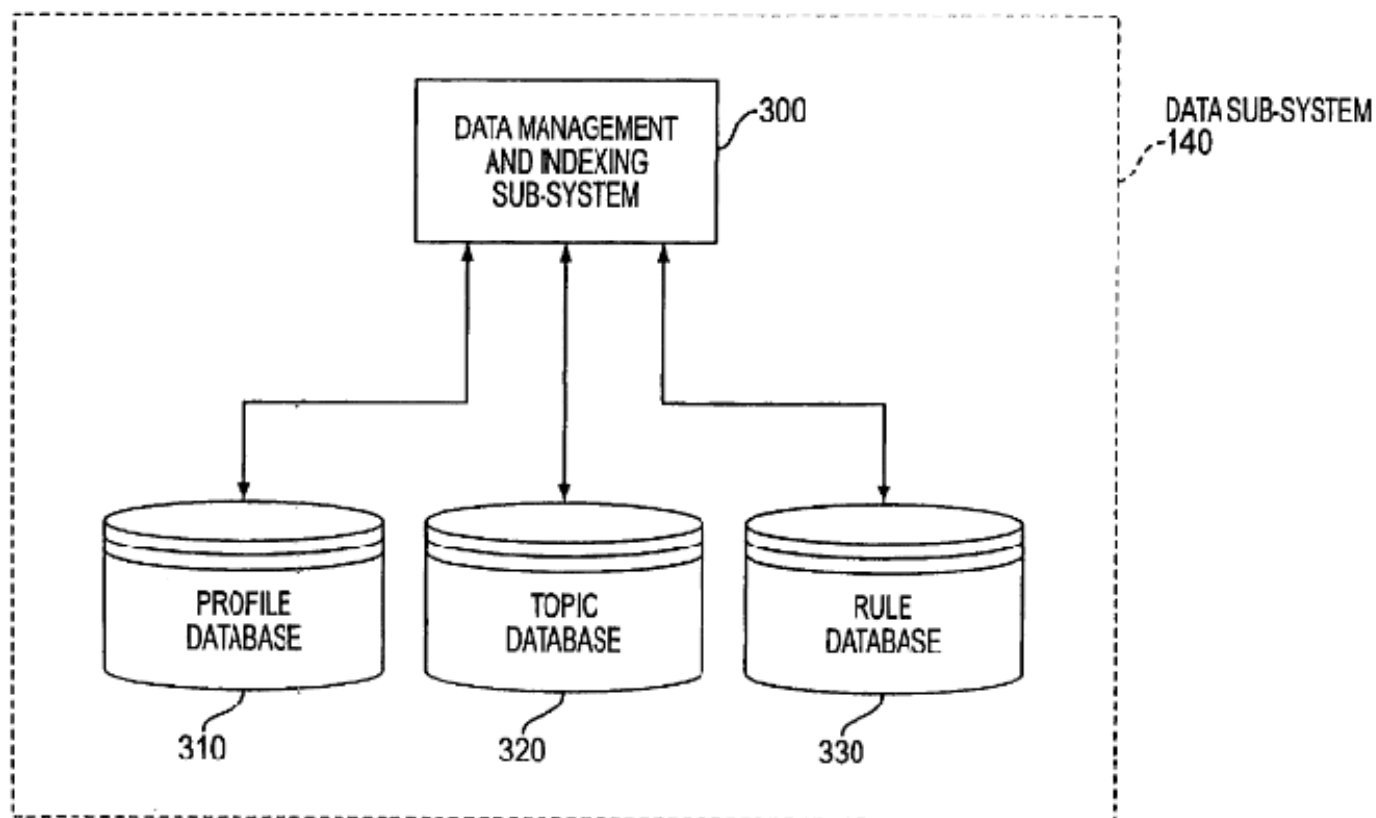


FIG. 3

Id., Fig. 3.

143. From these disclosures, and in combination with earlier disclosures regarding the relationship between the data user interface and the data sub-system, a POSITA would understand that the profile editor interacts with the data sub-system 140 to edit and store recipient profile data and profile rules data in the databases of the data sub-system 140 shown in Figure 3. A POSITA would further understand that each of the profile database 310 and the rule database 330 of Figure 3 is a

“recipient profile database” because each is operable to store profile data received from recipients.

144. Thus, McFadden discloses or renders obvious this limitation.

6. Claim 6

- a) The electronic message management system of claim 1, wherein the messenger profile application further comprises a global network interface and a messenger profile editor for receiving messenger profile data from a messenger computer via the global network interface and for manipulating the messenger profile database to store the messenger profile data.**

145. McFadden discloses or renders obvious “[t]he electronic message management system of claim 1, wherein the messenger profile application further comprises a global network interface and a messenger profile editor for receiving messenger profile data from a messenger computer via the global network interface and for manipulating the messenger profile database to store the messenger profile data.”

146. McFadden discloses or renders obvious the electronic message management system of claim 1. *See* Section IX.A.1, above. McFadden further discloses that the messenger profile application (data user interface) comprises “client and server components” that “interact using secure and non-secure Internet, network, and distributed object protocols.” EX1004, 4:21-27. A POSITA would

understand that, for the client and server components to communicate via “Internet, network, and distributed object protocols,” these components necessarily have a global network interface.

147. Regarding the messenger profile editor, McFadden discloses that the messenger profile application comprises a messenger profile editor to receive profile data via the network interface. In particular, McFadden discloses “profile editors” alongside “rule constructors” and “display devices” as components that make use of “[t]opic display data.” *Id.*, 7:36-41. Topic display data, including “profile topics,” is information that “describes how an instance of a topic will be displayed singularly or in a form editor or rules editor.” *Id.*, 5:9-14, 7:37-39 (“Topic display data include data to be used by the rule constructors, profile editors, message editors and display devices”). Topics are selected by a messenger to define and edit profile data through the data user interface. *Id.*, 6:33-38 (originators may enter profile rules data, where “entry of profile rules data occurs via a data user interface”); *see also* Section IX.A.1.f. McFadden explains that “[e]ntry of profile rules data occurs via a data user interface.” EX1004, 6:35-36. Thus, a POSITA would understand the profile editor to be a component of the data user interface. Bolstering this understanding is the discussion of the profile editors alongside rule constructors which, as previously discussed, comprise user interface components of the data user interface. Thus, a

POSITA would understand that profile editors are a component of the data user interface operable to display topics using topic display data in order to allow messengers to edit profile rules.

148. As explained in Section IX.A.1.f, a POSITA would understand that the data user interface receives profile rules data from a messenger at the client component via the Internet (a global network).

149. Furthermore, the profile editor of the data user interface is operable to “interact[] with other sub-systems” in McFadden to store profile data. EX1004, 4:27-29. As illustrated in Figure 1, the data user interface primarily interacts with the data sub-system 140:

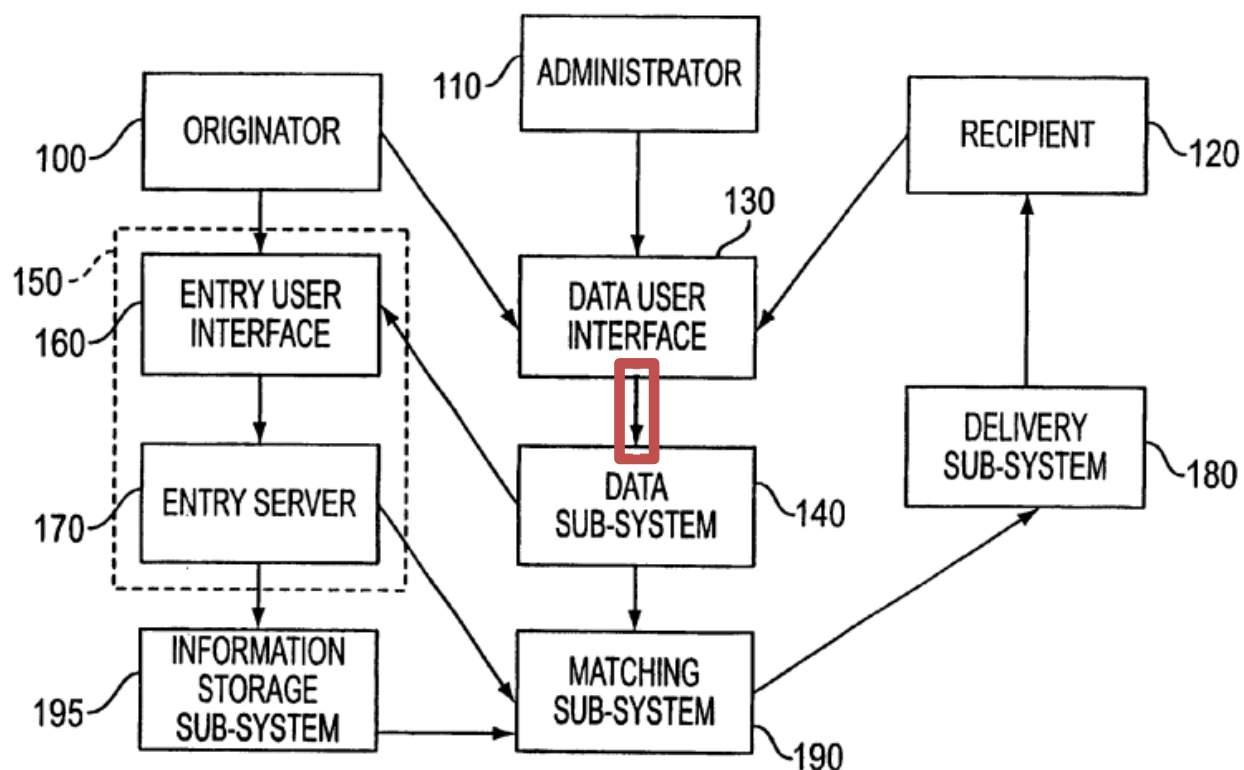


FIG. 1

EX1004, Fig. 1 (annotations added).

A POSITA would understand that the directional arrow pointing from the data user interface (labeled 130) to the data sub-system (labeled 140) represents a transfer of data from the data user interface to the data sub-system for storage. In the context of the disclosures in the specification, a POSITA would understand that the data being transferred from the data user interface to the data sub-system includes profile rules data. McFadden explains that the operation of the data sub-system 140 “involves storage and indexed retrieval of data.” *Id.*, 8:36-38. Furthermore, Figure

3 of McFadden shows that the data sub-system 140 includes a “PROFILE DATABASE” 310 to store profile data and a “RULE DATABASE” 330 to store profile rules:

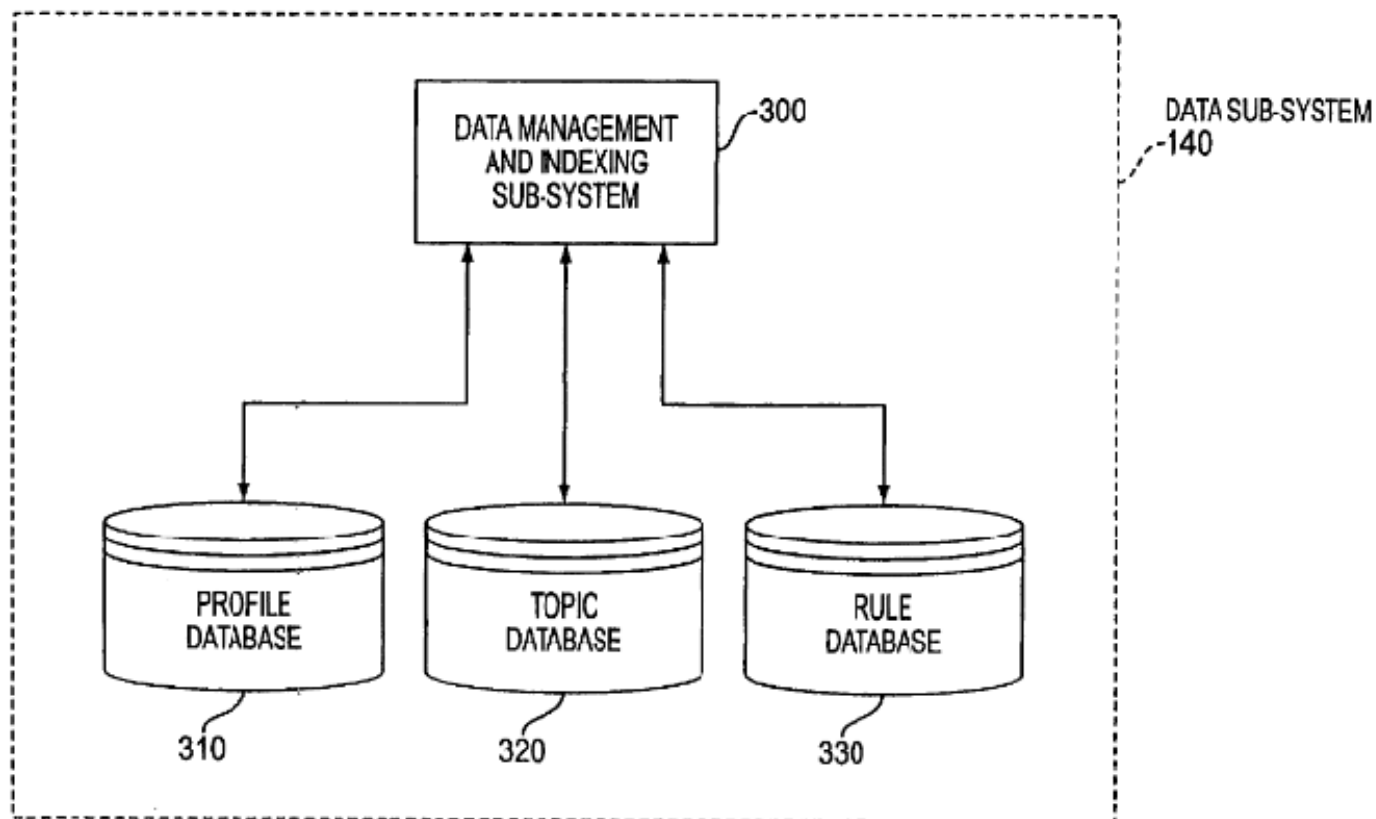


FIG. 3

Id., Fig. 3.

150. From these disclosures, and in combination with earlier disclosures regarding the relationship between the data user interface and the data sub-system, a POSITA would understand that the profile editor interacts with the data sub-system 140 to edit and store messenger profile data and profile rules data in the databases

shown in Figure 3. A POSITA would further understand that each of the profile database 310 and the rule database 330 of Figure 3 is a “messenger profile database” because each is operable to store profile data received from messengers.

151. Thus, McFadden discloses or renders obvious this limitation.

7. Claim 7

- a) The electronic message management system of claim 1, wherein the message input application further comprises a global network interface and a message data file editor for receiving a message file data from a messenger computer via the global network interface and for manipulating the message database to store the message data file.**

152. McFadden discloses or renders obvious “[t]he electronic message management system of claim 1, wherein the message input application further comprises a global network interface and a message data file editor for receiving a message file data from a messenger computer via the global network interface and for manipulating the message database to store the message data file.”

153. McFadden discloses or renders obvious the electronic message management system of claim 1. *See* Section IX.A.1, above. McFadden further discloses that the message input application (entry sub-system 150) includes an entry user interface 160 that comprises “client and server components” that “interact using secure and non-secure Internet, network, and distributed object protocols.” EX1004,

4:14-27, Fig. 1; *see* Section IX.A.1.g. A POSITA would understand that, for the client and server components to communicate via “Internet, network, and distributed object protocols,” these components necessarily have a global network interface.

154. Regarding the message data file editor, McFadden discloses that the message input application comprises a message data file editor to receive message data via the network interface. In particular, McFadden discloses “message editors” alongside “rule constructors” and “display devices” as components that make use of “[t]opic display data.” *Id.*, 7:36-41. Topic display data, including “message topics,” is information that “describes how an instance of a topic will be displayed singularly or in a form editor or rules editor.” *Id.*, 5:9-14, 7:37-39 (“Topic display data include data to be used by the rule constructors, profile editors, message editors and display devices”). Topics are selected by a messenger to define and edit message file data through the entry user interface. *Id.*, 6:5-14; *see also* Section IX.A.1.g. McFadden explains that the interface “makes available a set of topics that the originator 100 can select to describe the message or information that is entered.” EX1004, 6:5-14. Thus, a POSITA would understand the message editor to be a component of the entry user interface. Bolstering this understanding is the discussion of the message editors alongside rule constructors which, as previously discussed, comprise user interface components. Thus, a POSITA would understand that message editors are

a component of the entry user interface operable to display topics using topic display data in order to allow users to edit message data.

155. As explained in Section IX.A.1.g, a POSITA would understand that the entry user interface receives message file data from a messenger at the client component via the Internet (a global network).

156. Furthermore, the message editor of the entry user interface is operable to “interact[] with other sub-systems” in McFadden to store message data. EX1004, 4:27-29. As illustrated in Figure 1, the entry sub-system interacts with the information storage sub-system 195:

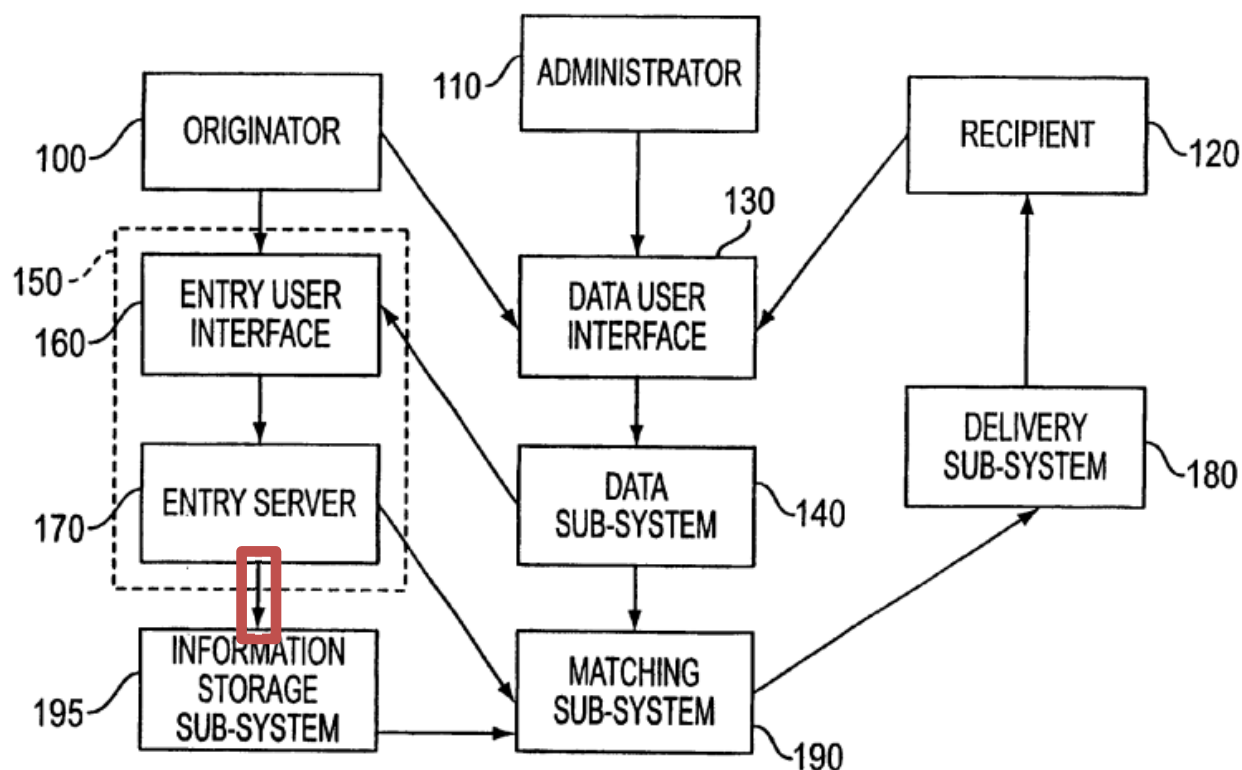


FIG. 1

EX1004, Fig. 1 (annotations added).

A POSITA would understand that the directional arrow pointing from the entry sub-system, including the entry user interface (labeled 150 and 160) to the information storage sub-system (labeled 195) represents a transfer of data from the entry sub-system to the information storage sub-system for storage. In the context of the disclosures in the specification, a POSITA would understand that the data being transferred from the entry sub-system to the information storage sub-system includes message file data received from the entry user-interface. McFadden explains that

the information storage sub-system 195 “handles requests for content as-well as the addition and updating of content.” *Id.*, 5:43-46. Furthermore, Figure 4 of McFadden shows that the information storage sub-system includes a “MESSAGES AND CONTENT” database 410 to store message file data:

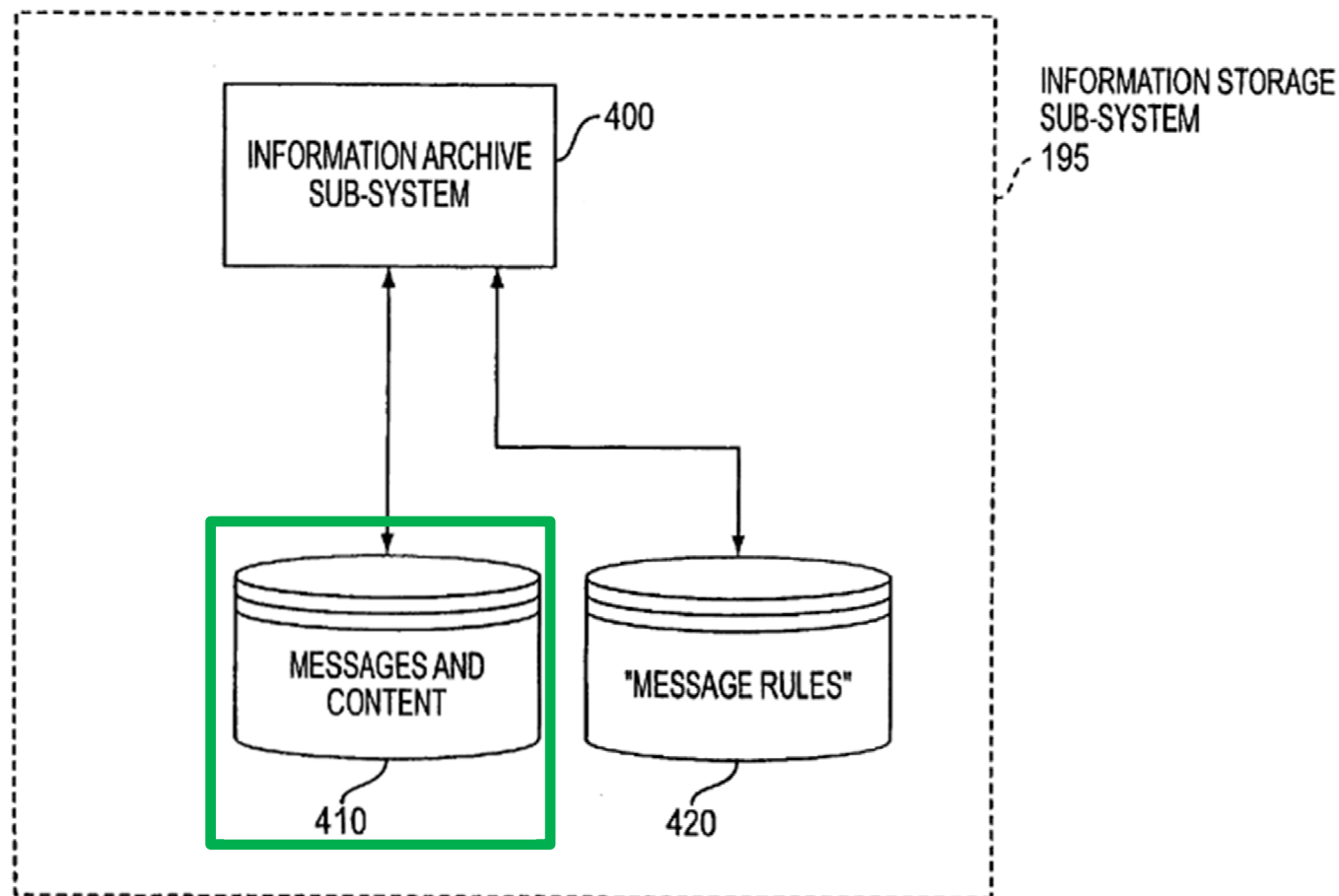


FIG. 4

Id., Fig. 4 (annotations added).

157. From these disclosures, and in combination with earlier disclosures regarding the relationship between the entry user interface and the information

storage sub-system, a POSITA would understand that the message editor interacts with the information storage sub-system 195 to edit and store message file data in the messages and content database 410 of the information storage sub-system shown in Figure 4. A POSITA would further understand that the messages and content database 410 of Figure 4 is a “message database” because it is operable to store message file data received from messengers.

158. Thus, McFadden discloses or renders obvious this limitation.

8. Claim 8

- a) A method of inputting data into the message management system of claim 1 from client computers via a global communications network, to centrally manage the distribution and delivery format of electronic messages from multiple messenger sources to multiple individual recipients, comprising the steps of:**

159. To the extent the preamble is limiting, McFadden discloses or renders obvious “[a] method of inputting data into the message management system of claim 1 from client computers via a global communications network, to centrally manage the distribution and delivery format of electronic messages from multiple messenger sources to multiple individual recipients.”

160. McFadden discloses or renders obvious the electronic message management system of claim 1. *See* Section IX.A.1, above. McFadden further

discloses a method of inputting data into the system over the Internet. In particular, McFadden discloses a “data user interface 130” operative to receive “profile rules” from client applications. EX1004, 6:33-36 (profile data entered via user interface), 4:14-25 (user interface with Internet accessible client components operating in a web browser). As I explained above, the data user interface, and other user interface components in McFadden, are operable to communicate with client components over the Internet (global communications network). *See* Section IX.A.1.b; EX1004, 4:14-25.

161. McFadden further discloses that the system centrally manages the distribution and delivery format of electronic messages from multiple messenger sources to multiple individual recipients. In particular, McFadden explains that “[i]t is an object of the present invention to provide a system and method for efficiently sorting through a large information flow.” EX1004, 1:65-67. McFadden thus provides “a system and method for employing an intuitive, rule-based approach to allow information originators to more intelligently distribute their information.” *Id.*, 2:1-6. McFadden discloses that “there may be any number of each of originators 100, administrators 110, and recipients 120.” *Id.*, 4:7-11; *see also id.*, 11:34-35 (“A typical use of the system may involve thousands and possibly millions of users”). Thus, the system and method of McFadden contemplates multiple messengers and

multiple individual recipients, and further discloses a method for managing the distribution of electronic messages from these multiple messengers (originators) to multiple individual recipients.

162. McFadden further discloses that the system manages the delivery format of electronic messages, as explained in Section IX.A.1.e. *See also id.*, 7:61-67. In particular, the system determines “how to transmit the message to its recipient,” including “via e-mail, fax, [or] postal mail...” *Id.*, 7:57-67. The system also uses “‘structured information’ and/or objects” including “information in Extensible markup Language (‘XML’) and Standardized General Markup Language (‘SGML’),” and computer representations thereof. *Id.*, 4:45-52.

163. Thus, McFadden discloses or renders obvious this limitation.

b) providing the client computers with access to the message management system via a global communications network, where the client computers are messenger and recipient computers;

164. McFadden discloses or renders obvious “providing the client computers with access to the message management system via a global communications network, where the client computers are messenger and recipient computers.”

165. In particular, McFadden discloses that the sub-systems that interact with originators and/or recipients have a client component that is “Internet- and network-accessible” and may operate “in a web-browser.” EX1004, 4:14-25. As

further explained in Sections IX.A.1.d and IX.A.1.e, these client components provide originators and recipients with access to the message management system via the Internet (global communications network). Because the client component may operate in a web-browser, a POSITA would understand that the client component may operate in a “client computer” operable to run the web browser.

166. Figure 1 illustrates how messenger and recipient client computers access the McFadden system through the user interfaces:

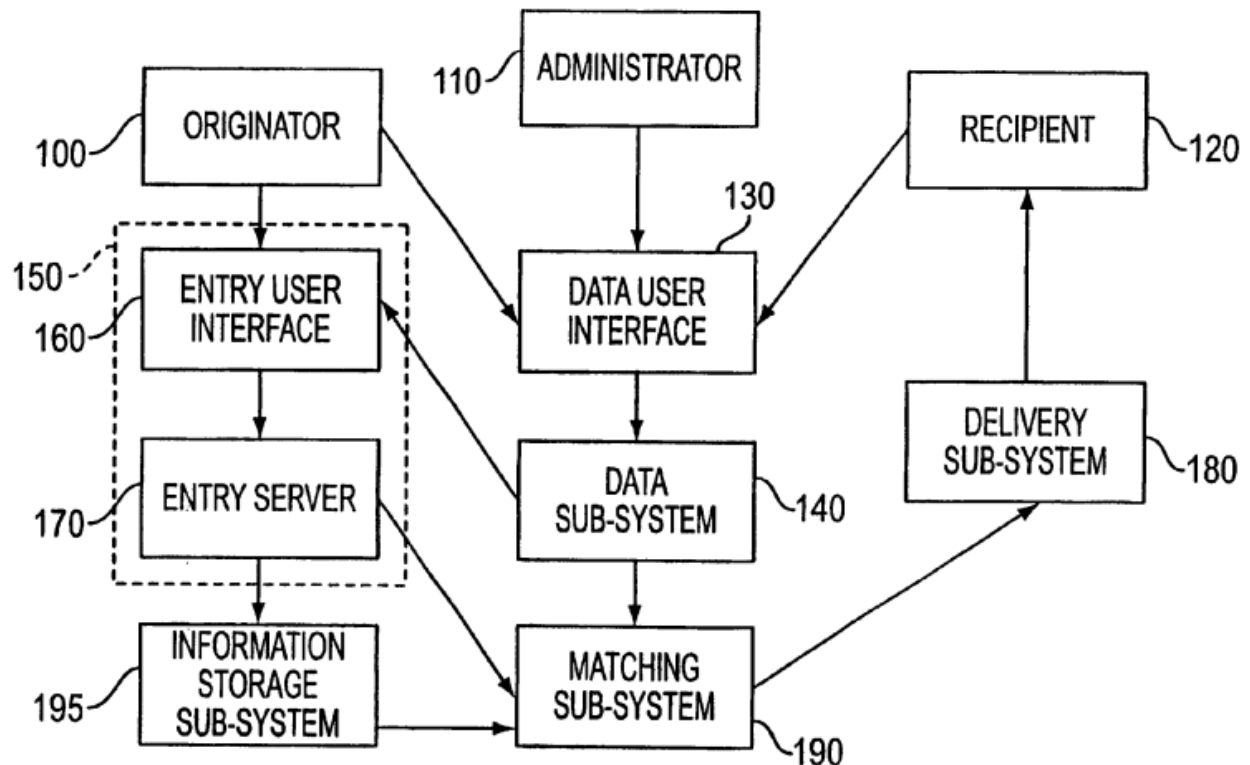


FIG. 1

EX1004, Fig. 1.

The arrows in the figure show recipient 120 accessing the system through the data user-interface 130 and the originator 100 accessing the system through the data user interface 130 and the entry user interface 160. *See* EX1004, 4:14-25.

167. Thus, McFadden discloses or renders obvious this limitation.

- c) **receiving a connectivity request from a client computer for access to the message management system to input data;**

168. McFadden discloses or renders obvious “receiving a connectivity request from a client computer for access to the message management system to input data.”

169. McFadden explains that its “sub-systems interact[]” with messengers and recipients through a computer user interface. EX1004, 4:14-18. The “client and server parts of the user interface interact using secure and non-secure Internet, network, and distributed object protocols.” EX1004, 4:20-27. McFadden further describes these protocols as “standard” protocols. *Id.*, 4:27-29. These protocols may enable the client component to operate in a web-browser. *Id.*, 4:21-25. A POSITA would understand that connectivity requests are inherent in all standard Internet and network connectivity protocols known in the art. In particular, a POSITA would understand that Internet protocols utilized by web-based applications operating in a web-browser generally require the client computer to initiate a connection via the

Hypertext Transfer Protocol (“HTTP”). This protocol requires the client to initiate the connection according to a request-response model, for example through an HTTP GET request.

170. Thus, McFadden discloses or renders obvious this limitation.

d) connecting the client computer to the message management system via the global communication network;

171. McFadden discloses or renders obvious “connecting the client computer to the message management system via the global communication network.” Regarding messenger client computers, McFadden discloses that “[a]n originator 100 interacts with the system by providing information to an entry sub-system 150 and a data sub-system 140.” EX1004, 4:2-4. Regarding recipient client computers, McFadden discloses that “[a] recipient 120 interacts with data sub-system 140 and a delivery sub-system 180.” *Id.*, 4:5-7. These interactions are shown with directional arrows between the system and the originators 100 and recipients 120 in Figure 1:

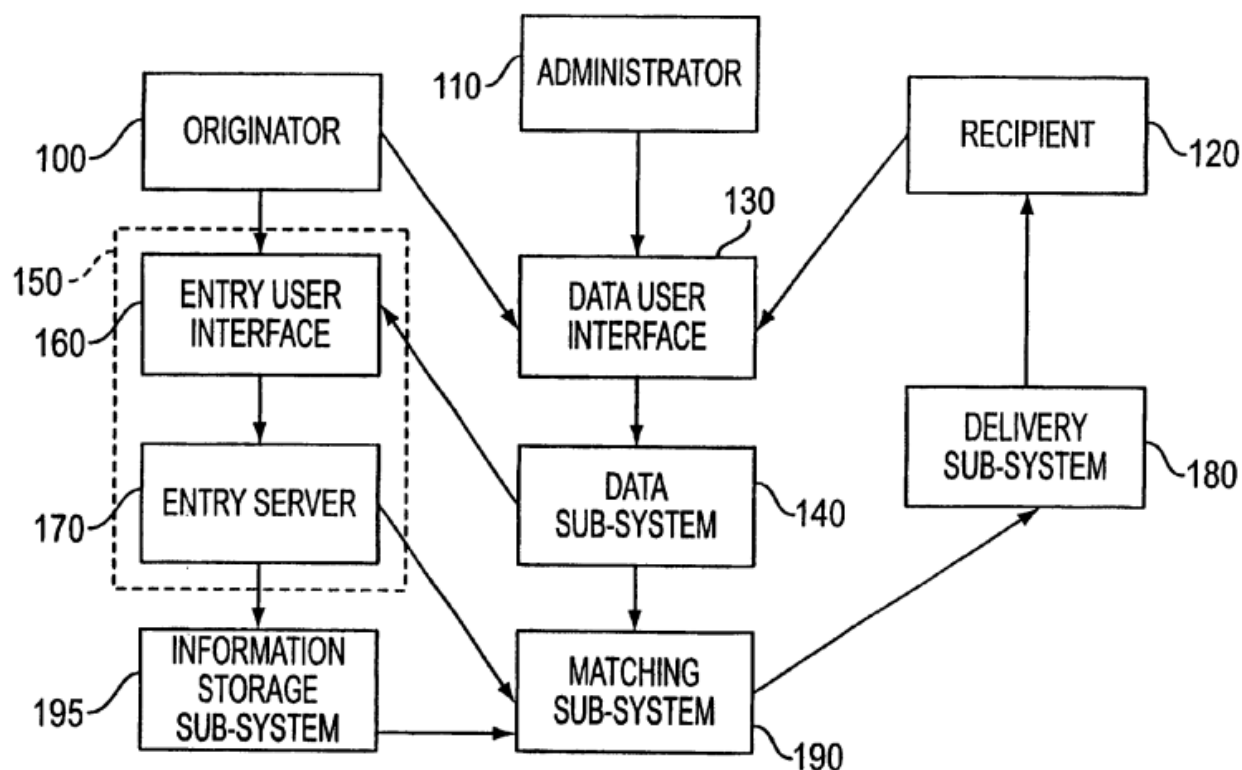


FIG. 1

EX1004, Fig. 1.

172. McFadden further explains that the system interacts with originators and recipients through a “user interface” which “comprises client and server components, with the Internet- and network-accessible client components operating in a web-browser.” *Id.*, 14-25. Because these originators and recipients interact with the system through a web-browser, a POSITA would understand that the recipients and originators use or comprise a “client computer” to run the web-browser. The “client and server parts of the user interface interact using secure and non-secure

Internet, network, and distributed object protocols.” *Id.*, 4:25-27. A POSITA would understand that, for the client and server parts to interact using Internet protocols, they must inherently be connected via the Internet (a global communication network).

173. Thus, McFadden discloses or renders obvious this limitation.

- e) **prompting the client computer for the data to be input by providing a data input form to the client computer; and**

174. McFadden discloses or renders obvious “prompting the client computer for the data to be input by providing a data input form to the client computer.”

175. McFadden discloses that originators and recipients are provided with a “rule construction form” and/or an “entry form” through which the user is prompted to enter data. *See* Sections IX.A.2, IX.A.3, IX.A.4. In particular, McFadden discloses that, depending on the topics selected, different entry forms are “presented to the user.” EX1004, 7:5-7, *see also* 6:11-14 (“The entry form presented to the originator 100 will depend on the topics selected...”). A POSITA would understand that these forms must be provided to the client computer to be presented to the user.

176. Thus, McFadden discloses or renders obvious this limitation.

- f) accepting input data from the client computer and entering the input data into an electronic message management database of the message management system.**

177. McFadden discloses or renders obvious “accepting input data from the client computer and entering the input data into an electronic message management database of the message management system.”

178. In particular, and as I explained in sections IX.A.2, IX.A.3, and IX.A.4 above, McFadden discloses that data received through the data user interface 130 and the entry sub-system 150 may be received through a “rule construction form and/or an “entry form.” McFadden also discloses that data received through the “rule construction form” and/or the “entry form” is stored in the information storage sub-system 195 and data sub-system 140. EX1004, 10:40-56; *see also* Sections IX.A.1.d, IX.A.1.f, IX.A.1.g.. These sub-systems collectively represent the claimed “electronic message management database,” as I explained previously. *Id.*, 4:66-5:3, 5:43-48; *see also* Section IX.A.1.c.

179. Thus, McFadden discloses or renders obvious this limitation.

9. Claim 9

- a) **The method of claim 8, wherein the prompting step includes providing an input form to the client computer.**

180. McFadden discloses or renders obvious “[t]he method of claim 8, wherein the prompting step includes providing an input form to the client computer.”

181. McFadden discloses or renders obvious the method of claim 8. *See* Section IX.A.8, above. McFadden further discloses that originators and recipients are provided with a “rule construction form” and/or an “entry form” through which the user is prompted to enter data, as I explained in Sections IX.A.2, IX.A.3, and IX.A.4 above. *See also* EX1004, 6:9-14 (“After the originator 100 selects a sub-set of topics to be used, he enters descriptive information for each topic selected. The entry form presented to the originator 100 will depend on the topics selected”), 6:66-7:7 (“all users (originators 100, administrators 110, recipients 120, and requesters 200) may enter profile data... The entry form presented to the user will depend on the topics selected”).

182. Thus, McFadden discloses or renders obvious this limitation.

10. Claim 10

- a) **The method of claim 8, wherein the prompting step includes providing an input form to the client computer, the input form being at least one input form selected from the group consisting of a recipient profile**

form, a messenger profile form, and a message input form.

183. McFadden discloses or renders obvious “[t]he method of claim 8, wherein the prompting step includes providing an input form to the client computer, the input form being at least one input form selected from the group consisting of a recipient profile form, a messenger profile form, and a message input form.”

184. McFadden discloses or renders obvious the method of claim 8. *See* Section IX.A.8, above. Furthermore, McFadden discloses that originators and recipients may be provided with a “rule construction form” for entering recipient or messenger profile rules and/or an “entry form” for entering data that “describe[s] the message,” as I explained in Sections IX.A.2, IX.A.3, and IX.A.4 above. *See also* EX1004, 6:33-42 (“In a preferred embodiment, all users (i.e., originators 100, administrators 110, recipients 120, and/or requesters 200) may enter profile rules... The rule construction form presented to the user will depend on the topics selected”), 5:15-22 (“The user interface[] that are part of the entry 150 . . . for adding messages use the topic display information to construct the forms presented to users”).

185. Thus, McFadden discloses or renders obvious this limitation.

11. Claim 11

- a) The method of claim 8, wherein the accepting step includes entering the input data into an electronic message management database comprising a recipient**

profile database, a messenger profile database, and a message database.

186. McFadden discloses or renders obvious “[t]he method of claim 8, wherein the accepting step includes entering the input data into an electronic message management database comprising a recipient profile database, a messenger profile database, and a message database.”

187. McFadden discloses or renders obvious the method of claim 8. *See* Section IX.A.8, above. McFadden further discloses that data received through the “data user interface” and the “entry sub-system” is stored in the “profile database 310,” the “rule database 330,” and “message and content database 410,” as I explained in Sections IX.A.1.d, IX.A.1.f, and IX.A.1.g above. *See also* EX1004, 10:40-56 (“In step 608, the originator enters a message and enters data related to the selected topics, which he desires to send to interested recipients... in step 610 the message is stored in the database 410 of information storage sub-system 195”). The profile database and the rule database store profile data and profile rules data for both recipients and messengers and are thus each a recipient profile database and a messenger profile database, as I explained in Sections IX.A.1.d and VIA.1.f above. EX1004, 6:66-7:1 (“In a preferred embodiment, all users (i.e., originators 100, administrators 110, recipients 120, and/or requesters 200) may enter profile data”).

The message and content database stores message data files, and is thus a message database, as I explained in Section IX.A.1.g above.

188. Alternatively, profile database 310 may represent the claimed messenger profile database and rule database 330 may represent the claimed recipient profile database, as I explained in section IX.A.1.j above. *See also* EX1004, 10:30-33 (“In step 602, at the start of the operation by a particular originator, the profile data about that originator is retrieved from profile database 310”), 10:56-61 (“The rules for identifying the interested recipients are retrieved from rule database 330”).

189. Alternatively, it would have been obvious to a POSITA that profile rules data for messengers and for recipients could be stored in different subparts or tables within either the profile database 310 or the rule database 330. A “database” may simply be a table or set of related tables. A POSITA would understand that data can be divided among different databases, subparts, or tables without changing the nature or functioning of the system. A POSITA would have understood that databases are routinely organized into subparts or tables, and that the exact organization of data between different subparts or tables of a database are routine design choices which would not affect the overall functionality of the system. Subdividing a single database into two databases, subparts or tables having recipient

profile data in one and messenger profile data in the other, would have been a straightforward design change which could easily be implemented by one skilled in the art with a reasonable expectation of success.

190. Thus, McFadden discloses or renders obvious this limitation.

12. Claim 14

- a) The electronic message management system of claim 1, wherein the individual message generator communicates with the database to identify messages and messenger parameters that are compatible with a recipient profile, and to configure the messages for delivery to the recipient.**

191. McFadden discloses or renders obvious “[t]he electronic message management system of claim 1, wherein the individual message generator communicates with the database to identify messages and messenger parameters that are compatible with a recipient profile, and to configure the messages for delivery to the recipient.”

192. McFadden discloses or renders obvious the electronic message management system of claim 1. *See* Section IX.A.1, above. McFadden further discloses that the individual message generator (matching sub-system), uses message rules, messenger profile rules, and recipient profile rules in the database to identify messages compatible with a recipient and to configure the messages for delivery to that recipient.

193. Figure 6 in McFadden explains this process in more detail:

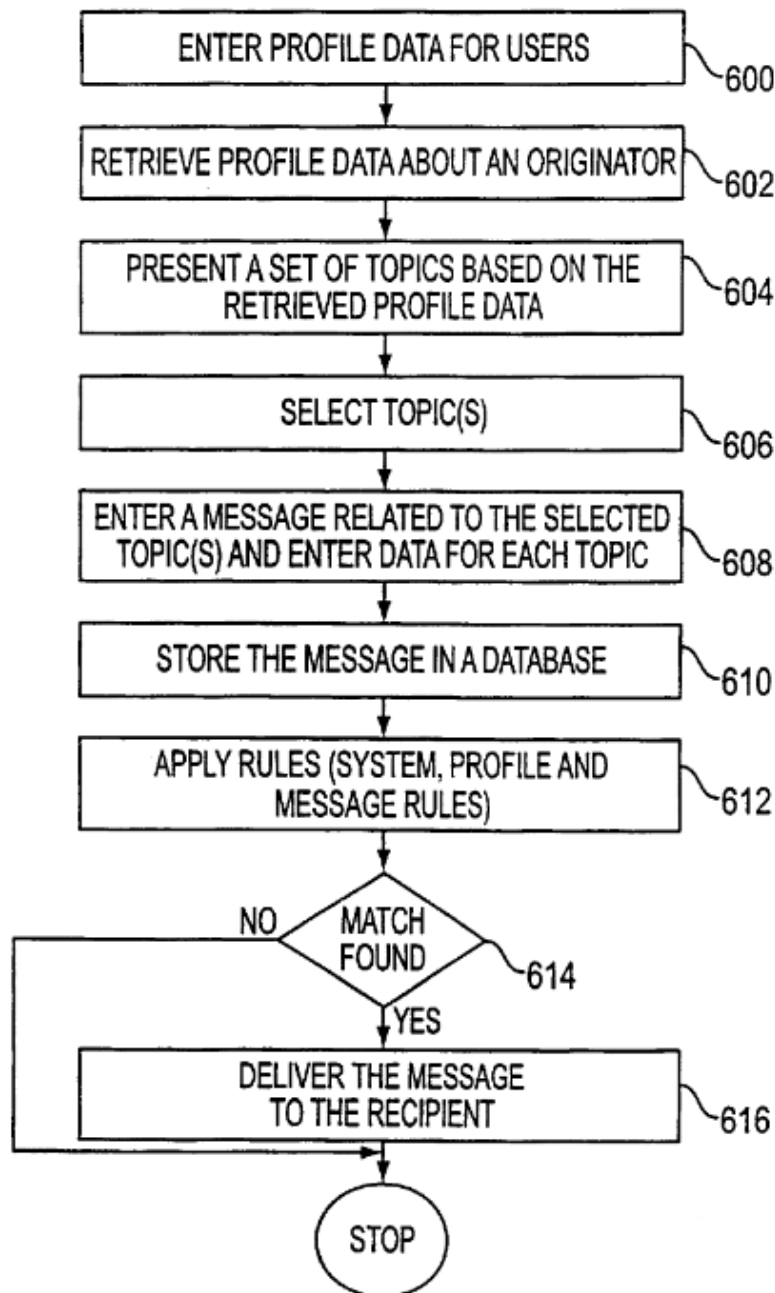


FIG. 6

EX1004, Fig. 6.

This figure shows that, to match messages to compatible recipients, the system first retrieves profile data about the messenger at step 602. This data is retrieved from the “profile database 310 of the data sub-system 140.” *Id.*, 10:30-33. In step 604, topics are presented to the messenger “on the basis of the obtained profile data.” *Id.*, 10:33-35. Later, at step 612, “message rules” are applied by the matching sub-system to identify a “preliminary set of recipients’ profiles.” *Id.*, 7:45-51, 10:53-61. Then “profile rules” are used to “further refine[] this set” and “determine which recipients should receive the message.” *Id.*, 7:52-55. These rules are “retrieved from rule database 330... and may optionally include message rules, associated with the message... and profile rules of the potential recipients.” *Id.*, 10:56-61. Thus, message rules, messenger profile rules, and recipient profile rules are all retrieved from the databases of the data sub-system 140 by the matching system and used to identify messages and messenger parameters compatible with recipient profiles.

194. After identifying recipient profiles compatible messages and messenger parameters, the matching sub-system works with the delivery sub-system to send the individual messages “via e-mail, fax, ... Internet protocols, wireless electronic delivery, ... or any other delivery mechanism or method without affecting the nature of the process.” EX1004, 7:57-65, Fig. 1 (arrows from the database to matching sub-system, which then provides delivery parameters to delivery sub-subsystem).

Thus, message rules, messenger profile rules, and recipient profile rules are retrieved from the database and used to identify messages compatible with a recipient and to configure messages for delivery.

195. Alternatively, a combined sub-system with both the matching and delivery functions could represent the claimed individual message generator, as explained above. *See* Section IX.A.1.h. As above, the combined sub-system communicates with the database to retrieve profiles and rules to identify messages and messenger parameters compatible with a recipient profile. EX1004, 10:19-23, 10:53-56, 7:42-56. The combined sub-system also communicates with the database to configure the individual message for delivery pursuant to the delivery parameters stored in the rule database. *Id.*, 7:57-65, Fig. 3, 10:55-65.

196. Thus, McFadden discloses or renders obvious this limitation.

13. Claim 15

- a) **The electronic message management system of claim 1, wherein the individual message generator generates and sends the individual message via a means selected from the group consisting of; electronic mail, voice telephone, facsimile transmission, and digital transmission.**

197. McFadden discloses or renders obvious “[t]he electronic message management system of claim 1, wherein the individual message generator generates

and sends the individual message via a means selected from the group consisting of; electronic mail, voice telephone, facsimile transmission, and digital transmission.”

198. McFadden discloses or renders obvious the electronic message management system of claim 1. *See* Section IX.A.1, above. McFadden further discloses that the matching sub-system (individual message generator) retrieves the individual message from storage, applying stored rules to the message to identify the recipients for the message and thus generating individual messages. EX1004, 7:42-58, 10:53-60, 11:51-58, Fig. 1, Fig. 4. The matching sub-system then works in conjunction with the delivery sub-system to send the individual message “via e-mail, fax, ... Internet protocols, wireless electronic delivery, ... or any other delivery mechanism or method without affecting the nature of the process.” *Id.*, 7:57-65, Fig. 1 (arrows from the database to matching sub-system, which then provides delivery parameters to delivery sub-subsystem). Thus, McFadden discloses transmission via electronic mail (e-mail), facsimile transmission (fax), and digital transmission (Internet protocols, wireless electronic delivery).

199. Alternatively, a combined sub-system with both the matching and delivery functions could represent the claimed individual message generator, as explained above. *See* Section IX.A.1.h. In the combined sub-system, the delivery function receives a “list of recipients,” and sends the individual messages to each

recipient, e.g., “via e-mail, fax, ... Internet protocols, [or] wireless electronic delivery.” EX1004, 7:57-65.

200. Thus, McFadden discloses or renders obvious this limitation.

14. Claim 16

- a) The electronic message management system of claim 1, wherein the individual message generator generates the individual message and sends the individual message via a means selected from the group consisting of an electronic means and a hardcopy means.**

201. McFadden discloses or renders obvious “[t]he electronic message management system of claim 1, wherein the individual message generator generates the individual message and sends the individual message via a means selected from the group consisting of an electronic means and a hardcopy means.” McFadden discloses or renders obvious the electronic message management system of claim 1. *See* Section IX.A.1, above. McFadden further discloses that the matching sub-system (individual message generator) retrieves the individual message from storage, applying stored rules to the message to identify the recipients for the message and thus generating individual messages. EX1004, 7:42-58, 10:53-60, 11:51-58, Fig. 1, Fig. 4. The matching sub-system then works in conjunction with the delivery sub-system to send the individual message “via e-mail, fax, postal mail, Internet protocols, wireless electronic delivery, sonar, radar, foot messenger or any

other delivery mechanism or method without affecting the nature of the process.” *Id.*, 7:57-65, Fig. 1 (arrows from the database to matching sub-system, which then provides delivery parameters to delivery sub-subsystem). A POSITA would understand that at least “e-mail, ... Internet protocols” and “wireless electronic delivery” are electronic means for sending messages. Furthermore, a POSITA would understand at least “fax, postal mail” and “foot messenger” to disclose delivery by a hardcopy means. Delivery by fax involves delivery in the form of one or more printed sheets of paper. While fax involves electronic transmission, the transmission must be converted to hardcopy to complete the process, and would be understood as a hardcopy delivery means to a POSITA. Furthermore, delivery by postal mail or foot messenger suggests the delivery of a physical document, or other hardcopy information medium.

202. Alternatively, a combined sub-system with both the matching and delivery functions could represent the claimed individual message generator, as explained above. *See* Section IX.A.1.h. In the combined sub-system, the delivery function receives a “list of recipients,” and sends the individual messages to each recipient, e.g., “via e-mail, fax, [or] postal mail.” EX1004, 7:57-65.

203. Thus, McFadden discloses or renders obvious this limitation.

15. Claim 17

- a) **The electronic message generator system of claim 16, wherein the individual message generator generates the individual message and sends the individual message via an electronic means selected from the group consisting of electronic mail, voice telephone, facsimile transmission, digital transmission, computer network, voice mail, SMS, telex, and wireless transmission.**

204. McFadden discloses or renders obvious “[t]he electronic message management system of claim 16, wherein the individual message generator generates the individual message and sends the individual message via an electronic means selected from the group consisting of electronic mail, voice telephone, facsimile transmission, digital transmission, computer network, voice mail, SMS, telex, and wireless transmission.”

205. McFadden discloses or renders obvious the electronic message management system of claim 1. *See* Section IX.A.1, above. McFadden further discloses that the matching sub-system (individual message generator) retrieves the individual message from storage, applying stored rules to the message to identify the recipients for the message and thus generating individual messages. EX1004, 7:42-58, 10:53-60, 11:51-58, Fig. 1, Fig. 4. The matching sub-system then works in conjunction with the delivery sub-system to send the individual message “via e-mail, fax, ... Internet protocols, wireless electronic delivery, sonar, radar, ... or any other

delivery mechanism or method without affecting the nature of the process.” *Id.*, 7:57-65, Fig. 1 (arrows from the database to matching sub-system, which then provides delivery parameters to delivery sub-subsystem). Thus, McFadden discloses transmission via electronic mail (e-mail), facsimile transmission (fax), digital transmission (Internet protocols, wireless electronic delivery), and wireless transmission (wireless electronic delivery).

206. Alternatively, a combined sub-system with both the matching and delivery functions could represent the claimed individual message generator, as explained above. *See* Section IX.A.1.h. In the combined sub-system, the delivery function receives a “list of recipients,” and sends the individual messages to each recipient, e.g., “via e-mail, fax, ... Internet protocols, wireless electronic delivery, sonar, [or] radar.” EX1004, 7:57-65.

207. Thus, McFadden discloses or renders obvious this limitation.

16. Claim 18

- a) The electronic message generator system of claim 16, wherein the individual message generator generates the individual message and sends the individual message via a hardcopy means selected from the group consisting of paper media, magnetic media, and optical media.**

208. McFadden discloses or renders obvious “[t]he electronic message management system of claim 16, wherein the individual message generator

generates the individual message and sends the individual message via a hardcopy means selected from the group consisting of paper media, magnetic media, and optical media.”

209. McFadden discloses or renders obvious the electronic message management system of claim 1. *See* Section IX.A.1, above. McFadden further discloses that the matching sub-system (individual message generator) retrieves the individual message from storage, applying stored rules to the message to identify the recipients for the message and thus generating individual messages. EX1004, 7:42-58, 10:53-60, 11:51-58, Fig. 1, Fig. 4. The matching sub-system then works in conjunction with the delivery sub-system to send the individual message via “fax, postal mail, ... foot messenger or any other delivery mechanism or method without affecting the nature of the process.” *Id.*, 7:57-65, Fig. 1 (arrows from the database to matching sub-system, which then provides delivery parameters to delivery sub-system). It would be obvious to a POSITA that delivery by postal mail or foot messenger could be in the form of paper media. Alternatively, POSITA would understand that “fax” is a hardcopy delivery means that delivers paper media, as the specification of the ’920 patent uses fax as an example of hardcopy delivery. *See* EX1001, 1:27-30. Furthermore, a POSITA would understand, regardless of the

specification of the '920 patent, that fax is a hardcopy delivery means because it results in the delivery of paper media.

210. Alternatively, a combined sub-system with both the matching and delivery functions could represent the claimed individual message generator, as explained above. *See* Section IX.A.1.h. In the combined sub-system, the delivery function receives a “list of recipients,” and sends the individual messages to each recipient, e.g., via “fax, postal mail, ... [or] foot messenger” EX1004, 7:57-65.

211. Thus, McFadden discloses or renders obvious this limitation.

B. Ground 2: McFadden In View Of Owens Renders Claims 1-11 and 14-18 Obvious

212. Regarding Ground 2, I incorporate the opinions and evidence relating to McFadden explained above in Ground 1. Below, I provide further opinions and evidence regarding the disclosures of McFadden in view of Owens for the “profile data” and “recipient specified by the messenger” elements of claim 1, and regarding the motivation to combine McFadden with Owens.

1. Claim 1

- a) The profile data including delivery parameters specified by a recipient of where, when and how specific types of messages from specific messengers are delivered to the recipient,**

213. McFadden in view of Owens discloses or renders obvious “the profile data including delivery parameters specified by a recipient of where, when and how specific types of messages from specific messengers are delivered to the recipient.”

214. As I explained above in Section IX.A.1.e, McFadden discloses or renders obvious recipient profile data including delivery parameters specifying “where, when and how,” specific types of messages from specific messengers are delivered to a recipient. To the extent McFadden does not disclose or render obvious recipient delivery parameters of “where, when and how,” Owens discloses such delivery parameters. And to the extent McFadden does not disclose or render obvious types of messages “from specific messengers,” Owens discloses this parameter.

215. Owens discloses recipient delivery parameters, including “where, when and how,” for specific types of messages. Owens explains that “[m]essage receivers” have “options that allow them to manage the retrieval of messages.” EX1005, 10:9-10. Owens then explains that the “options available are determined by the type of message received from the sender.” EX1005, 10:51-55. From this

disclosure, a POSITA would understand Owens to disclose that a user may configure specific options for specific types of messages.

216. Recipients may select options governing where to send the messages, including by directing “a message to an alternate device/address.” *Id.*, 10:24-31, 10:36-40 (option to direct “a message to an alternate device/address”) Recipients may select options governing when to send the messages, including an option to (1) “perform an immediate action” including forwarding the message to the destination device/address, “or (2) to have messages stored in the original communication medium format ... for later retrieval.” *Id.*, 10:24-31, 10:36-42 (immediate delivery for important messages). Recipients may select options governing how to receive the messages, including an option to “select the communication medium by which they would like to receive/retrieve their messages,” and to create “a rule for cross-media messaging ... so that all of a message receiver’s incoming messages are ... converted if necessary.” *Id.*, 10:9-17, 10:35-39 (send to alternative target device). A POSITA would understand that these options in Owens represent delivery parameters on where, when, and how messages are to be delivered to the recipient.

217. In addition, Owens discloses rules defined by recipient for delivering messages “from specific messengers.” Owens discloses that “filtering rules (in accordance with the filtering options selected by the receiver)” may be “based on

the sender's originating telephone number or e-mail address." EX1005, 10:48-55. Owens further discloses that "[d]ifferent rules may be established (via options) for each sender from which a message receiver expects to receive messages." *Id.*, 15:23-25; *see also* 11:62-65 ("Referring to FIG. 8, when an e-mail message is received, the receiver has several immediate filter and forward options based on who sent the message (as determined by the originator's e-mail address.)"). A POSITA would understand that such filtering options and rules in Owens allow a user to direct where, when, and how messages are delivered based on "specific messengers."

218. A POSITA would be motivated to combine McFadden with Owens. The goals and technology disclosed in McFadden and Owens are similar. Both McFadden and Owens teach user-defined rules to filter and route messages sent between senders and receivers. The object of the invention in McFadden is to direct the flow of messages among senders and receivers by employing filtering based on user-defined rules. EX1004, 2:1-10 ("object of the present invention to provide a system and method for employing an intuitive, rule-based approach" "by a method and system for distributing information between an originator and at least one end-user"). Owens also employs such filtering based on user-defined rules to direct the flow of messages among senders and receivers. EX1005, Abstract ("The options are used to define a set of rules to be applied to inbound and outbound messages so that

messages are sent and received in accordance with the preferences of the senders and receivers”).

219. To address the problem of managing the flow of messages between senders and receivers, both McFadden and Owens provide a solution that involves filtering messages by employing rules. Each of these rules is (a) based on preferences entered by users, (b) stored in a database, and (c) accessed for directing the flow of messages. EX1004, 6:33-35 (all users “may enter profile rules”), 5:33-38 (“profile rules” are “stored in a separate database”), 10:29-31 (“The profile data includes various information about the users, which is subsequently used to route a message to a proper recipient”); EX1005, 8:22-26 (“a user may... select options to set up rules for filtering and forwarding of information”), 15:43-49 (“computer access service rules database” contains “filter/forward rules”), 15:18-37 (“immediate filter and forward as well as store and forward options are selected . . . The options are used to establish rules to be applied to inbound and outbound messages”). And McFadden and Owens allow both senders and receivers to use their respective rules to control the flow of messages. EX1005, Abstract (“Message senders and receivers may choose from a variety of filter and forward options that allow them to manage their communications”); EX1004, Abstract (“Flexible rule-

based information system allows” originators and recipients “to control and influence the flow of and access to information”).

220. More particularly, McFadden and Owens both address managing where, when, and how messages are to be delivered. McFadden discloses delivery parameters on where to send the message (EX1004, 7:61-65 (“Messages may be transmitted via e-mail, fax, postal mail”)), when to send (*id.*, 7:61-67 (transmitted now or logged “for later retrieval”)), and how to send the message to the recipient (*id.*, 7:57-67 (“configuration profiles . . . determine how to transmit the message”). A POSITA would be motivated to enhance McFadden with Owens because Owens provides further “where, when, and how” attributes that could be incorporated into the same delivery parameters, including by the use of “addresses” (the claimed “where”), immediate forwarding for important messages (the claimed “when”), and the selection of alternate target devices, such as via email (the claimed “how”). EX1005, 10:24-56. A POSITA would look to Owens to enhance the McFadden delivery parameters because Owens, like McFadden, is aimed at using user-defined rules to direct the flow messages between senders and receivers. A POSITA would understand that additional attributes (e.g., a specific address, a particular target device, or immediate delivery for urgent messages) would enhance the functionality of McFadden and would be a practical extension of its existing delivery parameters

for users. McFadden discloses delivery parameters and Owens discloses further attributes for the same delivery parameters. These attributes disclosed in Owens can be implemented as additional Boolean conditions or action selections in the McFadden system, as discussed in detail below.

221. In addition, McFadden and Owens both address filtering messages based on specific messengers. McFadden discloses user-defined rules for “indicating what types of posts, and from whom, he would like to receive.” EX1004, 11:59-60, 11:60-67. A POSITA would be motivated to enhance the user-defined rules of McFadden with Owens because Owens provides further attributes for the same messenger-based filtering options, including filtering based on the email addresses of specific messengers. EX1005, 10:48-56 (“The filtering rules (in accordance with the filtering options selected by the receiver) applied to the message are based on the sender's originating telephone number or e-mail address”). A POSITA would look to Owens as an enhancement of the messenger-based filtering in McFadden because Owens, like McFadden, seeks to employ user-defined rules to direct the flow messages between senders and receivers. A POSITA would understand that additional attributes (e.g., a messenger’s email address) would enhance McFadden and would be a practical extension of its existing messenger-based filtering for users. McFadden discloses filtering for specific messengers,

where Owens provides additional attributes for the same filtering approach. Such Owens attributes can be implemented as additional Boolean conditions or action selections in the McFadden system, as discussed in detail below.

222. A POSITA would not have perceived technological obstacles in implementing the attributes of Owens into the McFadden system. McFadden provides a rule construction form allowing users to enter rules via Boolean conditions and/or based on a selection of actions to route messages. EX1004, 6:43-59. Specifically, McFadden discloses a “rule construction procedure [that] allows a user to specify one or more Boolean conditions.” *Id.*, 6:43-45. In McFadden, the user can employ any “operands for character and numeric data” along logical operators “AND” or “OR.” *Id.*, 6:45-55. The user can also apply Boolean conditions with “contains,” “starts with,” or “ends with.” *Id.* A POSITA would know to apply the Boolean conditions of McFadden to specify the Owens attributes, including by using a condition of “contains” and the messenger’s email address. Second, in McFadden, “rule construction also involves the selection of actions to be completed if the rule evaluates ‘true.’” EX1004, 6:56-59. Thus, the Owens attribute of immediate delivery for important messages can be implemented by using the selection of actions in McFadden’s rule construction form. A POSITA would

understand that a user could create a rule in McFadden where if a message is marked urgent, then the action to be completed is sending the message immediately.

223. A POSITA would have had a reasonable expectation of success because the additional attributes of Owens do not change the underlying structure of the McFadden system, which already includes (a) using an online interface for entering user-based rules, (b) storage of such rules in a database, and (c) access to the stored rules in order to match and route messages to recipients, as detailed above. A POSITA would understand that the Owens attributes could be added to the McFadden online interface, including the rule construction form and the entry form, for example, by using text boxes with additional Boolean conditions or drop down menus with additional selections of actions. Similarly, a POSITA would understand that the additional attributes of Owens may be stored in the same data tables and databases as the corresponding delivery parameters in McFadden. Further, a POSITA would understand that implementing the additional attributes, such as an address for a device or a specification of immediate delivery, would have been an obvious, practical extension of the functionality of McFadden's existing system, which is already operable to deliver a message to a recipient according to recipient-specified delivery parameters. EX1004, 7:57-67. In sum, the additional attributes for delivery parameters in Owens do not change the structure of the McFadden

system, and a POSITA would understand that the enhancement from Owens would predictably result in a refined set of McFadden-Owens attributes for the existing system for delivery parameters in McFadden.

224. Thus, McFadden in view of Owens discloses or render obvious this limitation.

- b) An individual message generator in communication with the database and operative to access and utilize data and files from the database to generate an individual message to be sent to the recipient specified by the messenger via the global communications network according to the delivery parameters, and**

225. McFadden in view of Owens discloses or renders obvious “an individual message generator in communication with the database and operative to access and utilize data and files from the database to generate an individual message to be sent to the recipient specified by the messenger via the global communications network according to the delivery parameters.”

226. As I explained in Section IX.A.1.h above, McFadden discloses or renders obvious an individual message generator in communication with the database and operative to access and utilize data and files from the database to generate an individual message to be sent to the recipient specified by the messenger via the global communications network according to the delivery parameters. And

to the extent McFadden does not disclose or render obvious “the recipient specified by the messenger,” Owens discloses this.

227. Owens discloses a messenger specifying a recipient. Specifically, Owens explains that a message sender “who wishes to send an e-mail message to a message receiver,” may do so via the Internet, whereby the sender “composes the message on the computer 20, supplies an identifier for the message receiver (such as a member number), and sends the message.” EX1005, 7:14-24. A POSITA would understand that, by supplying an “identifier for the message receiver,” the email sender in Owens is specifying the recipient, whether by name, email address, and/or an identifying number. This method of specifying a recipient is inherent in any conventional email system, and thus would be well known to a POSITA.

228. As discussed above, a POSITA would be motivated to combine McFadden with Owens because both McFadden and Owens route messages between senders and receivers using user-defined rules. *See* Section IX.B.1.a. McFadden explains that to target interested recipients, the originator may enter “message rules to reflect the originator’s target audience.” *Id.*, 10:44-48, 11:51-57 (specifying message rules for specific recipients); *see also id.*, 14:9-12 (“a message provider will be able to select a set of computer users that the message provider would like to receive the message”). A POSITA would be motivated to use the Owens recipient

identifier to enhance McFadden's targeting of recipients because Owens, like McFadden, seeks to employ user-defined rules to direct the flow of messages from a sender and to a receiver. The object of the invention in McFadden is to employ user-defined rules "for distributing information between an originator and at least one end-user." EX1004, 2:1-10. A POSITA would understand that the Owens identifier (e.g., a recipient's email address, name or other identifier) would be a practical option to incorporate into McFadden's "message rules" to specify "at least one end-user." *Id.* And a POSITA would have been motivated to give a messenger this option to give the messenger more control over the distribution of messages.

229. As discussed above, a POSITA would have perceived no technological obstacle and would have had a reasonable expectation of success because Owens would not change the underlying structure of the McFadden system, which includes an online interface, database storage, and access to database storage for routing messages. *See* Section VIII.B.1.a. In particular, a POSITA would have perceived no technological obstacle in implementing the recipient identifier of Owens into the McFadden system. McFadden provides a rule construction form to route messages by allowing users to enter rules via Boolean conditions. EX1004, 6:43-59. Specifically, McFadden discloses a "rule construction procedure [that] allows a user to specify one or more Boolean conditions," using any "operands for character and

numeric data” including “contains.” *Id.*, 6:45-55. A POSITA would know to apply the Boolean conditions of McFadden to specify the Owens recipient identifier, including by using the operand “contains” or similar, and the recipient’s email address, name, or other identifier.

230. A POSITA would have had a reasonable expectation of success because a POSITA would understand that a method for entry of the Owens recipient identifier could be added to the McFadden online interface, for example, by using one or more text boxes with additional Boolean conditions, and may be stored in the same data tables for the corresponding “message rule” in McFadden. Further, a POSITA would understand that implementing the Owens recipient identifier would have been a practical use of the functionality of McFadden’s existing system, which is already operable to deliver a message to a recipient “via email” and/or “Internet protocols.” EX1004, 7:57-67.

231. Thus, McFadden in view of Owens discloses or renders obvious this limitation.

X. AVAILABILITY FOR CROSS-EXAMINATION

232. 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 at a time mutually agreed between the parties.

XI. RIGHT TO SUPPLEMENT

233. I reserve the right to supplement my opinions in the future to respond to any arguments that the Patent Owner raises. This declaration represents only those opinions that I have formed to date. I reserve the right to revise, supplement, and/or amend my opinions stated herein based on new information that becomes available to me and on my continuing analysis of the materials already provided.

XII. CONCLUSION

234. I 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 so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Date: May 30, 2023

Respectfully submitted,

Philip Greenspun

Philip Greenspun