Practitioner's Docket No. 4123/1001 *PATENT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Keel, Paul		
Application No.:	Not Yet Assigned	Group No.:	Not Yet Assigned
Filed:	Herewith	Examiner:	Not Yet Assigned

For: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

List of Sections Forming Part of This Information Disclosure Statement

The following sections are being submitted for this Information Disclosure Statement:

1. [x] Preliminary Statements
2. [x] Forms PTO/SB/08A and 08B (substitute for Form PTO-1449)
3. [ ] Statement as to Information Not Found in Patents or Publications
4. [ ] Identification of Prior Application in Which Listed Information Was Already Cited and for Which No Copies Are Submitted or Need Be Submitted
5. [ ] Cumulative Patents or Publications
6. [x] Copies of Listed Information Items Accompanying This Statement
7. [ ] Concise Explanation of Non-English Language Listed Information Items
   - 7A. [ ]EPO Search Report
   - 7B. [ ]English Language Version of EPO Search Report
8. [ ] Translation(s) of Non-English Language Documents
9. [ ] Concise Explanation of English Language Listed Information Items (Optional)
10. [x] Identification of Person(s) Making This Information Disclosure Statement

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Meta Platforms, Inc. - IPR2026-00249
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Section 1. Preliminary statements

Applicants submit herewith patents, publications or other information, of which they are aware that they believe may be material to the examination of this application, and in respect of which, there may be a duty to disclose.

The filing of this information disclosure statement shall not be construed as a representation that a search has been made (37 C.F.R. § 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability, or that no other material information exists.

The filing of this information disclosure statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

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Section 2. Forms PTO/SB/08A and 08B (formerly Form PTO-1449)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Keel, Paul	Attorney Docket:	4123/1001
Serial No:	Not Yet Assigned	Art Group Unit:	Not Yet Assigned
Date Filed:	Herewith	Examiner Name:	Not Yet Assigned
Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects		

DATE: March 20, 2015

LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT

U.S. PATENT DOCUMENTS					
Examiner Initials	**Reference Number**	**Document Number**	**Issue Date**	**Inventor**	**Class/Subclass**
	AA	US 5,008,853	Apr. 16, 1991	Bly, et al	364/900
	AB	US 5,220,657	Jun. 15, 1993	Bly, et al	395/425
	AC	US 6,092,067	Jul. 18, 2000	Girling, et al	707/100
	AD	US 6,119,147	Sep. 12, 2000	Toomey, et al	709/204
	AE	US 6,266,649	Jul. 24, 2001	Linden, et al	705/26
	AF	US 6,327,590	Dec. 4, 2001	Chidlovskii, et al	707/5
	AG	US 6,597,377	Jul. 22, 2003	MacPhail	345/738
	AH	US 6,724,403	Apr. 20, 2004	Santoro, et al	345/765
	AI	US 6,768,999	July 27, 2004	Prager, et al	707/102
	AJ	US 6,829,619	Dec. 7, 2004	Wakamatsu, et al	707/104.1
	AK	US 6,912,505	Jun. 28, 2005	Linden, et al	705/14
	AL	US 6,931,591	Aug. 16, 2005	Brown, et al	715/517
	AM	US 6,973,456	Dec. 6, 2005	Elgart	707/10
	AN	US 7,028,264	Apr. 11, 2006	Santoro, et al	715/765
	AO	US 7,062,242	Jun. 13, 2006	Dajer, et al	455/232.1
	AP	US 7,113,917	Sep. 26, 2006	Jacobi, et al	705/14
	AQ	US 7,478,054	Jan. 13, 2009	Adams, et al	705/26
	AR	US 7,478,078	Jan. 13, 2009	Lunt, et al	707/1
	AS	US 7,543,237	Jun. 2, 2009	Kontny, et al	715/759
	AT	US 7,681,112	Mar. 16, 2010	Francis	715/201
	AU	US 7,765,490	Jul. 27, 2010	Lai, et al	715/810
	AV	US 7,904,323	Mar. 8, 2011	Wynn, et al	705/8
	AW	US 7,921,368	Apr. 5, 2011	Moody, et al	715/751
	AX	US 8,078,615	Dec. 13, 2011	Smith, et al	707/732
	AY	US 8,392,834	Mar. 5, 2013	Obrador	715/723
	AZ	US 8,743,148	Jun. 3, 2014	Gegner, et al	345/660

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Section 2. Forms PTO/SB/08A and 08B (formerly Form PTO-1449)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Keel, Paul	Attorney Docket:	4123/1001
Serial No:	Not Yet Assigned	Art Group Unit:	Not Yet Assigned
Date Filed:	Herewith	Examiner Name:	Not Yet Assigned
Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects		

DATE: March 20, 2015

LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT

U.S. PATENT PUBLICATION DOCUMENTS					
Examiner Initials	**Reference Number**	**Document Number**	**Publication Date**	**Inventor**	**Class/Subclass**
	BA	US2002/0016725	Feb. 7, 2002	Eichstaedt, et al	705/5
	BB	US2002/0080180	Jun. 27, 2002	Mander, et al	345/769
	BC	US2002/0143877	Oct. 3, 2002	Hackbarth, et al	709/205
	BD	US2002/0169737	Nov. 14, 2002	Armstrong, et al	706/59
	BE	US2003/0009493	Jan. 9, 2003	Parker, et al	707/500.1
	BF	US2003/0135565	Jul. 17, 2003	Estrada	709/206
	BG	US2003/0158855	Aug. 21, 2003	Farnham, et al	707/102
	BH	US2003/0208397	Nov. 6, 2003	VanDusen	705/14
	BI	US2003/0217056	Nov. 20, 2003	Allen, et al	707/7
	BJ	US2004/0003097	Jan. 1, 2004	Willis, et al	709/228
	BK	US2004/0049541	Mar. 11, 2004	Swahn	709/203
	BL	US2004/0054428	Mar. 18, 2004	Sheha, et al	700/56
	BM	US2004/0083274	Apr. 29, 2004	Katiyar, et al	709/217
	BN	US2004/0153445	Aug. 5, 2004	Horvitz, et al	707/3
	BO	US2004/0193673	Sep. 30, 2004	Samji, et al	709/200
	BP	US2004/0201609	Oct. 14, 2004	Obrador	345/723
	BQ	US2004/0261013	Dec. 23, 2004	Wynn, et al	715/511
	BR	US2004/0267700	Dec. 30, 2004	Dumais, et al	707/2
	BS	US2005/0080807	Apr. 14, 2005	Beilinson, et al	707/102
	BT	US2005/0154639	Jul. 14, 2005	Zetmeir	705/14
	BU	US2005/0165880	Ju. 28, 2005	Moody, et al	709/200

Examiner Signature: _____

Date Considered: _____

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation *if not* in conformance and not considered. Include copy of this form with next communication to applicant.

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Section 6. Copies of Listed Information Items Accompanying This Statement

Legible copies of all items listed in Forms PTO/SB/08A and 08B (substitute for Form PTO-1449) accompany this information statement.

[X] Exception(s) to above:

U.S. patent citations are not included pursuant to the United States Patent and Trademark Office's September 21, 2004 waiver of the copy requirement in 37 CFR 1.98 for cited pending U.S. patent citations when the patent citations are available in the USPTO's IFW system.

[ ] Items in prior application, from which an earlier filing date is claimed for this application, as identified in Section 4.

[ ] Cumulative patents or publications identified in Section 5.

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Section 10. Identification of Person Making This Information Disclosure Statement

The person making this certification is the practitioner of record.

/Bruce D. Sunstein, #27,234/
SIGNATURE OF PRACTITIONER

Reg. No.: 27,234

Bruce D. Sunstein
(type or print name of practitioner)

Tel. No.: (617) 443-9292

Sunstein Kann Murphy & Timbers LLP
125 Summer Street, 11th Floor
P.O. Address

Customer No.: 002101

Boston, MA 02110-1618

04123/01001 2263508.1

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Doc Code: TRACK1.REQ
Document Description: TrackOne Request

PTO/AIA/424 (04-14)

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e) (Page 1 of 1)

First Named Inventor:	Keel et al.	Nonprovisional Application Number (if known):	
Title of Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently $0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.

2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.

3. The applicable box is checked below:

I. ☑ Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)

i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.

---OR---

(b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.

ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, **or** the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.

II. ☐ Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)

i. A request for continued examination has been filed with, or prior to, this form.
ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /Bruce D. Sunstein, #27,234/	Date March 20, 2015
Name (Print/Typed) Bruce D. Sunstein	Practitioner Registration Number 27234

Note: *This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.**

☑ *Total of 1 forms are submitted.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Practitioner's Docket No. 4123/1001 *PATENT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Keel et al.

Application No.: Not Yet Assigned Group No.: Not Yet Assigned
Filed: Herewith Examiner: Not Yet Assigned
For: Assessing the Condition of a Joint and Preventing Damage

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OR OATH

I. In compliance with 37 CFR 1.63, Applicant submits herewith an executed declaration or oath for the application. These Declarations were filed in the parent application entitled "Methods and Apparatus for Managing and Exchanging Information Using Information Objects" on June 24, 2013 as U.S. Application No. 13/925,031.

II. If any fees are required, please charge Deposit Account Number 19-4972.

Date: March 20, 2015

/Bruce D. Sunstein, #27,234/
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PTO/AIA/01 (06-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	METHODS AND APPARATUS FOR MANAGING AND EXCHANGING INFORMATION USING INFORMATION OBJECTS

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [x] The attached application, or
- [ ] United States application or PCT international application number _____

filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

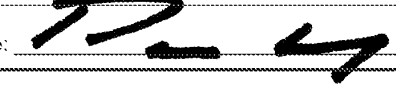
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Paul Erich Keel Date (Optional): June-20-2013

Signature: 

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/01 (06-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	

As the below named inventor, I hereby declare that:

This declaration is directed to:

[X] The attached application, or

[ ] United States application or PCT international application number _____

filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Jeffrey Huang Date (Optional) :_____

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Keel et al.	Docket No.:	4123/1001
Appl. No:	TBD	Art Unit:	TBD
Filed :	herewith	Examiner:	TBD

Title: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

VIA USPTO ELECTRONIC FILING SYSTEM

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Preliminary Amendment

Dear Sir:

Request is made to amend the accompanying application as set forth below.

Amendments to the Description begin on page 2 of this paper.

Remarks begin on page 5 of this paper.

A substitute specification, incorporating these amendments, is attached as Appendix A.

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Amendments to the Description:

1. Please replace paragraph [00053] with the following amended paragraph:

[00053] The IOs 320 include an information bar 322 that accommodates an interface and visual indicators for complementary IO functions. A small rectangular box that includes an icon or in some cases a numerical counter represents each available IO function. Three distinct colors visually indicate the status of each function. In one configuration, the color gray is used for inactive functions, the color green is used for active functions and the color red is used for functions that require user attention. Every function can be individually turned on and off. The information bar 322 also allows for the customization and addition of functions specific to particular situations and work tasks. The following is a list of example functions and is not intended to limit the invention to information objects (e.g., IOs 320) including such functions. A reference function allows users to hyperlink or to attach related information. A location function is used to associate IOs 320 with a geographic location. The location Algorithm indicates geographic locations for which cards (IOs) are available. In other words, if a card (IO) is associated with a geographic location then the Location Algorithm will represent this card with an icon on a map. Multiple cards in similar geographic locations do not produce multiple icons but a single icon of enlarged size. A typical application is a newspaper that marks on a world map all locations for which news is available. A control function enables automatic IO updates. A comment function allows for the addition of comments and annotations. A vote function allows collaborating users to exchange their opinions about the relevance of IOs. Every user is given one supporting vote for each card (IO). The icon color indicates the addition of recent and the presence of past votes. The numerical counter next to the icon displays the total number of supporting votes. An access log function provides users with a detailed record about the IO history. The Log Function provides users with a detailed record indicating the dates, times and names of all users that previously viewed, copied or modified the card (IO). The icon color indicates recent and past log entries. The counter next to the icon displays the number of log entries. This functionality allows users to review the evolution, collaborative use, and authorship history of cards (IOs). A personal note function is used to announce and send

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IOs 320 to specific users. A priority function allows users to categorize and highlight IOs.

2. Please replace paragraph [00057] with the following amended paragraph:

[00057] The IO attribute indicators shown in Figure 2 can indicate an IO state that can include such things as ownership of the IO, a geographic location associated with the IO, a time of creation of information associated with the IO, and other information. Depending upon the configuration, each IO 320 can further include features such as an instant messaging capability allowing to users in a distributed system to share access to an IO in order to exchange comments or messages between themselves concerning information associated with the IO. In one configuration, the system displays, within the IO perimeter, at least one messaging icon operable by a user to send a message to an IO associated with at least one other user, thus enabling collaboration. In one configuration, clicking on the messaging icon allows users to add a time/author stamped message to an IO 320 that all users 108-2 through 108-N can see if they have a copy of this IO 320. For any user 108, the icon lights red if the IO 320 includes new messages that the user has not yet looked at, green if it includes messages that the user previously looked at, and gray if the IO includes no messages. The counter next to the icon displays the number of comments. It is to be understood a that reference to an IO 320 refers to an implementation of an information object, and as will be explained shortly, algorithms disclosed herein can analyze information about IOs, such as spatial relationships between IOs, and that such algorithms and processing can be applied to other representations of information objects besides IOs, such as desktop icons, physical locations of physical items such as items on a store shelf, and so forth.

3. Please replace paragraph [00067] with the following amended paragraph:

[00067] In this manner, the system disclosed herein provides a novel process for exchanging information and for asynchronous, decentralized, remote, and cross-organizational collaboration. In particular, users 108 use their individual Workspace Views 300 to organize and analyze information. The exchange server 153 produces the exchange view 315 to display cards (IOs) 320 that are concurrently displayed in one or

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more workspace views 300 of at least one other user 108. The exchange view 315 displays (in prioritized order in one configuration) the IOs 320 created by all collaborating users 108 (or those with the appropriate access permissions or security levels). The exchange server 153 manages the display and exchange of card (IO) information between exchange views 315 and can include filter features to allow a user 108 to only see cards (IOs) from selected users 108 (as opposed to all cards (IOs) in all workspaces 300 of all users 108). The users 108 can copy relevant IOs 320 from their exchange views 315 to their Workspace Views 300. Users 108 can take "ownership" over IOs 320 copied from their exchange views 315 and these IOs 320 are now modifiable by the user 108. In one configuration, when a user takes ownership of an IO 320, the IO 320 is no longer synchronized with a counterpart IO on the IO author's Workspace View. In another configuration, once an IO 320 is owned exclusively by a user 108, these IOs 320 can no longer be used for collaboration such as by "instant messaging," IO commenting, or "IO voting."

4. Please replace paragraph [00076] with the following amended paragraph:

[00076] A variety of data visualization and access tools allow for the easy retrieval of IOs from the database, for example, in conjunction with an EWall Agent System; and by retrieving IOs from a Discovery View. The Discovery View presents individual users with a custom selection of potentially relevant IOs, and in one embodiment consolidates the Exchange View (315) and Database View (310). In this embodiment, the Discovery View not only displays related information in the IO database 125 but can also display related information found by other web services (e.g., related products for one selected product provided by online sellers or search engines). The Database Views (Discovery Views) 310 of individual users 108 display (in prioritized order) cards (IOs) 320 available in the database (as records 160) that are related or relevant to the cards (IOs) 320 on a user's workspace view 300 based on the relations discovered via application of the relation processing algorithms 155.

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REMARKS

This preliminary amendment is made to explicitly add to the present application material that is incorporated by reference. By way of background, each of the applications that is a source of priority for the present application is incorporated by reference. Moreover, each predecessor nonprovisional application that is a source of priority for the present application incorporates by reference each earlier application that is a source of priority for the predecessor. In short, there is a chain of incorporations by reference going back to the first filed application in the chain.

In these remarks we show the support for each amendment made to the present application. In the listing below, we use the following terminology to identify predecessor applications:

Application Number 1: Provisional Patent Application Serial Number 60/566,723, filed April 29, 2004, entitled "METHODS AND APPARATUS FOR MANAGING AND INFERRING RELATIONSHIPS FROM INFORMATION".

Application Number 2: Patent Application Serial Number 11/118,301 (now US Patent Number 7,640,511), filed April 29, 2005, entitled "METHODS AND APPARATUS FOR MANAGING AND INFERRING RELATIONSHIPS FROM INFORMATION OBJECTS".

Amendment Number 1, paragraph [00053].

First insert. Support is found in Application No. 1, page 98, section 2.4.17 (lines 22-25).

Second insert. Support is found in Application No. 1, page 15, second full paragraph after the first sentence thereof (lines 12-15).

Third insert. Support is found in Application No. 1, page 15, third full paragraph (lines 17-20).

Amendment Number 2, paragraph [00057].

Support is found in Application No. 1, page 14, second paragraph under "2. Information Bar", third sentence (line 32 on this page).

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Amendment Number 3, paragraph [00067].

First insert. Support is found in Application No. 2, page 18, lines 8-10.

Second insert. Support is found in Application No. 2, page 18, lines 16-19. In this insertion, the "152" after "exchange server" is changed to "153" to correct an obvious typographical error, as evident from the reference to "exchange server 153" earlier in the same paragraph, namely in the first insert.

Amendment Number 4, paragraph [00076].

Support is found in Application No. 2, page 20, lines 13-17. For adding "(Discovery Views)" after "Database Views", support is found in paragraph 76 of the application showing the correspondence of these views.

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In the foregoing amendments, the insertions are taken verbatim from the referenced portions of the above applications, except that the parenthetical "(IO)", meaning "Information Object" is inserted after "card" in the referenced portions. Support for "card" as an "Information Object" appears in the application, paragraph 22: "As used herein the term "card," "IO" and "information object" are used interchangeably, and a card is one example configuration or representation of an information object."

Date: March 20, 2015

Respectfully submitted,

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APPENDIX A

METHODS AND APPARATUS FOR MANAGING AND EXCHANGING INFORMATION USING INFORMATION OBJECTS (SUBSTITUTE APPLICATION)

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH

[0001] This invention was made with government support under government grant (N00014-08-C-0206). The Government may have certain rights in this invention.

RELATED APPLICATIONS

[0002] This application is a continuation of United States patent application serial number 13/925,031, filed June 24, 2013, which is a continuation of United States patent application serial number 12/563,416, filed September 21, 2009 (now United States patent number 8,499,248, issued July 30, 2013), entitled "METHODS AND APPARATUS FOR MANAGING AND EXCHANGING INFORMATON USING INFORMATION OBJECTS," which (i) claims the benefit of United States provisional application serial number 61/116,747, filed November 21, 2008, entitled "Information Objects (IOs) and Information Views (IVs)", and (ii) is a continuation in part of United States patent application serial number 11/118,301, filed April 29, 2005 (now United States patent number 7,640,511, issued December 29, 2009), entitled "METHODS AND APPARATUS FOR MANAGING AND INFERRING RELATIONSHIPS FROM INFORMATION," which claims the benefit of United States provisional application having Serial Number 60/566,723, filed April 29, 2004, entitled "METHODS AND APPARATUS FOR MANAGING AND INFERRING RELATIONSHIPS FROM INFORMATION". All of these related applications are hereby incorporated herein by reference in their entirety.

BACKGROUND

[0003] Modern information processing systems allow users to collect and process large amounts of information. As an example, a typical computer system such as a

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personal computer includes an operating system that executes within the computer system to provide a graphical user interface to users of that computer system. A conventional graphical user interface typically includes a number of information objects such as graphical icons that represent information of relevance or importance to the user. The user accesses data and controls functionality of the computer system by selecting and operating such icons. By way of example, software applications such as word processors, graphical editing tools, web browsers and many others often provide graphical user interfaces that include a number of icons that have visual meaning to the user of the computer system. Typically, a software application renders icons to allow the user to invoke specific functionality or commands of that application and/or to allow the user to organize and access data. Many software applications use icons to represent data or files that the user can access by selecting (e.g., clicking) the icon representing the data. As an example, if a user selects an icon that represents a software application installed within the computer, the computer will begin execution of that application. Other icons on a graphical user interface can represent folders or files maintained by the operating system within a file system.

[0004] Many conventional software applications allow a user to develop or collect various portions of information or content for storage and future access. As an example, a word processor or other editing tool allows the user to create and edit documents. As another example, a web browser allows a user to navigate web pages provided by servers on remote computer networks such as the Internet to reference information on a variety of subjects. A conventional computer system allows a user to store information referenced or created by such applications as a set of documents or files that can be retrieved by the user at a later time.

[0005] Most conventional operating systems and many software applications also provide a way for a user to arrange a file system of the computer in order to organize documents and files in a manner that makes sense to the user. Computer operating systems typically organize file systems in a hierarchical manner allowing the user to create folders or directories with user-specified names. The user can store files within the folders in a manner that makes sense to that user. A file system is thus one of the

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most popular ways for users to organize and manage data and information of interest to those users.

[0006] Another mechanism that conventional applications and operating systems provide to allow users to organize and manage information of interest to that user is the ability to allow a user to spatially arrange information objects such as graphical icons in a way that makes intuitive sense to the user. As an example, on a conventional "desktop" work area provided by many operating systems, a user can place or position icons representing files, documents, applications, email messages, appointments or the like in any manner and at any position that the user may choose. In particular, such conventional applications allow the user to graphically maneuver the icons into position in relation to one another in a manner that makes sense to that user. Different users often organize icons on their desktop in different ways.

[0007] Information availability and accessibility is continuously increasing. The problem is that information commonly exists in different formats, resides in different locations, is dynamically changing, and is used and modified by different people. This makes it difficult for users to effectively monitor, analyze and exchange information.

SUMMARY

[0008] Conventional mechanisms and techniques that allow a user to visually organize, collect and manage information objects that represent various portions of information suffer from a variety of deficiencies. In particular, conventional computer-based applications such as operating system desktops and software application graphical user interfaces allow a user to collect and store numerous portions of content and information that are of interest to the user and allow a user to represent that information graphically (e.g. via icons), but do little to analyze relations that may exist between the icons and/or between the stored portions of content or data.

[0009] In particular, conventional information processing systems such as those noted above allow a user to organize and arrange various portions of data or other information as icons in a graphical user interface in a manner that makes sense to the user, but such systems do not promote conversations and collaboration among users.

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[00010] Another deficiency with conventional information processing systems is that information is represented in different formats and, depending on the format, is stored in different locations. For example, conventional browsers store hyperlinks to web sites as bookmarks, whereas emails are located in mailboxes in mail handlers, files are stored in computer directories, and notes may be stored in files, and so forth. The proposed information object mechanism disclosed herein, referred to in some embodiments as IOs, solve this deficiency by introducing a standardized information format that represents a piece of information in an abstract way and links to an original piece of information and that has a standardized look thus allowing users to focus on and compare the information content and context rather that be distracted by the information format and location.

[00011] As an example of problems with conventional data processing systems, a user using a conventional content development application may spend large amounts of time collecting portions of content such as graphics, text, news stories, web pages, email messages, or other such information sources for collaborative production of a large content-based research project. Many users may be involved in this process. As each user collects portions of information using conventional information management systems, the users store and organize their respective portions of information within the computer file system. Each user may create icons on his or her desktop or other work areas that represent the respective portions of collected information. Each user might group icons for related pieces of information together in a list, within close proximity to each other, or in file directories. In conventional systems however, it is up to the user to identify what other portions of information might be of interest to the user that the user has not already identified and collected.

[00012] As an example, if the collaborative production being developed by the users is a project related to current events, each user may collect articles and stories related to that current event. Using conventional systems, it is up to each user to research and discover stories or other content related to that current event that might be available from a variety of different information sources. While conventional collaboration systems might provide a common repository for such collected information

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contributed by each user, there is little or no ordering to this information, other than an order specified by the users who place the content into the shared repository such as a file system or database. Each user must frequently communicate with other users in a highly manual manner (e.g. via a telephone call, email or other mechanism) to identify content that other users may have discovered and collected that might be of relevance to the production under development.

[00013] Such conventional information management systems do not automatically and dynamically analyze relations between user placed icons that represent the various pieces of available information in order to assist users in identifying other portions of content that many of interest to those users. More specifically, conventional systems do not analyze specific spatial relations, collaborative context relations, chronological context relations, and the like between information sources associated with icons arranged by a user to determine other portions of information, such as other portions of content collected by other users, that may be of relevance or interest to the user providing a specific spatial arrangement of his or her icons. As a result, conventional information management systems limit a user's knowledge of other available content and information to which that user may have interest. In particular, such systems limit available content to that content that a user can discover on their own.

[00014] As an example, using a conventional information discovery processes such as web searching, a user can quickly become overwhelmed with search results that are irrelevant to the information they are seeking. While some conventional web sites may attempt to suggest references to web pages that are similar in nature to those discovered when providing a particular search term, such additional references are simply provided based on frequently performed searches of other users and do not take into account current information already collected by the user performing the original search. Thus a conventional browser is not made aware that a user already has collected certain related pieces of information and has organized them in a spatially related manner.

[00015] In contrast, embodiments of the invention are based in part on the observations that conventional information collection management systems provide a

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significant cognitive burden on users caused by the increasing availability of information, the requirement for users to actively initiate a search for relevant information, the requirement for evaluation of the quality and feasibility of information, the need to collaborate remotely and asynchronously, as well as the necessity to dynamically adapt to changing circumstances. Modern information processing systems do not provide an automated ability to organize and identify information sources that come in many different formats. For example, information may be received in the form of a phone call, an email, an instant message, a computer file, a web site, a database item, a verbal comment, a radio transmission, a newspaper, a television spot, a magazine, or a security camera. The various formats often prevent the easy and efficient collection, organization, and comparison of information by conventional information processing systems.

[00016] Embodiments of the invention incorporate advanced graphical user interfaces and functions to address the shortcomings in conventional systems. These embodiments include Information Objects (IOs) and Information Views (IVs). IOs that are data files that can include other data files (such as documents, hyperlinks, and executables) as well as meta-data (such as ratings, discussion logs, and visualization parameters). IVs are computer windows for the visualization of IOs. IOs are rendered differently on different IVs allowing users to manage information in a customized format and in environments suited to particular tasks and circumstances. In certain embodiments the IO consolidates data, meta-data and communication features. For example, the IO can be an agenda item, a discussion, a hosted conversation, a topic, etc. Accordingly, the user can efficiently view and organize multiple IOs that represent different topics and that engage different groups of participants.

[00017] Advantageously IOs provide a means for users to package and visualize (static and dynamic) information in a standardized format. IOs can be viewed and modified differently on different IVs. IOs can be copied between the IVs of the same or different users. Copies of IOs remain synchronized if displayed on different IVs. IOs are associated with functions that enhance the collaborative use of information, for

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example, an object-based communication system that allows users to communicate through IOs and IVs.

[00018] Other benefits of Information Objects and Views include the ability to: consolidate task relevant information (e.g. from shared IVs to a private IVs);

display information in a custom and familiar format (e.g., in a wide variety of possible custom IVs);

maintain a standardized data format for different data visualization and management tools; and

easily move data between different data visualization and management tools; and

easily exchange information among remotely distributed participants in a hosted conversation.

[00019] Using techniques disclosed herein, it is possible to create IOs transfer IOs between the same or different types of IVs, add additional IVs and additional functions for IOs, as well as a selection of IO components, IO functions on IVs. An electronic wall (EWall) embodiment provides one example for the visualization of IOs on an information view (IV) in which an IO can present itself as a EWall IO on a EWall Workspace View. A graphical user interface is provided for the management of multiple IVs, as well as new functions for the exchange of IOs and the collaborative use of IVs.

[00020] Embodiments of the invention as disclosed herein provide mechanisms and techniques for providing the IO, sharing the IO among a plurality of participants, attaching multi-media data to the IO. The technique further includes displaying the IO in one of a plurality of views and in response to interaction with one of the plurality of views by one of the participants, communicating with at least one different one of the participants sharing the IO.

[00021] The system disclosed herein provides a computational environment for the support of individual and collaborative decision-making and greatly enhances the quality and the speed of individual and collaborative brainstorming, problem-solving, information collecting and decision-making processes. More specifically, the system

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for providing hosted conversation among a group of participants disclosed herein includes a processor, a memory unit that stores instructions associated with an application executed by the processor, and an interconnect coupling the processor and the memory unit, enabling the computer system to execute the application and perform operations of: storing a link to at least one information object, the at least one information object, the information object includes at least one link to a document, a plurality of links to the group of participants, meta-data related to the conversation, and a communication system linking the at least one information object to the group of participants. The system further provides a user interface on the client system comprising: an icon representing the at least one information object, a contact list, a list of participants linked to the at least one information object and an information view to visualize the at least on information object.

[00022] In one configuration, the IOs are sometimes represented as "cards" on a graphical user interface. IOs reference different types of information formats thus making it easier for users to directly compare and study information in different formats. As used herein the term "card," "IO"and "information object" are used interchangeably, and a card is one example configuration or representation of an information object. AN IO includes a graphic icon area to display text or a picture associated with an information source, as well as other information pertaining to such things as ownership of that IO, creation time of the IO, and attribute indicators that indicate a current state of the IO, and a hyperlink to its associated information source. In a simplest embodiment, an IO is just an icon that represents some information and information represented by IOs may be stored in different locations and in different formats. In one configuration, an IO is different from an ordinary icon because it comes with hidden functionality such as a built-in instant messaging system and the ability to drag and drop content onto the IO. It is noted that the: instant messaging system includes communication media such as Instant Messaging System , email and SMS messaging, text messaging and other forms of real-time communication between participants.

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[00023] In one configuration, the system applies a spatial relation algorithm that discovers spatial relations between positional information of at least two IO records in an IO database that are associated with IOs displayed on the graphical user interface in the first set of IOs. The relations between IOs can be stored in a database and the system can use discovered relations to identify a second set of information objects based on the relation(s) between the first set of information objects/IOs. The second set of information objects in an IO configuration is a second set of IOs that might be of interest to the user based on the analysis of the IOs already on display in a Workspace View associated with that user. The system can output an identity of the second set of information objects by displaying the second set of IOs on the graphical user interface for viewing by the user. The second set may be displayed in a prioritized and relevant manner based on relations discovered concerning the first set of IOs.

[00024] In this manner, the system can use IOs to show the user other sources of information, possibly from other users, or from a database, or from a dynamic source such as a news feed, that might be of interest to that user. News feeds include but are not limited to news, alerts, announcements, motion detection events triggering security cameras, emails, instant messages (IMs), short message services (SMSs), sensors, real time search results, and custom content. The system can thus assist a user in managing information and retrieving relevant information.

[00025] Embodiments of the invention include any type of computerized device, workstation, handheld or laptop computer, or the like configured with software and/or circuitry (e.g., a processor) to process any or all of the method operations disclosed herein. In other words, a computerized device or a processor that is programmed or configured to operate as explained herein is considered an embodiment of the invention.

[00026] Other embodiments of the invention that are disclosed herein include software programs to perform the steps and operations summarized above and disclosed in detail below. One such embodiment comprises a computer program product that has a computer-readable medium including computer program logic encoded thereon that, when performed in a computerized device having a coupling of

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a memory and a processor and a display, programs the processor to perform the operations disclosed herein. Such arrangements are typically provided as software, code and/or other data (e.g., data structures) arranged or encoded on a computer readable medium such as an optical medium (e.g., CD-ROM), floppy or hard disk or other a medium such as firmware or microcode in one or more ROM or RAM or PROM chips or as an Application Specific Integrated Circuit (ASIC). The software or firmware or other such configurations can be installed onto a computerized device to cause the computerized device to perform the techniques explained herein. Other configurations include various graphical representations of the IOs themselves, for example as displayed on a graphical user interface as will be explained in more detail.

[00027] It is to be understood that the system of the invention can be embodied strictly as a software program, as software and hardware, or as hardware alone such as within a processor, or within an operating system or within a software application.

BRIEF DESCRIPTION OF THE DRAWINGS

[00028] The foregoing and other objects, features and advantages of the invention will be apparent from the following more particular description of embodiments of the invention, as illustrated in the accompanying drawings and figures in which like reference characters refer to the same parts throughout the different views. The drawings are not necessarily to scale, with emphasis instead being placed upon illustrating the embodiments, principles and concepts of the invention.

[00029] Figure 1 is an example network environment including computer systems configured with a relation manager in accordance with one example embodiment disclosed herein.

[00030] Figure 2 shows an example layout of an IO in accordance with one example embodiment disclosed herein.

[00031] Figure 3 is a diagram of information flow and IOs present themselves differently on different IVs and can be copied between IVs in accordance with one example embodiment disclosed herein.

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[00032] Figures 4A and 4B are diagrams of News Views that display news for multiple different news papers postings by different users.

[00033] Figure 5A is a diagram of IOs being exchanged between IVs of different users.

[00034] Figure 5B is a diagram of IOs being exchanged between Private, Visible and Shared Views.

[00035] Figure 6A is a diagram of an exemplary graphical user interface (GUI) Organization in accordance with one example embodiment disclosed herein.

[00036] Figure 6B is a more detailed diagram of the exemplary GUI Organization of Figure 6A.

[00037] Figure 6C is a diagram of an alternate exemplary GUI Organization in accordance with one example embodiment disclosed herein.

[00038] Figure 7 is a diagram of a graphical user interface (GUI) which allows the users to select import/export IOs from/to IM systems, other users views, shared views, e-mail tools, databases, agent systems in accordance with one example embodiment disclosed herein.

[00039] Figure 8 is a diagram of IO File Management An IO can "display" different types of files such as pictures, text, movies, flash applications (left), attach/hyperlink different types of files (middle), and dynamically update IO contents (right). in accordance with one example embodiment disclosed herein.

[00040] Figure 9 is a diagram of IO components in accordance with one example embodiment disclosed herein.

[00041] Figure 10 is a diagram of IO Operations in accordance with one example embodiment disclosed herein.

[00042] Figures 11-13 are flow charts of processing steps performed to the in accordance with embodiments disclosed herein.

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DETAILED DESCRIPTION

[00043] Figure 1 illustrates the computer-networking environment 100 suitable for use in explaining example embodiments of invention. The computer-networking environment 100 includes a network 101 such as a local area network (e.g., LAN) that interconnects a plurality of computer systems 110-1 through 110-N that each execute respective relation managers 150 (application 150-1 and process 150-2), view manager managers 178 (application 178-1 and process 178-2), connections managers 180 (application 180-1 and process 180-2) and IO file managers 182 (application 182-1 and process 182-2) under respective control of a plurality of users 108. The computer systems 110 may be any type of computerized device such as a personal computer, laptop, workstation, mainframe terminal, or the like. In this example, each computer system 110 generally includes in interconnection mechanism 111 such as a data bus, motherboard or other circuitry that interconnects a memory 112, a processor 113, an input output interface 114 and a communications interface 115. A display 130 such as a computer monitor and input output mechanism 116 couple to the computer system 110 via the input output interface 114. The communications interface 115 allows communication with other computer systems 110-2 through 110-N over the network 101. The architecture of the computer system 110-1 is shown in Figure 1 by way of example only. It is to be understood that the details of the example computer systems 110-2 through 110-N can be similar to those of computer system 110-1 but are not shown in Figure 1 due to drawing space limitations.

[00044] The memory 112 within each computer system 110 may be any type of computer readable medium such as random access memory (RAM), read only memory (ROM). The memory 112 may be fixed or removable from the computer system 110, such as a floppy disk, magnetic disk, optical disk media (e.g., CD ROM) or the like.

[00045] In one embodiment, the memory 112 is encoded with computer program logic (e.g., software code) that includes a relation manager application 120-1. When the processor 113 executes the relation manager application 150-1, the processor 113

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produces a relation manager process 150-2 that executes as explained herein to produce a graphical user interface 132-1 (the example being produced by the relation manager 150 in computer 110-1) on the display 130 for viewing by the user 108. The relation manager process 150-1 and application 150-2 are collectively referred to herein as simply the relation manager 150. When referring to the relation manager 150, it can thus be a reference to the executing process 150-2, the application code 150-1, or both. Each relation manager 150 in combination with the view manager 178, connections manager 180 and file manager 182 process files and documents and produce a graphical user interface 132 that provides, to the user 108, visual knowledge representation, dynamically updated content, hosted conversations, and interpretation and management based in part on spatial relationships. To do so, the managers 150, 178, 180 and 182 include a workspace server 151, a news server 152, an exchange server 153 and a database server 154 that each produce, respectively, a Workspace View 300, a News View 305, a database view 310 and an exchange view 315 within the graphical user interface 132. The relation manager 150 adds discovered relations to IO's in a database 125 (the database 125 may already include relations that other people or software products added). The relation manager also provides the algorithms 155 to examine the network of relations to discover potentially relevant information.

[00046] The database 125 maintains a history of updates to the IOs to allow for inclusive reconstruction of a particular IO at given time.

[00047] The workspace server 151 produces the Workspace View 300 that in one configuration is a graphical user work area, such as a desktop, in which a user 108 is able to create and manipulate graphical information objects 310 that graphically represent information objects of interest to user 108. The Workspace View 300 helps users 108 to create, collect, organize and understand information associated with each IO 320 and the relationships among information represented by the IO 320. In one configuration, a generic client application such as a web browser accesses such views from respective servers 151 through 154 that may execute on the same or different computer systems 110. In another alternative configuration, a dedicated client application includes or provides the Workspace View, the News View, the database

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view, and the exchange view and implements the news server, the database server, and the exchange server. It is to be understood that the system described herein may be distributed or centralized and may operate among many computer systems with many users 108.

[00048] Information Objects (IOs) are flexible data structures and can include data files that can include other data files as well as meta-data (for the display of IO contents and the use of IO functions on different IVs), present themselves differently depending on the IV they are displayed on, include the same data and functionality on any IV they are displayed on. IOs can be copied or transferred between the same or different types of IVs, copied or transferred between the IVs of the same or different users, remain synchronized if copied to multiple IVs, synchronized with dynamic data sources other than source-IOs, moved from an IV to the computer desktop, file system, or 3rd party applications, thus converting an IO into a regular computer file that can be exchanged through conventional means such as email or file sharing and can be moved from the computer desktop, file system or 3rd party applications to any IV.

[00049] Information Views (IVs) can include graphical user interfaces that render IOs in different ways (can be described as a optical lenses that allows users to view information in different ways) and can enable access to all IO parameters and functions.

[00050] Using system 110 a user can interact with an information object, the system 110 facilitates sharing the IO among a plurality of participants; provides controls for attaching multi-media data to the IO, displays the IO in one of a plurality of views ; and in response to interaction with one of the plurality of views by one of the participants, provide a communications path between at least two of the participants sharing the IO.

[00051] Directing attention briefly to Figure 2, an example layout of an information object (IO) 310 is shown. An IO 320 in this example provides a visually compact, standardized, and abstract representation of information that displays, reminds of,

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and/or links to the original piece of information associated with that IO 320. Generally, an IO 320 is any graphical representation of an information object and may be considered the information object itself. The term "IO" as used herein can thus include anything from a simple icon that represents something such as a web page, a document, or a live information source, or an IO can be a more complex representation of such things. Both, the layout and the functionality of IOs 320 are highly modular in one configuration. This means that visual components and computational features can be individually turned on and off, and that additional visual components and computational features can easily be integrated. Furthermore, the colors and fonts of all IO components are customizable. In one embodiment, IOs 320 are visually subdivided into six segments in one configuration that can expand and contract depending on their contents.

[00052] The icon area 321 allows for the placement of graphical and/or textual material that can help users 108 to quickly visually locate IOs among many other IOs as well as to memorize and recall the data, information or knowledge associated with that IO 320. Users 108 can copy and paste pictures and text from various computer applications into the icon area. Users can also drag and drop pictures and text from web browsers and file managers into the icon area 321. Furthermore, users can directly draw and write into the icon area 321. The background color of the icon area 321 is also customizable allowing users to visually group and highlight IOs. Typically, the icon area 321 includes an IO graphic such as an icon, picture or other graphical information that represents information associated with that IO. As an example, if an HTML document such as a web page is of interest to a user, that user can create an IO to represent that web page. The IO can include a picture from the web page or a reduced sized version of the web page as its graphic.

[00053] The IOs 320 include an information bar 322 that accommodates an interface and visual indicators for complementary IO functions. A small rectangular box that includes an icon or in some cases a numerical counter represents each available IO function. Three distinct colors visually indicate the status of each function. In one configuration, the color gray is used for inactive functions, the color green is used for

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active functions and the color red is used for functions that require user attention. Every function can be individually turned on and off. The information bar 322 also allows for the customization and addition of functions specific to particular situations and work tasks. The following is a list of example functions and is not intended to limit the invention to information objects (e.g., IOs 320) including such functions. A reference function allows users to hyperlink or to attach related information. A location function is used to associate IOs 320 with a geographic location. The location Algorithm indicates geographic locations for which cards (IOs) are available. In other words, if a card (IO) is associated with a geographic location then the Location Algorithm will represent this card with an icon on a map. Multiple cards in similar geographic locations do not produce multiple icons but a single icon of enlarged size. A typical application is a newspaper that marks on a world map all locations for which news is available. A control function enables automatic IO updates. A comment function allows for the addition of comments and annotations. A vote function allows collaborating users to exchange their opinions about the relevance of IOs. Every user is given one supporting vote for each card (IO). The icon color indicates the addition of recent and the presence of past votes. The numerical counter next to the icon displays the total number of supporting votes. An access log function provides users with a detailed record about the IO history. The Log Function provides users with a detailed record indicating the dates, times and names of all users that previously viewed, copied or modified the card (IO). The icon color indicates recent and past log entries. The counter next to the icon displays the number of log entries. This functionality allows users to review the evolution, collaborative use, and authorship history of cards (IOs). A personal note function is used to announce and send IOs 320 to specific users. A priority function allows users to categorize and highlight IOs.

[00054] The date / time bar 324 displays the date and time of the most recent IO modification. The relation manager 150 can use the date / time bar indication to reconstruct the chronology of contributions from different users and sources. The author bar 325 displays the name of the user who last modified the IO 320 or the information source the IO 320 has been copied from. The author bar 325 provides an indication of the IO editor and is used to compare contributions from different users

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and sources. The heading bar 326 allows users 108 to complement IOs 320 with a brief description or some keywords such as a title. The heading bar 326 effectively complements the icon area 321 by introducing language as an additional means for the abstract representation of data, information and knowledge. While the icon area 321 is particularly useful for the visual navigation of large IO arrangements, the heading bar 326 is focused on supporting the quick and easy recollection of IO meanings and contents.

[00055] The creation and use of IOs 320 can fundamentally shift the way analysts and decision-makers comprehend and think about information during sense-making activities. The creation of IOs 320 engages users 108 into a process of converting, standardizing, abstracting, and associating information while the use of IOs 320 fosters a strong focus on relating information uninfluenced by the format and location of information. Humans like to think of data, information and knowledge as objects that they collect, compare, and organize. The conversion of data and information (as well as the externalization of knowledge) into virtual and physical objects accommodates this way of thinking. Dealing with virtual and physical objects such as files on a computer desktop or documents on a table effectively increases a human's ability to deal with complex sense-making tasks. A standardized IO size and layout is convenient to collect, compare, and organize IOs 320. Configurations disclosed herein are based in part on the observation that the benefits of standardized information objects are present in various everyday objects. For example, index cards, credit cards, business cards, slides, photographs and postcards are usually of equal size and layout so they can conveniently be stored, accessed, and processed. The abstract representation of data, information and knowledge with IOs 320 engages a human's visual recognition in ways that decreases information access time and allows for the processing of large amounts of information. Furthermore, the process of creating IOs 320 requires users to circumscribe the contents associated with IOs 320 in a visually and mentally fast accessible and easily comprehensible format thus encouraging a more careful analysis and understanding of the contents associated with IOs. The concept and use of abstract visual and textual reminders is also present in various everyday objects. For example, desktop icons and thumbnail views allow users to

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easily locate and organize computer files. Military ribbons use abstract visual representations to provide service, mission and award specific information on a small clothing area. Traffic signs depend on abstract visual representations that are easy to spot and understand by pedestrians and car drivers.

[00056] In one configuration, an IO 320 does not include information per se but only serves as a reminder for the presence of a particular piece of data, information or knowledge. The separation between IOs 320 and content associated with IOs 320 allows for the compact visualization and organization of large amounts of information. AN IO 320 may be viewed as a meaningfully labeled hyperlink to a piece of content available in a remote location. Users 108 can easily arrange and rearrange IOs 320 in the workspace 300. Users 108 benefit from this process by developing a good understanding of the IO contents and the relations among IOs 320 (e.g., context). The use of IO arrangements also benefits collaborative sense-making tasks. People of different backgrounds, interests and foci have their unique ways of relating information. The collaborative development of IO arrangements can help people to determine intersecting views as well as to develop a shared understanding of a particular information space. Information objects are thus each represented as respective IOs 320 in this configuration.

[00057] The IO attribute indicators shown in Figure 2 can indicate an IO state that can include such things as ownership of the IO, a geographic location associated with the IO, a time of creation of information associated with the IO, and other information. Depending upon the configuration, each IO 320 can further include features such as an instant messaging capability allowing to users in a distributed system to share access to an IO in order to exchange comments or messages between themselves concerning information associated with the IO. In one configuration, the system displays, within the IO perimeter, at least one messaging icon operable by a user to send a message to an IO associated with at least one other user, thus enabling collaboration. In one configuration, clicking on the messaging icon allows users to add a time/author stamped message to an IO 320 that all users 108-2 through 108-N can see if they have a copy of this IO 320. For any user 108, the icon lights red if the IO 320 includes new

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messages that the user has not yet looked at, green if it includes messages that the user previously looked at, and gray if the IO includes no messages. The counter next to the icon displays the number of comments. It is to be understood a that reference to an IO 320 refers to an implementation of an information object, and as will be explained shortly, algorithms disclosed herein can analyze information about IOs, such as spatial relationships between IOs, and that such algorithms and processing can be applied to other representations of information objects besides IOs, such as desktop icons, physical locations of physical items such as items on a store shelf, and so forth.

[00058] Returning attention back to the graphical user interface 132 in Figure 1, the Workspace View 300 presents users with an empty canvas for the creation and grouping of IOs 320. In one configuration, the Workspace View 300 can be the desktop of a computer system 110 provided by an operating system, such as the Windows Desktop provided by the Windows family of operating systems made by Microsoft Corporation of Redmond Washington ,USA (Windows is a registered trademark of Microsoft Corporation). The Workspace View 300 is designed to support individual and collaborative sense-making tasks such as information analysis, planning, decision-making, brainstorming, and problem-solving. The Workspace View 300 functionality will provide users 108 with the means to efficiently create, collect, organize, analyze, and discuss information. In one configuration, IOs 320 may be created manually or semi-automatically. The manual creation of IOs 320 requires the user 108 to position an empty IO 320 on the Workspace View 300 and complement it with a picture, a heading, and a reference to an information source by simply dragging and dropping pictures, texts, hyperlinks, files, or file folders onto IOs 320. The semi-automatic creation of IOs 320 allows users to drag and drop pictures, text, hyperlinks, URLs, files, and file folders directly onto the Workspace View 300. This action will cause the workspace server 151 to create a new IO 320 with the content of the dropped item linked or attached to the IO 320 and with a picture and a heading added to an icon area and the heading bar (to be explained) of the IO 320. Users 108 may also copy IOs 320 from the News View 305, the database view 310 or the exchange view 315. Furthermore, a user 108 can copy IOs 320 from the Workspace View 300 to the computer desktop or file system (and vice versa) thus

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converting IOs 320 into regular computer files. This functionality has a variety of applications such as to exchange IOs 320 by email or to convert IOs 320 for use with other software applications. Automated IO creation is provided as well that allows a user for example to specify a file system or path or URL or database identity and the system can traverse records, documents, web pages, files and the like within the specified path, database or domain and can convert each record, file or page into an IO for use in the system.

[00059] In one embodiment the relation manager 150 allows a user to easily arrange, compare, and evaluate IOs 320 thus ensuring that users 108 will not be distracted by different information formats but focus on information contents. Each individual user 108 can determine the particular arrangement or spatial (vertical, horizontal, overlapping, proximal) layout of the graphical IOs 108 on his or her Workspace View that might indicate meaning to that user 108. For example, a user 108 may group IOs that represent related information sources in a relatively close proximity to one another thus defining tight spatial relationships between those IOs.

[00060] The system is able to analyze spatial relationships that exist between IOs 320 in each users Workspace View 300 in order to identify other information objects (e.g., other IOs 320) that may be of interest to that user 108. Based on this analysis, the relation manager 150 can identify other information sources by showing other IOs 320 that might be of interest to that user. Embodiments disclosed herein are based in part on the observation that the spatial arrangement of a first set of objects such as IOs 320 in the Workspace View 300 can be used to identify relationships between those objects and can be further used to identify other objects (such as other IOs) that may be of importance to a user who created the initial spatial relation between the first set of objects in the Workspace View 300.

[00061] The Workspace View 300 introduces several options for the grouping of IOs 320. One option is to increase the size of one IO 320 so as to accommodate several other IOs 320 inside its boundaries. Moving an IO 320 will drag along all IOs 320 within its boundaries. A second option is to overlap IOs 320. Moving an IO 320 inside a cluster of overlapping IOs 320 will drag along the entire cluster of IOs 320. A

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third option is to use multiple workspaces for the grouping of IOs 320. A fourth option is to link IOs 320 to an entire IO arrangement. A mouse-click onto such an IO 320 will then open another Workspace View 300 and display the IO arrangement. Further details on contents and layout of IOs 320 will be explained shortly.

[00062] The news server 152 produces (i.e. provides information feeds for) the News View 305 to allow users 108 to collect IOs 320 for addition to the Workspace View 300. IOs 320 in the News View 305 represent information from a variety of other information sources. Feed examples includes news, alerts, announcements, motion detections on security cameras, emails, IMs, SMSs, sensors, real time search results, and custom content. An analogy of the News View 305 is a "news stand" in which recent or periodic information is available. In one configuration, the News View 305 displays the contents IOs 320 from news servers 151 that may be distributed through the network 101 within one of more computer systems 110. IOs 320 in the News View 305 can be organized by time and information sources (e.g., by topic or content area) as well as by geographic locations associated with the information represented by each IO 320. Users 108 are able to copy IOs 320 between the Workspace View 300 and the News Views 305. IOs 320 copied from the News View 305 to the Workspace View 300 may be static and not change in content, or such IOs 320 may dynamically adapt to modifications in content so that as the information source associated with an IO 320 produces new information.

[00063] In one configuration, the system can display IOs in various arrangements within the News View 305. In particular, the News View 305 can display a timeline arrangement of IOs 320. The timeline arrangement provides a visualization that represents and organizes knowledge using a grid comprising of a timeline categorization for IOs on the horizontal axis and subject categorization on the vertical axis. In an alternative configuration, the new server 152 can display a map arrangement that provides a visualization that represents and organizes knowledge using a world-map or a floor plan comprising of geographical categorization for IOs. As an example, a News View can organize and arrange IOs in an ordered list or as a table with rows and columns of IOs organized horizontally by time and vertically by

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information sources. In such a configuration, new IOs for newly discovered information can be inserted on the left pushing existing IOs to the right. The time scale can be irregular and optimized to display the largest number of IOs possible. The rows of IOs in the News View can automatically expand and contract depending on the number of IOs to be shown in each row.

[00064] In this manner, the system disclosed herein provides a novel process for information retrieval and processing based on information collection support. In one example, the News View 305 displays incoming information in IOs 320 from selected information sources. The users 108 can copy relevant information from the News View 305 to the Workspace View 300 or can create new information directly in the Workspace View 300 by creating new IOs. The user(s) 108 can study, organize, and categorize the information on the Workspace View 300. In one configuration, if the Workspace View is connected to a server then all content and established relations are made accessible to this server. The user can use two Workspace Views if he wishes to separate between information that is public and private. Other users 108 view the information on the news, database or exchange views 395, 310 and 315 and can also copy relevant information from the news, database, and exchange views 305, 310, and 315 to their personal Workspace Views 300. The system can track and analyze this movement of information from source to destination and can use this IO usage and movement data based on user identifiers, locations of IOs, arrangements of IOs, contents of IOs, times of movement and copying, and other such information in processing algorithms to infer or identify relationships between IOs and to suggest other IOs that reference other information that may be of interest to a user.

[00065] The News View 305 provides users 108 with the technology to effectively monitor and visualize additions and modifications from information sources such as web sites, databases, security cameras, alarm systems, sensors, news feeds and so forth. Every information item is displayed as an IO 320. In one configuration, the News View 305 can organize and arrange IOs 320 in an ordered list or as a table with rows and columns of IOs 320 organized horizontally by time and vertically by information sources, such as by geographic origination or relation of the new story

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associated with the IO 320.In another configuration, the News View has several visualization options such as displaying the IO arrangement in a table or displaying the IO arrangement on a geographic map. In one configuration, new IOs 320 for newly discovered information can be inserted on the left in an appropriate row pushing existing IOs 320 to the right. The time scale can be irregular and optimized to display the largest number of IOs 320 possible. The rows of IOs 320 in the News View 305 can automatically expand and contract depending on the number of IOs 320 to be shown. The News View 305 can include an adaptor for receiving news feeds and the user interface chronologically organizes information chronologically in a subject-time matrix. The News View 305 row can combine multiple data streams so that a row includes a group of data streams. A News View row can also display other data formats as well (email, search results, sensor data gathered though a file transfer protocol (FTP) in addition to displaying RSS streams.

[00066] The News View 305 offers a variety of tools for the exploration and collaborative use of information. As an example, a user 108 can copy IOs 320 from the News View 305 to the Workspace View 300 thus allowing users to easily collect, compare and organize new information. IOs 320 copied from the News View 305 to the Workspace View 300 may be static or dynamic as noted above. A static IO 320 is an exact copy of the IO on the News View 305. In one configuration, a dynamic IO 320 continuously updates itself to reflect the most recent (left-most) IO on the News View row it was copied from. Figure 9 below shows another example layout and additional IO features.

[00067] In this manner, the system disclosed herein provides a novel process for exchanging information and for asynchronous, decentralized, remote, and cross-organizational collaboration. In particular, users 108 use their individual Workspace Views 300 to organize and analyze information. The exchange server 153 produces the exchange view 315 to display cards (IOs) 320 that are concurrently displayed in one or more workspace views 300 of at least one other user 108. The exchange view 315 displays (in prioritized order in one configuration) the IOs 320 created by all collaborating users 108 (or those with the appropriate access permissions or security

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levels). The exchange server 153 manages the display and exchange of card (IO) information between exchange views 315 and can include filter features to allow a user 108 to only see cards (IOs) from selected users 108 (as opposed to all cards (IOs) in all workspaces 300 of all users 108). The users 108 can copy relevant IOs 320 from their exchange views 315 to their Workspace Views 300. Users 108 can take "ownership" over IOs 320 copied from their exchange views 315 and these IOs 320 are now modifiable by the user 108. In one configuration, when a user takes ownership of an IO 320, the IO 320 is no longer synchronized with a counterpart IO on the IO author's Workspace View. In another configuration, once an IO 320 is owned exclusively by a user 108, these IOs 320 can no longer be used for collaboration such as by "instant messaging," IO commenting, or "IO voting."

[00068] Figures 3 show a diagram 360 of an IO 320 as viewed in several IVs. The diagram 360 also shows how IOs present themselves differently on different IVs and can be copied between IVs. The following are examples of the various IVs (not intended to be limiting). The News View 362 displays the contents of RSS streams (and other dynamic information sources) as IOs arranged in a table, organized by time in horizontal and by information sources, subject or category in vertical direction. New IOs are inserted on the left pushing existing IOs to the right. The time scale is irregular and optimized to display the largest number of IOs possible (meaning time segments without IOs are automatically removed). The rows automatically expand and contract depending on the number of news items (makes all rows display similar numbers of IOs). Users can add RSS files by simply dropping an IO or an RSS URL onto a row in News View. A News View row can include multiple RSS streams (multiple streams are automatically combined). The News View can be used to display a wide variety of information such as newspaper news, emails instant messages, motion activity on web cameras, eBay and Craigslist postings, company internal announcements and alerts. The News View can also be used as a RSS feed generator. For example, a user could create an empty News View that all users can view and add IOs to. Users can copy News View rows or individual IOs to other IVs. A copy of a News View row onto a Workspace View would result in a single IO that dynamically updates itself and that displays the most recent item in the associated RSS feeds. The

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primary purpose of the News View is to help users monitor large numbers of RSS feeds in a quick and easy comprehensible format.

[00069] The Workspace View 364 displays IOs in a game IO like format. The visual components of the IOs are customizable and expandable. Users can modify IO parameters in a so-called IO editor (see Illustration 3 and 4). For example, users can add files to IOs, view and modify ratings, or discuss the IO contents with other users through the built-in instant messaging system or shared white board. If a user moves a regular file or a URL from a computer file system or a web browser onto the Workspace View then an IO is automatically created with the file attached or the URL hyperlinked. The Workspace View is designed to allow users to easily collect, organize and compare information in different formats and locations. For example, a Workspace View may be used for web shopping allowing users to quickly drag and drop items of interest from different web sites (such as Amazon, eBay, and Craigslist) onto the Workspace View for the subsequent comparison of options and prices. Since IO components can be dynamic (meaning that they can automatically retrieve content updates from dynamic information sources) the user can also use a collection of IOs to monitor changes to prices and bids.

[00070] The Map View 366 is a geographic map display that represents IOs as location items. A location item presents itself as (one or more) symbols (of choice) on the map. The location item allows access to all IO functionality available in other IVs. If the geographic location associated with a location item is dynamic then the symbol would automatically update its location on the map. If a location item is copied to a Workspace View then it will present itself as an IO with the geographic location accessible and modifiable through the IO Editor. The Map View is primarily designed for military use but has a wide range of commercial applications as well. For example, a user could create a public Map View with hiking paths. Other users could copy hiking paths of interest from this public Map View to their personal Map View s or other IVs, discuss hiking paths through the IO instant messaging feature, or rate the quality of hiking paths through the IO rating system.

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[00071] The Project View 368 is a time planning and calendar display (similar to MS Project) that allows users to represent IOs as time bars. IOs in this IV also maintain all the contents and functionalities of IOs displayed on other IVs. Moving an IO from the Project View to the Workspace View would create an IO that displays the time frame with a time bar on the IO or a time frame in the calendar tool of the IO Editor. The Project View is primarily designed for people that need to compare and modify time related IO parameters. For example, the Project View may be used to review and modify IOs that represent tasks scheduled for execution during particular time frames, resources that are only available during particular time frames or people that are only available during particular time frames.

[00072] The Graph View 370 displays IOs as line or bar graphs. This particular IV is primarily designed for comparing statistical data associated with IOs such as stock quotes, bids and sensor data.

[00073] The List View 372 is a spread sheet like display (similar to the Microsoft ® Office Excel spreadsheet program) that allows users to represent IO parameters in a table format. The List View is primarily designed for people that need to compare and modify particular IO parameters such as, for example, the cost of sales items or the specifications of resources referenced by individual IOs.

[00074] Now referring to Figures 4A and 4B, screen shots show News Views that display news for multiple different news papers (Figure 4A) and postings by different users (Figure 4B).

[00075] Figure 5A shows a diagram of IOs being exchanged between IVs of different users. Figure 5B shows a diagram of IOs being exchanged between Private, Visible and Shared Views. There are various ways in which IOs can be exchanged between the IVs of the same and of different users such as:

by copying IOs from the personal IV of another user (Users can make their personal IVs accessible to other users. An IV can be Shared 510 (read / write), Visible 512 (read) or Private 514;

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by sending IOs to a particular user or group of users through the integrated instant messaging system or a commercial instant messaging system;

by sending IOs to a particular user or group of users through email;

by making IOs available through shared file systems; and

by retrieving IOs from our database (The database automatically collects and organizes IOs from the IVs of different users.

[00076] A variety of data visualization and access tools allow for the easy retrieval of IOs from the database, for example, in conjunction with an EWall Agent System; and by retrieving IOs from a Discovery View. The Discovery View presents individual users with a custom selection of potentially relevant IOs, and in one embodiment consolidates the Exchange View (315) and Database View (310). In this embodiment, the Discovery View not only displays related information in the IO database 125 but can also display related information found by other web services (e.g., related products for one selected product provided by online sellers or search engines). The Database Views (Discovery Views) 310 of individual users 108 display (in prioritized order) cards (IOs) 320 available in the database (as records 160) that are related or relevant to the cards (IOs) 320 on a user's workspace view 300 based on the relations discovered via application of the relation processing algorithms 155.

[00077] Figure 6A is a diagram of an exemplary GUI Organization including graphical user interface 610 for the management of IVs in accordance with one example embodiment disclosed herein. Figure 6B is a more detailed diagram of the exemplary GUI Organization of Figure 6A. In one embodiment, the GUI Organization includes three columns. The left column 620 includes displays 622 and 624 provided by the View Manager 178 and the Communication Manager 180, respectively. The View Manager 178 displays all available IVs, allows users to open individual IVs, and enables users to modify the access rights of individual IVs. The View Manager 178 also displays representations of servers, databases, agent systems (e.g., EWall Agent System) and users in the collaborative environment. The Connection Manger 180 allows users to communicate with other users, exchange IOs with other users, access the IVs of other users, import IOs from databases and agent systems, as well as to

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control the export of IOs to databases and agent systems. The middle column 630 is used to display one or more IVs 632a – 632n. The right column 640 includes the IO Editors 642a – 642n. IO Editors 642a – 642n are tools that allow users to view and modify IO parameters and operate IO functions. The information displayed in IO Editors always refers to the currently selected IO or group of IOs.

[00078] Figure 6C is a diagram of an alternate exemplary GUI 660 in accordance with one example embodiment disclosed herein. Graphical user interface 660 for displaying an information objects includes a discussion subject 602, a message indicator 603, threaded discussion window 607, a list of participants linked to the information object 608, a collaborative rating 605 including a ranking of importance, a buddy list 601, a discussion heading 604, a list of attachments 606 and meta-data and shared applications 609. In other embodiments the graphical user interface for displaying information objects includes a geographic map, category keywords and auction information. In other embodiments the attachments include thumbnails of multimedia data.

[00079] Figure 7 is a diagram of a GUI 700 showing several features of the system 110 available to the user including control 710 which when clicked sends or receives an IM message about a view. This is a means for enhancing a hosted conversation, for example in a chat room. The GUI 700 further includes control 712 click to send/receive an IM message about an IO, for example in a chat room. The following controls can also be used: control 714 allows a database to collect information from the corresponding window; control; 716 disallows a database to collect information from the corresponding window; control 720 sends an IO to a user or a group of users; control 724 disallows a user to view details of the corresponding view; control 726 allows a user to view/modify the corresponding view; control 728 sends or receives an IM message or IO to or from the user, for example in a chat room; and control 730 sends an IM message or IO to a group of users, for example in a chat room. Indicator 718 indicates available resources in a database (cards, visualizations, statistics, etc.) and indicator 722 indicates a view of another user that is open for viewing or

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modification. GUI 700 allows the users to import and export IOs from and to IM systems, other users views, shared views, e-mail tools, databases, agent systems.

[00080] Figure 8 is a diagram of IO File Management 800 which allows an IO to display the content of different types of files 802 including such as content from: a web site 810, flash applications 812, movies 814, pictures, text from office documents 816, PDF documents 818 and other documents 820. In operation, the IO file manager 182 processes attachments, hyperlinked web content from the different file types 802 and remote sources 806 including remote RSS files 822, remote objects 824 and remote files 826 to create and dynamically update IO contents.

[00081] A user 108 can create an IO by simply dragging a hyperlink or file or other digital material onto the Workspace View 300. A new IO is created where the hyperlink or file is dropped, a picture is added automatically (by searching the hyperlink destination or the file contents for an appropriate graphic), the heading is added automatically (typically the web site or file name), and a link or embedded attachment is automatically created from the file or the web site reference by the hyperlink

[00082] Figure 9 is a diagram of IO components expanding on the basic IO components described above in Figure 2. IOs include default and custom parameters and functions. IO parameters and functions are best explained with IOs rendered on Workspace Views. IOs can display a large number of IO parameters and function without the need for the user to access the IO Editor. The IO layout can be customized to only display the IO parameters and function the user wants to see. The following list provides a few examples of IO parameters and functions as they would appear in different sections (Bars) of an IO on a Workspace View.

[00083] Picture/Text bar 902 allows the insertion and display of text, pictures, PDF files, active Flash applications (can run inside the Picture/Text Bar), Office documents, and additional applications, file types and multi-media data. Function Bar 910 displays icons that serve as status indicators and that link to particular IO Editors.

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[00084] A Bubble Icon 912 opens an IO Editor window that allows users to exchange comments, share a white board, contribute to a forum, or insert notes. The "bubble" icon 912 is rendered white if no user added any information, gray if one or more user added information and red if one or more users added information that the viewer has not yet looked at. An optional calendar tool allows users to compare their availabilities and schedule a "chat" session ahead of time.

[00085] A Flag Icon 914 links to a map display in the IO Editor allowing users to view and modify geographic locations associated with an IO. A Person Icon 916 indicates whether a particular IO is used by other users and links to an IO Editor that allows the IO owner to view the list of IO users as well as to assign access restrictions to IO contents. A File Icon 918 allows users to add and access (any number of) attachments and hyperlinks to an IO. An Arrow Icon 920 allows users to add, modify and control dynamic information sources (e.g., to control automatic updates to IO contents retrieved from dynamic information sources such as Email accounts, RSS feeds, sensors, motion detectors and security cameras or web sites). Users can activate one or more Reliability / Ratings / Votes / Importance / Priority Bars (collectively referred to as bars 924) for the individual and collaborative evaluation of information. IOs can be evaluated on a scale from 1 to 5 (represented by 5 boxes). Filled boxes represent the average evaluations of all IO users while the arrow symbol indicates the individual rating of the IO viewer.

[00086] Trade bar 930 and Value / Value Change bar 928 comprise a trading feature that allows users to trade IO contents or items referenced by IOs. For example, an IO could represent a stock (market item) and allow users to monitor, buy and sell stocks; an item on eBay or Craigslist and allow users to monitor and manage bids; or an item on Amazon and display its current purchase price. Users associate IOs with one or more categories using a Category bar 932 that allows for faster IO searches on IVs and databases. Users associate IOs with a time or time frame using Time Frame / Schedule bar 934, for example, displayed on IOs as a point or as a bar on a time scale. The time scale is the same for all IOs and can be set in the preference menu, e.g. left side of the bar = -12 hours, middle = now, right = +12 hours. The point or bar on the

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time scale will move from left to right in accordance to the real time. Graphic display 940 shows various display options for icons on the various function bars.

[00087] In one embodiment the system 110 provides hosted conversation among a group of participants using the integrated instant messaging system facilities which provide a communication system linking an IO to a group of participants. Each system component (IO, IV, Database, Agent System) and participant is linked to the instant messaging system (also known as a chat room). The IO can include a link to a document, links to the group of participants, meta-data related to the conversation and communication system which links the IO to the group of participants. The process of initiating a hosted conversation begins when a user starts a discussion or a collaborative project by first creating a new IO and then adding data, meta-data and linking participants to the IO.

[00088] For example, to communicate about the contents of an IO the user would click the bubble icon 912 on this IO in the user interface on the client system to "chat" (about this IO) with other participant who maintains a copy of this IO. Clicking on the "bubble" icon 912 associated with a participants (or group of participants) listed in a contact list and linked by the connection manger 180 would initiate a "chat" session with those participants. The hosted conversation includes a list of participants linked to the at least one information object and an IV to visualize the at least on information object. Clicking on the "bubble" icon 912 associated with the IV in the View Manager would initiate a "chat" session (about this IV) with every other participant who has access to this IV. The integrated instant messaging system is also used to exchange IOs between users. An IO can simply be dragged and dropped onto a user icon which subsequently sends a copy of this IO to the intended recipient. The instant messaging functionality can be complemented with any other IO parameter and function such as, for example, a function that allows users to assign ratings to databases, agent systems, users or IVs. One important benefit of this system is that it allows users to stay engaged in a large number of discussions about particular subjects represented by different users, IOs or IVs. Advantageously the user can organize and monitor a large number of IOs where every IO represents a different issue that may be discussed with a different groups of participants.

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[00089] Thus system 110 provides a graphical interface for displaying an information object which includes displaying a threaded discussion window, a list of participants linked to the information object, a collaborative rating including a ranking of importance, a buddy list, a discussion heading; and a list of attachments.

[00090] Figure 10 is a diagram of IO operations including IO creation. IOs can be created manually or automatically. The automatic creation converts a non-IO object or file into an IO if a user imports a non-IO file from any application into an IV. For example, if a user drags a URL of an item for sale on the Amazon web site onto the Workspace View, the resulting IO would display an image of the item in the Picture Bar, the name of the item in the Heading Bar, the cost of the item in the Value Bar, and hyperlinks to the Amazon web site where the item is advertised. Filters include the rules and manage the conversion from non-IO files to IOs.

[00091] Generally, IOs can be manually created such as by creating a blank IO and then specifying an information source to which that IO refers. The IO look can be complemented with a picture, explanatory text, a heading and other visual attributes by simply dragging and dropping pictures and text fragments onto the IO. Alternatively, in another mode, IOs can be semi-automatically created in a Workspace View or on a desktop by dragging an information object such as hyperlink, document, file or URL onto the Workspace View in which case a new IO is automatically formed and associated with the hyperlinked data, file or document. The IO picture and the IO heading are added automatically if an appropriate picture and heading can be extracted from the dragged information object or if an appropriate picture can be found in a database that matches the file name or within some of the content of the dragged information object. In yet another mode, an automated IO creation process can traverses a set of records or files, such as a database or file system or all web pages within a certain URL and can perform automatic creation of IOs from each database record, web page, or file. As an example, entire databases or file systems or all documents below or within a certain URL or domain on the Internet can automatically be converted into IOs using the semi-automatic creation of IOs but in a non-manual

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way that does not require a user dragging and dropping of each file, document or URL onto a view.

[00092] The following Workspace View examples detail several exemplary user interactions with IOs and IVs. A user can drag a URL from a web browser onto a Workspace View which will create an IO that hyperlinks to that URL and automatically extracts (from the URL destination) a picture and a heading that is displayed in the IO's picture and heading bar. The user can drag an RSS URL onto a Workspace View which will create an IO that visualizes the most recent item in the RSS file/s and that continuously updates itself. The user can drag a regular document (file) onto a Workspace View which will create an IO with the document attached. Dragging a document onto an IO also attaches the document. The user can import an IO from another user into the Workspace View which will create an IO copy that is synchronized with the original IO. The user can drag an IO from the Workspace View to the computer desktop which will create an IO file. The user can drag an IO from a News View row to the Workspace View which will create an IO copy that is synchronized with the original IO. The user can drag a News View Row to the Workspace View which will create an IO that visualizes the most recent item in the RSS file/s and that continuously updates itself. In another embodiment, a user can drag a buddy icon from an instant messaging system onto the IO or drag an IO the buddy icon to initiate a conversation or to link the "buddy" to the IO. In this manner, links are formed between the information object and one of the plurality of participants by selecting the information object and selecting the participant from a displayed list of participants and the system 110 associates participants and information objects by indicating a connection between an icon from an instant messaging system and the information object.

[00093] The following News View examples detail several exemplary user interactions with IOs and IVs. The user can drag one or more RSS URLs onto a News View row which will add and displays the content of RSS URLs on the News View row as a sequence of IOs. The user can drag and drop a Workspace View ID onto a News View row which will display IO additions and modification on that Workspace.

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The user can drag and drop an IO onto a News View row which will add that IO to the IO sequence. The user can drag an IO from a News View row to the computer desktop which will create an IO. The user can drag a News View row to the computer desktop which will create an IO.

[00094] Figure 11 diagrams the overall process of interacting with an information object. In step 1110, the system provides the information object (I/O), for example on a GUI display as described above. A new IO can be created from scratch or by using a filter, or an existing IO can be shared, copied, transferred, etc. as described above. Next, in step 1120, the IO is shared among a plurality of participants. In step 1130, multi-media data can be optionally attached to the information object. In step 1140, the information object is displayed in one of a plurality of views. Finally in step 1150, in response to interaction with one of the plurality of views by one of the participants, a communications path between at least two of the participants sharing the information object is provided by the connection manager 180.

[00095] Figure 12 is a flow chart of processing steps showing additional details in conjunction with flow char 1100 Figure 11, that system 110 performs to allow interactions with an information object in accordance with embodiments disclosed herein. In one embodiment, step 1210 provides the information object by filtering a web page associated with a URL to create the information object by automatically extracting meta-data including at least one of a heading, a picture, and link to the URL. In step 1220, the information object is shared among a plurality of participants by transferring the information object between different information views. In step 1230, the multi-media data is linked to the information object

[00096] In step 1240, an automated participant is provided. The automated participant interacts with the information object. In some embodiments, there is no distinction between a user and an automated participant (e.g., a participant based on a computational system). In step 1250, information is retrieved based on user interaction with the information object including spatially arranging the information object relative to other information objects. In step 1252, interaction with the information object includes attaching at least one document to the information object.

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[00097] Figure 13 is a flow chart of processing steps that system 110 performs to support a hosted conversation among a group of participants including interactions with an information object in accordance with embodiments disclosed herein. In step 1310, a link to at least one information object is stored to host a conversation among a group of participants. The information object includes at least one link to a document; a plurality of links to the group of participants; meta-data related to the conversation; and a communication system linking the at least one information object to the group of participants provided by connection manager 180.

[00098] In step 1320, a user interface on the client system is provided. The user interface includes an icon representing the at least one information object a contact list; a list of participants linked to the at least one information object; and an information view to visualize the at least on information object. In step 1330, an Information View is displayed that includes a News View having an adaptor for receiving news feeds and the user interface chronologically organizes information chronologically in a subject-time matrix. The user interface further includes a zoomable, graphical timeline including automatic compression of the subject-time matrix and in one embodiment the news feed is a syndication feed.

[00099] While configurations of the system and method have been particularly shown and described with references to configurations thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the scope of the invention. As an example, the order of processing steps in the flow charts is not limited to the order shown herein. Accordingly, the present invention is not limited by the example configurations provided above.

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[000100] What is claimed is:

1. A computer-implemented method of interacting with a plurality of arbitrary data items, in which at least one computer initiates execution of software instructions to perform computer processes, the method comprising:

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, multimedia data, and a URL; and

using the extracted data to cause display of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, a multimedia window, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions.

2. A method according to claim 1, wherein (i) one of the set of icons gives graphical access to a vote function by which a user can provide a vote associated with the information object and (ii) one of the indicators displays the total number of votes, associated with the information object, that have been received.

3. A method according to claim 1, wherein (i) one of the set of icons gives graphical access to a comment function by which a user can create a comment relating to the information object and cause the comment to be associated with the information object and shared among users who view the information object and (ii) one of the indicators displays the total number of comments, associated with the information object, that have been associated with the information object.

4. A method according to claim 3, wherein the one of the indicators changes its appearance to indicate the presence of a comment, associated with the information object, that has not yet been read by the user.

5. A method according to claim 1, wherein the format includes a user-accessible report on the number of times the information object has been replicated by a community of users.

6. A method according to claim 1, further comprising:

further causing to be displayed, at the same time as the representation, a map including a location, marked on the map, associated with at least one of the information objects.

7. A method according to claim 6, further comprising:

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responsive to a graphical input applied to the displayed location, causing the location to be edited in accordance with the graphical input.

8. A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a second collection of the first user;

responsive to (i) a graphical selection, by the first user, of an information object in the first view and (ii) a move command that has been graphically entered by the first user, causing the selected information object to be moved from the first view to the second view.

9. A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a second collection of the first user;

responsive to (i) a graphical selection, by the first user, of an information object in the first view and (ii) a copy command that has been graphically entered by the first user, causing the selected information object to be copied from the first view to the second view.

10. A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a collection of a second user.

11. A method according to claim 10, further comprising:

responsive to (i) a graphical selection, by the first user, of an information object in the second view and (ii) a copy command that has been graphically entered by the first user, causing the selected information object to be copied from the second view to the first view, so that the selected information object in the collection of the second user has been copied to the first collection of the first user.

12. A method according to claim 10, further comprising:

responsive to (i) a graphical selection, by the first user, of an information object in the

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first view and (ii) a send command that has been graphically entered by the first user, causing the selected information object to be sent to the second user, so that the selected information object in the collection of the first user is made available to the second user to be included in the collection of the second user.

13. A method according to claim 1, further comprising:

causing an information object to be shared with another user when the information object and the other user have been graphically selected.

14. A method according to claim 1, further comprising:

causing an information object to be shared with another user via an instant message sent through an integrated instant messaging system as a result of graphical selection by a first user.

15. A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, that are related to one or more information objects in the first collection as a result of being in one or more collections, of other users, that also include at least one of the information objects in the first collection.

16. A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, wherein any given member of the second set of information objects is both included in a collection of another user and the other user has been selected by the first user.

17. A computer-implemented method of interacting with a plurality of arbitrary data items received from a plurality of news feeds, in which at least one computer initiates execution of software instructions to perform computer processes, the method comprising:

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including at least one of a heading, multimedia data, and a URL; and

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using the extracted data to cause display of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, a multimedia window, and a heading;

wherein the information objects are organized for display in a plurality of rows, wherein each row corresponds to a distinct set of at least one of the news feeds.

18. A computer-implemented method according to claim 17, wherein each row is organized chronologically.

19. A computer-implemented method according to claim 17, wherein each column of the display corresponds to a shared time interval in each row.

20. A computer-implemented method according to claim 17, wherein at least one of the news feeds includes an item selected from the group consisting of cards, news feed items, alerts, announcements, motion detection events triggered by cameras, e-mails, instant messages, short message services, sensors, and real time search results.

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ABSTRACT OF THE DISCLSOURE

METHODS AND APPARATUS FOR MANAGING AND EXCHANGING INFORMATION USING INFORMATION OBJECTS

A computer-implemented method of interacting with a plurality of arbitrary data items includes configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, multimedia data, and a URL. The method additionally uses the extracted data to cause display of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, a multimedia window, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions.

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Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects
First Named Inventor/Applicant Name:	Paul Erich Keel
Filer:	Bruce D. Sunstein
Attorney Docket Number:	4123/1001

Filed as Small Entity

Filing Fees for Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	70	70
Utility Search Fee	2111	1	300	300
Utility Examination Fee	2311	1	360	360
Request for Prioritized Examination	2817	1	2000	2000
Pages:				
Claims:				
Miscellaneous-Filing:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Publ. Fee- Early, Voluntary, or Normal	1504	1	0	0
PROCESSING FEE, EXCEPT PROV. APPLS.	2830	1	70	70
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
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Electronic Acknowledgement Receipt	
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First Named Inventor/Applicant Name:	Paul Erich Keel
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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	kem4123_1001_ADS.pdf	1561781 069cb59e67de66dcf73001427968f9869ea54175	no	7
Warnings:					
Information:					
2		kem4123_1001_Application.pdf	198795 9210623eb2eaceff75bf8f6c1b0052dde539175e	yes	39
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Specification		1	34	
	Claims		35	38	
	Abstract		39	39	
Warnings:					
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3	Drawings-only black and white line drawings	kem4123_1001_Drawings.pdf	1185393 b74367c0ce5071aa220645f2be9c9b8636d253e7	no	14
Warnings:					
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4	TrackOne Request	kem4123_1001_TrackOneReq.pdf	913257 afe864c48fc734e4a01dd41be338e4a1b32740ee	no	2
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5	Transmittal Letter	kem4123_1001_TransmittalDecs.pdf	67489 613463e3fa3a4359d4d31986be9c9b52d28a77e1	no	1
Warnings:					
Information:					
6	Oath or Declaration filed	kem4123_1001_Decs.pdf	2003432 4e40938fef7e2126fa30507458c5fb107f26e753	no	2

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7	Information Disclosure Statement (IDS) Form (SB08)	kem4123_1001_IDS.pdf	106034 65cd27b93f98bbea97dcef0128a8fd7cd1d6f8f8	no	6
Warnings:					
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8	Preliminary Amendment	kem4123_1001_PreliminaryAmendment.pdf	310302 70ad5489ead0d0f3c0ae8b461ace0e58db801180	no	47
Warnings:					
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9	Fee Worksheet (SB06)	fee-info.pdf	40633 81cba41c432d235f9c10a36846e96510fcebba40	no	2
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	4123/1001
	Application Number	
Title of Invention	Methods and Apparatus for Managing and Exchanging Information Using Information Objects	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
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Secrecy Order 37 CFR 5.2

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Inventor Information:

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	4123/1001
	Application Number	
Title of Invention	Methods and Apparatus for Managing and Exchanging Information Using Information Objects	

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Application Information:

Title of the Invention	Methods and Apparatus for Managing and Exchanging Information Using Information Objects		
Attorney Docket Number	4123/1001	**Small Entity Status Claimed**	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	14	**Suggested Figure for Publication (if any)**	

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Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☒ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	4123/1001
	Application Number	
Title of Invention	Methods and Apparatus for Managing and Exchanging Information Using Information Objects	

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Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation of	13/925031	2013-06-24

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13/925031	Continuation of	12/563416	2009-09-21	8499248	2013-07-30

Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12/563416	Claims benefit of provisional	61/116747	2008-11-21

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
12/563416	Continuation in part of	11/118301	2005-04-29	7640511	2009-12-29

Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
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Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

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First Name	Bruce D.	Last Name	Sunstein	Registration Number	27234

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METHODS AND APPARATUS FOR MANAGING AND EXCHANGING INFORMATION USING INFORMATION OBJECTS

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH

[0001] This invention was made with government support under government grant (N00014-08-C-0206). The Government may have certain rights in this invention.

RELATED APPLICATIONS

[0002] This application is a continuation of United States patent application serial number 13/925,031, filed June 24, 2013, which is a continuation of United States patent application serial number 12/563,416, filed September 21, 2009 (now United States patent number 8,499,248, issued July 30, 2013), entitled "METHODS AND APPARATUS FOR MANAGING AND EXCHANGING INFORMATON USING INFORMATION OBJECTS," which (i) claims the benefit of United States provisional application serial number 61/116,747, filed November 21, 2008, entitled "Information Objects (IOs) and Information Views (IVs)", and (ii) is a continuation in part of United States patent application serial number 11/118,301, filed April 29, 2005 (now United States patent number 7,640,511, issued December 29, 2009), entitled "METHODS AND APPARATUS FOR MANAGING AND INFERRING RELATIONSHIPS FROM INFORMATION," which claims the benefit of United States provisional application having Serial Number 60/566,723, filed April 29, 2004, entitled "METHODS AND APPARATUS FOR MANAGING AND INFERRING RELATIONSHIPS FROM INFORMATION". All of these related applications are hereby incorporated herein by reference in their entirety.

BACKGROUND

[0003] Modern information processing systems allow users to collect and process large amounts of information. As an example, a typical computer system such as a

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personal computer includes an operating system that executes within the computer system to provide a graphical user interface to users of that computer system. A conventional graphical user interface typically includes a number of information objects such as graphical icons that represent information of relevance or importance to the user. The user accesses data and controls functionality of the computer system by selecting and operating such icons. By way of example, software applications such as word processors, graphical editing tools, web browsers and many others often provide graphical user interfaces that include a number of icons that have visual meaning to the user of the computer system. Typically, a software application renders icons to allow the user to invoke specific functionality or commands of that application and/or to allow the user to organize and access data. Many software applications use icons to represent data or files that the user can access by selecting (e.g., clicking) the icon representing the data. As an example, if a user selects an icon that represents a software application installed within the computer, the computer will begin execution of that application. Other icons on a graphical user interface can represent folders or files maintained by the operating system within a file system.

[0004] Many conventional software applications allow a user to develop or collect various portions of information or content for storage and future access. As an example, a word processor or other editing tool allows the user to create and edit documents. As another example, a web browser allows a user to navigate web pages provided by servers on remote computer networks such as the Internet to reference information on a variety of subjects. A conventional computer system allows a user to store information referenced or created by such applications as a set of documents or files that can be retrieved by the user at a later time.

[0005] Most conventional operating systems and many software applications also provide a way for a user to arrange a file system of the computer in order to organize documents and files in a manner that makes sense to the user. Computer operating systems typically organize file systems in a hierarchical manner allowing the user to create folders or directories with user-specified names. The user can store files within the folders in a manner that makes sense to that user. A file system is thus one of the

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most popular ways for users to organize and manage data and information of interest to those users.

[0006] Another mechanism that conventional applications and operating systems provide to allow users to organize and manage information of interest to that user is the ability to allow a user to spatially arrange information objects such as graphical icons in a way that makes intuitive sense to the user. As an example, on a conventional "desktop" work area provided by many operating systems, a user can place or position icons representing files, documents, applications, email messages, appointments or the like in any manner and at any position that the user may choose. In particular, such conventional applications allow the user to graphically maneuver the icons into position in relation to one another in a manner that makes sense to that user. Different users often organize icons on their desktop in different ways.

[0007] Information availability and accessibility is continuously increasing. The problem is that information commonly exists in different formats, resides in different locations, is dynamically changing, and is used and modified by different people. This makes it difficult for users to effectively monitor, analyze and exchange information.

SUMMARY

[0008] Conventional mechanisms and techniques that allow a user to visually organize, collect and manage information objects that represent various portions of information suffer from a variety of deficiencies. In particular, conventional computer-based applications such as operating system desktops and software application graphical user interfaces allow a user to collect and store numerous portions of content and information that are of interest to the user and allow a user to represent that information graphically (e.g. via icons), but do little to analyze relations that may exist between the icons and/or between the stored portions of content or data.

[0009] In particular, conventional information processing systems such as those noted above allow a user to organize and arrange various portions of data or other information as icons in a graphical user interface in a manner that makes sense to the user, but such systems do not promote conversations and collaboration among users.

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[00010] Another deficiency with conventional information processing systems is that information is represented in different formats and, depending on the format, is stored in different locations. For example, conventional browsers store hyperlinks to web sites as bookmarks, whereas emails are located in mailboxes in mail handlers, files are stored in computer directories, and notes may be stored in files, and so forth. The proposed information object mechanism disclosed herein, referred to in some embodiments as IOs, solve this deficiency by introducing a standardized information format that represents a piece of information in an abstract way and links to an original piece of information and that has a standardized look thus allowing users to focus on and compare the information content and context rather that be distracted by the information format and location.

[00011] As an example of problems with conventional data processing systems, a user using a conventional content development application may spend large amounts of time collecting portions of content such as graphics, text, news stories, web pages, email messages, or other such information sources for collaborative production of a large content-based research project. Many users may be involved in this process. As each user collects portions of information using conventional information management systems, the users store and organize their respective portions of information within the computer file system. Each user may create icons on his or her desktop or other work areas that represent the respective portions of collected information. Each user might group icons for related pieces of information together in a list, within close proximity to each other, or in file directories. In conventional systems however, it is up to the user to identify what other portions of information might be of interest to the user that the user has not already identified and collected.

[00012] As an example, if the collaborative production being developed by the users is a project related to current events, each user may collect articles and stories related to that current event. Using conventional systems, it is up to each user to research and discover stories or other content related to that current event that might be available from a variety of different information sources. While conventional collaboration systems might provide a common repository for such collected information

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contributed by each user, there is little or no ordering to this information, other than an order specified by the users who place the content into the shared repository such as a file system or database. Each user must frequently communicate with other users in a highly manual manner (e.g. via a telephone call, email or other mechanism) to identify content that other users may have discovered and collected that might be of relevance to the production under development.

[00013] Such conventional information management systems do not automatically and dynamically analyze relations between user placed icons that represent the various pieces of available information in order to assist users in identifying other portions of content that many of interest to those users. More specifically, conventional systems do not analyze specific spatial relations, collaborative context relations, chronological context relations, and the like between information sources associated with icons arranged by a user to determine other portions of information, such as other portions of content collected by other users, that may be of relevance or interest to the user providing a specific spatial arrangement of his or her icons. As a result, conventional information management systems limit a user's knowledge of other available content and information to which that user may have interest. In particular, such systems limit available content to that content that a user can discover on their own.

[00014] As an example, using a conventional information discovery processes such as web searching, a user can quickly become overwhelmed with search results that are irrelevant to the information they are seeking. While some conventional web sites may attempt to suggest references to web pages that are similar in nature to those discovered when providing a particular search term, such additional references are simply provided based on frequently performed searches of other users and do not take into account current information already collected by the user performing the original search. Thus a conventional browser is not made aware that a user already has collected certain related pieces of information and has organized them in a spatially related manner.

[00015] In contrast, embodiments of the invention are based in part on the observations that conventional information collection management systems provide a

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significant cognitive burden on users caused by the increasing availability of information, the requirement for users to actively initiate a search for relevant information, the requirement for evaluation of the quality and feasibility of information, the need to collaborate remotely and asynchronously, as well as the necessity to dynamically adapt to changing circumstances. Modern information processing systems do not provide an automated ability to organize and identify information sources that come in many different formats. For example, information may be received in the form of a phone call, an email, an instant message, a computer file, a web site, a database item, a verbal comment, a radio transmission, a newspaper, a television spot, a magazine, or a security camera. The various formats often prevent the easy and efficient collection, organization, and comparison of information by conventional information processing systems.

[00016] Embodiments of the invention incorporate advanced graphical user interfaces and functions to address the shortcomings in conventional systems. These embodiments include Information Objects (IOs) and Information Views (IVs). IOs that are data files that can include other data files (such as documents, hyperlinks, and executables) as well as meta-data (such as ratings, discussion logs, and visualization parameters). IVs are computer windows for the visualization of IOs. IOs are rendered differently on different IVs allowing users to manage information in a customized format and in environments suited to particular tasks and circumstances. In certain embodiments the IO consolidates data, meta-data and communication features. For example, the IO can be an agenda item, a discussion, a hosted conversation, a topic, etc. Accordingly, the user can efficiently view and organize multiple IOs that represent different topics and that engage different groups of participants.

[00017] Advantageously IOs provide a means for users to package and visualize (static and dynamic) information in a standardized format. IOs can be viewed and modified differently on different IVs. IOs can be copied between the IVs of the same or different users. Copies of IOs remain synchronized if displayed on different IVs. IOs are associated with functions that enhance the collaborative use of information, for

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example, an object-based communication system that allows users to communicate through IOs and IVs.

[00018] Other benefits of Information Objects and Views include the ability to: consolidate task relevant information (e.g. from shared IVs to a private IVs);

display information in a custom and familiar format (e.g., in a wide variety of possible custom IVs);

maintain a standardized data format for different data visualization and management tools; and

easily move data between different data visualization and management tools; and

easily exchange information among remotely distributed participants in a hosted conversation.

[00019] Using techniques disclosed herein, it is possible to create IOs transfer IOs between the same or different types of IVs, add additional IVs and additional functions for IOs, as well as a selection of IO components, IO functions on IVs. An electronic wall (EWall) embodiment provides one example for the visualization of IOs on an information view (IV) in which an IO can present itself as a EWall IO on a EWall Workspace View. A graphical user interface is provided for the management of multiple IVs, as well as new functions for the exchange of IOs and the collaborative use of IVs.

[00020] Embodiments of the invention as disclosed herein provide mechanisms and techniques for providing the IO, sharing the IO among a plurality of participants, attaching multi-media data to the IO. The technique further includes displaying the IO in one of a plurality of views and in response to interaction with one of the plurality of views by one of the participants, communicating with at least one different one of the participants sharing the IO.

[00021] The system disclosed herein provides a computational environment for the support of individual and collaborative decision-making and greatly enhances the quality and the speed of individual and collaborative brainstorming, problem-solving, information collecting and decision-making processes. More specifically, the system

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for providing hosted conversation among a group of participants disclosed herein includes a processor, a memory unit that stores instructions associated with an application executed by the processor, and an interconnect coupling the processor and the memory unit, enabling the computer system to execute the application and perform operations of: storing a link to at least one information object, the at least one information object, the information object includes at least one link to a document, a plurality of links to the group of participants, meta-data related to the conversation, and a communication system linking the at least one information object to the group of participants. The system further provides a user interface on the client system comprising: an icon representing the at least one information object, a contact list, a list of participants linked to the at least one information object and an information view to visualize the at least on information object.

[00022] In one configuration, the IOs are sometimes represented as "cards" on a graphical user interface. IOs reference different types of information formats thus making it easier for users to directly compare and study information in different formats. As used herein the term "card," "IO"and "information object" are used interchangeably, and a card is one example configuration or representation of an information object. AN IO includes a graphic icon area to display text or a picture associated with an information source, as well as other information pertaining to such things as ownership of that IO, creation time of the IO, and attribute indicators that indicate a current state of the IO, and a hyperlink to its associated information source. In a simplest embodiment, an IO is just an icon that represents some information and information represented by IOs may be stored in different locations and in different formats. In one configuration, an IO is different from an ordinary icon because it comes with hidden functionality such as a built-in instant messaging system and the ability to drag and drop content onto the IO. It is noted that the: instant messaging system includes communication media such as Instant Messaging System , email and SMS messaging, text messaging and other forms of real-time communication between participants.

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[00023] In one configuration, the system applies a spatial relation algorithm that discovers spatial relations between positional information of at least two IO records in an IO database that are associated with IOs displayed on the graphical user interface in the first set of IOs. The relations between IOs can be stored in a database and the system can use discovered relations to identify a second set of information objects based on the relation(s) between the first set of information objects/IOs. The second set of information objects in an IO configuration is a second set of IOs that might be of interest to the user based on the analysis of the IOs already on display in a Workspace View associated with that user. The system can output an identity of the second set of information objects by displaying the second set of IOs on the graphical user interface for viewing by the user. The second set may be displayed in a prioritized and relevant manner based on relations discovered concerning the first set of IOs.

[00024] In this manner, the system can use IOs to show the user other sources of information, possibly from other users, or from a database, or from a dynamic source such as a news feed, that might be of interest to that user. News feeds include but are not limited to news, alerts, announcements, motion detection events triggering security cameras, emails, instant messages (IMs), short message services (SMSs), sensors, real time search results, and custom content. The system can thus assist a user in managing information and retrieving relevant information.

[00025] Embodiments of the invention include any type of computerized device, workstation, handheld or laptop computer, or the like configured with software and/or circuitry (e.g., a processor) to process any or all of the method operations disclosed herein. In other words, a computerized device or a processor that is programmed or configured to operate as explained herein is considered an embodiment of the invention.

[00026] Other embodiments of the invention that are disclosed herein include software programs to perform the steps and operations summarized above and disclosed in detail below. One such embodiment comprises a computer program product that has a computer-readable medium including computer program logic encoded thereon that, when performed in a computerized device having a coupling of

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a memory and a processor and a display, programs the processor to perform the operations disclosed herein. Such arrangements are typically provided as software, code and/or other data (e.g., data structures) arranged or encoded on a computer readable medium such as an optical medium (e.g., CD-ROM), floppy or hard disk or other a medium such as firmware or microcode in one or more ROM or RAM or PROM chips or as an Application Specific Integrated Circuit (ASIC). The software or firmware or other such configurations can be installed onto a computerized device to cause the computerized device to perform the techniques explained herein. Other configurations include various graphical representations of the IOs themselves, for example as displayed on a graphical user interface as will be explained in more detail.

[00027] It is to be understood that the system of the invention can be embodied strictly as a software program, as software and hardware, or as hardware alone such as within a processor, or within an operating system or within a software application.

BRIEF DESCRIPTION OF THE DRAWINGS

[00028] The foregoing and other objects, features and advantages of the invention will be apparent from the following more particular description of embodiments of the invention, as illustrated in the accompanying drawings and figures in which like reference characters refer to the same parts throughout the different views. The drawings are not necessarily to scale, with emphasis instead being placed upon illustrating the embodiments, principles and concepts of the invention.

[00029] Figure 1 is an example network environment including computer systems configured with a relation manager in accordance with one example embodiment disclosed herein.

[00030] Figure 2 shows an example layout of an IO in accordance with one example embodiment disclosed herein.

[00031] Figure 3 is a diagram of information flow and IOs present themselves differently on different IVs and can be copied between IVs in accordance with one example embodiment disclosed herein.

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[00032] Figures 4A and 4B are diagrams of News Views that display news for multiple different news papers postings by different users.

[00033] Figure 5A is a diagram of IOs being exchanged between IVs of different users.

[00034] Figure 5B is a diagram of IOs being exchanged between Private, Visible and Shared Views.

[00035] Figure 6A is a diagram of an exemplary graphical user interface (GUI) Organization in accordance with one example embodiment disclosed herein.

[00036] Figure 6B is a more detailed diagram of the exemplary GUI Organization of Figure 6A.

[00037] Figure 6C is a diagram of an alternate exemplary GUI Organization in accordance with one example embodiment disclosed herein.

[00038] Figure 7 is a diagram of a graphical user interface (GUI) which allows the users to select import/export IOs from/to IM systems, other users views, shared views, e-mail tools, databases, agent systems in accordance with one example embodiment disclosed herein.

[00039] Figure 8 is a diagram of IO File Management An IO can "display" different types of files such as pictures, text, movies, flash applications (left), attach/hyperlink different types of files (middle), and dynamically update IO contents (right). in accordance with one example embodiment disclosed herein.

[00040] Figure 9 is a diagram of IO components in accordance with one example embodiment disclosed herein.

[00041] Figure 10 is a diagram of IO Operations in accordance with one example embodiment disclosed herein.

[00042] Figures 11-13 are flow charts of processing steps performed to the in accordance with embodiments disclosed herein.

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DETAILED DESCRIPTION

[00043] Figure 1 illustrates the computer-networking environment 100 suitable for use in explaining example embodiments of invention. The computer-networking environment 100 includes a network 101 such as a local area network (e.g., LAN) that interconnects a plurality of computer systems 110-1 through 110-N that each execute respective relation managers 150 (application 150-1 and process 150-2), view manager managers 178 (application 178-1 and process 178-2), connections managers 180 (application 180-1 and process 180-2) and IO file managers 182 (application 182-1 and process 182-2) under respective control of a plurality of users 108. The computer systems 110 may be any type of computerized device such as a personal computer, laptop, workstation, mainframe terminal, or the like. In this example, each computer system 110 generally includes in interconnection mechanism 111 such as a data bus, motherboard or other circuitry that interconnects a memory 112, a processor 113, an input output interface 114 and a communications interface 115. A display 130 such as a computer monitor and input output mechanism 116 couple to the computer system 110 via the input output interface 114. The communications interface 115 allows communication with other computer systems 110-2 through 110-N over the network 101. The architecture of the computer system 110-1 is shown in Figure 1 by way of example only. It is to be understood that the details of the example computer systems 110-2 through 110-N can be similar to those of computer system 110-1 but are not shown in Figure 1 due to drawing space limitations.

[00044] The memory 112 within each computer system 110 may be any type of computer readable medium such as random access memory (RAM), read only memory (ROM). The memory 112 may be fixed or removable from the computer system 110, such as a floppy disk, magnetic disk, optical disk media (e.g., CD ROM) or the like.

[00045] In one embodiment, the memory 112 is encoded with computer program logic (e.g., software code) that includes a relation manager application 120-1. When the processor 113 executes the relation manager application 150-1, the processor 113

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produces a relation manager process 150-2 that executes as explained herein to produce a graphical user interface 132-1 (the example being produced by the relation manager 150 in computer 110-1) on the display 130 for viewing by the user 108. The relation manager process 150-1 and application 150-2 are collectively referred to herein as simply the relation manager 150. When referring to the relation manager 150, it can thus be a reference to the executing process 150-2, the application code 150-1, or both. Each relation manager 150 in combination with the view manager 178, connections manager 180 and file manager 182 process files and documents and produce a graphical user interface 132 that provides, to the user 108, visual knowledge representation, dynamically updated content, hosted conversations, and interpretation and management based in part on spatial relationships. To do so, the managers 150, 178, 180 and 182 include a workspace server 151, a news server 152, an exchange server 153 and a database server 154 that each produce, respectively, a Workspace View 300, a News View 305, a database view 310 and an exchange view 315 within the graphical user interface 132. The relation manager 150 adds discovered relations to IO's in a database 125 (the database 125 may already include relations that other people or software products added). The relation manager also provides the algorithms 155 to examine the network of relations to discover potentially relevant information.

[00046] The database 125 maintains a history of updates to the IOs to allow for inclusive reconstruction of a particular IO at given time.

[00047] The workspace server 151 produces the Workspace View 300 that in one configuration is a graphical user work area, such as a desktop, in which a user 108 is able to create and manipulate graphical information objects 310 that graphically represent information objects of interest to user 108. The Workspace View 300 helps users 108 to create, collect, organize and understand information associated with each IO 320 and the relationships among information represented by the IO 320. In one configuration, a generic client application such as a web browser accesses such views from respective servers 151 through 154 that may execute on the same or different computer systems 110. In another alternative configuration, a dedicated client application includes or provides the Workspace View, the News View, the database

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view, and the exchange view and implements the news server, the database server, and the exchange server. It is to be understood that the system described herein may be distributed or centralized and may operate among many computer systems with many users 108.

[00048] Information Objects (IOs) are flexible data structures and can include data files that can include other data files as well as meta-data (for the display of IO contents and the use of IO functions on different IVs), present themselves differently depending on the IV they are displayed on, include the same data and functionality on any IV they are displayed on. IOs can be copied or transferred between the same or different types of IVs, copied or transferred between the IVs of the same or different users, remain synchronized if copied to multiple IVs, synchronized with dynamic data sources other than source-IOs, moved from an IV to the computer desktop, file system, or 3rd party applications, thus converting an IO into a regular computer file that can be exchanged through conventional means such as email or file sharing and can be moved from the computer desktop, file system or 3rd party applications to any IV.

[00049] Information Views (IVs) can include graphical user interfaces that render IOs in different ways (can be described as a optical lenses that allows users to view information in different ways) and can enable access to all IO parameters and functions.

[00050] Using system 110 a user can interact with an information object, the system 110 facilitates sharing the IO among a plurality of participants; provides controls for attaching multi-media data to the IO, displays the IO in one of a plurality of views ; and in response to interaction with one of the plurality of views by one of the participants, provide a communications path between at least two of the participants sharing the IO.

[00051] Directing attention briefly to Figure 2, an example layout of an information object (IO) 310 is shown. An IO 320 in this example provides a visually compact, standardized, and abstract representation of information that displays, reminds of,

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and/or links to the original piece of information associated with that IO 320. Generally, an IO 320 is any graphical representation of an information object and may be considered the information object itself. The term "IO" as used herein can thus include anything from a simple icon that represents something such as a web page, a document, or a live information source, or an IO can be a more complex representation of such things. Both, the layout and the functionality of IOs 320 are highly modular in one configuration. This means that visual components and computational features can be individually turned on and off, and that additional visual components and computational features can easily be integrated. Furthermore, the colors and fonts of all IO components are customizable. In one embodiment, IOs 320 are visually subdivided into six segments in one configuration that can expand and contract depending on their contents.

[00052] The icon area 321 allows for the placement of graphical and/or textual material that can help users 108 to quickly visually locate IOs among many other IOs as well as to memorize and recall the data, information or knowledge associated with that IO 320. Users 108 can copy and paste pictures and text from various computer applications into the icon area. Users can also drag and drop pictures and text from web browsers and file managers into the icon area 321. Furthermore, users can directly draw and write into the icon area 321. The background color of the icon area 321 is also customizable allowing users to visually group and highlight IOs. Typically, the icon area 321 includes an IO graphic such as an icon, picture or other graphical information that represents information associated with that IO. As an example, if an HTML document such as a web page is of interest to a user, that user can create an IO to represent that web page. The IO can include a picture from the web page or a reduced sized version of the web page as its graphic.

[00053] The IOs 320 include an information bar 322 that accommodates an interface and visual indicators for complementary IO functions. A small rectangular box that includes an icon or in some cases a numerical counter represents each available IO function. Three distinct colors visually indicate the status of each function. In one configuration, the color gray is used for inactive functions, the color green is used for

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active functions and the color red is used for functions that require user attention. Every function can be individually turned on and off. The information bar 322 also allows for the customization and addition of functions specific to particular situations and work tasks. The following is a list of example functions and is not intended to limit the invention to information objects (e.g., IOs 320) including such functions. A reference function allows users to hyperlink or to attach related information. A location function is used to associate IOs 320 with a geographic location. A control function enables automatic IO updates. A comment function allows for the addition of comments and annotations. A vote function allows collaborating users to exchange their opinions about the relevance of IOs. An access log function provides users with a detailed record about the IO history. A personal note function is used to announce and send IOs 320 to specific users. A priority function allows users to categorize and highlight IOs.

[00054] The date / time bar 324 displays the date and time of the most recent IO modification. The relation manager 150 can use the date / time bar indication to reconstruct the chronology of contributions from different users and sources. The author bar 325 displays the name of the user who last modified the IO 320 or the information source the IO 320 has been copied from. The author bar 325 provides an indication of the IO editor and is used to compare contributions from different users and sources. The heading bar 326 allows users 108 to complement IOs 320 with a brief description or some keywords such as a title. The heading bar 326 effectively complements the icon area 321 by introducing language as an additional means for the abstract representation of data, information and knowledge. While the icon area 321 is particularly useful for the visual navigation of large IO arrangements, the heading bar 326 is focused on supporting the quick and easy recollection of IO meanings and contents.

[00055] The creation and use of IOs 320 can fundamentally shift the way analysts and decision-makers comprehend and think about information during sense-making activities. The creation of IOs 320 engages users 108 into a process of converting, standardizing, abstracting, and associating information while the use of IOs 320

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fosters a strong focus on relating information uninfluenced by the format and location of information. Humans like to think of data, information and knowledge as objects that they collect, compare, and organize. The conversion of data and information (as well as the externalization of knowledge) into virtual and physical objects accommodates this way of thinking. Dealing with virtual and physical objects such as files on a computer desktop or documents on a table effectively increases a human's ability to deal with complex sense-making tasks. A standardized IO size and layout is convenient to collect, compare, and organize IOs 320. Configurations disclosed herein are based in part on the observation that the benefits of standardized information objects are present in various everyday objects. For example, index cards, credit cards, business cards, slides, photographs and postcards are usually of equal size and layout so they can conveniently be stored, accessed, and processed. The abstract representation of data, information and knowledge with IOs 320 engages a human's visual recognition in ways that decreases information access time and allows for the processing of large amounts of information. Furthermore, the process of creating IOs 320 requires users to circumscribe the contents associated with IOs 320 in a visually and mentally fast accessible and easily comprehensible format thus encouraging a more careful analysis and understanding of the contents associated with IOs. The concept and use of abstract visual and textual reminders is also present in various everyday objects. For example, desktop icons and thumbnail views allow users to easily locate and organize computer files. Military ribbons use abstract visual representations to provide service, mission and award specific information on a small clothing area. Traffic signs depend on abstract visual representations that are easy to spot and understand by pedestrians and car drivers.

[00056] In one configuration, an IO 320 does not include information per se but only serves as a reminder for the presence of a particular piece of data, information or knowledge. The separation between IOs 320 and content associated with IOs 320 allows for the compact visualization and organization of large amounts of information. AN IO 320 may be viewed as a meaningfully labeled hyperlink to a piece of content available in a remote location. Users 108 can easily arrange and rearrange IOs 320 in the workspace 300. Users 108 benefit from this process by developing a good

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understanding of the IO contents and the relations among IOs 320 (e.g., context). The use of IO arrangements also benefits collaborative sense-making tasks. People of different backgrounds, interests and foci have their unique ways of relating information. The collaborative development of IO arrangements can help people to determine intersecting views as well as to develop a shared understanding of a particular information space. Information objects are thus each represented as respective IOs 320 in this configuration.

[00057] The IO attribute indicators shown in Figure 2 can indicate an IO state that can include such things as ownership of the IO, a geographic location associated with the IO, a time of creation of information associated with the IO, and other information. Depending upon the configuration, each IO 320 can further include features such as an instant messaging capability allowing to users in a distributed system to share access to an IO in order to exchange comments or messages between themselves concerning information associated with the IO. In one configuration, the system displays, within the IO perimeter, at least one messaging icon operable by a user to send a message to an IO associated with at least one other user, thus enabling collaboration. In one configuration, clicking on the messaging icon allows users to add a time/author stamped message to an IO 320 that all users 108-2 through 108-N can see if they have a copy of this IO 320. For any user 108, the icon lights red if the IO 320 includes new messages that the user has not yet looked at, green if it includes messages that the user previously looked at, and gray if the IO includes no messages. It is to be understood a that reference to an IO 320 refers to an implementation of an information object, and as will be explained shortly, algorithms disclosed herein can analyze information about IOs, such as spatial relationships between IOs, and that such algorithms and processing can be applied to other representations of information objects besides IOs, such as desktop icons, physical locations of physical items such as items on a store shelf, and so forth.

[00058] Returning attention back to the graphical user interface 132 in Figure 1, the Workspace View 300 presents users with an empty canvas for the creation and grouping of IOs 320. In one configuration, the Workspace View 300 can be the

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desktop of a computer system 110 provided by an operating system, such as the Windows Desktop provided by the Windows family of operating systems made by Microsoft Corporation of Redmond Washington ,USA (Windows is a registered trademark of Microsoft Corporation). The Workspace View 300 is designed to support individual and collaborative sense-making tasks such as information analysis, planning, decision-making, brainstorming, and problem-solving. The Workspace View 300 functionality will provide users 108 with the means to efficiently create, collect, organize, analyze, and discuss information. In one configuration, IOs 320 may be created manually or semi-automatically. The manual creation of IOs 320 requires the user 108 to position an empty IO 320 on the Workspace View 300 and complement it with a picture, a heading, and a reference to an information source by simply dragging and dropping pictures, texts, hyperlinks, files, or file folders onto IOs 320. The semi-automatic creation of IOs 320 allows users to drag and drop pictures, text, hyperlinks, URLs, files, and file folders directly onto the Workspace View 300. This action will cause the workspace server 151 to create a new IO 320 with the content of the dropped item linked or attached to the IO 320 and with a picture and a heading added to an icon area and the heading bar (to be explained) of the IO 320. Users 108 may also copy IOs 320 from the News View 305, the database view 310 or the exchange view 315. Furthermore, a user 108 can copy IOs 320 from the Workspace View 300 to the computer desktop or file system (and vice versa) thus converting IOs 320 into regular computer files. This functionality has a variety of applications such as to exchange IOs 320 by email or to convert IOs 320 for use with other software applications. Automated IO creation is provided as well that allows a user for example to specify a file system or path or URL or database identity and the system can traverse records, documents, web pages, files and the like within the specified path, database or domain and can convert each record, file or page into an IO for use in the system.

[00059] In one embodiment the relation manager 150 allows a user to easily arrange, compare, and evaluate IOs 320 thus ensuring that users 108 will not be distracted by different information formats but focus on information contents. Each individual user 108 can determine the particular arrangement or spatial (vertical, horizontal,

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overlapping, proximal) layout of the graphical IOs 108 on his or her Workspace View that might indicate meaning to that user 108. For example, a user 108 may group IOs that represent related information sources in a relatively close proximity to one another thus defining tight spatial relationships between those IOs.

[00060] The system is able to analyze spatial relationships that exist between IOs 320 in each users Workspace View 300 in order to identify other information objects (e.g., other IOs 320) that may be of interest to that user 108. Based on this analysis, the relation manager 150 can identify other information sources by showing other IOs 320 that might be of interest to that user. Embodiments disclosed herein are based in part on the observation that the spatial arrangement of a first set of objects such as IOs 320 in the Workspace View 300 can be used to identify relationships between those objects and can be further used to identify other objects (such as other IOs) that may be of importance to a user who created the initial spatial relation between the first set of objects in the Workspace View 300.

[00061] The Workspace View 300 introduces several options for the grouping of IOs 320. One option is to increase the size of one IO 320 so as to accommodate several other IOs 320 inside its boundaries. Moving an IO 320 will drag along all IOs 320 within its boundaries. A second option is to overlap IOs 320. Moving an IO 320 inside a cluster of overlapping IOs 320 will drag along the entire cluster of IOs 320. A third option is to use multiple workspaces for the grouping of IOs 320. A fourth option is to link IOs 320 to an entire IO arrangement. A mouse-click onto such an IO 320 will then open another Workspace View 300 and display the IO arrangement. Further details on contents and layout of IOs 320 will be explained shortly.

[00062] The news server 152 produces (i.e. provides information feeds for) the News View 305 to allow users 108 to collect IOs 320 for addition to the Workspace View 300. IOs 320 in the News View 305 represent information from a variety of other information sources. Feed examples includes news, alerts, announcements, motion detections on security cameras, emails, IMs, SMSs, sensors, real time search results, and custom content. An analogy of the News View 305 is a "news stand" in which recent or periodic information is available. In one configuration, the News View 305

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displays the contents IOs 320 from news servers 151 that may be distributed through the network 101 within one of more computer systems 110. IOs 320 in the News View 305 can be organized by time and information sources (e.g., by topic or content area) as well as by geographic locations associated with the information represented by each IO 320. Users 108 are able to copy IOs 320 between the Workspace View 300 and the News Views 305. IOs 320 copied from the News View 305 to the Workspace View 300 may be static and not change in content, or such IOs 320 may dynamically adapt to modifications in content so that as the information source associated with an IO 320 produces new information.

[00063] In one configuration, the system can display IOs in various arrangements within the News View 305. In particular, the News View 305 can display a timeline arrangement of IOs 320. The timeline arrangement provides a visualization that represents and organizes knowledge using a grid comprising of a timeline categorization for IOs on the horizontal axis and subject categorization on the vertical axis. In an alternative configuration, the new server 152 can display a map arrangement that provides a visualization that represents and organizes knowledge using a world-map or a floor plan comprising of geographical categorization for IOs. As an example, a News View can organize and arrange IOs in an ordered list or as a table with rows and columns of IOs organized horizontally by time and vertically by information sources. In such a configuration, new IOs for newly discovered information can be inserted on the left pushing existing IOs to the right. The time scale can be irregular and optimized to display the largest number of IOs possible. The rows of IOs in the News View can automatically expand and contract depending on the number of IOs to be shown in each row.

[00064] In this manner, the system disclosed herein provides a novel process for information retrieval and processing based on information collection support. In one example, the News View 305 displays incoming information in IOs 320 from selected information sources. The users 108 can copy relevant information from the News View 305 to the Workspace View 300 or can create new information directly in the Workspace View 300 by creating new IOs. The user(s) 108 can study, organize, and

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categorize the information on the Workspace View 300. In one configuration, if the Workspace View is connected to a server then all content and established relations are made accessible to this server. The user can use two Workspace Views if he wishes to separate between information that is public and private. Other users 108 view the information on the news, database or exchange views 395, 310 and 315 and can also copy relevant information from the news, database, and exchange views 305, 310, and 315 to their personal Workspace Views 300. The system can track and analyze this movement of information from source to destination and can use this IO usage and movement data based on user identifiers, locations of IOs, arrangements of IOs, contents of IOs, times of movement and copying, and other such information in processing algorithms to infer or identify relationships between IOs and to suggest other IOs that reference other information that may be of interest to a user.

[00065] The News View 305 provides users 108 with the technology to effectively monitor and visualize additions and modifications from information sources such as web sites, databases, security cameras, alarm systems, sensors, news feeds and so forth. Every information item is displayed as an IO 320. In one configuration, the News View 305 can organize and arrange IOs 320 in an ordered list or as a table with rows and columns of IOs 320 organized horizontally by time and vertically by information sources, such as by geographic origination or relation of the new story associated with the IO 320.In another configuration, the News View has several visualization options such as displaying the IO arrangement in a table or displaying the IO arrangement on a geographic map. In one configuration, new IOs 320 for newly discovered information can be inserted on the left in an appropriate row pushing existing IOs 320 to the right. The time scale can be irregular and optimized to display the largest number of IOs 320 possible. The rows of IOs 320 in the News View 305 can automatically expand and contract depending on the number of IOs 320 to be shown. The News View 305 can include an adaptor for receiving news feeds and the user interface chronologically organizes information chronologically in a subject-time matrix. The News View 305 row can combine multiple data streams so that a row includes a group of data streams. A News View row can also display other data

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formats as well (email, search results, sensor data gathered though a file transfer protocol (FTP) in addition to displaying RSS streams.

[00066] The News View 305 offers a variety of tools for the exploration and collaborative use of information. As an example, a user 108 can copy IOs 320 from the News View 305 to the Workspace View 300 thus allowing users to easily collect, compare and organize new information. IOs 320 copied from the News View 305 to the Workspace View 300 may be static or dynamic as noted above. A static IO 320 is an exact copy of the IO on the News View 305. In one configuration, a dynamic IO 320 continuously updates itself to reflect the most recent (left-most) IO on the News View row it was copied from. Figure 9 below shows another example layout and additional IO features.

[00067] In this manner, the system disclosed herein provides a novel process for exchanging information and for asynchronous, decentralized, remote, and cross-organizational collaboration. In particular, users 108 use their individual Workspace Views 300 to organize and analyze information. The exchange view 315 displays (in prioritized order in one configuration) the IOs 320 created by all collaborating users 108 (or those with the appropriate access permissions or security levels). The users 108 can copy relevant IOs 320 from their exchange views 315 to their Workspace Views 300. Users 108 can take "ownership" over IOs 320 copied from their exchange views 315 and these IOs 320 are now modifiable by the user 108. In one configuration, when a user takes ownership of an IO 320, the IO 320 is no longer synchronized with a counterpart IO on the IO author's Workspace View. In another configuration, once an IO 320 is owned exclusively by a user 108, these IOs 320 can no longer be used for collaboration such as by "instant messaging," IO commenting, or "IO voting."

[00068] Figures 3 show a diagram 360 of an IO 320 as viewed in several IVs. The diagram 360 also shows how IOs present themselves differently on different IVs and can be copied between IVs. The following are examples of the various IVs (not intended to be limiting). The News View 362 displays the contents of RSS streams (and other dynamic information sources) as IOs arranged in a table, organized by time

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in horizontal and by information sources, subject or category in vertical direction. New IOs are inserted on the left pushing existing IOs to the right. The time scale is irregular and optimized to display the largest number of IOs possible (meaning time segments without IOs are automatically removed). The rows automatically expand and contract depending on the number of news items (makes all rows display similar numbers of IOs). Users can add RSS files by simply dropping an IO or an RSS URL onto a row in News View. A News View row can include multiple RSS streams (multiple streams are automatically combined). The News View can be used to display a wide variety of information such as newspaper news, emails instant messages, motion activity on web cameras, eBay and Craigslist postings, company internal announcements and alerts. The News View can also be used as a RSS feed generator. For example, a user could create an empty News View that all users can view and add IOs to. Users can copy News View rows or individual IOs to other IVs. A copy of a News View row onto a Workspace View would result in a single IO that dynamically updates itself and that displays the most recent item in the associated RSS feeds. The primary purpose of the News View is to help users monitor large numbers of RSS feeds in a quick and easy comprehensible format.

[00069] The Workspace View 364 displays IOs in a game IO like format. The visual components of the IOs are customizable and expandable. Users can modify IO parameters in a so-called IO editor (see Illustration 3 and 4). For example, users can add files to IOs, view and modify ratings, or discuss the IO contents with other users through the built-in instant messaging system or shared white board. If a user moves a regular file or a URL from a computer file system or a web browser onto the Workspace View then an IO is automatically created with the file attached or the URL hyperlinked. The Workspace View is designed to allow users to easily collect, organize and compare information in different formats and locations. For example, a Workspace View may be used for web shopping allowing users to quickly drag and drop items of interest from different web sites (such as Amazon, eBay, and Craigslist) onto the Workspace View for the subsequent comparison of options and prices. Since IO components can be dynamic (meaning that they can automatically retrieve content

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updates from dynamic information sources) the user can also use a collection of IOs to monitor changes to prices and bids.

[00070] The Map View 366 is a geographic map display that represents IOs as location items. A location item presents itself as (one or more) symbols (of choice) on the map. The location item allows access to all IO functionality available in other IVs. If the geographic location associated with a location item is dynamic then the symbol would automatically update its location on the map. If a location item is copied to a Workspace View then it will present itself as an IO with the geographic location accessible and modifiable through the IO Editor. The Map View is primarily designed for military use but has a wide range of commercial applications as well. For example, a user could create a public Map View with hiking paths. Other users could copy hiking paths of interest from this public Map View to their personal Map View s or other IVs, discuss hiking paths through the IO instant messaging feature, or rate the quality of hiking paths through the IO rating system.

[00071] The Project View 368 is a time planning and calendar display (similar to MS Project) that allows users to represent IOs as time bars. IOs in this IV also maintain all the contents and functionalities of IOs displayed on other IVs. Moving an IO from the Project View to the Workspace View would create an IO that displays the time frame with a time bar on the IO or a time frame in the calendar tool of the IO Editor. The Project View is primarily designed for people that need to compare and modify time related IO parameters. For example, the Project View may be used to review and modify IOs that represent tasks scheduled for execution during particular time frames, resources that are only available during particular time frames or people that are only available during particular time frames.

[00072] The Graph View 370 displays IOs as line or bar graphs. This particular IV is primarily designed for comparing statistical data associated with IOs such as stock quotes, bids and sensor data.

[00073] The List View 372 is a spread sheet like display (similar to the Microsoft ® Office Excel spreadsheet program) that allows users to represent IO parameters in a

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table format. The List View is primarily designed for people that need to compare and modify particular IO parameters such as, for example, the cost of sales items or the specifications of resources referenced by individual IOs.

[00074] Now referring to Figures 4A and 4B, screen shots show News Views that display news for multiple different news papers (Figure 4A) and postings by different users (Figure 4B).

[00075] Figure 5A shows a diagram of IOs being exchanged between IVs of different users. Figure 5B shows a diagram of IOs being exchanged between Private, Visible and Shared Views. There are various ways in which IOs can be exchanged between the IVs of the same and of different users such as:

by copying IOs from the personal IV of another user (Users can make their personal IVs accessible to other users. An IV can be Shared 510 (read / write), Visible 512 (read) or Private 514;

by sending IOs to a particular user or group of users through the integrated instant messaging system or a commercial instant messaging system;

by sending IOs to a particular user or group of users through email;

by making IOs available through shared file systems; and

by retrieving IOs from our database (The database automatically collects and organizes IOs from the IVs of different users.

[00076] A variety of data visualization and access tools allow for the easy retrieval of IOs from the database, for example, in conjunction with an EWall Agent System; and by retrieving IOs from a Discovery View. The Discovery View presents individual users with a custom selection of potentially relevant IOs, and in one embodiment consolidates the Exchange View (315) and Database View (310). In this embodiment, the Discovery View not only displays related information in the IO database 125 but can also display related information found by other web services (e.g., related products for one selected product provided by online sellers or search engines).

[00077] Figure 6A is a diagram of an exemplary GUI Organization including graphical user interface 610 for the management of IVs in accordance with one

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example embodiment disclosed herein. Figure 6B is a more detailed diagram of the exemplary GUI Organization of Figure 6A. In one embodiment, the GUI Organization includes three columns. The left column 620 includes displays 622 and 624 provided by the View Manager 178 and the Communication Manager 180, respectively. The View Manager 178 displays all available IVs, allows users to open individual IVs, and enables users to modify the access rights of individual IVs. The View Manager 178 also displays representations of servers, databases, agent systems (e.g., EWall Agent System) and users in the collaborative environment. The Connection Manger 180 allows users to communicate with other users, exchange IOs with other users, access the IVs of other users, import IOs from databases and agent systems, as well as to control the export of IOs to databases and agent systems. The middle column 630 is used to display one or more IVs 632a – 632n. The right column 640 includes the IO Editors 642a – 642n. IO Editors 642a – 642n are tools that allow users to view and modify IO parameters and operate IO functions. The information displayed in IO Editors always refers to the currently selected IO or group of IOs.

[00078] Figure 6C is a diagram of an alternate exemplary GUI 660 in accordance with one example embodiment disclosed herein. Graphical user interface 660 for displaying an information objects includes a discussion subject 602, a message indicator 603, threaded discussion window 607, a list of participants linked to the information object 608, a collaborative rating 605 including a ranking of importance, a buddy list 601, a discussion heading 604, a list of attachments 606 and meta-data and shared applications 609. In other embodiments the graphical user interface for displaying information objects includes a geographic map, category keywords and auction information. In other embodiments the attachments include thumbnails of multimedia data.

[00079] Figure 7 is a diagram of a GUI 700 showing several features of the system 110 available to the user including control 710 which when clicked sends or receives an IM message about a view. This is a means for enhancing a hosted conversation, for example in a chat room. The GUI 700 further includes control 712 click to send/receive an IM message about an IO, for example in a chat room. The following

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controls can also be used: control 714 allows a database to collect information from the corresponding window; control; 716 disallows a database to collect information from the corresponding window; control 720 sends an IO to a user or a group of users; control 724 disallows a user to view details of the corresponding view; control 726 allows a user to view/modify the corresponding view; control 728 sends or receives an IM message or IO to or from the user, for example in a chat room; and control 730 sends an IM message or IO to a group of users, for example in a chat room. Indicator 718 indicates available resources in a database (cards, visualizations, statistics, etc.) and indicator 722 indicates a view of another user that is open for viewing or modification. GUI 700 allows the users to import and export IOs from and to IM systems, other users views, shared views, e-mail tools, databases, agent systems.

[00080] Figure 8 is a diagram of IO File Management 800 which allows an IO to display the content of different types of files 802 including such as content from: a web site 810, flash applications 812, movies 814, pictures, text from office documents 816, PDF documents 818 and other documents 820. In operation, the IO file manager 182 processes attachments, hyperlinked web content from the different file types 802 and remote sources 806 including remote RSS files 822, remote objects 824 and remote files 826 to create and dynamically update IO contents.

[00081] A user 108 can create an IO by simply dragging a hyperlink or file or other digital material onto the Workspace View 300. A new IO is created where the hyperlink or file is dropped, a picture is added automatically (by searching the hyperlink destination or the file contents for an appropriate graphic), the heading is added automatically (typically the web site or file name), and a link or embedded attachment is automatically created from the file or the web site reference by the hyperlink

[00082] Figure 9 is a diagram of IO components expanding on the basic IO components described above in Figure 2. IOs include default and custom parameters and functions. IO parameters and functions are best explained with IOs rendered on Workspace Views. IOs can display a large number of IO parameters and function without the need for the user to access the IO Editor. The IO layout can be customized

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to only display the IO parameters and function the user wants to see. The following list provides a few examples of IO parameters and functions as they would appear in different sections (Bars) of an IO on a Workspace View.

[00083] Picture/Text bar 902 allows the insertion and display of text, pictures, PDF files, active Flash applications (can run inside the Picture/Text Bar), Office documents, and additional applications, file types and multi-media data. Function Bar 910 displays icons that serve as status indicators and that link to particular IO Editors.

[00084] A Bubble Icon 912 opens an IO Editor window that allows users to exchange comments, share a white board, contribute to a forum, or insert notes. The "bubble" icon 912 is rendered white if no user added any information, gray if one or more user added information and red if one or more users added information that the viewer has not yet looked at. An optional calendar tool allows users to compare their availabilities and schedule a "chat" session ahead of time.

[00085] A Flag Icon 914 links to a map display in the IO Editor allowing users to view and modify geographic locations associated with an IO. A Person Icon 916 indicates whether a particular IO is used by other users and links to an IO Editor that allows the IO owner to view the list of IO users as well as to assign access restrictions to IO contents. A File Icon 918 allows users to add and access (any number of) attachments and hyperlinks to an IO. An Arrow Icon 920 allows users to add, modify and control dynamic information sources (e.g., to control automatic updates to IO contents retrieved from dynamic information sources such as Email accounts, RSS feeds, sensors, motion detectors and security cameras or web sites). Users can activate one or more Reliability / Ratings / Votes / Importance / Priority Bars (collectively referred to as bars 924) for the individual and collaborative evaluation of information. IOs can be evaluated on a scale from 1 to 5 (represented by 5 boxes). Filled boxes represent the average evaluations of all IO users while the arrow symbol indicates the individual rating of the IO viewer.

[00086] Trade bar 930 and Value / Value Change bar 928 comprise a trading feature that allows users to trade IO contents or items referenced by IOs. For example, an IO

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could represent a stock (market item) and allow users to monitor, buy and sell stocks; an item on eBay or Craigslist and allow users to monitor and manage bids; or an item on Amazon and display its current purchase price. Users associate IOs with one or more categories using a Category bar 932 that allows for faster IO searches on IVs and databases. Users associate IOs with a time or time frame using Time Frame / Schedule bar 934, for example, displayed on IOs as a point or as a bar on a time scale. The time scale is the same for all IOs and can be set in the preference menu, e.g. left side of the bar = -12 hours, middle = now, right = +12 hours. The point or bar on the time scale will move from left to right in accordance to the real time. Graphic display 940 shows various display options for icons on the various function bars.

[00087] In one embodiment the system 110 provides hosted conversation among a group of participants using the integrated instant messaging system facilities which provide a communication system linking an IO to a group of participants. Each system component (IO, IV, Database, Agent System) and participant is linked to the instant messaging system (also known as a chat room). The IO can include a link to a document, links to the group of participants, meta-data related to the conversation and communication system which links the IO to the group of participants. The process of initiating a hosted conversation begins when a user starts a discussion or a collaborative project by first creating a new IO and then adding data, meta-data and linking participants to the IO.

[00088] For example, to communicate about the contents of an IO the user would click the bubble icon 912 on this IO in the user interface on the client system to "chat" (about this IO) with other participant who maintains a copy of this IO. Clicking on the "bubble" icon 912 associated with a participants (or group of participants) listed in a contact list and linked by the connection manger 180 would initiate a "chat" session with those participants. The hosted conversation includes a list of participants linked to the at least one information object and an IV to visualize the at least on information object. Clicking on the "bubble" icon 912 associated with the IV in the View Manager would initiate a "chat" session (about this IV) with every other participant who has access to this IV. The integrated instant messaging system is also used to exchange IOs between users. An IO can simply be dragged and dropped onto a user

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icon which subsequently sends a copy of this IO to the intended recipient. The instant messaging functionality can be complemented with any other IO parameter and function such as, for example, a function that allows users to assign ratings to databases, agent systems, users or IVs. One important benefit of this system is that it allows users to stay engaged in a large number of discussions about particular subjects represented by different users, IOs or IVs. Advantageously the user can organize and monitor a large number of IOs where every IO represents a different issue that may be discussed with a different groups of participants.

[00089] Thus system 110 provides a graphical interface for displaying an information object which includes displaying a threaded discussion window, a list of participants linked to the information object, a collaborative rating including a ranking of importance, a buddy list, a discussion heading; and a list of attachments.

[00090] Figure 10 is a diagram of IO operations including IO creation. IOs can be created manually or automatically. The automatic creation converts a non-IO object or file into an IO if a user imports a non-IO file from any application into an IV. For example, if a user drags a URL of an item for sale on the Amazon web site onto the Workspace View, the resulting IO would display an image of the item in the Picture Bar, the name of the item in the Heading Bar, the cost of the item in the Value Bar, and hyperlinks to the Amazon web site where the item is advertised. Filters include the rules and manage the conversion from non-IO files to IOs.

[00091] Generally, IOs can be manually created such as by creating a blank IO and then specifying an information source to which that IO refers. The IO look can be complemented with a picture, explanatory text, a heading and other visual attributes by simply dragging and dropping pictures and text fragments onto the IO. Alternatively, in another mode, IOs can be semi-automatically created in a Workspace View or on a desktop by dragging an information object such as hyperlink, document, file or URL onto the Workspace View in which case a new IO is automatically formed and associated with the hyperlinked data, file or document. The IO picture and the IO heading are added automatically if an appropriate picture and heading can be extracted from the dragged information object or if an appropriate picture can be found in a

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database that matches the file name or within some of the content of the dragged information object. In yet another mode, an automated IO creation process can traverses a set of records or files, such as a database or file system or all web pages within a certain URL and can perform automatic creation of IOs from each database record, web page, or file. As an example, entire databases or file systems or all documents below or within a certain URL or domain on the Internet can automatically be converted into IOs using the semi-automatic creation of IOs but in a non-manual way that does not require a user dragging and dropping of each file, document or URL onto a view.

[00092] The following Workspace View examples detail several exemplary user interactions with IOs and IVs. A user can drag a URL from a web browser onto a Workspace View which will create an IO that hyperlinks to that URL and automatically extracts (from the URL destination) a picture and a heading that is displayed in the IO's picture and heading bar. The user can drag an RSS URL onto a Workspace View which will create an IO that visualizes the most recent item in the RSS file/s and that continuously updates itself. The user can drag a regular document (file) onto a Workspace View which will create an IO with the document attached. Dragging a document onto an IO also attaches the document. The user can import an IO from another user into the Workspace View which will create an IO copy that is synchronized with the original IO. The user can drag an IO from the Workspace View to the computer desktop which will create an IO file. The user can drag an IO from a News View row to the Workspace View which will create an IO copy that is synchronized with the original IO. The user can drag a News View Row to the Workspace View which will create an IO that visualizes the most recent item in the RSS file/s and that continuously updates itself. In another embodiment, a user can drag a buddy icon from an instant messaging system onto the IO or drag an IO the buddy icon to initiate a conversation or to link the "buddy" to the IO. In this manner, links are formed between the information object and one of the plurality of participants by selecting the information object and selecting the participant from a displayed list of participants and the system 110 associates participants and

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information objects by indicating a connection between an icon from an instant messaging system and the information object.

[00093] The following News View examples detail several exemplary user interactions with IOs and IVs. The user can drag one or more RSS URLs onto a News View row which will add and displays the content of RSS URLs on the News View row as a sequence of IOs. The user can drag and drop a Workspace View ID onto a News View row which will display IO additions and modification on that Workspace. The user can drag and drop an IO onto a News View row which will add that IO to the IO sequence. The user can drag an IO from a News View row to the computer desktop which will create an IO. The user can drag a News View row to the computer desktop which will create an IO.

[00094] Figure 11 diagrams the overall process of interacting with an information object. In step 1110, the system provides the information object (I/O), for example on a GUI display as described above. A new IO can be created from scratch or by using a filter, or an existing IO can be shared, copied, transferred, etc. as described above. Next, in step 1120, the IO is shared among a plurality of participants. In step 1130, multi-media data can be optionally attached to the information object. In step 1140, the information object is displayed in one of a plurality of views. Finally in step 1150, in response to interaction with one of the plurality of views by one of the participants, a communications path between at least two of the participants sharing the information object is provided by the connection manager 180.

[00095] Figure 12 is a flow chart of processing steps showing additional details in conjunction with flow char 1100 Figure 11, that system 110 performs to allow interactions with an information object in accordance with embodiments disclosed herein. In one embodiment, step 1210 provides the information object by filtering a web page associated with a URL to create the information object by automatically extracting meta-data including at least one of a heading, a picture, and link to the URL. In step 1220, the information object is shared among a plurality of participants by transferring the information object between different information views. In step 1230, the multi-media data is linked to the information object

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[00096] In step 1240, an automated participant is provided. The automated participant interacts with the information object. In some embodiments, there is no distinction between a user and an automated participant (e.g., a participant based on a computational system). In step 1250, information is retrieved based on user interaction with the information object including spatially arranging the information object relative to other information objects. In step 1252, interaction with the information object includes attaching at least one document to the information object.

[00097] Figure 13 is a flow chart of processing steps that system 110 performs to support a hosted conversation among a group of participants including interactions with an information object in accordance with embodiments disclosed herein. In step 1310, a link to at least one information object is stored to host a conversation among a group of participants. The information object includes at least one link to a document; a plurality of links to the group of participants; meta-data related to the conversation; and a communication system linking the at least one information object to the group of participants provided by connection manager 180.

[00098] In step 1320, a user interface on the client system is provided. The user interface includes an icon representing the at least one information object a contact list; a list of participants linked to the at least one information object; and an information view to visualize the at least on information object. In step 1330, an Information View is displayed that includes a News View having an adaptor for receiving news feeds and the user interface chronologically organizes information chronologically in a subject-time matrix. The user interface further includes a zoomable, graphical timeline including automatic compression of the subject-time matrix and in one embodiment the news feed is a syndication feed.

[00099] While configurations of the system and method have been particularly shown and described with references to configurations thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the scope of the invention. As an example, the order of processing steps in the flow charts is not limited to the order shown herein. Accordingly, the present invention is not limited by the example configurations provided above.

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What is claimed is:

1. A computer-implemented method of interacting with a plurality of arbitrary data items, in which at least one computer initiates execution of software instructions to perform computer processes, the method comprising:

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, multimedia data, and a URL; and

using the extracted data to cause display of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, a multimedia window, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions.

2. A method according to claim 1, wherein (i) one of the set of icons gives graphical access to a vote function by which a user can provide a vote associated with the information object and (ii) one of the indicators displays the total number of votes, associated with the information object, that have been received.

3. A method according to claim 1, wherein (i) one of the set of icons gives graphical access to a comment function by which a user can create a comment relating to the information object and cause the comment to be associated with the information object and shared among users who view the information object and (ii) one of the indicators displays the total number of comments, associated with the information object, that have been associated with the information object.

4. A method according to claim 3, wherein the one of the indicators changes its appearance to indicate the presence of a comment, associated with the information object, that has not yet been read by the user.

5. A method according to claim 1, wherein the format includes a user-accessible report on the number of times the information object has been replicated by a community of users.

6. A method according to claim 1, further comprising:

further causing to be displayed, at the same time as the representation, a map including a location, marked on the map, associated with at least one of the information objects.

7. A method according to claim 6, further comprising:

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responsive to a graphical input applied to the displayed location, causing the location to be edited in accordance with the graphical input.

8. A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a second collection of the first user;

responsive to (i) a graphical selection, by the first user, of an information object in the first view and (ii) a move command that has been graphically entered by the first user, causing the selected information object to be moved from the first view to the second view.

9. A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a second collection of the first user;

responsive to (i) a graphical selection, by the first user, of an information object in the first view and (ii) a copy command that has been graphically entered by the first user, causing the selected information object to be copied from the first view to the second view.

10. A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a collection of a second user.

11. A method according to claim 10, further comprising:

responsive to (i) a graphical selection, by the first user, of an information object in the second view and (ii) a copy command that has been graphically entered by the first user, causing the selected information object to be copied from the second view to the first view, so that the selected information object in the collection of the second user has been copied to the first collection of the first user.

12. A method according to claim 10, further comprising:

responsive to (i) a graphical selection, by the first user, of an information object in the

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first view and (ii) a send command that has been graphically entered by the first user, causing the selected information object to be sent to the second user, so that the selected information object in the collection of the first user is made available to the second user to be included in the collection of the second user.

13. A method according to claim 1, further comprising:

causing an information object to be shared with another user when the information object and the other user have been graphically selected.

14. A method according to claim 1, further comprising:

causing an information object to be shared with another user via an instant message sent through an integrated instant messaging system as a result of graphical selection by a first user.

15. A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, that are related to one or more information objects in the first collection as a result of being in one or more collections, of other users, that also include at least one of the information objects in the first collection.

16. A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, wherein any given member of the second set of information objects is both included in a collection of another user and the other user has been selected by the first user.

17. A computer-implemented method of interacting with a plurality of arbitrary data items received from a plurality of news feeds, in which at least one computer initiates execution of software instructions to perform computer processes, the method comprising:

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including at least one of a heading, multimedia data, and a URL; and

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using the extracted data to cause display of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, a multimedia window, and a heading;

wherein the information objects are organized for display in a plurality of rows, wherein each row corresponds to a distinct set of at least one of the news feeds.

18. A computer-implemented method according to claim 17, wherein each row is organized chronologically.

19. A computer-implemented method according to claim 17, wherein each column of the display corresponds to a shared time interval in each row.

20. A computer-implemented method according to claim 17, wherein at least one of the news feeds includes an item selected from the group consisting of cards, news feed items, alerts, announcements, motion detection events triggered by cameras, e-mails, instant messages, short message services, sensors, and real time search results.

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ABSTRACT OF THE DISCLSOURE

METHODS AND APPARATUS FOR MANAGING AND EXCHANGING INFORMATION USING INFORMATION OBJECTS

A computer-implemented method of interacting with a plurality of arbitrary data items includes configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, multimedia data, and a URL. The method additionally uses the extracted data to cause display of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, a multimedia window, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions.

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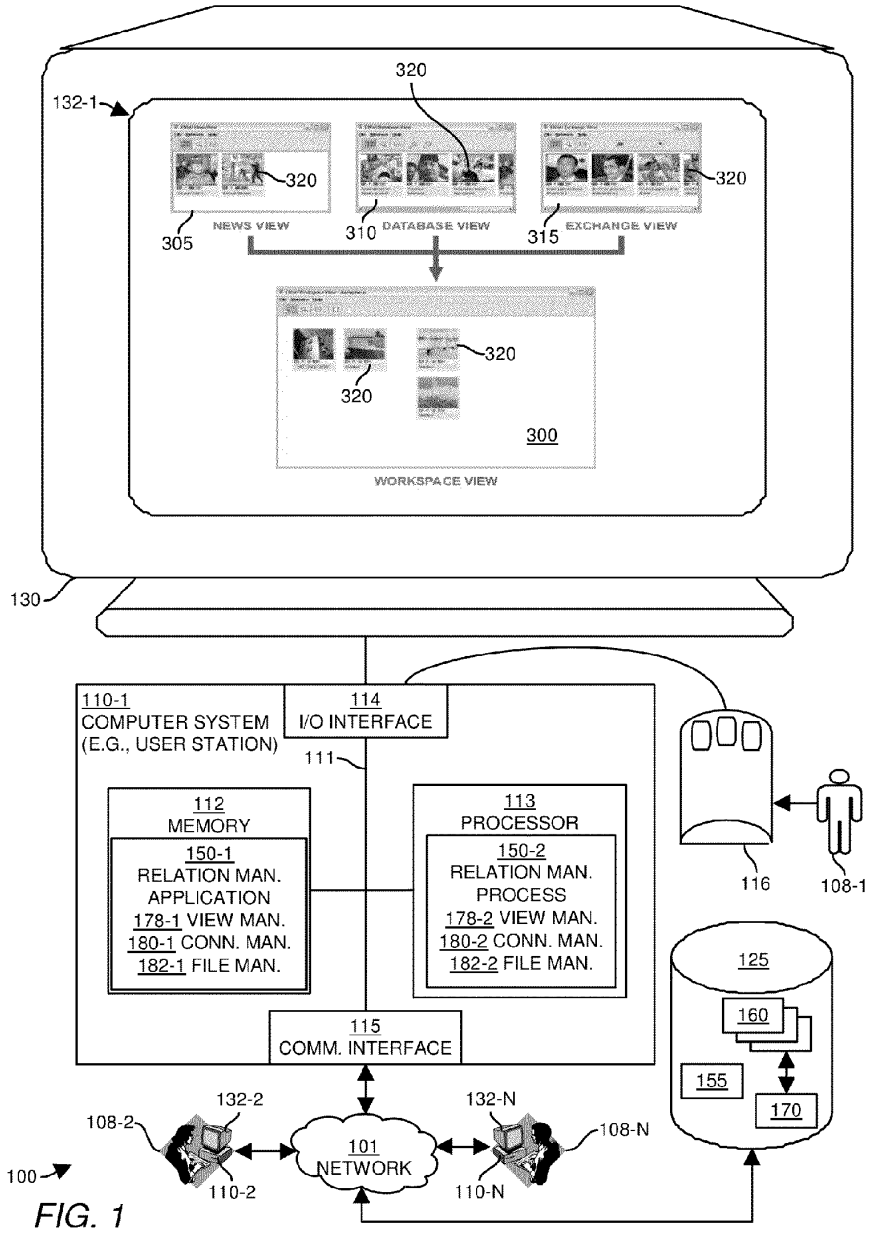

132-1
320
320
320
NEWS VIEW
DATABASE VIEW
EXCHANGE VIEW
305
310
315
320
320
300
WORKSPACE VIEW
130
110-1
COMPUTER SYSTEM
(E.G., USER STATION)
114
I/O INTERFACE
111
112
MEMORY
150-1
RELATION MAN.
APPLICATION
178-1 VIEW MAN.
180-1 CONN. MAN.
182-1 FILE MAN.
113
PROCESSOR
150-2
RELATION MAN.
PROCESS
178-2 VIEW MAN.
180-2 CONN. MAN.
182-2 FILE MAN.
115
COMM. INTERFACE
116
108-1
125
160
155
170
132-2
132-N
108-2
108-N
101
NETWORK
110-2
110-N
100

FIG. 1

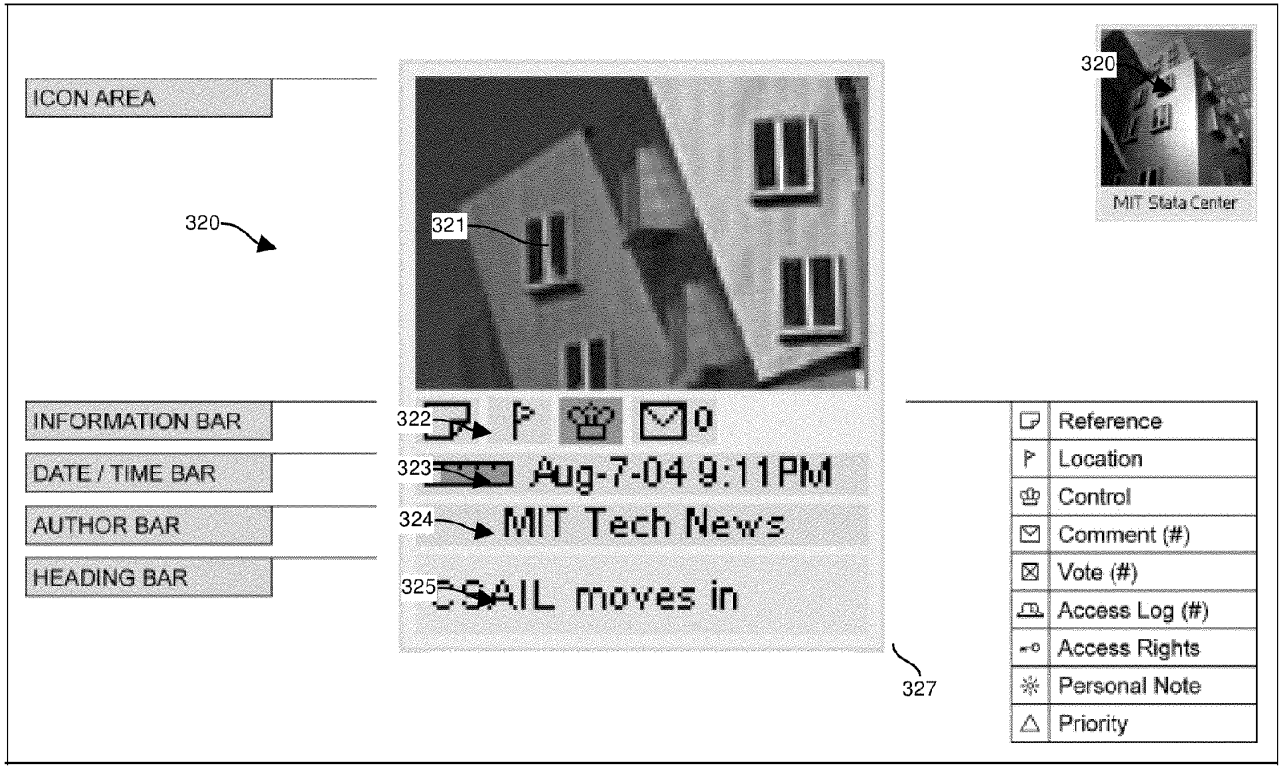


FIG. 2

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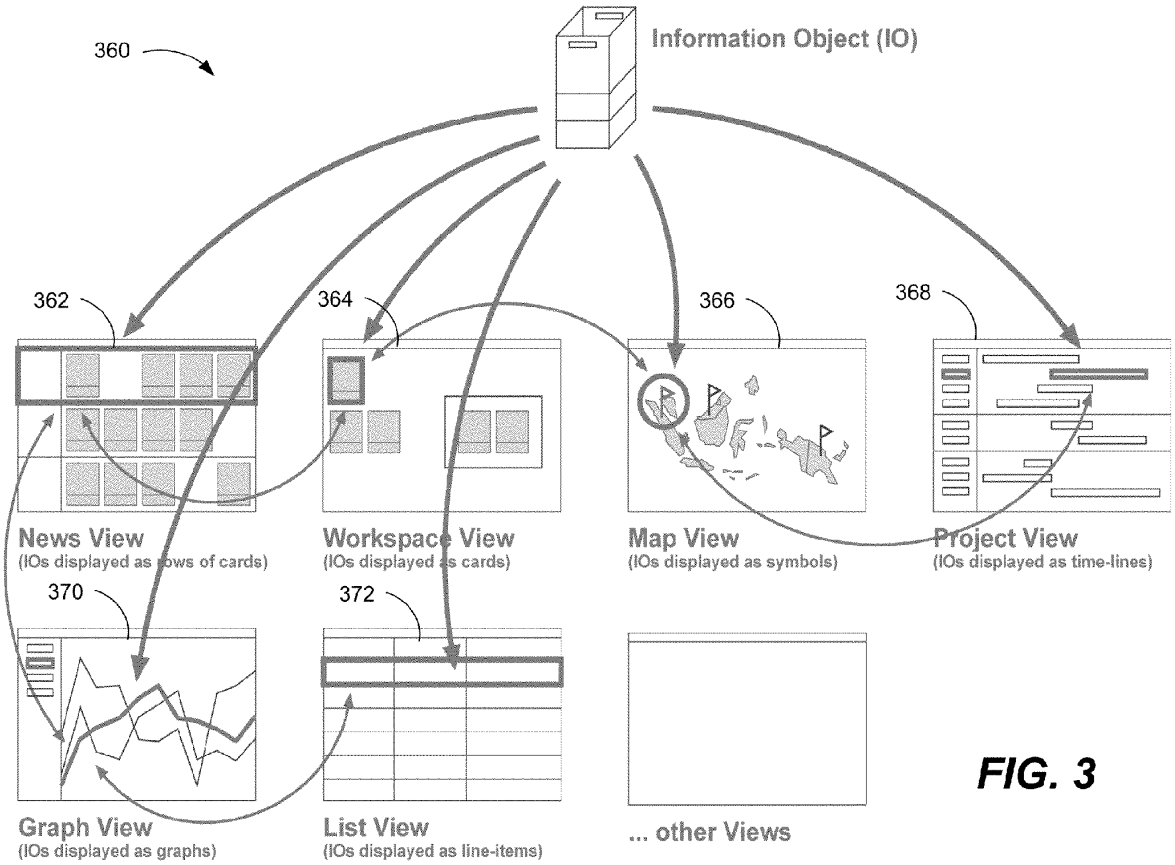


FIG. 3

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FIG. 4B

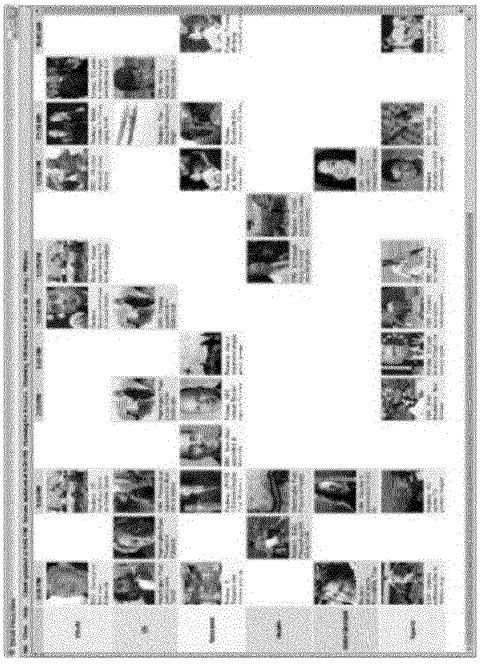


FIG. 4A

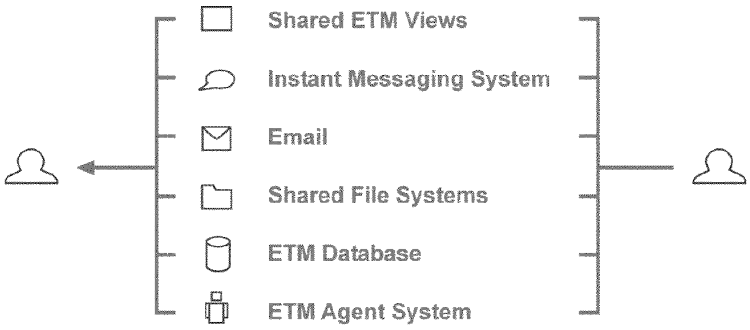

Shared ETM Views
Instant Messaging System
Email
Shared File Systems
ETM Database
ETM Agent System

FIG. 5A

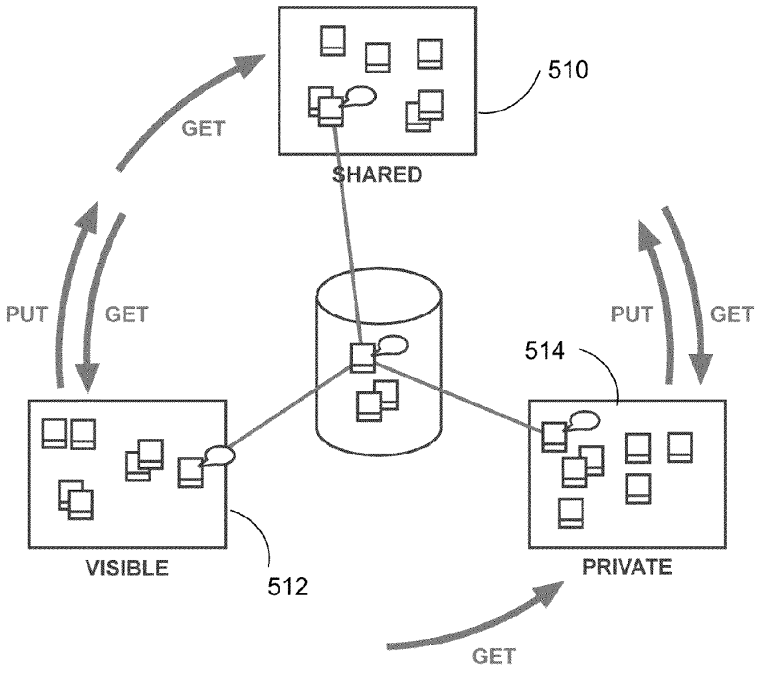

510
GET
SHARED
PUT
GET
PUT
GET
514
VISIBLE
512
PRIVATE
GET

FIG. 5B

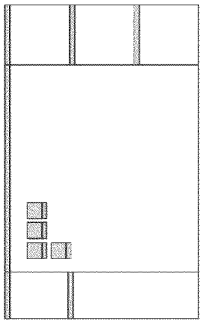

610

FIG. 6A

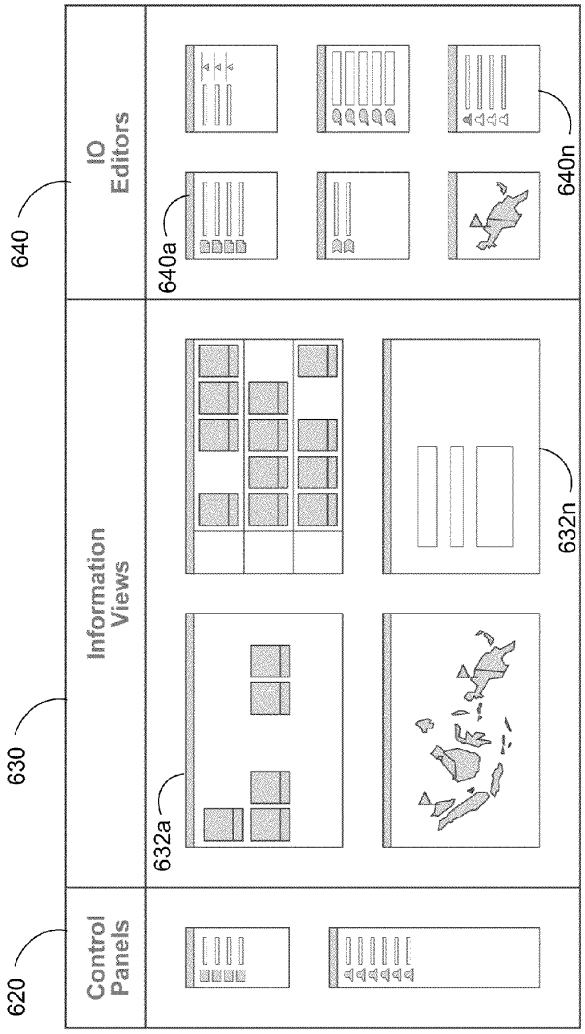
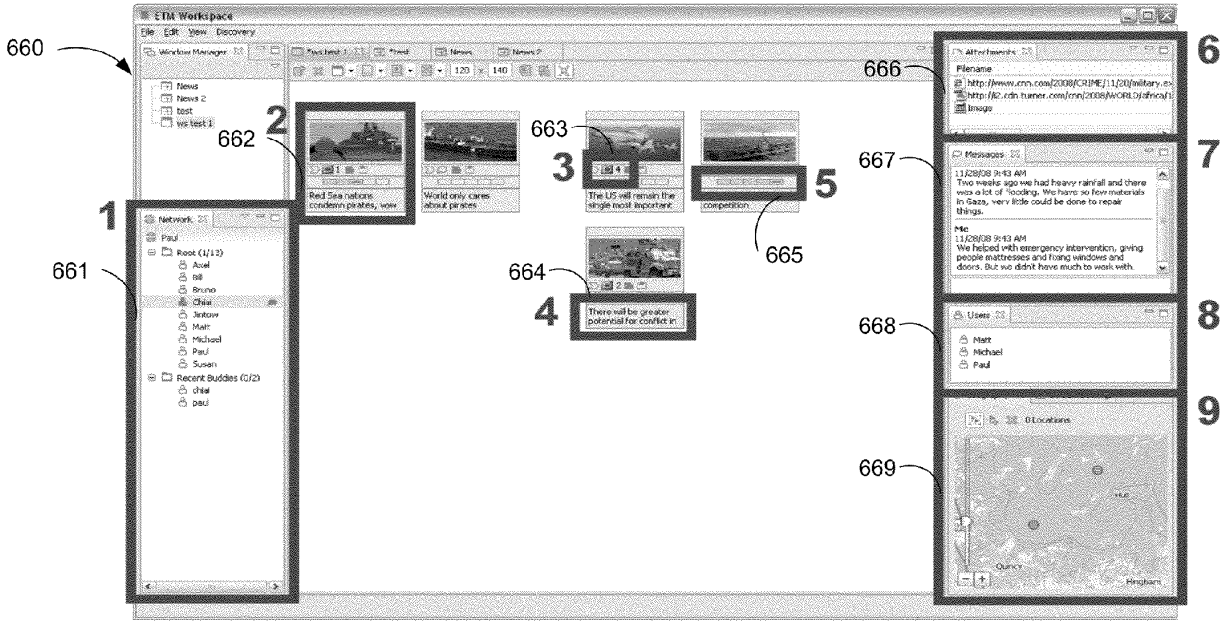

620
Control Panels
630
Information Views
632a
632n
640
IO Editors
640a
640n

FIG. 6B



1. Buddy List
2. Object (Discussion Subject)
3. Message Indicator (Counter)
4. Object / Discussion Heading
5. Collaborative Ratings
6. Shared Files (List or Thumbnails)
7. Threaded Discussion
8. Participants
9. Meta-data and shared applications

FIG. 6C

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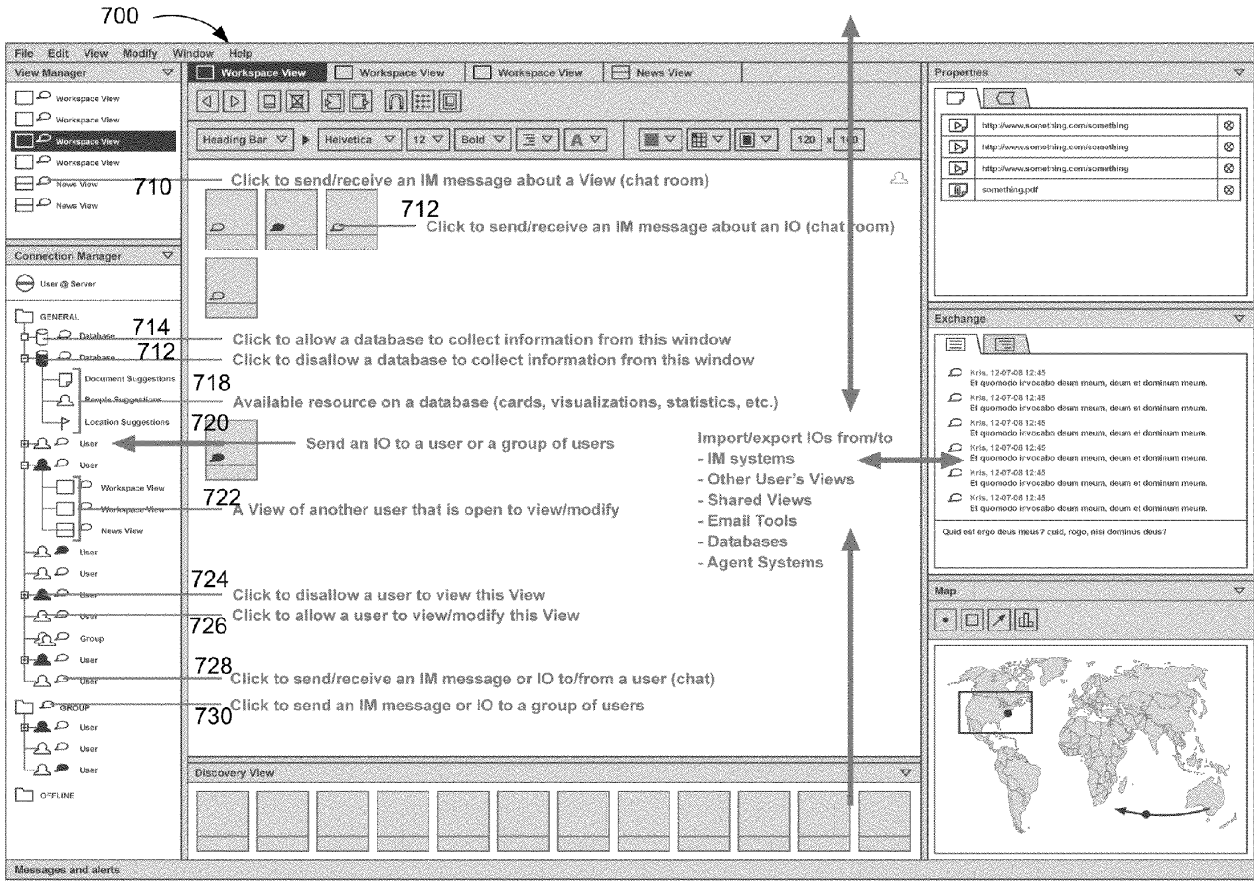


FIG. 7

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800
Display
URL to a web site
Flash Executables
Movie Documents
Office Document
PDF Documents
Other Documents
Attachments
Updates
Remote RSS Files
Remote Objects
Remote Files

FIG. 8

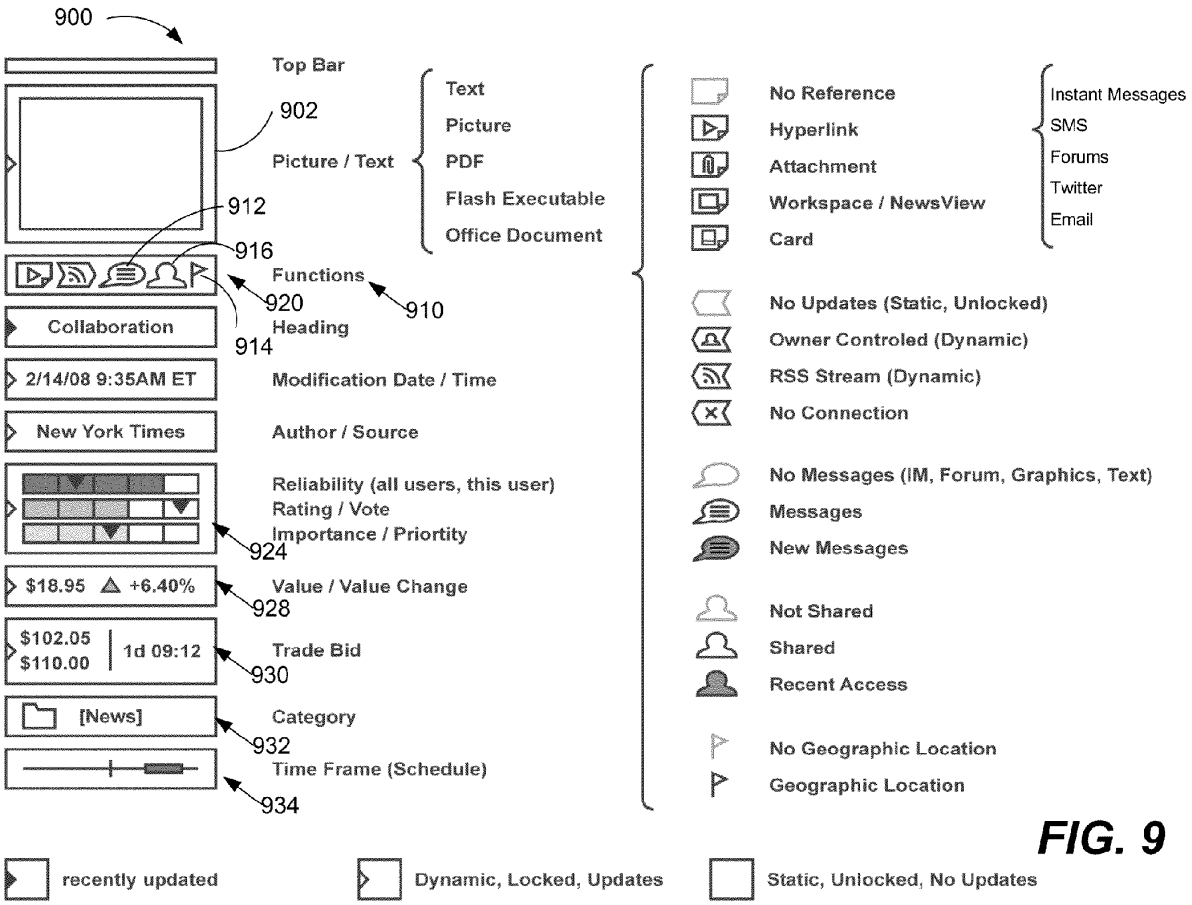


FIG. 9

Meta Platforms, Inc. v. Cogmedia LLC
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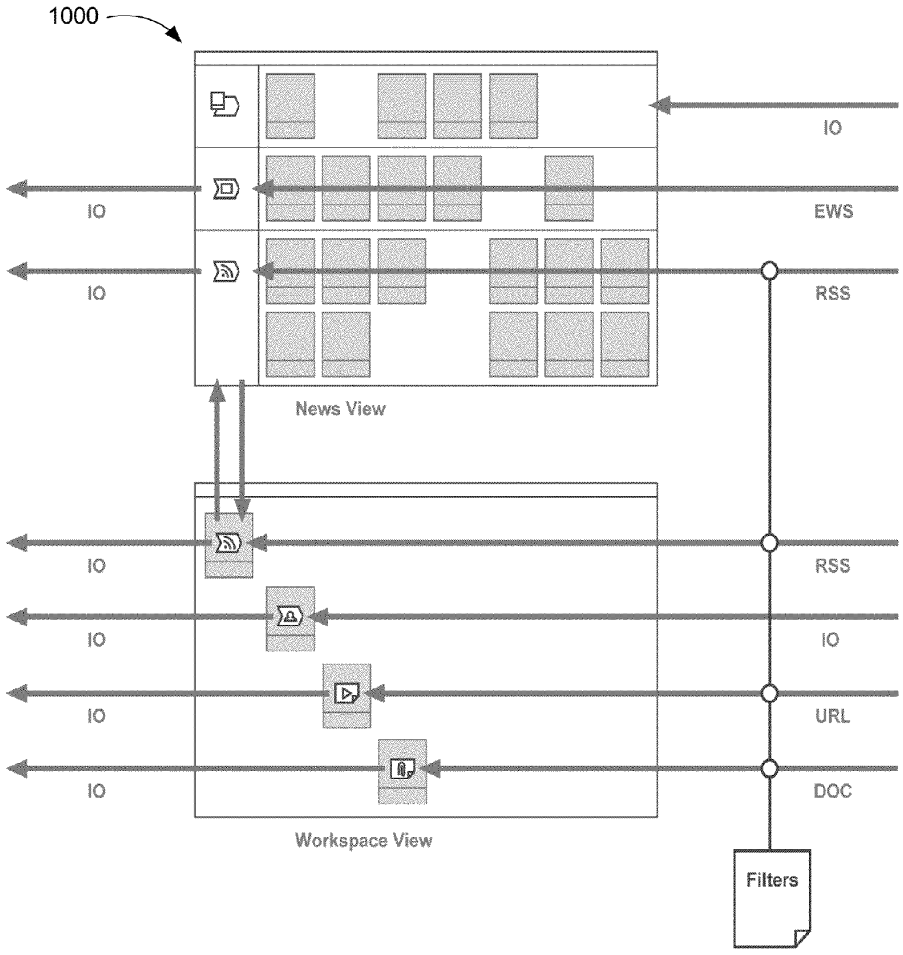

1000
IO
IO
EWS
IO
RSS
News View
IO
RSS
IO
IO
IO
URL
IO
DOC
Workspace View
Filters

FIG. 10

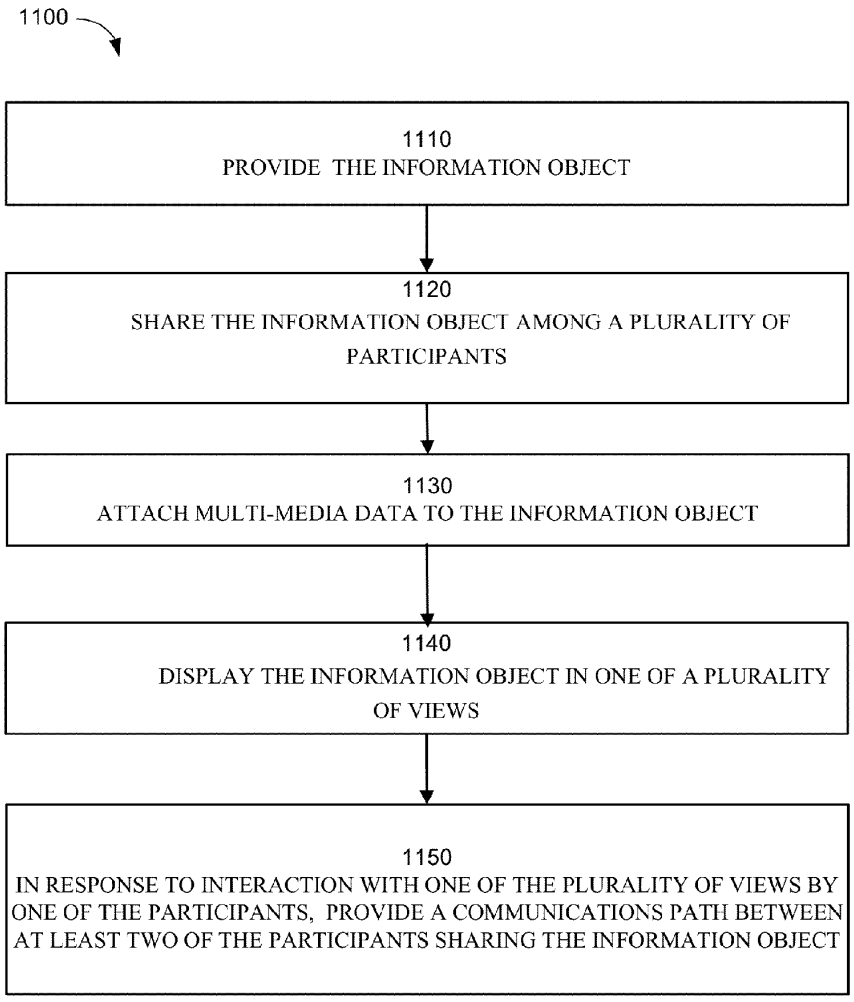

1100
1110
PROVIDE THE INFORMATION OBJECT
1120
SHARE THE INFORMATION OBJECT AMONG A PLURALITY OF PARTICIPANTS
1130
ATTACH MULTI-MEDIA DATA TO THE INFORMATION OBJECT
1140
DISPLAY THE INFORMATION OBJECT IN ONE OF A PLURALITY OF VIEWS
1150
IN RESPONSE TO INTERACTION WITH ONE OF THE PLURALITY OF VIEWS BY ONE OF THE PARTICIPANTS, PROVIDE A COMMUNICATIONS PATH BETWEEN AT LEAST TWO OF THE PARTICIPANTS SHARING THE INFORMATION OBJECT

FIG. 11

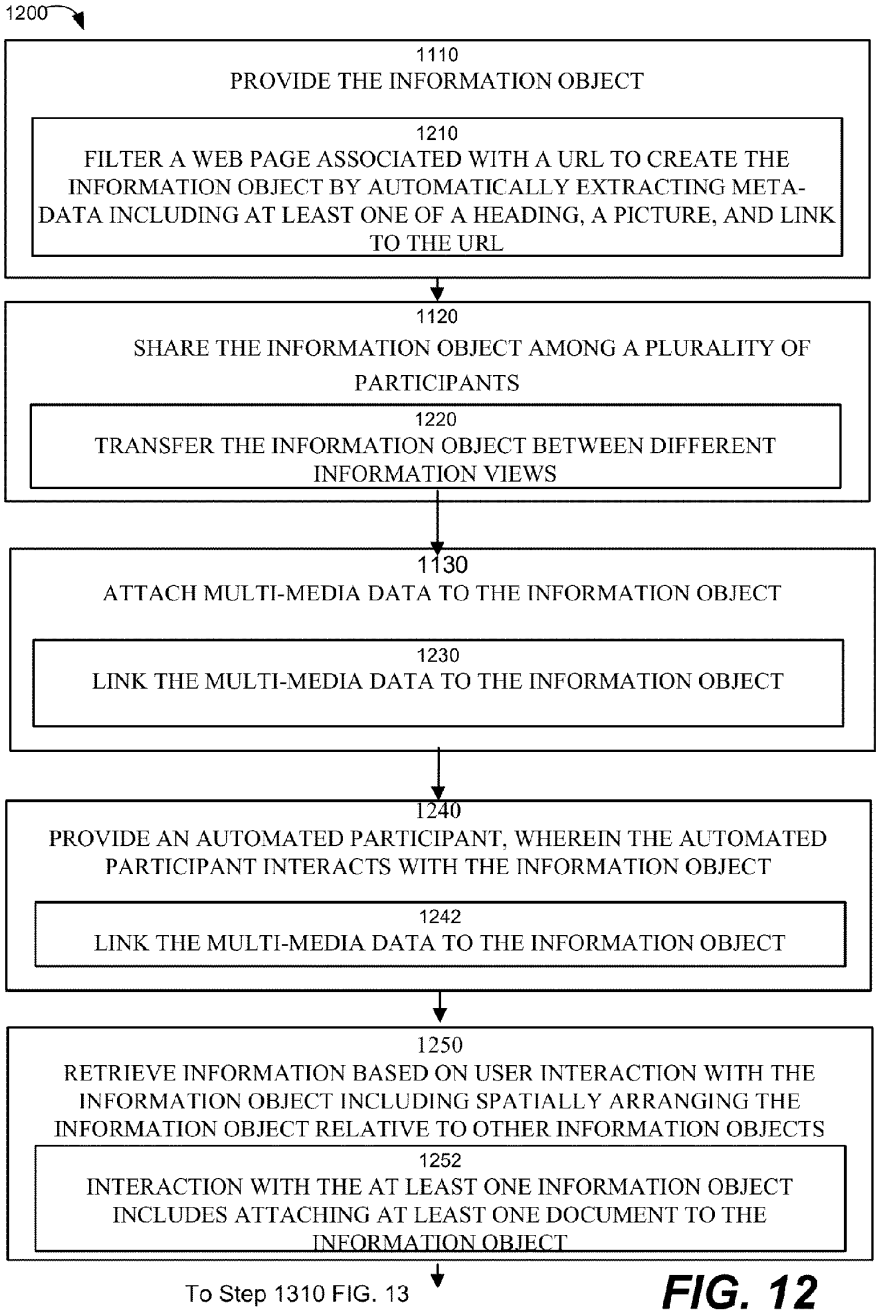

1200
1110
PROVIDE THE INFORMATION OBJECT
1210
FILTER A WEB PAGE ASSOCIATED WITH A URL TO CREATE THE INFORMATION OBJECT BY AUTOMATICALLY EXTRACTING META-DATA INCLUDING AT LEAST ONE OF A HEADING, A PICTURE, AND LINK TO THE URL
1120
SHARE THE INFORMATION OBJECT AMONG A PLURALITY OF PARTICIPANTS
1220
TRANSFER THE INFORMATION OBJECT BETWEEN DIFFERENT INFORMATION VIEWS
1130
ATTACH MULTI-MEDIA DATA TO THE INFORMATION OBJECT
1230
LINK THE MULTI-MEDIA DATA TO THE INFORMATION OBJECT
1240
PROVIDE AN AUTOMATED PARTICIPANT, WHEREIN THE AUTOMATED PARTICIPANT INTERACTS WITH THE INFORMATION OBJECT
1242
LINK THE MULTI-MEDIA DATA TO THE INFORMATION OBJECT
1250
RETRIEVE INFORMATION BASED ON USER INTERACTION WITH THE INFORMATION OBJECT INCLUDING SPATIALLY ARRANGING THE INFORMATION OBJECT RELATIVE TO OTHER INFORMATION OBJECTS
1252
INTERACTION WITH THE AT LEAST ONE INFORMATION OBJECT INCLUDES ATTACHING AT LEAST ONE DOCUMENT TO THE INFORMATION OBJECT
To Step 1310 FIG. 13

FIG. 12

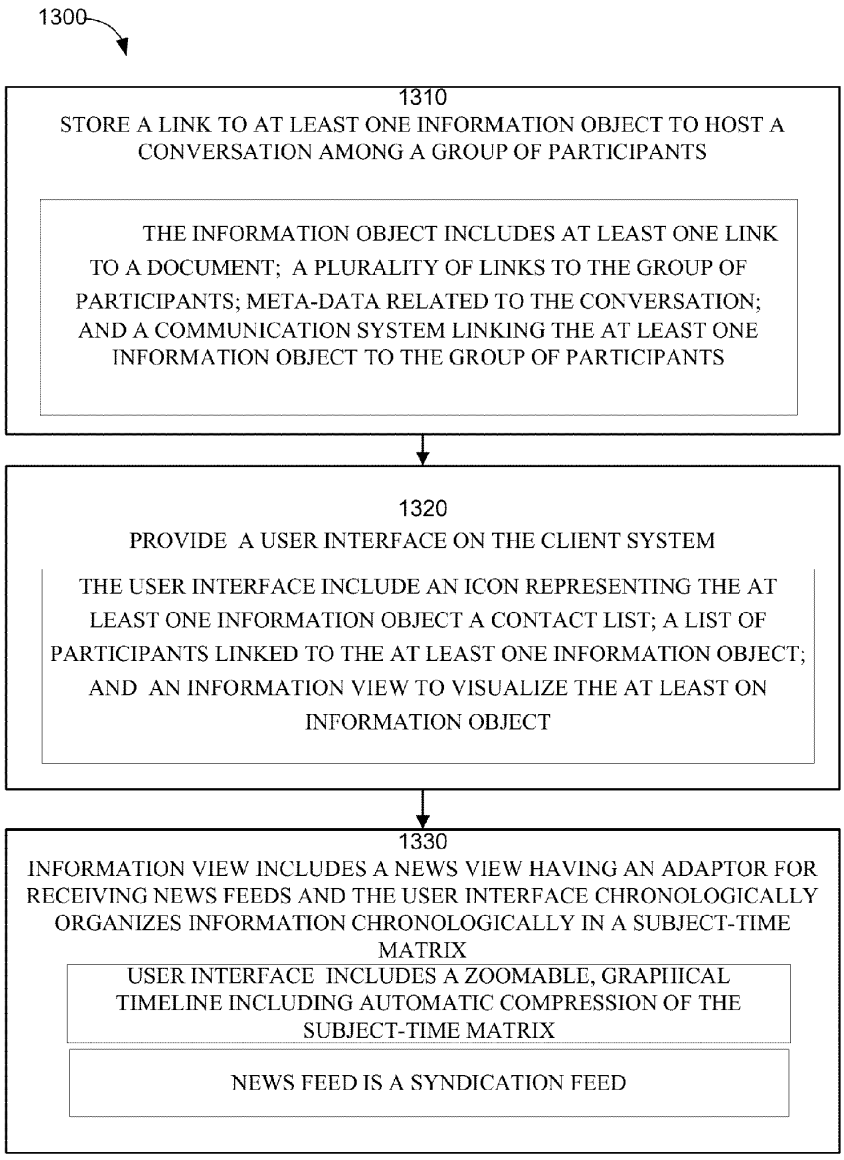

1300
1310
STORE A LINK TO AT LEAST ONE INFORMATION OBJECT TO HOST A CONVERSATION AMONG A GROUP OF PARTICIPANTS
THE INFORMATION OBJECT INCLUDES AT LEAST ONE LINK TO A DOCUMENT; A PLURALITY OF LINKS TO THE GROUP OF PARTICIPANTS; META-DATA RELATED TO THE CONVERSATION; AND A COMMUNICATION SYSTEM LINKING THE AT LEAST ONE INFORMATION OBJECT TO THE GROUP OF PARTICIPANTS
1320
PROVIDE A USER INTERFACE ON THE CLIENT SYSTEM
THE USER INTERFACE INCLUDE AN ICON REPRESENTING THE AT LEAST ONE INFORMATION OBJECT A CONTACT LIST; A LIST OF PARTICIPANTS LINKED TO THE AT LEAST ONE INFORMATION OBJECT; AND AN INFORMATION VIEW TO VISUALIZE THE AT LEAST ON INFORMATION OBJECT
1330
INFORMATION VIEW INCLUDES A NEWS VIEW HAVING AN ADAPTOR FOR RECEIVING NEWS FEEDS AND THE USER INTERFACE CHRONOLOGICALLY ORGANIZES INFORMATION CHRONOLOGICALLY IN A SUBJECT-TIME MATRIX
USER INTERFACE INCLUDES A ZOOMABLE, GRAPHICAL TIMELINE INCLUDING AUTOMATIC COMPRESSION OF THE SUBJECT-TIME MATRIX
NEWS FEED IS A SYNDICATION FEED

FIG. 13

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 14/664,178

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*	x 40 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*	x 210 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	730		TOTAL	

APPLICATION AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)	OR	RATE($)	ADDITIONAL FEE($)
Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
14/664,178	03/20/2015		730	4123/1001	20	2

CONFIRMATION NO. 8607

2101
Sunstein Kann Murphy & Timbers LLP
125 SUMMER STREET
BOSTON, MA 02110-1618

FILING RECEIPT

OC000000074346679

Date Mailed: 04/03/2015

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Paul Erich Keel, Cambridge, MA;
Jeffrey Huang, Lausanne, SWITZERLAND;

Applicant(s)

Paul Erich Keel, Cambridge, MA;
Jeffrey Huang, Lausanne, SWITZERLAND;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 13/925,031 06/24/2013
which is a CON of 12/563,416 09/21/2009 PAT 8499248
which is a CON of 61/116,747 11/21/2008
and is a CIP of 11/118,301 04/29/2005 PAT 7640511
which claims benefit of 60/566,723 04/29/2004

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

If Required, Foreign Filing License Granted: 03/31/2015

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The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/664,178**

Projected Publication Date: Request for Non-Publication Acknowledged

Non-Publication Request: Yes

Early Publication Request: No
** **SMALL ENTITY** **
Title

Methods and Apparatus for Managing and Exchanging Information Using Information Objects

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

Meta Platforms, Inc. v. Cogmedia LLC
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Ex. 1034 - Page 126 of 360

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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Sunstein Kann Murphy & Timbers LLP
125 SUMMER STREET
BOSTON MA 02110-1618

MAILED
APR 07 2015
OFFICE OF PETITIONS

Doc Code: TRACK1.GRANT

Decision Granting Request for Prioritized Examination (Track I or After RCE)	Application No.: 14/664,178

1. THE REQUEST FILED March 20, 2015 IS **GRANTED.**

The above-identified application has met the requirements for prioritized examination

A. ☒ for an original nonprovisional application (Track I).
B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination.** The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

A. filing a **petition for extension of time** to extend the time period for filing a reply;
B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims**, or a multiple dependent claim;
C. filing a **request for continued examination**;
D. filing a notice of appeal;
E. filing a request for suspension of action;
F. mailing of a notice of allowance;
G. mailing of a final Office action;
H. completion of examination as defined in 37 CFR 41.102; or
I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to Brian W. Brown at 571-272-5338.

/Brian W. Brown/
[*Signature*]

Petitions Examiner, Office of Petitions
(Title)

U.S. Patent and Trademark Office
PTO-2298 (Rev. 02-2012)

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/664,178	03/20/2015	Paul Erich Keel	4123/1001	8607

2101 7590 07/30/2015
Sunstein Kann Murphy & Timbers LLP
125 SUMMER STREET
BOSTON, MA 02110-1618

EXAMINER	
HAILU, TADESSE	

ART UNIT	PAPER NUMBER
2173	

NOTIFICATION DATE	DELIVERY MODE
07/30/2015	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptomail@sunsteinlaw.com

Office Action Summary	Application No. 14/664,178	Applicant(s) KEEL ET AL.	
	Examiner TADEESE HAILU	Art Unit 2173	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *March 20, 2015*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-20* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-20* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *3/20/2015* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date *3/20/2015*.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

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DETAILED ACTION

1. The present application (TrackOne application) is being examined under the pre-AIA first to invent provisions. This Office action is responsive to the above identified application filed March 20, 2015.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-3, 6, and 7 are rejected under pre-AIA 35 U.S.C. 102(a) as being anticipated by Nickerson et al (20030115023 A1).

As per claim 1, Nickerson discloses a computer-implemented method ***(flowchart of Fig. 10, 11A, 11b or 12)*** of interacting with a plurality of arbitrary data items ***(e.g., particular pages or websites) in*** which at least one computer initiates execution of software instructions to perform computer processes ***(for example web server 14 hosts or otherwise supports at least one website 26 including one or more pages 28, paragraph 0024),*** the method comprising

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, multimedia data, and a URL (***the method begins at step 400, where collection module 42 may perform a crawl or otherwise identify the pages 28 of website 26 incorporating tool 30. At step 402, collection module 42 may parse (i.e. extract) pages 28 to identify their titles, URLs, and any other appropriate information (paragraphs 0037, and 0086***);

using the extracted data to cause display of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, a multimedia window, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions (***using the collected (parsed or extracted) information (reaction information) for particular pages 28 , rendering, the reaction information for page 28 which may include, in any suitable combination and without limitation, the title, the URL, the start time and date, the reaction time and date, the user reaction, the reaction user identifier, and web profile information (paragraphs 0045, 0051, 0084). Furthermore the parsed pages within a browser window 52 (information object or card) maintains or renders any type of information including multimedia content).***

As per claim 2, Nickerson teaches the method according to claim 1, wherein (i) one of the set of icons gives graphical access to a vote function by which a user can provide a vote associated with the information object and (ii) one of the indicators displays the total number of votes, associated with the information object, that have been received ***(Nickerson is directed to collecting a user response to an explicit***

question specifically concerning a particular web page of a website. Nickerson further discloses rating or voting at paragraphs 0050, 0056, 0065, 0073 and Fig. 6 as required in the claim.

As per claim 3, Nickerson teaches a method according to claim 1, wherein (i) one of the set of icons gives graphical access to a comment function by which a user can create a comment relating to the information object and cause the comment to be associated with the information object and shared among users who view the information object and (ii) one of the indicators displays the total number of comments, associated with the information object, that have been associated with the information object (***Nickerson is directed to collecting a user response to an explicit question specifically concerning a particular web page of a website. Nickerson further discloses applying comment at paragraphs 0044, 0054, 0060, Figs. 4 and 6 as required in the claim.)***

As per claim 6, Nickerson teaches "causing to be displayed, at the same time as the representation, a map including a location, marked on the map, associated with at least one of the information objects" (Nickerson, pargraph 0037).

As per claim 7, Nickerson teaches responsive to a graphical input applied to the displayed location, causing the location to be edited in accordance with the graphical input" (Nickerson, pargraph 0037).

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 4 and 5 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Nickerson et al in view of US Boulton et al (U.S. 5,537,618).

As per claim 4, Nickerson teaches a mechanism for receiving comments or other textual input from user 16 in association with a particular page 28 [0060] In one embodiment, a question mark or other symbol 64 may be associated with rating scale 60 to allow user 16 to provide comments relating to page 28, one or more specified aspects of page 28, one or more items associated with page 28, or any other appropriate comments [0054].

But, Nickerson does not seem to teach the one of the indicators changes its appearance to indicate the presence of a comment, associated with the information object that has not yet been read by the user.

However, Boulton is directed to method and apparatus for implementing user feedback in a computer environment. The feedback record is preferably stored on a database with other feedback records, which are read from the database and presented to the reviewer by displaying a viewing interface on the second computer system. Boulton further discloses Read window 258 that shows feedback records that have

been read and not been read by the reviewer as determined by flag field 213 of a feedback record. Active window 260 shows how many feedback records are currently in the combined set of feedback records, i.e. how many feedback records are "active." Active window 260 also shows how many feedback records are inactive, i.e. Boulton at column 28, lines 50 - column 29, lines 6. Thereby, Boulton discloses status indicators for indicating whether feedbacks are read or not yet read.

At the time of the invention was made it would have been obvious to incorporate the feedback/comment status indicator (read or unread) with Nickerson so the user of Nickerson would be able to easily visualize the state/status of the feedback/comment/.

As per claim 5, Nickerson does not seem to teach that the format includes a user-accessible report on the number of times the information object has been replicated by a community of users.

However, Boulton teaches for the attributes 224 or 224', such as situation and sharing, the number or other identifier representing the segment is copied directly from the attribute field from feedback record(i) into the appropriate index field of the visualizer record (column 46, lines 27-46). Thereby, Boulton reads on the claimed subject matter.

At the time of the invention was made it would have been obvious to incorporate the feature described by Boulton with Nickerson so that the system of Nickerson would be able to manage the feedback/comment record that is accessed or copied by other participants sharing the feedback.

4. Claims 8-16 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Nickerson in view of Rosenblatt et al (US 20040199514 A1)

As per claims 8-16, Nickerson generally relates in general to communications and more particularly to collecting a user response to an explicit question specifically concerning a particular web page of a website. Nickerson further describes a system 10 that includes several computing devices wherein one of the computing devices (server 18) may operate on at least one shared computer system (paragraph 0023).

Although Nickerson further describes sharing information objects, files or folders among the computing device users. Nickerson does not clearly disclose that the sharing mechanism is via a **move** command (as recited in claims 9), a **copy** command (as recited in claims 8 and 11), and a **send** command (as recited in claim 12).

Rosenblatt, on the other hand discloses information sharing mechanism via a **move command** (see paragraphs 0004, 0045, 0045, and 0059) , **a copy command** (see paragraphs 0036, 0043, and 0050), **and a send command** (see paragraphs 0023, 0026, and 0029). Thus, Sharing, via copying and/or moving, information file, through a communications program such as an IM program may provide an extra layer of security that helps to prevent the other aspects of a system from being exposed and jeopardized. Thus, to obtain the above advantages, at the time of the invention was made it would have been obvious to combine the sharing command (copy/move or drag-drop) with Nickerson's shared computer system (paragraph 0023).

Therefore, it would have been obvious to combine Nickerson and Rosenblatt to obtain the invention as specified in claim 8, 9, 11 and 12.

As per claim 10, Nickerson in view of Rosenblatt teaches a method according to claim 1, further comprising: serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user; also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a collection of a second user (Rosenblatt, Fig. 5B-5J, paragraphs 0003, 0016, 0045, Fig. 4) .

As per claim 13, Nickerson in view of Rosenblatt teaches a method according to claim 1, further comprising: causing an information object to be shared with another user when the information object and the other user have been graphically selected (Rosenblatt, paragraphs 0024, and 0038).

As per claim 14, Nickerson in view of Rosenblatt teaches a method according to claim 1, further comprising: causing an information object to be shared with another user via an instant message sent through an integrated instant messaging system as a result of graphical selection by a first user (Rosenblatt, 0024, 0025).

As per claim 15, Nickerson in view of Rosenblatt teaches a method according to claim 1, further comprising: serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user; also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, that are related to one or more information objects in the first collection as a result of being in one or more collections, of other users, that also include at least one of the information objects in the first collection (Rosenblatt, 0068, 0069, Figs. 5I, and 5J).

As per claim 16, Nickerson in view of Rosenblatt teaches a method according to claim 1, further comprising: serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user; also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, wherein any given member of the second set of information objects is both included in a collection of another user and the other user has been selected by the first user (Rosenblatt, 0068, 0069, Figs. 5I, and 5J).

5. Claims 17-20 are rejected under pre-AIA 35 U.S.C. 102b as being anticipated by Maybury et al (US 6,961,954).

Maybury is directed to automated segmentation, information extraction, summarization, and presentation of broadcast news or news feed. Maybury discloses a news story or news feed organized in a table with a plurality of rows and column (Abstract, Figs. 3-9).

As per claim 17, Maybury discloses a computer-implemented method ***(flowchart of Figs 1 and 2)*** of interacting with a plurality of arbitrary data items ***(e.g., multimedia data , such as news broadcast)*** received from a plurality of news feeds (**news channels**), in which at least one computer initiates execution of software instructions to perform computer processes (***for example FIG. 1 is a block diagram of an automated system 10 for analyzing, selecting, condensing and presenting information derived from broadcast news)***, the method comprising:

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including at least one of a heading, multimedia

data, and a URL ***(configuring the automated system 10 for content-based segmentation, information extraction, summarization and presentation of the content of a video program (multimedia program) such as a news broadcast is shown in block diagram form, column 5, lines 11-20;*** and

using the extracted data to cause display of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, a multimedia window, and a heading (FIG. 14 is one view of a Web page showing data extracted and formatted to permit visualization of trends in usage of named entities; ***FIG. 18 is a view of a topic (headings), person, organization, or location named entity frequency page; a FIG. 19 is a view of a multimedia summary Web page;*** and

Wherein the information objects are organized for display in a plurality of rows, wherein each row corresponds to a distinct set of at least one of the news feeds (***See Figs, 5, 6, and 9, column 15, lines 2-27).***

As per claim 18, Maybury further discloses that each row is organized chronologically (Abstract, Figs. 3-9).

As per claim 19, Maybury further discloses that each column of the display corresponds to a shared time interval in each row (Figs. 3-9, column 15, lines 2-27).

As per claim 20, Maybury further discloses that at least one of the news feeds includes an item selected from the group consisting of cards, news feed items, alerts, announcements, motion detection events triggered by cameras, e-mails, instant messages, short message services, sensors, and real time search results (e.g., the

story item (news feed) selected include at least a news feed item and/or motion detection event by camera are described in Figs. 3-9 , and 19-22, column 3, lines 14-25, column 7, lines 3-13,).

CONCLUSION

6. It is noted that any citation to specific pages, columns, figures, or lines in the prior art references any interpretation of the references should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. In re Heck, 699 F.2d 1331-33, 216 USPQ 1038-39 (Fed. Cir. 1983) (quoting In re Lemelson, 397 F.2d 1006, 1009, 158 USPQ 275, 277 (CCPA 1968)).

7. Information regarding the status of an application may be obtained from the patent application information retrieval (PAIR) system. Status information for published application may be obtained from either Private –PAIR or Public-PAIR. Status information for unpublished applications is available through Private-PAIR only. For more information about the PAIR system, please see pair-direct.uspto.gov web site. Should you have questions regarding access to the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Tadesse Hailu, whose telephone number is (571) 272-4051, e-mail address tadesse.hailu@uspto.gov, and the Fax number is (571) 273-4051. The Examiner can normally be reached on M-F from 10:30 – 7:00 ET. If attempts

to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kieu Vu, can be reached at (571) 272-4057 Art Unit 2173.

/Tadesse Hailu/
Primary Examiner, Art Unit 2173

Notice of References Cited	Application/Control No. 14/664,178	Applicant(s)/Patent Under Reexamination KEEL ET AL.	
	Examiner TADEESE HAILU	Art Unit 2173	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2004/0199497	10-2004	Timmons, Michael	707/003
*	B	US-2004/0199514	10-2004	Rosenblatt et al.	707/010
*	C	US-2004/0111467	06-2004	Willis, Brian	709/203
*	D	US-2004/0177319	09-2004	Horn, Bruce L.	715/501.1
*	E	US-2005/0138631	06-2005	Bellotti et al.	719/310
*	F	US-2003/0115023	06-2003	Nickerson et al.	702/188
*	G	US-5,537,618	07-1996	Boulton et al.	715/745
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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Practitioner's Docket No. 4123/1001 *PATENT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Keel, Paul		
Application No.:	Not Yet Assigned	Group No.:	Not Yet Assigned
Filed:	Herewith	Examiner:	Not Yet Assigned

For: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

List of Sections Forming Part of This Information Disclosure Statement

The following sections are being submitted for this Information Disclosure Statement:

1. [x] Preliminary Statements
2. [x] Forms PTO/SB/08A and 08B (substitute for Form PTO-1449)
3. [ ] Statement as to Information Not Found in Patents or Publications
4. [ ] Identification of Prior Application in Which Listed Information Was Already Cited and for Which No Copies Are Submitted or Need Be Submitted
5. [ ] Cumulative Patents or Publications
6. [x] Copies of Listed Information Items Accompanying This Statement
7. [ ] Concise Explanation of Non-English Language Listed Information Items
   - 7A. [ ]EPO Search Report
   - 7B. [ ]English Language Version of EPO Search Report
8. [ ] Translation(s) of Non-English Language Documents
9. [ ] Concise Explanation of English Language Listed Information Items (Optional)
10. [x] Identification of Person(s) Making This Information Disclosure Statement

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.H./

Meta Platforms, Inc. v. Cogmedia LLC
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Section 1. Preliminary statements

Applicants submit herewith patents, publications or other information, of which they are aware that they believe may be material to the examination of this application, and in respect of which, there may be a duty to disclose.

The filing of this information disclosure statement shall not be construed as a representation that a search has been made (37 C.F.R. § 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability, or that no other material information exists.

The filing of this information disclosure statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.H./

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Section 2. Forms PTO/SB/08A and 08B (formerly Form PTO-1449)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Keel, Paul	Attorney Docket:	4123/1001
Serial No:	Not Yet Assigned	Art Group Unit:	Not Yet Assigned
Date Filed:	Herewith	Examiner Name:	Not Yet Assigned
Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects		

DATE: March 20, 2015

LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT

U.S. PATENT DOCUMENTS					
Examiner Initials	**Reference Number**	**Document Number**	**Issue Date**	**Inventor**	**Class/Subclass**
	AA	US 5,008,853	Apr. 16, 1991	Bly, et al	364/900
	AB	US 5,220,657	Jun. 15, 1993	Bly, et al	395/425
	AC	US 6,092,067	Jul. 18, 2000	Girling, et al	707/100
	AD	US 6,119,147	Sep. 12, 2000	Toomey, et al	709/204
	AE	US 6,266,649	Jul. 24, 2001	Linden, et al	705/26
	AF	US 6,327,590	Dec. 4, 2001	Chidlovskii, et al	707/5
	AG	US 6,597,377	Jul. 22, 2003	MacPhail	345/738
	AH	US 6,724,403	Apr. 20, 2004	Santoro, et al	345/765
	AI	US 6,768,999	July 27, 2004	Prager, et al	707/102
	AJ	US 6,829,619	Dec. 7, 2004	Wakamatsu, et al	707/104.1
	AK	US 6,912,505	Jun. 28, 2005	Linden, et al	705/14
	AL	US 6,931,591	Aug. 16, 2005	Brown, et al	715/517
	AM	US 6,973,456	Dec. 6, 2005	Elgart	707/10
	AN	US 7,028,264	Apr. 11, 2006	Santoro, et al	715/765
	AO	US 7,062,242	Jun. 13, 2006	Dajer, et al	455/232.1
	AP	US 7,113,917	Sep. 26, 2006	Jacobi, et al	705/14
	AQ	US 7,478,054	Jan. 13, 2009	Adams, et al	705/26
	AR	US 7,478,078	Jan. 13, 2009	Lunt, et al	707/1
	AS	US 7,543,237	Jun. 2, 2009	Kontny, et al	715/759
	AT	US 7,681,112	Mar. 16, 2010	Francis	715/201
	AU	US 7,765,490	Jul. 27, 2010	Lai, et al	715/810
	AV	US 7,904,323	Mar. 8, 2011	Wynn, et al	705/8
	AW	US 7,921,368	Apr. 5, 2011	Moody, et al	715/751
	AX	US 8,078,615	Dec. 13, 2011	Smith, et al	707/732
	AY	US 8,392,834	Mar. 5, 2013	Obrador	715/723
	AZ	US 8,743,148	Jun. 3, 2014	Gegner, et al	345/660

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.H./

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Section 2. Forms PTO/SB/08A and 08B (formerly Form PTO-1449)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Keel, Paul	Attorney Docket:	4123/1001
Serial No:	Not Yet Assigned	Art Group Unit:	Not Yet Assigned
Date Filed:	Herewith	Examiner Name:	Not Yet Assigned
Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects		

DATE: March 20, 2015

LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT

U.S. PATENT PUBLICATION DOCUMENTS					
Examiner Initials	**Reference Number**	**Document Number**	**Publication Date**	**Inventor**	**Class/Subclass**
	BA	US2002/0016725	Feb. 7, 2002	Eichstaedt, et al	705/5
	BB	US2002/0080180	Jun. 27, 2002	Mander, et al	345/769
	BC	US2002/0143877	Oct. 3, 2002	Hackbarth, et al	709/205
	BD	US2002/0169737	Nov. 14, 2002	Armstrong, et al	706/59
	BE	US2003/0009493	Jan. 9, 2003	Parker, et al	707/500.1
	BF	US2003/0135565	Jul. 17, 2003	Estrada	709/206
	BG	US2003/0158855	Aug. 21, 2003	Farnham, et al	707/102
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	BL	US2004/0054428	Mar. 18, 2004	Sheha, et al	700/56
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	BN	US2004/0153445	Aug. 5, 2004	Horvitz, et al	707/3
	BO	US2004/0193673	Sep. 30, 2004	Samji, et al	709/200
	BP	US2004/0201609	Oct. 14, 2004	Obrador	345/723
	BQ	US2004/0261013	Dec. 23, 2004	Wynn, et al	715/511
	BR	US2004/0267700	Dec. 30, 2004	Dumais, et al	707/2
	BS	US2005/0080807	Apr. 14, 2005	Beilinson, et al	707/102
	BT	US2005/0154639	Jul. 14, 2005	Zetmeir	705/14
	BU	US2005/0165880	Ju. 28, 2005	Moody, et al	709/200

Examiner Signature: /Tadesse Hailu/

Date Considered: 07/23/2015

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation *if not* in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.H./

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Section 6. Copies of Listed Information Items Accompanying This Statement

Legible copies of all items listed in Forms PTO/SB/08A and 08B (substitute for Form PTO-1449) accompany this information statement.

[X] Exception(s) to above:

U.S. patent citations are not included pursuant to the United States Patent and Trademark Office's September 21, 2004 waiver of the copy requirement in 37 CFR 1.98 for cited pending U.S. patent citations when the patent citations are available in the USPTO's IFW system.

[ ] Items in prior application, from which an earlier filing date is claimed for this application, as identified in Section 4.

[ ] Cumulative patents or publications identified in Section 5.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.H./

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Section 10. Identification of Person Making This Information Disclosure Statement

The person making this certification is the practitioner of record.

/Bruce D. Sunstein, #27,234/
SIGNATURE OF PRACTITIONER

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(type or print name of practitioner)

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125 Summer Street, 11th Floor
P.O. Address

Customer No.: 002101

Boston, MA 02110-1618

04123/01001 2263508.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.H./

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14664178	KEEL ET AL.
	Examiner	Art Unit
	TADEESE HAILU	2173

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	07/26/2015								
	1	✓								
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	20	✓								

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	11712	(customiz$3 organiz$4 arrang$4 personaliz$4) with icons same (desktop window surface display render$3 view$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/07/21 16:22
L2	4362	1 and graphical$3 near3 interface	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:23
L3	524	2 and context$5 and metadata	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:26
L4	520	2 and context$5 and metadata and (relationship relevan$4 associat$3 realted) same (content information data file page)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:28
L5	353	2 and context$5 and metadata and (relationship relevan$4 associat$3 realted) same (content information data file page) same (dynamic$4 automatic$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:31
L6	299	5 and information with (object view$3 window pane)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:32
L7	277	6 and (render$3 manipulat$4 display$3 arrang$3 organiz$5) with (topics metadata title object items)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:39
L8	25	7 and extract$3 with (title name id identifier URL heading)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:41
L9	6	8 and (render$3 manipulat$4 display$3 arrang$3 organiz$5) with extract$4 with (topics metadata title object items)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:42
L10	10	8 and (render$3 manipulat$4 display$3 arrang$3 organiz$5) with extract$4 with (topics information metadata title object items)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:45

Meta Platforms, Inc. v. Cogmedia LLC
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L11	25	8 and (render$3 manipulat$4 display$3 arrang$3 organiz$5) with (topics information metadata title object items)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:46
L12	25	11 and extract$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:49
L13	19	11 and extract$5 with metadata	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:49
L14	17	11 and extract$5 with metadata and configur$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:49
L15	0	11 and extract$5 with metadata and uniform$4 with display	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:53
L16	5	11 and extract$5 with metadata and uniform$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:54
L17	43	715/762-765.ccls. and extract$5 with metadata and uniform$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:57
L18	33	715/762-765.ccls. and extract$5 with metadata with (title name id identifier topics date place location other)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:58
L19	18	18 and configur$5 with (extract$3 represent$5 metadata)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:59
L20	0	19 and information with card	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:59
L21	6	19 and card	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 16:59
L22	814	(IOs IV) and information near object and information near view$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 17:02

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L23	568	information near object and information near view$4 and metadata same (arrang$5 render$3 display configur$3 organiz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 17:03
L24	56	23 and @py < "2007"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 17:03
L25	42	24 and (vote map comment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 17:07
L26	42	24 and (vote map comment) and format$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 17:07
L27	7	24 and (vote map comment) and format$4 and (first second) near3 (view viewpoint)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/21 17:08

EAST Search History (Interference)

<This search history is empty>

7/21/2015 5:11:16 PM
C:\Users\thailu\Documents\EAST\\default.wsp

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14664178	KEEL ET AL.
	Examiner	Art Unit
	TADEESE HAILU	2173

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
EAST - Searched USPAT, PGPUB, EPO, JPO, DERWENT	7/21/2015	TH

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 153 of 360

GENERAL POWER OF ATTORNEY

I/we hereby appoint the practitioners associated with the Customer Number: **02101**

with the firm: SUNSTEIN KANN MURPHY & TIMBERS LLP
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United States

As attorneys to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications where the assignee is named as an applicant or where the applications are assigned to the undersigned according to the USPTO assignment records or assignment documents, in which case the details will be listed on an attached form in accordance with 37 CFR 3.73(c).

Address all correspondence to: **Customer Number: 02101**

Direct all telephone calls to: 617-443-9292
Facsimiles to: 617-443-0004

(a) Full name and registered address of Applicant/ Inventor

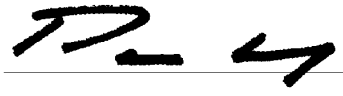
I/We, (a) Paul Erich Keel
Inventor/Applicant

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Address

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Dated this 28th day of March 2015

(b) Signature of Applicant/ Inventor

(b) 

(c) Signatory's name

By (c) Paul Keel

GENERAL POWER OF ATTORNEY

I/we hereby appoint the practitioners associated with the Customer Number: **02101**

with the firm: SUNSTEIN KANN MURPHY & TIMBERS LLP
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United States

As attorneys to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications where the assignee is named as an applicant or where the applications are assigned to the undersigned according to the USPTO assignment records or assignment documents, in which case the details will be listed on an attached form in accordance with 37 CFR 3.73(c).

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(a) Full name and registered address of Applicant/ Inventor

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Inventor/Applicant

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Dated this 24th day of March 2015

(b) Signature of Applicant/ Inventor

(b) _____

(c) Signatory's name

By (c) Jeffrey Huang

Electronic Patent Application Fee Transmittal

Application Number:	14664178
Filing Date:	20-Mar-2015
Title of Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects
First Named Inventor/Applicant Name:	Paul Erich Keel
Filer:	Bruce D. Sunstein
Attorney Docket Number:	4123/1001

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Claims in excess of 20	2202	7	40	280
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**280**

Electronic Acknowledgement Receipt	
EFS ID:	23939548
Application Number:	14664178
International Application Number:	
Confirmation Number:	8607
Title of Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects
First Named Inventor/Applicant Name:	Paul Erich Keel
Customer Number:	2101
Filer:	Bruce D. Sunstein
Filer Authorized By:	
Attorney Docket Number:	4123/1001
Receipt Date:	30-OCT-2015
Filing Date:	20-MAR-2015
Time Stamp:	12:03:30
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$280
RAM confirmation Number	9748
Deposit Account	194972
Authorized User	SUNSTEIN, BRUCE D.
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	kem4123_1001_Response.pdf	309846 1edc8fd81daf0b00bdd33dec57b9c6a945c088de	no	40
Warnings:					
Information:					
2	Affidavit-traversing rejectns or objectns rule 132	kem4123_1001_Declaration.pdf	122366 a0a76d12f6c032bc3106fca4b803530d5dbf3b7d	no	6
Warnings:					
Information:					
3	Power of Attorney	4123_GenPOA_Keel_Huang.pdf	633384 ad5ba2e2b62da11853deb5c7b39475fa8807cee6	no	2
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	30540 fceb01518162b18756b9b7c8f804d7af15f9a8ba	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1096136		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Practitioner's Docket No. 4123/1001 *PATENT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Keel et al.

Application No.: 14/664,178 Group No.: 2173
Filed: 03/20/2015 Examiner: Hailu, Tadesse
For: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TRANSMITTAL

1. Transmitted herewith is a response and declaration for this application.

STATUS

2. Applicant is a small entity. Small entity status was asserted at the time of filing.

EXTENSION OF TERM

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply. Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. 1.16(b)-(d)) has been calculated as shown below:

	(Col. 1)		(Col. 2)		(Col. 3)		SMALL ENTITY			
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE		ADDIT. FEE	
TOTAL	27	–	20	=	7	x	$ 40.00	=	$	280.00
INDEP.	2	–	3	=	0	x	$ 210.00	=	$	0.00
FIRST PRESENTATION OF MULTIPLE DEP. CLAIM						+	$ 0.00	=	$	0.00
							TOTAL ADDIT. FEE		$	280.00

Total additional fee for claims required $280.00

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FEE PAYMENT

5. Authorization is hereby made to charge the amount of $280.00 to Deposit Account No. 194972.

Charge any additional fees required by this paper or credit any overpayment in the manner authorized above.

FEE DEFICIENCY

6. If an extension and/or fee is required, charge Account No. 194972.

If an additional fee for claims is required, charge Account No. 194972.

Date: October 30, 2015

/Bruce D. Sunstein, #27,234/
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04123/01001 2397206.1

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Keel	Docket No.:	4123/1001
Appl. No:	14/664,178	Art Unit:	2173
Filed :	March 20, 2015	Examiner:	Hailu
		Conf. No:	8607

Title: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

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VIA USPTO ELECTRONIC FILING SYSTEM

Mail Stop AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE A

Dear Sir:

In response to the Office Action of July 30, 2015, please amend the above-identified application as follows.

Amendments to the Description begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 12 of this paper.

Remarks begin on page 18 of this paper.

Distinction of claimed subject matter over the prior art (in **Remarks**) begins on page 30 of this paper.

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Amendments to the Description:

1. Please replace paragraph [00057] with the following amended paragraph:

[00057] The IO attribute indicators shown in Figure 2 can indicate an IO state that can include such things as ownership of the IO, a geographic location associated with the IO, a time of creation of information associated with the IO, and other information. Depending upon the configuration, each IO 320 can further include features such as an instant messaging capability allowing to users in a distributed system to share access to an IO in order to exchange comments or messages between themselves concerning information associated with the IO. In one configuration, the system displays, within the IO perimeter, at least one messaging icon operable by a user to send a message to an IO associated with at least one other user, thus enabling collaboration. In one configuration, clicking on the messaging icon allows users to add a time/author stamped message to an IO 320 that all users 108-2 through 108-N can see if they have a copy of this IO 320. For any user 108, the icon lights red if the IO 320 includes new messages that the user has not yet looked at, green if it includes messages that the user previously looked at, and gray if the IO includes no messages. The counter next to the icon displays the number of ~~comments~~ messages. It is to be understood a that reference to an IO 320 refers to an implementation of an information object, and as will be explained shortly, algorithms disclosed herein can analyze information about IOs, such as spatial relationships between IOs, and that such algorithms and processing can be applied to other representations of information objects besides IOs, such as desktop icons, physical locations of physical items such as items on a store shelf, and so forth.

2. Please insert the following paragraph [00058A] immediately after paragraph [00058]:

[00058A] Below are steps a user 108 can perform to create a card. The relation manager 150 creates and displays a new card in the workspace view. The user 108 may have performed a drag and drop of some content onto the workspace view 300, or may have selected a pull down menu in the workspace view to create a new card 320. In response,

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the relation manager 150 creates a new card record 160 in the database to correspond to the new card in the workspace view 300. The relation manager 150 associates an information source identified by the first user to the new card 320 created in the workspace view. In the case of a drag and drop, the information source can be identified via the information dragged into the workspace view 300. If the user created a new card from pull down menu selection, the workspace view 300 can prompt the user to specify a specific information source (that can be hyperlinked or embedded) such as a file system path and filename, a URL or some other indicator. The relation manager 150 stores card attributes and an identity of the information source in the new card record 160 in the card database. The relation manager 150 stores a card creation time in the new card record. The relation manager 150 stores a card position in the new card record 160. The card position indicates positional information such as a corner pixel location (or a hierarchical location such as a specific window, directory, or desktop) as well as a window size of the new card 320 within the workspace view 300 of the first user 108. The relation manager 150 stores an identity of the first user in the new card record 160. The user for a new card becomes the author of that card 320. Once a card 320 is created, pictures and text can be dragged and dropped onto the icon area and text can be dragged and dropped on the heading bar of the card to cause those areas to automatically change. In this manner, a user 108 can create a card by simply dragging a hyperlink or file or other digital material onto the workspace view 300. A new card 320 is created where the hyperlink or file is dropped, a picture is added automatically (by searching the hyperlink destination or the file contents for an appropriate graphic), the heading is added automatically (usually the web site or file name), and a link or embedded attachment is automatically created from the file or the web site reference by the hyperlink.

3. Please replace paragraph [00062] with the following amended paragraph:

[00062] The news server 152 produces (i.e. provides information feeds for) the News View 305 to allow users 108 to collect IOs 320 for addition to the Workspace View 300. IOs 320 in the News View 305 represent information from a variety of other information sources. Feed examples includes news, alerts, announcements, motion detections on security cameras, emails, IMs, SMSs, sensors, real time search results, and custom

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content. An analogy of the News View 305 is a "news stand" in which recent or periodic information is available. In one configuration, the News View 305 displays the contents IOs 320 from news servers 151 that may be distributed through the network 101 within one of more computer systems 110. IOs 320 in the News View 305 can be organized by time and information sources (e.g., by topic or content area) as well as by geographic locations associated with the information represented by each IO 320, and can be filtered for user specific keywords. Users 108 are able to copy IOs 320 between the Workspace View 300 and the News Views 305. IOs 320 copied from the News View 305 to the Workspace View 300 may be static and not change in content, or such IOs 320 may dynamically adapt to modifications in content so that as the information source associated with an IO 320 produces new information.

4. Please replace paragraph [00067] with the following amended paragraph:

[00067] In this manner, the system disclosed herein provides a novel process for exchanging information and for asynchronous, decentralized, remote, and cross-organizational collaboration. In particular, users 108 use their individual Workspace Views 300 to organize and analyze information. The exchange server 153 produces the exchange view 315 to display cards (IOs) 320 that are concurrently displayed in one or more workspace views 300 of at least one other user 108. The exchange view 315 can display cards (IOs) 320 in prioritized order, or alternatively can display cards 320 the way they are arranged on another users Workspace. This allows users 108 to view each other's Workspaces 300 as they appear to those other users 108. The exchange view 315 displays (in prioritized order in one configuration) the IOs 320 created by all collaborating users 108 (or those with the appropriate access permissions or security levels). The exchange server 153 manages the display and exchange of card (IO) information between exchange views 315 and can include filter features to allow a user 108 to only see cards (IOs) from selected users 108 (as opposed to all cards (IOs) in all workspaces 300 of all users 108). The users 108 can copy relevant IOs 320 from their exchange views 315 to their Workspace Views 300. Users 108 can take "ownership" over IOs 320 copied from their exchange views 315 and these IOs 320 are now modifiable by the user 108. In one configuration, when a user takes ownership of an IO

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320, the IO 320 is no longer synchronized with a counterpart IO on the IO author's Workspace View. In another configuration, once an IO 320 is owned exclusively by a user 108, these IOs 320 can no longer be used for collaboration such as by "instant messaging," IO commenting, or "IO voting."

5. Please insert the following paragraphs [00076A] through [00076F] immediately after paragraph [00076]:

[00076A] The relation manager 150 is able to analyze the spatial arrangement of the cards 320 as provided by the user 108 in the workspace view 300 in order to deduce or infer relations between the information sources associated with the cards 320. In response, the database server 154 can provides other cards based on matching card records 160 maintained in the card database 125 that may be of interest to that user based on the analysis of the spatial arrangement of the cards 320 on that user's workspace view 300. The database server 154 is thus capable of inventing or deriving additional relations 170 based on the analysis of previous relations. For example if card A is related to card B and card B is related to card C, then the database server 154 can decide to relate card A and C because the indirect relation suggests a partial correlation. In this manner, the system disclosed herein provides a novel process for organizational knowledge management based on information merging. Users 108 use their individual workspace views 300 (or operating system desktops and file systems) to organize and analyze information. Additions to the workspace views of all users are collected in the card database 125. The database items including the relations 170 and the card records 160 are combined into one coherent network of cards using the relation processing algorithms 155. The number of relations 170 between individual cards 320 may differ and can indicate the "strength" or "importance" of a relation 170 (or its unimportance or weakness). Relations 170 in the database 125 may be complementary or conflicting, speculative or concrete. The database views 310 of individual users 108 display (in prioritized order) cards 320 available in the database (as records 160) that are related or relevant to the cards 320 on a user's workspace view 300 based on the relations discovered via application of the relation processing algorithms 155.

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[00076B] The activities and contents on the individual users Workspace Views are monitored and recorded by the Recognition Functions. The Recognition Functions maintain a record of all active and erased cards including a list of all current and past owners and users of individual cards. The Recognition Functions record and combine all explicit relations among cards established by the users as well as all implicit relations established by the Algorithms. The Recognition Functions keep track of all interactions that take place among users. An interaction is registered if a user copies a card, views the content associated with a card, or adds a comment, vote or notification to a card.

[00076C] The relation manager 150 analyzes card (IO) records 160 and card relations 170 within the card (IO) database 125. The results of this analysis can produce an indication of other card records 160 in the card database 125 that correspond to other cards 320 that are not currently displayed in the workspace view 300 of the user 108, but that might be of interest to that user operating that workspace view 300. A transformation algorithm 155 that can, for example, compare the combination of spatial relationships 170 that identify closely placed cards 320 in the workspace view 300. For those cards 320 that are close to each other, the transformation algorithm 155 can compare the content of those cards (i.e., can compare the information sources referenced by these cards) to identify a common subject. Alternatively, the transformation algorithm 155 can compare the creation time of closely spaced cards. In another alternative, the transformation algorithm 155 can compare user identities of users 108 who have accessed these cards. Using these metrics (e.g. a common creation time window, or a common subject, common users or use patterns), the transformation algorithm 155 can identify, in order of relevance, a set of resultant cards not already placed in that user's workspace 300. These can be shown to the user in the database view 310. Additionally, the current arrangement of exchange view cards 320 can be reordered to reflect the newly discovered relations of the group of cards so that cards of other users that might be of importance to the user (that are already in the exchange view) are more to the front of the line or list in the exchange view to be more noticeable to that user. In one configuration, cards 320 displayed on views not only hint relevant information but also inform about people (the authors of the cards) with relevant knowledge on a particular topic. This can foster the

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creation of teams or communities of interest and help to build knowledge-based relationships between people due to information objects those people spatially organize in particular ways.

[00076D] The relation manager 150 applies at least one interpretation algorithm 155 between card (IO) records 160 in the card database 125 to create relations 170 between card records 160 in the card database 125. The relation manager 150 applies a spatial relation algorithm 155 that discovers spatial relations 170 between position information of at least two card records 160 in the card database 125 that are associated with cards 320 displayed on the graphical user interface 132 in the first set of cards. The relation manager 150 identifies implicit relations between cards in the first set of cards displayed on the graphical user interface based on proximity of cards on the graphical user interface. Thus, how close or far apart cards are can determine a strength or week relationship between cards 320. The relation manager 150 identifies implicit relations between cards in the first set of cards displayed on the graphical user interface based on horizontal alignment of cards 320 on the graphical user interface 132. Horizontal alignment can be suggestive of a list of items and transformation algorithms 155 can perform analysis of cards 320 arranged horizontally to suggest other cards that might be successor cards in the list. The relation manager 150 identifying implicit relations between cards in the first set of cards displayed on the graphical user interface based on vertical alignment of cards on the graphical user interface. Likewise, vertical arrangements of cards 320 might also be suggestive of a card list. The relation manager 150 identifying implicit relations between cards in the first set of cards displayed on the graphical user interface based on at least some overlap of cards on the graphical user interface. Overlapping cards can suggest a grouping relationship. It is to be understood that the spatial relations noted above are not limited to vertical, horizontal and overlap. Other spatial relations can exist and be analyzed as well, such as relative size relations between cards, or exclusive (i.e. alone) or particular placement (e.g. in a certain corner, in center, etc.) of cards 320 in certain regions within the graphical user interface 132. Additionally, spatial processing algorithms can recognize card clusters that define groups of cards in close proximity to one another that create a cluster that is distinct from other

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clusters of other cards 320. The relation manager can detect and analyze other relations as well besides spatial relations. As an example, context relations concerning use, access (e.g. copying) or other operations on cards can be detected that are based on time of card creation or modification, which users access a card, and relation of content between cards that have similar or relating subject matter. The relation manager 150 applies at least one context relation interpretation algorithm 155 to discover contextual relations between card records 160 in the card database 125. The contextual relations 155 indicate commonality between at least two card records 160 based one or more relationship criteria. In one configuration, the relation manager 150 can detect and analyze chronological context of the at least two card records (e.g., sequence of creation or modification of card information). In another configuration, the relation manager 150 can detect and analyze collaborative context by at least two users 108 of at least two cards 320 respectively associated with the card records 160. An example of collaborative context is when two or more users share two (or more) cards such as by providing comments to those cards, or using instant messaging to discuss information associated with the cards, or via other common access (e.g., copying to workspace) to the cards by those two or more users. In another configuration, the relation manager 150 can detect and analyze similarities of content identified by the at least two card records using keyword or subject or title matching, for example. In this manner, using contextual relations, the relation manager 150 can determine, for example, that if user A and B use the same card then other cards used by user A and B are more likely to become related. Card content can include content displayed on the card, parameters associated with the card, or information content hyperlinked to the card or metadata about the card (e.g., creation time, time of last access, time of last copy, user access history, etc.) that might not be readily visible from viewing the cards in a view. In one configuration, the database contents are evaluated based on the relations between cards. The relation manager 150 can thus establish relationships among cards 320 based on comparison of content and spatial history of card usage. Content relations are established based on a comparison of card contents such as headings, contents of hyperlinked files, and image descriptions, whereas context relations are established based on the spatial location of cards, the collaborative use of cards, or the virtual organization of cards (e.g. the

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hierarchical organization of files in computer directories). For example, two relations between two cards can be valued more than one relation between two cards. This is because two relations between two cards means that two different algorithms both established a relation between these two cards, although such relations may have been established for different reasons.

[00076E] Four distinct types of Database Algorithms examine the networked contents of databases by defining a starting point, a search path, an end point, and the order in which the search results are returned: The first type of Database Algorithms defines the Start Point of a database search. The Start Point refers to a node (IO) in a database from where directly and indirectly related information is being retrieved. A Start Point may be defined though a conventional database query that contains text or graphical information. This means that a Start Point might reflect a node that contains similarities with information that a particular user is currently working with, focusing on, or searching for. A Start Point can also be the most recently active node in the database such as the most recently added, retrieved, traversed, or modified node. Furthermore, a Start Point might be defined through so-called "Stimuli" or "Focal Points" that are placed and dynamically displaced by the Database Algorithms. The Start Point continuously changes its location and multiple Start Points may exist simultaneously. In the case of multiple Start Points the search progresses in parallel from multiple locations and in multiple directions. Every search returns the node referenced by the Start Point as well as a selection of directly and indirectly connected nodes. The selection of related nodes is defined by the Search Path. By default, the second node returned is the adjacent node with the most relations. The same procedure applies for all subsequent nodes unless specified differently by the Search Path. The second type of Database Algorithms defines the Search Path. The search path determines how the network is traversed. Every search initiates at a Start Point and proceeds by examining adjacent nodes. By default, adjacent nodes with many relations are examined first. Previously examined nodes are ignored. The Database Algorithms offer a variety of options for the examination of less heavily connected nodes. For example, the Curiosity Algorithm is used to increase the probability for the examination of weaker branches. In addition, the Persistence Algorithm

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determines how many nodes associated with weaker branches will be considered. Other Database Algorithms dynamically define and modify the Search Path based on the relevance of currently explored nodes. The relevance of nodes is determined based on the card contents or the card authors. For example, a card may not contain relevant content but its author may be known for having created cards that contain relevant content. Thus, the author is considered a specialist in this particular area and the cards created by the author are given preference. The third type of Database Algorithms defines the End Point of a Search Path. The End Point may be determined through an analysis of the card contents, the distance from the Start Point, or the time passed since the start of an examination. In other words, the End Point represents either a satisfying search result or a state of decreasing patience or tiredness. For example, the Patience Algorithm terminates a search after the examination of certain number of nodes. The fourth type of Database Algorithms orders the search results. By default, the search result is a string of nodes that reflects the sequence in which the nodes were examined. Other criteria of organizing the search results include the distance of nodes from the Start Point, the number of relations associated with individual nodes, or the card properties such as card sizes, modification dates, authors, contents, notifications, comments, votes, accesses, font types, font styles, font sizes, pictures, and locations.

[00076F] The Unity Algorithm sorts cards (IOs) by the number of current and past users of individual cards. A card user is defined as somebody who created, copied, took ownership, reviewed the content, commented, or voted for a particular card. The Unity Algorithm assumes that the activity associated with a card is a meaningful way to determine the importance and popularity of the card. The Weight Algorithm sorts cards by the number of relations associated with individual cards. may be related twice with card B and once with card C. Thus, card A is associated with three relations, card B with two relations, and card C with one relation. The Weight Algorithm assumes that number of links associated with a card is a meaningful way to determine the importance and popularity of the card. The Relevance Algorithm is the same as the Weight Algorithms yet only considers relations that connect with cards the user is using. For example, a card on a user's Exchange View may be related to four cards only one of which the user is

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using on his Workspace View. Thus, the number of associated relations for this card is assumed one rather than four. The Relevance Algorithm is particularly useful to spot cards that have some relevance with cards the user is already using. The Group Algorithm fosters the information exchange among users that have had frequent interactions in the past. The Group Algorithm considers an interaction when a user copies a card from another user, takes ownership over another user's card, or adds a comment or a vote to another user's card. The Group Algorithms orders cards based on the number of interactions that a particular user had with the individual card authors.

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A computer-implemented method of interacting with a plurality of arbitrary data items, in which at least one computer initiates execution of software instructions to perform computer processes, the method comprising:

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, ~~multimedia data~~ graphical and textual material, and a ~~URL~~ hyperlink; ~~and~~

using the extracted data to cause display, simultaneously, of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, ~~a multimedia window~~ an icon area for graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions; and

storing data corresponding to each of the cards in a database, configured so that each card in the database is sharable.

2. (Original) A method according to claim 1, wherein (i) one of the set of icons gives graphical access to a vote function by which a user can provide a vote associated with the information object and (ii) one of the indicators displays the total number of votes, associated with the information object, that have been received.

3. (Currently amended) A method according to claim 1, wherein (i) one of the set of icons gives graphical access to a ~~comment~~ message function by which a user can create a ~~comment~~ message relating to the information object and cause the ~~comment~~ message to be associated with the information object and shared among users who view the information object and (ii) one of the indicators displays the total number of ~~comments~~ messages, associated with the information object, that have been associated with the information object.

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4. (Currently amended) A method according to claim 3, wherein the one of the indicators changes its appearance to indicate the presence of a ~~comment~~ message, associated with the information object, that has not yet been read by the user.

5. (Original) A method according to claim 1, wherein the format includes a user-accessible report on the number of times the information object has been replicated by a community of users.

6. (Original) A method according to claim 1, further comprising:

further causing to be displayed, at the same time as the representation, a map including a location, marked on the map, associated with at least one of the information objects.

7. (Original) A method according to claim 6, further comprising:

responsive to a graphical input applied to the displayed location, causing the location to be edited in accordance with the graphical input.

8. (Canceled)

9. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a second collection of the first user;

responsive to (i) a graphical selection, by the first user, of an information object in the first view and (ii) a copy command that has been graphically entered by the first user, causing the selected information object to be copied from the first view to the second view.

10. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a collection of a second user.

11. (Original) A method according to claim 10, further comprising:

responsive to (i) a graphical selection, by the first user, of an information object in the second view and (ii) a copy command that has been graphically entered by the first

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user, causing the selected information object to be copied from the second view to the first view, so that the selected information object in the collection of the second user has been copied to the first collection of the first user.

12. (Original) A method according to claim 10, further comprising:

responsive to (i) a graphical selection, by the first user, of an information object in the first view and (ii) a send command that has been graphically entered by the first user, causing the selected information object to be sent to the second user, so that the selected information object in the collection of the first user is made available to the second user to be included in the collection of the second user.

13. (Original) A method according to claim 1, further comprising:

causing an information object to be shared with another user when the information object and the other user have been graphically selected.

14. (Original) A method according to claim 1, further comprising:

causing an information object to be shared with another user via an instant message sent through an integrated instant messaging system as a result of graphical selection by a first user.

15. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, that are related to one or more information objects in the first collection as a result of being in one or more collections, of other users, that also include at least one of the information objects in the first collection.

16. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, wherein any given member of the second set of information objects is both included in a collection of another user and the other user has been selected by the first user.

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17. (Currently amended) A computer-implemented method of interacting with a plurality of arbitrary data items received from a plurality of ~~news feeds~~ information sources, in which at least one computer initiates execution of software instructions to perform computer processes, the method comprising:

obtaining additions and modifications to the information sources and converting the additions and modifications into data items;

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including ~~at least one of~~ a heading, ~~multimedia data~~ graphical and textual material, and a ~~URL~~ hyperlink; and

using the extracted data to cause display, simultaneously, of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, ~~a multimedia window~~ an icon area for graphical and textual material, and a heading;

wherein the information objects are organized for display in a plurality of rows, wherein each row is automatically collected and corresponds to a distinct set of at least one of the ~~news feeds~~ information sources and the data items therein are arranged chronologically.

18. (Original) A computer-implemented method according to claim 17, wherein each row is organized chronologically.

19. (Original) A computer-implemented method according to claim 17, wherein each column of the display corresponds to a shared time interval in each row.

20. (Currently amended) A computer-implemented method according to claim 17, wherein at least one of the news feeds includes an item selected from the group consisting of ~~cards,~~ news feed items, alerts, announcements, ~~motion detection events triggered by cameras,~~ e-mails, instant messages~~, short message services, sensors,~~ and sensor data ~~real time search results~~.

21. (New) A method according to claim 9, further comprising causing copies of information object to be synchronized with one another.

22. (New) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a view of a first set of information objects that constitute a collection of the first user;

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serving, to a client computing device of a second user, a view of a first set of information objects that constitute a collection of the second user;

storing the information objects in a database, each of the information objects being stored in association with data pertinent thereto including

any users thereof,

spatial location thereof in the workspace view,

content and metadata thereof, such metadata including comments and votes,

times of storage, viewing and copying thereof,

relationship thereof to any other information objects; and

processing information object data in the database to make a recommendation to the first user, wherein the recommendation is based on at least one of the criteria in the group consisting of:

number of direct and indirect relations of information objects in the collection of the first user with another information object in the database;

addition of a first pair of information objects to a collection of another user in short interval of time, of which one of the first pair of information objects is already in the collection of the first user;

presence of a second pair of information objects in the collection of the other user in close spatial proximity to one another, of which one of the second pair of information objects is already in the collection of the first user;

presence of a given information object in a row or column of information objects in the collection of the other user, wherein one of the information objects in the row or column is already in the collection of the first user;

popularity of an information object in the database, based on a popularity measure selected from the group consisting of number of users, number of views, number of copies made, number of comments made, number of votes, and combinations thereof;

presence of an information object from a second user with whom the first user previously exchanged information objects, comments or votes;

and combinations thereof.

23. (New) A method according to claim 22, wherein the processing to make the

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recommendation includes processing to recommend an information object that is not in the collection of the first user.

24. (New) A method according to claim 22, wherein the processing to make the recommendation includes processing to recommend another user who created an information object that is selected based on at least one of the criteria.

25. (New) A method according to claim 16, wherein each of the information objects in the second view is displayed in an order determined by a criterion selected from the group consisting of the information object's creation time, its access time, and combinations thereof.

26. (New) A method according to claim 17, wherein at least one of the information sources provides real-time search results.

27. (New) A method according to claim 17, wherein the contents of information objects in any given row is filtered to match a user-specified set of keywords for the given row.

28. (New) A method according to claim 17, wherein any given row is configurable to receive an information object deposited therein manually by the user using a graphical user interface.

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REMARKS

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Support for amendments to the claims 21
Distinction of claimed subject matter over the prior art 30
I. Nickerson (i) fails to disclose or suggest "configuring each [of a plurality of arbitrary data items] into a distinct information object", (ii) similarly fails to disclose or suggest "using the extracted data to cause display, simultaneously, of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, an icon area for graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions", and fails to disclose or suggest "storing data corresponding to each of the cards in a database, configured so that each card in the database is sharable." 30
II. Maybury fails to disclose or suggest the requirements of claim 17. 36

The examiner interview

The courtesy of Examiner Hailu in granting a telephone interview to the undersigned attorney with applicant Dr. Paul Keel on October 28, 2015, is acknowledged with appreciation. In the interview, there was discussion of claim 1 in relation to the Nickerson reference. Examiner Hailu maintained that paragraphs 45 and 52 of Nickerson disclose the subject matter of claim 1. Mr. Sunstein disagreed, pointing out, among other things, that the language relied upon by Examiner Hailu in paragraph 45 ("the reaction information may include the title, URL, start time and date, reaction time and date, user reaction") pertains to information entered by the user and not information caused to be displayed by the server (see earlier in the paragraph: "Tool 30, using the user's computer system, may communicate user reaction information for page 28 to server 18 before or after user 16 leaves page 28.") As to paragraph 52, Examiner Hailu took the position that

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because a web page could "include a picture of a particular make and model of vehicle" the contents of the web page could satisfy the requirements of claim 1. Mr. Sunstein disagreed.

Accompanying declaration

Accompanying this response is a declaration by one of the inventors, Dr. Paul Keel, which is submitted in support of the response.

Support for amendments to description

The Description is amended in this Response A to explicitly add to the present application material that is incorporated by reference. By way of background, each of the applications that is a source of priority for the present application is incorporated by reference. Moreover, each predecessor nonprovisional application that is a source of priority for the present application incorporates by reference each earlier application that is a source of priority for the predecessor. In short, there is a chain of incorporations by reference going back to the first filed application in the chain.

In these remarks we show the support for each amendment made to the present application. In the listing below, we use the following terminology to identify predecessor applications:

Application Number 1: Provisional Patent Application Serial Number 60/566,723, filed April29, 2004, entitled "METHODS AND APPARATUS FOR MANAGING AND INFERRING RELATIONSHIPS FROM INFORMATION".

Application Number 2: Patent Application Serial Number 11/118,301 (now US Patent Number 7,640,511), filed April29, 2005, entitled "METHODS AND APPARATUS FOR MANAGING AND INFERRING RELATIONSHIPS FROM INFORMATION OBJECTS".

The amendments to the Description have support as indicated below.

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Amendment Number 1, paragraph [00057].

For substituting "comments" with "messages", support is found in Application No. 2, page 13, lines 13-17 showing the correspondence of these words.

Amendment Number 2, immediately after paragraph [00058].

For paragraph [00058A], support is found in Application No. 2 starting on page 31 line 31 and ending on page 33 line 2.

Amendment Number 3, paragraph [00062].

Support is found in Application No. 1, page 27, lines 47-48.

Amendment Number 4, paragraph [00067].

Support is found in Application No. 2, page 18, lines 10-13.

Amendment Number 5, immediately after paragraph [00076].

For paragraph [00076A], support is found in Application No. 2 starting on page 19, line 25 and ending on page 20, line 17.

For paragraph [00076B], support is found in Application No. 1 starting on page 91, line 54 and ending on page 92, line 10.

For paragraph [00076C], support is found in Application No. 2 starting on page 21, line 16 and ending on page 22, line 8.

For paragraph [00076D], support is found in Application No. 2 starting on page 26, line 21 and ending on page 28, line 27.

For paragraph [00076E], support is found in Application No. 1 starting on page 88, line 43 and ending on page 89, line 36.

For paragraph [00076F], support is found in Application No. 1 starting on page 93, line 43 and ending on page 94, line 12.

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In the foregoing amendments, the insertions are taken verbatim from the referenced portions of the above applications (with various references in the copied text being deleted to avoid confusion), except that the parenthetical "(IO)", meaning "Information Object" is occasionally inserted after "card" and after "node" in the referenced portions. Support for "card" as an "Information Object" appears in the application, paragraph [00022]: "As used herein the term "card," "IO" and "information object" are used interchangeably, and a card is one example configuration or representation of an information object." Support for "node" as an "Object" appears in application No. 1 on page 51, line 25: "This section uses the words Objects, Items, Nodes, and Cards for similar concepts."

***

Claims 1-20 are pending. Claims 1, 3, 4, 17 and 20 have been amended so as to assure that the claims have an effective filing date no later than the filing date of Application No. 2. Claims 1 and 17 have also been amended in order to claim subject matter of the invention with greater precision, even though these claims previously distinguished over the prior art relied upon in the office action. Claim 8 has been canceled. Claims 21-28 have been added. Therefore, claims 1-7 and 9-28 are pending. Applicants respectfully request reconsideration of the claims in view of the above amendments and these remarks.

***

Support for amendments to the claims

The amendments to the Claims have support as indicated below.

Amendment to Claim 1

For substituting "multimedia data" with "graphical and textual material", support is found in paragraph [00052] ("The icon area allows for the placement of graphical and/or textual material …").

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For substituting "URL" with "hyperlink", support is found in paragraph [00016] ("IOs that are data files that can include other data files (such as documents, hyperlinks, and executables) …").

For substituting "a multimedia window" with "an icon area for graphical and textual material", support is found in paragraph [00052] ("The icon area allows for the placement of graphical and/or textual material …").

For "using the extracted data to cause display, simultaneously, of a representation of each of the information objects in a uniform format", see numerous figures, including, for example, Figs. 1, 4A, 4B, 5B, and 6B.

For "storing data corresponding to each of the cards in a database, configured so that each card in the database is sharable", see paragraph 76 (database), 92 (importation, which is a form of sharing), and 94 (sharing).

Amendment to Claims 3 and 4

For substituting "comment/s" with "message/s", support is found in amended paragraph [00057] ("… each IO 320 can further include features such as an instant messaging capability allowing to users in a distributed system to share access to an IO in order to exchange comments or messages between themselves concerning information associated with the IO.") and in Application No. 2, page 13, lines 13-17 showing the correspondence of these words.

Amendment to Claim 17

For substituting "news feeds" with "information sources", support is found in paragraph [00065] ("The News View provides users with the technology to effectively monitor and visualize additions and modifications from information sources such as web sites, databases, security cameras, alarm systems, sensors, news feeds and so forth.").

For adding the limitation "obtaining additions and modifications to the information sources and converting the additions and modifications into data items", support is also found in paragraph [00065] as recited above.

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For substituting "multimedia data" with "graphical and textual material", support is found in paragraph [00052] ("The icon area allows for the placement of graphical and/or textual material …").

For substituting "URL" with "hyperlink", support is found in paragraph [00016] ("IOs that are data files that can include other data files (such as documents, hyperlinks, and executables) …").

For substituting "a multimedia window" with "an icon area for graphical and textual material", support is found in paragraph [00052] ("The icon area allows for the placement of graphical and/or textual material …").

For inserting "automatically collected" and "data items therein are arranged chronologically" support is found in paragraph [00098] ("… News View having an adaptor for receiving news feeds and the user interface chronologically organizes information chronologically in a subject-time matrix …").

For "using the extracted data to cause display, simultaneously, of a representation of each of the information objects in a uniform format", see numerous figures, including, for example, Figs. 1, 4A, 4B, 5B, and 6B.

Amendment to Claim 20

For substituting "sensors" with "sensor data", support is found in paragraph [00065] ("The News View 305 provides users 108 with the technology to effectively monitor and visualize additions and modifications from information sources such as web sites, databases, security cameras, alarm systems, sensors, news feeds and so forth.…"). The substitution corrects a grammatical error. Only sensor data and not the sensor itself can be transmitted for information processing.

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The new Claims have support as indicated below.

New Claim 21

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Support is found in paragraphs [00017] ("Copies of IOs remain synchronized if displayed on different IVs."), [00048] ("IOs can be copied or transferred between the same or different types of IVs, copied or transferred between the IVs of the same or different users, remain synchronized if copied to multiple IVs, …") and [00092] ("The user can import an IO from another user into the Workspace View which will create an IO copy that is synchronized with the original IO.").

New Claim 22

For convenience in showing support, we reproduce this claim with reference numbers, which will be used below to indicate the source of support.

22. (New) A method according to claim 1, further comprising:

[22.1.] serving, to a client computing device of a first user, a view of a first set of information objects that constitute a collection of the first user;

[22.2.] serving, to a client computing device of a second user, a view of a first set of information objects that constitute a collection of the second user;

[22.3.] storing the information objects in a database, each of the information objects being stored in association with data pertinent thereto including

[22.3.1.] any users thereof,

[22.3.2.] spatial location thereof in the workspace view,

[22.3.3.] content and metadata thereof, such metadata including comments and votes,

[22.3.4.] times of storage, viewing and copying thereof,

[22.3.5.] relationship thereof to any other information objects; and

[22.4.] processing information object data in the database to make a recommendation to the first user, wherein the recommendation is based on at least one of the criteria in the group consisting of:

[22.4.1.] number of direct and indirect relations of information objects in the collection of the first user with another information object in the database;

[22.4.2.] addition of a first pair of information objects to a collection of another user in short interval of time, of which one of the first pair of information objects

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is already in the collection of the first user;

[22.4.3.] presence of a second pair of information objects in the collection of the other user in close spatial proximity to one another, of which one of the second pair of information objects is already in the collection of the first user;

[22.2.4.] presence of a given information object in a row or column of information objects in the collection of the other user, wherein one of the information objects in the row or column is already in the collection of the first user;

[22.4.5.] popularity of an information object in the database, based on a popularity measure selected from the group consisting of number of users, number of views, number of copies made, number of comments made, number of votes, and combinations thereof;

[22.4.6] presence of an information object from a second user with whom the first user previously exchanged information objects, comments or votes;

and combinations thereof.

Reference [22.1.]: Support is found in paragraph [00067] ("… users 108 use their individual Workspace Views 300 to organize and analyze information.").

Reference [22.2.]: Support is found in paragraph [00067] ("The exchange server 153 produces the exchange view 315 to display cards (IOs) 320 that are concurrently displayed in one or more workspace views 300 of at least one other user 108.") and in paragraph [00076C] ("…the transformation algorithm 155 can identify, in order of relevance, a set of resultant cards not already placed in that user's workspace 300. These can be shown to the user in the database view 310."), whereas the words "Database View" and "Exchange View" are used interchangeably as indicated in paragraph [00076] ("The Discovery View presents individual users with a custom selection of potentially relevant IOs, and in one embodiment consolidates the Exchange View (315) and Database View (310).").

Reference [22.3.]: Support is found in paragraph [00058A] ("… the relation manager 150 creates a new card record 160 in the database to correspond to the new card in the workspace view 300."; "The relation manager 150 stores card attributes and an identity of the information source in the new card record 160 in the card database.") and

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paragraph [00076D] ("Card content can include content displayed on the card, parameters associated with the card, or information content hyperlinked to the card or metadata about the card (e.g., creation time, time of last access, time of last copy, user access history, etc.) …").

Reference [22.3.1.]: Support is found in paragraph [00058A] ("The relation manager 150 stores an identity of the first user in the new card record 160.") and paragraph [00076D] ("Card content can include content displayed on the card, parameters associated with the card, or information content hyperlinked to the card or metadata about the card (e.g., creation time, time of last access, time of last copy, user access history, etc.) that might not be readily visible from viewing the cards in a view.").

Reference [22.3.2.]: Support is found in paragraph [00058A] ("The relation manager 150 stores a card position in the new card record 160.").

Reference [22.3.3.]: Support is found in paragraph [00076B] ("The Recognition Functions keep track of all interactions that take place among users. An interaction is registered if a user copies a card, views the content associated with a card, or adds a comment, vote or notification to a card.") and paragraph [00076D] ("Card content can include content displayed on the card, parameters associated with the card, or information content hyperlinked to the card or metadata about the card (e.g., creation time, time of last access, time of last copy, user access history, etc.) that might not be readily visible from viewing the cards in a view.").

Reference [22.3.4.]: Support is found in paragraph [00058A] ("The relation manager 150 stores a card creation time in the new card record.") and paragraph [00076D] ("Card content can include content displayed on the card, parameters associated with the card, or information content hyperlinked to the card or metadata about the card (e.g., creation time, time of last access, time of last copy, user access history, etc.) that might not be readily visible from viewing the cards in a view.").

Reference [22.3.5.]: Support is found in paragraph [00076A] ("The database items including the relations 170 and the card records 160 are combined into one coherent network of cards using the relation processing algorithms 155.") and in paragraph [00076B] ("The Recognition Functions record and combine all explicit relations among cards established by the users as well as all implicit relations established

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by the Algorithms.") and paragraph [00076D] ("The relation manager 150 applies at least one interpretation algorithm 155 between card (IO) records 160 in the card database 125 to create relations 170 between card records 160 in the card database 125.").

Reference [22.4.]: Support is found in paragraph [00076C] ("The relation manager 150 analyzes card (IO) records 160 and card relations 170 within the card (IO) database 125. The results of this analysis can produce an indication of other card records 160 in the card database 125 that correspond to other cards 320 that are not currently displayed in the workspace view 300 of the user 108, but that might be of interest to that user operating that workspace view 300.").

Reference [22.4.1.]: Support is found in paragraph [00076A] ("…if card A is related to card B and card B is related to card C, then the database server 154 can decide to relate card A and C because the indirect relation suggests a partial correlation."), paragraph [00076E] ("Every search returns the node referenced by the Start Point as well as a selection of directly and indirectly connected nodes."), paragraph [00076E] ("Other criteria of organizing the search results include the distance of nodes from the Start Point, the number of relations associated with individual nodes, …), paragraph [00076F] ("The Weight Algorithm sorts cards by the number of relations associated with individual cards."), and paragraph [00076F] ("The Relevance Algorithm … considers relations that connect with cards the user is using. For example, a card on a user's Exchange View may be related to four cards only one of which the user is using on his Workspace View. Thus, the number of associated relations for this card is assumed one rather than four.").

Reference [22.4.2.]: Support is found in paragraph [00076D] ("… the relation manager 150 can detect and analyze chronological context of the at least two card records (e.g., sequence of creation or modification of card information).").

Reference [22.4.3.]: Support is found in paragraph [00076D] ("The relation manager 150 identifies implicit relations between cards in the first set of cards displayed on the graphical user interface based on proximity of cards on the graphical user interface.").

Reference [22.4.4.]: Support is found in paragraph [00076D] ("The relation manager 150 identifies implicit relations between cards in the first set of cards displayed on the graphical user interface based on horizontal alignment of cards 320 on the

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graphical user interface 132." And paragraph [00076D] ("The relation manager 150 identifying implicit relations between cards in the first set of cards displayed on the graphical user interface based on vertical alignment of cards on the graphical user interface.").

Reference [22.4.5.]: Support is found in paragraph [00076D] ("… the relation manager 150 can detect and analyze collaborative context by at least two users 108 of at least two cards 320 respectively associated with the card records 160. An example of collaborative context is when two or more users share two (or more) cards such as by providing comments to those cards, or using instant messaging to discuss information associated with the cards, or via other common access (e.g., copying to workspace) to the cards by those two or more users."), paragraph [00076E] ("Other criteria of organizing the search results include … the card properties such as card sizes, modification dates, authors, contents, notifications, comments, votes, accesses, font types, font styles, font sizes, pictures, and locations.") and paragraph [00076F] ("The Unity Algorithm sorts cards (IOs) by the number of current and past users of individual cards. A card user is defined as somebody who created, copied, took ownership, reviewed the content, commented, or voted for a particular card. The Unity Algorithm assumes that the activity associated with a card is a meaningful way to determine the importance and popularity of the card.").

Reference [22.4.6.]: Support is found in paragraph [00076F] ("The Group Algorithm fosters the information exchange among users that have had frequent interactions in the past. The Group Algorithm considers an interaction when a user copies a card from another user, takes ownership over another user's card, or adds a comment or a vote to another user's card. The Group Algorithms orders cards based on the number of interactions that a particular user had with the individual card authors.").

New Claim 23

Support is found in paragraph [00076C]. ("…the transformation algorithm 155 can identify, in order of relevance, a set of resultant cards not already placed in that user's workspace 300.").

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New Claim 24

Support is found in paragraph [00076C]. ("In one configuration, cards 320 displayed on views not only hint relevant information but also inform about people (the authors of the cards) with relevant knowledge on a particular topic.").

New Claim 25

Support is found in paragraph [00053] ("An access log function provides users with a detailed record about the IO history. The Log Function provides users with a detailed record indicating the dates, times and names of all users that previously viewed, copied or modified the card (IO).") and [00054] ("The date / time bar 324 displays the date and time of the most recent IO modification. The relation manager can use the date / time bar indication to reconstruct the chronology of contributions from different users and sources.").

New Claim 26

Support is found in paragraph [00024] ("News feeds include but are not limited to news, alerts, announcements, motion detection events triggering security cameras, emails, instant messages (IMs), short message services (SMSs), sensors, real time search results, and custom content.").

New Claim 27

Support is found in paragraph [00062] ("IOs 320 in the News View 305 can be organized by time and information sources (e.g., by topic or content area) as well as by geographic locations associated with the information represented by each IO 320, and can be filtered for user specific keywords.").

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New Claim 28

Support is found in paragraph [00068] ("The News View can also be used as a RSS feed generator. For example, a user could create an empty News View that all users can view and add IOs to.").

Distinction of claimed subject matter over the prior art

I. Nickerson (i) fails to disclose or suggest "configuring each [of a plurality of arbitrary data items] into a distinct information object", (ii) similarly fails to disclose or suggest "using the extracted data to cause display, simultaneously, of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, an icon area for graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions", and fails to disclose or suggest "storing data corresponding to each of the cards in a database, configured so that each card in the database is sharable."

Claim 1 requires three processes, none of which is disclosed or suggested by the Nickerson reference asserted by the Office Action to anticipate claim 1.

As a preliminary matter, claim 1 is directed to "[a] computer-implemented method of interacting *with a plurality of arbitrary data items*" (emphasis added). The claim requires a "plurality" of data items, and the data items are "arbitrary". The two processes required by claim 1 operate on these arbitrary data items (i) to configure each data item into a distinct information object and (ii) to cause display, simultaneously, of a representation of each of the information objects in a uniform format.

As discussed in the application, and as pointed out in the accompanying declaration of Dr. Paul Keel, an inventor herein, the "information objects", in accordance with various embodiments of the present invention, are designed to handle a wide range of data items. These data items include documents, hyperlinks, and executables (see Application, paragraph 16), as well as feeds, including news, alerts, announcements, motion detection events triggering security cameras, emails, instant messages (IMs), short message services (SMSs), sensors, real time search results, and custom content (see Application, paragraph 24). Moreover, information objects in such embodiments can "display" different types of files, such as pictures, text, movies, and flash applications, etc. (Application, paragraph 39). Declaration of Dr. Paul Keel, paragraph 3.

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In contrast, Nickerson concerns only web pages, as indicated by its title: COLLECTING A USER RESPONSE TO AN EXPLICIT QUESTION SPECIFICALLY CONCERNING *A PARTICULAR WEB PAGE OF A WEBSITE* (emphasis added). As pointed out by Dr. Keel, web pages are displayed in a web browser. A web page is written in hypertext markup language (HTML), and provides data (which may include a set of style sheets) instructing the browser generally how to render the content defined of the web page. In all cases, the appearance of a web page reflects the work of a human (in specifying the content and the layout). There is no requirement that any given web page should have the same appearance as any other web page. Declaration of Dr. Paul Keel, paragraph 4.

The body of claim 1 specifies three processes that are performed on the plurality of arbitrary data items recited in the preamble of the claim.

The first process required by claim 1, applicable to this plurality of arbitrary data items, is "configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, graphical and textual material, and a hyperlink". As pointed out by Dr. Keel, the application, in paragraph 91, addresses protocols by which information objects are created from data items. Although the starting point is an arbitrary data item, as discussed above, the two processes required by claim 1 transform the arbitrary data item into what is represented in a display as an information object. Declaration of Dr. Paul Keel, paragraph 5.

Although, for this limitation, the Office Action relies on paragraphs 37 and 86 of Nickerson (Office Action, page 3), these paragraphs in Nickerson are unconcerned with "configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, graphical and textual material, and a hyperlink".

Nickerson has nothing to do with configuring arbitrary data items into information objects, as required by the first process of claim 1. Nickerson discloses embedding a polling tool 30 in web pages (see paragraph 27), so that viewers of a web page can respond to questions and vote on content in the web page without leaving the web page (see abstract). In this context, in paragraph 37 (on which the Office Action

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relies), Nickerson discloses a procedure for embedding the polling tool in web pages that are served to the user. That is the subject of paragraph 37:

> …collection module 42 of server 18 may perform a "crawl" to identify the pages 28 that are associated with website 26 (and possibly other websites 26) *and incorporate tool 30*.

(Tool 30, in turn, is a "user reaction measurement tool" that collects the user's reaction to a web page. See, for example, paragraphs 28-29.) Per paragraph 37, on which the Office Action relies, these collected web pages are stored, and a map is prepared of the topography of the website so that the owner of the website can analyze the website to possibly improve it based on user reactions:

> Reporting module 46 [which provides the user reactions, see Fig. 1] uses the map to generate reports concerning the pages 28 of website 26, which might be linked to one another according to the topography of website 26 as described as described more fully below with reference to FIG. 9. Owner 12 may subsequently modify one or more pages 28 of website 26 according to the subjective ratings or other user reactions received from users 16 (and possibly their demographic profiles), as reflected in the reports, to improve the pages 28 or better tailor the pages 28 for particular categories of users 16.

Accordingly, paragraph 37, on which the Office Action relies for disclosing the first process of claim 1, fails to disclose or suggest the limitation of "configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, graphical and textual material, and a hyperlink".

Similarly, the other paragraph on which the Office Action relies for this limitation, paragraph 86, is similarly irrelevant to this limitation. Paragraph 86, in its entirety, reads as follows:

> FIG. 12 illustrates an example method of reporting to owner 12 user reactions to one or more particular web pages 28 of a website 26. The method begins at step 400, where collection module 42 may perform a

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> crawl or otherwise identify the pages 28 of website 26 incorporating tool 30. At step 402, collection module 42 may parse pages 28 to identify their titles, URLs, and any other appropriate information. At step 404, the collection module 42 may generate a map or other report concerning the topography of website 26 and, at step 406, store the map in the database 44. At step 408, owner 12 communicates a report request to server 18 and, at step 410, the reporting module 46 prompts owner 12 to specify one or more criteria for use in generating the requested report 100. Owner 12 provides the requested report criteria at step 412.

Two things can be learned from this passage. First, it is concerned with "method of reporting to owner 12 user reactions to one or more particular web pages 28 of a website 26." Second, the reporting of user reactions happens to involve parsing web pages with respect to which the users provided reactions. Neither one of these ideas in paragraph 86 has anything to do with the claim limitation of "configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, graphical and textual material, and a hyperlink".

Accordingly, paragraph 86 also fails to suggest or disclose the claim limitation of "configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, graphical and textual material, and a hyperlink".

The second process of claim 1 further requires using the extracted data to cause display, *simultaneously*, of a representation of each "information object" "*in a uniform format*". The claim is precise in requiring first causing display, *simultaneously*, of a representation of each "information object." The claim is similarly precise that the representation of each information object displayed is "*in a uniform format*". Moreover, the claim requires that "the format includes a card, and, within the card, an icon area for placement of graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions". The accompanying declaration of Dr. Paul Keel explains that embodiments of the represented information objects are illustrated in many figures of the application. A representative card is illustrated Fig. 2, showing specific areas of the type that are called out by claim 1. Fig. 1 shows a computer

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screen, wherein a plurality of cards are displayed. Similarly, Figs. 4A, 4B, 5B, and 6B show displays with a plurality of cards. Declaration of Dr. Paul Keel, paragraph 6.

The Office Action argues that this limitation of claim 1 is anticipated by Nickerson, citing paragraphs 45, 51, and 84, and in the interview, the Examiner cited paragraphs 45 and 52. This argument is baseless. There are, in fact, dramatic differences between the processes disclosed in Nickerson and this limitation of claim 1. We begin with the requirement in claim 1 that it is required to cause display representations of a plurality of information objects simultaneously. Nothing in Nickerson discloses or suggests any such thing. Moreover, it is required that the information objects represented must have a uniform format, including includes a card, and, within the card, an icon area for placement of graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions. Nothing in these passages discloses any such thing.

Nickerson concerns collecting user reaction to displayed web pages, and with respect to web pages, as pointed out by Dr. Keel, there is no requirement that any given web page should have the same appearance as any other web page. Moreover, nothing in Nickerson requires or suggests that the web page must have the uniform format required by the claim, namely, "includes a card, and, within the card, an icon area for placement of graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions".

The third process of claim 1 requires "storing data corresponding to each of the cards in a database, configured so that each card in the database is sharable." As explained by Dr. Keel, the application discloses that the cards are stored in a database (application, paragraph 76), and the application discloses that cards can be imported from a view of another user (application, paragraph 92), and that cards can be shared (application, paragraph 94). Nothing in Nickerson has any correspondence to this claim limitation.

The body of independent claim 17 includes limitations similar to the first two limitations of claim 1, including "configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, multimedia data graphical and textual material, and a URL". Claim 17 also requires

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"using the extracted data to cause display, simultaneously, of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, an icon area for placement of graphical and textual material, and a heading.

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II. Maybury fails to disclose or suggest the requirements of claim 17.

Although the office action argues that claim 17 is anticipated by Maybury, that reference fails to meet a variety of provisions of claim 17. Quintessentially, among other things, claim 17, as currently amended, requires:

> …
> obtaining additions and modifications to the information sources and converting the additions and modifications into data items;
> …
> using the extracted data to cause display, simultaneously, of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, an icon area for graphical and textual material, and a heading;
> …
> wherein the information objects are organized for display in a plurality of rows, wherein each row is automatically collected and corresponds to a distinct set of at least one of the information sources and the data items therein are arranged chronologically.

In contrast to these claim requirements, Maybury operates in a different fashion altogether—by segmenting a stream of video or audio or close captions into separate segments, tagging the segments, and storing the separate segments, which are analyzed and searched. See, for example, col. 5, line 56, to col. 6, line 9. Accordingly, since Maybury simply segments streams of data, nothing in Maybury discloses or suggests the claim requirement of "obtaining additions and modifications to the information sources and converting the additions and modifications into data items". Furthermore, since Maybury simply segments streams of data, nothing in Maybury discloses or suggests representing each data item as a card by "using the extracted data to cause display of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, an icon area for graphical and textual material, and a heading". Finally, since Maybury simply segments streams of data, nothing in Maybury discloses or suggests organizing the information objects for display in rows, "wherein each row is automatically collected and corresponds to a distinct set of at least one of the information sources and the data items therein are arranged chronologically."

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For these reasons nothing in Maybury discloses or suggests the requirements of claim 17, and therefore claim 17, and the claims dependent on claim 17, are allowable over Maybury.

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For all of the foregoing reasons, the applicants submit that all pending claims are in condition for allowance. The applicants respectfully request early allowance of the application.

Date: October 30, 2015

Respectfully submitted,

/Bruce D. Sunstein, Reg. No. 27,234/

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Keel	Docket No.:	4123/1001
Appl. No:	14/664,178	Art Unit:	2173
Filed :	March 20, 2015	Examiner:	Hailu
		Conf. No:	8607

Title: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

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VIA USPTO ELECTRONIC FILING SYSTEM

Mail Stop AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF DR. PAUL KEEL

[37 C.F.R. § 1.132]

Dear Madam:

In support of the accompanying Response B to the Office Action of July 30, 2015, I, Paul Keel, Ph.D., hereby declare as follows:

1. I am a Research Scientist at the MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL), where I conduct theoretical and applied research on the development of new models for knowledge construction, computer supported collaborative sense-making and visual analytics in defense and education environments. I am also founder and manager of Eversitas LLC, a DoD (Department of Defense) contractor, where I have served as Project Investigator for the EVTM (Electronic Virtual Transactive Memory) project (a computational collaboration environment that estimates the expertise of individuals), concept developer for the T-Soldier project (technology solutions focused on improving the decentralized intelligence exchange at lower levels of command), and lead concept designer for various enterprise and consumer applications focused on new solutions for knowledge sharing. I have performed postdoctoral study

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and research at MIT's Artificial Intelligence Laboratory (AI Lab) and I hold a Ph.D. in Design and Computation from MIT. My further credentials are set forth in my Curriculum Vitae, which is attached as Exhibit 1 hereto. I am a co-inventor of the above application.

2. I have read the Office Actin of July 30, 2015, and offer the following comments.

3. As discussed in the application, the "information objects", in accordance with various embodiments of the present invention, are designed to handle a wide range of data items. These data items include documents, hyperlinks, and executables (see Application, paragraph 16), as well as feeds, including news, alerts, announcements, motion detection events triggering security cameras, emails, instant messages (IMs), short message services (SMSs), sensors, real time search results, and custom content (see Application, paragraph 24). Moreover, information objects in such embodiments can "display" different types of files, such as pictures, text, movies, and flash applications, etc. (Application, paragraph 39).

4. In contrast, Nickerson, relied upon by the Examiner, concerns only web pages, as indicated by its title: COLLECTING A USER RESPONSE TO AN EXPLICIT QUESTION SPECIFICALLY CONCERNING *A PARTICULAR WEB PAGE OF A WEBSITE* (emphasis added). Web pages are displayed in a web browser. A web page is written in hypertext markup language (HTML), and provides data (which may include a set of style sheets) instructing the browser generally how to render the content defined of the web page. In all cases, the appearance of a web page reflects the work of a human (in specifying the content and the layout). There is no requirement that any given web page should have the same appearance as any other web page.

5. Claim 1 of the application requires three processes. The first process required by claim 1 is applicable to a plurality of arbitrary data items. This process is "configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, graphical and textual material, and a hyperlink". In paragraph 91 of the application, we address protocols by which information objects are created from data items. Although the starting point is an arbitrary data item, as discussed above, the processes required by claim 1 transform the arbitrary data item into what is represented in a display as an information object.

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6. The second process of claim 1 further requires using the extracted data to cause display, *simultaneously*, of a representation of each "information object" "*in a uniform format*". The claim is precise in requiring first causing display, *simultaneously*, of a representation of each "information object." The claim is similarly precise that the representation of each information object displayed is "*in a uniform format*". Moreover, the claim requires that "the format includes a card, and, within the card, an icon area for placement of graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions". Embodiments of the represented information objects are illustrated in many figures of the application. A representative card is illustrated Fig. 2, showing specific areas of the type that are called out by claim 1. Fig. 1 shows a computer screen, wherein a plurality of cards are displayed. Similarly, Figs. 4A, 4B, 5B, and 6B show displays with a plurality of cards. Nothing in Nickerson corresponds to the second process of claim 1.

7. The third process of claim 1 requires "storing data corresponding to each of the cards in a database, configured so that each card in the database is sharable." In this connection, the application discloses that the cards are stored in a database (application, paragraph 76), and the application discloses that cards can be imported from a view of another user (application, paragraph 92) and that cards can be shared (application, paragraph 94). Nothing in Nickerson corresponds to this third process of claim 1.

8. I hereby declare that all statements made herein are of my own knowledge and that all statements made on information and belief are true; and further that these statements are being 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 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



October 29, 2015 Paul Keel, Ph.D.

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Exhibit 1

CURRICULUM VITAE - DR. PAUL KEEL

Professional Experience

2006 - Pres	Research Scientist at MIT CSAIL (Massachusetts Institute of Technology's Computer Science and Artificial Intelligence Laboratory). Conduct theoretical and applied research on the development of new models for knowledge construction, computer supported collaborative sense-making and visual analytics in defense and education environments.
2006 - Pres	Founder and Manager of Eversitas LLC, a DoD (Department of Defense) contractor. Project Investigator for the EVTM (Electronic Virtual Transactive Memory) project (a computational collaboration environment that estimates the expertise of individuals), concept developer for the T-Soldier project (technology solutions focused on improving the decentralized intelligence exchange at lower levels of command), and lead concept designer for various enterprise and consumer applications focused on new solutions for knowledge sharing.
2004 - 2006	Postdoctoral Associate at MIT's AI Lab (Artificial Intelligence Laboratory) and project lead for the EWall project, a DoD sponsored effort focused on realizing prototype architectures for knowledge transfer and collaboration.
2000 - 2004	Research Assistant at MIT's Artificial Intelligence Laboratory. Project Lead for the EWall project and supervisor for several thesis students.
1995 - 1999	Research Assistant at MIT's Department of Architecture. Helped establish MIT's Space, Planning and Organization Research Group and carried out various projects on the development of physical environments and information technologies that help foster innovation, collaboration and decentralized work. Long-term assistant for the Design Inquiry Seminar, an effort to help students understand design thinking.
1992 - 1993	Assistant Teacher for Computer Aided Architectural Design at ZTL (Central Swiss Institute of Technology Lucerne). Responsible for developing a new curriculum and integrate new technologies for architectural education.
1988 - 1989	Software Designer and IT Specialist at SAW (Spannbeton AG Widnau, Switzerland). Responsible for conceptualizing custom software for the automation of work processes.

Education

2006	MIT - Massachusetts Institute of Technology, Post-Doctoral study in Artificial Intelligence
2004	MIT - Massachusetts Institute of Technology, PhD in Design and Computation
1997	MIT - Massachusetts Institute of Technology, SMArchS in Design Technology
1993	ETH - Swiss Federal Institute of Technology, Zurich, Switzerland, Certificate in CAAD
1992	ZTL - Zentralschweizerisches Technikum Luzern, Switzerland, Diploma as dipl. Arch. HTL
1989	Commercial Pilot School, Grenchen and Altenrhein, Switzerland, Commercial Pilot License
1988	Swiss Air Force, Headquarters, Certificate in Flight Planning and Flight Coordination
1987	GBS - Gewerbeschule St. Gallen, Switzerland, Diploma as HBZ (Architecture)

Relevant Publications and Patents

2015 Keel P. System and Methods for Remote Collaborative Intelligence Analysis. US Patent Application 12/916,693 (notice of allowance received).

2014 Keel P, Huang jJ. Methods and Apparatus for Managing Information Objects in an Electronic Personal Information Management System. US Patent 8,701,018.

2013 Keel P, Huang J. Methods and Apparatus for Exchanging and Managing Information Using Information Objects. US Patent 8,499,248.

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2009 Keel P, Huang J. Methods and Apparatus for Managing and Inferring Relationships from Information. US Patent 7,640,511.

2008 Keel P, Porter W, Sither M, Winston P. EWall: Computational Support for Collaborative Sense-Making Activities. In: Letsky M, Norman W, Fiore S, Smith C (Eds). Macrocognition in Teams: Understanding the Mental Processes that Underlie Collaborative Team Activity. Ashgate; 2008.

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PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/664,178	Filing Date 03/20/2015	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	10/30/2015	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 27	Minus	** 20	= 7	X $40 =	280
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $210 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	**280**

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/GYZELL JOHNSON SMITH/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/664,178	03/20/2015	Paul Erich Keel	4123/1001	8607

2101 7590 11/05/2015

Sunstein Kann Murphy & Timbers LLP
125 SUMMER STREET
BOSTON, MA 02110-1618

EXAMINER	
HAILU, TADESSE	

ART UNIT	PAPER NUMBER
2173	

NOTIFICATION DATE	DELIVERY MODE
11/05/2015	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptomail@sunsteinlaw.com

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	14/664,178	KEEL ET AL.	
	Examiner	Art Unit	
	TADEESE HAILU	2173	

All participants (applicant, applicant's representative, PTO personnel):

(1) *TADEESE HAILU*. (3)_____.

(2) *Bruce D. Sunstein (representative)*. (4)_____.

Date of Interview: *28 October 2015*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☒ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☒102 ☐103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: _____.

Identification of prior art discussed: *Nickerson et al (US 2003/0115023 A1)*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

The representative and the examiner discussed the claimed invention but no agreement was reached.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☒ Attachment

/TADEESE HAILU/ Primary Examiner, Art Unit 2173	

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Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

DO NOT ENTER 11/2/2015 T.H.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Keel	Docket No.:	4123/1001
Appl. No:	14/664,178	Art Unit:	2173
Filed :	March 20, 2015	Examiner:	Hailu
		Conf. No:	8607

Title: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

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VIA USPTO ELECTRONIC FILING SYSTEM

Mail Stop AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE A

Dear Sir:

In response to the Office Action of July 30, 2015, please amend the above-identified application as follows.

Amendments to the Description begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 12 of this paper.

Remarks begin on page 18 of this paper.

Distinction of claimed subject matter over the prior art (in **Remarks**) begins on page 29 of this paper.

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Amendments to the Description:

1. Please replace paragraph [00057] with the following amended paragraph:

[00057] The IO attribute indicators shown in Figure 2 can indicate an IO state that can include such things as ownership of the IO, a geographic location associated with the IO, a time of creation of information associated with the IO, and other information. Depending upon the configuration, each IO 320 can further include features such as an instant messaging capability allowing to users in a distributed system to share access to an IO in order to exchange comments or messages between themselves concerning information associated with the IO. In one configuration, the system displays, within the IO perimeter, at least one messaging icon operable by a user to send a message to an IO associated with at least one other user, thus enabling collaboration. In one configuration, clicking on the messaging icon allows users to add a time/author stamped message to an IO 320 that all users 108-2 through 108-N can see if they have a copy of this IO 320. For any user 108, the icon lights red if the IO 320 includes new messages that the user has not yet looked at, green if it includes messages that the user previously looked at, and gray if the IO includes no messages. The counter next to the icon displays the number of ~~comments~~ messages. It is to be understood a that reference to an IO 320 refers to an implementation of an information object, and as will be explained shortly, algorithms disclosed herein can analyze information about IOs, such as spatial relationships between IOs, and that such algorithms and processing can be applied to other representations of information objects besides IOs, such as desktop icons, physical locations of physical items such as items on a store shelf, and so forth.

2. Please insert the following paragraph [00058A] immediately after paragraph [00058]:

[00058A] Below are steps a user 108 can perform to create a card. The relation manager 150 creates and displays a new card in the workspace view. The user 108 may have performed a drag and drop of some content onto the workspace view 300, or may have selected a pull down menu in the workspace view to create a new card 320. In response,

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the relation manager 150 creates a new card record 160 in the database to correspond to the new card in the workspace view 300. The relation manager 150 associates an information source identified by the first user to the new card 320 created in the workspace view. In the case of a drag and drop, the information source can be identified via the information dragged into the workspace view 300. If the user created a new card from pull down menu selection, the workspace view 300 can prompt the user to specify a specific information source (that can be hyperlinked or embedded) such as a file system path and filename, a URL or some other indicator. The relation manager 150 stores card attributes and an identity of the information source in the new card record 160 in the card database. The relation manager 150 stores a card creation time in the new card record. The relation manager 150 stores a card position in the new card record 160. The card position indicates positional information such as a corner pixel location (or a hierarchical location such as a specific window, directory, or desktop) as well as a window size of the new card 320 within the workspace view 300 of the first user 108. The relation manager 150 stores an identity of the first user in the new card record 160. The user for a new card becomes the author of that card 320. Once a card 320 is created, pictures and text can be dragged and dropped onto the icon area and text can be dragged and dropped on the heading bar of the card to cause those areas to automatically change. In this manner, a user 108 can create a card by simply dragging a hyperlink or file or other digital material onto the workspace view 300. A new card 320 is created where the hyperlink or file is dropped, a picture is added automatically (by searching the hyperlink destination or the file contents for an appropriate graphic), the heading is added automatically (usually the web site or file name), and a link or embedded attachment is automatically created from the file or the web site reference by the hyperlink.

3. Please replace paragraph [00062] with the following amended paragraph:

[00062] The news server 152 produces (i.e. provides information feeds for) the News View 305 to allow users 108 to collect IOs 320 for addition to the Workspace View 300. IOs 320 in the News View 305 represent information from a variety of other information sources. Feed examples includes news, alerts, announcements, motion detections on security cameras, emails, IMs, SMSs, sensors, real time search results, and custom

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content. An analogy of the News View 305 is a "news stand" in which recent or periodic information is available. In one configuration, the News View 305 displays the contents IOs 320 from news servers 151 that may be distributed through the network 101 within one of more computer systems 110. IOs 320 in the News View 305 can be organized by time and information sources (e.g., by topic or content area) as well as by geographic locations associated with the information represented by each IO 320, and can be filtered for user specific keywords. Users 108 are able to copy IOs 320 between the Workspace View 300 and the News Views 305. IOs 320 copied from the News View 305 to the Workspace View 300 may be static and not change in content, or such IOs 320 may dynamically adapt to modifications in content so that as the information source associated with an IO 320 produces new information.

4. Please replace paragraph [00067] with the following amended paragraph:

[00067] In this manner, the system disclosed herein provides a novel process for exchanging information and for asynchronous, decentralized, remote, and cross-organizational collaboration. In particular, users 108 use their individual Workspace Views 300 to organize and analyze information. The exchange server 153 produces the exchange view 315 to display cards (IOs) 320 that are concurrently displayed in one or more workspace views 300 of at least one other user 108. The exchange view 315 can display cards (IOs) 320 in prioritized order, or alternatively can display cards 320 the way they are arranged on another users Workspace. This allows users 108 to view each other's Workspaces 300 as they appear to those other users 108. The exchange view 315 displays (in prioritized order in one configuration) the IOs 320 created by all collaborating users 108 (or those with the appropriate access permissions or security levels). The exchange server 153 manages the display and exchange of card (IO) information between exchange views 315 and can include filter features to allow a user 108 to only see cards (IOs) from selected users 108 (as opposed to all cards (IOs) in all workspaces 300 of all users 108). The users 108 can copy relevant IOs 320 from their exchange views 315 to their Workspace Views 300. Users 108 can take "ownership" over IOs 320 copied from their exchange views 315 and these IOs 320 are now modifiable by the user 108. In one configuration, when a user takes ownership of an IO

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320, the IO 320 is no longer synchronized with a counterpart IO on the IO author's Workspace View. In another configuration, once an IO 320 is owned exclusively by a user 108, these IOs 320 can no longer be used for collaboration such as by "instant messaging," IO commenting, or "IO voting."

5. Please insert the following paragraphs [00076A] through [00076F] immediately after paragraph [00076]:

[00076A] The relation manager 150 is able to analyze the spatial arrangement of the cards 320 as provided by the user 108 in the workspace view 300 in order to deduce or infer relations between the information sources associated with the cards 320. In response, the database server 154 can provides other cards based on matching card records 160 maintained in the card database 125 that may be of interest to that user based on the analysis of the spatial arrangement of the cards 320 on that user's workspace view 300. The database server 154 is thus capable of inventing or deriving additional relations 170 based on the analysis of previous relations. For example if card A is related to card B and card B is related to card C, then the database server 154 can decide to relate card A and C because the indirect relation suggests a partial correlation. In this manner, the system disclosed herein provides a novel process for organizational knowledge management based on information merging. Users 108 use their individual workspace views 300 (or operating system desktops and file systems) to organize and analyze information. Additions to the workspace views of all users are collected in the card database 125. The database items including the relations 170 and the card records 160 are combined into one coherent network of cards using the relation processing algorithms 155. The number of relations 170 between individual cards 320 may differ and can indicate the "strength" or "importance" of a relation 170 (or its unimportance or weakness). Relations 170 in the database 125 may be complementary or conflicting, speculative or concrete. The database views 310 of individual users 108 display (in prioritized order) cards 320 available in the database (as records 160) that are related or relevant to the cards 320 on a user's workspace view 300 based on the relations discovered via application of the relation processing algorithms 155.

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[00076B] The activities and contents on the individual users Workspace Views are monitored and recorded by the Recognition Functions. The Recognition Functions maintain a record of all active and erased cards including a list of all current and past owners and users of individual cards. The Recognition Functions record and combine all explicit relations among cards established by the users as well as all implicit relations established by the Algorithms. The Recognition Functions keep track of all interactions that take place among users. An interaction is registered if a user copies a card, views the content associated with a card, or adds a comment, vote or notification to a card.

[00076C] The relation manager 150 analyzes card (IO) records 160 and card relations 170 within the card (IO) database 125. The results of this analysis can produce an indication of other card records 160 in the card database 125 that correspond to other cards 320 that are not currently displayed in the workspace view 300 of the user 108, but that might be of interest to that user operating that workspace view 300. A transformation algorithm 155 that can, for example, compare the combination of spatial relationships 170 that identify closely placed cards 320 in the workspace view 300. For those cards 320 that are close to each other, the transformation algorithm 155 can compare the content of those cards (i.e., can compare the information sources referenced by these cards) to identify a common subject. Alternatively, the transformation algorithm 155 can compare the creation time of closely spaced cards. In another alternative, the transformation algorithm 155 can compare user identities of users 108 who have accessed these cards. Using these metrics (e.g. a common creation time window, or a common subject, common users or use patterns), the transformation algorithm 155 can identify, in order of relevance, a set of resultant cards not already placed in that user's workspace 300. These can be shown to the user in the database view 310. Additionally, the current arrangement of exchange view cards 320 can be reordered to reflect the newly discovered relations of the group of cards so that cards of other users that might be of importance to the user (that are already in the exchange view) are more to the front of the line or list in the exchange view to be more noticeable to that user. In one configuration, cards 320 displayed on views not only hint relevant information but also inform about people (the authors of the cards) with relevant knowledge on a particular topic. This can foster the

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creation of teams or communities of interest and help to build knowledge-based relationships between people due to information objects those people spatially organize in particular ways.

[00076D] The relation manager 150 applies at least one interpretation algorithm 155 between card (IO) records 160 in the card database 125 to create relations 170 between card records 160 in the card database 125. The relation manager 150 applies a spatial relation algorithm 155 that discovers spatial relations 170 between position information of at least two card records 160 in the card database 125 that are associated with cards 320 displayed on the graphical user interface 132 in the first set of cards. The relation manager 150 identifies implicit relations between cards in the first set of cards displayed on the graphical user interface based on proximity of cards on the graphical user interface. Thus, how close or far apart cards are can determine a strength or week relationship between cards 320. The relation manager 150 identifies implicit relations between cards in the first set of cards displayed on the graphical user interface based on horizontal alignment of cards 320 on the graphical user interface 132. Horizontal alignment can be suggestive of a list of items and transformation algorithms 155 can perform analysis of cards 320 arranged horizontally to suggest other cards that might be successor cards in the list. The relation manager 150 identifying implicit relations between cards in the first set of cards displayed on the graphical user interface based on vertical alignment of cards on the graphical user interface. Likewise, vertical arrangements of cards 320 might also be suggestive of a card list. The relation manager 150 identifying implicit relations between cards in the first set of cards displayed on the graphical user interface based on at least some overlap of cards on the graphical user interface. Overlapping cards can suggest a grouping relationship. It is to be understood that the spatial relations noted above are not limited to vertical, horizontal and overlap. Other spatial relations can exist and be analyzed as well, such as relative size relations between cards, or exclusive (i.e. alone) or particular placement (e.g. in a certain corner, in center, etc.) of cards 320 in certain regions within the graphical user interface 132. Additionally, spatial processing algorithms can recognize card clusters that define groups of cards in close proximity to one another that create a cluster that is distinct from other

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clusters of other cards 320. The relation manager can detect and analyze other relations as well besides spatial relations. As an example, context relations concerning use, access (e.g. copying) or other operations on cards can be detected that are based on time of card creation or modification, which users access a card, and relation of content between cards that have similar or relating subject matter. The relation manager 150 applies at least one context relation interpretation algorithm 155 to discover contextual relations between card records 160 in the card database 125. The contextual relations 155 indicate commonality between at least two card records 160 based one or more relationship criteria. In one configuration, the relation manager 150 can detect and analyze chronological context of the at least two card records (e.g., sequence of creation or modification of card information). In another configuration, the relation manager 150 can detect and analyze collaborative context by at least two users 108 of at least two cards 320 respectively associated with the card records 160. An example of collaborative context is when two or more users share two (or more) cards such as by providing comments to those cards, or using instant messaging to discuss information associated with the cards, or via other common access (e.g., copying to workspace) to the cards by those two or more users. In another configuration, the relation manager 150 can detect and analyze similarities of content identified by the at least two card records using keyword or subject or title matching, for example. In this manner, using contextual relations, the relation manager 150 can determine, for example, that if user A and B use the same card then other cards used by user A and B are more likely to become related. Card content can include content displayed on the card, parameters associated with the card, or information content hyperlinked to the card or metadata about the card (e.g., creation time, time of last access, time of last copy, user access history, etc.) that might not be readily visible from viewing the cards in a view. In one configuration, the database contents are evaluated based on the relations between cards. The relation manager 150 can thus establish relationships among cards 320 based on comparison of content and spatial history of card usage. Content relations are established based on a comparison of card contents such as headings, contents of hyperlinked files, and image descriptions, whereas context relations are established based on the spatial location of cards, the collaborative use of cards, or the virtual organization of cards (e.g. the

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hierarchical organization of files in computer directories). For example, two relations between two cards can be valued more than one relation between two cards. This is because two relations between two cards means that two different algorithms both established a relation between these two cards, although such relations may have been established for different reasons.

[00076E] Four distinct types of Database Algorithms examine the networked contents of databases by defining a starting point, a search path, an end point, and the order in which the search results are returned: The first type of Database Algorithms defines the Start Point of a database search. The Start Point refers to a node (IO) in a database from where directly and indirectly related information is being retrieved. A Start Point may be defined though a conventional database query that contains text or graphical information. This means that a Start Point might reflect a node that contains similarities with information that a particular user is currently working with, focusing on, or searching for. A Start Point can also be the most recently active node in the database such as the most recently added, retrieved, traversed, or modified node. Furthermore, a Start Point might be defined through so-called "Stimuli" or "Focal Points" that are placed and dynamically displaced by the Database Algorithms. The Start Point continuously changes its location and multiple Start Points may exist simultaneously. In the case of multiple Start Points the search progresses in parallel from multiple locations and in multiple directions. Every search returns the node referenced by the Start Point as well as a selection of directly and indirectly connected nodes. The selection of related nodes is defined by the Search Path. By default, the second node returned is the adjacent node with the most relations. The same procedure applies for all subsequent nodes unless specified differently by the Search Path. The second type of Database Algorithms defines the Search Path. The search path determines how the network is traversed. Every search initiates at a Start Point and proceeds by examining adjacent nodes. By default, adjacent nodes with many relations are examined first. Previously examined nodes are ignored. The Database Algorithms offer a variety of options for the examination of less heavily connected nodes. For example, the Curiosity Algorithm is used to increase the probability for the examination of weaker branches. In addition, the Persistence Algorithm

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determines how many nodes associated with weaker branches will be considered. Other Database Algorithms dynamically define and modify the Search Path based on the relevance of currently explored nodes. The relevance of nodes is determined based on the card contents or the card authors. For example, a card may not contain relevant content but its author may be known for having created cards that contain relevant content. Thus, the author is considered a specialist in this particular area and the cards created by the author are given preference. The third type of Database Algorithms defines the End Point of a Search Path. The End Point may be determined through an analysis of the card contents, the distance from the Start Point, or the time passed since the start of an examination. In other words, the End Point represents either a satisfying search result or a state of decreasing patience or tiredness. For example, the Patience Algorithm terminates a search after the examination of certain number of nodes. The fourth type of Database Algorithms orders the search results. By default, the search result is a string of nodes that reflects the sequence in which the nodes were examined. Other criteria of organizing the search results include the distance of nodes from the Start Point, the number of relations associated with individual nodes, or the card properties such as card sizes, modification dates, authors, contents, notifications, comments, votes, accesses, font types, font styles, font sizes, pictures, and locations.

[00076F] The Unity Algorithm sorts cards (IOs) by the number of current and past users of individual cards. A card user is defined as somebody who created, copied, took ownership, reviewed the content, commented, or voted for a particular card. The Unity Algorithm assumes that the activity associated with a card is a meaningful way to determine the importance and popularity of the card. The Weight Algorithm sorts cards by the number of relations associated with individual cards. may be related twice with card B and once with card C. Thus, card A is associated with three relations, card B with two relations, and card C with one relation. The Weight Algorithm assumes that number of links associated with a card is a meaningful way to determine the importance and popularity of the card. The Relevance Algorithm is the same as the Weight Algorithms yet only considers relations that connect with cards the user is using. For example, a card on a user's Exchange View may be related to four cards only one of which the user is

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using on his Workspace View. Thus, the number of associated relations for this card is assumed one rather than four. The Relevance Algorithm is particularly useful to spot cards that have some relevance with cards the user is already using. The Group Algorithm fosters the information exchange among users that have had frequent interactions in the past. The Group Algorithm considers an interaction when a user copies a card from another user, takes ownership over another user's card, or adds a comment or a vote to another user's card. The Group Algorithms orders cards based on the number of interactions that a particular user had with the individual card authors.

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A computer-implemented method of interacting with a plurality of arbitrary data items, in which at least one computer initiates execution of software instructions to perform computer processes, the method comprising:

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, ~~multimedia data~~ graphical and textual material, and a ~~URL~~ hyperlink; and

using the extracted data to cause display of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, ~~a multimedia window~~ an icon area for graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions.

2. A method according to claim 1, wherein (i) one of the set of icons gives graphical access to a vote function by which a user can provide a vote associated with the information object and (ii) one of the indicators displays the total number of votes, associated with the information object, that have been received.

3. (Currently amended) A method according to claim 1, wherein (i) one of the set of icons gives graphical access to a ~~comment~~ message function by which a user can create a ~~comment~~ message relating to the information object and cause the ~~comment~~ message to be associated with the information object and shared among users who view the information object and (ii) one of the indicators displays the total number of ~~comments~~ messages, associated with the information object, that have been associated with the information object.

4. (Currently amended) A method according to claim **Error! Reference source not found.**, wherein the one of the indicators changes its appearance to indicate the presence

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of a ~~comment~~ message, associated with the information object, that has not yet been read by the user.

5. A method according to claim 1, wherein the format includes a user-accessible report on the number of times the information object has been replicated by a community of users.

6. A method according to claim 1, further comprising:

further causing to be displayed, at the same time as the representation, a map including a location, marked on the map, associated with at least one of the information objects.

7. A method according to claim **Error! Reference source not found.**, further comprising:

responsive to a graphical input applied to the displayed location, causing the location to be edited in accordance with the graphical input.

8. (Canceled)

9. A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a second collection of the first user;

responsive to (i) a graphical selection, by the first user, of an information object in the first view and (ii) a copy command that has been graphically entered by the first user, causing the selected information object to be copied from the first view to the second view.

10. A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a collection of a second user.

11. A method according to claim **Error! Reference source not found.**, further comprising:

responsive to (i) a graphical selection, by the first user, of an information object in

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the second view and (ii) a copy command that has been graphically entered by the first user, causing the selected information object to be copied from the second view to the first view, so that the selected information object in the collection of the second user has been copied to the first collection of the first user.

12. A method according to claim **Error! Reference source not found.**, further comprising:

responsive to (i) a graphical selection, by the first user, of an information object in the first view and (ii) a send command that has been graphically entered by the first user, causing the selected information object to be sent to the second user, so that the selected information object in the collection of the first user is made available to the second user to be included in the collection of the second user.

13. A method according to claim 1, further comprising:

causing an information object to be shared with another user when the information object and the other user have been graphically selected.

14. A method according to claim 1, further comprising:

causing an information object to be shared with another user via an instant message sent through an integrated instant messaging system as a result of graphical selection by a first user.

15. A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, that are related to one or more information objects in the first collection as a result of being in one or more collections, of other users, that also include at least one of the information objects in the first collection.

16. A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, wherein any given

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member of the second set of information objects is both included in a collection of another user and the other user has been selected by the first user.

17. (Currently amended) A computer-implemented method of interacting with a plurality of arbitrary data items received from a plurality of ~~news feeds~~ information sources, in which at least one computer initiates execution of software instructions to perform computer processes, the method comprising:

obtaining additions and modifications to the information sources and converting the additions and modifications into data items;

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including ~~at least one of~~ a heading, ~~multimedia data~~ graphical and textual material, and a ~~URL~~ hyperlink; and

using the extracted data to cause display of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, ~~a multimedia window~~ an icon area for graphical and textual material, and a heading;

wherein the information objects are organized for display in a plurality of rows, wherein each row is automatically collected and corresponds to a distinct set of at least one of the ~~news feeds~~ information sources and the data items therein are arranged chronologically.

18. A computer-implemented method according to claim **Error! Reference source not found.**, wherein each row is organized chronologically.

19. A computer-implemented method according to claim **Error! Reference source not found.**, wherein each column of the display corresponds to a shared time interval in each row.

20. (Currently amended) A computer-implemented method according to claim **Error! Reference source not found.**, wherein at least one of the news feeds includes an item selected from the group consisting of ~~cards,~~ news feed items, alerts, announcements, ~~motion detection events triggered by cameras,~~ e-mails, instant messages~~, short message services, sensors,~~ and sensor data ~~real-time search results~~.

21. (New) A method according to claim **Error! Reference source not found.**, further comprising causing copies of information object to be synchronized with one another.

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22. (New) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a view of a first set of information objects that constitute a collection of the first user;

serving, to a client computing device of a second user, a view of a first set of information objects that constitute a collection of the second user;

storing the information objects in a database, each of the information objects being stored in association with data pertinent thereto including

any users thereof,

spatial location thereof in the workspace view,

content and metadata thereof, such metadata including comments and votes,

times of storage, viewing and copying thereof,

relationship thereof to any other information objects; and

processing information object data in the database to make a recommendation to the first user, wherein the recommendation is based on at least one of the criteria in the group consisting of:

number of direct and indirect relations of information objects in the collection of the first user with another information object in the database;

addition of a first pair of information objects to a collection of another user in short interval of time, of which one of the first pair of information objects is already in the collection of the first user;

presence of a second pair of information objects in the collection of the other user in close spatial proximity to one another, of which one of the second pair of information objects is already in the collection of the first user;

presence of a given information object in a row or column of information objects in the collection of the other user, wherein one of the information objects in the row or column is already in the collection of the first user;

popularity of an information object in the database, based on a popularity measure selected from the group consisting of number of users, number of views, number of copies made, number of comments made, number of votes, and combinations thereof;

presence of an information object from a second user with whom the first

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user previously exchanged information objects, comments or votes;

and combinations thereof.

23. (New) A method according to claim **Error! Reference source not found.**, wherein the processing to make the recommendation includes processing to recommend an information object that is not in the collection of the first user.

24. (New) A method according to claim **Error! Reference source not found.**, wherein the processing to make the recommendation includes processing to recommend another user who created an information object that is selected based on at least one of the criteria.

25. (New) A method according to claim 16, wherein each of the information objects in the second view is displayed in an order determined by a criterion selected from the group consisting of the information object's creation time, its access time, and combinations thereof.

26. (New) A method according to claim 17, wherein at least one of the information sources provides real-time search results.

27. (New) A method according to claim 17, wherein the contents of information objects in any given row is filtered to match a user-specified set of keywords for the given row.

28. (New) A method according to claim 17, wherein any given row is configurable to receive an information object deposited therein manually by the user using a graphical user interface.

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REMARKS

The Description is amended in this Response A to explicitly add to the present application material that is incorporated by reference. By way of background, each of the applications that is a source of priority for the present application is incorporated by reference. Moreover, each predecessor nonprovisional application that is a source of priority for the present application incorporates by reference each earlier application that is a source of priority for the predecessor. In short, there is a chain of incorporations by reference going back to the first filed application in the chain.

In these remarks we show the support for each amendment made to the present application. In the listing below, we use the following terminology to identify predecessor applications:

Application Number 1: Provisional Patent Application Serial Number 60/566,723, filed April29, 2004, entitled "METHODS AND APPARATUS FOR MANAGING AND INFERRING RELATIONSHIPS FROM INFORMATION".

Application Number 2: Patent Application Serial Number 11/118,301 (now US Patent Number 7,640,511), filed April29, 2005, entitled "METHODS AND APPARATUS FOR MANAGING AND INFERRING RELATIONSHIPS FROM INFORMATION OBJECTS".

The amendments to the Description have support as indicated below.

Amendment Number 1, paragraph [00057].

For substituting “comments” with “messages”, support is found in Application No. 2, page 13, lines 13-17 showing the correspondence of these words.

Amendment Number 2, immediately after paragraph [00058].

For paragraph [00058A], support is found in Application No. 2 starting on page 31 line 31 and ending on page 33 line 2.

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Amendment Number 3, paragraph [00062].

Support is found in Application No. 1, page 27, lines 47-48.

Amendment Number 4, paragraph [00067].

Support is found in Application No. 2, page 18, lines 10-13.

Amendment Number 5, immediately after paragraph [00076].

For paragraph [00076A], support is found in Application No. 2 starting on page 19, line 25 and ending on page 20, line 17.

For paragraph [00076B], support is found in Application No. 1 starting on page 91, line 54 and ending on page 92, line 10.

For paragraph [00076C], support is found in Application No. 2 starting on page 21, line 16 and ending on page 22, line 8.

For paragraph [00076D], support is found in Application No. 2 starting on page 26, line 21 and ending on page 28, line 27.

For paragraph [00076E], support is found in Application No. 1 starting on page 88, line 43 and ending on page 89, line 36.

For paragraph [00076F], support is found in Application No. 1 starting on page 93, line 43 and ending on page 94, line 12.

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In the foregoing amendments, the insertions are taken verbatim from the referenced portions of the above applications (with various references in the copied text being deleted to avoid confusion), except that the parenthetical "(IO)", meaning "Information Object" is occasionally inserted after "card" and after "node" in the referenced portions. Support for "card" as an "Information Object" appears in the application, paragraph [00022]: "As used herein the term "card," "IO" and "information object" are used interchangeably, and a card is one example configuration or representation of an information object." Support for "node" as an "Object" appears in

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application No. 1 on page 51, line 25: "This section uses the words Objects, Items, Nodes, and Cards for similar concepts."

***

Claims 1-20 are pending. Claims 1, 3, 4, 17 and 20 have been amended so as to assure that the claims have an effective filing date no later than the filing date of Application No. 2. Claim 8 has been canceled. Claims 21-28 have been added. Therefore, claims 1-7 and 9-28 are pending. Applicants respectfully request reconsideration of the claims in view of the above amendments and these remarks.

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The amendments to the Claims have support as indicated below.

Amendment to Claim 1

For substituting "multimedia data" with "graphical and textual material", support is found in paragraph [00052] ("The icon area allows for the placement of graphical and/or textual material …").

For substituting "URL" with "hyperlink", support is found in paragraph [00016] ("IOs that are data files that can include other data files (such as documents, hyperlinks, and executables) …").

For substituting "a multimedia window" with "an icon area for graphical and textual material", support is found in paragraph [00052] ("The icon area allows for the placement of graphical and/or textual material …").

Amendment to Claims 3 and 4

For substituting "comment/s" with "message/s", support is found in amended paragraph [00057] ("… each IO 320 can further include features such as an instant messaging capability allowing to users in a distributed system to share access to an IO in order to exchange comments or messages between themselves concerning information

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associated with the IO.") and in Application No. 2, page 13, lines 13-17 showing the correspondence of these words.

Amendment to Claim 17

For substituting "news feeds" with "information sources", support is found in paragraph [00065] ("The News View provides users with the technology to effectively monitor and visualize additions and modifications from information sources such as web sites, databases, security cameras, alarm systems, sensors, news feeds and so forth.").

For adding the limitation "obtaining additions and modifications to the information sources and converting the additions and modifications into data items", support is also found in paragraph [00065] as recited above.

For substituting "multimedia data" with "graphical and textual material", support is found in paragraph [00052] ("The icon area allows for the placement of graphical and/or textual material …").

For substituting "URL" with "hyperlink", support is found in paragraph [00016] ("IOs that are data files that can include other data files (such as documents, hyperlinks, and executables) …").

For substituting "a multimedia window" with "an icon area for graphical and textual material", support is found in paragraph [00052] ("The icon area allows for the placement of graphical and/or textual material …").

For inserting "automatically collected" and "data items therein are arranged chronologically" support is found in paragraph [00098] ("… News View having an adaptor for receiving news feeds and the user interface chronologically organizes information chronologically in a subject-time matrix …").

Amendment to Claim 20

For substituting "sensors" with "sensor data", support is found in paragraph [00065] ("The News View 305 provides users 108 with the technology to effectively monitor and visualize additions and modifications from information sources such as web sites, databases, security cameras, alarm systems, sensors, news feeds and so forth.…").

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The substitution corrects a grammatical error. Only sensor data and not the sensor itself can be transmitted for information processing.

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The new Claims have support as indicated below.

New Claim 21

Support is found in paragraphs [00017] ("Copies of IOs remain synchronized if displayed on different IVs."), [00048] ("IOs can be copied or transferred between the same or different types of IVs, copied or transferred between the IVs of the same or different users, remain synchronized if copied to multiple IVs, …") and [00092] ("The user can import an IO from another user into the Workspace View which will create an IO copy that is synchronized with the original IO.").

New Claim 22

For convenience in showing support, we reproduce this claim with reference numbers, which will be used below to indicate the source of support.

22. (New) A method according to claim 1, further comprising:

[22.1.] serving, to a client computing device of a first user, a view of a first set of information objects that constitute a collection of the first user;

[22.2.] serving, to a client computing device of a second user, a view of a first set of information objects that constitute a collection of the second user;

[22.3.] storing the information objects in a database, each of the information objects being stored in association with data pertinent thereto including

[22.3.1.] any users thereof,

[22.3.2.] spatial location thereof in the workspace view,

[22.3.3.] content and metadata thereof, such metadata including comments and votes,

[22.3.4.] times of storage, viewing and copying thereof,

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[22.3.5.] relationship thereof to any other information objects; and

[22.4.] processing information object data in the database to make a recommendation to the first user, wherein the recommendation is based on at least one of the criteria in the group consisting of:

[22.4.1.] number of direct and indirect relations of information objects in the collection of the first user with another information object in the database;

[22.4.2.] addition of a first pair of information objects to a collection of another user in short interval of time, of which one of the first pair of information objects is already in the collection of the first user;

[22.4.3.] presence of a second pair of information objects in the collection of the other user in close spatial proximity to one another, of which one of the second pair of information objects is already in the collection of the first user;

[22.2.4.] presence of a given information object in a row or column of information objects in the collection of the other user, wherein one of the information objects in the row or column is already in the collection of the first user;

[22.4.5.] popularity of an information object in the database, based on a popularity measure selected from the group consisting of number of users, number of views, number of copies made, number of comments made, number of votes, and combinations thereof;

[22.4.6] presence of an information object from a second user with whom the first user previously exchanged information objects, comments or votes;

and combinations thereof.

Reference [22.1.]: Support is found in paragraph [00067] ("… users 108 use their individual Workspace Views 300 to organize and analyze information.").

Reference [22.2.]: Support is found in paragraph [00067] ("The exchange server 153 produces the exchange view 315 to display cards (IOs) 320 that are concurrently displayed in one or more workspace views 300 of at least one other user 108.") and in paragraph [00076C] ("…the transformation algorithm 155 can identify, in order of relevance, a set of resultant cards not already placed in that user's workspace 300. These can be shown to the user in the database view 310."), whereas the words "Database

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View" and "Exchange View" are used interchangeably as indicated in paragraph [00076] ("The Discovery View presents individual users with a custom selection of potentially relevant IOs, and in one embodiment consolidates the Exchange View (315) and Database View (310).").

Reference [22.3.]: Support is found in paragraph [00058A] ("… the relation manager 150 creates a new card record 160 in the database to correspond to the new card in the workspace view 300."; "The relation manager 150 stores card attributes and an identity of the information source in the new card record 160 in the card database.") and paragraph [00076D] ("Card content can include content displayed on the card, parameters associated with the card, or information content hyperlinked to the card or metadata about the card (e.g., creation time, time of last access, time of last copy, user access history, etc.) …").

Reference [22.3.1.]: Support is found in paragraph [00058A] ("The relation manager 150 stores an identity of the first user in the new card record 160.") and paragraph [00076D] ("Card content can include content displayed on the card, parameters associated with the card, or information content hyperlinked to the card or metadata about the card (e.g., creation time, time of last access, time of last copy, user access history, etc.) that might not be readily visible from viewing the cards in a view.").

Reference [22.3.2.]: Support is found in paragraph [00058A] ("The relation manager 150 stores a card position in the new card record 160.").

Reference [22.3.3.]: Support is found in paragraph [00076B] ("The Recognition Functions keep track of all interactions that take place among users. An interaction is registered if a user copies a card, views the content associated with a card, or adds a comment, vote or notification to a card.") and paragraph [00076D] ("Card content can include content displayed on the card, parameters associated with the card, or information content hyperlinked to the card or metadata about the card (e.g., creation time, time of last access, time of last copy, user access history, etc.) that might not be readily visible from viewing the cards in a view.").

Reference [22.3.4.]: Support is found in paragraph [00058A] ("The relation manager 150 stores a card creation time in the new card record.") and paragraph [00076D] ("Card content can include content displayed on the card, parameters

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associated with the card, or information content hyperlinked to the card or metadata about the card (e.g., creation time, time of last access, time of last copy, user access history, etc.) that might not be readily visible from viewing the cards in a view.").

Reference [22.3.5.]: Support is found in paragraph [00076A] ("The database items including the relations 170 and the card records 160 are combined into one coherent network of cards using the relation processing algorithms 155.") and in paragraph [00076B] ("The Recognition Functions record and combine all explicit relations among cards established by the users as well as all implicit relations established by the Algorithms.") and paragraph [00076D] ("The relation manager 150 applies at least one interpretation algorithm 155 between card (IO) records 160 in the card database 125 to create relations 170 between card records 160 in the card database 125.").

Reference [22.4.]: Support is found in paragraph [00076C] ("The relation manager 150 analyzes card (IO) records 160 and card relations 170 within the card (IO) database 125. The results of this analysis can produce an indication of other card records 160 in the card database 125 that correspond to other cards 320 that are not currently displayed in the workspace view 300 of the user 108, but that might be of interest to that user operating that workspace view 300.").

Reference [22.4.1.]: Support is found in paragraph [00076A] ("…if card A is related to card B and card B is related to card C, then the database server 154 can decide to relate card A and C because the indirect relation suggests a partial correlation."), paragraph [00076E] ("Every search returns the node referenced by the Start Point as well as a selection of directly and indirectly connected nodes."), paragraph [00076E] ("Other criteria of organizing the search results include the distance of nodes from the Start Point, the number of relations associated with individual nodes, …), paragraph [00076F] ("The Weight Algorithm sorts cards by the number of relations associated with individual cards."), and paragraph [00076F] ("The Relevance Algorithm … considers relations that connect with cards the user is using. For example, a card on a user's Exchange View may be related to four cards only one of which the user is using on his Workspace View. Thus, the number of associated relations for this card is assumed one rather than four.").

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Reference [22.4.2.]: Support is found in paragraph [00076D] ("… the relation manager 150 can detect and analyze chronological context of the at least two card records (e.g., sequence of creation or modification of card information).").

Reference [22.4.3.]: Support is found in paragraph [00076D] ("The relation manager 150 identifies implicit relations between cards in the first set of cards displayed on the graphical user interface based on proximity of cards on the graphical user interface.").

Reference [22.4.4.]: Support is found in paragraph [00076D] ("The relation manager 150 identifies implicit relations between cards in the first set of cards displayed on the graphical user interface based on horizontal alignment of cards 320 on the graphical user interface 132." And paragraph [00076D] ("The relation manager 150 identifying implicit relations between cards in the first set of cards displayed on the graphical user interface based on vertical alignment of cards on the graphical user interface.").

Reference [22.4.5.]: Support is found in paragraph [00076D] ("… the relation manager 150 can detect and analyze collaborative context by at least two users 108 of at least two cards 320 respectively associated with the card records 160. An example of collaborative context is when two or more users share two (or more) cards such as by providing comments to those cards, or using instant messaging to discuss information associated with the cards, or via other common access (e.g., copying to workspace) to the cards by those two or more users."), paragraph [00076E] ("Other criteria of organizing the search results include … the card properties such as card sizes, modification dates, authors, contents, notifications, comments, votes, accesses, font types, font styles, font sizes, pictures, and locations.") and paragraph [00076F] ("The Unity Algorithm sorts cards (IOs) by the number of current and past users of individual cards. A card user is defined as somebody who created, copied, took ownership, reviewed the content, commented, or voted for a particular card. The Unity Algorithm assumes that the activity associated with a card is a meaningful way to determine the importance and popularity of the card.").

Reference [22.4.6.]: Support is found in paragraph [00076F] ("The Group Algorithm fosters the information exchange among users that have had frequent

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interactions in the past. The Group Algorithm considers an interaction when a user copies a card from another user, takes ownership over another user's card, or adds a comment or a vote to another user's card. The Group Algorithms orders cards based on the number of interactions that a particular user had with the individual card authors.").

New Claim 23

Support is found in paragraph [00076C]. ("…the transformation algorithm 155 can identify, in order of relevance, a set of resultant cards not already placed in that user's workspace 300.").

New Claim 24

Support is found in paragraph [00076C]. ("In one configuration, cards 320 displayed on views not only hint relevant information but also inform about people (the authors of the cards) with relevant knowledge on a particular topic.").

New Claim 25

Support is found in paragraph [00053] ("An access log function provides users with a detailed record about the IO history. The Log Function provides users with a detailed record indicating the dates, times and names of all users that previously viewed, copied or modified the card (IO).") and [00054] ("The date / time bar 324 displays the date and time of the most recent IO modification. The relation manager can use the date / time bar indication to reconstruct the chronology of contributions from different users and sources.").

New Claim 26

Support is found in paragraph [00024] ("News feeds include but are not limited to news, alerts, announcements, motion detection events triggering security cameras, emails, instant messages (IMs), short message services (SMSs), sensors, real time search results, and custom content.").

New Claim 27

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Support is found in paragraph [00062] ("IOs 320 in the News View 305 can be organized by time and information sources (e.g., by topic or content area) as well as by geographic locations associated with the information represented by each IO 320, and can be filtered for user specific keywords.").

New Claim 28

Support is found in paragraph [00068] ("The News View can also be used as a RSS feed generator. For example, a user could create an empty News View that all users can view and add IOs to.").

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Distinction of claimed subject matter over the prior art

Claim 1 is directed to a method of interacting with a plurality of *arbitrary data items*. Claim 1 further requires configuring each of the data items into a distinct "information object". The configuring process requires "extracting, from each data item, extracted data including a heading, a source, graphical and textual material, and a hyperlink". After the extraction process, the claim requires using the extracted data to cause display of a representation of each "information object" "*in a uniform format*". The claim is precise in requiring that "the format includes a card, and, within the card, an icon area for placement of graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions". A representative card is illustrated Fig. 2, showing specific areas of the type that are called out by claim 1. Fig. 1 shows a computer screen, wherein a plurality of cards are displayed. Similarly, Figs. 4, 7, and 8 show displays with a plurality of cards.

The body of independent claim 17 includes limitations similar to those described above for claim 1, including "configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, multimedia data graphical and textual material, and a URL". Claim 17 also requires "using the extracted data to cause display of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, an icon area for placement of graphical and textual material, and a heading.

Although the office action argues that the limitations of claims 1 and 17 are anticipated by Nickerson, there are, in fact, dramatic differences between the processes disclosed in Nickerson and the processes required by claim 1. Nickerson discloses embedding a polling tool in web pages (paragraph 27), so that viewers of a web page can respond to questions and vote on content in the web page without leaving the web page (see abstract).

In contrast, claims 1 and 17 are directed to a collaborative knowledge management system, and require, as mentioned above, a representation of each of a plurality of "information objects" "*in a uniform format*". In claim 1, "the format includes a card, and, within the card, an icon area for placement of graphical and textual material,

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the heading, the source, a set of indicators, and a set of icons giving graphical access to functions". Nickerson fails to disclose or suggest such limitations. Claims 1 and 17 require, among other things, displaying at least two information objects, whereas Nickerson fails to show displaying *any* information objects. Nowhere does Nickerson disclose or suggest displaying arbitrary data in a uniform format that includes "a card, and, within the card, an icon area for placement of graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions.

It should be noted that Nickerson's drawings include browser windows, but no browser window in Nickerson shows the format required by claim 1 or by claim 17. Moreover, as discussed above, it is required by claim 1 to cause display of representations of a plurality of information objects, wherein each information object represented includes a card, and each card has the format features listed, namely "an icon area for placement of graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions. (Claim 17 has similar limitations.) There is utterly nothing in Nickerson that suggests, let alone discloses, this required subject matter.

Because Nickerson fails to meet the requirements of claims 1 and 17, it also fails to meet the requirements of claims dependent on these claims.

Although the office action argues that claim 17 is anticipated by Maybury, that reference fails to meet a variety of provisions of claim 17. Quintessentially, among other things, claim 17, as currently amended, requires:

> …
> obtaining additions and modifications to the information sources and converting the additions and modifications into data items;
> …
> using the extracted data to cause display of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, an icon area for graphical and textual material, and a heading;
> …
> wherein the information objects are organized for display in a plurality of rows, wherein each row is automatically collected and

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corresponds to a distinct set of at least one of the information sources and the data items therein are arranged chronologically.

In contrast to these claim requirements, Maybury operates in a different fashion altogether—by segmenting a stream of video or audio or close captions into separate segments, tagging the segments, and storing the separate segments, which are analyzed and searched. See, for example, col. 5, line 56, to col. 6, line 9. Accordingly, since Maybury simply segments streams of data, nothing in Maybury discloses or suggests the claim requirement of "obtaining additions and modifications to the information sources and converting the additions and modifications into data items". Furthermore, since Maybury simply segments streams of data, nothing in Maybury discloses or suggests representing each data item as a card by "using the extracted data to cause display of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, an icon area for graphical and textual material, and a heading". Finally, since Maybury simply segments streams of data, nothing in Maybury discloses or suggests organizing the information objects for display in rows, "wherein each row is automatically collected and corresponds to a distinct set of at least one of the information sources and the data items therein are arranged chronologically."

For these reasons nothing in Maybury discloses or suggests the requirements of claim 17, and therefore claim 17, and the claims dependent on claim 17, are allowable over Maybury.

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For all of the foregoing reasons, the applicants submit that all pending claims are in condition for allowance. The applicants respectfully request early allowance of the application.

Date: [DATE]

Respectfully submitted,

[ELECTRONIC SIGNATURE]

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UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/664,178	03/20/2015	Paul Erich Keel	4123/1001

CONFIRMATION NO. 8607

2101
Sunstein Kann Murphy & Timbers LLP
125 SUMMER STREET
BOSTON, MA 02110-1618

POA ACCEPTANCE LETTER

OC000000078534259

Date Mailed: 11/09/2015

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/30/2015.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/lqchau/

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Practitioner's Docket No. 4123/1001 *PATENT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Keel et al.

Application No.: 14/664,178 Group No.: 2173
Filed: 03/20/2015 Examiner: Hailu, Tadesse
For: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLEMENTAL RESPONSE TRANSMITTAL

1. Transmitted herewith is a Supplement to Response A for this application.

STATUS

2. Applicant is a small entity. Small entity status was asserted at the time of filing.

EXTENSION OF TERM

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply. Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. 1.16(b)-(d)) has been calculated as shown below:

	(Col. 1) CLAIMS REMAINING AFTER AMENDMENT		(Col. 2) HIGHEST NO. PREVIOUSLY PAID FOR		(Col. 3) PRESENT EXTRA		SMALL ENTITY RATE		ADDIT. FEE
TOTAL	28	–	28	=	0	x	$ 40.00	=	$ 0.00
INDEP.	2	–	3	=	0	x	$ 210.00	=	$ 0.00
FIRST PRESENTATION OF MULTIPLE DEP. CLAIM						+	$ 0.00	=	$ 0.00
							TOTAL ADDIT. FEE		$ 0.00

No additional fee for claims is required.

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FEE DEFICIENCY

5. If a fee for claims is required, charge Account No. 194972.

Date: December 10, 2015

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04123/01001 2418767.1

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Keel et al.	Docket No.:	4123/1001
Appl. No:	14/664,178	Art Unit:	2173
Filed :	March 20, 2015	Examiner:	Hailu
		Conf. No:	8607

Title: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

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VIA USPTO ELECTRONIC FILING SYSTEM

Mail Stop AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLEMENT TO RESPONSE A

Dear Sir:

In further response to the Office Action of July 30, 2015, please further amend the above-identified application as follows.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 8 of this paper.

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A computer-implemented method of interacting with a plurality of arbitrary data items, in which at least one computer initiates execution of software instructions to perform computer processes, the method comprising:

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, graphical and textual material, and a hyperlink;

using the extracted data to cause display, simultaneously, of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, an icon area for graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions, wherein one of the icons in the set gives graphical access to a message function by which a user can create a message relating to the information object and cause the message to be associated with the information object and shared among users who view the information object; and

storing data corresponding to each of the cards in a database, configured so that each card in the database is sharable.

2. (Original) A method according to claim 1, wherein (i) one of the set of icons gives graphical access to a vote function by which a user can provide a vote associated with the information object and (ii) one of the indicators displays the total number of votes, associated with the information object, that have been received.

3. (Currently amended) A method according to claim 1, wherein ~~(i) one of the set of icons gives graphical access to a message function by which a user can create a message relating to the information object and cause the message to be associated with the information object and shared among users who view the information object and (ii)~~ one

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of the indicators displays the total number of messages, associated with the information object, that have been associated with the information object.

4. (Amended by Response A) A method according to claim 3, wherein the one of the indicators changes its appearance to indicate the presence of a message, associated with the information object, that has not yet been read by the user.

5. (Original) A method according to claim 1, wherein the format includes a user-accessible report on the number of times the information object has been replicated by a community of users.

6. (Original) A method according to claim 1, further comprising:

further causing to be displayed, at the same time as the representation, a map including a location, marked on the map, associated with at least one of the information objects.

7. (Original) A method according to claim 6, further comprising:

responsive to a graphical input applied to the displayed location, causing the location to be edited in accordance with the graphical input.

8. (Canceled)

9. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a second collection of the first user;

responsive to (i) a graphical selection, by the first user, of an information object in the first view and (ii) a copy command that has been graphically entered by the first user, causing the selected information object to be copied from the first view to the second view.

10. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a collection of a second user.

11. (Original) A method according to claim 10, further comprising:

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responsive to (i) a graphical selection, by the first user, of an information object in the second view and (ii) a copy command that has been graphically entered by the first user, causing the selected information object to be copied from the second view to the first view, so that the selected information object in the collection of the second user has been copied to the first collection of the first user.

12. (Original) A method according to claim 10, further comprising:

responsive to (i) a graphical selection, by the first user, of an information object in the first view and (ii) a send command that has been graphically entered by the first user, causing the selected information object to be sent to the second user, so that the selected information object in the collection of the first user is made available to the second user to be included in the collection of the second user.

13. (Original) A method according to claim 1, further comprising:

causing an information object to be shared with another user when the information object and the other user have been graphically selected.

14. (Original) A method according to claim 1, further comprising:

causing an information object to be shared with another user via an instant message sent through an integrated instant messaging system as a result of graphical selection by a first user.

15. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, that are related to one or more information objects in the first collection as a result of being in one or more collections, of other users, that also include at least one of the information objects in the first collection.

16. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, wherein any given

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member of the second set of information objects is both included in a collection of another user and the other user has been selected by the first user.

17. (Amended by Response A) A computer-implemented method of interacting with a plurality of arbitrary data items received from a plurality of information sources, in which at least one computer initiates execution of software instructions to perform computer processes, the method comprising:

obtaining additions and modifications to the information sources and converting the additions and modifications into data items;

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, graphical and textual material, and a hyperlink; and

using the extracted data to cause display, simultaneously, of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, an icon area for graphical and textual material, and a heading;

wherein the information objects are organized for display in a plurality of rows, wherein each row is automatically collected and corresponds to a distinct set of at least one of the information sources and the data items therein are arranged chronologically.

18. (Original) A computer-implemented method according to claim 17, wherein each row is organized chronologically.

19. (Original) A computer-implemented method according to claim 17, wherein each column of the display corresponds to a shared time interval in each row.

20. (Amended by Response A) A computer-implemented method according to claim 17, wherein at least one of the news feeds includes an item selected from the group consisting of news feed items, alerts, announcements, e-mails, instant messages and sensor data.

21. (New in Response A) A method according to claim 9, further comprising causing copies of information object to be synchronized with one another.

22. (New in Response A) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a view of a first set of information objects that constitute a collection of the first user;

serving, to a client computing device of a second user, a view of a first set of

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information objects that constitute a collection of the second user;

storing the information objects in a database, each of the information objects being stored in association with data pertinent thereto including

any users thereof,

spatial location thereof in the workspace view,

content and metadata thereof, such metadata including comments and votes,

times of storage, viewing and copying thereof,

relationship thereof to any other information objects; and

processing information object data in the database to make a recommendation to the first user, wherein the recommendation is based on at least one of the criteria in the group consisting of:

number of direct and indirect relations of information objects in the collection of the first user with another information object in the database;

addition of a first pair of information objects to a collection of another user in short interval of time, of which one of the first pair of information objects is already in the collection of the first user;

presence of a second pair of information objects in the collection of the other user in close spatial proximity to one another, of which one of the second pair of information objects is already in the collection of the first user;

presence of a given information object in a row or column of information objects in the collection of the other user, wherein one of the information objects in the row or column is already in the collection of the first user;

popularity of an information object in the database, based on a popularity measure selected from the group consisting of number of users, number of views, number of copies made, number of comments made, number of votes, and combinations thereof;

presence of an information object from a second user with whom the first user previously exchanged information objects, comments or votes;

and combinations thereof.

23. (New in Response A) A method according to claim 22, wherein the processing to make the recommendation includes processing to recommend an information object that

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is not in the collection of the first user.

24. (New in Response A) A method according to claim 22, wherein the processing to make the recommendation includes processing to recommend another user who created an information object that is selected based on at least one of the criteria.

25. (New in Response A) A method according to claim 16, wherein each of the information objects in the second view is displayed in an order determined by a criterion selected from the group consisting of the information object's creation time, its access time, and combinations thereof.

26. (New in Response A) A method according to claim 17, wherein at least one of the information sources provides real-time search results.

27. (New in Response A) A method according to claim 17, wherein the contents of information objects in any given row is filtered to match a user-specified set of keywords for the given row.

28. (New in Response A) A method according to claim 17, wherein any given row is configurable to receive an information object deposited therein manually by the user using a graphical user interface.

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REMARKS

Claims 1-28 are pending. Claims 1 is further amended to distinguish over the prior art, by incorporating a limitation formerly present as item (i) of claim 3, and this limitation is removed from claim 3.

For the reasons discussed in Response A, the applicants submit that all pending claims are in condition for allowance. The applicants respectfully request early allowance of the application.

Date: December 10, 2015

Respectfully submitted,

/Bruce D. Sunstein, Reg. No. 27,234/

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Meta Platforms, Inc. v. Cogmedia LLC
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Electronic Acknowledgement Receipt

EFS ID:	24321719
Application Number:	14664178
International Application Number:	
Confirmation Number:	8607
Title of Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects
First Named Inventor/Applicant Name:	Paul Erich Keel
Customer Number:	2101
Filer:	Bruce D. Sunstein
Filer Authorized By:	
Attorney Docket Number:	4123/1001
Receipt Date:	10-DEC-2015
Filing Date:	20-MAR-2015
Time Stamp:	14:56:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Supplemental Response or Supplemental Amendment	kem4123_1001_Supplemental Response.pdf	159022 461183fb156ef90d47fff1d8f8689c397dffaaa1	no	10

Warnings:	
Information:	

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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/664,178	Filing Date 03/20/2015	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	12/10/2015	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 27	Minus	** 27	= 0	X $40 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $210 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	**0**

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/PAULA MCCRAY STANLEY/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/664,178	03/20/2015	Paul Erich Keel	4123/1001	8607

2101 7590 03/21/2016
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EXAMINER	
HAILU, TADESSE	

ART UNIT	PAPER NUMBER
2173	

NOTIFICATION DATE	DELIVERY MODE
03/21/2016	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptomail@sunsteinlaw.com

Office Action Summary	Application No. 14/664,178	Applicant(s) KEEL ET AL.	
	Examiner TADEESE HAILU	Art Unit 2173	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/10/2015*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-7 and 9-28* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☒ Claim(s) *1-7,9-16 and 21-25* is/are allowed.

7)☒ Claim(s) *17-20 and 26-28* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

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DETAILED ACTION

1. The present application is being examined under the pre-AIA first to invent provisions. The amendment to the claims filed on December 10, 2015 has been entered and examined herein below.

Response to Arguments

2. Applicant's arguments with respect to the pending claims have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Specification

3. The amendment to the Specification filed on 11/5/2015 has been considered.

Affidavit/Declaration

4. The Affidavit/Declaration filed on 10/30/2015 has been considered.

Priority

5. This application repeats a substantial portion of prior Application No. 11/118,301 (now patented as US 7,640,511), filed April 29, 20005, and adds and claims additional disclosure not presented in a prior continuation application 12/563,416 (now patented as US 8,499,248). Since this application names the inventor or at least one joint inventor named in the prior continuation application, it may constitute a continuation-in-part of the prior continuation application.

If a continuation or divisional application as filed contains subject matter that would have been new matter in the prior application, 12/563,416 (now patented as US 8,499,248), the applicant is required to delete the benefit claim or change the relationship (continuation or divisional application) to continuation-in-part. The new matter not disclosed in the prior-filed application, 12/563,416 (now patented as US 8,499,248), includes the newly introduced paragraphs [00058A and 00076A-00076F]. Also the matter not disclosed in the prior-filed application includes the amendments made to paragraphs [00062] and [00067].

Accordingly, applicant is required to review all the claimed chain of priorities to the current application.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

> (a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 19 is rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s)

contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the inventor(s), at the time the application was filed, had possession of the claimed invention. Support for "*the display corresponds to a shared time interval in each row" nowhere to be found in the specification.* The applicant is required to amend the language of the claim or cancel the claim.

7. Claim 20 recites the limitation "the news feed" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 17, 18 and 28 are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by **Masuda** et al (US 2002/0087602).

As per claim 17, Masuda discloses a computer-implemented method (***see at least flowcharts of Figs. 6 and 15***) of interacting with a plurality of arbitrary data items received from a plurality of information sources (see at least information sources or documents in collection windows 504), in which at least one computer initiates

execution of software instructions to perform computer processes, the method comprising:

obtaining additions and modifications to the information sources and converting the additions and modifications into data items ***(see at least the Abstract, 0130, 0133 and 0138);***

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, graphical and textual material, and a hyperlink (***see at least Fig. 2A, [0079 and 0082]);*** and

using the extracted data to cause display, simultaneously, of a representation of each of the information objects in a uniform format ***(see at least Figs. 10a-10C, [0100, 0106 and 0122]),*** wherein the format includes a card (***see at least electronic source document pages 701 or 702, and 801 or 802***), and, within the card, an icon area for graphical and textual material, and a heading (***see at least Fig. 2A, [0079 and 0082]);***

wherein the information objects are organized for display in a plurality of rows (***see at least electronic source document pages 803 and 804 as rendered on a composed window 505***), wherein each row is automatically collected and corresponds to a distinct set of at least one of the information sources and the data items therein are arranged chronologically (***see at least the distinct electronic source document pages 803 and 804 as arranged chronologically, Fig. 8).***

As per claim 18, Masuda discloses that the computer-implemented method according to claim 17, wherein each row is organized chronologically (***see at least the***

distinct electronic source document pages 803 and 804 as arranged chronologically, Fig. 8).

As per claim 28, Masuda discloses that the method according to claim 17, wherein any given row is configurable to receive an information object deposited therein manually by the user using a graphical user interface (***source object or document is manipulated via a drag and drop in a given row , see at least Figs. 5, 6 and 12).***

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 20, and 26-27 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable **Masuda** et al (US 2002/0087602) in view of Schneider (US 6,760,746).

As per claim 20, Masuda discloses a plurality electronic source documents or information pages but Masuda does not explicitly describe a news feed. Schneider, on the other hand discloses a news feed item including news feed items or messages (column 13, lines 31-42).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate and collect news feed electronic document with the electronic

document of Masuda. The suggestion /motivation for doing so would have been to provide various documents including news feed for a user of Masuda.

Furthermore, as per claims 26 and 27, although Masuda teaches collecting source documents but Masuda does not mentions information source that provides real-time search results. Schneider, on the other hand discloses a search engine that provides real-time search results (column 35, lines 37-55). Schneider also discloses querying or filtering information to match a user-specified set of keywords for the given line of information (column 32, lines 26-49).

Therefore, it would have been obvious to combine Masuda with Schneider to obtain the invention as specified in claims 20, 26 and 27.

10. Claim 19 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable Masuda et al (US 2002/0087602) in view of *Maloney et al (US 5,535,256).*

As per claim 19, Masuda does not tech “wherein each column of the display corresponds to a shared time interval in each row” Maloney on the other hand discoes an monitoring and/or analyzer, wherein the analysis must consider that resources are shared by sessions scheduled in both periods in the time interval (column 15, lines 12-14). At the time of the invention it would have been obvious to incorporate data usage analyzing means or monitoring shared session with Masuda so that data usage including shared data would be managed. Therefore, it would have been obvious to combine Masuda with Maloney to obtain the invention as specified in claim 19.

Allowable Subject Matter

11. Claims 1-7, 9-16, 21-25 are allowed. Prior art searches failed to produce any relevant results.

CONCLUSION

12. It is noted that any citation to specific pages, columns, figures, or lines in the prior art references any interpretation of the references should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. In re Heck, 699 F.2d 1331-33, 216 USPQ 1038-39 (Fed. Cir. 1983) (quoting In re Lemelson, 397 F.2d 1006, 1009, 158 USPQ 275, 277 (CCPA 1968)).

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Information regarding the status of an application may be obtained from the patent application information retrieval (PAIR) system. Status information for published application may be obtained from either Private –PAIR or Public-PAIR. Status information for unpublished applications is available through Private-PAIR only. For more information about the PAIR system, please see pair-direct.uspto.gov web site. Should you have questions regarding access to the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

15. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Tadesse Hailu, whose telephone number is (571) 272-4051, e-mail address tadesse.hailu@uspto.gov, and the Fax number is (571) 273-4051. The Examiner can normally be reached on M-F from 10:30 – 7:00 ET. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kieu Vu, can be reached at (571) 272-4057 Art Unit 2173.

/Tadesse Hailu/
Primary Examiner, Art Unit 2173

Notice of References Cited	Application/Control No. 14/664,178	Applicant(s)/Patent Under Reexamination KEEL ET AL.	
	Examiner TADEESE HAILU	Art Unit 2173	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2004/0177319 A1	09-2004	Horn, Bruce L.	G06F17/3002	715/205
*	B	US-2002/0049705 A1	04-2002	Haviv-Segal, Irit	G06N5/025	1/1
*	C	US-2004/0199514 A1	10-2004	Rosenblatt, Ira	G06F17/30165	1/1
*	D	US-2007/0130190 A1	06-2007	Yoshikawa; Tadashi	G06F17/30011	1/1
*	E	US-2002/0194502 A1	12-2002	Sheth, Dinesh	G06F17/30873	726/4
*	F	US-2002/0087602 A1	07-2002	Masuda, Ryuichi	G06F17/217	715/255
*	G	US-2003/0164862 A1	09-2003	Cadiz, Jonathan J.	G06Q10/107	715/838
*	H	US-2005/0097440 A1	05-2005	Lusk, Richard	G06Q10/10	715/758
*	I	US-2004/0261038 A1	12-2004	Ording, Bas	G06F3/0481	715/792
*	J	US-6,760,746 B1	07-2004	Schneider; Eric	G06Q10/06	709/203
*	K	US-5,535,256 A	07-1996	Maloney; Michael J.	G07C1/10	379/111
	L	US-				
	M	US-				

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	118914	(gather$4 collect$3 view$3 display$3 render$3 presenting sharing) with(information data metadata tag$4 sources) with card	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:10
L2	139852	1 card with (category$4 several different various) with (source data information)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:12
L3	11602	1 and card with (uniform category$4 several different various) with (source data information)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:13
L4	13469	1 and card with (uniform compact category$4 several different various) with (source data information)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:13
L5	461	4 and (first second) with (set group$3) with (associat$4 correspond$3) with card	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:15
L6	230	5 and @py < "2007"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:15
L7	491	4 and (first second) with (set group$3) with (associat$4 relation$4 correspond$3) with card	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:16
L8	250	7 and @py < "2007"	US-PGPUB;	OR	OFF	2016/03/05

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			USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			22:16
L9	112	8 and graphical and (interface window pane view viewport viewer)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:17
L10	11	9 and cards with (categor$5 relation$4 spatial position$3 spatial)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:19
L11	230762	(gather$4 collect$3 view$3 display$3 render$3 presenting sharing) with(information data metadata tag$4 sources) with (pane workspace window viewport card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:23
L12	243360	(gather$4 collect$3 view$3 group$3 display$3 render$3 presenting sharing) with(information data metadata tag$4 sources) with (pane workspace window viewport card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:23
L13	8928	(gather$4 collect$3 group$3) with (display$3 render$3 presenting sharing) with(information data metadata tag$4 sources) with (pane workspace window viewport card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:24
L14	4561	(gather$4 collect$3 extract$3 group$3) with (metadata tags parameters headings title hyperlink lnk url graphical iconic thumbnail) with (information data metadata tag$4 sources) with (pane compact workspace window viewport card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:27
L15	1137	14 and @py < "2007"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:27
L16	132	15 and (first second) with (group$3 criteria categor$3) with (information source content representations)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	2016/03/05 22:29

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			IBM_TDB			
L17	54	16 and graphical	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:30
L18	158	(EXTRACT$3 AND (PARAMETERS META INFORMAITON DATA)).TI. AND INFORMATION NEAR5 NODE	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:49
L19	4	18 AND ((G06F17/30595 OR G06F17/30873).CPC.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/05 22:50

EAST Search History (Interference)

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3/5/2016 10:52:36 PM
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
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	TADEESE HAILU	2173

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	07/26/2015	03/16/2016							
	1	✓	=							
	2	✓	=							
	3	✓	=							
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	25		=							
	26		✓							
	27		✓							
	28		✓							

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14664178	KEEL ET AL.
	Examiner	Art Unit
	TADEESE HAILU	2173

CPC- SEARCHED		
Symbol	Date	Examiner
G06F17/30873	3/5/2016	TH
G06F17/30595	3/5/2016	TH

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
EAST - Searched USPAT, PGPUB, EPO, JPO, DERWENT	7/21/2015	TH
EAST - Searched USPAT, PGPUB, EPO, JPO, DERWENT	3/5/2016	TH
EAST - Searched USPAT, PGPUB, EPO, JPO, DERWENT	3/6/2016	TH

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	9201	(gather$3 collect$3 arranging arrangement organiz$3 structur$3 render$3 display$3 presenting) with extracted with (uniform card interface viewpoint viewer window pane)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 16:58
L2	1621	1 and extract$3 with ((meta near data) attributes properties variables parameters identifier id name title subject header hyperlink link url) with (media content multimedia subject article video image)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:00
L3	310	2 and extracted with (presented rendered displayed populated) with (viewer pane window viewport)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:02
L4	600	2 and extracted with (presented rendered displayed populated) with (interface viewer pane window viewport)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:02
L5	151	4 and @py < "2009"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:03
L6	0	4 and @py < "2009" and various with (properties (meta near data) attributes)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:06
L7	32	4 and @py < "2009" and extract$4 with (properties (meta near data) attributes)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:06
L8	5	("2007/0219970").URPN.	USPAT	OR	OFF	2016/03/06

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						17:14
L9	3541	(gather$3 collect$3 arranging arrangement organiz$3 structur$3 render$3 display$3 presenting) with extracted with (item information caption) with (uniform card interface viewpoint viewer window pane)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:15
L10	844	9 and extract$3 with ((meta near data) attributes properties variables parameters identifier id name title subject header hyperlink link url) with (media content multimedia subject article object document video image)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:16
L11	844	10 and (gather$3 aggregat$4 collect$3 arranging arrangement organiz$3 structur$3 render$3 display$3 presenting) with extracted with (uniform card interface viewpoint viewer window pane)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:16
L12	210	11 and @py < "2008"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:17
L13	70	11 and @py < "2008" and (information near3 object)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:18
L14	6	("5075845" | "5428734" | "5594638" | "5660176" | "5711297" | "5724968").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/03/06 17:25
L15	252	("5864848").URPN.	USPAT	OR	OFF	2016/03/06 17:25
L16	139	15 and extract$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:25
L17	67	15 and extract$5 and (viewport window pane viewer)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:26
L18	0	15 and extract$5 with (attributes captions title name id parameters properties metadata meta data) with (object media image) same (display$3 render$3 insert$3 organiz$3 structur$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	OFF	2016/03/06 17:31

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		arrang$4) with (viewport container folder window pane viewer)	DERWENT; IBM_TDB			
L19	1680	extract$5 with (attributes captions title name id parameters properties metadata meta data) with (object media image) same (display$3 render$3 insert$3 organiz$3 structur$4 arrang$4) with (viewport container folder window pane viewer)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:32
L20	2194	extract$5 with (attributes captions title name id parameters properties metadata meta data) with (object media image) same (display$3 render$3 insert$3 organiz$3 structur$4 arrang$4) with (viewport container folder window pane viewer)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/03/06 17:32
L21	826	20 and @py < "2008"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:33
L22	0	21 and graphcicl near3 interface	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/06 17:34
L23	143	21 and graphical near3 interface	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/03/06 17:34
L24	23	21 and graphical near3 interface and represent$4 with object with (audio video image multimedia icon thumbnails)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/03/06 17:35
L25	20	21 and graphical near3 interface and represent$4 with object with (audio video image multimedia icon thumbnails) and (captions lable link$3 hyperlink$3 uri url)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/03/06 17:39
L26	14	21 and graphical near3 interface and represent$4 with object with (audio video image multimedia icon thumbnails) and (captions lable title name identifer) same (link$3 hyperlink$3 uri url)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/03/06 17:39

EAST Search History (Interference)

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<This search history is empty>

3/6/2016 5:41:53 PM
C:\Users\thailu\Documents\EAST\Workspaces\Default EAST Workspace 1600x1200.wsp

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Practitioner's Docket No. 4123/1001 *PATENT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Keel et al.

Application No.: 14/664,178 Group No.: 2173
Filed: 03/20/2015 Examiner: Hailu, Tadesse
For: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

RESPONSE UNDER
37 C.F.R. § 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP
2173

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT OR RESPONSE AFTER FINAL REJECTION--TRANSMITTAL

1. Transmitted herewith is an amendment after final rejection (37 C.F.R. 1.116) for this application.

STATUS

2. Applicant is a small entity. Small entity status was asserted at the time of filing.

EXTENSION OF TERM

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply. Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

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FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. 1.16(b)-(d)) has been calculated as shown below:

	(Col.1)		(Col. 2)	(Col. 3)	SMALL ENTITY			
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE			ADDIT. FEE
TOTAL	26	MINUS	28	= 0	x $	40.00	= $	0.00
INDEP	2	MINUS	3	= 0	x $	210.00	= $	0
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+ $	0.00	= $	0.00
						TOTAL ADDIT. FEE	$	0.00

No additional fee for claims is required.

FEE DEFICIENCY

5. If any extension and/or fee is required, charge Account No. 194972.

If any fee for claims is required, charge Account No. 194972.

Date: May 18, 2016

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04123/01001 2512134.1

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Keel et al.	Docket No.:	4123/1001
Appl. No:	14/664,178	Art Unit:	2173
Filed :	March 20, 2015	Examiner:	Hailu
		Conf. No:	8607

Title: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

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VIA USPTO ELECTRONIC FILING SYSTEM

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Alexandria, VA 22313-1450

RESPONSE B

Dear Sir:

In response to the Office Action of March 21, 2016, please amend the above-identified application as follows.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 8 of this paper.

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Amendments to the Claims:

Please cancel claims 18 and 19, add new claim 29, and amend claims 17, 20, and 28 as indicated below. This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously amended) A computer-implemented method of interacting with a plurality of arbitrary data items, in which at least one computer initiates execution of software instructions to perform computer processes, the method comprising:

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, graphical and textual material, and a hyperlink;

using the extracted data to cause display, simultaneously, of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, an icon area for graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions, wherein one of the icons in the set gives graphical access to a message function by which a user can create a message relating to the information object, and cause the message to be associated with the information object and shared among users who view the information object; and

storing data corresponding to each of the cards in a database, configured so that each card in the database is sharable.

2. (Original) A method according to claim 1, wherein (i) one of the set of icons gives graphical access to a vote function by which a user can provide a vote associated with the information object and (ii) one of the indicators displays the total number of votes, associated with the information object, that have been received.

3. (Previously amended) A method according to claim 1, wherein one of the indicators displays the total number of messages, associated with the information object, that have been associated with the information object.

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4. (Previously amended) A method according to claim 3, wherein the one of the indicators changes its appearance to indicate the presence of a message, associated with the information object, that has not yet been read by the user.

5. (Original) A method according to claim 1, wherein the format includes a user-accessible report on the number of times the information object has been replicated by a community of users.

6. (Original) A method according to claim 1, further comprising:

further causing to be displayed, at the same time as the representation, a map including a location, marked on the map, associated with at least one of the information objects.

7. (Original) A method according to claim 6, further comprising:

responsive to a graphical input applied to the displayed location, causing the location to be edited in accordance with the graphical input.

8. (Canceled)

9. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a second collection of the first user;

responsive to (i) a graphical selection, by the first user, of an information object in the first view and (ii) a copy command that has been graphically entered by the first user, causing the selected information object to be copied from the first view to the second view.

10. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a collection of a second user.

11. (Original) A method according to claim 10, further comprising:

responsive to (i) a graphical selection, by the first user, of an information object in the second view and (ii) a copy command that has been graphically entered by the first

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user, causing the selected information object to be copied from the second view to the first view, so that the selected information object in the collection of the second user has been copied to the first collection of the first user.

12. (Original) A method according to claim 10, further comprising:

responsive to (i) a graphical selection, by the first user, of an information object in the first view and (ii) a send command that has been graphically entered by the first user, causing the selected information object to be sent to the second user, so that the selected information object in the collection of the first user is made available to the second user to be included in the collection of the second user.

13. (Original) A method according to claim 1, further comprising:

causing an information object to be shared with another user when the information object and the other user have been graphically selected.

14. (Original) A method according to claim 1, further comprising:

causing an information object to be shared with another user via an instant message sent through an integrated instant messaging system as a result of graphical selection by a first user.

15. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, that are related to one or more information objects in the first collection as a result of being in one or more collections, of other users, that also include at least one of the information objects in the first collection.

16. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, wherein any given member of the second set of information objects is both included in a collection of another user and the other user has been selected by the first user.

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17. (Currently Amended) A computer-implemented method of interacting with a plurality of arbitrary data items ~~received~~ retrieved from a plurality of dynamic information sources, in which at least one computer initiates execution of software instructions to perform computer processes, the method comprising:

automatically obtaining additions and modifications to the information sources and automatically converting the additions and modifications into data items;

automatically configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, graphical and textual material, and a hyperlink; and

using the extracted data to cause display, simultaneously, of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, an icon area for graphical and textual material, and a heading;

wherein the information objects are automatically organized for display in a plurality of rows, wherein each row is automatically collected and corresponds to a distinct set of at least one of the dynamic information sources and the data items therein are arranged chronologically and the information object provides graphical access to content via the hyperlink.

18. (Canceled)

19. (Canceled)

20. (Currently Amended) A computer-implemented method according to claim 17, wherein at least one of the ~~news feeds~~ dynamic information sources includes an item selected from the group consisting of news feed items, alerts, announcements, e-mails, instant messages and sensor data.

21. (Previously added) A method according to claim 9, further comprising causing copies of information object to be synchronized with one another.

22. (Previously added) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a view of a first set of information objects that constitute a collection of the first user;

serving, to a client computing device of a second user, a view of a first set of information objects that constitute a collection of the second user;

storing the information objects in a database, each of the information objects

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being stored in association with data pertinent thereto including

any users thereof,

spatial location thereof in the workspace view,

content and metadata thereof, such metadata including comments and votes,

times of storage, viewing and copying thereof,

relationship thereof to any other information objects; and

processing information object data in the database to make a recommendation to the first user, wherein the recommendation is based on at least one of the criteria in the group consisting of:

number of direct and indirect relations of information objects in the collection of the first user with another information object in the database;

addition of a first pair of information objects to a collection of another user in short interval of time, of which one of the first pair of information objects is already in the collection of the first user;

presence of a second pair of information objects in the collection of the other user in close spatial proximity to one another, of which one of the second pair of information objects is already in the collection of the first user;

presence of a given information object in a row or column of information objects in the collection of the other user, wherein one of the information objects in the row or column is already in the collection of the first user;

popularity of an information object in the database, based on a popularity measure selected from the group consisting of number of users, number of views, number of copies made, number of comments made, number of votes, and combinations thereof;

presence of an information object from a second user with whom the first user previously exchanged information objects, comments or votes;

and combinations thereof.

23. (Previously added) A method according to claim 22, wherein the processing to make the recommendation includes processing to recommend an information object that is not in the collection of the first user.

24. (Previously added) A method according to claim 22, wherein the processing to make

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the recommendation includes processing to recommend another user who created an information object that is selected based on at least one of the criteria.

25. (Previously added) A method according to claim 16, wherein each of the information objects in the second view is displayed in an order determined by a criterion selected from the group consisting of the information object's creation time, its access time, and combinations thereof.

26. (Previously added) A method according to claim 17, wherein at least one of the information sources provides real-time search results.

27. (Previously added) A method according to claim 17, wherein the contents of information objects in any given row is filtered to match a user-specified set of keywords for the given row.

28. (Currently amended) A method according to claim 17, wherein any given row is configurable to receive an information object deposited therein manually by the user using a graphical user interface, wherein the information object deposited therein is placed in a left-most position.

29. (New) A method according to claim 17, wherein any given row is configurable to receive at least one RSS URL that has been deposited therein manually by the user using a graphical user interface, so as to cause display in the given row of a sequence of information objects extracted from a corresponding data stream associated with the at least one RSS URL.

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REMARKS

Claims 1-28 are pending. Claims 18 and 19 have been canceled. Claim 29, which depends on claim 17, has been added. Claims 17, 20, and 28 have been amended.

Applicant notes with appreciation the allowance of claims 1-7, 9-16, and 21-25. Claim 17 and claims dependent on claim 17 have been rejected, and the amendment of claim 17 is intended to address this rejection.

Claim 19, which was rejected under section 112, has been canceled. Claim 20 was rejected under section 112 for indefiniteness. Claim 20 has been amended to delete reference to the "news feed," and accordingly, as amended is believed to overcome the section 112 rejection. Support for the amendment is described below.

The Office Action has asserted on pages 2-3 that applicant has added disclosure not present in a prior application. That assertion is incorrect, because each preceding application in the chain of applications after the first application and to which the present application claims priority incorporates by reference the text of its predecessor applications. Furthermore, the text that was added by Response A dated October 30, 2015, was therein expressly stated to have been drawn from these predecessor applications. See Response A, pages 19-21, which expressly shows support for the insertions, which were extracted substantially verbatim from two predecessor applications in the chain of priority:

Application Number 1: Provisional Patent Application Serial Number 60/566,723, filed April29, 2004, entitled "METHODS AND APPARATUS FOR MANAGING AND INFERRING RELATIONSHIPS FROM INFORMATION".

Application Number 2: Patent Application Serial Number 11/118,301 (now US Patent Number 7,640,511), filed April29, 2005, entitled "METHODS AND APPARATUS FOR MANAGING AND INFERRING RELATIONSHIPS FROM INFORMATION OBJECTS".

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Accordingly, no new matter has been added by the insertions made via Response A, and the insertions come from applications having filing dates of 2004 and 2005 respectively in the chain of priority. Therefore the present application is properly labeled as a continuation application and not a continuation in part.

Claim 17 has been amended to claim the invention more distinctly. Specifically, the word "automatically" has been added to characterize the processes of obtaining, converting and configuring. Support for this amendment is in the application as filed herein, among other places, on page 32, lines 2-5: "In yet another mode, an automated IO creation process can traverses a set of records or files, such as a database or file system or all web pages within a certain URL and can perform automatic creation of IOs from each database record, web page, or file." See also page 22, line 16 ("Every information item is displayed [and therefore converted] as an IO 320") and page 23, line 29 to page 24, line 1 ("The News View 362 displays the contents of RSS streams (and other dynamic information sources) as IOs arranged in a table, organized by time in horizontal and by information sources, subject or category in vertical direction"). Additionally, the word "automatically" has been added before "organized for display in a plurality of rows". For support, please see the application as filed, page 21, lines 18-20 ("News View can organize and arrange IOs in an ordered list or as a table with rows and columns of IOs organized horizontally by time and vertically by information sources") and page 23, line 29 to page 24, line 17 ("The News View 362 displays the contents of RSS streams (and other dynamic information sources) as IOs arranged in a table, organized by time in horizontal and by information sources, subject or category in vertical direction" with further detailed discussion following).

Claim 17 has also been amended to specify that the information sources are "dynamic." Support for this amendment can be found in the application as filed, among other places, on page 9, paragraph 24, lines 13-19, referencing the use of IOs (information objects) for a "dynamic source such as a news feed". Claim 17 has been further amended to change "received" to "retrieved". For support, please see, among other places, the application as filed, page 24, line 30 to page 25, line 1: "IO components can be dynamic (meaning that they can automatically retrieve content updates from dynamic information sources)".

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Finally, claim 17 has been amended to require that "the information object provides graphical access to content via the hyperlink". Claim 17 already implied this limitation because it specifies that each information object includes a hyperlink that is extracted from the corresponding data item, and this amendment merely makes the limitation explicit. Further support appears, among other places, in the application as filed, page 17, lines 29-30 ("AN IO 320 may be viewed as a meaningfully labeled hyperlink to a piece of content available in a remote location").

In a manner analogous to the amendment of claim 17, claim 20 has been amended to change "news feeds" to "dynamic information sources". Support for this amendment is the same as support for the similar change made with respect to claim 17.

Claim 28 has been amended to clarify that when an information object is manually added, it is placed in a left-most position in the row. For support, please see, among other places, the application as originally filed, page 24, line 22 ("New IOs are inserted on the left pushing existing IOs to the right").

Claim 29 is new, and depends on claim 17, and requires any given row is configurable to receive at least one RSS URL that has been deposited therein manually by the user using a graphical user interface, so as to cause display in the given row of a sequence of information objects extracted from a corresponding data stream associated with the at least one RSS URL. For support, please see, among other places, the application as originally filed, page 33, paragraph 93, lines 3-11 ("The user can drag one or more RSS URLs onto a News View row which will add and displays the content of RSS URLs on the News View row as a sequence of IOs.").

Claims 17-20 and 26-28 stand rejected for anticipation or obviousness based on Masuda alone or in combination with other references. All rejected claims other than claim 17 depend directly or indirectly on claim 17. Claim 17 has been amended to require that the processes of obtaining additions and modifications, converting, and configuring occur automatically. Claim 17 has further been amended to require that the information objects are organized automatically for display. Additionally claim 17 has been amended to require that it concerns dynamic information sources (such as news feeds). Support for these amendments is discussed above.

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As compared to amended claim 17, Masuda discloses an electronic binder system for documents. See abstract. Fig. 2A shows that the Masuda system has thumbnails and electronic pages, which function in a manner analogous to Adobe Acrobat. Fig. 5 shows that the documents are placed in the electronic binder by manually dragging and dropping the documents that go into the electronic binder. Fig. 6 confirms that it is the user who must drag and drop the documents to organize them in the electronic binder. See page 5, paragraphs 106 and 107, for example. In other words, the Masuda system requires user manipulation to organize documents in the e-binder.

In contrast, claim 17 explicitly requires automatic processes to handle the stream of data items from a plurality of dynamic information sources. These automatic processes are required by the claim to convert each data item in the stream into a distinct information object, and for represent each information object in a uniform format. These automatic processes further are required to automatically organize the information objects for display in a plurality of rows, arranged chronologically. Nothing in Masuda teaches such automatic processing and nothing teaches arranging information objects in rows and chronologically automatically. For these reasons, the rejection of claim 17 does not apply to claim 17 as herein amended. Accordingly, claim 17 is now in condition for allowance, and the claims dependent directly or indirectly on claim 17 should be allowed for the same reasons as claim 17.

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For the reasons discussed in Response A, the applicants submit that all pending claims are in condition for allowance. The applicants respectfully request early allowance of the application.

Date: May 18, 2016

Respectfully submitted,

/Bruce D. Sunstein, Reg. No. 27,234/

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Electronic Acknowledgement Receipt

EFS ID:	25808990
Application Number:	14664178
International Application Number:	
Confirmation Number:	8607
Title of Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects
First Named Inventor/Applicant Name:	Paul Erich Keel
Customer Number:	2101
Filer:	Bruce D. Sunstein
Filer Authorized By:	
Attorney Docket Number:	4123/1001
Receipt Date:	18-MAY-2016
Filing Date:	20-MAR-2015
Time Stamp:	10:28:32
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Response After Final Action	kem4123_1001_ResponseAF.pdf	124918 4175182ee3f67c27e18915a9dce9a4373db5839	no	14

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/664,178	Filing Date 03/20/2015	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	05/18/2016	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 26	Minus	** 27	= 0	X $40 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $210 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	**0**

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/CHARLENE /. HERBERT/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/664,178	03/20/2015	Paul Erich Keel	4123/1001	8607

2101 7590 06/10/2016
Sunstein Kann Murphy & Timbers LLP
125 SUMMER STREET
BOSTON, MA 02110-1618

EXAMINER	
HAILU, TADESSE	

ART UNIT	PAPER NUMBER
2173	

NOTIFICATION DATE	DELIVERY MODE
06/10/2016	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptomail@sunsteinlaw.com

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 14/664,178	**Applicant(s)** KEEL ET AL.	
	Examiner TADEESE HAILU	**Art Unit** 2173	**AIA (First Inventor to File) Status** No

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 18 May 2016 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. ☒ The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance;
(2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires _____months from the mailing date of the final rejection.
   b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
   c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection. The current period for reply expires months from the mailing date of *the prior Advisory Action* or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.
   Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANT'S FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   b) ☐ They raise the issue of new matter (see NOTE below);
   c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.
   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): (a) ☒ will not be entered, or (b) ☐ will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
9. ☐ The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
10. ☐ The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
11. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.
13. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
14. ☐ Other: _____.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: 1-7,9-16 and 21-25.
Claim(s) objected to: .
Claim(s) rejected: 17-20 and 26-28.
Claim(s) withdrawn from consideration: .

/TADEESE HAILU/
Primary Examiner, Art Unit 2173

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
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Continuation of 7. First, the newly added claim 29 requires further consideration/search. second, the amendment to claim 17 does NOT place the application in condition for allowance because the argument is not persuasive: The applicant is arguing that claim 17 is now ameneded to include automatic process that differs from the manual operations (process) of Masuda. However, It is well settled that it is not "invention" to broadly provide a mechanical or automatic means to replace manual activitity which has accomplished the same result. In re Rundell, 18 CCPA 1290, 48F.2d 958, 9 USPQ 220. Accordingly, it is the examiner's position that Masuda anticipates the langauge of claim 17, the rejecion is maintained.

On the other hand, persuant to the applicant's remarks/arguments the chain of priority is considered; and the 35 USC§ 112 rejection is withdrawn.

Meta Platforms, Inc. v. Cogmedia LLC
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DO NOT ENTER: /T.H./

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Keel et al.	Docket No.:	4123/1001
Appl. No:	14/664,178	Art Unit:	2173
Filed :	March 20, 2015	Examiner:	Hailu
		Conf. No:	8607

Title: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

---

VIA USPTO ELECTRONIC FILING SYSTEM

Mail Stop AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE B

Dear Sir:

In response to the Office Action of March 21, 2016, please amend the above-identified application as follows.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 8 of this paper.

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
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Practitioner's Docket No. 4123/1001 *PATENT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Keel et al.

Application No.: 14/664,178 Group No.: 2173
Filed: 03/20/2015 Examiner: Hailu, Tadesse
For: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

RESPONSE UNDER
37 C.F.R. § 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP
2173

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT OR RESPONSE AFTER FINAL REJECTION--TRANSMITTAL

1. Transmitted herewith is a supplemental response B after final rejection (37 C.F.R. 1.116) for this application.

STATUS

2. Applicant is a small entity. Small entity status was asserted at the time of filing.

EXTENSION OF TERM

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply. Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

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FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. 1.16(b)-(d)) has been calculated as shown below:

	(Col.1)		(Col. 2)	(Col. 3)	SMALL ENTITY				
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE			ADDIT. FEE
TOTAL	20	MINUS	28	= 0	x	$ 40.00	=	$	0.00
INDEP	1	MINUS	3	= 0	x	$ 210.00	=	$	0
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+	$ 0.00	=	$	0.00
						TOTAL ADDIT. FEE		$	0.00

No additional fee for claims is required.

FEE DEFICIENCY

5. If any extension and/or fee is required, charge Account No. 194972.

If any fee for claims is required, charge Account No. 194972.

Date: June 16, 2016

/Bruce D. Sunstein, #27,234/
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04123/01001 2512134.1

Meta Platforms, Inc. v. Cogmedia LLC
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Keel et al.	Docket No.:	4123/1001
Appl. No:	14/664,178	Art Unit:	2173
Filed :	March 20, 2015	Examiner:	Hailu
		Conf. No:	8607

Title: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

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VIA USPTO ELECTRONIC FILING SYSTEM

Mail Stop AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLEMENT TO RESPONSE B

Dear Sir:

In supplement to Response B, filed May 18, 2016 in response to the Office Action of March 21, 2016, please cancel claims 17, 20, and 26-29, so that the pending claims in the above-identified application read as follows.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 8 of this paper.

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Amendments to the Claims:

Please cancel claims 18 and 19, add new claim 29, and amend claims 17, 20, and 28 as indicated below. This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously amended) A computer-implemented method of interacting with a plurality of arbitrary data items, in which at least one computer initiates execution of software instructions to perform computer processes, the method comprising:

configuring each of the data items into a distinct information object by extracting, from each data item, extracted data including a heading, a source, graphical and textual material, and a hyperlink;

using the extracted data to cause display, simultaneously, of a representation of each of the information objects in a uniform format, wherein the format includes a card, and, within the card, an icon area for graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions, wherein one of the icons in the set gives graphical access to a message function by which a user can create a message relating to the information object, and cause the message to be associated with the information object and shared among users who view the information object; and

storing data corresponding to each of the cards in a database, configured so that each card in the database is sharable.

2. (Original) A method according to claim 1, wherein (i) one of the set of icons gives graphical access to a vote function by which a user can provide a vote associated with the information object and (ii) one of the indicators displays the total number of votes, associated with the information object, that have been received.

3. (Previously amended) A method according to claim 1, wherein one of the indicators displays the total number of messages, associated with the information object, that have been associated with the information object.

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4. (Previously amended) A method according to claim 3, wherein the one of the indicators changes its appearance to indicate the presence of a message, associated with the information object, that has not yet been read by the user.

5. (Original) A method according to claim 1, wherein the format includes a user-accessible report on the number of times the information object has been replicated by a community of users.

6. (Original) A method according to claim 1, further comprising:

further causing to be displayed, at the same time as the representation, a map including a location, marked on the map, associated with at least one of the information objects.

7. (Original) A method according to claim 6, further comprising:

responsive to a graphical input applied to the displayed location, causing the location to be edited in accordance with the graphical input.

8. (Canceled)

9. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a second collection of the first user;

responsive to (i) a graphical selection, by the first user, of an information object in the first view and (ii) a copy command that has been graphically entered by the first user, causing the selected information object to be copied from the first view to the second view.

10. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, that constitute a collection of a second user.

11. (Original) A method according to claim 10, further comprising:

responsive to (i) a graphical selection, by the first user, of an information object in the second view and (ii) a copy command that has been graphically entered by the first

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user, causing the selected information object to be copied from the second view to the first view, so that the selected information object in the collection of the second user has been copied to the first collection of the first user.

12. (Original) A method according to claim 10, further comprising:

responsive to (i) a graphical selection, by the first user, of an information object in the first view and (ii) a send command that has been graphically entered by the first user, causing the selected information object to be sent to the second user, so that the selected information object in the collection of the first user is made available to the second user to be included in the collection of the second user.

13. (Original) A method according to claim 1, further comprising:

causing an information object to be shared with another user when the information object and the other user have been graphically selected.

14. (Original) A method according to claim 1, further comprising:

causing an information object to be shared with another user via an instant message sent through an integrated instant messaging system as a result of graphical selection by a first user.

15. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, that are related to one or more information objects in the first collection as a result of being in one or more collections, of other users, that also include at least one of the information objects in the first collection.

16. (Original) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a first view of a first set of information objects that constitute a first collection of the first user;

also serving, to the client computing device of the first user, a second view of a second set of information objects, outside of the first collection, wherein any given member of the second set of information objects is both included in a collection of another user and the other user has been selected by the first user.

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17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Previously added) A method according to claim 9, further comprising causing copies of information object to be synchronized with one another.

22. (Previously added) A method according to claim 1, further comprising:

serving, to a client computing device of a first user, a view of a first set of information objects that constitute a collection of the first user;

serving, to a client computing device of a second user, a view of a first set of information objects that constitute a collection of the second user;

storing the information objects in a database, each of the information objects being stored in association with data pertinent thereto including

any users thereof,

spatial location thereof in the workspace view,

content and metadata thereof, such metadata including comments and votes,

times of storage, viewing and copying thereof,

relationship thereof to any other information objects; and

processing information object data in the database to make a recommendation to the first user, wherein the recommendation is based on at least one of the criteria in the group consisting of:

number of direct and indirect relations of information objects in the collection of the first user with another information object in the database;

addition of a first pair of information objects to a collection of another user in short interval of time, of which one of the first pair of information objects is already in the collection of the first user;

presence of a second pair of information objects in the collection of the other user in close spatial proximity to one another, of which one of the second pair of information objects is already in the collection of the first user;

presence of a given information object in a row or column of information

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objects in the collection of the other user, wherein one of the information objects in the row or column is already in the collection of the first user;

popularity of an information object in the database, based on a popularity measure selected from the group consisting of number of users, number of views, number of copies made, number of comments made, number of votes, and combinations thereof;

presence of an information object from a second user with whom the first user previously exchanged information objects, comments or votes;

and combinations thereof.

23. (Previously added) A method according to claim 22, wherein the processing to make the recommendation includes processing to recommend an information object that is not in the collection of the first user.

24. (Previously added) A method according to claim 22, wherein the processing to make the recommendation includes processing to recommend another user who created an information object that is selected based on at least one of the criteria.

25. (Previously added) A method according to claim 16, wherein each of the information objects in the second view is displayed in an order determined by a criterion selected from the group consisting of the information object's creation time, its access time, and combinations thereof.

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Canceled)

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REMARKS

With the present amendment, claim 17 and claims dependent on claim 17 are canceled. With the prior amendment of Response B, the pending claims are now 1-7, 9-16, and 21-25, which have been previously allowed.

Applicants note that in a telephone interview with the Examiner on June 14, 2016, the Examiner maintained that claim 17 reads on the Matsuda reference. Although applicant s disagree, in the interest of expediting prosecution of the application, this claim and claims dependent on it have been canceled and will be presented in a continuation application.

Accordingly, the applicants submit that all pending claims are in condition for allowance. The applicants respectfully request reconsideration and early allowance of the application.

Date: June 16, 2016

Respectfully submitted,

/Bruce D. Sunstein, Reg. No. 27,234/

Bruce D. Sunstein
Registration No. 27,234
Attorney for Applicants

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Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
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Electronic Acknowledgement Receipt

EFS ID:	26081200
Application Number:	14664178
International Application Number:	
Confirmation Number:	8607
Title of Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects
First Named Inventor/Applicant Name:	Paul Erich Keel
Customer Number:	2101
Filer:	Bruce D. Sunstein
Filer Authorized By:	
Attorney Docket Number:	4123/1001
Receipt Date:	16-JUN-2016
Filing Date:	20-MAR-2015
Time Stamp:	12:07:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Supplemental Response or Supplemental Amendment	kem4123_1001_SuppResponseBAF.pdf	107519 c2030ddf4f983f42fe0be70fe7fa05f9cc8a1c52	no	9
Warnings:					
Information:					

Total Files Size (in bytes):	107519

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Practitioner's Docket No. 4123/1001 *PATENT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Keel et al.

Application No.: 14/664,178 Group No.: 2173
Filed: 03/20/2015 Examiner: Hailu, Tadesse
For: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

RESPONSE UNDER
37 C.F.R. § 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP
2173

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P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT OR RESPONSE AFTER FINAL REJECTION--TRANSMITTAL

1. Transmitted herewith is a Second Supplement to Response B after final rejection (37 C.F.R. 1.116) for this application.

STATUS

2. Applicant is a small entity. Small entity status was asserted at the time of filing.

EXTENSION OF TERM

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply. Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 308 of 360

FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. 1.16(b)-(d)) has been calculated as shown below:

	(Col.1)		(Col. 2)	(Col. 3)	SMALL ENTITY				
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE			ADDIT. FEE
TOTAL	20	MINUS	28	= 0	x	$ 40.00	=	$	0.00
INDEP	1	MINUS	3	= 0	x	$ 210.00	=	$	0
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+	$ 0.00	=	$	0.00
						TOTAL ADDIT. FEE		$	0.00

No additional fee for claims is required.

FEE DEFICIENCY

5. If any extension and/or fee is required, charge Account No. 194972.

If any fee for claims is required, charge Account No. 194972.

Date: July 12, 2016

/Bruce D. Sunstein, #27,234/
Bruce D. Sunstein
Registration No. 27,234
Sunstein Kann Murphy & Timbers LLP
125 Summer Street
Boston, MA 02110
617-443-9292
Customer No. 02101

04123/01001 2512134.1

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 309 of 360

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Keel et al.	Docket No.:	4123/1001
Appl. No:	14/664,178	Art Unit:	2173
Filed :	March 20, 2015	Examiner:	Hailu
		Conf. No:	8607

Title: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

---

VIA USPTO ELECTRONIC FILING SYSTEM

Mail Stop AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SECOND SUPPLEMENT TO RESPONSE B

Dear Sir:

In further supplement to Response B, filed May 18, 2016, in response to the Office Action of March 21, 2016, please delete the first paragraph of the specification, concerning rights of the Government and substitute a new first paragraph concerning the same to read as set forth below.

Amendments to the Specification are reflected on page 2.

Remarks appear on page 2 of this paper.

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 310 of 360

Amendments to the Specification:

Please delete the first paragraph of the specification, concerning rights of the Government, and substitute a new first paragraph concerning the same to read as follows:

[0001] This invention was made with Government support under Grant No. N00014-02-1-0132 and/or N00014-04-1-0569 and/or N00014-08-C-0206 awarded by the Office of Naval Research. The Government has certain rights in the invention.

REMARKS

The present amendment is made to correct and update the reference to relevant Government contract numbers.

Date: July 12, 2016

Respectfully submitted,

/Bruce D. Sunstein, Reg. No. 27,234/

Bruce D. Sunstein
Registration No. 27,234
Attorney for Applicants

Sunstein Kann Murphy & Timbers LLP
125 Summer Street
Boston, Massachusetts 02110-1618
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Fax: (617) 443-0004

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 311 of 360

Electronic Acknowledgement Receipt

EFS ID:	26322270
Application Number:	14664178
International Application Number:	
Confirmation Number:	8607
Title of Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects
First Named Inventor/Applicant Name:	Paul Erich Keel
Customer Number:	2101
Filer:	Bruce D. Sunstein
Filer Authorized By:	
Attorney Docket Number:	4123/1001
Receipt Date:	12-JUL-2016
Filing Date:	20-MAR-2015
Time Stamp:	15:48:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Supplemental Response or Supplemental Amendment	kem4123_1001_SecondSupplementalResponse.pdf	202058 7f5c83b9e9aa649957fa754ad03e57a2480a1aec	no	4

Warnings:

Information:	
Total Files Size (in bytes):	202058

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Practitioner's Docket No. 4123/1001 ***PATENT***

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Keel, et al		
Application No.:	14/664,178	Group No.:	2173
Filed:	March 20, 2015	Examiner:	Hailu, Tadesse

For: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLMENTAL INFORMATION DISCLOSURE STATEMENT

List of Sections Forming Part of This Information Disclosure Statement

The following sections are being submitted for this Information Disclosure Statement:

1. [x] Preliminary Statements
2. [x] Forms PTO/SB/08A and 08B (substitute for Form PTO-1449)
3. [ ] Statement as to Information Not Found in Patents or Publications
4. [ ] Identification of Prior Application in Which Listed Information Was Already Cited and for Which No Copies Are Submitted or Need Be Submitted
5. [ ] Cumulative Patents or Publications
6. [x] Copies of Listed Information Items Accompanying This Statement
7. [ ] Concise Explanation of Non-English Language Listed Information Items
   - 7A. [ ]EPO Search Report
   - 7B. [ ]English Language Version of EPO Search Report
8. [ ] Translation(s) of Non-English Language Documents
9. [ ] Concise Explanation of English Language Listed Information Items (Optional)
10. [x] Identification of Person(s) Making This Information Disclosure Statement

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 314 of 360

Section 1. Preliminary statements

Applicants submit herewith patents, publications or other information, of which they are aware that they believe may be material to the examination of this application, and in respect of which, there may be a duty to disclose.

The filing of this information disclosure statement shall not be construed as a representation that a search has been made (37 C.F.R. § 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability, or that no other material information exists.

The filing of this information disclosure statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 315 of 360

Section 2. **Forms PTO/SB/08A and 08B (formerly Form PTO-1449)**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Keel, et al	Attorney Docket:	4123/1001
Serial No:	14/664,178	Art Group Unit:	2173
Date Filed:	March 20, 2015	Examiner Name:	Hailu, Tadesse
Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects		

DATE: September 9, 2016

LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

U.S. PATENT DOCUMENTS					
Examiner Initials	**Reference Number**	**Document Number**	**Issue Date**	**Inventor**	**Class/Subclass**
	BV	US 6,289,362	Sep. 11, 2001	Van Der Meer	707/501
	BW	US 6,415,316	Jul. 2, 2002	Van Der Meer	709/203

Examiner Signature: _____

Date Considered: _____

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation *if not* in conformance and not considered. Include copy of this form with next communication to applicant.

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 316 of 360

Section 6. Copies of Listed Information Items Accompanying This Statement

Legible copies of all items listed in Forms PTO/SB/08A and 08B (substitute for Form PTO-1449) accompany this information statement.

[x] Exception(s) to above:

U.S. patent citations are not included pursuant to the United States Patent and Trademark Office's September 21, 2004 waiver of the copy requirement in 37 CFR 1.98 for cited pending U.S. patent citations when the patent citations are available in the USPTO's IFW system.

[ ] Items in prior application, from which an earlier filing date is claimed for this application, as identified in Section 4.

[ ] Cumulative patents or publications identified in Section 5.

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 317 of 360

Section 10. Identification of Person Making This Information Disclosure Statement

The person making this certification is the practitioner of record.

/Bruce D. Sunstein, #27,234/
SIGNATURE OF PRACTITIONER

Reg. No.: 27,234

Bruce D. Sunstein
(type or print name of practitioner)

Tel. No.: (617) 443-9292

Sunstein Kann Murphy & Timbers LLP
125 Summer Street, 11th Floor
P.O. Address

Customer No.: 002101

Boston, MA 02110-1618

04123/01001 2571131.1

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 318 of 360

Practitioner's Docket No. 4123/1001 *PATENT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Keel, et al

		Group No.:	2173
Application No.:	14/664,178	Examiner:	Hailu, Tadesse
Filed:	March 20, 2015		

For: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

STATEMENT FOR INFORMATION DISCLOSURE UNDER 37 C.F.R. SECTION 1.97(e)

IDENTIFICATION OF INFORMATION DISCLOSURE STATEMENT FOR WHICH THIS STATEMENT IS BEING MADE

1. This statement is being made for the Information Disclosure Statement
   [x] accompanying this statement.
   [ ] filed _____.
   Date

STATEMENT

2. I, the person(s) signing below state:

   [x] that no item of information contained in the information disclosure statement was cited in any communication from a foreign patent office in a counterpart foreign application and to the knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in Section 1.56(c) more than three months prior to the filing of the information disclosure statement. 37 C.F.R. Section 1.97(e)(2).

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 319 of 360

IDENTIFICATION OF PERSON(S) MAKING THIS STATEMENT

3. The person making this statement is the practitioner of record.

/Bruce D. Sunstein, #27,234/
SIGNATURE OF PRACTITIONER

Reg. No. 27,234

Bruce D. Sunstein
(type or print name of practitioner)

Tel. No. (617) 443-9292

SUNSTEIN KANN MURPHY & TIMBERS LLP
125 Summer Street, 11th Floor
Boston, MA 02110
617-443-9292

Customer No.: 002101

04123/01001 2571282.1

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 320 of 360

Electronic Patent Application Fee Transmittal

Application Number:	14664178
Filing Date:	20-Mar-2015
Title of Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects
First Named Inventor/Applicant Name:	Paul Erich Keel
Filer:	Bruce D. Sunstein
Attorney Docket Number:	4123/1001

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	2806	1	90	90
		Total in USD ($)		**90**

Electronic Acknowledgement Receipt	
EFS ID:	26877612
Application Number:	14664178
International Application Number:	
Confirmation Number:	8607
Title of Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects
First Named Inventor/Applicant Name:	Paul Erich Keel
Customer Number:	2101
Filer:	Bruce D. Sunstein
Filer Authorized By:	
Attorney Docket Number:	4123/1001
Receipt Date:	09-SEP-2016
Filing Date:	20-MAR-2015
Time Stamp:	11:56:09
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$90
RAM confirmation Number	090916INTEFSW00009430194972
Deposit Account	194972
Authorized User	Bruce Sunstein
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		SuppIDS.pdf	121649 9b09db0d7930f2aa368ef205fe47ecb881ee a6bd	yes	9

Multipart Description/PDF files in .zip description

Document Description	Start	End
Transmittal Letter	1	2
Information Disclosure Statement (IDS) Form (SB08)	3	7
Miscellaneous Incoming Letter	8	9

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30501 64f91deda364c8d2a6d304997fe0c9049a9 b793b	no	2

Warnings:

Information:

Total Files Size (in bytes):	152150

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Practitioner's Docket No. 4123/1001 *PATENT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Keel, et al

Application No.:	14/664,178	Group No.:	2173
Filed:	March 20, 2015	Examiner:	Hailu, Tadesse

For: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT AFTER MAILING DATE OF FINAL ACTION, NOTICE OF ALLOWANCE OR ACTION THAT CLOSES PROSECUTION BUT BEFORE PAYMENT OF ISSUE FEE (37 C.F.R. § 1.97(d))

TIME OF TRANSMITTAL OF ACCOMPANYING INFORMATION DISCLOSURE STATEMENT

1. The information disclosure statement transmitted herewith is being filed ***after*** a final action under § 1.113, or a notice of allowance under § 1.311, whichever occurs first, but before, or simultaneously with, the payment of the issue fee.

STATEMENT AND FEE

2. In accordance with the requirements of 37 C.F.R. § 1.97(d):

   A. Accompanying this transmittal is a statement, as specified in 37 C.F.R. § 1.97(e).
   B. Applicant submits the fee set forth in § 1.17(p) ($90.00, at the small entity rate)

FEE DUE

3. Fee due (§ 1.17(p)): $90.00

METHOD OF PAYMENT OF FEE

4. Authorization is hereby made to charge the amount of $90.00 to Deposit Account No. 19-4972.

   Charge any additional fees required by this paper or credit any overpayment to Deposit Account No. 19-4972.

Date: September 9, 2016

/Bruce D. Sunstein, #27,234/

Bruce D. Sunstein
Registration No. 27,234
SUNSTEIN KANN MURPHY & TIMBERS LLP
Customer Number 02101
125 Summer Street
Boston, MA 02110-1618
US

04123/01001 2571287.1

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 327 of 360

Receipt date: 06/16/2016

OK TO ENTER: /T.H/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Keel et al.	Docket No.:	4123/1001
Appl. No:	14/664,178	Art Unit:	2173
Filed :	March 20, 2015	Examiner:	Hailu
		Conf. No:	8607

Title: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

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VIA USPTO ELECTRONIC FILING SYSTEM

Mail Stop AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLEMENT TO RESPONSE B

Dear Sir:

In supplement to Response B, filed May 18, 2016 in response to the Office Action of March 21, 2016, please cancel claims 17, 20, and 26-29, so that the pending claims in the above-identified application read as follows.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 8 of this paper.

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 328 of 360

Amendments to the Specification:

Please delete the first paragraph of the specification, concerning rights of the Government, and substitute a new first paragraph concerning the same to read as follows:

[0001] This invention was made with Government support under Grant No. N00014-02-1-0132 and/or N00014-04-1-0569 and/or N00014-08-C-0206 awarded by the Office of Naval Research. The Government has certain rights in the invention.

REMARKS

The present amendment is made to correct and update the reference to relevant Government contract numbers.

Date: July 12, 2016

Respectfully submitted,

/Bruce D. Sunstein, Reg. No. 27,234/

Bruce D. Sunstein
Registration No. 27,234
Attorney for Applicants

Sunstein Kann Murphy & Timbers LLP
125 Summer Street
Boston, Massachusetts 02110-1618
Tel: (617) 443-9292
Fax: (617) 443-0004

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 329 of 360

Practitioner's Docket No. 4123/1001 ***PATENT***

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Keel, et al		
Application No.:	14/664,178	Group No.:	2173
Filed:	March 20, 2015	Examiner:	Hailu, Tadesse

For: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLMENTAL INFORMATION DISCLOSURE STATEMENT

List of Sections Forming Part of This Information Disclosure Statement

The following sections are being submitted for this Information Disclosure Statement:

1. [x] Preliminary Statements
2. [x] Forms PTO/SB/08A and 08B (substitute for Form PTO-1449)
3. [ ] Statement as to Information Not Found in Patents or Publications
4. [ ] Identification of Prior Application in Which Listed Information Was Already Cited and for Which No Copies Are Submitted or Need Be Submitted
5. [ ] Cumulative Patents or Publications
6. [x] Copies of Listed Information Items Accompanying This Statement
7. [ ] Concise Explanation of Non-English Language Listed Information Items
   - 7A. [ ]EPO Search Report
   - 7B. [ ]English Language Version of EPO Search Report
8. [ ] Translation(s) of Non-English Language Documents
9. [ ] Concise Explanation of English Language Listed Information Items (Optional)
10. [x] Identification of Person(s) Making This Information Disclosure Statement

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 330 of 360

Section 1. Preliminary statements

Applicants submit herewith patents, publications or other information, of which they are aware that they believe may be material to the examination of this application, and in respect of which, there may be a duty to disclose.

The filing of this information disclosure statement shall not be construed as a representation that a search has been made (37 C.F.R. § 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability, or that no other material information exists.

The filing of this information disclosure statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 331 of 360

Section 2. **Forms PTO/SB/08A and 08B (formerly Form PTO-1449)**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Keel, et al	Attorney Docket:	4123/1001
Serial No:	14/664,178	Art Group Unit:	2173
Date Filed:	March 20, 2015	Examiner Name:	Hailu, Tadesse
Invention:	Methods and Apparatus for Managing and Exchanging Information Using Information Objects		

DATE: September 9, 2016

LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

U.S. PATENT DOCUMENTS					
Examiner Initials	**Reference Number**	**Document Number**	**Issue Date**	**Inventor**	**Class/Subclass**
/T.H/	BV	US 6,289,362	Sep. 11, 2001	Van Der Meer	707/501
/T.H/	BW	US 6,415,316	Jul. 2, 2002	Van Der Meer	709/203

Examiner Signature: /TADESSE HAILU/

Date Considered: 09/19/2016

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation *if not* in conformance and not considered. Include copy of this form with next communication to applicant.

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 332 of 360

Section 6. Copies of Listed Information Items Accompanying This Statement

Legible copies of all items listed in Forms PTO/SB/08A and 08B (substitute for Form PTO-1449) accompany this information statement.

[x] Exception(s) to above:

U.S. patent citations are not included pursuant to the United States Patent and Trademark Office's September 21, 2004 waiver of the copy requirement in 37 CFR 1.98 for cited pending U.S. patent citations when the patent citations are available in the USPTO's IFW system.

[ ] Items in prior application, from which an earlier filing date is claimed for this application, as identified in Section 4.

[ ] Cumulative patents or publications identified in Section 5.

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 333 of 360

Section 10. Identification of Person Making This Information Disclosure Statement

The person making this certification is the practitioner of record.

/Bruce D. Sunstein, #27,234/
SIGNATURE OF PRACTITIONER

Reg. No.: 27,234

Bruce D. Sunstein
(type or print name of practitioner)

Tel. No.: (617) 443-9292

Sunstein Kann Murphy & Timbers LLP
125 Summer Street, 11th Floor
P.O. Address

Customer No.: 002101

Boston, MA 02110-1618

04123/01001 2571131.1

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
Ex. 1034 - Page 334 of 360

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 8607

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
14/664,178	03/20/2015 RULE	715	2173	4123/1001

APPLICANTS

INVENTORS

Paul Erich Keel, Cambridge, MA;
Jeffrey Huang, Lausanne, SWITZERLAND;

**** CONTINUING DATA ***************************

This application is a CON of 13/925,031 06/24/2013 ABN
which is a CON of 12/563,416 09/21/2009 PAT 8499248
which is a CON of 61/116,747 11/21/2008
and is a CIP of 11/118,301 04/29/2005 PAT 7640511
which claims benefit of 60/566,723 04/29/2004

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
03/31/2015

Foreign Priority claimed	35 USC 119(a-d) conditions met	Verified and Acknowledged	Met after Allowance	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
☐ Yes ☑ No	☐ Yes ☐ No	/TADEESE HAILU/ Examiner's Signature	☐ Initials	MA	14	20	1

ADDRESS

Sunstein Kann Murphy & Timbers LLP
125 SUMMER STREET
BOSTON, MA 02110-1618
UNITED STATES

TITLE

Methods and Apparatus for Managing and Exchanging Information Using Information Objects

FILING FEE RECEIVED		
1010	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

BIB (Rev. 05/07).

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14664178	KEEL ET AL.
	Examiner	**Art Unit**
	TADEESE HAILU	2173

CPC						
Symbol					**Type**	**Version**
G06F		3	/	04842	F	2013-01-01
G06F		3	/	04817	I	2013-01-01
			/			
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CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
			/					
			/					

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 20	
/TADEESE HAILU/ Primary Examiner.Art Unit 2173 (Primary Examiner)	9/19/16 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 11

Meta Platforms, Inc. v. Cogmedia LLC
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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14664178	KEEL ET AL.
	Examiner	**Art Unit**
	TADEESE HAILU	2173

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION	
CLASS	SUBCLASS	CLAIMED	NON-CLAIMED
		G 0 6 F 3 / 048 (2013.01.01)	
CROSS REFERENCE(S)			
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)		

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	20	
/TADEESE HAILU/ Primary Examiner.Art Unit 2173	9/19/16	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	11

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14664178	KEEL ET AL.
	Examiner	**Art Unit**
	TADEESE HAILU	2173

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1		17												
2	2		18												
3	3		19												
4	4		20												
5	5	9	21												
6	6	18	22												
7	7	19	23												
	8	20	24												
8	9	17	25												
10	10		26												
11	11		27												
12	12		28												
13	13		29												
14	14														
15	15														
16	16														

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 20	
/TADEESE HAILU/ Primary Examiner.Art Unit 2173 (Primary Examiner)	9/19/16 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 11

U.S. Patent and Trademark Office Part of Paper No. 20160919

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L25	102022	graphical near3 interface and information with (represent$4 thumbnails icons graphics)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/09/19 13:04
L26	5999	25 AND ((G06F3/0482 OR G06F3/04842 OR G06F17/212 OR G06F17/30958 OR G06F17/30011 OR G06F7/08).CPC.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/09/19 13:06
L27	5796	26 and (arrang$4 organiz$3 render$4 display$3 view$3 gather$5) with (object information documents)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/09/19 13:10
L28	108	27 and (unified single) with interface same (management manager) same (content information document folder)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/09/19 13:13
L29	108	28 and (thumbnails represent$4 icons (information adj object))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/09/19 13:15
L30	12	29 and @py < "2009"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/09/19 13:16
L31	5	("6289362" "6415316").pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/09/19 13:19
L32	1	("6289362" "6415316").pn. and information near object	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/09/19 13:21
L33	0	("6289362" "6415316").pn. and information near object and card	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/09/19 13:28

EAST Search History (Interference)

<This search history is empty>

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9/19/2016 1:30:13 PM
C:\Users\thailu\Documents\EAST\Workspaces\Default EAST Workspace 1600x1200.wsp

Meta Platforms, Inc. v. Cogmedia LLC
Meta Platforms, Inc. - IPR2026-00249
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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14664178	KEEL ET AL.
	Examiner	Art Unit
	TADEESE HAILU	2173

CPC- SEARCHED		
Symbol	Date	Examiner
G06F17/30873	3/5/2016	TH
G06F17/30595	3/5/2016	TH
(G06F3/0482 OR G06F3/04842 OR G06F17/212 OR G06F17/30958 OR G06F17/30011 OR G06F7/08).CPC.	9/19/2016	TH

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
EAST - Searched USPAT, PGPUB, EPO, JPO, DERWENT	7/21/2015	TH
EAST - Searched USPAT, PGPUB, EPO, JPO, DERWENT	3/5/2016	TH
EAST - Searched USPAT, PGPUB, EPO, JPO, DERWENT	3/6/2016	TH
EAST - Searched USPAT, PGPUB, EPO, JPO, DERWENT	9/19/2016	TH

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
G06F	(3/0482 OR 3/04842 OR 17/212 OR 17/30958 OR17/30011 OR G/08).CPC.	9/19/2016	TH

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

2101 7590 09/23/2016
Sunstein Kann Murphy & Timbers LLP
125 SUMMER STREET
BOSTON, MA 02110-1618

EXAMINER
HAILU, TADESSE

ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 09/23/2016

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/664,178	03/20/2015	Paul Erich Keel	4123/1001	8607

TITLE OF INVENTION: METHODS AND APPARATUS FOR MANAGING AND EXCHANGING INFORMATION USING INFORMATION OBJECTS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	12/23/2016

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PTOL-85 (Rev. 02/11)

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PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

2101 7590 09/23/2016
Sunstein Kann Murphy & Timbers LLP
125 SUMMER STREET
BOSTON, MA 02110-1618

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/664,178	03/20/2015	Paul Erich Keel	4123/1001	8607

TITLE OF INVENTION: METHODS AND APPARATUS FOR MANAGING AND EXCHANGING INFORMATION USING INFORMATION OBJECTS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	12/23/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
HAILU, TADESSE	2173	715-753000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29
  NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ❑ Applicant asserting small entity status. See 37 CFR 1.27
  NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ❑ Applicant changing to regular undiscounted fee status.
  NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Meta Platforms, Inc. v. Cogmedia LLC
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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/664,178	03/20/2015	Paul Erich Keel	4123/1001	8607

2101 7590 09/23/2016

Sunstein Kann Murphy & Timbers LLP
125 SUMMER STREET
BOSTON, MA 02110-1618

EXAMINER	
HAILU, TADESSE	
ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 09/23/2016

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 02/11)

Meta Platforms, Inc. v. Cogmedia LLC
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OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 14/664,178	Applicant(s) KEEL ET AL.	
	Examiner TADEESE HAILU	Art Unit 2173	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the amendment filed June 16, 2016 and IDS filed 9/9/16*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-7,9-16 and 21-25*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   Certified copies:
   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 9/9/2016
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/TADEESE HAILU/
Primary Examiner, Art Unit 2173

Meta Platforms, Inc. v. Cogmedia LLC
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The present application is being examined under the pre-AIA first to invent provisions.

Amendments

Please enter all amendments/responses including amendment to the claims and Specification and supplementary Amendments/Response filed on 6/16/16, and/or 7/12/16.

Allowable Subject Matter

Claims 1-7, 9-16, and 21-25 are allowed. The following is an examiner's statement of reasons for allowance: The invention is related to a graphical user interface for managing/organizing information objects. The prior art of records fails to teach the language of claim 1 including *representing information object in a uniform format, wherein the format includes a card, and, within the card, an icon area for graphical and textual material, the heading, the source, a set of indicators, and a set of icons giving graphical access to functions, wherein one of the icons in the set gives graphical access to a message function by which a user can create a message relating to the information object, and cause the message to be associated with the information object and shared among users who view the information object; and storing data corresponding to each of the cards in a database, configured so that each card in the database is sharable.*

Further prior art searches failed to produce any relevant results.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

CONCLUSION

Information regarding the status of an application may be obtained from the patent application information retrieval (PAIR) system. Status information for published application may be obtained from either Private –PAIR or Public-PAIR. Status information for unpublished applications is available through Private-PAIR only. For more information about the PAIR system, please see pair-direct.uspto.gov web site. Should you have questions regarding access to the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Tadesse Hailu, whose telephone number is (571) 272-4051, e-mail address tadesse.hailu@uspto.gov, and the Fax number is (571) 273-4051. The Examiner can normally be reached on M-F from 10:30 – 7:00 ET. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kieu Vu, can be reached at (571) 272-4057 Art Unit 2173.

/Tadesse Hailu/
Primary Examiner, Art Unit 2173

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
14/664,178	03/20/2015	2173	1010	4123/1001	20	2

CONFIRMATION NO. 8607

CORRECTED FILING RECEIPT

2101
Sunstein Kann Murphy & Timbers LLP
125 SUMMER STREET
BOSTON, MA 02110-1618



Date Mailed: 10/17/2016

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Paul Erich Keel, Cambridge, MA;
Jeffrey Huang, Lausanne, SWITZERLAND;

Applicant(s)

Paul Erich Keel, Cambridge, MA;
Jeffrey Huang, Lausanne, SWITZERLAND;

Power of Attorney: The patent practitioners associated with Customer Number 02101

Domestic Priority data as claimed by applicant

This application is a CON of 13/925,031 06/24/2013 ABN
which is a CON of 12/563,416 09/21/2009 PAT 8499248
which claims benefit of 61/116,747 11/21/2008
and is a CIP of 11/118,301 04/29/2005 PAT 7640511
which claims benefit of 60/566,723 04/29/2004

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: No

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Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 03/31/2015
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/664,178**
Projected Publication Date: Request for Non-Publication Acknowledged
Non-Publication Request: Yes
Early Publication Request: No
**** SMALL ENTITY ****
Title

METHODS AND APPARATUS FOR MANAGING AND EXCHANGING INFORMATION USING INFORMATION OBJECTS

Preliminary Class

715

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

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countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

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Practitioner's Docket No. 4123/1001 *PATENT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Keel et al.

Application No.: 14/664,178 Group No.: 2173
Filed: March 20, 2015 Examiner: Hailu, Tadesse
For: Methods and Apparatus for Managing and Exchanging Information Using Information Objects

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF PAYMENT OF ISSUE FEE (37 C.F.R. § 1.311)

1. Applicant hereby pays the issue fee for the attached Issue Fee Transmittal PTOL-85.

2. Applicant

Asserted small entity status in this application on March 20, 2015 by payment of the basic filing fee as a small entity. (37 C.F.R. § 1.27(c)(3))

It is confirmed that small entity status for this application has been checked and it is still in effect and is being asserted.

3. Fee (Issue):

Application status is other than a small entity with a utility fee of $480.00.

4. Fees (Publication)

The publication fee is no longer applicable.

5. Total Fees Due

The total amount of fee due is:

Issue Fee	$480.00
TOTAL FEE(S) DUE	$480.00

6. Assignee's Name and Address To Be Printed On Patent is as follows (37 C.F.R. § 3.81):

Name of Assignee:	Paul Erich Keel
Address:	872 Massachusetts Avenue, Apartment 1004
Residence (City and State or Country):	Cambridge, MA 02139

Assignee category or categories (not printed on patent): Individual

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7. Payment of total fee due:

Authorization is hereby made to charge the amount of $480.00 to Deposit Account No. 194972.

Charge any additional fees required by this paper or credit any overpayment in the manner authorized above.

Date: November 9, 2016

/Bruce D. Sunstein, #27,234/
Bruce D. Sunstein
Registration No. 27,234
Sunstein Kann Murphy & Timbers LLP
125 Summer Street
Boston, MA 02110
617-443-9292
Customer No. 02101

04123/01001 2618527.1

Meta Platforms, Inc. v. Cogmedia LLC
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PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

2101 7590 09/23/2016
Sunstein Kann Murphy & Timbers LLP
125 SUMMER STREET
BOSTON, MA 02110-1618

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/664,178	03/20/2015	Paul Erich Keel	4123/1001	8607

TITLE OF INVENTION: METHODS AND APPARATUS FOR MANAGING AND EXCHANGING INFORMATION USING INFORMATION OBJECTS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	12/23/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
HAILU, TADESSE	2173	715-753000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Sunstein Kann Murphy & Timbers LLP
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Paul Erich Keel

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Cambridge, MA

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☒ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number 194972 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
  NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
  NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ☐ Applicant changing to regular undiscounted fee status.
  NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Bruce D. Sunstein, #27,234/ Date November 9, 2016

Typed or printed name Bruce D. Sunstein Registration No. 27,234

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Meta Platforms, Inc. v. Cogmedia LLC
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Electronic Patent Application Fee Transmittal

Application Number:	14664178
Filing Date:	20-Mar-2015
Title of Invention:	METHODS AND APPARATUS FOR MANAGING AND EXCHANGING INFORMATION USING INFORMATION OBJECTS
First Named Inventor/Applicant Name:	Paul Erich Keel
Filer:	Bruce D. Sunstein
Attorney Docket Number:	4123/1001

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	480	480

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**480**

Electronic Acknowledgement Receipt

EFS ID:	27457228
Application Number:	14664178
International Application Number:	
Confirmation Number:	8607
Title of Invention:	METHODS AND APPARATUS FOR MANAGING AND EXCHANGING INFORMATION USING INFORMATION OBJECTS
First Named Inventor/Applicant Name:	Paul Erich Keel
Customer Number:	2101
Filer:	Bruce D. Sunstein
Filer Authorized By:	
Attorney Docket Number:	4123/1001
Receipt Date:	09-NOV-2016
Filing Date:	20-MAR-2015
Time Stamp:	20:38:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$480
RAM confirmation Number	111016INTEFSW00005656194972
Deposit Account	194972
Authorized User	Bruce Sunstein
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	kem4123_1001_IssueFeePayment.pdf	186713 1b15521f20ce7bb0be65267fa7e7a0ea2f7ae874	no	3
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30469 390f0261ab87832de758a0f85ca7ef96142e55c5	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	217182		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/664,178	12/20/2016	9524090	4123/1001	8607

2101 7590 11/30/2016

Sunstein Kann Murphy & Timbers LLP
125 SUMMER STREET
BOSTON, MA 02110-1618

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Paul Erich Keel, Cambridge, MA;
Jeffrey Huang, Lausanne, SWITZERLAND;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.