

EXHIBIT C

Part 2

Index of Claims



Application No.

09/597,975

Applicant(s)

KONIG ET AL.

Examiner

Barbara N Burgess

Art Unit

2157

✓	Rejected
=	Allowed

-	(Through numeral) Cancelled
+	Restricted

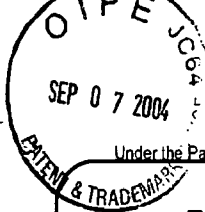
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Claim		Date
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GP 257

PTO/SB/21 (08-03)
Approved for use through 08/30/2003. OMB 0651-0031
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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TRANSMITTAL FORM <i>(to be used for all correspondence after initial filing)</i>	Application Number	09/597,975	
	Filing Date	6/20/2000	
	First Named Inventor	Yochai Konig	
	Art Unit	2157	
	Examiner Name	Barbara N. Burgess	
Total Number of Pages in This Submission	7	Attorney Docket Number	UTO-101/US

ENCLOSURES (Check all that apply)		
<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance communication to Technology Center (TC)
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input checked="" type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input checked="" type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Change of Correspondence Address	<input type="checkbox"/> Other Enclosure(s) (please Identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Terminal Disclaimer	
<input type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Request for Refund	
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Response to Missing Parts/ Incomplete Application	<div style="border: 1px solid black; padding: 5px; display: inline-block;">RECEIVED</div> <div style="border: 1px solid black; padding: 5px; display: inline-block;">SEP 14 2004</div> <div style="border: 1px solid black; padding: 5px; display: inline-block;">Technology Center 2100</div>	
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		
Remarks		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Ron Jacobs Ph. D Reg. No. 50,142
Signature	
Date	9/1/04

CERTIFICATE OF TRANSMISSION/MAILING	
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.	
Typed or printed name	SYLVIA LEE
Signature	
Date	9/1/04

This collection of information is required by 37 CFR 1.5. 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 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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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/597,975

Docket No.: UTO-101

Filing Date: 06/20/2000

Art Unit: 2157

Applicants: Konig *et al.*

Examiner: Barbara N. Burgess

Title: Automatic, Personalized Online Information and Product Services

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Reply under 37 CFR 1.111

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Technology Center 2100

Sir:

In reply to the Final Office Action mailed by the USPTO on June 4th, 2004, the

Applicants respectfully submit the following remarks.

REMARKS

Phone conversation with Supervisor Etienne

On 9/1/04, undersigned agent Dr. Ron Jacobs had a phone conversation with Supervisor Ario Etienne. Jacobs raised several concerns: (i) two premature finalities, (ii) Breese as a reference in view of the claimed invention, (iii) inconsistencies in the latest Office Action, and (iv) incompleteness of the latest Office Action to argue obviousness.

Supervisor Etienne indicated to proceed with the filing of the response to the latest office action. Supervisor Etienne also indicated that he would be directly involved and working with Examiner Burgess in reviewing the case.

CLAIM REJECTION, 35 USC Paragraph 103

Claims 1-62 were rejected under U.S.C. 103(a) as being unpatentable over *Breese et al.* (U.S. Patent No. 6,006,218).

In reply, the Applicants respectfully disagree.

1. Incomplete and inconsistent office action

In the Office Action dated January 29, 2004 the Examiner rejected claims 1-62 under U.S.C. 103(a) as being unpatentable over *Breese et al.* (U.S. Patent No. 6,006,218) in view of *Hertz et al.* (U.S. Patent No. 5,754,939).

As stated in the January 04 Office Action, the Examiner believed that *Breese* disclosed claim element 1a, 1b, and 1d and believed that *Hertz* disclosed claim element 1c, 1e and 1f. The Examiner further believed that the combination of *Breese* and *Hertz* rendered the claims obvious. In the latest Office Action, the Examiner dropped *Hertz* in the 103 argument pursuant of Applicants' previous arguments and still alleges that "*Breese does not explicitly disclose*" 1c, 1e and 1f [page 3 of the Office Action; underline and italic by Applicants]. If *Breese* does not explicitly disclose as the Examiner states, how can a complete and lawful 103 argument be construed that render the claims obvious?

Accordingly, the Office Action is incomplete and inconsistent with respect to lawful 103 arguments and therefore the finality of the Office Action is premature. The Applicants respectfully request that the finality of the latest Office Action be withdrawn *or* that all claims be allowed.

2. Breese does not teach not suggest the claimed invention

- A. The teachings of *Breese* as a whole don't suggest to a person of ordinary skill in the art the combined claims elements of the independent claims presented in the original application (see below).
- B. The teachings of *Breese* don't provide a reasonable expectation of success simply because *Breese* cannot predict beyond its memory model (see below)!
- C. *Breese* would destroy the intended function of the present invention. *Breese* tallies up seen objects, determines the probability that a user has seen the object,

and then does not show it again to the user. The present claimed invention application is very different from *Breese*'s concept (see below).

D. *Breese* does not teach and not even address the problem of generality and predictability beyond a memory model and can therefore not render the present claims obvious (see below).

The Applicants also submit herewith the following arguments indicating that *Breese* is not teaching nor suggesting the claims in the present application. The Applicants hereby also incorporate all previous arguments made in previous replies to Office Actions.

The **present invention** is a method for **predicting user interests** in documents and products using a **learning machine** and **probability measures**.

Breese is a **memory model** (See abstract) and teaches that one could determine the **probability that a user knows** about an item – i.e. the user has **seen** that item **in the past**. Note knowledge probability (i.e. **memory**) as in *Breese* IS NOT the same as probability that documents are of interest (i.e. generalization/estimate probability) as in the present application as an **artisan would readily appreciate**.

For example could *Breese* use a user-model for apples to predict if the user is interested in pears? The answer is NO, since *Breese*'s **user-model** for **apples** has **no knowledge or generalization power** related to **pears**. The teachings in *Breese* are knowledge-based without any teachings on how to use that knowledge (memory) model to generalize

beyond that or become application independent – independent from apples and extend to pears or even potatoes. It is one of the objectives of the present invention as claimed to overcome these shortcoming; i.e. a learning machine in the probability domain and cross-fertilization of learning in one mode to another mode.

Generalization predicts beyond items in the past and even beyond the user itself; it estimates probability of something to happen in the future. It is exactly this generalization that is claimed in claims 1 and 32 by:

- (1) using the monitored actions to estimate parameters of a learning machine, and
- (2) using the learning machine to estimate the probability that a document is of interest to a user.

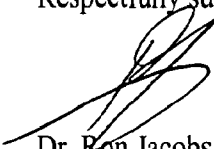
Accordingly, the Applicants submit that the present claims 1-62 are NOT obvious with respect to *Breese*. A prima facie case of obviousness (See MPEP 2143) has not been established as discussed *supra*.

CONCLUSION

Applicants respectfully submit that the present claims 1-62 are NOT obvious with respect to *Breese*. A prima facie case of obviousness (MPEP 2143) has not been established as discussed *supra*. In addition the finality of the Office Action is premature due to an incomplete and/or inconsistent Office Action.

Therefore, the Applicants submit that claims 1-62 are novel and unobvious over the closest prior art of record. Accordingly, allowance of the claims now in the application is kindly requested.

Respectfully submitted,


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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/597,975	06/20/2000	Yochai Konig	UTO-101	9014

30869 7590 06/04/2004
LUMEN INTELLECTUAL PROPERTY SERVICES, INC.
2345 YALE STREET, 2ND FLOOR
PALO ALTO, CA 94306

EXAMINER

BURGESS, BARBARA N

ART UNIT PAPER NUMBER

2157

DATE MAILED: 06/04/2004

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

Office Action Summary

Application No. 09/597,975	Applicant(s) KONIG ET AL.	
Examiner Barbara N Burgess	Art Unit 2157	

-- 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 MONTH(S) 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 the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- 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 08 March 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) 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

- 4) Claim(s) 1-62 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-62 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) 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).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
 - a) All b) Some * c) None of:
 - 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) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

This Office Action is in response to Request for Reconsideration filed March 8, 2004.

Claims 1-62 are presented for further examination.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 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 negated by the manner in which the invention was made.

2. Claims 1-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breese et al. (hereinafter "Breese", 6,006,218).

As per claims 1 and 32, Breese discloses a computer-implemented method for providing automatic, personalized information services to a user u, the method comprising:

- Transparently monitoring user interactions with data while the user is engaged in normal use of a computer (column 3, lines 23-27, column 5, lines 2-5, 15-18, 25-38, column 7, lines 65-67, column 8, lines 1-11);
- Updating user-specific data files, wherein the user-specific data files comprise the monitored user interactions with the data and a set of documents associated with the user (column 5, lines 25-38, column 8, lines 33-36, 40-42, 44-46, column 16, lines 38-40, 50-52);

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- Analyzing a document d to identify properties of the document (column 2, lines 53-60, column 5, lines 51-67, column 6, lines 1-2, 11-20, column 8, lines 44-54, column 9, lines 60-63, column 10, lines 1-13).

Breese does not explicitly disclose:

- Estimating parameters of a learning machine, wherein the parameters define a User Model specific to the user and wherein the parameters are estimated in part from the user-specific data files;
- Estimating a probability $P(u/d)$ that the document d is of interest to the user u , wherein the the probability $P(u/d)$ is estimated by applying the identified properties of the document to the learning machine having the parameters defined by the User Model;
- Using the estimated probability to provide automatic, personalized information services to the user.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the user already knows the document, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's

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experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate estimating parameters of a learning machine, wherein the parameters define a User Model specific to the user and wherein the parameters are estimated in part from the user-specific data files, estimating a probability $P(u/d)$ that the document d is of interest to the user u , wherein the the probability $P(u/d)$ is estimated by applying the identified properties of the document to the learning machine having the parameters defined by the User Model, and using the estimated probability to provide automatic, personalized information services to the user in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 2 and 33, Breese discloses wherein the user-specific data files include documents of interest to the user u and documents that are not of interest to the user u , and wherein estimating the parameters comprises distinct treatment of the documents of interest and the documents that are not of interest (column 12, lines 44-55).

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As per claims 3 and 34, Breese discloses wherein analyzing the document d provides for the analysis of documents having multiple distinct media types (column 8, lines 15-26)

As per claims 4 and 35, Breese discloses wherein transparently monitoring user interactions with data comprises monitoring multiple distinct modes of user interaction with network data (column 5, lines 25-38).

As per claims 5 and 36, Breese discloses wherein the multiple distinct modes of user interaction comprise a mode selected from the group consisting of a network searching mode, a network navigation mode, a network browsing mode, an email reading mode, and email writing mode, a document writing mode, a viewing "pushed" information mode, a finding expert advice mode, and a product purchasing mode (column 5, lines 25-38).

As per claims 6 and 37, Breese discloses crawling network documents, wherein the crawling comprises parsing crawled documents for links, calculating probable user interest in the parsed links using the learning machine, and preferentially following links likely to be of interest to the user (column 9, lines 51-67, column 10, lines 1-27, 38-55).

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As per claims 7 and 38, Breese discloses wherein the identified properties of the document d comprise a user u -independent property selected from the group consisting of:

- A probability $P(t|d)$ that the document d is of interest to users interested in a topic t (column 6, lines 38-45);
- A topic classifier discrete probability distribution $P(t/d)$ (column 6, lines 38-45);
- A product model discrete probability distribution $P(p/d)$ (column 6, lines 38-45);
- Product feature values extracted from the document d (column 9, lines 50-67, column 10, lines 1-20);
- An author of the document d (column 9, lines 50-67, column 10, lines 1-20);
- An age of the document d (column 9, lines 50-67, column 10, lines 1-20);
- A list of documents linked to the document d (column 9, lines 50-67, column 10, lines 1-20);
- A language of the document d (column 9, lines 50-67, column 10, lines 1-20);
- A number of users who have accessed the document d (column 11, lines 1-30);
- A number of users who have saved the document d in a favorite document list (column 11, lines 1-30);
- A list of users previously interested in the document d (column 11, lines 1-30).

As per claims 8 and 39, Breese does not explicitly disclose wherein the parameters of the learning machine define a user u -dependent function selected from the group consisting of:

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- A user topic probability distribution $P(t/u)$ representing interests of the user u in various topics t ;
- A user product probability distribution $P(p/u)$ representing interests of the user u in various products p ;
- A user product feature probability distribution $P(F/u, p)$ representing interests of the user u in various features f of each of the various products p ;
- A website probability distribution $P(s/u)$ representing interests of the user u in various websites s ;
- A cluster probability distribution $P(c(u)/u)$ representing similarity of the user u to users in various clusters $c(u)$;
- A phrase model probability distribution $P(w/u)$ representing interests of the user u in various phrases w ;
- An information theory based measure $I(lw; lu)$ representing mutual information between various phrases w and the user u ;
- An information theory based measure $I(lt; lu)$ representing mutual information between various topics t and the user u ;
- An information theory based measure $I(ls; lu)$ representing mutual information between various websites s and the user u ;
- An information theory based measure $I(lp; lu)$ representing mutual information between various products p and the user u ;
- An information theory based measure $I(lf; lu)$ representing mutual information between various features f of each of the various products p and the user u .

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However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the user already knows the document, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate the parameters of the learning machine defining a user u -dependent function in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 9 and 40, Breese does not explicitly disclose wherein the parameters of the learning machine define:

- A user product probability distribution $P(p/u)$ representing interests of the user u in various products p ;
- A user product feature probability distribution $P(f/u, p)$ representing interests of the user u in various features f of each of the various products p ;
- Estimating a probability $P(u/d, \text{product described}=p)$ that a document d that describes a product p is of interest to the user u , wherein the probability is estimated in part from the user product probability distribution and the user product feature probability distribution.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the user already knows the document, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are

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displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate the parameters of the learning machine defining user product probability distribution, user product feature probability distribution, and estimating a probability in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 10 and 41, Breese does not explicitly disclose recommending products to the user based on the probability $P(u/d, \text{product described}=p)$. However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the user already knows the document, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the

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Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate recommending products to the user based on the probability in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 11 and 42, Breese does not explicitly disclose estimating a posterior probability $P(u/d, q)$ that the document d is of interest to the user u , given a query q submitted by the user.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may

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be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate estimating a posterior probability in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 12 and 43, Breese does not explicitly disclose wherein estimating the posterior probability comprises estimating a probability $P(q/d, u)$ that the query q is expressed by the user u with an information need in the document d .

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the

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probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate estimating a posterior probability in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 13 and 44, Breese does not explicitly disclose applying the identified properties of the document d to a learning machine having product parameters characterizing a product p to estimate a probability $P(p/d)$ that the document d refers to the product p .

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as

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unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate applying identified properties of the document to a learning machine in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 14 and 45, Breese does not explicitly disclose updating the product parameters based on the identified properties of the document d and the estimated probability $P(p/d)$.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest

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to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate updating the product parameters based on the identified properties of the document and the estimated probability in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 15 and 46, Breese discloses initializing the product parameters based on a set of documents associated with the product p (column 8, lines 15-50).

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As per claims 16 and 47, Breese does not explicitly disclose clustering multiple users into clusters of similar users, wherein the clustering comprises calculating distances between User Models, and selecting similar users based on the calculated distances between User Models.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate clustering multiple users in Breese's system enabling the user to more efficiently view relevant, unknown documents by

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generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 17 and 48, Breese does not explicitly disclose calculating relative entropy values between User Models of multiple users, and clustering together users based on the calculated relative entropy values.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate calculating relative entropy in

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Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 18 and 49, Breese does not explicitly disclose wherein the parameters defining the User Model comprise calculated distances between the User Model and User Models of users similar to the user. However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

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Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate parameters defining the User Model in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claim 19 and 50, Breese does not disclose selecting in a group of users an expert user in an area expertise, wherein selecting the expert user comprises finding an expert User Model among User Models of the group of users, such that the expert User Model indicates a strong interest of the expert user in a document associated with the area of expertise.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible

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by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate selecting in a group of users an expert in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claim 20 and 51, Breese discloses parsing the document d for hyperlinks, and separately estimating for each of the hyperlinks a probability that the hyperlink is of interest to the user u (column 9, lines 51-67, column 10, lines 1-27, 38-55).

As per claims 21 and 52, Breese does not explicitly disclose sending to a third party web server user interest information derived from the User Model, whereby the third party web server may customize its interaction with the user. However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or

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wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate sending to a third party web server user interest information in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 22 and 53, Breese discloses wherein the monitored user interactions include a sequence of interaction times (column 9, lines 63-67).

As per claims 23 and 54, Breese discloses initializing the User Model using information selected from the group consisting of a set of documents provided by the user, a web browser history file associated with the user, a web browser bookmarks file

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associated with the user, ratings by the user of a set of documents, and previous product purchases made by the user.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate initializing the User Model using information selected from the group consisting of set documents in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

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As per claims 24 and 55, Breese does not explicitly disclose modifying the User Model based on User Model modification requests provided by the user. However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate modifying the User Model in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

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As per claims 25 and 56, Breese does not explicitly disclose providing to the user a score for a document identified by the user, wherein the score is derived from the estimated probability.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate providing to the user a score in Breese's system enabling the user to more efficiently view relevant, unknown

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documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 26 and 57, Breese discloses providing to the user a 3D map of a hyperlinked document collection, wherein the 3D map indicates a user interest in each document (column 5, lines 25-38).

As per claims 27 and 58, Breese does not explicitly disclose temporarily using a User Model that is built from a set of predetermined parameters of a profile selected by the user.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are

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displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate using a User Model built from a set of predetermined parameters in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 28 and 59, Breese does not explicitly disclose initializing the User Model by selecting a set of predetermined parameters of a prototype user selected by the user.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the

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Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate initializing the User Model by selecting a set of predetermined parameters in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 29 and 60, Breese does not explicitly disclose updating the predetermined parameters of the prototype user based on actions of users similar to the prototype user.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may

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be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate updating the predetermined parameters in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 30 and 61, Breese discloses identifying a set of users interest in the document d (column 16, lines 34-42).

As per claims 31 and 62, Breese discloses calculating a range of interests in the document d for the identified set of users (column 16, lines 34-42).

Response to Arguments

The Office notes the following arguments:

- (a) Applicants assert that the Breese does not specify nor imply that the user is engaged in normal use of the computer, nor the monitoring is transparent.

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- (b) Breese does not discuss any analysis of documents.
- (c) Hertz does not teach or imply any learning to estimate probability of user interests.
- (d) Hertz does not teach determine probability measures.
- (e) Hertz does not teach clusters of user models.

In response to:

- (a) Breese explicitly discloses “the present invention can be done when making recommendations to a user, e.g., in response to a user initiated information request, **or after monitoring a user’s actions for a period of time**”. In Breese, “monitoring a user’s actions” is done transparently through the web browser. “In one embodiment, the **Internet browser application** stores information on Internet sites visited by the user as well as information on the frequency of visits to Internet sites, by one or more users, in the user database.” Therefore, whenever the user visits different web pages, not only does transparent monitoring takes place, but the user is also engaging in **normal** use of a computer (column 3, lines 23-27, column 5, lines 2-5, 15-18, 25-38, column 7, lines 65-67, column 8, lines 1-11).
- (b) Breese explicitly discloses getting information on the content or subject matter of the item, overall salience of an item. Therefore, the document must be analyzed in order to determine these properties (column 2, lines 53-60, column 5, lines 51-67, column 6, lines 1-2, 11-20, column 8, lines 44-54, column 9, lines 60-63, column 10, lines 1-13).

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(c)-(e) Breese discloses estimating parameters of a learning machine, wherein the parameters define a User Model specific to the user and wherein the parameters are estimated in part from the user-specific data files and estimating a probability $P(u/d)$ that the document d is of interest to the user u , wherein the the probability $P(u/d)$ is estimated by applying the identified properties of the document to the learning machine having the parameters defined by the User Model (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Conclusion

3. **THIS ACTION IS MADE FINAL.** 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 mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara N Burgess whose telephone number is (703) 305-3366. The examiner can normally be reached on M-F (8:00am-4:00pm).

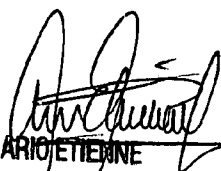
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (703) 308-7562. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Barbara N Burgess
Examiner
Art Unit 2157

June 1, 2004


ARIO ETIENNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Notice of References Cited	Application/Control No. 09/597,975	Applicant(s)/Patent Under Reexamination KONIG ET AL.	
	Examiner Barbara N Burgess	Art Unit 2157	Page 1 of 1

U.S. PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
A	US-6,006,218	12-1999	Breese et al.	707/3
B	US-			
C	US-			
D	US-			
E	US-			
F	US-			
G	US-			
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

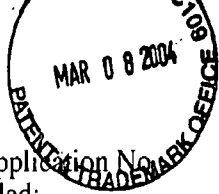
*	Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
U	
V	
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



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FORM PTO-148 U.S. DEPARTMENT OF COMMERCE		ATTY. DOCKET NO. UTO-101/US		SERIAL NO. 09/597,975						
LIST OF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary)				APPLICANT Konig et al.						
				FILING DATE 06/20/2000		GROUP 2157				
U.S. PATENT DOCUMENTS										
EXAMINER INITIAL		DOCUMENT NUMBER						DATE	NAME	RELEVANT INFORMATION
BB	A	6	6	8	7	6	9	6	02/03/2004	Hofmann et al.
	B									
	C									
	D									RECEIVED MAR 10 2004 Technology Center 2100
	E									
	F									
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	H									
FOREIGN PATENT DOCUMENTS										
		2-letter code	DOCUMENT NUMBER			DATE	COUNTRY		TRANSLATION	
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	J									
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)										
	K									
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	M									
	N									
EXAMINER <i>Bauer B</i>				DATE CONSIDERED 5-4-04						
* 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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MAR 10 2004

Technology Center 2100

Application No: 09/597,975
Filed: 06/20/2000
Title: Automatic, Personalized Online Information and Product Services
Applicant(s): Konig et al.
Examiner: Barbara N. Burgess
Art Unit: 2157

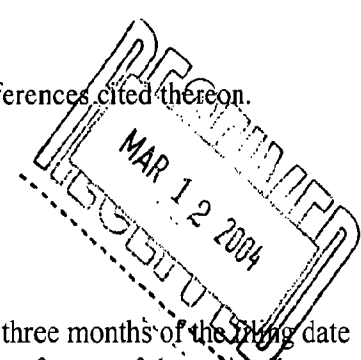
Mailed 3/4/04 Palo Alto, CA

Information Disclosure Statement

Commissioner of Patents and Trademarks
Alexandria, VA 22313

Dear Sir or Madam:

Attached is a completed Form PTO-1449 and copies of the pertinent parts of the references cited thereon.
It is requested that the document(s) on the enclosed form be made of record.



Part I (Authority)

This statement is filed pursuant to:

() 37 C.F.R. § 1.97(b).

This information disclosure statement is filed either (1) within three months of the filing date of the national applications; (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; or (3) before the mailing date of a first office action on the merits, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

(X) 37 C.F.R. § 1.97(c).

This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of either (1) a final action under 37 C.F.R. § 1.113 or (2) a notice of allowance under 37 C.F.R. § 1.311.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) (\$240), or a certification according to 37 C.F.R. § 1.97(e).

() 37 C.F.R. § 1.97(d).

This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c).

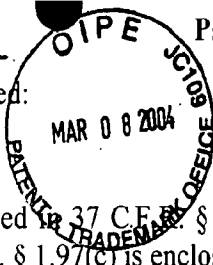
Accordingly, this information disclosure statement requires the petition fee specified in 37 C.F.R. § 1.17(i)(1) to consider an information disclosure statement under 37 C.F.R. § 1.97(d) (\$130), a certification according to 37 C.F.R. § 1.97(e), and a petition requesting consideration of the information disclosure statement.

Conditional Petition

It is respectfully requested that this information disclosure statement be considered, good cause being presented in Part III herein (certification). Please treat this paper as the required petition.

If this statement crosses in the mail with an office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record.

To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.



Part II (Payment)

A check is enclosed as indicated:

- (X) No fee is due.
- () The fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) is enclosed (\$240).
- () The petition fee specified in 37 C.F.R. § 1.17(i)(1) to consider an information disclosure statement under 37 C.F.R. § 1.97(d) is enclosed (\$130).

Part III (Certification)

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Pursuant to 37 C.F.R. § 1.97(e), I certify:

Technology Center 2100

- (X) No certification is necessary.
- () (1) Each item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the statement.
- () The "communication from a foreign patent office" referred to in the certification is an International Search Report, possibly issued by the U.S. Patent and Trademark Office in its capacity as an International Search Authority or International Preliminary Examining Authority.
- () The "counterpart foreign application" referred to in the certification corresponds to an ancestor or descendent application of the application for which this information disclosure statement is filed.
- () (2) No item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c), more than three months prior to the filing of the statement.

Part IV (Additional Statement)

An additional statement regarding these items of information () is, (X) is not, enclosed. Copies of the cited documents () are enclosed, () are of record in parent application Serial No. _____ and will be provided if the Examiner deems it convenient.

Dated: 3/4/04

Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#11
RWB
3-17-04

Application No.: 09/597,975

Docket No.: UTO-101

Filing Date: 06/20/2000

Art Unit: 2157

Applicants: Konig *et al.*

Examiner: Barbara N. Burgess

Title: Automatic, Personalized Online Information and Product Services

CERTIFICATE OF MAILING	
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Reply under 37 CFR 1.111

Commissioner for Patents
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Sir:

In reply to the Office Action mailed by the USPTO on January 29, 2004, the Applicants respectfully submit the following remarks.

REMARKS

CLAIM REJECTION, 35 USC Paragraph 103

Claims 1-62 were rejected under U.S.C. 103(a) as being unpatentable over *Breese et al.* (U.S. Patent No. 6,006,218) in view of *Hertz et al.* (U.S. Patent No. 5,754,939).

In reply, the Applicants respectfully disagree.

A. GENERAL COMMENTS

What does the present invention teach and claim in independent claims 1 and 32?

The present invention is a method for predicting user interests in documents and products using a learning machine and probability measures. The steps are among others (See claim 1 and 32):

- transparently monitoring user interactions;
- using the monitored user actions (note: transparently monitored) for user-specific files;
- estimate parameters of a learning machine to define a user model based on user specific files;
- using the learning machine (i.e. with user estimated parameters) to estimate the probability that a document is of interest to a user (i.e. probability estimates);
- using the estimated probability to provide personalized information to user.

The Applicants would like to respectfully note that learning can be divided into two parts:

(1) memorization and (2) generalization or prediction.

Ad 1. Memory

Memory refers to what happened in the past. A model could be developed that keeps track or score of what happened. For instance, a user model could be developed of the scored/tracked items (e.g. which websites were visited or which documents were looked at). Items could be correlated or similarities could be established (See e.g. *Hertz* Col. 8, line 49; *Hertz* Claim 3).

Using such a model (called knowledge or memory model) one could determine the probability that a user has seen or knows about an item. Based on this memory, one could determine correlations/similarities/matches (See e.g. *Hertz* Fig. 10 item 1103; *Hertz* Col. 78 lines 51-52 "... cluster articles based on similarity ... ") with items obtained through a search query. Note such a model is only applicable to determine the probability for:

- (1) an individual user, and
- (2) for that particular item.

There is no carry over and no generalization to other users or other items. Memorization could also be referred to as low-level learning (or limited learning).

More specifically to *Breese*, who teaches that one could determine the probability that a user knows about an item (*Breese*: Column 7, lines 1-10, 31-36) – i.e. the user has seen that item in the past. Note knowledge probability (i.e. memory) as in *Breese* IS NOT the same as probability that documents are of interest (i.e. generalization/estimate probability) as in the present application as an artisan would readily appreciate.

In a model one could further make the distinction between application-dependent or application-independent learning. An example of application-dependent learning could be “choose all relevant NY Times articles”. An example of application-independent learning could be “choose all relevant NY Times articles **and** find the most important emails, provide personalized search results, etc.”. The Applicants assert that *Hertz* teaches the application-dependent approach, whereas the present application is application-independent as defined by elements 1(e) and 1(f) (same for our claim 32).

Classification as an application-independent approach requires at least two criteria:

- (i) “*cross fertilization*” (see present application), i.e. feedback or learning in one application is used to serve all applications. Neither *Hertz* nor *Breese* teach cross-fertilization.
- (ii) a user-model can be used for a new personalized application, without the need for application specific learning or initialization. Neither *Hertz* nor *Breese* teach such a generic user model.

To illustrate the application-dependency of *Hertz*, see for instance column 10, lines 10-24 and column 11, lines 3-16. *Hertz* also teaches different sets of attributes for different applications, which makes it obvious that *Hertz* **can't conceive** an application-independent user model. It is again further noted that the present application **does not teach memorization**. Rather, the present invention teaches a learning model to estimate probabilities to predict personalized information that is of interest to the user.

Ad 2.Generalization

Neither *Breese* nor *Hertz* teach any type of generalization; there is no learning involved other than keeping score or tracking what happened in the past. Please note that there is no learning or generalization in these prior art references and could therefore not suggest the present invention to render it obvious.

For example could *Breese* or *Hertz* use a user-model for apples to predict if the user is interested in pears? The answer is no, since the user-model for apples has no knowledge or generalization power related to pears. The teachings of *Breese* and *Hertz* are knowledge-based without any teaching on how to use that knowledge model to generalize beyond that or become application independent – independent from the apples and extend to pears. It is one of the objectives of the present invention to overcome this shortcoming; i.e. a learning machine in the probability domain and cross-fertilization of learning in one mode to another mode.

Generalization predicts beyond items in the past and even beyond the user itself; it estimates probability of something to happen in the future. It is exactly this generalization that is claimed in claims 1 and 32 by:

- (1) using the monitored actions to estimate parameters of a learning machine, and
- (2) using the learning machine to estimate the probability that a document is of interest to a user.

As clearly taught in the present application, generalization is made possible by defining a model in the probability domain, which decouples particular feature vectors and learns to make the model application/item independent. The user model of the learning machine in the present invention represents user interests independent of any specific (note: specific is application dependent) user information. In other words, the present invention is not related to a specific query. There is therefore no need to distinguish between seen or unseen documents.

Furthermore, *Hertz* (Col. 5, lines 4-21) teaches ordering articles. The question arises what the importance is of the ordered articles. For instance, is it important enough to drag your boss out of a meeting to show the article? *Hertz* does not have a solution for this problem. Ordering articles could be useless if on one day the article is of high importance and the next day is of low importance. This is in contrast to the present invention, which determines for every document an absolute score of importance, e.g. 0.9 probability that a document is of interest to a user, independent what the other documents on today's list were. This aspect is clearly claimed in element 1(e) and 1(f) (vice versa in claim 32) of the present application.

Accordingly, the Applicants submit that the present claims 1-62 are NOT obvious with respect to *Breese* in view of *Hertz*. A prima facie case of obviousness (See MPEP 2143) has not been established as discussed *supra*.

B. SPECIFIC COMMENTS

Claims 1 and 32

1. The Office Action asserts that column 5, lines 25-38 of *Breese* discloses, “transparently monitoring user interactions with data while the user is engaged in normal use of a computer.”

In reply, the Applicants assert that the cited passages **do not** specify **nor imply** that the user is engaged in normal use of the computer, nor that the monitoring is transparent. In fact, the cited passage includes obtaining information from questionnaire results, which are certainly not transparently obtained when the user is engaged in normal use of a computer.

2. The Office Action asserts that column 8, lines 33-36, 44-46 of *Breese* discloses, “updating user-specific data files, wherein the user-specific data files comprise the monitored user interactions with the data and a set of documents associated with the user.”

In reply, the Applicants assert that if the step in element (a) “transparently monitoring user interactions ..” is not taught or implied, then there can not be a teaching or implication of step (b) that follows (a). Note it is updating (step b) with the monitored user interactions (step a).

3. The Office Action asserts that element, “analyzing a document to identify properties of the document,” is described in column 8, lines 15-26 of *Breese*.

In reply, the cited section of *Breese* does not discuss any analysis of documents and are irrelevant to the claim element.

4. The Office Action asserts that several sections of *Hertz* discloses steps (c), (e) and (f).

In reply, the Applicants respectfully disagree and refer to the arguments made *supra* (general comments). The Applicants would like to respectfully point out that the Office Action fails to **clearly point out** where *Hertz* teaches steps (c), (e) and (f) since reviewing these sections the Applications are unable to identify the relevant teachings. Perhaps the Examiner could assist and be more precise by pointing to the selective sentences instead of an *aggregate* of independent sections/paragraphs/words.

In addition, *Hertz*:

- (i) teaches **memorization**, we don't,
- (ii) teaches an **application specific** user model without any generalization power, we have an application-independent learning model,
- (iii) does not teach or imply any learning to **estimate probability** of user interests, we do,
- (iv) does not teach or imply any information theory to **determine probability measures**, we do,
- (v) does not teach **probability measures** if whether an item is of interest to a user (See also *infra*), we do, and/or
- (vi) teaches **clusters of documents** (See *Hertz* Col. 78, lines 51-53) and does not teach **clusters of user models** like we do (which is a big difference).

None of the sections (either *individually* or *combined*) of *Hertz* referred to in the Office Action discusses, teaches or implies steps (either *individually* or *combined*) (c), (e) and (f). Accordingly, the Applicants submit, as submitted *supra*, that the present claims 1-62 are **NOT obvious** with respect to *Breese* in view of *Hertz*. A **prima facie** case of obviousness (See MPEP 2143) has **not been established**.

CLAIMS 2-31 and 33-62

The Applicants believe that the significant differences discussed above between the claimed invention and *Breese* in view of *Hertz* make the claimed invention novel and *non-obvious*. Because all other claims depend from either claim 1 or claim 32, the Applicants believe that all pending depending claims are also novel and *non-obvious*. In addition to their dependency on claims 1 or 32, the Applicants incorporate herewith **all previous arguments** made on the record in the previous reply to the first Office Action.

In addition, the Applicants have trouble comprehending the relevant teaches pointed out by the Examiner related to *Hertz* that would render the present claims obvious. As a side note, *Hertz* in Column 7, lines 47-67 to Column 8 1-9 teaches “truly passive” and “browsing and filtering”, which shows that *Hertz* does not have the intention to suggest its teachings to be a basis for predicting user interests for personal search and services. This is in contrast to claim 1 and 32 of the present application.

Furthermore, Applicants would like to point out that *Hertz* does not teach nor imply probability measures, or how to define probability measures in either formula or

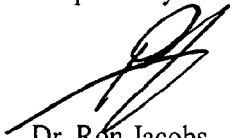
wordings. A simple word search on the word probability in *Hertz* doesn't return a favorable answer. Note the word "probability" can be found e.g. in *Hertz* Col. 50 line 28 it refers to "... probability that a user will access target object T". **However**, this probability is based on a memorized user model (see *supra*) and not the probability that the document is of interest to a user (which is based on a learning model of estimated probabilities and not memories). Furthermore, a description or implication of the necessary information theory to establish probability measures as claimed in claim 1 and 32 is missing in *Hertz*. Accordingly, the Applicants are puzzled to why the Office Action asserts that *Hertz* teaches or renders our claims obvious in combination with *Breese*.

CONCLUSION

Applicants respectfully submit that the present claims 1-62 are **NOT obvious** with respect to *Breese* in view of *Hertz*. A **prima facie** case of obviousness (MPEP 2143) has **not been established** as discussed *supra*. Even *if* at the time the invention (i.e. hindsight is impermissible, See MPEP 2141.01 III) was made one skilled in the art would be motivated to combine *Breese* and *Hertz*, the resulting method would still not possess the capability to provide automated and personalized information services to a user that uses machine learning including memorization and generalization defined in the probability domain simply because neither *Breese* or *Hertz* teach or suggest anything beyond memorization models.

Therefore, the Applicants submit that claims 1-62 are novel and unobvious over the closest prior art of record. Accordingly, allowance of the claims now in the application is kindly requested.

Respectfully submitted,



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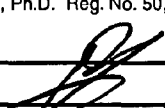
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TRANSMITTAL FORM <i>(to be used for all correspondence after initial filing)</i>	Application Number	09/597,975	RECEIVED MAR 10 2004 Technology Center 2100
	Filing Date	06/20/2000	
	First Named Inventor	Konig et al.	
	Art Unit	2157	
	Examiner Name	Barbara N. Burgess	
Total Number of Pages in This Submission	15	Attorney Docket Number	UTO-101/US

ENCLOSURES (Check all that apply)		
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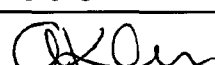
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Firm or Individual name	Ron Jacobs, Ph.D. Reg. No. 50,142
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/597,975	06/20/2000	Yochai Konig	UTO-101	9014

30869 7590 01/29/2004

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EXAMINER

BURGESS, BARBARA N

ART UNIT	PAPER NUMBER
2157	

2157

DATE MAILED: 01/29/2004

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

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DETAILED ACTION

This Office Action is in response to After-Final filed December 16, 2003. This Office Action is in response to After Final filed January 5, 2003. Examiner has withdrawn the finality of claims 1-62. These claims are now presented for further examination.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 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 negated by the manner in which the invention was made.

2. Claims 1-62 are rejected under 35 U.S.C. 103(a) as being unpatentable by Breese et al. (hereinafter "Breese", 6,006,218) in view of Hertz et al. (hereinafter "Hertz", 5,754,939).

As per claims 1 and 32, Breese discloses a computer-implemented method for providing automatic, personalized information services to a user u, the method comprising:

- Transparently monitoring user interactions with data while the user is engaged in normal use of a computer (column 5, lines 25-38);
- Updating user-specific data files, wherein the user-specific data files comprise the monitored user interactions with the data and a set of documents associated with the user (column 8, lines 33-36, 44-46);

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- Analyzing a document d to identify properties of the document (column 8, lines 15-26).

Breese does not explicitly disclose:

- Estimating parameters of a learning machine, wherein the parameters define a User Model specific to the user and wherein the parameters are estimated in part from the user-specific data files;
- Estimating a probability $P(u/d)$ that the document d is of interest to the user u , wherein the the probability $P(u/d)$ is estimated by applying the identified properties of the document to the learning machine having the parameters defined by the User Model;
- Using the estimated probability to provide automatic, personalized information services to the user.

However, in an analogous, Hertz discloses using the user profile (User Model) to estimate (probability) the user's interest in documents (target objects) presented to the user. The estimate (probability) is based on the target object's profile or attributes (properties of the document). This estimate (probability) is used to then provide the user with possible documents to read or engage in (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column

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28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate estimating parameters of a learning machine, wherein the parameters define a User Model specific to the user and wherein the parameters are estimated in part from the user-specific data files, estimating a probability $P(u/d)$ that the document d is of interest to the user u , wherein the the probability $P(u/d)$ is estimated by applying the identified properties of the document to the learning machine having the parameters defined by the User Model, and using the estimated probability to provide automatic, personalized information services to the user in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 2 and 33, Breese discloses wherein the user-specific data files include documents of interest to the user u and documents that are not of interest to the user u , and wherein estimating the parameters comprises distinct treatment of the documents of interest and the documents that are not of interest (column 12, lines 44-55).

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As per claims 3 and 34, Breese discloses wherein analyzing the document d provides for the analysis of documents having multiple distinct media types (column 8, lines 15-26)

As per claims 4 and 35, Breese discloses wherein transparently monitoring user interactions with data comprises monitoring multiple distinct modes of user interaction with network data (column 5, lines 25-38).

As per claims 5 and 36, Breese discloses wherein the multiple distinct modes of user interaction comprise a mode selected from the group consisting of a network searching mode, a network navigation mode, a network browsing mode, an email reading mode, and email writing mode, a document writing mode, a viewing "pushed" information mode, a finding expert advice mode, and a product purchasing mode (column 5, lines 25-38).

As per claims 6 and 37, Breese discloses crawling network documents, wherein the crawling comprises parsing crawled documents for links, calculating probable user interest in the parsed links using the learning machine, and preferentially following links likely to be of interest to the user (column 9, lines 51-67, column 10, lines 1-27, 38-55).

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As per claims 7 and 38, Breese does not explicitly disclose wherein the identified properties of the document d comprise a user u -independent property selected from the group consisting of:

- A probability $P(t|d)$ that the document d is of interest to users interested in a topic t ;
- A topic classifier discrete probability distribution $P(t/d)$;
- A product model discrete probability distribution $P(p/d)$;
- Product feature values extracted from the document d ;
- An author of the document d ;
- An age of the document d ;
- A list of documents linked to the document d ;
- A language of the document d ;
- A number of users who have accessed the document d ;
- A number of users who have saved the document d in a favorite document list;
- A list of users previously interested in the document d .

However, these features are taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

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Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these properties in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 8 and 39, Breese does not explicitly disclose wherein the parameters of the learning machine define a user u -dependent function selected from the group consisting of:

- A user topic probability distribution $P(t/u)$ representing interests of the user u in various topics t ;
- A user product probability distribution $P(p/u)$ representing interests of the user u in various products p ;
- A user product feature probability distribution $P(F/u, p)$ representing interests of the user u in various features f of each of the various products p ;
- A website probability distribution $P(s/u)$ representing interests of the user u in various websites s ;
- A cluster probability distribution $P(c(u)/u)$ representing similarity of the user u to users in various clusters $c(u)$;
- A phrase model probability distribution $P(w/u)$ representing interests of the user u in various phrases w ;

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- An information theory based measure $I(lw; lu)$ representing mutual information between various phrases w and the user u ;
- An information theory based measure $I(lt; lu)$ representing mutual information between various topics t and the user u ;
- An information theory based measure $I(ls; lu)$ representing mutual information between various websites s and the user u ;
- An information theory based measure $I(lp; lu)$ representing mutual information between various products p and the user u ;
- An information theory based measure $I(lf; lu)$ representing mutual information between various features f of each of the various products p and the user u .

However, these features are taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

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As per claims 9 and 40, Breese does not explicitly disclose wherein the parameters of the learning machine define:

- A user product probability distribution $P(p/u)$ representing interests of the user u in various products p ;
- A user product feature probability distribution $P(f/u, p)$ representing interests of the user u in various features f of each of the various products p ;
- Estimating a probability $P(u/d, \text{product described}=p)$ that a document d that describes a product p is of interest to the user u , wherein the probability is estimated in part from the user product probability distribution and the user product feature probability distribution.

However, these features are taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-

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customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 10 and 41, Breese does not explicitly disclose recommending products to the user based on the probability $P(u/d, \text{product described}=p)$.

However, these features are taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 11 and 42, Breese does not explicitly disclose estimating a posterior probability $P(u/d, q)$ that the document d is of interest to the user u , given a query q submitted by the user.

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However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 12 and 43, Breese does not explicitly disclose wherein estimating the posterior probability comprises estimating a probability $P(q/d, u)$ that the query q is expressed by the user u with an information need in the document d .

However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines

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55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 13 and 44, Breese does not explicitly disclose applying the identified properties of the document d to a learning machine having product parameters characterizing a product p to estimate a probability $P(p/d)$ that the document d refers to the product p .

However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-

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customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 14 and 45, Breese does not explicitly disclose updating the product parameters based on the identified properties of the document d and the estimated probability $P(p/d)$.

However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 15 and 46, Breese does not explicitly disclose initializing the product parameters based on a set of documents associated with the product p .

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However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 16 and 47, Breese does not explicitly disclose clustering multiple users into clusters of similar users, wherein the clustering comprises calculating distances between User Models, and selecting similar users based on the calculated distances between User Models.

However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines

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55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 17 and 48, Breese does not explicitly disclose calculating relative entropy values between User Models of multiple users, and clustering together users based on the calculated relative entropy values.

However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-

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customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 18 and 49, Breese does not explicitly disclose wherein the parameters defining the User Model comprise calculated distances between the User Model and User Models of users similar to the user.

However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claim 19 and 50, Breese does not disclose selecting in a group of users an expert user in an area expertise, wherein selecting the expert user comprises finding an expert User Model among User Models of the group of users, such that the expert

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User Model indicates a strong interest of the expert user in a document associated with the area of expertise.

However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claim 20 and 51, Breese discloses parsing the document d for hyperlinks, and separately estimating for each of the hyperlinks a probability that the hyperlink is of interest to the user u (column 9, lines 51-67, column 10, lines 1-27, 38-55).

As per claims 21 and 52, Breese does not explicitly disclose sending to a third party web server user interest information derived from the User Model, whereby the third party web server may customize its interaction with the user.

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However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 22 and 53, Breese discloses wherein the monitored user interactions include a sequence of interaction times (column 9, lines 63-67).

As per claims 23 and 54, Breese discloses initializing the User Model using information selected from the group consisting of a set of documents provided by the user, a web browser history file associated with the user, a web browser bookmarks file associated with the user, ratings by the user of a set of documents, and previous product purchases made by the user.

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However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 24 and 55, Breese does not explicitly disclose modifying the User Model based on User Model modification requests provided by the user.

However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

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Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 25 and 56, Breese does not explicitly disclose providing to the user a score for a document identified by the user, wherein the score is derived from the estimated probability.

However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

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As per claims 26 and 57, Breese discloses providing to the user a 3D map of a hyperlinked document collection, wherein the 3D map indicates a user interest in each document (column 5, lines 25-38).

As per claims 27 and 58, Breese discloses temporarily using a User Model that is built from a set of predetermined parameters of a profile selected by the user. However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 28 and 59, Breese does not explicitly disclose initializing the User Model by selecting a set of predetermined parameters of a prototype user selected by the user.

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However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines 55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 29 and 60, Breese does not explicitly disclose updating the predetermined parameters of the prototype user based on actions of users similar to the prototype user.

However, this feature is taught by Hertz (Abstract, column 1, lines 18-35, column 4, lines 54-62, column 5, lines 88-30, 36-45, 49-51, 57-60, column 6, lines 5-12, 19-31, 44-60, column 7, lines 4-31, column 8, lines 54-56, 60-63, column 9, lines 10-55, 59-63, column 10, lines 3-5, 10-30, column 11, lines 3-15, 20-35, 57-67, column 18, lines 39-50, column 19, lines 5-30, column 20, lines 29-31, 40-45, column 21, column 28, lines

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55-57, column 29, lines 34-45, 60-65, column 55, lines 60-65, column 56, lines 5-50, column 57, lines 6-35, column 58, lines 24-40, column 59, lines 7-35).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate these parameters in Breese's system enabling the user to more efficiently view relevant documents by generating a user-customized rank ordered listing of target objects most likely to be of interest to the user so that the user can select from among these potentially relevant target objects.

As per claims 30 and 61, Breese discloses identifying a set of users interest in the document d (column 16, lines 34-42).

As per claims 31 and 62, Breese discloses calculating a range of interests in the document d for the identified set of users (column 16, lines 34-42).

Response to Arguments

The Office notes the following arguments:

(a) Applicants particularly points out that Breese does not disclose "analyzing a document to identify properties of the document," "selecting in a group of users an expert user in an area of expertise", "finding an expert User Model among User Models of the group of users", "initializing the User Model by selecting a set of predetermined parameters of a prototype user selected by the user."

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(b) Breese does not disclose "estimating parameters of a learning machine, wherein the parameters define a User Model..."

In response to:

(a)-(b), Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara N Burgess whose telephone number is (703) 305-3366. The examiner can normally be reached on M-F (8:00am-4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Ettinene can be reached on (703) 308-7562. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Barbara N Burgess
Examiner
Art Unit 2157

January 16, 2004


ARIO ETTENNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Notice of References Cited

Application/Control No. 09/597,975	Applicant(s)/Patent Under Reexamination KONIG ET AL.	
Examiner Barbara N Burgess	Art Unit 2157	Page 1 of 1

U.S. PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
A	US-6,006,218	12-1999	Breese et al.	707/3
B	US-5,754,939	05-1998	Herz et al.	455/3.04
C	US-			
D	US-			
E	US-			
F	US-			
G	US-			
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	
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*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.

-	781	(@ad<19991228 or @prad<19991228) and monitor\$5 same (user\$1 or customer\$1 or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4) and (database or file\$1 or profile\$1) and (advertis\$5 or email\$1 or banner\$1 or coupon\$1 or incentive\$1 or distribut\$4) same (probabilit\$3 or chance or estimat\$4 or guess)	USPAT; US-PGPUB	2004/01/15 17:25
-	121	(@ad<19991228 or @prad<19991228) and monitor\$5 same (user\$1 or customer\$1 or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4) same (database or file\$1 or profile\$1) and (advertis\$5 or email\$1 or banner\$1 or coupon\$1 or incentive\$1 or distribut\$4) same (probabilit\$3 or chance or estimat\$4)	USPAT; US-PGPUB	2003/05/30 15:31
-	1	6006218.pn.	USPAT; US-PGPUB	2003/06/02 08:57
-	0	6006218.pn	USPAT; US-PGPUB	2003/11/25 15:41
-	1	6006218.pn.	USPAT; US-PGPUB	2003/11/25 15:42
-	1541	(monitor\$5 same (user\$1 or customer\$1 or client or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4)).ab.	USPAT; US-PGPUB	2004/01/15 17:27
-	47346	monitor\$5 same (user\$1 or customer\$1 or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4)	USPAT; US-PGPUB	2004/01/15 17:37
-	198	(monitor\$5 same (user\$1 or customer\$1 or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4)) same (updat\$4 same file)	USPAT; US-PGPUB	2004/01/15 17:31
-	37	((monitor\$5 same (user\$1 or customer\$1 or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4)) same (updat\$4 same file)) and (user same model)	USPAT; US-PGPUB	2004/01/15 17:30
-	2	((monitor\$5 same (user\$1 or customer\$1 or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4)) same (updat\$4 same file)) and (user same model)) and ((monitor\$5 same (user\$1 or customer\$1 or client or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4)).ab.)	USPAT; US-PGPUB	2004/01/15 17:30
-	14	((monitor\$5 same (user\$1 or customer\$1 or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4)) same (updat\$4 same file)) and ((monitor\$5 same (user\$1 or customer\$1 or client or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4)).ab.)	USPAT; US-PGPUB	2004/01/15 17:31

-	12	((monitor\$5 same (user\$1 or customer\$1 or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4)) same (updat\$4 same file)) and ((monitor\$5 same (user\$1 or customer\$1 or client or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4)).ab.)) not (((monitor\$5 same (user\$1 or customer\$1 or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4)) same (updat\$4 same file)) and (user same model)) and ((monitor\$5 same (user\$1 or customer\$1 or client or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4)).ab.))	USPAT; US-PGPUB	2004/01/15 17:32
-	498	(monitor\$5 same (user\$1 or customer\$1 or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4)) same query\$3	USPAT; US-PGPUB	2004/01/15 17:38
-	42	((monitor\$5 same (user\$1 or customer\$1 or computer\$1 or device\$1 or workstation\$1) same (interaction\$1 or key\$5 or mouse or click\$4)) same query\$3) same parameter\$1	USPAT; US-PGPUB	2004/01/15 17:39
-	29666	quer\$4 same (user or client or customer or subscriber)	USPAT; US-PGPUB	2004/01/15 17:40
-	3811	(quer\$4 same (user or client or customer or subscriber)) same parameter\$1	USPAT; US-PGPUB	2004/01/15 17:40
-	1	((quer\$4 same (user or client or customer or subscriber)) same parameter\$1) same (user adj model)	USPAT; US-PGPUB	2004/01/15 17:41
-	1928	((quer\$4 same (user or client or customer or subscriber)) same parameter\$1) same (database or file)	USPAT; US-PGPUB	2004/01/15 17:41
-	96	((quer\$4 same (user or client or customer or subscriber)) same parameter\$1) same (database or file) same interest\$3	USPAT; US-PGPUB	2004/01/15 17:42
-	50	((quer\$4 same (user or client or customer or subscriber)) same parameter\$1) same (database or file) same interest\$3) and (probability or estimat\$3)	USPAT; US-PGPUB	2004/01/16 11:06

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09/597,975

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

DEC 16 2003

Application No.: 09/597,975

Atty. Docket No.: UTO-101

Filing Date: 06/20/2000

Art Unit: 2157

Applicants: Yochai Konig *et al.*

Examiner: Barbara N. Burgess

Title: AUTOMATIC, PERSONALIZED ONLINE INFORMATION AND PRODUCT SERVICES

CERTIFICATE OF TRANSMISSION	
I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office (Fax No. <u>703-872-9306</u>) on December <u>16</u> , 2003.	
<u>Tianhua Gu</u>	
Typed or printed name of person signing this certificate	
<u>Tianhua Gu</u>	
Signature	

REQUEST TO WITHDRAW FINALITY OF THE OFFICE ACTION

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

Sir:

In response to the Office action mailed on December 3, 2003 and the telephonic communication with the examiner on December 12, 2003, applicants respectfully request that the finality of the Office action be withdrawn in view of the following remarks.



LUMEN INTELLECTUAL PROPERTY SERVICES
2345 Yale St., 2nd Floor
Palo Alto, CA 94306
Phone: (650) 424-0100
Fax: (650) 424-0141
gu@lumen.com
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DEC 16 2003

FAX COVER SHEET

Total Pages (including cover): 6

OFFICIAL

Date: December 16, 2003
From: Katharina Wang Schuster, Reg. No. 50,000
To: Attention: Examiner's Supervisor Ario Ettinene
Examiner Barbara N Burgess

Your Fax: 703-872-9306

Re: 09/597,975, (UTO-101)

Memo: Enclosed is "Request to Withdraw Finality of the Office Action" (5 pages).
This is a "FORMAL REQUEST FOR ENTRY."

CONFIDENTIAL INFORMATION

The information in this facsimile transmission is privileged.
Please notify us immediately if you received this communication in error

Certificate of Transmssion under 37 CFR 1.8

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office

on . 12/16/03
Date

Tianhua Gu
Signature

Tianhua Gu
Typed or printed name of person signing Certificate

09/597,975

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REMARKS

Claims 1-62 are pending. Claims 1-62 were finally rejected under 35 U.S.C. § 102(e) as being anticipated by Breese *et al.* (U.S. Pat. No. 6,006,218, hereinafter referred to as "Breese").

The Finality of the Office Action Was Improper and Should be Withdrawn

MPEP § 706.07 states:

"Before final rejection is in order a clear issue should be developed between the examiner and applicant. To bring the prosecution to as speedy conclusion as possible and at the same time to deal justly by both the applicant and the public, the invention as disclosed and claimed should be thoroughly searched in the first action and the references fully applied; and in reply to this action the applicant should amend with a view to avoiding all the grounds of rejection and objection."

The first Office action applied Breese as anticipating every one of the elements/claim limitations recited in all 62 claims. In reply to the first Office action and in accordance with the controlling case laws, *infra*, applicants pointed out, with respect to pertinent claim limitations, what Breese does not disclose or suggest. No claim amendments were presented in the previous Reply because original claims recite novel elements/limitations sufficient to distinguish Breese.

MPEP § 2131 states:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently describe, in a single prior art reference." *Verdegaal Bros. V. Unton Oil Co. of California*, 814 F.2d 628, 631, 2 USP2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Applicants respectfully submit that Breese simply does not show or suggest an identical invention in as complete detail as is contained in the claims as set forth in the present application. At the minimum, Breese failed to teach or suggest claim limitations such as "estimating parameters of a learning machine, wherein the parameters define a

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User Model ...," as explicitly recited in independent claims 1 and 32. This is particularly pointed out in the previous Reply, which is incorporated herein by reference.

MPEP § 706.07 states:

"In making the final rejection, all outstanding grounds of rejection of record should be carefully reviewed, and any such grounds relied on in the final rejection should be carefully reviewed, and any such grounds relied on in the final rejection should be reiterated. They must also be clearly developed to such an extent that applicant may readily judge the advisability of an appeal unless a single previous Office action contains a complete statement supporting the rejection.

Applicants respectfully submit that the finality was premature inasmuch as there remain outstanding grounds of rejection of record not clearly developed to such an extent that applicants may readily judge the advisability of an appeal. For example, independent claim 1 recites "estimating parameters of a learning machine, wherein the parameters define a User Model..." There are three limitations here, "a learning machine," "parameters," and "a User Model." All three limitations, as well as the deterministic relationship among them (i.e., the User Model is defined by the parameters of the learning model) *must* be present in Breese for an anticipatory type of rejection to stand. The cited columns of Breese refer to a database (storage) that has information (stored data) about the user and the user's interests [Office action, page 14, 2nd para.]. It is not clear at all how such a database *anticipates* or is *identical* to the claimed "User Model," which, according to the particular teaching of the present application, is a function defined by a set of parameters of a learning machine [Spec. page 14, 2nd para.; Fig. 3].

A rejection under 35 U.S.C. § 102(e) simply does not stand if the reference relied upon fails to disclose, either expressly or inherently, an identical invention in as complete detail as contained in the claims, *supra*. Thus, to obviate the 102(e) rejections, applicants particularly pointed out, on pages 2-9 of the previous Reply, the specific limitations of the claims not disclosed in Breese, e.g., "analyzing a document *d* to identify properties of the document," "selecting in a group of users an expert user in an area of expertise," "finding an expert User Model among User Models of the group of users," "initializing the User Model by selecting a set of predetermined

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parameters of a prototype user selected by the user.”

Clearly, these specific arguments do not amount to a general allegation, as the Office action has alleged. Contrary, they clearly show that, by pointing out what Breese does not teach or suggest, the language of the claims patentably distinguish them from Breese, in compliance with 37 CFR 1.111(b). Therefore, at least the aforementioned claim limitations should have been considered.

Since the final Office action did not take into consideration of these claim limitations which have been submitted to be not disclosed and not anticipated by Breese, the finality of the Office action is submitted to be premature and should be withdrawn.

“The applicant who is seeking to define his or her invention in claims that will give him or her the patent protection to which he or she is justly entitled should receive the cooperation of the examiner to that end, and not be prematurely cut off in the prosecution of his or her application,” *id.*

Since the final rejection did not include a rebuttal of all arguments raised in Applicants' previous Reply with respect to the claim limitations not disclosed in Breese, Applicants are unable to develop a clear issue or readily judge the advisability of an appeal.

“The examiner should never lose sight of the fact that in every case the applicant is entitled to a full and fair hearing, and that a clear issue between applicant and examiner should be developed, if possible, before appeal.” MPEP 706.07.

“The examiner must ... address any arguments presented by the applicant which are still relevant to any references being applied.” MPEP 707.07.

In view of the foregoing, applicants therefore respectfully request that the examiner withdraws the finality of the Office action.

Applicants further respectfully submit that claims 1-62 as originally filed recite subject matter not reached by Breese under 35 U.S.C. 102(e) and are therefore allowable. The present Request is a bona fide attempt to forward the present application to allowance.

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The examiner is earnestly invited to telephone the undersigned at 650-331-8413 to discuss matters pertaining to the present application or an examiner's Amendment. Any suggested actions that would accelerate prosecution and move the present application to a condition for allowance are much appreciated.

Respectfully submitted,



Katharina Wang Schuster, Reg. No. 50,000
Attorney for the Applicants under 37 CFR 1.34

LUMEN INTELLECTUAL PROPERTY SERVICES
2345 Yale Street, Second Floor
Palo Alto, CA 94306
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Interview Summary

Application No. 09/597,975	Applicant(s) KONIG ET AL.	
Examiner Barbara N Burgess	Art Unit 2157	

All participants (applicant, applicant's representative, PTO personnel):

(1) Barbara N Burgess. (3) _____.

(2) Katrina Shuster. (4) _____.

Date of Interview: 11 December 2003.

Type: a) Telephonic b) Video Conference
c) Personal [copy given to: 1) applicant 2) applicant's representative]

Exhibit shown or demonstration conducted: d) Yes e) No.
If Yes, brief description: _____.

Claim(s) discussed: Independent claim 1.

Identification of prior art discussed: Breese et al. (6,006,218).

Agreement with respect to the claims f) was reached. g) was not reached. h) N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant's representative, Katrina Shuster, discussed limitations of claim 1 that she alleged was not found in the cited prior art.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

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 ONE MONTH 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. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

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.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/597,975	06/20/2000	Yochai Konig	UTO-101	9014
30869	7590	12/03/2003	EXAMINER BURGESS, BARBARA N	
LUMEN INTELLECTUAL PROPERTY SERVICES, INC. 2345 YALE STREET, 2ND FLOOR PALO ALTO, CA 94306			ART UNIT	
			PAPER NUMBER	

2157
DATE MAILED: 12/03/2003

6

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