

# **Future Foundational Technologies for E-Discovery**

**(Draft for discussion only, subject to changes)**

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## **A. E-discovery Patent List**

1. E-discovery Information Management System (U.S. Pat. No. 8,548,997 B1). A flexible server tool for litigation by opening a collaboration method between different reviewers. It makes the whole team constantly aware of what is found by other team members.

2. Investigative identity data search algorithm (U.S. Pat. No. 8,935,266 B2). It provides a one-click method for searching N names in a table containing M names. When M is very large, it can reduce manual cross-checking time from tens of minutes to seconds, and reduce chances of human errors.

3. Method For Improving Document Review Performance (U.S. Pat. No. 8,972,845 B2). The invented method is intended as a standard method for improving document review performance in litigation.

4. Versatile Log System (U. S. Pat. App. No. Pat. No. 9,361,464). This is the only tool/method that can be used to dramatically improve the chance to capture privileged and risky documents. It can help clients improve their chances to win but also reduce risks of exposing risky and valuable documents.

5. Translation Protocol for Large Discovery Projects (U.S. Pat. No. 9,342,505). This is the only system/method for improving translation quality in litigation. It can address a large number of problems and avoid massive duplicate translations.

## **B. Huge Market Space of E-discovery**

(1). E-discovery market size: USD 7.89 Billion in 2016.

(2). USD 22.62 Billion by 2021.

See the report "E-Discovery Market by Solution (Legal Hold, Early Case Assessment, Data Processing, Data Production), Service (Consulting, Implementation, Training & Support, Managed), Deployment Type (CLOUD, On-premises), and Vertical - Global Forecast to 2021". The market expand at a Compound Annual Growth Rate (CAGR) of 23.4% from 2016 to 2021. <http://www.marketsandmarkets.com/Market-Reports/e-discovery-market-11881863.html>.

(3). The North American region is expected to contribute the maximum market share to the overall E-Discovery market.

(4). The vendors in the E-Discovery market include Xerox Corporation (U.S.), Hewlett Packard Enterprise (U.S.), Microsoft, IBM (U.S.), LexisNexis, KPMG, FTI Technology (U.S.), kCura (U.S.). A more complete list of vendors can be found in Appendix B:

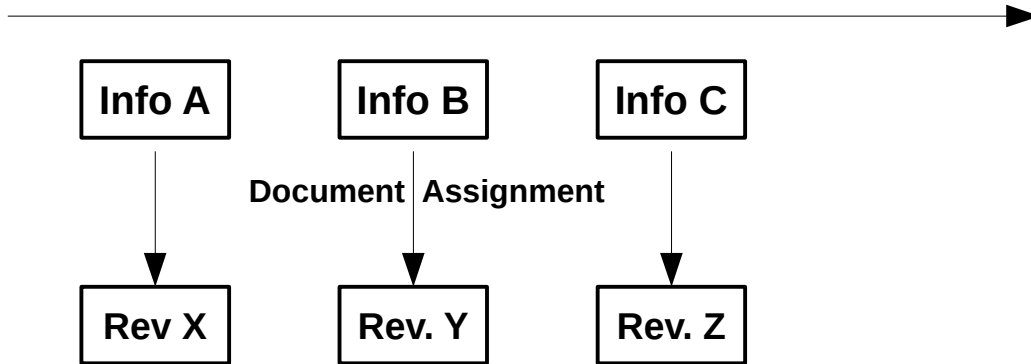
## **C. A Foundational Flaw in E-discovery**

All of those inventions are intended to fix many problems arising from a foundational flaw in the network-based document review model.

This giant multiple-billion industry has used the network-based document review model without even examining its problems since the day one. This giant industry comprising fortune companies, law firms, and the entire judiciary is conducting its business on a totally flawed foundation, as more fully explained below:

When a plurality of reviewers review documents in a network-based review model, documents allocated in batches are assigned to different reviewers. Since different documents carry different amounts of information, the reviewers acquire different knowledge. Therefore, they will understand the same documents in different ways, depending upon what they happen to know. Assuming that three information units carried in documents are assigned to three reviewers X, Y, and Z, the three reviewers will acquire different information and thus will make fatal errors as shown below:

## Information distribution sequence



If Info A is essential for understanding info B, reviewer Y will make a mistake in coding for his documents.

For example, if Info B is an email of John Doe without indicating his role, Info A is an agreement showing that John Doe is an attorney for the client. Reviewer Y will make a mistake in coding for privilege because he could not access Info A. There is an unlimited number of A-B interactions in real world.

In business documents, nearly all names, product names, transaction names, facts and issues are mentioned without providing details of their legal significance. Therefore, reviewers make guess and often make wrong guesses.

**Problems demonstrated in exemplar document.** A document may contain one statement: “Dear Jack, I just have signed the agreement. I will give you a copy when I get their signatures.” This document cannot be accurately coded. The reviewer must make arbitrary assumptions about the agreement, the recipient, and the signers (all of those information are not provided in real world). The same document may be a junk email (a house contract sent to a family member), reflect a civil violation (antitrust agreement sent to a partner), or even a criminal conduct (a illegal contrast sent to a criminal). A document may contain one term to several terms, and even tens of terms that are susceptible to different interpretations. That is why the work product of human document reviewers is worse than computer product.

## **D. Impacts of the Foundational Flaw**

This current review problem can waste the client's millions of dollars in just one big case, lead to a malpractice lawsuit, or cripple the client company. The impact is often extremely high. For mega cases, the price of injuries can be millions of dollars.

### **(1) Ruining client cases routinely**

This foundational flaw in the review model is responsible for exposing confidential information, trade secrets, and privileged information. In the worst case, one single piece of leaked information can ruin client case and lead to liability.

### **(2) Damaging client business and competitiveness**

Leaked damaging information can seriously injure clients' future business, diminish its competitiveness, and invite chain lawsuits (when such information can be used by other parties in support of new suits)

### **(3) Causing huge waste in resources**

This foundational flaw is responsible for massive duplicate tasks. If the review project has T facts or concepts that must be correctly understood by N reviewers. N reviewers have to repeat the same task to understand each of the T facts or concepts. In other words, each task is repeated by N times. The total number of tasks is  $N \times T$  while it should T tasks. In other words, the current review model wastes  $N-1$  times efforts. This duplicate work process does not help the client in any way because it inevitably results in a massive number of conflicting coding decisions. A similar documents are coded as both responsive and non-responsive; and similar documents are coded as both privileged and non-privileged. One reason for making the massive number of conflicting coding decisions is that most business documents do not contain all details about every term, person, transaction, legal issue, and code.... The documents are written for intended readers who know every term in the documents. Most reviewers must make a guess in coding documents whenever they do not have sufficient information. That is what I call "coding documents by guessing".

### **(4) Posing big stress on legal staff, clients, and attorneys**

When document review products are in such bad and unpredictable quality, none of workers in the chain of services can control litigation course. None of them can have a good sleep, by counting on good luck. The game runs its own course that no body can control. This creates a huge pressure on all those workers in legal service delivery. Document reviewers, service providers, attorneys (associates and partners), and data

service providers are subject to malpractice lawsuits. They can only hope that bad things will not happen....but bad things do happen. This is one of the main reasons for the extremely poor health condition of legal professionals. Each year, Bar study found that a high percentage of lawyers live their lives by using caffeine, alcohol, pain killers, and sedative drugs.

#### **(5) Compromising the mission of delivering justice**

When document review products are in such poor quality, adjudication is meaningless. Case disposition is often not based upon case merit when the documentary evidence is just a bunch of conflicting, confusing, meaningless coding marks which are worse than work products of a computer algorithm. In other words, human review products are worse than work products of computers that are able to do several simple things with an overall IQ of one digit. This is discussed frequently in court opinions. Delivery of justice has become only a joke and such an e-discovery practice totally undermines the value of society. When such evidence is used in criminal cases, it is only capable of inflicting pain to defendants.

### **E. Purposes of The Patented Inventions**

Inventor had worked in the e-discovery field for more than fifteen years and has identified the fatal flaw in the foundation of this huge legal service market. All inventions are intended to solve following problems:

- (1) Improving document review accuracy.
- (2) Making document review easier from document reviewers.
- (3) Avoiding doing duplicate tasks thus avoiding conflicting decisions, which are very bad in legal services.
- (4) Saving resources and time on tasks can hurt client interests.
- (5) Improving the ability to deal with routine changes.

The combination of five inventions will reshape the foundation of this huge industry. The claimed inventions are expected to be paradigm-shifting technologies.

### **F. Specific Problems Solved by the Versatile Log System**

The patented invention 9,361,464 B2 is intended to solve the following problems:

### **1. Improving productivity by eliminating N-1 duplicate tasks**

Help document review team to track work products by using real time review information sharing system. It works in two ways. When the first reviewer sees definite information for the understanding of the privilege of a particular transaction, document, or subject, the first reviewer enters the information as a search-able data record, which can be found by any other reviewers. This review assisting information is available to all reviewers by search and will guide all other reviewers so that they do not need to try to do N-1 times tasks. If N=50, it saves 49 duplicate work.

Some documents are reviewed without full knowledge of facts and concepts, and may contain errors. Those errors are captured by conducting reconciling review: when the review is done, based upon all used keywords used for translations, documents, or subjects, and the time stamp, a small set of documents are identified for a corrective review. This will help the team recapture previously missed privileged documents. This can help reviewers get rid of all potentially errors in theory.

### **2. Reducing conflicting privilege claims**

By eliminating N-1 duplicate tasks, and by providing review-assisting information in real time, the patented method can help the review team avoid making a large number of conflicting coding decisions. When all reviewers can access the review assisting information, they would not interpret an identical term, name, or concept in different ways.

Even if there are different interpretations, such differences can be resolved among themselves during the review process and thus prevent conflicting decisions to appear in court documents or challenged by the adversary.

### **3. Improving accuracy of privilege claims**

The patented method can help law firms greatly improve the accuracy of privilege claims, reduce conflicting or inconsistent privilege claims. By controlling the coupling data in the coupled table, the law firm will be in a better position to control the precise scope of privilege claims, adjust the scope of privilege claims, and reduce the risks of exposing other non-responsive sensitive business information and trade secrets.

### **4. Improving log consistency and appearance**

The patented method can help the review team to increase log entry quality by (1) reducing conflicting terms and inconsistent usages, (2) reducing the numbers of bad words and phrases in the log, (3) improving log entry formats such as name display style and consistency, and (4) controlling the right amount of information in each log entry. Word usage consistency, entry format, and avoiding incidental disclosure in log entries are important signs of high-quality legal representation of law firms.

## **5. Saving time on resolving conflicts in privilege claims**

It can help the review team save time for resolving privilege claim conflicts (e.g. one document is logged as privileged, but another similar document is not logged as privileged). In the prior art review, resolving privilege claim conflicts is a routine task that consumes a great deal of time and resources.

## **6. Saving time on searching names from name table**

The patented method can help document reviewers save time by using names search method. For example, a reviewer can search fifty names from a 2000 names table in one second, and thus save half an hour of time (this requires the use of name search patent 8,935,266 B2). In prior art review method, reviewers check each name against each name in a table manually. Corporate email, which is the body of documents, often contains tens to hundreds of names.

## **7. Saving time in many ways**

The patented method can help managing attorneys who run the log production project, reduce time for conducting manual tasks of data entry, reduce time on fixing word usage problems, reduce time on fixing conflict privilege claims, reducing time on fixing bad words, reduce time on conducting name searches, and reduce time on fixing all kinds of errors caused by coding by guessing.

## **7. Improving chance to win cases**

The patented method can help the client increase the chance to win case, reduce review costs and log production costs, protect trade secrets and competitive information, and control damaging information so that it will not be used by other parties in starting chain litigation.

## **8. Helping all players gain peace of mind**

When all workers in the log production can count on their efforts and control their own responsibilities, they have fewer reasons to worry about surprising strikes such as malpractice lawsuits, disciplinary actions, bad publicity, client complaints, and termination of employment. Stress caused

by litigation uncertainty is the highest among legal professionals. This invention can help them gain peace of mind.

## G. Patent Validity Analysis

**Prior art method:** using a document review platform and a log table, which would be run by a word application, excel spreadsheet, or any separate or integrated database. The basic function in log production is just to fill data in a table while document reviewers review documents one by one.

**The claimed invention:** using a document review platform plus a **coupled log table** which is used in parallel to a log table. The coupled log table can be a name table integrated with a name search (see the claim 15).

The Patent Office tried multiple rejections on various grounds, including 103 rejection, 112 rejection (means-plus-function), and Alice rejection under section 111. The PTO grants this patent when the application was being appealed to the PTAB without change to real substance. All changes are made to fix wording and phrases.

The 103 rejection based upon reference combination is very weak. As shown in the following claim charts, the Office would not make out a prima facie case.

The 112 rejection (mean-plus function) was overcome by using method claims.

Alice rejection was overcome with very strong argument. The claimed invention is not concerned with mental process or abstract idea, and the claimed invention performs functions that cannot be achieved by mental process or old method under the Alice's Second Step analysis.

### 1. Independent claim 1:

Elements	Claim Language	Comment On Prior Art
Preamble	A method for creating, validating and editing a log for documents or objects for a legal proceeding or a legal matter by using a system comprising a server and a plurality of client computers, the method	Read on a server and client computers in a network.



	comprising the steps of:	
1	setting up and modifying user accounts on the server by a privileged user for authorized users, who can access, validate and edit log data concerning documents or objects from the client computers under their user accounts;	Setting up and modifying review accounts are essential.
2	setting up by a privileged user a table structure of a log table on the server for storing the log concerning documents or objects, only the authorized users having the right to access the log table;	Setting up a log table is essential with the use and access privilege.
3	setting up a table structure of a coupled table containing coupling data relating to at least one field of the log table by the privileged user, with only the authorized users having the right to access the coupled table from the client computers, wherein at least one column of data in the coupled table that the authorized users collect from reviewing documents in real time assist the authorized users to decide if a log entry is entered for a particular document or object and how to enter data in the log table;	<b>(Not used in prior art)</b> Coupled table may be a table containing attorney names, issues, transactions etc. The use of the table cannot be avoided.
4	creating a web page and a navigation bar containing a button for opening the log table and a button for opening the coupled table so that each of the authorized users can open a log form for the log table and a table form for the coupled table from a client computer;	All review platform uses web pages.

5	adding and editing data for the coupled table in real time by the authorized users while reviewing documents whereby the amount of coupling data and related data increase in the course of creating log entries for the log;	<b>(Not used in prior art)</b> Adding and editing data the coupled table by reviewers while reviewing documents.
6	retrieving the coupling data and the related data from the coupled table and presenting the coupling data and the related data to each of the authorized users; and	<b>(Not used in prior art)</b> retrieving data from coupled table and showing data to each of the reviewers.
7	entering data into the log table, retrieving data from the log table, showing the retrieved data from the log table on the client computer, and editing data in the log table by the authorized users that are reviewing documents.	Entering data and editing data in the log table are repetitive tasks.

Note: the claim 1 reads on a method that uses a real time coupled table. A privileged user means anyone who has an authority to set up a database table.

## 2. Independent claim 9:

Elements	Claim Language	Comments on Prior Art
Preamble	A method for creating a log for documents or objects for a legal proceeding or a legal matter on a server connected to a plurality of client computers used by a plurality of authorized users, the method comprising the steps of:	Method of using server-client system.
1	creating user accounts on the server for the authorized users, thereby enabling the authorized users to access, validate, and	creating review accounts are essential.

	edit the log concerning documents or objects under their user accounts from their client computers;	
2	creating on the server a log table, to which log entries concerning documents or objects are added, and from which log entries are retrieved for review by the authorized users on their client computers;	A log table is essential and its use cannot be changed.
3	creating a coupled table on the server, the coupled table containing coupling data that the authorized users collect from reviewing documents in real time, the coupled table containing at least one field of data relating to at least one field of the log table whereby the coupling data aids the authorized users in creating and editing log entries;	<b>(Not used in prior art)</b> Coupled table may be a table containing attorney names, issues, transactions etc.
4	creating a navigation bar, a web form for the log table, and a web form for the coupled table on the server, the navigation bar containing a button for opening the log table and a button for opening the coupled table that has been set up, with the navigation bar accessible to all authorized users on their client computers under their user accounts;	<b>(Coupled table is NOT used in prior art).</b> All review platforms use web pages.
5	adding and editing data on the web form for the coupled table in real time by the authorized users on their client computers while reviewing documents throughout a production cycle;	<b>(Not used in prior art)</b> adding and editing data on the web form for the coupled table.
6	adding and editing log data on	<b>(Prior art method)</b>

	the input boxes of the log form for the log table by the authorized users on the client computers while reviewing documents throughout a production cycle;	adding and editing log data on the input boxes of the log form for the log table.
7	reviewing each document or object, determining if the document or the object is to be logged in the log by searching and reading the data in the coupled table, filling log data in the input boxes on the log form, submitting the filled log form to the server, writing the log data in the log table, displaying the newly entered log record on the log form; and	<b>(Not used in prior art:</b> “determining if the document or the object is to be logged in the log by searching and reading the data in the coupled table.”)
8	validating coupling data in the coupled table.	<b>(Not used in prior art)</b>

Since the coupled table is not used in the reference, it is very hard to find reference or reference combination that comprises all steps. As long as a method uses a coupled table to collect coupling data by document reviewers, it would infringe this claim.

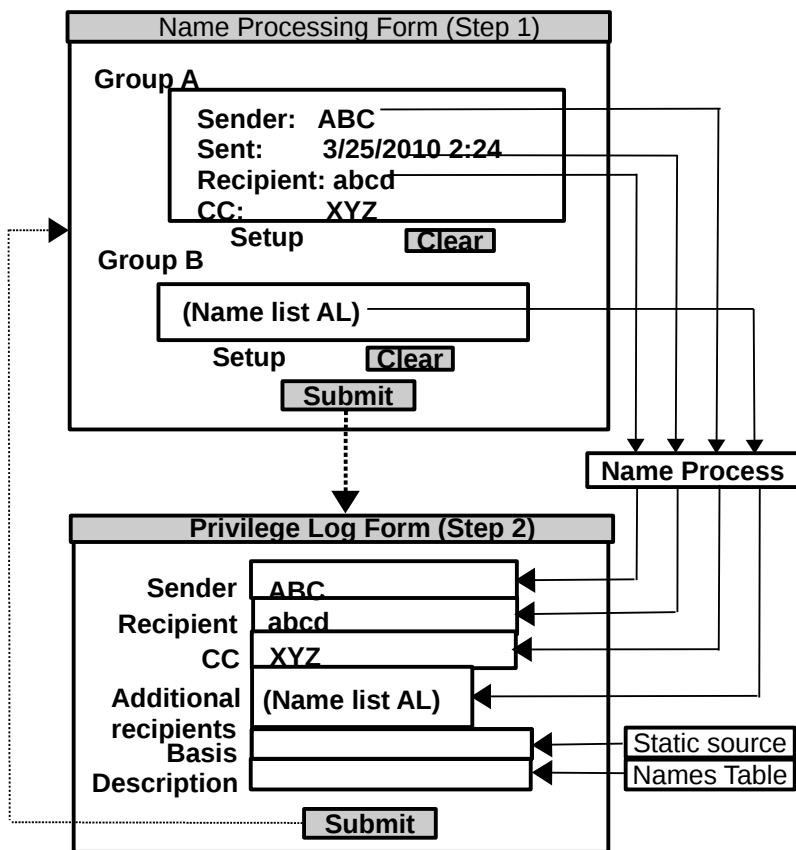
### 3. Independent claim 15:

Elements	Claim Language	Comment on Prior Art
Preamble	The method for processing a log for documents or objects for a legal proceeding or a legal matter on a system comprising a server and client computers connected to the server, the method comprising the steps of:	Method of using server-client system.
1	creating a web user interface... comprising a name-processing form with a name input box and a submission button, plus a log	<b>(Not used in prior art)</b> No name-processing form.

	form with a submission button;	
2	copying name data from a document, pasting the copied name data into the name input box and submitting the filled name-processing form to the server;	<b>(Not used in prior art)</b> <b>No name-processing form and no</b>
3	processing the name data by the server by removing special characters, dividing the name data into three groups, respectively, for sender, recipients, and cc-recipients, breaking up names data into individual names for each group, searching individual names in a names table, marking each of the found names with a unique mark, sorting all names in each of the three groups according to the sorting keys set in default settings or current settings;	<b>(Not used in prior art)</b> The detailed steps are essential for the program to have practical utility
4	reconstructing on the server the web user interface that contains the name-processing form and the log form, filling processed name data in input boxes for sender, recipients, and cc-recipients on the log form, and copying the processed name data to the log form on the client computer	<b>(Not used in prior art)</b>
5	filling data in the remaining input boxes on the log form on the client computer by an authorized user and submitting the log form by the authorized user to the server; and	Filling data in the log table is common in all prior method.
6	processing the log form by the server by retrieving submitted log data from the log form, writing the retrieved log data in	<b>(Not used in prior art)</b> (Recreating the name processing form is NOT used in prior art)

each of the data fields in a log table on the server, recreating the name processing form with a confirmation message on it, and sending the web user interface to the client computer for processing next document.

The claimed subject is shown in the following diagram. The prior art comprises only a preamble and element 5. It is absolutely impossible to find all prior art for the claim 15.



Subjects Claimed by Claim 15

## **H. Infringing Condition or Evidence**

Current privilege log production methods do not use a coupled table because the industry has never studied how the network document review model creates the uneven allocation of case knowledge among the document reviewers. In fact, everything it does is make the situation worse: using search method, removing all “irrelevant documents” and review only a few percentage of documents, disrupting the document review context....

To infringe claims 1 and 9, a method must have the following components: (1) using a coupled table or a table containing review assisting information, (2) the review assisting information must be filled by the reviewers while reviewing documents, (3) the reviewers can access the review assisting information, and (4) the reviewers have the chance to validate review-assisting information. The claims 1 and 9 have some variations in wording.

To infringe the claim 15, a method must contain the methods of (1) using a name-processing form, (2) processing name data OR searching names against a name table, and (3) the number of names in the name table can be added by reviewers in reviewing documents. If those main features exist, it is hard to design around the claims. It should be noted that web forms may be placed on one web page or different web pages. This is not a limitation. One can make those different arrangements easily.

## **I. Potential Users of the Invention**

Big companies in litigation: no company wants to lose its cases due to bad privileged review. The companies in routine litigation have an incentive to use the invention to improve log quality, improve accuracy in making privilege claim, and avoid exposing sensitive documents.

Software development companies: they develop software for document review and tools for creating privilege logs. The software is sold to law firms, corporations, document review companies, and government agencies.....

Big law firms, which create privilege logs routinely, have an incentive to use better software products.

When the problems caused by review model problems are properly understood, each party has an incentive to use the patented invention: the clients (who have lawsuit cases) want to win cases and avoid collateral damages caused by leaked information. The clients can ask law firms and

data processing companies to use the invention. The law firms have a professional duty to use best technologies available. Failure to do so can be a ground for imposing liability. The document review (outsourced companies) companies also have an incentive to use the patented invention if the problems are well understood. They always want to provide best technologies to their end clients and affiliated law firms. Each of them wants to win business. Software manufacturers also have an incentive to use the invention. If they well understand the problems, they have to use it. They cannot get a reputation of destroying client cases and ruining client business by ignoring the problems that are already known. They cannot ignore the problems AFTER solutions have been found.

Big corporations, companies with pending cases, big law firms, e-discovery sourcing companies, document review software developers can be easily found. The total number is in the order of 10,000 with 1000 as special targets.

It is not difficult to add claimed features to any existing review platforms. I have a review platform to be used with any existing review system.

## **J. Log System's Main Features**

1. The name table is coupled with the log table with a data validation method used for both. This kind of real time couple can achieve the highest productivity and minimize inaccuracies and errors caused by inaccurate or omitted attorney names or other information units.

2. The claimed invention has a highly complex name search algorithm. It can search hundreds names in various input fields in the coupled name table at once to find attorney names and non-attorney names.

3. The name search function keeps the structure of names for email fields for sender, recipients, cc-recipient fields, and additional recipients (AL list).

4. The claimed invention can automatically mark all found attorneys' names using a unique mark such as "Esq." or star. This reduces the time for checking people's role status and also increases coding accuracy.

5. The claimed invention can process several name lists and sub-



lists, and format all of them according to a selected format such as "Smith, John W." This dramatically improves the looks of a privilege log.

6. A privileged reviewer can configure interactive data entry feature to use only approved terms in the general subjects or special subjects. Litigation attorneys or site managers can change the choices of words any time. This increases coding consistency and reduces the risk of errors and risk of accidental exposure.

7. A privileged reviewer can construct privilege description phrases (need to be set up). This can greatly improve coding consistency, but still produce enough language patterns or types of documents to avoid challenges.

8. The reviewer can add players' names and attorney names while creating the log real time, thus perfecting the names table by adding more names in real time.

9. The claimed invention has a sophisticated data validation method. All names are marked as either tentative or validated, and the reviewers immediately know if a record in the coupled table can be trusted. The reviewers can also validate any name records by using a validation method that the project manager has chosen.

10. By using the reflective log entry mode, the reviewer can see the last log entry, and copy it and paste it to a new space as start new log entry for editing. It is particularly useful for producing a privilege log for a large number of duplicate or similar documents.

11. The reviewer can track newly entered data records by looking at smart feedback (a server message showing the record entry number and entry time) so that the reviewer immediately knows if she entered the last record successfully.

12. By using a dynamic mode, the reviewer need less desktop space.

13. The data in the coupled table may be saved in a database table, which can be ported to other database, desktop database, Excel and even delimited text.

The privilege reviewers can avoid spending too much time on searching names and processing names, and use the saved time to further improve log quality. If a project group spends the same amount of time as it could do in a convention method, it would create a much better, defensible and winning log.

## **K. Entering Data in the Privilege Log**

The following examples show how the invented log method is used in the real world (Assuming that the document is an email).

1. Log in to a member account by providing project code, user name and password.
2. Open the privilege log page by clicking the top menu "Priv\_log". It opens the log entry page.
3. Copy the document ID number into a number field (this step can be automatically done by setting up by a manager) from the document under review.
4. Copy names from the privilege-creating email into the bottom big bottom box. See the example as in the original page. To keep the name structure, copy the whole block.
5. Copy additional names from all subsequent email headers into the top box.
6. Click the "Process" button to process names. The names list will be passed into the log table's respective fields.
7. Fill the rest fields by the reviewer while reviewing the document. The reviewer may copy information directly from the document. The reviewer may use interactive search feature to enter data such as file type, and privilege basis. The reviewer may also use the phrase-constructing feature to build the description for the logged document.
8. The reviewer verifies the names in Sender, Recipient, and CC-recipient, and Additional Recipient fields.
9. Submit the filled log form by pressing the "Submit" button. The log data is sent to the server for processing and storage.
10. The reviewer may note a server response: "Record 57 entered successfully at 06/21/2012 18:33:59" in a green color. The reviewer can see this record back in the privilege table.

## **L. Using Different Log Entry Modes**

Some of the following features are claimed in dependent claims. On the first log entry page, a link "Layout Setup" ("Select Mode") on the top left is for selecting a log entry mode from any of the following modes:

A1. Static Page with Long Input Boxes and Long Fields

The log page has two long name input boxes and a log page with long fields.

A2. Static Page with Long Input Boxes and Short Input Fields

The log page has two long name input boxes and a long page with short fields.

B1. Static Page with Short Boxes and Long Fields

The log page uses two short input name boxes and a log page with long fields.

B2. Static Page with Short Boxes and Short Fields

The log page uses two short input name boxes and a log page with short fields.

C1. Dynamic Pages with Long Boxes and Long Fields

The system presents a name input page with two long boxes and a log page with long fields in two steps.

C2. Dynamic Pages with Long Boxes and Short Fields

The system presents a name input page with two long boxes and a log page with short fields in two steps.

D1. Dynamic Pages with Short Boxes and Long Fields

The system presents a name input page with two short boxes and a log page with long fields in two steps.

D2. Dynamic Pages with Short Boxes and Short Fields

The system presents a name input page with two short boxes and a log page with short fields in two steps.

E1. Long-Field Log with Editable Feedback Record

This mode is for entering similar log entries while no new names are expected. When a log record is submitted, the system feeds the record back on the top for verification with an edit and copy links. The

reviewer may copy the whole last record, and paste it onto the new space for next record. This can save considerable time.

#### E2. Short-Field Log with Editable Feedback Record

This log page with short fields is for entering similar log records while no new name data to be processed. When a log record is submitted, the system feeds the record back for verification, with one edit button and copy button. The reviewer may copy the whole last record and paste it onto the new space for next record.

#### F1. Expandable Long Boxes and Long Fields with Feedback

It is similar to A1 except that the name search/processing portion can be hidden.

#### F2. Expandable Long Boxes and Short Fields with Feedback

It is similar to A2 except that the name search/processing portion can be hidden.

#### G1. Expandable Short Boxes and Long Fields with Feedback

Similar to B1 except that the name search/processing portion can be hidden.

#### G2. Expandable Short Boxes and Short Fields with Feedback

Similar to B2 except that the name search/processing portion can be condensed.

Static modes (A1, A2, B1, and B2) are the most common modes.

Dynamic modes (C1, C2, D1, D2) take two actions as two separate actions to be performed on two separate pages so that system needs less desktop space. Feedback modes (E1 and E2) are for entering log data for similar documents so that the reviewer does not need to process name list. Expendable modes (F1, F2, G1, and G2) allow the reviewer to hide or show the name search/processing area while it also allows the reviewer to see the last record the reviewer has entered. It uses less desktop space, allows the reviewer to inspect the last record for edits, and copies it as the start material for next log record.

## **M. Using Name Search Algorithm**

Names copied from a document and pasted in the name-processing

table will be processed to indicate all attorneys and pass the processed names to the log table. If one types in "John M. Smith" in the sender field of the name search table, the server sends "Smith, John M." to the sender field of the log name field. If one enters a list of names, it sends the list in the correspondent fields in the log form with all attorney names marked. This step actually goes through a process of searching all names in the names table, formatting all names according to a selected format, and filling them into the log page's names fields. It saves a huge amount of time.

## **1. Setting Up Name Search and A Name-Processing Tool**

The reviewer may conduct name search by using "current search" or "default search" mode. Current search allows the user to change settings for immediate effect without saving the setting. The default setting is a persistent search setting which is saved permanently in database. Default setting affects only the current reviewer, and every reviewer has his own default setting. The reviewer can use the default setting for most documents. However, if the reviewer runs into a particular document that requires different search settings, the reviewer can select "current search" to bypass the default setting.

To set up a search method, the reviewer goes to any static log form and click "Show setup." The server will show a setup page. This page allows the reviewer to enter delimiter, mark words for search ranges in the inputted name data, ignored words, and mark words for ignored ranges within the name data. For ordinary use, there is no need to set up the page. The reviewer may select the following settings:

Match Methods: select "basic and reliable matches set by system"

Show Types: Law Firm, Client, Partner. Other parties (not used in the log form)

Duplicated names: Select "Delete the names from group A if they appear in Group B."

Email Input Format: select "Firstname.Lastname@test.com."

Output Names Format: "lastname, firstname middlename"

Group A Output Order: use original order.

Group B Output Options: Keep original section order.

The reviewer needs to save those settings as a default setting.

To change name sorting method, click "Show Sorting Menu" or "Hide Sorting Menu" to show up the sorting menu or hide the menu. The

reviewer can select any of the sorting methods and the selection takes effect immediately in the output box.

To view the intermediate name output product (which is not in the log form), click “Show Names Output” or “Hide Names Output.”

## **2. Viewing Name Output and Entering New Names into the Name Table**

In processing a log, it may be necessary to see name output in structured name data blocks. To see such structured names, click the “Hide Names Output” or “Show Sorting Menu” buttons. On the static modes, click the “Add Name into Table” button. The system will pop-up a page for adding a name to the names table. When this page is shown, the reviewer can also take a look at a table view and may delete or add a name by using those bottom buttons. For dynamic modes (C1, and C2), the reviewer may add a name by clicking “Add Name to Table” button at the bottom of the second name input box. For reflective modes (D1, and D2), no button for adding name is placed (this can be added if necessary). For expendable modes (F1, F2, G1, and G2), the “Add Name to Table” is available to add a new name.

Names can be added to the name table by using any of the “Enter Record” button when the name table is opened under any of the five views.

## **N. Using Data Validation Methods**

All newly entered log entries are marked as tentative records. The reviewers may validate them by two methods: One method is conducting global validation by using “Edit Table.” The reviewer can open this page by clicking “privilege log” in the main navigation bar, and then clicks the “Edit Table”. The reviewer needs to be trained to use this powerful tool. On this table, the reviewer can find log entries by documents ID ranges, date range, and field value. The manger can track the review. If a reviewer finds that a log entry is not good, the reviewer may search and find the document by using document ID and conduct a cross check. If there is any error, the reviewer can fix it.

The second method is to use the “Unverified Records” page to validate them by casting a vote or click (those functions must be set up by the project manager). The reviewers can get any records in this table and validate them by clicking the “Vote” button or by clicking a “Validate” button. For a highly contentious case, two vote plus the owner implied vote

should be enough. For less contentious case, one vote or one direct click validation may be good enough.

## **O. Invention Respects Professional Judgment**

Although those core programs have been tested for more than 2 years and achieve a great stability, there might be cases where the name string may cause problems due to the extreme complexity of the algorithm. If such a problem happens, the reviewer can fix it at the name input box by fixing the name string and removing suspected junks. The reviewer may also fix name strings in the log input form's respective name fields manually.

While the patented method has fully used computer algorithms, it does NOT interfere with professional judgment. It passes every judgment call to the reviewer, but removes the burden of doing manual tasks. The reviewer can use saved time to improve the log's substantive quality.

Finally, the patented method has three methods to secure log data: database dump tool, table data output, and whole project data export. If the system is down for any reason, a back-up system can continue immediately, and the saved log data can be loaded later or combined with the log table in production.

## **P. Key Players in E-discovery**

Those are the some major companies:

7Safe, ABBYY, Actiance, Absolute Discovery, AccessData, Advanced Discovery (Millnet Limited), Advanced Imaging and eDiscovery, AlixPartners (Evidence Exchange), Altep, Altlaw, Alvarez & Marsal, Barracuda Networks (C2C Systems), BDO Consulting, Belkasoft, BeyondRecognition, Black Letter Discovery, BlackStone Discovery, BR Consult, Brainspace, Business Intelligence Associates (BIA), Canon Discovery Services, CapaxDiscovery, Capita, Capital Novus, CAS, Casepoint (@Legal Discovery), Catalyst Repository Systems, Causasoft, CCL Group, Celebrite, Cenza, Cicayda, ClayDesk, CloudNine, Codex, Commonwealth Legal, CommVault, Compliance Discovery Solutions, Compiled Services, Complete Discovery Source, Complete Legal Services, Compute Forensics, Concept Searching, Conduent (Formerly Xerox Legal Services), Consilio

(Backstop, Huron Legal, Proven Legal Technologies, EQD), Control Risks, Critical Data Services, CS Disco, CYFOR, D4, DATAssimilate Systems, Deloitte Discovery, Digital DNA, DiscoverReady, Discovia, Disklabs, doeLEGAL, Driven, Druva, DSI, DTI, dtSearch, EDT (Formally eDiscovery Tools), e.law, eForensics Lab, Elijah, e-Lucidata Solutions, ELM Solutions (Tymetrix), EMC, eMag Solutions, Empire Discovery, Envision Discovery, Epiq Systems, EY (Cataphora), Espion, e-Stet, eTERA Consulting, Everlaw, Evidence Talks, Evolver Legal, Exigent, Exterro, FileControl, Forensic Risk Alliance, ForenTec, Forexus, Franklin Data, FRONTEO (UBIC (TechLaw Solutions, Evolve Discovery)), FTI Technology, GGO Digital WarRoom, GoldFynch, Grant Thornton UK LLP (Formally Legal Inc), Guidance Software, Gulfstream Legal Group, H5, Haystac, Hayes Warren, Hire Counsel, HP - Autonomy, Hobs Legal Docs, Heureka, Heuristica Discovery Counsel, i-Analysis, IBM (StoredIQ), iCONNECT, iControlESI, iDiscovery Solutions, IDS-Legal, iLaw, ILS Innovative Litigation Services, Index Engines, Indexed I/O, Innovative Development, Inspired Review (Review Less), Integreon, InterLegis, Inventus (Part of RPX Corp.), IPRO, IT Group (UK), kCura (Content Analyst), KOFAX, KPMG, KrollDiscovery, Law & Forensics, Law & Order, LDM Global, Legastat, Lexbe, LexisNexis, Lighthouse, LightSpeed, Lineal, Liquid Litigation Management, LitSavant Ltd, LogicForce Consulting, Logikcull, LSI (Litigation Solutions Inc.), MD5 Limited, Media Discovery, Media Resources, Microsoft (Equivio), Mindseye Solutions, Milyli, Mitrstech, Navigant Consulting, Netmaster Solutions, Nexidia, Nextpoint, NightOwl Discovery, NuLegal, Nuix, Omnia, Omnis, OmniVere (Kiersted Systems), ONE Discovery, OpenText (Informative Graphics Corporation, Daegis, Recommind), Opus 2 Magnum, Oyster IMS, Percipient, Planet Data, Precision Discovery, Prolorem, Proofpoint (OrcaTec), ProSearch Strategies, PwC PricewaterhouseCoopers, QDiscovery, QuisLex, RAID, Rational Retention, Resolution1, Ricoh, RVM, SearchBlox Software, Servient, Shepherd Data Services, Sherpa Software, SHMSOFT, Smarsh, Smith & Williamson, Stroz Friedberg, Swiss FTS, Systran, TCDI (TCDI Fox, JURINNOV Ltd.), Teris, The Oliver Group, The Review People, Thomson Reuters, TotalDiscovery, Transperfect (Digital Reef), TRU Staffing Partners, TrustedData Solutions, TrustPoint International, UHY, Unified, UnitedLex, WebPreserver, Valora Technologies, vdiscovery, Vista Analytics, Venio Systems, Veritas, Vound, Yerra Solutions, X1 Discovery, Xact Data Discovery (Orange Legal Technologies, F1 Discovery), Zapproved, Zovy, ZL Technologies, and ZyLAB.

## **Q. Document Review Background**

### **1. E-discovery and document review**



Discovery is a process by which two parties in legal proceeding exchanges information, exhibits and documents according to specific rules of procedure. In a typical legal proceeding, a party (“requesting party”) may, pursuant to procedural rules, send a document request to another party (“responding party”) to compel the responding party to produce documents that contain many categories of subject matters. The responding party reviews potential documents, identifies documents containing any of the enumerated categories of subject matters, and produces them for the requesting party. In a typical document review, the representing law firm or the client retains a data company for providing data hosting services and retains contract attorneys (“the reviewers”) from employment agency to review documents on client computers. The reviewers can access the server of the review platform and download documents one by one for review. Then, each document is marked by categories.

## **2. Where document review is used?**

Two third corporate cases may need the invention. This is a very big space. The need for document review may arise from all kinds of causes such as civil actions, securities litigation, patent infringement, product liability claims, administrative actions, merger acquisition approvals, governmental investigations for statutory violations (violation of Foreign Corrupt Practice Acts), criminal actions, compliance reviews, and internal due diligence reviews. Different legal procedures and substantive laws require the responding party to produce different types of documents. As a result, there is no universal procedure for processing documents. Each review project requires unique tasks for the project manager and the reviewers. Each type of cases may require unique discovery process.

## **3. How documents are reviewed?**

In the old way, documents in hard copies are reviewed by one attorney one by one to determine which is produced and which is privileged (not produced) and attorney also produces two logs: a production log showing a list of documents to be given to the requesting party, and a privilege log showing a list of withheld documents (not to be given to the requesting party).

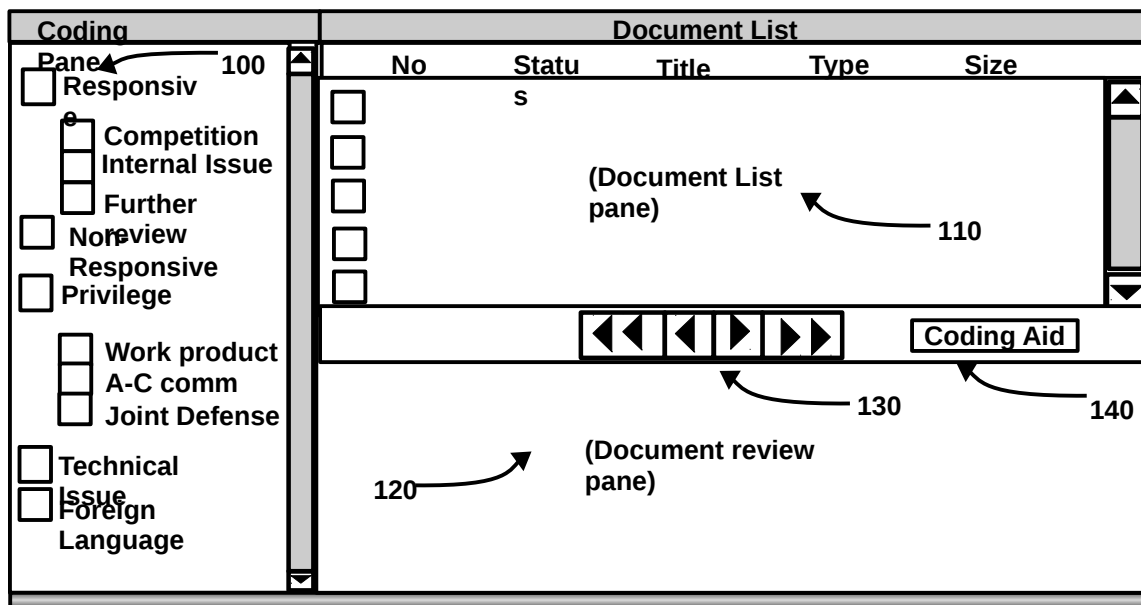
After the arrival of information technologies, companies and even individual persons often have a large number of documents to be reviewed. It is impossible to review documents in the old way. So, documents are reviewed in a network review platform by using network-based review model.

**Network-based review model.** Let say that a client has 1,000,000 documents to be reviewed, a document processor might put all documents

into 10,000 batches (each batch is equivalent to a virtual folder) with 100 documents in each batch. Let say, a review team has 50 reviewers, each reviewer will review 200 batches of documents. Each reviewer will get a first batch of documents to review for all 100 documents. After the reviewer finishes the first batch, the reviewer will get another batch of documents and complete this batch. All 50 reviewers do the same until they have completed all 10,000 batches. It should be noted that all documents are allocated to different reviewers by random drawing in the network review model. All problems arise from this division of review tasks or division of documents among all reviewers. In the old review method, one single attorney reviews a small number of documents and knows everything about all documents. In the network-based review model, each document reviewer access only part of all documents, and learn part of all stories.

When a reviewer review a batch of documents, the reviewer will review document one by one and code for each reviewed document on a user interface. The user interface is shown in the following diagram.

Basic components of document view user interface



Coding pane 100 is where the reviewer selects checks for the document under review; the full document (image or text) is shown in the document pane 120; and document list pane shows a list of documents in the current batch (assigned to this reviewer).

In reviewing a batch of document, the reviewer first starts with a first document, reads the document on document pane 120, and selects all checks applicable in the coding pane 100. After the document is coded, the

reviewer will advance to next document by using the button 130. The reviewer will do the same for the next document.

A document review team with N reviewers want to achieve the following purposes:

(1) Finding those documents responsive to a document request category and code them for production. This group of documents will be given to the requesting party. The reviewer may check the boxes in the coding pane 130: The reviewer may also enter an attorney note.

After the review is finished, the server will generate a production log.

**An Exemplar Production Log**

Doc ID	Sender	Recipients	Subject Matter	Responsive Categories
000001	Jack Smith	Brain Smith..... (1 to 100s)	Meeting customer	1
000002	John Doe folder	Company name list (90 names)	Employee benefits	3,5

The production log may contain thousands of records, each be correspondent to a produced document. It can be generated by the server automatically. Categories numbers are usually based upon the document request's request numbers. DANGER: If a non-responsive document containing privileged information, trade secrets, and sensitive business information is produced by a mistake, it is a fatal mistake!

(2) Finding certain documents that can be withheld for privilege. Two kinds of documents: documents relating a communication with attorneys and documents prepared in anticipation of litigation are privileged, and thus must NOT be produced. A mistake in privilege claim can be an end of the game and subject of lawsuit.

If a document is privileged, the reviewer needs to enter the document descriptive information in a privilege log (Log table is NOT shown here, but is is just like a table for accepting data field). Entering data in a privilege log can be done at this stage or after all documents have been reviewed. If a log is produced in a separate stage, all those documents marked with privilege tags can be pulled by database search tool. Then, reviewers will enter data into the log table one by one. It is very time-consuming. Each reviewer can enter about 40-80 records for one full day. The review term creates a privilege log which looks like below:

**An Exemplar Privilege Log**

Doc ID	Sender	Recipients	Special subject matter	Privilege basis
000100	Jack Lee	Brain Smith..... (1 to 100s)	A licensing agreement	Attorney-client communication
000109	Jack file folder	None	Accident investigation report	Attorney work product

This privilege log may contain thousands of records, each being correspondent to a withheld document, it can consume a great amount of time to make a large privilege log. Tens of millions can be spent on privileged review in large cases.

A privilege log is very important because it will be used by the adversary party as the basis to challenge any privilege claims. If document 000109 was not captured and is given to the adversary party, it may be a game-ending mistake (if the agreement is the focus of dispute). This can be a ground for malpractice lawsuit.

(3) Controlling harmful and irrelevant documents. Giving documents to the adversary parties can hurt the client's future business. It is a very bad mistake. Exposing client trade secrets and sensitive customer information can cripple client future business.

#### **4. How is the invention different from prior art on the market?**

##### **Differences:**

1. **The prior art does not use a coupled table.** In the prior art review method, every document reviewer will review document independently. Whenever they could not understand terms, names, products, legal issues....., they just think are not important. In other words, **they determine the nature of privilege by guessing.** It can often be wrong. There are a large number malpractice suits for making such mistakes.

For example, a document may contain one statement "Dear Jack, I just have signed the agreement. I will give you a copy to you when I get their signatures". Although, the intended recipient knows the agreement, all document reviewers do not know the nature of agreement and those who will sign. The reviewer will code it by guessing. It can be a bombshell if the agreement is solicitation of crime with criminal agents. It would be harmless is the agreement is concerning selling a personal house with real estate agents. In the worse case, a document may contain 5 to 10 critical terms that are not defined.

**2. They do not use name search method.** If a reviewer sees an email with 50 people names, they have to check each of the names against a table of name manually. It can consume 30 minutes. The invention use an integrated name-search algorithm, that will take only 1 second to get a result (when it is combined with another name search invention). It is a huge productivity gain.

The advantages: improving accuracy of the privilege claim, reducing errors, saving time, and reducing the exposure of client's critical information. Each one is vitally important in litigation. One millions dollar claim can go to the toilet, billion dollar punitive damages can be based upon bad document produced by a single mistake (if it is serious). A client business can be destroyed if trade secrets, customer information, and internal information are exposed.

**5. What would the end-user product or service be that is created from this invention?**

The end product is legal service products: the privilege log, and correct entries in the privilege log, properly coded privilege documents, and the production of right documents (without leaked privileged documents). All those things are produced in prior art, but the invention improves the quality of each of those things, and reduces the time for doing the same.

**6. What companies would you see buying the patent and developing a product from the patented invention?**

Big companies in litigation: no company wants to lose its cases due to bad privileged review. The companies in routine litigation have incentive to use the invention to improve the log quality, correct claim of privilege, and avoid exposing sensitive documents.

Software development companies: they develop software for document review and tools for creating privilege logs. They sell their software to law firms, big corporations, document review companies, government agencies.....

Big law firms, which create privilege logs routinely, have an incentive to develop software products.

When the problem is properly understood, each party has incentive to use the patented invention: the clients (who have lawsuit cases) want to win and avoid collateral damages caused by leaked information. The clients can ask the law firms and data processing company to use the invention. The law firm has professional duty to use best technologies available. Failure to do so can be a ground for imposing liability. The document review (outsourced companies) companies also have an incentive to use the

patented invention if the problems are well understood. They always want to provide best technologies to their end clients and affiliated law firms. Each of them claim it is the best to win business. The software manufacturers also have an incentive to use the invention. If they well understand the problems, they have to use it. They cannot get a reputation of destroying client cases and ruining client business by ignoring the problems that are already known. They cannot ignore the problems AFTER solutions have been found.

Big companies, companies with pending cases, big law firms, e-discovery sourcing companies, document review software developers can be easily found. The total number is in the order of 10,000 with 1000 as special targets.

I have a review platform to be used with any existing review system, and it is not difficult to add the claimed features to any existing review platforms.

### **7. Who would the end-user customers be for the product created by the invention?**

(1) The clients: all big companies are routinely in litigation. The big companies have hundreds of thousands cases each year. Thousands of companies. They own and run document view applications.

(2) All of the middle sized and large law firms: they want to provide best legal services. Privileged log mistakes are not what they can tolerate. This is about one thousand law firms. Lawyers have professional duty to use best and updated technologies. They all have such review tools (normally free).

(3) Software companies that develop document review tools such as Ringtail, Relativity.... At least third (30) such companies.

(4) E-discovery review companies. Many companies now provide document review service for clients or law firms by agreements. They have an incentive to do better jobs.

The long list of companies in the Patent Brief does not include law firms.

The entire industry does not understand what causes so many problems. So we must educate them. See my discussion of the foundational flaw.

### **9. What is the invention? What does it do? What need does it fill? What problem does it fix?**

It is used in the legal service market to improve log formality and privilege claim accuracy, reduce conflict claims, and reduce number of fatal

errors. It also improves log production productivity. The name search algorithm can save half an hour of review time for each use. It can reduce costs. What is filled is shown in the exemplar log table above.

## **10. Costs and exposure by the flaw in the prior art**

Document review in litigation is very expensive. It consumes about 80-90% legal fees. Document reviewers are retained to code documents at rate of \$75-200 per hour. Searching 50 names can consumer more than 50 dollars. In email, the headers often contain tens to hundreds of people names!!! When N reviewers do the task, it repeats same tasks by N-1 folds. It is like wasting time on creating more troubles (conflicting coding for same or similar documents).

## **R. The Claims**

1. A method for creating, validating and editing a log for documents or objects for a legal proceeding or a legal matter by using a system comprising a server and a plurality of client computers, the method comprising the steps of:

setting up and modifying user accounts on the server by a privileged user for authorized users, who can access, validate and edit log data concerning documents or objects from the client computers under their user accounts;

setting up by a privileged user a table structure of a log table on the server for storing the log concerning documents or objects, only the authorized users having the right to access the log table;

setting up a table structure of a coupled table containing coupling data relating to at least one field of the log table by the privileged user, with only the authorized users having the right to access the coupled table from the client computers, wherein at least one column of data in the coupled table that the authorized users collect from reviewing documents in real time assist the authorized users to decide if a log entry is entered for a particular document or object and how to enter data in the log table;

creating a web page and a navigation bar containing a button for opening the log table and a button for opening the coupled table so that

each of the authorized users can open a log form for the log table and a table form for the coupled table from a client computer;

adding and editing data for the coupled table in real time by the authorized users while reviewing documents whereby the amount of coupling data and related data increase in the course of creating log entries for the log;

retrieving the coupling data and the related data from the coupled table and presenting the coupling data and the related data to each of the authorized users; and

entering data into the log table, retrieving data from the log table, showing the retrieved data from the log table on the client computer, and editing data in the log table by the authorized users that are reviewing documents.

2. The method of claim 1, further comprising changing the table structure of the log table and the table structure of the coupled table by selecting from the group consisting of: (1) uploading a configuration file containing table names and table structure definitions from a client computer, (2) uploading a project file containing table names and table structure definitions from a client computer, and (3) interactively deleting existing tables, creating new tables, or modifying the tables using a web-based setup page, or any combination of deleting existing tables, creating new tables, or modifying the tables using a web-based setup page.

3. The method of claim 2, further comprising setting up a data source for an input box on a web form for at least one destination field of the log table by setting up the data source on a web page, or uploading a file containing delimited setup data, or both.

4. The method of claim 2 further comprising constructing a phrase by combining user-selected data pieces in a plurality of component input boxes on the log form for the log table or by combining the data pieces that the user has selected in a plurality of selection boxes for a single construction box for the log table.

5. The method of claim 2 further comprising a step of exporting data from the log table and the coupled table in a project zip file and uploading a project zip file onto the server, decompressing the file to form individuals files, and writing the data from the files to corresponding tables.



6. The method of claim 2, further comprising setting up a data validation page and data validation methods for the log table and the coupled table, and validating data for the log table and the coupled table on corresponding validation page.

7. The method of claim 6, wherein the data validation table is a tentative table containing tentative records or a combined table showing both validated records and distinctively marked tentative records, and data validation is accomplished by manager validation or member voting validation.

8. The method of claim 7, further comprising changing data access rule setting between a setting for private edit or a setting for public edit for the log table and the coupled table, whereby a public edit setting allows any authorized user to edit or delete any records of other authorized users on respective web forms while a private edit setting allows an authorized user to edit or delete only the authorized user's own records.

9. A method for creating a log for documents or objects for a legal proceeding or a legal matter on a server connected to a plurality of client computers used by a plurality of authorized users, the method comprising the steps of:

creating user accounts on the server for the authorized users, thereby enabling the authorized users to access, validate, and edit the log concerning documents or objects under their user accounts from their client computers;

creating on the server a log table, to which log entries concerning documents or objects are added, and from which log entries are retrieved for review by the authorized users on their client computers;

creating a coupled table on the server, the coupled table containing coupling data that the authorized users collect from reviewing documents in real time, the coupled table containing at least one field of data relating to at least one field of the log table whereby the coupling data aids the authorized users in creating and editing log entries;

creating a navigation bar, a web form for the log table, and a web form for the coupled table on the server, the navigation bar containing a button for opening the log table and a button for opening the coupled table that has been set up, with the navigation bar accessible to all authorized users on their client computers under their user accounts;

adding and editing data on the web form for the coupled table in real time by the authorized users on their client computers while reviewing documents throughout a production cycle;

adding and editing log data on the input boxes of the log form for the log table by the authorized users on the client computers while reviewing documents throughout a production cycle;

reviewing each document or object, determining if the document or the object is to be logged in the log by searching and reading the data in the coupled table, filling log data in the input boxes on the log form, submitting the filled log form to the server, writing the log data in the log table, displaying the newly entered log record on the log form; and

validating coupling data in the coupled table.

10. The method of claim 9, wherein the coupled table is a names table containing a type field, a comment field, and name fields, wherein the log table is a privilege log table, the method further comprising entering names in an input box on a name search page, submitting a filled name search page to the server, conducting name searches according to a default or current search mode, marking up the names that have been found in the names table, and filling names in respective input boxes for senders and recipients on the search result thereby enabling the authorized user to view and copy the names.

11. The method of claim 10 further comprising selecting a search mode between a current search mode and a default search mode, showing names that are not found in the names table, adding a name into the names table, and repeating search operations by using new name data.

12. The method of claim 11, further comprising setting up search settings, defining ignored ranges and ignored words, providing delimiting characters, changing the display order and format of found names, selecting the types of names data to appear, breaking the name data into segments, breaking up each of the segments to form plural names, and identifying email address, obvious initials, single words, and multi-part names for each of the names, thereby enabling the server to conduct name searches in the names table.

13. The method of claim 10, wherein the name search further comprises full name matches and an additional match method selected from the group consisting of matching inputted obvious acronyms with firm

names and matching inputted email addresses with email addresses, matching two-letter and three-letter initials with initials in comments and with first and last initials of names, matching obvious initials and their variants with the first letters of names and with initials in comments, matching single words with first names and last names, and matching any part of multi-part names with first names, last names, and firm names.

14. The method of claim 9, further comprising processing two lists of names that have been placed in two input boxes, removing special characters, removing ignored ranges from each list of names by using user-provided marks, eliminating duplicates between the two lists of names, sorting names for each of the two lists of names by a selected sorting method, and displaying two lists of processed names in selected formats and selected orders in two output boxes.

15. The method for processing a log for documents or objects for a legal proceeding or a legal matter on a system comprising a server and client computers connected to the server, the method comprising the steps of:

creating a web user interface on the server, the web user interface comprising a name-processing form with a name input box and a submission button, plus a log form with a submission button, wherein the two forms being placed on a single web page or on two separate web pages on a client computer;

copying name data from a document under review on the client computer, the document delivered by a separate document review server or by an integrated review component of the client-server system, pasting the copied name data into the name input box and submitting the filled name-processing form to the server;

processing the name data by the server by removing special characters, dividing the name data into three groups, respectively, for sender, recipients, and cc-recipients, breaking up names data into individual names for each group, searching individual names in a names table, marking each of the found names with a unique mark, sorting all names in each of the three groups according to the sorting keys set in default settings or current settings;

reconstructing on the server the web user interface that contains the name-processing form and the log form, filling processed name data in input boxes for sender, recipients, and cc-recipients on the log form, and

copying the processed name data to the log form on the client computer;

filling data in the remaining input boxes on the log form on the client computer by an authorized user and submitting the log form by the authorized user to the server; and

processing the log form by the server by retrieving submitted log data from the log form, writing the retrieved log data in each of the data fields in a log table on the server, recreating the name processing form with a confirmation message on it, and sending the web user interface to the client computer for processing next document.

16. The method of claim 15, wherein the name-processing form contains a second name input box for entering additional names and the log table contains an additional data field for additional names, the method further comprising eliminating from the second name input box names that are in the first name input box, and copying processed names from the second name input box into the name input box for additional names on the log form.

17. The method of claim 15 further comprising setting up search settings, defining ignored ranges and ignored words by providing mark words, providing delimiting characters, changing appearance order and format of found names, and selecting markings for different types of names.

18. The method of claim 15 further comprising creating a data source for an interactive search and data-feeding function for an input box for a destination field of the log table by selecting from the group consisting of: interactively setting up static data source or data fields of at least one table, uploading and executing a file containing data source setup instructions, and executing a command for setting a data source on a server terminal.

19. The method of claim 15, further comprising typing in an interactive component input box, calling a search program to conduct searches in a data source; retrieving data pieces from the data source, displaying the retrieved data pieces in a selection box, moving a data piece selected by the user to a component input box, combining all data pieces from all component input boxes, submitting the filled log form to the server for processing, and saving the submitted log data in the log table.

20. The method of claim 15 further comprising including and

showing the last log record that the authorized user just submitted at the top of the name processing form, together with embedded tools for editing, copying the log data, and pasting the copied log data into the log form whereby the authorized user can edit it.

## **S. Contact Information**

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