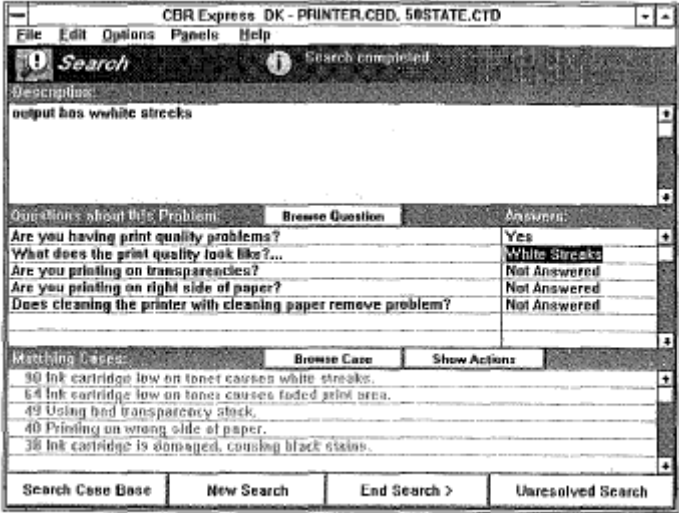**Anticipation under 35 U.S.C. § 102 and Obviousness under 35 U.S.C. § 103 by**
CBR Express User's Guide and CBR Express Reference Manual
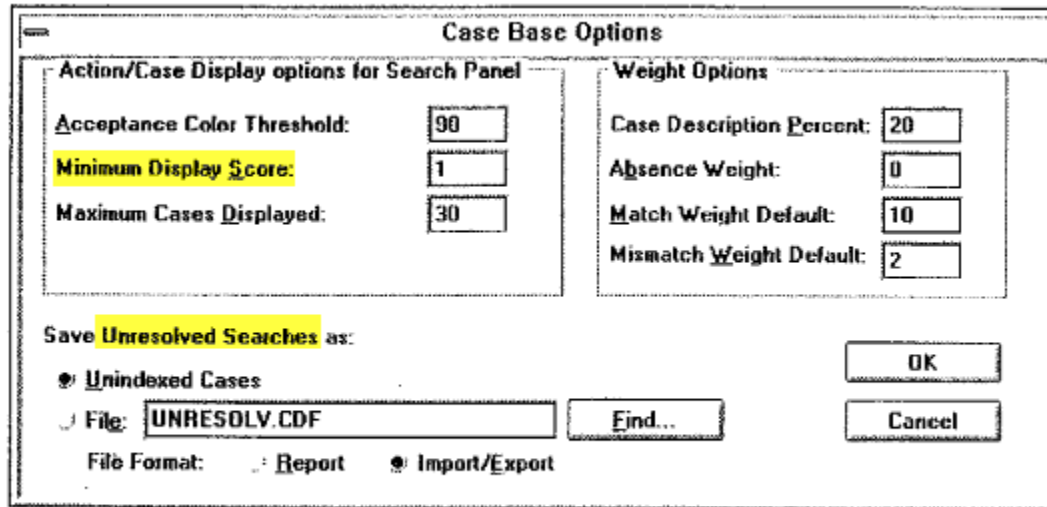
Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
26. A method for automatically processing a non-interactive electronic message using a computer, comprising the steps of:	The User's Guide disclose processing a non-interactive electronic message, i.e. a fact pattern entered by the user. For instance, "output has wwhite [sic] streaks" is the fact pattern entered into the "description" field below: Search Panel (CBR Express User's Guide, p. 51.) Furthermore, the User's Guide discloses that the questions may be automatically filled in for the user: "When you search a case base using CasePoint, you may discover that some of the questions are being answered automatically CasePoint supports the use of rules to copy information from the search description into the answers of particular questions. Rules can also make deductions about answers based on logical implications between one question and another. (It the power is off, then we know for a fact

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
	that the lamp is out.)" (User's Guide p. 64.)
	The Reference Manual discloses disabling questions:
	"Of the 100 points that may be allocated to a case's score, the default percentage for descriptions is set at 20%, meaning a maximum of 20 points may come from the description. Users frequently raise that figure substantially. You are permitted to raise it to 100% if you want to ignore questions completely." (CBR Express Reference Manual p. 14.)
	One of skill in the art would understand that the CBR Express User's Guide incorporates by reference the teachings of Chapter 2 of the CBR Express Reference Manual. Both the User's Guide and the Reference Manual, which bear the same date, were provided to customers who purchased version 2.0 of the CBR Express software. (Declaration of Bradley Allen.) In addition, The CBR Express User's Guide states that "[t]he software packages required for user modification of *CBR Express* and its databases are described in the *CBR Express Reference Manual*." (User's Guide at 7.) One of skill in the art would understand this statement to incorporate at least Chapter 2 of the Reference Manual, which describes the software packages required for user modification of the case-base matching functions of CBR Express.
	To the extent that Bright Response claims the User's Guide insufficient to meet this element, the disclosures in the CBR Express Reference Manual render this element obvious. One of ordinary skill would have been motivated to combine the User's Guide and the Reference Manual, as both shipped with the same software package, both bear the same date, and both described the CBR Express manual, and the User's Guide explicitly references the Reference Manual. *See, e.g.*, User's Guide pp. 7, 24, 46.
(a) receiving the electronic message from a source;	The CBR Express User's Manual disclose receiving an electronic message from a source, e.g. "output has wwhite [sic] streaks." (*See above*, CBR Express User's Guide, p. 51.)
	"The program accepts a natural language sentence as its initial input." CBR Express User's Guide, p. 1.)
	"When you begin a case-base search, all you do is type in a description of the thing you are looking for. Plain old human language is good enough. Just write a sentence or two telling the program what you

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
	would like to find." CBR Express User's Guide, p. 3.) The Reference Manual discloses disabling questions: "Of the 100 points that may be allocated to a case's score, the default percentage for descriptions is set at 20%, meaning a maximum of 20 points may come from the description. Users frequently raise that figure substantially. You are permitted to raise it to 100% if you want to ignore questions completely." (CBR Express Reference Manual p. 14.) One of skill in the art would understand that the CBR Express User's Guide incorporates by reference the teachings of Chapter 2 of the CBR Express Reference Manual. Both the User's Guide and the Reference Manual, which bear the same date, were provided to customers who purchased version 2.0 of the CBR Express software. (Declaration of Bradley Allen.) In addition, The CBR Express User's Guide states that "[t]he software packages required for user modification of *CBR Express* and its databases are described in the *CBR Express Reference Manual*." (User's Guide at 7.) One of skill in the art would understand this statement to incorporate at least Chapter 2 of the Reference Manual, which describes the software packages required for user modification of the case-base matching functions of CBR Express. To the extent that Bright Response claims the User's Guide insufficient to meet this element, the disclosures in the CBR Express Reference Manual render this element obvious. One of ordinary skill would have been motivated to combine the User's Guide and the Reference Manual, as both shipped with the same software package, both bear the same date, and both described the CBR Express manual, and the User's Guide explicitly references the Reference Manual. *See, e.g.*, User's Guide pp. 7, 24, 46.
(b) interpreting the electronic message using a rule base and case base knowledge engine; and	The CBR Express User's Guide discloses interpreting the electronic message using a rule-base and case-base engine. Specifically, the User's Guide discloses using rule-based reasoning to process the message and pre-answer some of the questions presented, and using case-based reasoning (along with the pre-answered questions) to locate the best-matching case from the case base. "CBR Express typically returns the five closest cases and lists them in order on the Search Panel. Each

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
	case is displayed with its match score, a number between 0 and 100 that shows how nearly that case matched the search description. CBR Express also retrieves a set of questions for each of the five cases, and displays the combined set of questions on the panel." (CBR Express User's Guide, p. 49.) "the use of rules to copy information from the search description into the answers of particular questions. Rules can also make deductions about answers based on logical implications between one question and another. (It the power is off, then we know for a fact that the lamp is out.)" (CBR Express User's Guide, p. 64.) "CasePoint is the light-weight deployment vehicle for CBR Express case bases. It is very small and very fast. With release 2.0, CasePoint supports automatic question answering through rules, which greatly increases throughput for the search operator." (CBR Express User's Guide, p. 6.)
(c) retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source	The CBR Express User's Guide discloses retrieving predetermined responses—the solutions or actions associated with the "best matched" cases—for presentation to the user. "The operator continues to answer questions and search until one of the cases shows an acceptably high score, or until all pertinent questions have been answered. Then the operator browses the "winning" case(s) and their recommended actions. In a help-desk application, this information would then be relayed back to the customer. In more general applications, the "winning" cases might all be of interest to the operator, who might examine each case in turn to see how it could contribute to the current situation." (CBR Express User's Guide, p. 50.) Those solutions may be directly displayed to the user after the user enters the problem. "Some CBR Express applications naturally display the list of cases as the output of the search. Other applications emphasize recommended actions. The Search Panel accommodates both perspectives by letting you toggle between a display of cases and a display of actions associated with those cases."

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
	(CBR Express User's Guide, p. 50.)
28. The method of claim 26, further comprising the steps of: (b1) classifying the electronic message as at least one of (i) being able to be responded to automatically; and (ii) requiring assistance from a human operator; and	The CBR Express User's Guide discloses classifying the message as automatic or requiring human intervention. Specifically, the User's Guide describe computing match scores for the cases in the case base. If the match quality of the cases is high, the message is "automatic" and the User's Guide discloses providing an automatic response to the user (see below). If the match quality of the cases are all low, the User's Guide discloses classifying the case as requiring assistance from a human operator, and posing a series of questions to the user. In addition, if there is no "best" case found after the questions are answered, or if there are no applicable questions to answer, then the User's Guide discloses classifying the question as unanswerable and requesting that a human enter the solution. That solution may be entered by the user or by a designated expert. "During the second search, CBR Express finds the five cases that have the best match to the combined description and questions, and returns these to the Search Panel. As before, CBR Express augments the existing list of questions with additional questions drawn from the current list of matching cases. . . . The operator continues to answer questions and search until one of the cases shows an acceptably high score, or until all pertinent questions have been answered. Then the operator browses the "winning" case(s) and their recommended actions. In a help-desk application, this information would then be relayed back to the customer. In more general applications, the "winning" cases might all be of interest to the operator, who might examine each case In turn to see how it could contribute to the current situation." (CBR Express User's Guide, p. 51-52.)

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
	Set Case Base Options Dialog Box

Set Case Base Options Dialog Box

"The Minimum Display Score is the lowest score that will be displayed to the search user. In maintenance mode, lower scores will automatically be displayed. The default is 1. . . . Unresolved Searches may be saved as unindexed cases in the case base, or in either of two external file formats. Report format is human-readable, while ImporVExport format is reloadable into CBR Express. The Find ••• bullon helps you locate the file and pathway of the file."
(CBR Express User's Guide, p. 111.)

"Sometimes the search operator cannot quite come to a resolution while searching the case base. In the early stages of case base development this is normal and to be expected. Case bases go through a "learning curve" just like people do, and at first there may be many practical situations that the case-base author was not able to predict. . . . The search operator will be the one who finds these overlooked situations, and it is very valuable to be able to take a "snapshot" of the search panel for subsequent discussion. This is the purpose of the Unresolved Search button at the bottom of the Search Panel."
(CBR Express User's Guide, p. 56.)

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
(c) retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source when the classification step indicates that the electronic message can be responded to automatically.	The CBR Express User's Guide discloses retrieving predetermined responses—the solutions or actions associated with the "best matched" cases—for presentation to the user, in the event that one or more of the cases has a sufficiently high match score, i.e. that the problem is classified as automatic. "During the second search, CBR Express finds the five cases that have the best match to the combined description and questions, and returns these to the Search Panel. As before, CBR Express augments the existing list of questions with additional questions drawn from the current list of matching cases. . . . The operator continues to answer questions and search until one of the cases shows an acceptably high score, or until all pertinent questions have been answered. Then the operator browses the "winning" case(s) and their recommended actions. In a help-desk application, this information would then be relayed back to the customer. In more general applications, the "winning" cases might all be of interest to the operator, who might examine each case In turn to see how it could contribute to the current situation." (CBR Express User's Guide, p. 51-52.) **Set Case Base Options Dialog Box** "The Minimum Display Score is the lowest score that will be displayed to the search user. In

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
	maintenance mode, lower scores will automatically be displayed. The default is 1. . . . Unresolved Searches may be saved as unindexed cases in the case base, or in either of two external file formats. Report format is human-readable, while ImporVExport format is reloadable into CBR Express. The Find ••• bullon helps you locate the file and pathway of the file." (CBR Express User's Guide, p. 111.) "Sometimes the search operator cannot quite come to a resolution while searching the case base. In the early stages of case base development this is normal and to be expected. Case bases go through a "learning curve" just like people do, and at first there may be many practical situations that the case-base author was not able to predict. . . . The search operator will be the one who finds these overlooked situations, and it is very valuable to be able to take a "snapshot" of the search panel for subsequent discussion. This is the purpose of the Unresolved Search button at the bottom of the Search Panel." (CBR Express User's Guide, p. 56.)
30. The method of claim 28, wherein the step of interpreting the electronic message further includes the steps of: (b1) producing a case model of the electronic message including (i) a set of attributes for identifying specific features of the electronic message; and (ii) message text;	The CBR Express User's Guide discloses building a presented case model from the electronic message. The case consists of a set of features which include the description string or message text. Other features or attributes can be additional strings, yes/no questions, list questions, and numerical questions. "First, the operator types in a natural-language description of the current case. For a help desk, this would be a description of the customer's complaint or difficulty. CBR Express runs an Initial search on this description alone, looking for cases whose descriptions are similar to it." (CBR Express User's Guide, p. 49.) "The operator then answers one or more of the questions. Each time a question is answered, CBR Express updates the search. The questions may be answered in any order, and it is not necessary to answer them all. The operator simply supplies the information that is readily available." (CBR Express User's Guide, p. 50.) *See generally* CBR Express User's Guide, pp. 49-56.

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
	The Reference Manual gives additional details as to the mechanics of the case-base matching and scoring algorithm: "In general, the task is to take a single search case, consisting of data from the Search Panel, and develop a numerical similarity score versus an unknown and potentially large number of stored cases. Both the search case and the stored cases are characterized by a set of features consisting of a description string together with a number of answered questions." (CBR Express Reference Manual p. 13.) "String matching is the default algorithm for scoring Yes/No questions and List questions in CBR Express. . . . Number matching is the default algorithm for scoring numeric questions in CBR Express. . . . Character matching is the default algorithm for scoring search descriptions in CBR Express. . . . Word matching is the default algorithm for scoring text questions in CBR Express. The approach is similar to character matching but is more economical of time and memory." (CBR Express Reference Manual p. 16-19.) One of skill in the art would understand that the CBR Express User's Guide incorporates by reference the teachings of Chapter 2 of the CBR Express Reference Manual. Both the User's Guide and the Reference Manual, which bear the same date, were provided to customers who purchased version 2.0 of the CBR Express software. (Declaration of Bradley Allen.) In addition, The CBR Express User's Guide states that "[t]he software packages required for user modification of *CBR Express* and its databases are described in the *CBR Express Reference Manual*." (User's Guide at 7.) One of skill in the art would understand this statement to incorporate at least Chapter 2 of the Reference Manual, which describes the software packages required for user modification of the case-base matching functions of CBR Express. To the extent that Bright Response claims the User's Guide insufficient to meet this element, the disclosures in the CBR Express Reference Manual render this element obvious. One of ordinary skill would have been motivated to combine the User's Guide and the Reference Manual, as both shipped with the same software package, both bear the same date, and both described the CBR Express manual, and the User's Guide explicitly references the Reference Manual. *See, e.g.*, User's Guide pp. 7, 24, 46.
(b2) detecting at least	The CBR Express User's Guide discloses detecting patterns of text in the electronic message.

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
one of text, combinations of text, and patterns of text of the electronic message using character matching;	"CBR Express uses a sophisticated text-matching algorithm to compare the description of the current case with the descriptions of the cases stored in the case base. This algorithm ignores most common words and concentrates on the more substantive and informative words in the description." (CBR Express User's Guide, p. 51.) "For a text answer, CBR Express bases the matching score on the number of words in the search answer that appear in the case answer. If all of the search words also occur in the case, full credit is given. If half of the search words occur in the case's answer, half credit is given, and so on." (CBR Express User's Guide, p. 63.) The User's Guide further discloses using a rule-based reasoning system to process the message text and automatically answer questions. "When you search a case base using CasePoInt, you may discover that some of the questions are being answered automatically. CasePoint supports the use of rules to copy information from the search description into the answers of particular questions. Rules can also make deductions about answers based on logical implications between one question and another. (It the power is off, then we know for a fact that the lamp is out.)" (CBR Express User's Guide, p. 64.) *See generally* CBR Express User's Guide, pp. 49-56. The Reference Manual discloses using string matching, word matching, and character matching on the message text, with the default being character matching: "String matching is the default algorithm for scoring Yes/No questions and List questions in CBR Express. . . . Number matching is the default algorithm for scoring numeric questions in CBR Express. . . . Character matching is the default algorithm for scoring search descriptions in CBR Express. . . . Word matching is the default algorithm for scoring text questions in CBR Express. The approach is similar to character matching but is more economical of time and memory."

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
	(CBR Express Reference Manual p. 16-19.) "Character matching is the default algorithm for scoring search descriptions in CBR Express. Character matching involves preprocessing the description string to remove as much "noise" text as possible. CBR Express keeps a List of Ignored words which are removed by the string preprocessor. Then all recognizable suffixes are removed from the remaining words. There is a pass to substitute synonyms, if any are defined. Punctuation marks (called "separators") are removed. Finally the string is converted to uppercase throughout to eliminate case sensitive distinctions." (CBR Express Reference Manual p. 18.) One of skill in the art would understand that the CBR Express User's Guide incorporates by reference the teachings of Chapter 2 of the CBR Express Reference Manual. Both the User's Guide and the Reference Manual, which bear the same date, were provided to customers who purchased version 2.0 of the CBR Express software. (Declaration of Bradley Allen.) In addition, The CBR Express User's Guide states that "[t]he software packages required for user modification of *CBR Express* and its databases are described in the *CBR Express Reference Manual*." (User's Guide at 7.) One of skill in the art would understand this statement to incorporate at least Chapter 2 of the Reference Manual, which describes the software packages required for user modification of the case-base matching functions of CBR Express. To the extent that Bright Response claims the User's Guide insufficient to meet this element, the disclosures in the CBR Express Reference Manual render this element obvious. One of ordinary skill would have been motivated to combine the User's Guide and the Reference Manual, as both shipped with the same software package, both bear the same date, and both described the CBR Express manual, and the User's Guide explicitly references the Reference Manual. *See, e.g.*, User's Guide pp. 7, 24, 46.
(b3) flagging the attributes of the case model which are detected in the electronic message;	The CBR Express User's Guide discloses extracting answers to questions (attributes) from the message text using a rule-based reasoning system. "Now, how do you answer a question? To change an answer, click the mouse on it. The Answers field will respond in one of four ways, depending on what type of answer is expected: Yes or No questions are answered by means of a dialog box containing buttons for Yes, No, and Not Answered. . . . List answers pop up a dialog box containing a scrolling field of legal answers. . . . Numeric answers pop up a dialog

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	box for user input. This box accepts numeric values only, and enforces a maximum and minimum value limit on each question. . . . Text answers pop up a dialog box containing an editable field. . . . Notice that it is always possible to mark a question "Not Answered." (CBR Express User's Guide, p. 53-56.) "Automatic Question Answering: When you search a case base using CasePoint, you may discover that some of the questions are being answered automatically CasePoint supports the use of rules to copy information from the search description into the answers of particular questions. Rules can also make deductions about answers based on logical implications between one question and another. (It the power is off, then we know for a fact that the lamp is out.)" (CBR Express User's Guide, p. 64.)
(b4) comparing the flagged attributes of the case model with stored attributes of stored case models of the case base;	The CBR Express User's Guide discloses several means of comparing attributes, including numerical comparisons, exact matching, character matching, and word matching: "CBR Express supports four types of answers to questions: Yes or No, Numeric, Text, and List. The type of answer determines how CBR Express will score them against cases. • Yes/No questions may be answered Yes, No, and Not Answered. These are the most generally-useful type of question. • List questions are selected from a scrolling list of legal answers. These, too, are widely used in most case bases. • Numeric questions have answers that may be positive or negative integers and floating-point numbers, and occur within a specific range between upper and lower limits. • Text questions accommodate text input of unrestricted length." (CBR Express User's Guide, pp. 62-63.) *See generally* CBR Express User's Guide, pp. 60-64. The Reference Manual gives additional information on the attribute comparison: "String matching is the default algorithm for scoring Yes/No questions and List questions in CBR

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	Express. . . . Number matching is the default algorithm for scoring numeric questions in CBR Express. . . . Character matching is the default algorithm for scoring search descriptions in CBR Express. . . . Word matching is the default algorithm for scoring text questions in CBR Express. The approach is similar to character matching but is more economical of time and memory." (CBR Express Reference Manual p. 16-19.) One of skill in the art would understand that the CBR Express User's Guide incorporates by reference the teachings of Chapter 2 of the CBR Express Reference Manual. Both the User's Guide and the Reference Manual, which bear the same date, were provided to customers who purchased version 2.0 of the CBR Express software. (Declaration of Bradley Allen.) In addition, The CBR Express User's Guide states that "[t]he software packages required for user modification of *CBR Express* and its databases are described in the *CBR Express Reference Manual*." (User's Guide at 7.) One of skill in the art would understand this statement to incorporate at least Chapter 2 of the Reference Manual, which describes the software packages required for user modification of the case-base matching functions of CBR Express. To the extent that Bright Response claims the User's Guide insufficient to meet this element, the disclosures in the CBR Express Reference Manual render this element obvious. One of ordinary skill would have been motivated to combine the User's Guide and the Reference Manual, as both shipped with the same software package, both bear the same date, and both described the CBR Express manual, and the User's Guide explicitly references the Reference Manual. *See, e.g.*, User's Guide pp. 7, 24, 46.
(b5) comparing the text of the case model with stored text of the stored case models of the case base; and	The CBR Express User's Guide discloses detecting comparing patterns of text in the electronic message. "CBR Express uses a sophisticated text-matching algorithm to compare the description of the current case with the descriptions of the cases stored in the case base. This algorithm ignores most common words and concentrates on the more substantive and informative words in the description." (CBR Express User's Guide, p. 51.) "For a text answer, CBR Express bases the matching score on the number of words in the search answer that appear in the case answer. If all of the search words also occur in the case, full credit is given. If half of the search words occur in the case's answer, half credit is given, and so on."

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
	(CBR Express User's Guide, p. 63.) The Reference Manual gives additional information on comparing descriptions: "The scoring of each case takes place in two separate parts. The case descriptions are scored separately from the case questions. This lets us assign the description a fixed percentage of the total score, regardless of the number of questions in play in each case. This was a feature that many users requested." (CBR Express Reference Manual p. 14.) One of skill in the art would understand that the CBR Express User's Guide incorporates by reference the teachings of Chapter 2 of the CBR Express Reference Manual. Both the User's Guide and the Reference Manual, which bear the same date, were provided to customers who purchased version 2.0 of the CBR Express software. (Declaration of Bradley Allen.) In addition, The CBR Express User's Guide states that "[t]he software packages required for user modification of *CBR Express* and its databases are described in the *CBR Express Reference Manual*." (User's Guide at 7.) One of skill in the art would understand this statement to incorporate at least Chapter 2 of the Reference Manual, which describes the software packages required for user modification of the case-base matching functions of CBR Express. To the extent that Bright Response claims the User's Guide insufficient to meet this element, the disclosures in the CBR Express Reference Manual render this element obvious. One of ordinary skill would have been motivated to combine the User's Guide and the Reference Manual, as both shipped with the same software package, both bear the same date, and both described the CBR Express manual, and the User's Guide explicitly references the Reference Manual. *See, e.g.*, User's Guide pp. 7, 24, 46.
(b6) assigning a score to each stored case model which is compared with the case model, the score increasing when at least one of the attributes and the text	The CBR Express User's Guide discloses assigning match scores to the stored cases of the case base. "CBR Express typically returns the five closest cases and lists them in order on the Search Panel. Each case is displayed with its match score, a number between 0 and 100 that shows how nearly that case matched the search description." (CBR Express User's Guide, p. 49.)

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
match the stored case model and the score not increasing when at least one of the attributes and the text do not match the stored case model.	"The operator then answers one or more of the questions. Each time a question is answered, CBR Express updates the search." (CBR Express User's Guide, p. 50.) "The operator continues to answer questions and search until one of the cases shows an acceptably high score, or until all pertinent questions have been answered." (CBR Express User's Guide, p. 50.) "If the search answer agrees with the case answer, CBR Express raises the case's score. If not, the score of the case may be reduced." (CBR Express User's Guide, p. 63.) "[T]he match weight of a question influences the relative importance of the question in determining a case's score. It all of the questions in a case have the same match weight, then they will all contribute equally to the score of that case. If one question has a much higher match weight than the others, then it will tend to dominate the scoring process." (CBR Express User's Guide, p. 81.) The Reference Manual gives additional information on computing match scores: "To do this, the questions of the search case are each individually scored against corresponding questions of the stored cases. Generally speaking, if a search feature exactly matches a stored feature (both questions answered "Yes") the raw score of the stored case is incremented by the match weight of the question. This weight is an integer set by the user on the Question Panel. For features that may result In partial matches (such as the text or numeric answers) the raw score of the stored case will be incremented by some fraction of the feature's defined weight, depending on how close the match is. It is also possible to define a mismatch weight for a feature. In this case, failure to match a feature of the search case results in decrementing the stored case's raw score." (CBR Express Reference Manual p. 14.) "The raw score for each case is then incremented by a fraction of the description weight for each trigram

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	that the search description and the case description have in common. . . . Word matching is the same except that "the text is divided up into words rather than trigrams. The raw score for each case is then incremented by a fraction of the description weight for each word that the search answer and the case answer have in common" (CBR Express Reference Manual p. 18.) One of skill in the art would understand that the CBR Express User's Guide incorporates by reference the teachings of Chapter 2 of the CBR Express Reference Manual. Both the User's Guide and the Reference Manual, which bear the same date, were provided to customers who purchased version 2.0 of the CBR Express software. (Declaration of Bradley Allen.) In addition, The CBR Express User's Guide states that "[t]he software packages required for user modification of *CBR Express* and its databases are described in the *CBR Express Reference Manual*." (User's Guide at 7.) One of skill in the art would understand this statement to incorporate at least Chapter 2 of the Reference Manual, which describes the software packages required for user modification of the case-base matching functions of CBR Express. To the extent that Bright Response claims the User's Guide insufficient to meet this element, the disclosures in the CBR Express Reference Manual render this element obvious. One of ordinary skill would have been motivated to combine the User's Guide and the Reference Manual, as both shipped with the same software package, both bear the same date, and both described the CBR Express manual, and the User's Guide explicitly references the Reference Manual. *See, e.g.*, User's Guide pp. 7, 24, 46.
31. The method of claim 30, wherein: when at least one of the attributes and the text match the stored case model, the score is increased by a predetermined match weight; and	The CBR Express User's Manual discloses increasing the score by the match weight in the event of an attribute match. "If the search answer agrees with the case answer, CBR Express raises the case's score. If not, the score of the case may be reduced." (CBR Express User's Guide, p. 63.) "[T]he match weight of a question influences the relative importance of the question in determining a case's score. It all of the questions in a case have the same match weight, then they will all contribute equally to the score of that case. If one question has a much higher match weight than the others, then it

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	will tend to dominate the scoring process." (CBR Express User's Guide, p. 81.) The Reference Manual gives additional information on computing match scores: "Generally speaking, if a search feature exactly matches a stored feature (both questions answered "Yes") the raw score of the stored case is incremented by the match weight of the question. . . . It is also possible to define a mismatch weight for a feature. In this case, failure to match a feature of the search case results in decrementing the stored case's raw score." (CBR Express Reference Manual, p. 14.) One of skill in the art would understand that the CBR Express User's Guide incorporates by reference the teachings of Chapter 2 of the CBR Express Reference Manual. Both the User's Guide and the Reference Manual, which bear the same date, were provided to customers who purchased version 2.0 of the CBR Express software. (Declaration of Bradley Allen.) In addition, The CBR Express User's Guide states that "[t]he software packages required for user modification of *CBR Express* and its databases are described in the *CBR Express Reference Manual*." (User's Guide at 7.) One of skill in the art would understand this statement to incorporate at least Chapter 2 of the Reference Manual, which describes the software packages required for user modification of the case-base matching functions of CBR Express. To the extent that Bright Response claims the User's Guide insufficient to meet this element, the disclosures in the CBR Express Reference Manual render this element obvious. One of ordinary skill would have been motivated to combine the User's Guide and the Reference Manual, as both shipped with the same software package, both bear the same date, and both described the CBR Express manual, and the User's Guide explicitly references the Reference Manual. *See, e.g.*, User's Guide pp. 7, 24, 46.
when at least one of the attributes and the text does not match the stored case model the score is decreased by a predetermined mismatch	The CBR Express User's Manual discloses decreasing the score by the mismatch weight in the event of an attribute mismatch. "If the search answer agrees with the case answer, CBR Express raises the case's score. If not, the score of the case may be reduced." (CBR Express User's Guide, p. 63.)

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
weight.	"The mismatch weight influences the score of cases where the question does not match. It is intended as a penalty, and we find that it works best when the mismatch weight is set to a small fraction of the match weight." (CBR Express User's Guide, pp. 81-82.) The Reference Manual gives additional information on computing match scores: "Generally speaking, if a search feature exactly matches a stored feature (both questions answered "Yes") the raw score of the stored case is incremented by the match weight of the question. . . . It is also possible to define a mismatch weight for a feature. In this case, failure to match a feature of the search case results in decrementing the stored case's raw score." (CBR Express Reference Manual, p. 14.) One of skill in the art would understand that the CBR Express User's Guide incorporates by reference the teachings of Chapter 2 of the CBR Express Reference Manual. Both the User's Guide and the Reference Manual, which bear the same date, were provided to customers who purchased version 2.0 of the CBR Express software. (Declaration of Bradley Allen.) In addition, The CBR Express User's Guide states that "[t]he software packages required for user modification of *CBR Express* and its databases are described in the *CBR Express Reference Manual*." (User's Guide at 7.) One of skill in the art would understand this statement to incorporate at least Chapter 2 of the Reference Manual, which describes the software packages required for user modification of the case-base matching functions of CBR Express. To the extent that Bright Response claims the User's Guide insufficient to meet this element, the disclosures in the CBR Express Reference Manual render this element obvious. One of ordinary skill would have been motivated to combine the User's Guide and the Reference Manual, as both shipped with the same software package, both bear the same date, and both described the CBR Express manual, and the User's Guide explicitly references the Reference Manual. *See, e.g.*, User's Guide pp. 7, 24, 46.
33. The method of claim 31, wherein each score is normalized by	The CBR Express User's Guide discloses normalizing match scores: "If a question is defined as having a "Yes/No" answer or a list answer, CBR Express conducts a simple

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
dividing the score by a maximum possible score for the stored case model, where the maximum possible score is determined when all of the attributes and text of the case model and the stored case model match.	string match of the answer against the cases in the case base. If the search answer agrees with the case answer, CBR Express raises the case's score. If not, the score of the case may be reduced. The comparison is not case-sensitive. For a text answer, CBR Express bases the matching score on the number of words in the search answer that appear in the case answer. If all of the search words also occur in the case, full credit is given. If half of the search words occur in the case's answer, half credit is given, and so on." (CBR Express User's Guide, p. 63.) The Reference Manual gives additional information on normalizing match scores: "The raw score is totaled up for each case, and is then normalized into the range of points left over after scoring the description. For instance, if the description percentage is set to 50% (or 50 points), the contribution from the questions will be some scaled proportion of the remaining 50 points. The normalization confines the final values to a range of 0 to 100 in CBR Express. A normalized score of 100 indicates a perfect match." (CBR Express Reference Manual, pp. 14-15.) One of skill in the art would understand that the CBR Express User's Guide incorporates by reference the teachings of Chapter 2 of the CBR Express Reference Manual. Both the User's Guide and the Reference Manual, which bear the same date, were provided to customers who purchased version 2.0 of the CBR Express software. (Declaration of Bradley Allen.) In addition, The CBR Express User's Guide states that "[t]he software packages required for user modification of *CBR Express* and its databases are described in the *CBR Express Reference Manual*." (User's Guide at 7.) One of skill in the art would understand this statement to incorporate at least Chapter 2 of the Reference Manual, which describes the software packages required for user modification of the case-base matching functions of CBR Express. To the extent that Bright Response claims the User's Guide insufficient to meet this element, the disclosures in the CBR Express Reference Manual render this element obvious. One of ordinary skill would have been motivated to combine the User's Guide and the Reference Manual, as both shipped with the same software package, both bear the same date, and both described the CBR Express manual, and the User's Guide explicitly references the Reference Manual. *See, e.g.*, User's Guide pp. 7, 24, 46.

Claim Language from US 6,411,947	Disclosures in CBR Express User's Guide and CBR Express Reference Manual
38. The method of claim 26, wherein the predetermined response is altered in accordance the interpretation of the electronic message before delivery to the source.	It would be obvious to one of ordinary skill to modify the predetermined response—the solution associated with the best matching case—prior to delivering that response to the user. As detailed more fully in the text of the expert report, adapting solutions to meet the needs of the current case is one of the main aspects of CBR, particularly since CBR often does not find a *perfect* match in its case base to the incoming facts. Modifying the stored solution to account for those differences in facts would be obvious to one of skill in the art.

**Anticipation under 35 U.S.C. § 102 and Obviousness under 35 U.S.C. § 103 by
T. Nguyen, M. Czerwinski, and D. Lee, "Compaq QuickSource: providing the consumer with the power of AI," AI Magazine
14:3 (1993)**

Claim Language from US 6,411,947	Disclosure in Nguyen
26. A method for automatically processing a non-interactive electronic message using a computer, comprising the steps of:	Nguyen discloses a method for processing a non-interactive electronic message. "Users begin a search for a problem solution by invoking the QUICKSOLVE screen (figure 9), which allows them to answer a set of predefined questions, such as problem category, problem subcategory, and problem detail, and to access the underlying search engine (CASEPOINT)." (Nguyen at 55.) Nguyen discloses presenting a set of questions and solutions to the users. Some or all of the questions may be pre-answered by the rule-based reasoning component. (Nguyen 56.)
(a) receiving the electronic message from a source;	Nguyen discloses receiving a message from a source. "Users begin a search for a problem solution by invoking the QUICKSOLVE screen (figure 9):"

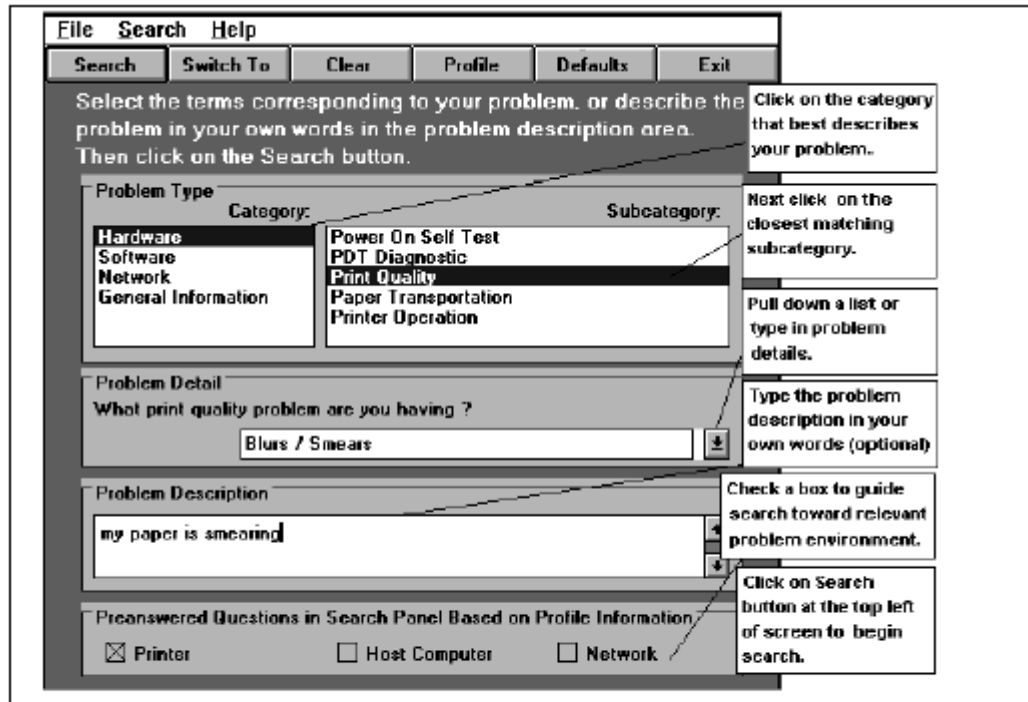| Claim Language from US 6,411,947	Disclosure in Nguyen

Figure 9. Screen Example from QUICKSOLVE.

(Nguyen at 55.)

"When QUICKSOLVE is invoked the first time, the user is presented with a QUICKSOLVE menu screen. This initial screen allows users to select symptoms from a pre designated set of questions. These questions are presented in a logical and dynamic structure that is similar to the previously defined case base structure. For this example, the user should answer that this problem is hardware related—a problem of print quality—and the symptom is blurs smears. The user also has an option to type more specific symptom information in the problem-description box of this screen (figure 9)." |

Claim Language from US 6,411,947	Disclosure in Nguyen
	(Nguyen at 56.)

The information is then received by the QUICKSOLVE system. |
| (b) interpreting the electronic message using a rule base and case base knowledge engine; and | Nguyen discloses interpreting the electronic message using a rule-base and case-base knowledge engine. Specifically, Nguyen discloses using a rule-base knowledge engine to preanswer questions corresponding to attributes within a case base. Nguyen also discloses using case-base reasoning to find the closest case to the instant problem.

"Because QUICKSOURCE's main objective was to find the right answers to printer issues quickly, it was designed to operate in a highly interrelated, integrated environment. Its modules were designed to communicate with and reference one another. The system architecture, defined in figure 1, was designed to include the five main modules (QUICKTOUR, QUICKCONFIG, QUICKSOLVE, QUICKHELP, and QUICKTUTORIAL), a setup utility, and the different case bases."
(Nguyen at 51.)

"QUICKSOURCE interprets the data from the entered problem using a rule base and case base knowledge engine as seen in Fig. 1 and outlined below:" |
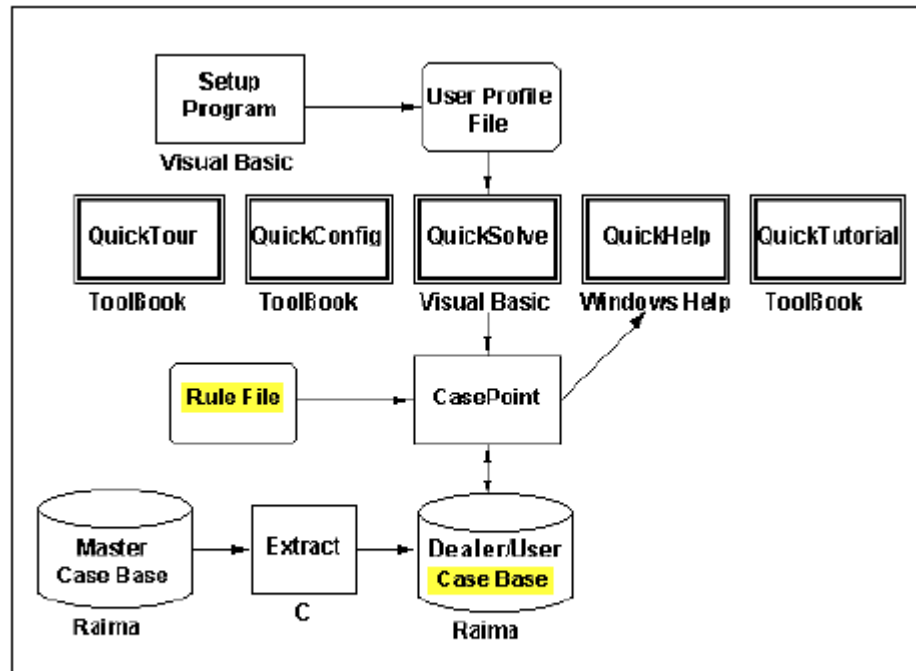
Claim Language from US 6,411,947	Disclosure in Nguyen

Figure 1. QUICKSOURCE *System Architecture.*

(Nguyen at 51 (highlights added).)

"One benefit of this structure was that this limited set of questions was used to define all existing and future cases as the system evolved, allowing new cases to be added to the case base with ease. Another benefit was that users noticed a drastic improvement in the logical presentation of questions during the search process. Dividing the case base into various domain partitions enabled the knowledge engineers to know what areas needed a concentration of effort and led to a well-organized QUICKHELP, which used the same structure as the case base. Cases were built and tested concurrently, ensuring that the structure of the cases was usable and consistent."
(Nguyen at 54.) |

Claim Language from US 6,411,947	Disclosure in Nguyen
| | "The case base was developed using Inference's CBR EXPRESS tool." (Nguyen at 54.)<br><br>Rule-based reasoning is used to pre answer as many questions as possible based on the user's problem description. Rules can also answer questions based on previously answered questions. See figure 12 for some examples of QUICKSOLVE's use of rules. This ability to pre answer questions through the use of rule-based reasoning coupled with the CBR search engine resolved one of the major usability challenges observed during the earlier human factors testing. (Nguyen at 56.)<br><br>```
0 "blurs"
0 "print quality"
=>
1 "Blurs-Smears"
/*  If "blurs" and "print quality" strings are detected in the description
field (represented by "0"), then answer the question "What is your print
quality? (question number 1) with "Blurs/Smears".   */
34 "3.1"
=>
31 "Windows 3.X"
/*  If "3.1" is the answer for the "What version of Windows 3.X are you
using ?" question (i.e., question number 34) then answer the "What
major release of Windows are you using?" question (question number
31) with "Windows 3.X". */
```<br><br>Figure 12. Examples of Rules Used by QUICKSOLVE to Preanswer Questions. (Nguyen at 57.) |

Claim Language from US 6,411,947	Disclosure in Nguyen
(c) retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source	Nguyen discloses retrieving predetermined responses—the solutions or actions associated with the "best matched" cases—for presentation to the user. "Once QUICKSOLVE finds an appropriate solution, the user can double-click on the solution topic in the actions area of the search screen, and a detailed solution appears. Figure 13 shows an example of a detailed solution that is retrieved from the QUICKHELP module."

Claim Language from US 6,411,947	Disclosure in Nguyen
	  Figure 13. Example of Blurs-Smears Solution Available in QUICKHELP. (Nguyen at 56.)

Claim Language from US 6,411,947	Disclosure in Nguyen
28. The method of claim 26, further comprising the steps of: (b1) classifying the electronic message as at least one of (i) being able to be responded to automatically; and (ii) requiring assistance from a human operator; and	Nguyen discloses classifying messages as automatic or requiring human assistance. Specifically, Nguyen discloses presenting a solution to the user in the event that a "good" solution can be found, i.e. in the event that the message is automatic. If no such solution can be found, that Nguyen does not respond to the user, and the user is required to seek human assistance, e.g. call Compaq's help desk. "SMART was developed for Compaq's help-desk operation. It used case-based reasoning (CBR) to provide expert-level knowledge and experience to Compaq's Customer-Support Center, helping representatives with customer calls on the customer-service hotline. With the success of SMART, Compaq looked for new opportunities to use CBR technology to provide even higher levels of customer service. This analysis resulted in a reengineering of Compaq's customer- support strategy. The decision was made to package and deliver the troubleshooting knowledge and expertise directly with the product, allowing consumers to solve most of their problems entirely on their own and to use Compaq's help desk as a backup facility." (Nguyen at 50). To the extent that Nguyen does not disclose this limitation, the disclosures in the CBR Express User's Guide and Reference Manual demonstrate that this limitation is an obvious application of art known to one of ordinary skill, and thus the entire claim is invalid for obviousness. A person of ordinary skill in the art would combine Nguyen with the CBR Express manuals because Nguyen discloses that the QUICKSOLVE case base was developed using CBR Express. (Nguyen 54.) The CBR Express User's Guide discloses classifying the message as automatic or requiring human intervention. Specifically, the User's Guide describe computing match scores for the cases in the case base. If the match quality of the cases is high, the message is "automatic" and the User's Guide discloses providing an automatic response to the user (see below). If the match quality of the cases are all low, the User's Guide discloses classifying the case as requiring assistance from a human operator, and posing a series of questions to the user. In addition, if there is no "best" case found after the questions are answered, or if there are no applicable questions to answer, then the User's Guide discloses classifying the question as unanswerable and requesting that a human enter the solution. That solution may be entered by the user or by a designated expert.

Claim Language from US 6,411,947	Disclosure in Nguyen
	"During the second search, CBR Express finds the five cases that have the best match to the combined description and questions, and returns these to the Search Panel. As before, CBR Express augments the existing list of questions with additional questions drawn from the current list of matching cases. . . . The operator continues to answer questions and search until one of the cases shows an acceptably high score, or until all pertinent questions have been answered. Then the operator browses the "winning" case(s) and their recommended actions. In a help-desk application, this information would then be relayed back to the customer. In more general applications, the "winning" cases might all be of interest to the operator, who might examine each case In turn to see how it could contribute to the current situation." (CBR Express User's Guide, p. 51-52.)

<table>
<tr><td colspan="2" align="center">Case Base Options</td></tr>
<tr><td>Action/Case Display options for Search Panel</td><td>Weight Options</td></tr>
<tr><td>Acceptance Color Threshold: 90</td><td>Case Description Percent: 20</td></tr>
<tr><td>Minimum Display Score: 1</td><td>Absence Weight: 0</td></tr>
<tr><td>Maximum Cases Displayed: 30</td><td>Match Weight Default: 10</td></tr>
<tr><td></td><td>Mismatch Weight Default: 2</td></tr>
</table>

Save Unresolved Searches as: OK
● Unindexed Cases
○ File: UNRESOLV.CDF   Find...   Cancel
File Format: ○ Report   ● Import/Export

Set Case Base Options Dialog Box

"The Minimum Display Score is the lowest score that will be displayed to the search user. In maintenance mode, lower scores will automatically be displayed. The default is 1. . . . Unresolved Searches may be saved as unindexed cases in the case base, or in either of two external file formats. Report format is human-readable, while ImporVExport format is reloadable into CBR Express. The Find ••• bullon helps you locate the file and pathway of the file."

Claim Language from US 6,411,947	Disclosure in Nguyen
	(CBR Express User's Guide, p. 111.)

"Sometimes the search operator cannot quite come to a resolution while searching the case base. In the early stages of case base development this is normal and to be expected. Case bases go through a "learning curve" just like people do, and at first there may be many practical situations that the case-base author was not able to predict. . . . The search operator will be the one who finds these overlooked situations, and it is very valuable to be able to take a "snapshot" of the search panel for subsequent discussion. This is the purpose of the Unresolved Search button at the bottom of the Search Panel."
(CBR Express User's Guide, p. 56.)

"During the second search, CBR Express finds the five cases that have the best match to the combined description and questions, and returns these to the Search Panel. As before, CBR Express augments the existing list of questions with additional questions drawn from the current list of matching cases. . . . The operator continues to answer questions and search until one of the cases shows an acceptably high score, or until all pertinent questions have been answered. Then the operator browses the "winning" case(s) and their recommended actions. In a help-desk application, this information would then be relayed back to the customer. In more general applications, the "winning" cases might all be of interest to the operator, who might examine each case In turn to see how it could contribute to the current situation."
(CBR Express User's Guide, p. 51-52.)

"The Minimum Display Score is the lowest score that will be displayed to the search user. In maintenance mode, lower scores will automatically be displayed. The default is 1. . . . Unresolved Searches may be saved as unindexed cases in the case base, or in either of two external file formats. Report format is human-readable, while ImporVExport format is reloadable into CBR Express. The Find ••• bullon helps you locate the file and pathway of the file."
(CBR Express User's Guide, p. 111.)

"Sometimes the search operator cannot quite come to a resolution while searching the case base. In the early stages of case base development this is normal and to be expected. Case bases go through a "learning curve" just like people do, and at first there may be many practical situations that the case-base author was not able to predict. . . . The search operator will be the one who finds these overlooked

Claim Language from US 6,411,947	Disclosure in Nguyen
	situations, and it is very valuable to be able to take a "snapshot" of the search panel for subsequent discussion. This is the purpose of the Unresolved Search button at the bottom of the Search Panel." (CBR Express User's Guide, p. 56.)
(c) retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source when the classification step indicates that the electronic message can be responded to automatically.	Nguyen discloses retrieving predetermined responses—the solutions or actions associated with the "best matched" cases—for presentation to the user, in the event that such a "best matched" case exists: Once QUICKSOLVE finds an appropriate solution, the user can double-click on the solution topic in the actions area of the search screen, and a detailed solution appears. Figure 13 shows an example of a detailed solution that is retrieved from the QUICKHELP module.

Claim Language from US 6,411,947	Disclosure in Nguyen

Figure 13. Example of Blurs-Smears Solution Available in QUICKHELP.

(Nguyen at 56.) |
| 30. The method of claim 28, wherein the step of interpreting the electronic message | It would have been obvious to one of ordinary skill to combine the disclosure in Nguyen with the disclosures in CBR Express User's Guide and the CBR Express Reference Manual. Nguyen discloses that the QUICKSOLVE case base was developed using CBR Express (Nguyen 54); accordingly, one of skill would think to reference the manuals describing the CBR Express system to better understand the |

Claim Language from US 6,411,947	Disclosure in Nguyen
further includes the steps of: (b1) producing a case model of the electronic message including (i) a set of attributes for identifying specific features of the electronic message; and (ii) message text;	system described in Nguyen. The CBR Express User's Guide discloses building a presented case model from the electronic message. The case consists of a set of features which include the description string or message text. Other features or attributes can be additional strings, yes/no questions, list questions, and numerical questions. "First, the operator types in a natural-language description of the current case. For a help desk, this would be a description of the customer's complaint or difficulty. CBR Express runs an Initial search on this description alone, looking for cases whose descriptions are similar to it." (CBR Express User's Guide, p. 49.) "The operator then answers one or more of the questions. Each time a question is answered, CBR Express updates the search. The questions may be answered in any order, and it is not necessary to answer them all. The operator simply supplies the information that is readily available." (CBR Express User's Guide, p. 50.) *See generally* CBR Express User's Guide, pp. 49-56. The Reference Manual gives additional details as to the mechanics of the case-base matching and scoring algorithm: "In general, the task is to take a single search case, consisting of data from the Search Panel, and develop a numerical similarity score versus an unknown and potentially large number of stored cases. Both the search case and the stored cases are characterized by a set of features consisting of a description string together with a number of answered questions." (CBR Express Reference Manual p. 13.) "String matching is the default algorithm for scoring Yes/No questions and List questions in CBR Express. . . . Number matching is the default algorithm for scoring numeric questions in CBR Express. . . . Character matching is the default algorithm for scoring search descriptions in CBR Express. . . . Word matching is the default algorithm for scoring text questions in CBR Express. The approach is similar to

Claim Language from US 6,411,947	Disclosure in Nguyen
	character matching but is more economical of time and memory." (CBR Express Reference Manual p. 16-19.)
(b2) detecting at least one of text, combinations of text, and patterns of text of the electronic message using character matching;	It would have been obvious to one of ordinary skill to combine the disclosure in Nguyen with the disclosures in CBR Express User's Guide and the CBR Express Reference Manual. Nguyen discloses that the QUICKSOLVE case base was developed using CBR Express (Nguyen 54); accordingly, one of skill would think to reference the manuals describing the CBR Express system to better understand the system described in Nguyen. The CBR Express User's Guide discloses detecting patterns of text in the electronic message. "CBR Express uses a sophisticated text-matching algorithm to compare the description of the current case with the descriptions of the cases stored in the case base. This algorithm ignores most common words and concentrates on the more substantive and informative words in the description." (CBR Express User's Guide, p. 51.) "For a text answer, CBR Express bases the matching score on the number of words in the search answer that appear in the case answer. If all of the search words also occur in the case, full credit is given. If half of the search words occur in the case's answer, half credit is given, and so on." (CBR Express User's Guide, p. 63.) The User's Guide further discloses using a rule-based reasoning system to process the message text and automatically answer questions. "When you search a case base using CasePolnt, you may discover that some of the questions are being answered automatically. CasePoint supports the use of rules to copy information from the search description into the answers of particular questions. Rules can also make deductions about answers based on logical implications between one question and another. (It the power is off, then we know for a fact that the lamp is out.)" (CBR Express User's Guide, p. 64.) *See generally* CBR Express User's Guide, pp. 49-56.

Claim Language from US 6,411,947	Disclosure in Nguyen
	The Reference Manual discloses using string matching, word matching, and character matching on the message text, with the default being character matching: "String matching is the default algorithm for scoring Yes/No questions and List questions in CBR Express. . . . Number matching is the default algorithm for scoring numeric questions in CBR Express. . . . Character matching is the default algorithm for scoring search descriptions in CBR Express. . . . Word matching is the default algorithm for scoring text questions in CBR Express. The approach is similar to character matching but is more economical of time and memory." (CBR Express Reference Manual p. 16-19.) "Character matching is the default algorithm for scoring search descriptions in CBR Express. Character matching involves preprocessing the description string to remove as much "noise" text as possible. CBR Express keeps a List of Ignored words which are removed by the string preprocessor. Then all recognizable suffixes are removed from the remaining words. There is a pass to substitute synonyms, if any are defined. Punctuation marks (called "separators") are removed. Finally the string is converted to uppercase throughout to eliminate case sensitive distinctions." (CBR Express Reference Manual p. 18.)
(b3) flagging the attributes of the case model which are detected in the electronic message;	It would have been obvious to one of ordinary skill to combine the disclosure in Nguyen with the disclosures in CBR Express User's Guide and the CBR Express Reference Manual. Nguyen discloses that the QUICKSOLVE case base was developed using CBR Express (Nguyen 54); accordingly, one of skill would think to reference the manuals describing the CBR Express system to better understand the system described in Nguyen. The CBR Express User's Guide discloses extracting answers to questions (attributes) from the message text using a rule-based reasoning system. "Now, how do you answer a question? To change an answer, click the mouse on it. The Answers field will respond in one of four ways, depending on what type of answer is expected: Yes or No questions are answered by means of a dialog box containing buttons for Yes, No, and Not Answered. . . . List answers pop up a dialog box containing a scrolling field of legal answers. . . . Numeric answers pop up a dialog

Claim Language from US 6,411,947	Disclosure in Nguyen
	box for user input. This box accepts numeric values only, and enforces a maximum and minimum value limit on each question. . . . Text answers pop up a dialog box containing an editable field. . . . Notice that it is always possible to mark a question "Not Answered." (CBR Express User's Guide, p. 53-56.) "Automatic Question Answering: When you search a case base using CasePoint, you may discover that some of the questions are being answered automatically CasePoint supports the use of rules to copy information from the search description into the answers of particular questions. Rules can also make deductions about answers based on logical implications between one question and another. (It the power is off, then we know for a fact that the lamp is out.)" (CBR Express User's Guide, p. 64.)
(b4) comparing the flagged attributes of the case model with stored attributes of stored case models of the case base;	It would have been obvious to one of ordinary skill to combine the disclosure in Nguyen with the disclosures in CBR Express User's Guide and the CBR Express Reference Manual. Nguyen discloses that the QUICKSOLVE case base was developed using CBR Express (Nguyen 54); accordingly, one of skill would think to reference the manuals describing the CBR Express system to better understand the system described in Nguyen. The CBR Express User's Guide discloses several means of comparing attributes, including numerical comparisons, exact matching, character matching, and word matching: "CBR Express supports four types of answers to questions: Yes or No, Numeric, Text, and List. The type of answer determines how CBR Express will score them against cases. • Yes/No questions may be answered Yes, No, and Not Answered. These are the most generally-useful type of question. • List questions are selected from a scrolling list of legal answers. These, too, are widely used in most case bases. • Numeric questions have answers that may be positive or negative integers and floating-point numbers, and occur within a specific range between upper and lower limits. • Text questions accommodate text input of unrestricted length." (CBR Express User's Guide, pp. 62-63.)

Claim Language from US 6,411,947	Disclosure in Nguyen
	See generally CBR Express User's Guide, pp. 60-64. The Reference Manual gives additional information on the attribute comparison: "String matching is the default algorithm for scoring Yes/No questions and List questions in CBR Express. . . . Number matching is the default algorithm for scoring numeric questions in CBR Express. . . . Character matching is the default algorithm for scoring search descriptions in CBR Express. . . . Word matching is the default algorithm for scoring text questions in CBR Express. The approach is similar to character matching but is more economical of time and memory." (CBR Express Reference Manual p. 16-19.)
(b5) comparing the text of the case model with stored text of the stored case models of the case base; and	It would have been obvious to one of ordinary skill to combine the disclosure in Nguyen with the disclosures in CBR Express User's Guide and the CBR Express Reference Manual. Nguyen discloses that the QUICKSOLVE case base was developed using CBR Express (Nguyen 54); accordingly, one of skill would think to reference the manuals describing the CBR Express system to better understand the system described in Nguyen. The CBR Express User's Guide discloses detecting comparing patterns of text in the electronic message. "CBR Express uses a sophisticated text-matching algorithm to compare the description of the current case with the descriptions of the cases stored in the case base. This algorithm ignores most common words and concentrates on the more substantive and informative words in the description." (CBR Express User's Guide, p. 51.) "For a text answer, CBR Express bases the matching score on the number of words in the search answer that appear in the case answer. If all of the search words also occur in the case, full credit is given. If half of the search words occur in the case's answer, half credit is given, and so on." (CBR Express User's Guide, p. 63.) The Reference Manual gives additional information on comparing descriptions:

Claim Language from US 6,411,947	Disclosure in Nguyen
	"The scoring of each case takes place in two separate parts. The case descriptions are scored separately from the case questions. This lets us assign the description a fixed percentage of the total score, regardless of the number of questions in play in each case. This was a feature that many users requested." (CBR Express Reference Manual p. 14.)
(b6) assigning a score to each stored case model which is compared with the case model, the score increasing when at least one of the attributes and the text match the stored case model and the score not increasing when at least one of the attributes and the text do not match the stored case model.	It would have been obvious to one of ordinary skill to combine the disclosure in Nguyen with the disclosures in CBR Express User's Guide and the CBR Express Reference Manual. Nguyen discloses that the QUICKSOLVE case base was developed using CBR Express (Nguyen 54); accordingly, one of skill would think to reference the manuals describing the CBR Express system to better understand the system described in Nguyen. The CBR Express User's Guide discloses assigning match scores to the stored cases of the case base. "CBR Express typically returns the five closest cases and lists them in order on the Search Panel. Each case is displayed with its match score, a number between 0 and 100 that shows how nearly that case matched the search description." (CBR Express User's Guide, p. 49.) "The operator then answers one or more of the questions. Each time a question is answered, CBR Express updates the search." (CBR Express User's Guide, p. 50.) "The operator continues to answer questions and search until one of the cases shows an acceptably high score, or until all pertinent questions have been answered." (CBR Express User's Guide, p. 50.) "If the search answer agrees with the case answer, CBR Express raises the case's score. If not, the score of the case may be reduced." (CBR Express User's Guide, p. 63.)

Claim Language from US 6,411,947	Disclosure in Nguyen
	"[T]he match weight of a question influences the relative importance of the question in determining a case's score. It all of the questions in a case have the same match weight, then they will all contribute equally to the score of that case. If one question has a much higher match weight than the others, then it will tend to dominate the scoring process." (CBR Express User's Guide, p. 81.) The Reference Manual gives additional information on computing match scores: "To do this, the questions of the search case are each individually scored against corresponding questions of the stored cases. Generally speaking, if a search feature exactly matches a stored feature (both questions answered "Yes") the raw score of the stored case is incremented by the match weight of the question. This weight is an integer set by the user on the Question Panel. For features that may result In partial matches (such as the text or numeric answers) the raw score of the stored case will be incremented by some fraction of the feature's defined weight, depending on how close the match is. It is also possible to define a mismatch weight for a feature. In this case, failure to match a feature of the search case results in decrementing the stored case's raw score." (CBR Express Reference Manual p. 14.) "The raw score for each case is then incremented by a fraction of the description weight for each trigram that the search description and the case description have in common. . . . Word matching is the same except that "the text is divided up into words rather than trigrams. The raw score for each case is then incremented by a fraction of the description weight for each word that the search answer and the case answer have in common" (CBR Express Reference Manual p. 18.)
31. The method of claim 30, wherein: when at least one of the attributes and the text match the stored case	It would have been obvious to one of ordinary skill to combine the disclosure in Nguyen with the disclosures in CBR Express User's Guide and the CBR Express Reference Manual. Nguyen discloses that the QUICKSOLVE case base was developed using CBR Express (Nguyen 54); accordingly, one of skill would think to reference the manuals describing the CBR Express system to better understand the system described in Nguyen.

Claim Language from US 6,411,947	Disclosure in Nguyen
model, the score is increased by a predetermined match weight; and	The CBR Express User's Manual discloses increasing the score by the match weight in the event of an attribute match. "If the search answer agrees with the case answer, CBR Express raises the case's score. If not, the score of the case may be reduced." (CBR Express User's Guide, p. 63.) "[T]he match weight of a question influences the relative importance of the question in determining a case's score. It all of the questions in a case have the same match weight, then they will all contribute equally to the score of that case. If one question has a much higher match weight than the others, then it will tend to dominate the scoring process." (CBR Express User's Guide, p. 81.) The Reference Manual gives additional information on computing match scores: "Generally speaking, if a search feature exactly matches a stored feature (both questions answered "Yes") the raw score of the stored case is incremented by the match weight of the question. . . . It is also possible to define a mismatch weight for a feature. In this case, failure to match a feature of the search case results in decrementing the stored case's raw score." (CBR Express Reference Manual, p. 14.)
when at least one of the attributes and the text does not match the stored case model the score is decreased by a predetermined mismatch weight.	It would have been obvious to one of ordinary skill to combine the disclosure in Nguyen with the disclosures in CBR Express User's Guide and the CBR Express Reference Manual. Nguyen discloses that the QUICKSOLVE case base was developed using CBR Express (Nguyen 54); accordingly, one of skill would think to reference the manuals describing the CBR Express system to better understand the system described in Nguyen. The CBR Express User's Manual discloses decreasing the score by the mismatch weight in the event of an attribute mismatch. "If the search answer agrees with the case answer, CBR Express raises the case's score. If not, the score of the case may be reduced."

Claim Language from US 6,411,947	Disclosure in Nguyen
	(CBR Express User's Guide, p. 63.) "The mismatch weight influences the score of cases where the question does not match. It is intended as a penalty, and we find that it works best when the mismatch weight is set to a small fraction of the match weight." (CBR Express User's Guide, pp. 81-82.) The Reference Manual gives additional information on computing match scores: "Generally speaking, if a search feature exactly matches a stored feature (both questions answered "Yes") the raw score of the stored case is incremented by the match weight of the question. . . . It is also possible to define a mismatch weight for a feature. In this case, failure to match a feature of the search case results in decrementing the stored case's raw score." (CBR Express Reference Manual, p. 14.)
33. The method of claim 31, wherein each score is normalized by dividing the score by a maximum possible score for the stored case model, where the maximum possible score is determined when all of the attributes and text of the case model and the stored case model match.	It would have been obvious to one of ordinary skill to combine the disclosure in Nguyen with the disclosures in CBR Express User's Guide and the CBR Express Reference Manual. Nguyen discloses that the QUICKSOLVE case base was developed using CBR Express (Nguyen 54); accordingly, one of skill would think to reference the manuals describing the CBR Express system to better understand the system described in Nguyen. The CBR Express User's Guide discloses normalizing match scores: "If a question is defined as having a "Yes/No" answer or a list answer, CBR Express conducts a simple string match of the answer against the cases in the case base. If the search answer agrees with the case answer, CBR Express raises the case's score. If not, the score of the case may be reduced. The comparison is not case-sensitive. For a text answer, CBR Express bases the matching score on the number of words in the search answer that appear in the case answer. If all of the search words also occur in the case, full credit is given. If half of the search words occur in the case's answer, half credit is given, and so on." (CBR Express User's Guide, p. 63.)

Claim Language from US 6,411,947	Disclosure in Nguyen
	The Reference Manual gives additional information on normalizing match scores: "The raw score is totaled up for each case, and is then normalized into the range of points left over after scoring the description. For instance, if the description percentage is set to 50% (or 50 points), the contribution from the questions will be some scaled proportion of the remaining 50 points. The normalization confines the final values to a range of 0 to 100 in CBR Express. A normalized score of 100 indicates a perfect match." (CBR Express Reference Manual, pp. 14-15.)
38. The method of claim 26, wherein the predetermined response is altered in accordance the interpretation of the electronic message before delivery to the source.	It would be obvious to one of ordinary skill to modify the predetermined response—the solution associated with the best matching case—prior to delivering that response to the user. As detailed more fully in the text of the expert report, adapting solutions to meet the needs of the current case is one of the main aspects of CBR, particularly since CBR often does not find a *perfect* match in its case base to the incoming facts. Modifying the stored solution to account for those differences in facts would be obvious to one of skill in the art.

Anticipation under 35 U.S.C. § 102 and Obviousness under 35 U.S.C. § 103 by
EZ Reader

Claim Language from US 6,411,947	Disclosure in EZ Reader
26. A method for automatically processing a non-interactive electronic message using a computer, comprising the steps of:	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, automatically processed non-interactive electronic messages, e.g. email. "Lotus Notes is Chase Manhattan Bank's corporate email standard; Chase's corporate email router mutes emails to and from the Internet domain and Lotus Notes databases. Accordingly, EZ. Reader was built to operate continuously and automatically in conjunction with Lotus Notes mail functions." (BR 001255, p .1510.) "EZ Reader is an intelligent electronic mail (email) tender that employs a unique combination of rule based parsing and case-based reasoning to automatically and with a high level of accuracy classify and respond to large volumes of incoming email. EZ Reader reduces the time and human resources required to handle incoming email by selecting responses and adding attachments and advice to each incoming message based on how previous similar messages were handled." (BR 001252, p .1507, Abstract.) "Either automatically respond[ing] to it by placing it a Lotus Notes 'outbox' or by forward[ing] it the ChaseDirect 'inbox' for human review and response." (EZ Reader Manual p. 10). "As a new piece of mail comes in, EZ Reader retrieves the message and compares it to a library of actual customer messages, and categorizes the message." (EZ Reader Manual p. 18.)
(a) receiving the electronic message from a source;	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, received email from a source: "EZ Reader is an intelligent electronic mail (email) tender that employs a unique combination of rule based parsing and case-based reasoning to automatically and with a high level of accuracy classify and

Claim Language from US 6,411,947	Disclosure in EZ Reader
	respond to large volumes of incoming email. EZ Reader reduces the time and human resources required to handle incoming email by selecting responses and adding attachments and advice to each incoming message based on how previous similar messages were handled." (BR 001252, p .1507, Abstract.) "The customer sends an email to Chase Manhattan Bank's Internet address…. EZ Reader periodically checks the inbox (a Lotus Notes mail database) for new mail. When a new email arrives in the inbox, EZ Reader retrieves the message." (BR 001254, p .1509.) Figure 1: EZ Reader High-Level Architecture

Claim Language from US 6,411,947	Disclosure in EZ Reader
	(EZ Reader Manual p. 17.) "As a new piece of mail comes in, EZ Reader retrieves the message and compares it to a library of actual customer messages, and categorizes the message." (EZ Reader Manual p. 18.)
(b) interpreting the electronic message using a rule base and case base knowledge engine; and	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, processed the email using a rule base and case base knowledge engine. EZ READER 1507, 1509-13. "EZ Reader is an intelligent electronic mail (email) tender that employs a unique combination of rule based parsing and case-based reasoning to automatically and with a high level of accuracy classify and respond to large volumes of incoming email. EZ Reader reduces the time and human resources required to handle incoming email by selecting responses and adding attachments and advice to each incoming message based on how previous similar messages were handled." (BR 001252, p .1507, Abstract.) "EZ Reader retrieves the message and 'interprets' it by performing rule-based parsing and case-based retrieval." (BR 001254, p .1509.) "The knowledge base portion of EZ Reader, written in the ART* Enterprise® language, combines case-based analysis and rule-based reasoning to interpret incoming email messages. Roles are used to drive the flow of processing, but also are utilized in a pre-processing phase, to identify and tag certain characteristics of a message. A case-based retrieval is then performed, searching for the best matching case of the current email against the case base. /f any characteristics were tagged in pre-processing phase, they will contribute to the overall case base score_ Details on the knowledgebase can be found in the Maintenance section of this document." (EZ Reader Manual p. 19.)

Claim Language from US 6,411,947	Disclosure in EZ Reader
	"Before describing how to maintain the knowledge portion of EZ Reader (i.e., the rule base, case base, and action base), it is helpful to be familiar with the internal process flow of F7 Reader code, as diagramed in Figure 5." (EZ Reader Manual p. 29) (*see* Fig. 5) "Note that any question rule can fire in the pre-processing phase if the current email message passes that rule's criteria. . . . The Text file ez-cases.art contains all cases found in the F7 Reader civ.ebase. Cases are instances of the class class:case which contains the following attributes" (EZ Reader Manual p. 36.)
(c) retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, retrieved predetermined or "canned" responses from a database corresponding to the interpretation of the message. "The outcome of its interpretation is one of two possibilities: a) EZ Reader can respond to the email automatically. An automatic response, which is routed directly to the ChaseDirect outbox, consists of the original email and one or more attachments, or prepared replies, that are retrieved from a Lotus Notes repository of standard responses." (BR 001254, p .1509.) "In general, EZ Reader will operate continuously in conjunction with Lotus Notes mail functions in ChaseDirect Whenever a piece of electronic mail is received into the Lotus Notes environment in ChaseDirect, El Reader will automatically retrieve the email, process (i.e., interpret) it, and either automatically respond to it by placing it in a Lotus Notes "outbox" or forward it to the ChaseDirect "inbox" for human review and response." (EZ Reader Manual p. 10.)
28. The method of claim 26, further comprising the steps of: (b1) classifying the electronic message as at	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, classified emails as either "automatic" (being able to be responded to automatically) or "referral" or "detected." "The outcome of its interpretation is one of two possibilities: a) EZ Reader can respond to the email automatically. An automatic response, which is routed directly to the ChaseDirect outbox, consists of the

Claim Language from US 6,411,947	Disclosure in EZ Reader
least one of (i) being able to be responded to automatically; and (ii) requiring assistance from a human operator; and	original email and one or more attachments, or prepared replies, that are retrieved from a Lotus Notes repository of standard responses. [or b)] EZ Reader cannot respond to the email automatically. It refers the email to ChaseDirect for human review and response before placing the email in the manual review inbox, EZ Reader assigns a category and priority to the message and suggests one or more standard replies based on message content. (Categories and priorities are described in more detail later.)" (BR 001254, p .1509-10.) "There are three general types of actions EZ Reader recommends: 1. A=Automatic: no manual review necessary 2. R=Referral: needs manual review 3. D: Detected: EZ Reader found some information in the email currently being processed which-matches a pre specified keyword, phrase, or numbering scheme." (EZ Reader Manual p. 41.)
(c) retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source when the classification step indicates that the electronic message can be responded to automatically.	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, retrieved predetermined responses in the event the email was classified as "automatic." "The outcome of its interpretation is one of two possibilities: a) EZ Reader can respond to the email automatically. An automatic response, which is routed directly to the ChaseDirect outbox, consists of the original email and one or more attachments, or prepared replies, that are retrieved from a Lotus Notes repository of standard responses. . . . Chase's corporate email router routes the message from ChaseDirect's Lotus Notes mail management system and places it in Chase's domain server for reply back through the internet." (BR 001254, p .1509.) "In general, El Reader will operate continuously in conjunction with Lotus Notes mail functions in ChaseDirect Whenever a piece of electronic mail is received into the Lotus Notes environment in ChaseDirect, El Reader will automatically retrieve the email, process (i.e., interpret) it, and either automatically respond to it by placing it in a Lotus Notes "outbox" or forward it to the ChaseDirect "inbox" for human review and response."

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	(EZ Reader Manual p. 10.)

30. The method of claim 28, wherein the step of interpreting the electronic message further includes the steps of:
(b1) producing a case model of the electronic message including
(i) a set of attributes for identifying specific features of the electronic message; and
(ii) message text;
	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, created a presented case model the included both the text of the email and attributes derived from the email, e.g. "do-not-call-customer."
	
	"The application emulates the recursive nature of evolving interpretation by firs/ detecting combinations of prominent words and patterns of text in any order throughout an incoming message, then setting object attribute values that both trigger and influence the case based reasoning process. The application's case-based reasoning process then provides data to the rule-base lo infer a classification by comparing the message content against the repository of messages in the case-base."
	(BR 001255, p .1510.)
	
	"For example, if EZ Reader infers from incoming email test that the sender does not want to be telephoned by ChaseDirect, the ride for do-not-call-customer? fires and sets that attribute in the case to "Yes'. Features set to "Yes" then contribute lo the case-based search by adding weight for similar stored cases during case-base retrieval."
	(BR 001257-8, p .1512-13.)
	
	"A sample of EZ Reader hybrid processing flow, including the interaction between rule firings and case base matching, is set forth below. The importance of set attributes for the case-base search is clearly illustrated in these two examples. . . ."
	(BR 001258, p .1513 *et. seq.*)
	
	"The second kind of rule, a question rule in EZ Reader terminology, is used for lagging certain characteristics or (or answering certain questions about) the current email and specifying action(s) based on the answers. are three
	subclasses of question rules:
	1. Action-setting rules
	  a) add a detected action
	  b) add an automatic response action

Claim Language from US 6,411,947	Disclosure in EZ Reader
	c) add a referral action 2. Attribute-setting rules 3. Action- and attribute-setting- rules" (EZ Reader Manual p. 33.) "By looking at the right hand side of the rule (lines after the => symbol), we see that q:merger? is an attribute-setting rule. This means that the merger? attribute of class:case is set to "yes" for the present case (result of calling the attribute-setting function). Then, if a search against the casebase is performed, the merger? attribute will contribute to the resulting match score." (EZ Reader Manual p. 35.)
(b2) detecting at least one of text, combinations of text, and patterns of text of the electronic message using character matching;	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, detected text and combinations of text that were present in the email. "The application emulates the recursive nature of evolving interpretation by firs/ detecting combinations of prominent words and patterns of text in any order throughout an incoming message, then setting object attribute values that both trigger and influence the case based reasoning process. The application's case-based reasoning process then provides data to the rule-base lo infer a classification by comparing the message content against the repository of messages in the case-base." (BR 001255, p .1510.) "The left hand sides of the business knowledge rule in EZ Reader represent key linguistic clues that directly imply interpretive conclusions, including literals, wild card patterns, variables and segments, or choices of pattern sets. For example, one wild card pattern rule infers the presence of a foreign phone number by looking for patterns of text that resemble a phone number with a preceding plus sign. The inference of a foreign phone number is then used by the case-based search process to trigger an output Classification." (BR 001256, p .1511.) "For example, if EZ Reader infers from incoming email test that the sender does not want to be telephoned by ChaseDirect, the ride for do-not-call-customer? fires and sets that attribute in the case to

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	"Yes'. Features set to "Yes" then contribute to the case-based search by adding weight for similar stored cases during case-base retrieval." (BR 001257-8, p .1512-13.) "A sample of EZ Reader hybrid processing flow, including the interaction between rule firings and case base matching, is set forth below. The importance of set attributes for the case-base search is clearly illustrated in these two examples. . . ." (BR 001258, p .1513 *et. seq.*) "In addition to the attribute-setting rules described above, EZ Reader's rule-base consists of several "action setting" rules. The rules can detect information that a human readily may overlook. Some aspects of the customer's email reveal valuable information for ChaseDirect but do not necessarily contribute to the reply." (BR 001258, p .1513) (*see also* Figure 3 "skip search" block).
(b3) flagging the attributes of the case model which are detected in the electronic message;	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, flagged attributes of the case detected in the email. "The left hand sides of the business knowledge rule in EZ Reader represent key linguistic clues that directly imply interpretive conclusions, including literals, wild card patterns, variables and segments, or choices of pattern sets. For example, one wild card pattern rule infers the presence of a foreign phone number by looking for patterns of text that resemble a phone number with a preceding plus sign. The inference of a foreign phone number is then used by the case-based search process to trigger an output Classification." (BR 001256, p .1511.) "For example, if EZ Reader infers from incoming email test that the sender does not want to be telephoned by ChaseDirect, the ride for do-not-call-customer? fires and sets that attribute in the case to "Yes'. Features set to "Yes" then contribute to the case-based search by adding weight for similar stored cases during case-base retrieval." (BR 001257-8, p .1512-13.)

Claim Language from US 6,411,947	Disclosure in EZ Reader
	"A sample of EZ Reader hybrid processing flow, including the interaction between rule firings and case base matching, is set forth below. The importance of set attributes for the case-base search is clearly illustrated in these two examples. . . . A rule for deterring an address will fire_ resulting in setting the case attribute address? to -Yes." (BR 001258, p .1513 *et. seq.*) "The knowledge base portion of EZ Reader, written in the ART* Enterprise® language, combines case-based analysis and rule-based reasoning to interpret incoming email messages. Roles are used to drive the flow of processing, but also are utilized in a pre-processing phase, to identify and tag certain characteristics of a message. A case-based retrieval is then performed, searching for the best matching case of the current email against the case base." (EZ Reader Manual p. 19.)
(b4) comparing the flagged attributes of the case model with stored attributes of stored case models of the case base;	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, compared attributes of the presented case and the stored case models of the case base. "EZ Reader searches the case-base assigning relative scores to each stored case based on the number of features, the mismatch of feature values and the absence of features as compared with the presented case using customizable case-based reasoning components supplied in the ARTEnterprise tool. . . . The standard algorithm works as follows: if the value in a feature of the stored email matches the value in the corresponding Intuit of thc incoming email, the feature's match weight is add to the stored email's score. If the feature's value mismatches, the feature's mismatch weight, typically a negative value, is added to the score." (BR 001257, p .1512.) "A sample of EZ Reader hybrid processing flow, including the interaction between rule firings and case base matching, is set forth below. The importance of set attributes for the case-base search is clearly illustrated in these two examples. . . . A rule for deterring an address will fire_ resulting in setting the case attribute address? to -Yes. Next, EZ Reader will perform a search against the ease-base ranking CASE001 with a score higher than CASE002 because of the match on address?. The email will he

Claim Language from US 6,411,947	Disclosure in EZ Reader
	referred because the sign-up kit must be scat out via postal mail, and the sender will receive an electronic acknowledgment that their request has been received and that it is being processed. The detected action simply aids the ChaseDirect staff in quickly determining important contents in Me email. Next suppose another person requests the kit but does not include his postal address in the email, in which case the request cannot be fulfilled. The case-base search will result in CASE002 scoring higher and being selected over CA SE001. The sender will then receive an automatic standard ChaseDirect response with instructions on how to receive the sign-up kit. (BR 001258, p .1513.) The knowledge base portion of EZ Reader, written in the ART* Enterprise® language, combines case-based analysis and rule-based reasoning to interpret incoming email messages. Roles are used to drive the flow of processing, but also are utilized in a pre-processing phase, to identify and tag certain characteristics of a message. A case-based retrieval is then performed, searching for the best matching case of the current email against the case base." (EZ Reader Manual p. 19.)
(b5) comparing the text of the case model with stored text of the stored case models of the case base; and	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, compared the message text of the presented case and the stored case models of the case base. "EZ Reader searches the case-base assigning relative scores to each stored case based on the number of features, the mismatch of feature values and the absence of features as compared with the presented case using customizable case-based reasoning components supplied in the ARTEnterprise tool. . . . The standard algorithm works as follows: if the value in a feature of the stored email matches the value in the corresponding Intuit of the incoming email, the feature's match weight is add to the stored email's score. If the feature's value mismatches, the feature's mismatch weight, typically a negative value, is added to the score." (BR 001257, p .1512.) "Character matching with trigrams was chosen to drive case-base scoring in EL Reader. A trigram is a 3-character sequence. For example, the word "CHASE" generates 7 consecutive trigrams: C; CH; CHA; HAS; ASE; SE; E. When character matching is used, the value of the character feature is broken up into

Claim Language from US 6,411,947	Disclosure in EZ Reader
	consecutive trigrams, and the trigrams of a stored case are matched against the trigrams of the presented case" (BR 001257, p .1512.) "INTERPRETATION: As a new piece of mail comes in, F7 Reader retrieves the message and compares it to a library of actual customer messages, and categorizes the message. Categories are described in the section labeled "Key to Categories". EZ Reader recommends actions and responses based on the message's category and priority and routes the mail to one or more Lotus Notes mailboxes according to one of two action types." (EZ Reader Manual p. 18.)
(b6) assigning a score to each stored case model which is compared with the case model, the score increasing when at least one of the attributes and the text match the stored case model and the score not increasing when at least one of the attributes and the text do not match the stored case model.	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, increased the match score when attributes and text match, and decreased the match score when attributes and text did not match. "EZ Reader searches the case-base assigning relative scores to each stored case based on the number of features, the mismatch of feature values and the absence of features as compared with the presented case using customizable case-based reasoning components supplied in the ARTEnterprise tool. . . . The standard algorithm works as follows: if the value in a feature of the stored email matches the value in the corresponding Intuit of the incoming email, the feature's match weight is add to the stored email's score. If the feature's value mismatches, the feature's mismatch weight, typically a negative value, is added to the score." (BR 001257, p .1512.) "The knowledge base portion of EZ Reader, written in the ART* Enterprise® language, combines case-based analysis and rule-based reasoning to interpret incoming email messages. Roles are used to drive the flow of processing, but also are utilized in a pre-processing phase, to identify and tag certain characteristics of a message. A case-based retrieval is then performed, searching for the best matching case of the current email against the case base. /f any characteristics were tagged in pre-processing phase, they will contribute to the overall case base score_ Details on the knowledgebase can be found in the Maintenance section of this document."

Claim Language from US 6,411,947	Disclosure in EZ Reader
	(EZ Reader Manual p. 19.)
31. The method of claim 30, wherein: when at least one of the attributes and the text match the stored case model, the score is increased by a predetermined match weight; and	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, increased match scores by a predetermined match weight when attributes and text matched. "EZ Reader searches the case-base assigning relative scores to each stored case based on the number of features, the mismatch of feature values and the absence of features as compared with the presented case using customizable case-based reasoning components supplied in the ARTEnterprise tool. . . . The standard algorithm works as follows: if the value in a feature of the stored email matches the value in the corresponding Intuit of the incoming email, the feature's match weight is add to the stored email's score. If the feature's value mismatches, the feature's mismatch weight, typically a negative value, is added to the score. In EZ Reader, each attribute, or feature, used by the case-base was assigned a default match-weight and a customized mismatch-weight of 7.C50. In EZ Reader, the mismatch-weight of zero leads to better differentiation of scores,, because of the incidence of misspellings in incoming emails, combined with the well-bounded knowledge domain. The actual weight that any feature contributes is meaningful only within the context of a particular case and relative to the weights of other features. Since stored cases can contain different numbers of features, a presented case's raw score is normalized by dividing the raw score by the maximum possible match score for the case." (BR 001257, p .1512.)
when at least one of the attributes and the text does not match the stored case model the score is decreased by a predetermined mismatch weight.	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, decreased match scores by a predetermined mismatch weight when attributes and text did not match. "EZ Reader searches the case-base assigning relative scores to each stored case based on the number of features, the mismatch of feature values and the absence of features as compared with the presented case using customizable case-based reasoning components supplied in the ARTEnterprise tool. . . . The standard algorithm works as follows: if the value in a feature of the stored email matches the value in the corresponding Intuit of the incoming email, the feature's match weight is add to the stored email's score. If the feature's value mismatches, the feature's mismatch weight, typically a negative value, is added to

Claim Language from US 6,411,947	Disclosure in EZ Reader
	the score. In CZ Reader, each attribute, or feature, used by the case-base was assigned a default match-weight and a customized mismatch-weight of 7.C50. In EZ Reader, the mismatch-weight of zero leads to better differentiation of scores,, because of the incidence of misspellings in incoming emails, combined with the well-bounded knowledge domain. The actual weight that any feature contributes is meaningful only within the context of a particular case and relative to the weights of other features. Since stored cases can contain different numbers of features, a presented case's raw score is normalized by dividing the raw score by the maximum possible match score for the case." (BR 001257, p .1512.)
33. The method of claim 31, wherein each score is normalized by dividing the score by a maximum possible score for the stored case model, where the maximum possible score is determined when all of the attributes and text of the case model and the stored case model match.	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, normalized match scores. "EZ Reader searches the case-base assigning relative scores to each stored case based on the number of features, the mismatch of feature values and the absence of features as compared with the presented case using customizable case-based reasoning components supplied in the ARTEnterprise tool. . . . The standard algorithm works as follows: if the value in a feature of the stored email matches the value in the corresponding Intuit of the incoming email, the feature's match weight is add to the stored email's score. If the feature's value mismatches, the feature's mismatch weight, typically a negative value, is added to the score. In EZ Reader, each attribute, or feature, used by the case-base was assigned a default match-weight and a customized mismatch-weight of 7.C50. In EZ Reader, the mismatch-weight of zero leads to better differentiation of scores,, because of the incidence of misspellings in incoming emails, combined with the well-bounded knowledge domain. The actual weight that any feature contributes is meaningful only within the context of a particular case and relative to the weights of other features. Since stored cases can contain different numbers of features, a presented case's raw score is normalized by dividing the raw score by the maximum possible match score for the case." (BR 001257, p .1512.)
38. The method of claim 26, wherein the predetermined response	The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, may alter or adapt the predetermined response.

Claim Language from US 6,411,947	Disclosure in EZ Reader
is altered in accordance the interpretation of the electronic message before delivery to the source.	"When rule-base processing fails to clearly identify a classification for an ambiguous incoming email, EZ Reader attempts to find cases that close/y resemble it. If a similar previous email is found, EZ Reader infers that the response used previously can be used (or adapted) for the incoming email." (BR 001257, p .1512.)

Claim Language from US 6,411,947	Disclosure in GREBE
26. A method for automatically processing a non-interactive electronic message using a computer, comprising the steps of:	GREBE operates on a non-interactive electronic message, specifically a relational structure containing the fact pattern of the incoming case. "The application of the structure-matching algorithm to GREBE'S case representations can be illustrated by considering a match between a precedent of "activity in furtherance of employment," Vaughn, and the facts of Jarek's Case, 326 Mass. 182, 93 N.E.2d 533 (1950). The facts of Jarek's Case can be briefly summarized as follows: Jarek was employed as a railroad porter and normally worked from 8:00 A.M. to 5:00 P.M. Because of an unusual work-load, Jarek's employer asked him to work late. Jarek requested and was given permission to walk several blocks home to tell his wife that he would be working late. He slipped and was seriously injured while walking home. Figure 3.8 is a partial representation of the facts of Jarek's Case. At the top of the graph is a node representing the employment relation with Jarek as employee, a Railroad as employer, and duties of portering. The Railroad directed Jarek to engage in overtime portering, and this action gave rise to a family need on the part of Jarek. The intensity of this need would have been decreased by Jarek informing his wife of the schedule change. However, a prerequisite for informing his wife was that Jarek be at home. Being at home would have been achieved by Jarek's special trip home, and the Railroad gave permission for Jarek to make the trip. GREBE'S actual representation of the facts of Jarek's case contains 89 propositions (corresponding to 89 relations among 26 objects).

Claim Language from US 6,411,947	Disclosure in GREBE
	  Figure 3.8: A portion of the facts of *Jarek's Case.* *See also* GREBE 118-138 (listing seven hypotheticals uses as input to Grebe.)
(a) receiving the electronic message from a source;	As detailed in the cell above, GREBE receives messages containing the fact structure of a case.
(b) interpreting the electronic message using a rule base and case base knowledge engine; and	GREBE interprets the message using a rule-base and case-base knowledge engine. More specifically, GREBE uses rule-based reasoning both to infer the relationships between the concepts present in the fact pattern and to combine multiple case comparisons into a single explanation. Thus, given a message input like the following: Jarek was employed as a railroad porter and normally worked from 8:00 A.M.

Claim Language from US 6,411,947	Disclosure in GREBE
	to 5:00 P.M. Because of an unusual work-load, Jarek's employer asked him to work late. Jarek requested and was given permission to walk several blocks home to tell his wife that he would be working late. He slipped and was seriously injured while walking home. (Grebe 44.) GREBE would apply a combination of rules and cases to show how Jarek is entitled to worker's compensation. Specifically, GREBE would use both legal rules (Texas worker's compensation statutes), common-sense rules (walking is like driving since both are traveling), and cases (Jarek is like Vaughn in that in both cases the travel was "necessitated by employment" (Grebe 65-75) to interpret whether the new case was one in which the employee was entitled to worker's compensation.

Claim Language from US 6,411,947	Disclosure in GREBE
Figure 3.1: A schematic representation of the architecture of GREBE.

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Claim Language from US 6,411,947	Disclosure in GREBE
(c) retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source	GREBE retrieved predetermined responses based on the interpretation of the incoming fact pattern. Specifically, GREBE determines the explanations that apply to the particular fact pattern, then converts those explanations into natural-language equivalents: "**3.5 Presenting Explanation Structures as Memoranda** GREBE's explanation generator uses warrants that are derived from sources familiar to legal experts: statutes, the reasoning of precedents, and the meanings of common terms. The objective of using such warrants is to produce explanations that are both as strong as possible and also as plausible as possible to users. If an inference path produced by the explanation generator corresponds to a strong, plausible explanation, then a straightforward syntactic transformation should be sufficient to transform the inference path into a natural language output that legal experts can comprehend and find persuasive. GREBE's memorandum generator is a mechanism for achieving this transformation. The memorandum generator does not address the very difficult problem of converting between a case's natural language representation and its the equivalent semantic network representation. The very lack of a priori relational constraints that is the source of expressiveness of semantic network representations would give rise to great complexity in discourse generation and interpretation. GREBE's explanations structures, by contrast, have a simple recursive structure that lends itself well to template instantiation techniques. The memorandum generator operates in two steps. First, it sorts the explanations by a heuristic estimate of their strength. It then prints a natural-language equivalent of one or more of the explanations, starting with the strongest. The natural-language equivalent of each explanation is formed by instantiating natural-language templates corresponding to classes of predicates and types of warrants. The memorandum generator has both a verbose mode, in which it prints the complete explanation, and a comparison mode, in which it prints only those portions of an explanation that differ from the immediately preceding explanation." (GREBE 64.) |