

EXHIBIT K

**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
<p>26. A method for automatically processing a non-interactive electronic message using a computer, comprising the steps of:</p>	<p>The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, automatically processed non-interactive electronic messages, e.g. email.</p> <p>“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.)</p> <p>“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.)</p> <p>“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).</p> <p>“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.)</p>
<p>(a) receiving the electronic message from a source;</p>	<p>The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, received email from a source:</p> <p>“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</p>

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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.)

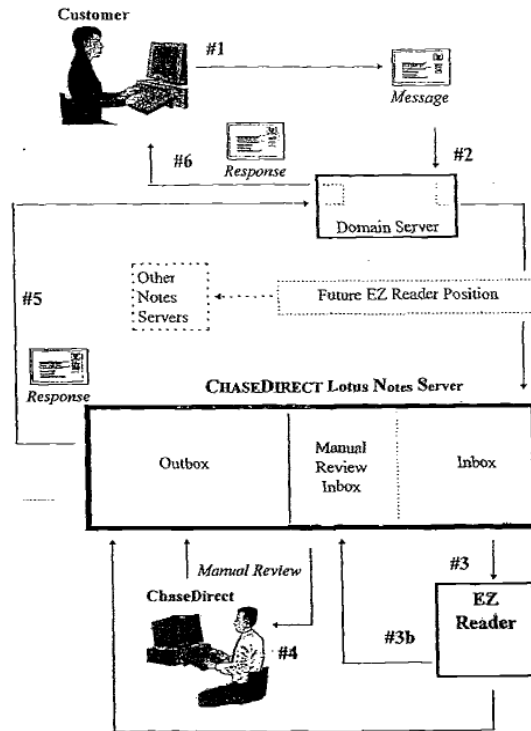


Figure 1: EZ Reader High-Level Architecture

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	<p>(EZ Reader Manual p. 17.)</p> <p>“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.)</p>
<p>(b) interpreting the electronic message using a rule base and case base knowledge engine; and</p>	<p>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.</p> <p>EZ READER 1507, 1509-13.</p> <p>“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.)</p> <p>“EZ Reader retrieves the message and ‘interprets’ it by performing rule-based parsing and case-based retrieval.” (BR 001254, p .1509.)</p> <p>“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.)</p>

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	<p>“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) (<i>see</i> Fig. 5)</p> <p>“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.ibase. Cases are instances of the class class:case which contains the following attributes” (EZ Reader Manual p. 36.)</p>
<p>(c) retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source</p>	<p>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.</p> <p>“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.)</p> <p>“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.)</p>
<p>28. The method of claim 26, further comprising the steps of: (b1) classifying the electronic message as at</p>	<p>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.”</p> <p>“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</p>

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<p>least one of (i) being able to be responded to automatically; and (ii) requiring assistance from a human operator; and</p>	<p>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.)</p> <p>“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.)</p>
<p>(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.</p>	<p>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.”</p> <p>“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.)</p> <p>“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.”</p>

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	(EZ Reader Manual p. 10.)
<p>30. The method of claim 28, wherein the step of interpreting the electronic message further includes the steps of:</p> <p>(b1) producing a case model of the electronic message including</p> <p>(i) a set of attributes for identifying specific features of the electronic message;</p> <p>and</p> <p>(ii) message text;</p>	<p>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.”</p> <p>“The application emulates the recursive nature of evolving interpretation by firing/ 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 to infer a classification by comparing the message content against the repository of messages in the case-base.” (BR 001255, p .1510.)</p> <p>“For example, if EZ Reader infers from incoming email text that the sender does not want to be telephoned by ChaseDirect, the rule 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.)</p> <p>“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 <i>et. seq.</i>)</p> <p>“The second kind of rule, a question rule in EZ Reader terminology, is used for tagging 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:</p> <ol style="list-style-type: none"> 1. Action-setting rules <ol style="list-style-type: none"> a) add a detected action b) add an automatic response action

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	<p>c) add a referral action 2. Attribute-setting rules 3. Action- and attribute-setting- rules” (EZ Reader Manual p. 33.)</p> <p>“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.)</p>
<p>(b2) detecting at least one of text, combinations of text, and patterns of text of the electronic message using character matching;</p>	<p>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.</p> <p>“The application emulates the recursive nature of evolving interpretation by first 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 to infer a classification by comparing the message content against the repository of messages in the case-base.” (BR 001255, p .1510.)</p> <p>“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.)</p> <p>“For example, if EZ Reader infers from incoming email text that the sender does not want to be telephoned by ChaseDirect, the rule for do-not-call-customer? fires and sets that attribute in the case to</p>

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	<p>"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.)</p> <p>"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 <i>et. seq.</i>)</p> <p>"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) (<i>see also</i> Figure 3 "skip search" block).</p>
(b3) flagging the attributes of the case model which are detected in the electronic message;	<p>The EZ Reader system, as described in the Rice paper and the EZ Reader Manual, flagged attributes of the case detected in the email.</p> <p>"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.)</p> <p>"For example, if EZ Reader infers from incoming email text that the sender does not want to be telephoned by ChaseDirect, the rule 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.)</p>

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	<p>“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 <i>et. seq.</i>)</p> <p>“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.)</p>
(b4) comparing the flagged attributes of the case model with stored attributes of stored case models of the case base;	<p>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.</p> <p>“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.)</p> <p>“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</p>

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	<p>referred because the sign-up kit must be sent 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.)</p> <p>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.)</p>
(b5) comparing the text of the case model with stored text of the stored case models of the case base; and	<p>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.</p> <p>“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.)</p> <p>“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</p>

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	<p>consecutive trigrams, and the trigrams of a stored case are matched against the trigrams of the presented case” (BR 001257, p .1512.)</p> <p>“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.)</p>
<p>(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.</p>	<p>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.</p> <p>“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.)</p> <p>“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.”</p>