Deborah E. Fishman (Cal. Bar No. 197584)
FishmanD@dicksteinshapiro.com
Assad H. Rajani (Cal. Bar No. 251143)
RajaniA@dicksteinshapiro.com
DICKSTEIN SHAPIRO LLP
700 Hansen Way
Palo Alto, California 94304-1016
Telephone: (650) 690-9500
Facsimile: (650) 690-9501

Attorney for Plaintiff,
CALLIDUS SOFTWARE INC.

E-filing

JSC

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

CALLIDUS SOFTWARE INC., a Delaware corporation,

Plaintiff,

v.

VERSATA SOFTWARE, INC., a Delaware corporation, and VERSATA DEVELOPMENT GROUP, INC., a Delaware corporation,

Defendants.

Case No. CV 12 5337

COMPLAINT FOR DECLARATORY JUDGMENT OF PATENT NON-INFRINGEMENT AND INVALIDITY

DEMAND FOR JURY TRIAL

Plaintiff Callidus Software Inc. ("Callidus"), by and through its undersigned counsel, files this Complaint against Defendants Versata Software, Inc., and Versata Development Group, Inc., (collectively "Versata" or "Defendants"), and alleges as follows:

1. This is a civil action arising under the Patent Laws of the United States, 35 U.S.C. §§ 101, et seq., seeking declaratory judgment that United States Patent Nos. 7,904,326 ("the '326 patent"), 7,908,304 ("the '304 patent"), and 7,958,024 ("the '024 patent") are invalid and not infringed by Callidus. The '326 patent is attached as Exhibit A. The '304 patent is attached as Exhibit B. The '024 patent is attached as Exhibit C.

THE PARTIES

2. Plaintiff Callidus Software Inc. is a Delaware corporation with its principal place of business at 6200 Stoneridge Mall Road, Suite 500, Pleasanton, California 94588. Callidus is a market and technology leader in cloud-based solutions for sales effectiveness sold to companies of every size throughout the world. Callidus's customers use sales effectiveness solutions to optimize investments in sales planning and performance. Callidus's solutions enable businesses to achieve new insights into the principal levers that drive sales force performance so they can repeat sales successes for sustainable, predictable sales growth.

3. Upon information and belief, Defendant Versata Software, Inc., is a Delaware corporation with its principal place of business at 6011 West Courtyard Drive, Austin, Texas 78730. Upon information and belief, Versata Software, Inc., may be served with process through its registered agent, Capitol Services, Inc., 1675 South State Street, Suite B, Dover, Delaware 19901.

4. Upon information and belief, Defendant Versata Development Group, Inc., f/k/a Trilogy Development Group, Inc., is a Delaware corporation with its principle place of business at 6011 West Courtyard Drive, Austin, Texas 78730. Upon information and belief, Versata Development Group, Inc., may be served with process through its registered agent, Capitol Services, Inc., 1675 South State Street, Suite B, Dover, Delaware 19901.

JURISDICTION AND VENUE

5. Callidus brings this complaint against Versata pursuant to the patent laws of the United States, Title 35 of the United States Code, with a specific remedy sought based upon the laws

authorizing actions for declaratory judgment in the courts of the United States, 28 U.S.C. §§ 2201 and 2202.

6. This Court has subject matter jurisdiction over this action, which arises under the patent laws of the United States, pursuant to 28 U.S.C. §§ 1331, 1338(a), and 2201.

7. Venue is proper in this District under to 28 U.S.C. § 1391(b) and (c).

8. This Court has personal jurisdiction over Versata. Upon information and belief, Versata conducts business in this District and has sought and is seeking to monetize its patent portfolio, including the '326 patent, the '304 patent, and the '024 patent, in this District.

EXISTENCE OF AN ACTUAL CONTROVERSY

9. There is an actual controversy within the jurisdiction of this Court under 28 U.S.C. §§ 2201 and 2202. Versata has filed an action for infringement of the '326 patent, the '304 patent, and the '024 patent against Callidus in Case No. 1:12-cv-00931 in the District of Delaware.

COUNT 1: DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '326 PATENT

10. Callidus restates and re-alleges the allegations contained in paragraphs 1-9 above and incorporates them by reference.

11. Callidus has not directly infringed, contributed to the infringement, or induced the infringement of any claim of the '326 patent. Without limitation, Callidus's SPM Suite, including Callidus's TrueComp and TrueProducer products do not meet each and every limitation, literally or under the doctrine of equivalents, of any claim of the '326 patent.

COUNT 2: DECLARATORY JUDGMENT OF INVALIDITY OF THE '326 PATENT

12. Callidus restates and re-alleges the allegations contained in paragraphs 1-11 above and incorporates them by reference.

13. The claims of the '326 patent are invalid for failing to satisfy one or more of the statutory requirements for patentability set forth in the United States patent laws, Title 35 of the United States Code, including but not limited to 35 U.S.C. §§ 101, 102, 103, and/or 112.

COUNT 3: DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '304 PATENT

14. Callidus restates and re-alleges the allegations contained in paragraphs 1-13 above and incorporates them by reference.

15. Callidus has not directly infringed, contributed to the infringement, or induced the infringement of any claim of the '304 patent. Without limitation, Callidus's SPM Suite, including Callidus's TrueComp and TrueProducer products do not meet each and every limitation, literally or under the doctrine of equivalents, of any claim of the '304 patent.

COUNT 4: DECLARATORY JUDGMENT OF INVALIDITY OF THE '304 PATENT

16. Callidus restates and re-alleges the allegations contained in paragraphs 1-15 above and incorporates them by reference.

17. The claims of the '304 patent are invalid for failing to satisfy one or more of the statutory requirements for patentability set forth in the United States patent laws, Title 35 of the United States Code, including but not limited to 35 U.S.C. §§ 101, 102, 103, and/or 112.

COUNT 5: DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '024 PATENT

18. Callidus restates and re-alleges the allegations contained in paragraphs 1-17 above and incorporates them by reference.

19. Callidus has not directly infringed, contributed to the infringement, or induced the infringement of any claim of the '024 patent. Without limitation, Callidus's TrueComp product does not meet each and every limitation, literally or under the doctrine of equivalents, of any claim of the '024 patent.

COUNT 6: DECLARATORY JUDGMENT OF INVALIDITY OF THE '024 PATENT

20. Callidus restates and re-alleges the allegations contained in paragraphs 1-19 above and incorporates them by reference.

21. The claims of the '024 patent are invalid for failing to satisfy one or more of the statutory requirements for patentability set forth in the United States patent laws, Title 35 of the United States Code, including but not limited to 35 U.S.C. §§ 101, 102, 103, and/or 112.

DEMAND FOR JURY

If this matter proceeds to trial, Callidus demands a trial by jury.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Callidus Software Inc. prays that the Court enter judgment in its favor and against Defendants Versata Software, Inc., and Versata Development Group, Inc. as follows:

A. Declaring that Callidus has not infringed and is not infringing, directly or indirectly, contributorily or by inducement, any claims of the '326, '324, and '024 patents;

B. Declaring that each claim of the '326, '324, and '024 patents is invalid;

C Enjoining and restraining Versata, its agents, servants, officers, alter egos, employees, attorneys, and those persons in active concert, participation, and privity with Versata, from asserting against Callidus, its agents, vendees, suppliers, customers, or any others in privity with it, that any of them infringe any claim of Versata's '326, '324, and '024 patents;

D. Adjudging that this is an exceptional case within the meaning of 35 U.S.C. § 285;

E. Awarding Callidus its costs, disbursements, and reasonable attorneys' fees incurred in connection with this action; and

F. Awarding any such other and further relief in law or in equity to which Callidus may be justly entitled.

Dated: October 16, 2012

Respectfully Submitted,

DICKSTEIN SHAPIRO LLP

By: _____

Deborah E. Fishman (Cal. Bar No. 197584)
FishmanD@dicksteinshapiro.com
Assad H. Rajani (Cal. Bar No. 251143)
RajaniA@dicksteinshapiro.com
DICKSTEIN SHAPIRO LLP
700 Hansen Way
Palo Alto, California 94304-1016
Telephone: (650) 690-9500
Facsimile: (650) 690-9501

Attorneys for Plaintiff,
CALLIDUS SOFTWARE INC.

EXHIBIT A

US007904326B2

(12) **United States Patent**
Gharavy

(10) **Patent No.: US 7,904,326 B2**
(45) **Date of Patent: Mar. 8, 2011**

(54) **METHOD AND APPARATUS FOR PERFORMING COLLECTIVE VALIDATION OF CREDENTIAL INFORMATION**

(75) Inventor: **Shari Gharavy**, Austin, TX (US)

(73) Assignee: **Versata Development Group, Inc.**, Austin, TX (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 120 days.

(21) Appl. No.: **09/896,144**

(22) Filed: **Jun. 29, 2001**

(65) **Prior Publication Data**

US 2003/0004840 A1 Jan. 2, 2003

(51) **Int. Cl.**
G06Q 40/00 (2006.01)
G06F 17/30 (2006.01)

(52) **U.S. Cl.** **705/10**; 705/44

(58) **Field of Classification Search** 705/33, 705/7, 10, 30, 38, 44

See application file for complete search history.

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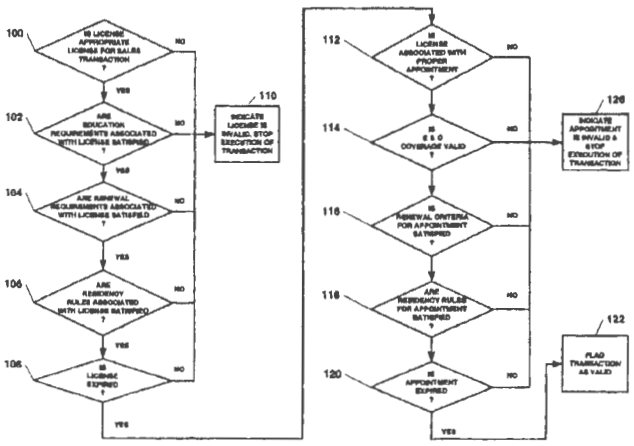
Primary Examiner — Andrew Joseph Rudy
(74) *Attorney, Agent, or Firm* — Hamilton & Terrile, LLP; Kent B. Chambers

(57) **ABSTRACT**

An embodiment of the invention comprises a method and apparatus for performing collective validation of credential information. The invention has applicability in industries that require sales agents or those related to the distribution of a certain product to be credentialed (e.g., licensed and/or appointed) when selling certain products (e.g., life insurance, etc . . .). For example, in order to sell some financial instruments sales representatives must meet state and/or federal licensing requirements. Embodiments of the invention provide a way to ensure that sales representatives operate within any regulatory constraints put in place by government or any other organization. Companies may, for instance, utilize embodiments of the invention to ensure that sales representatives operate within a set of defined constraints. One aspect of the invention provides a method for validating sales agents' credentials while processing the sales transaction data to determine commission amounts. The system is configured to perform such transaction processing in an efficient manner that minimizes the amount of computational resources required to determine whether a sales agent has valid credential at the time of a particular sale and is therefore entitled to compensation (e.g., a commission) for the sale.

22 Claims, 5 Drawing Sheets



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* cited by examiner

Figure 1

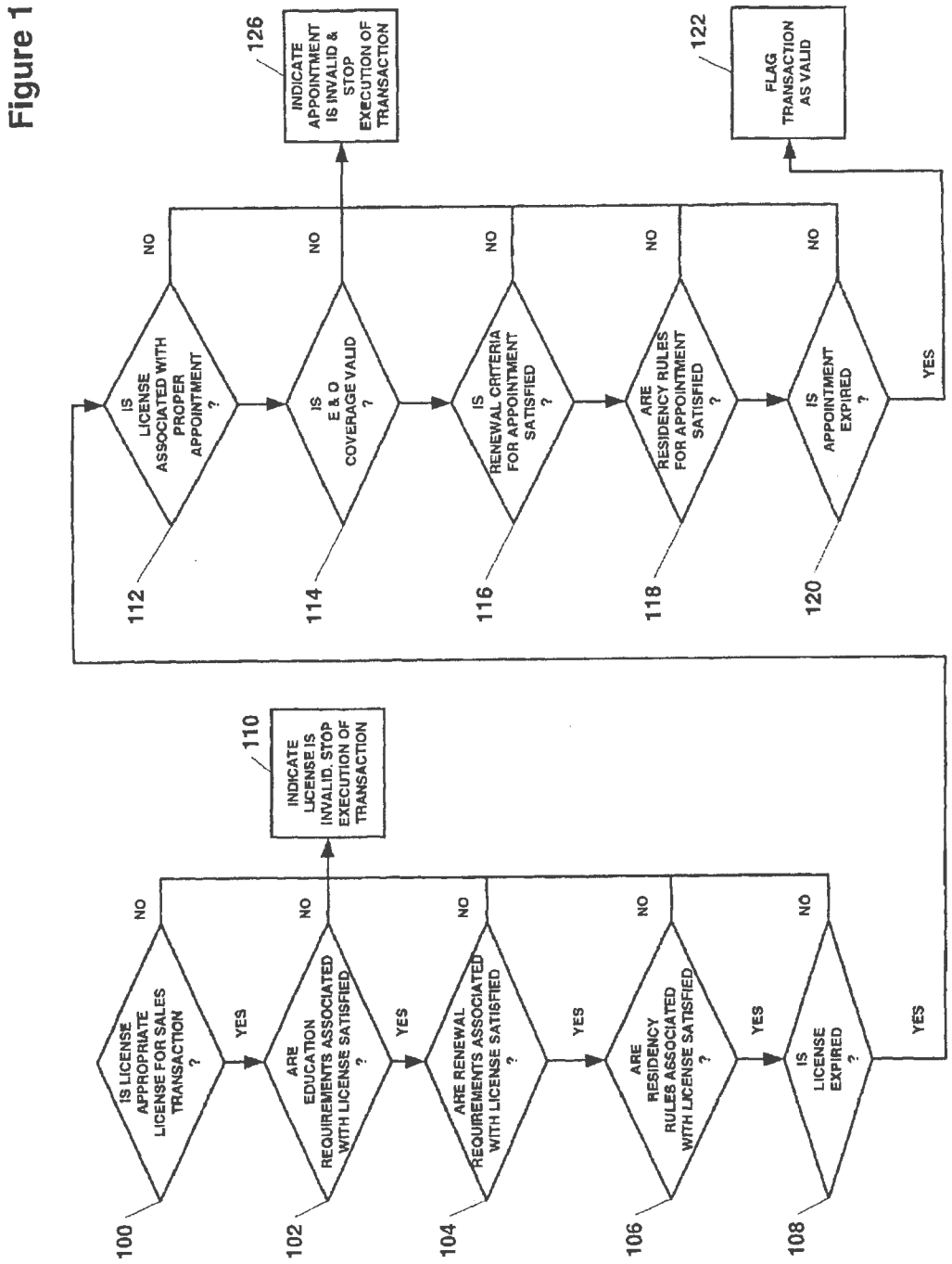

100
IS LICENSE APPROPRIATE LICENSE FOR SALES TRANSACTION ?
102
ARE EDUCATION REQUIREMENTS ASSOCIATED WITH LICENSE SATISFIED ?
104
ARE RENEWAL REQUIREMENTS ASSOCIATED WITH LICENSE SATISFIED ?
106
ARE RESIDENCY RULES ASSOCIATED WITH LICENSE SATISFIED ?
108
IS LICENSE EXPIRED ?
110
INDICATE LICENSE IS INVALID, STOP EXECUTION OF TRANSACTION
112
IS LICENSE ASSOCIATED WITH PROPER APPOINTMENT ?
114
IS E & O COVERAGE VALID ?
116
IS RENEWAL CRITERIA FOR APPOINTMENT SATISFIED ?
118
ARE RESIDENCY RULES FOR APPOINTMENT SATISFIED ?
120
IS APPOINTMENT EXPIRED ?
122
FLAG TRANSACTION AS VALID
126
INDICATE APPOINTMENT IS INVALID & STOP EXECUTION OF TRANSACTION
YES
NO

Figure 2

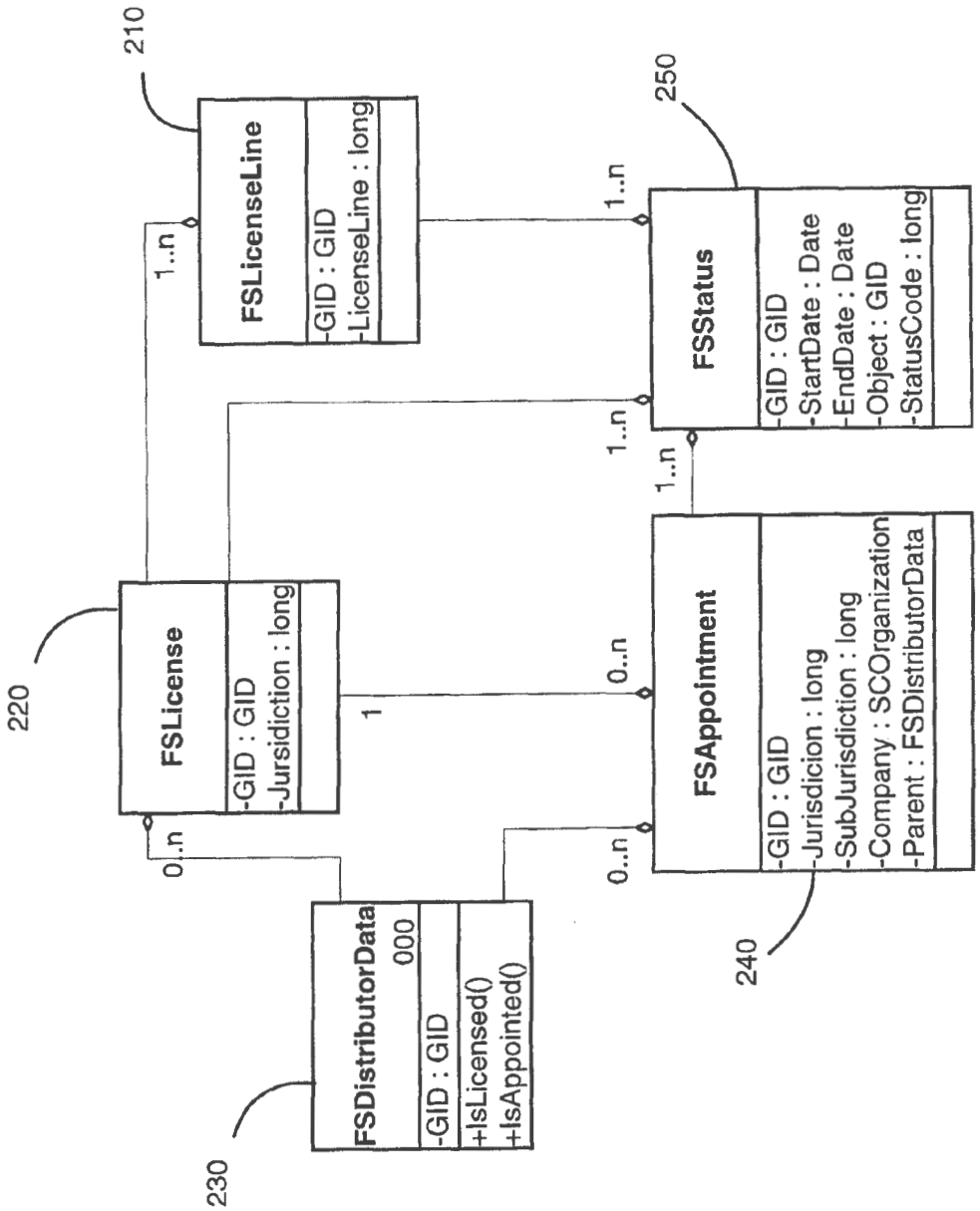

210
FSLicenseLine
-GID : GID
-LicenseLine : long
250
FSStatus
-GID : GID
-StartDate : Date
-EndDate : Date
-Object : GID
-StatusCode : long
220
FSLicense
-GID : GID
-Jursidiction : long
240
FSAppointment
-GID : GID
-Jurisdicion : long
-SubJurisdiction : long
-Company : SCOrganization
-Parent : FSDistributorData
230
FSDistributorData
000
-GID : GID
+IsLicensed()
+IsAppointed()
1..n
1..n
1..n
1..n
1
0..n
0..n
0..n

Figure 3

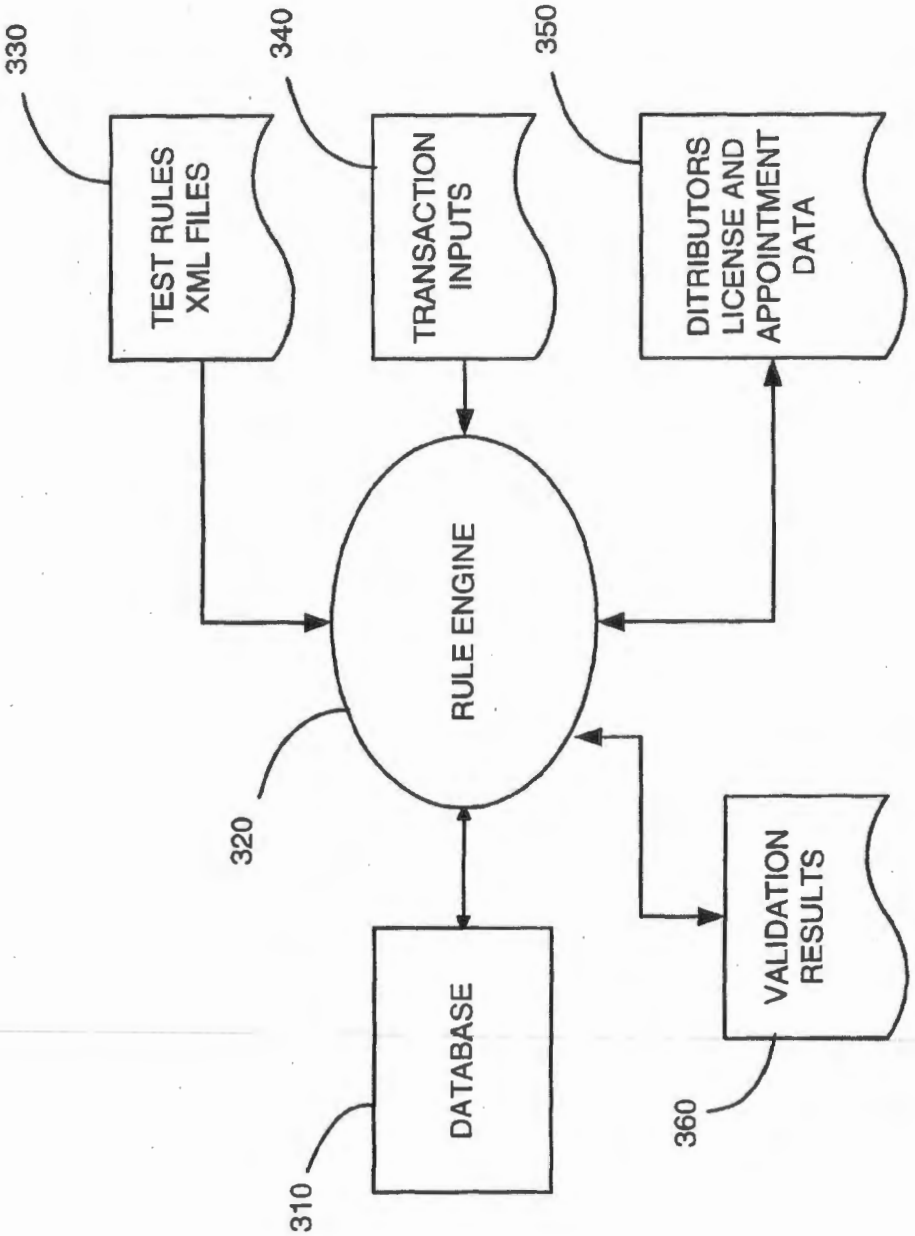

330
340
350
TEST RULES XML FILES
TRANSACTION INPUTS
DITRIBUTORS LICENSE AND APPOINTMENT DATA
RULE ENGINE
320
DATABASE
310
VALIDATION RESULTS
360

Figure 4

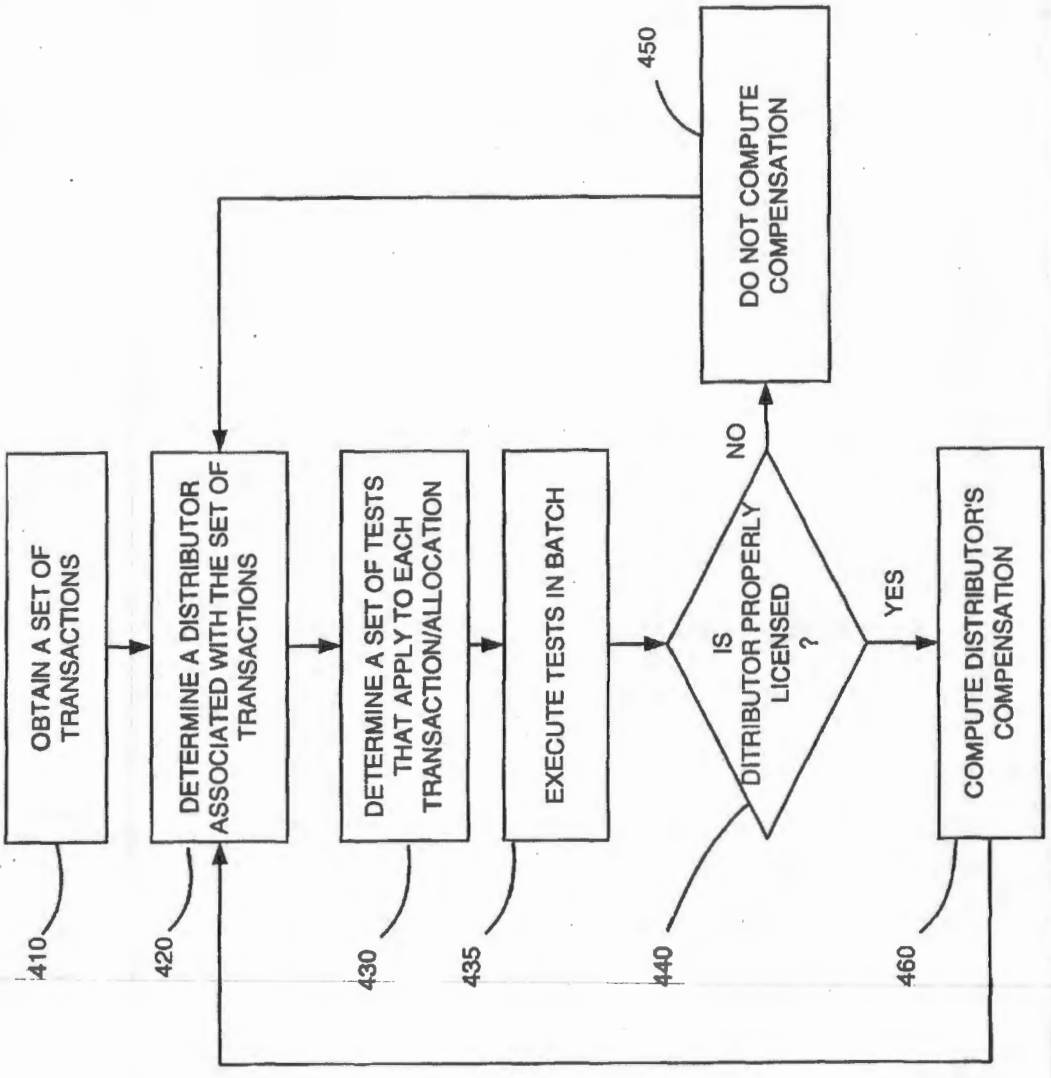
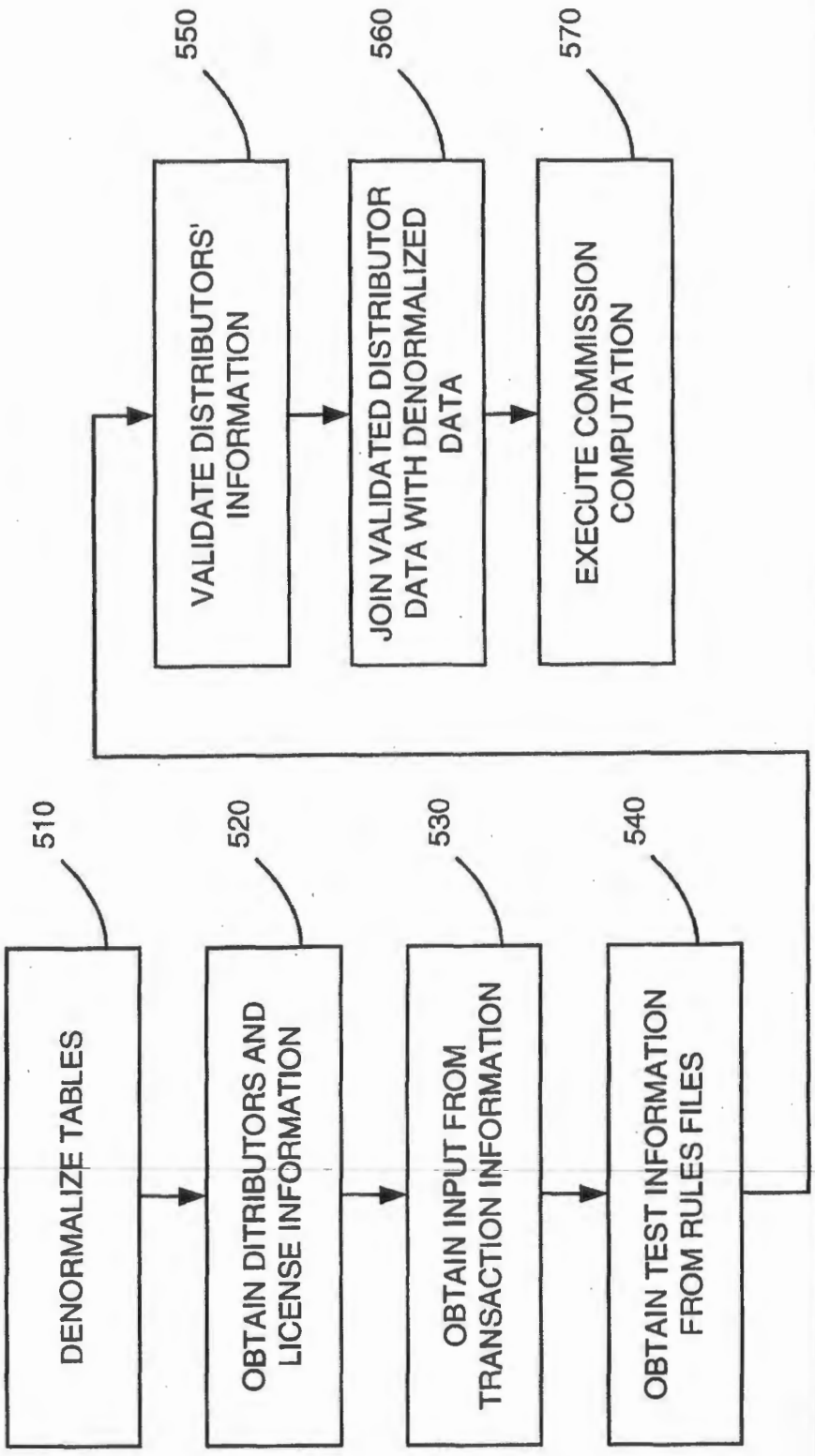

OBTAIN A SET OF TRANSACTIONS
DETERMINE A DISTRIBUTOR ASSOCIATED WITH THE SET OF TRANSACTIONS
DETERMINE A SET OF TESTS THAT APPLY TO EACH TRANSACTION/ALLOCATION
EXECUTE TESTS IN BATCH
IS DITRIBUTOR PROPERLY LICENSED ?
NO
YES
DO NOT COMPUTE COMPENSATION
COMPUTE DISTRIBUTOR'S COMPENSATION
410
420
430
435
440
450
460

Figure 5


510
DENORMALIZE TABLES
520
OBTAIN DITRIBUTORS AND LICENSE INFORMATION
530
OBTAIN INPUT FROM TRANSACTION INFORMATION
540
OBTAIN TEST INFORMATION FROM RULES FILES
550
VALIDATE DISTRIBUTORS' INFORMATION
560
JOIN VALIDATED DISTRIBUTOR DATA WITH DENORMALIZED DATA
570
EXECUTE COMMISSION COMPUTATION

METHOD AND APPARATUS FOR PERFORMING COLLECTIVE VALIDATION OF CREDENTIAL INFORMATION

FIELD OF THE INVENTION

This invention relates to the field of computer technology. More specifically, the invention relates to a method and system for performing collective validation of credential information (e.g., license and/or appointment data).

BACKGROUND

There are many complexities to the financial services business. At any given time large amounts of sales transaction data must be organized and processed. Such data may relate to many types of sales transactions and much of it is necessary to keep the business running smoothly. Some of the more significant classifications of sales transaction data stem from the fact that in the financial services business there are multiple distribution channels each with multiple distributors and many different incentive plans for employees. In most instances, these incentive plans are constantly modified and changed. This is particularly true in the financial services sector where distributors and sales representatives may require certain licenses and appointments in order to legally sell certain financial instruments. The status of the license or appointment data changes continuously and must therefore be updated on a regular basis. Furthermore, the volume of sales transactions is large, and for each transaction a number of tests must carried out to validate the sales agents' credentials and compute the compensation amounts associated with the sales transactions.

Updating such a large amount of records is a cumbersome process that can require significant system resources. Thus, systems must be configured to efficiently validate sales transactions in view of the licenses and/or appointments necessary to legally complete the transaction. Existing systems do not currently have a mechanism for processing such data in a way that minimizes the time required to process license and appointment data and validate a sales agent's credentials before distributing compensation to the sales agent for the transaction. Therefore there is a need for an improved mechanism for processing sales transaction data.

SUMMARY OF THE INVENTION

An embodiment of the invention comprises a method and apparatus for performing collective validation of credential information. The invention has applicability in industries that require sales agents or those related to the distribution of a certain product to be credentialed (e.g., licensed and/or appointed) when selling certain products (e.g., life insurance, etc . . .). For example, in order to sell some financial instruments sales representatives must meet state and/or federal licensing requirements. Embodiments of the invention provide a way to ensure that sales representatives operate within any regulatory constraints put in place by government or any other organization. Companies may, for instance, utilize embodiments of the invention to ensure that sales representatives operate within a set of defined constraints.

One aspect of the invention provides a method for validating sales agents' credentials while processing the sales transaction data to determine commission amounts. The system is configured to perform such transaction processing in an efficient manner that minimizes the amount of computational resources required to determine whether a sales agent has valid credential at the time of a particular sale and is therefore entitled to compensation (e.g., a commission) for the sale. The system may process one or more transactions at a time and may perform transaction processing collectively if such processing is desirable.

In an embodiment of the invention, the compensation engine or some other software component determines the grouping of input such that validation can be performed collectively (e.g., in batch). For instance, the compensation engine may perform an initialization process where it obtains credential information that relates to the sales agents and assembles the credential information into a denormalized table. The system may obtain credential information (e.g., licensing and/or appointment data) from several tables of a database and put the credential information into a single denormalized table. The system may also load rule information that can be utilized to process the credential information. This rule information may be provided to the system in any structured form (e.g., text, XML, etc . . .) and the rule data may comprise a set of tests for determining if a particular transaction was valid. In one embodiment of the invention, the system instantiates an instance of an object oriented class referred to as the RuleSet class. The RuleSet class and a set of associated object reachable from that class (e.g., preconditions, test, etc . . .) provide the functionality referred to as the rule engine. Thus, the rule engine may comprise a collection of objects working together. However, the invention also contemplates other software or hardware mechanisms configured to provide rule engine functionality. The objected oriented examples provided herein are for illustrative purposes and the reader should note that other non-objected oriented programs may be configured to provide the functionality described herein.

Once the rule information is loaded, an embodiment of the invention utilizes the rule information to determine if the distributor (e.g., sales agent) specified in the transaction was properly credited. Thus, the system obtains a set of transactions (e.g., a batch) associated with one or more sales agents and utilizes the transaction data to determine if a commission amount associated with each transaction may be credited to one or more of the sales agent's accounts. Compensation is distributed when the constraints placed on the sales transaction are satisfied. For example, a sales representative that made a sale under an invalid credential (e.g., a license or appointment) will not be compensated for the sales. Thus, part of the compensation process involves determining the validity of the sales agent's credentials (e.g., license and/or appointment data).

In one embodiment of the invention, the process associated with determining whether the credential data is valid involves converting each transaction to input usable by the rule engine. A collective set of rule engine input may then be provided to the system to perform validation. The process of determining whether the transaction input is valid may involve determining the set of rules that apply to the input by filtering the rules using a set of preconditions. The set of tests may then be partitioned by test type and each test type is associated with the transaction input. Once the association occurs a candidate for each test type is selected and a collective group of the tests of a particular type is formulated. The group of tests is then input to the system for processing. The reader should note,

however, that the invention does not require that such test data be input collectively (e.g., in batch). The test data (e.g., tests of a particular type) may also be input individually or in any other categorical methodology that provides the test data to the system. The results can be stored in cache for later use by the system.

For each rule associated with each input, the system determines if the test conditions are met. If the test conditions are met, the transaction data with respect to that test type is considered valid. The system may use the cached results to determine if the test conditions are met. The results indicate which of the transactions are valid and can therefore be utilized to determine which sales agents to compensation for a particular transaction.

In an embodiment of the invention, the functionality is accomplished through the use of a set of software and/or hardware components configured to determine whether a sales transaction should result in a credit to the sales agent associated with the transaction. The system may perform this by utilizing a compensation engine configured to communicate with the rule engine. In one embodiment of the invention, the rule engine comprises a collection of software interrelated components.

DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a flowchart of the steps in an example that illustrates the validity checks of credentials according to an embodiment of the invention.

FIG. 2 shows a class diagram and relationships representing object models for licenses (e.g., credentials) in an embodiment of the invention.

FIG. 3 shows a block diagram illustrating data communication during credential validation process in an embodiment of the invention.

FIG. 4 shows a flowchart illustrating the steps involved in validating distributors credentials in an embodiment of the invention.

FIG. 5 shows a flowchart illustrating the steps involved in validating credential using an alternative approach to credential validation in an embodiment of the invention.

DETAILED DESCRIPTION

The invention provides a method and apparatus for performing collective validation of credential information. In the following description, numerous specific details are set forth in order to provide a more thorough understanding of the invention. It will be apparent, however, to one skilled in the art, that the invention may be practiced without these specific details. In other instances, well-known features have not been described in detail in order to avoid unnecessarily obscuring the invention.

System Overview:

An embodiment of the invention comprises a method and apparatus for performing collective validation of credential information (e.g., license and/or appointment data or any other set of constraints upon a sales transaction). More specifically, the invention provides a method for validating sales agents' credentials while processing sales transaction data to determine commissions to be paid. The system is configured to perform such transaction processing in a manner that decreases the amount of time and resources required to determine whether a sales agent has a valid credential at the time of a particular sale and is therefore entitled to compensation (e.g., a commission) for the sale. The system may process one or more transactions at a time and may perform transaction processing collectively if such processing is desirable. The specifics of the improved system for processing such transaction data will be described in further detail below.

The invention may be integrated into an extensible system for managing relationships between institutions (e.g., suppliers/manufacturers) of a product or service and the distributors (e.g., sales representatives) of their product. Systems embodying the invention have applicability in industries that require sales agents or those related to the distribution of a certain product or service to be credentialed (e.g., licensed or appointed) in order to sell the product. For example, in order to sell a certain financial instrument a sales representative might be required to have a state and/or federal license to sell that type of financial instrument.

Companies or organizations may utilize the invention to enforce agreements the company has with distributors who sell their products. Thus, the system may enforce an agreement stating that all sales transactions are to be performed by sales representatives or distributors who have valid credentials. This provides organizations such as life insurances companies a way to manage the sale and distribution of life insurance plans in a way that coincides with the regulatory constraints of government organizations. Whether a particular distributor or sales representative is appropriately credentialed can be viewed as a regulatory constraint. The system ensures that such regulatory constraints are not violated when a transaction is executed. Although, licenses and/or appointments are utilized as examples of the types of credentials that may be validated by embodiments of the invention, the term credentials as it utilized encompasses any set of constraints or requirements associated with a sales transaction. For instance, company policies or individual constraints that vary on a product by product basis, or any other set of definable constraints can also be enforced by the system by implementing such items as "credentials" that may be required for a sales representative to be compensated. Transactions that do not conform to the government regulations are not typically executed and may not therefore result in any compensation to the sales representative(s) or distributor(s) associated with the transaction. In accordance with one embodiment of the invention, credential checks are collectively submitted to the system for processing. This decreases the time and resources required to process the credential information.

The invention may use multiple techniques for processing the sales transaction data in order to determine whether a sales agent has valid credential at the time of a particular sale and is therefore entitled to compensation (e.g., a commission) for the sale. In an embodiment of the invention, a compensation engine or some other software component determines an arrangement of input such that validation can be performed collectively (e.g., in batch). For example, the compensation engine may perform an initialization process where it obtains credential information that relates to the sales agents and assemble the credential information into a denormalized table. For instance, the system may obtain credential information (e.g., licensing and/or appointment information) from several database tables and put the credential information into a single denormalized table. The initialization engine may also load rule information that can be utilized to process the credential information. This rule information may be provided to the system in any structured form (e.g., text, XML, etc . . .) and the rule data may comprise a set of tests for determining if a particular transaction was valid.

In one embodiment of the invention, the system instantiates an instance of an object oriented class referred to as the RuleSet class. The RuleSet class and a set of associated object reachable from that class (e.g., preconditions, test, etc . . .)

provide the functionality referred to as the rule engine. Thus, the rule engine may comprise a collection of objects working together. For instance, the system may interact with a RuleSet instance through a rule container class or some other type of interface (e.g., a license and appointment class). Upon initialization, a RuleSetImporter may be utilized to obtain the rule information (e.g., XML files that define the rules) and create an in memory representation of the imported rules. That representation may comprise a chain of RuleSet objects and their associated preconditions and tests. The reader should note that the specific classes and objects referred to herein are for illustrative purposes. Other non-objected oriented programs may be configured to provide the same functionality.

Once the rule information is loaded (e.g., via the RuleSetImporter or some other mechanism), an embodiment of the invention utilizes the rule information to determine if the distributor (e.g., sales agent) specified in the transaction was properly credited. Thus, the system obtains a set of transactions (e.g., a batch) associated with one or more sales parties and utilizes the transaction data to determine if a commission amount associated with each transaction should be credited. Compensation is distributed when the constraints placed on the sales transaction are satisfied. For example, a sales representative that made a sale under an invalid credential (e.g., license or policy) will not be compensated for the sales. Thus, part of the compensation process involves determining the validity of the sales agent's credentials (e.g., license and/or appointment data).

In one embodiment of the invention, the process associated with determining whether the credential data is valid involves converting each transaction to input usable by the rule engine. A collective set of rule engine input may then be provided to the system to perform validation. In one embodiment of the invention, the process of determining whether the transaction input is valid involves determining the set of rules that apply to the input by filtering the rules using a set of preconditions.

The set of tests may then be partitioned by test type and each test type is associated with the transaction input. Once the association occurs a candidate for each test type is selected and a collective group of all tests of a particular type is formulated for input. The tests are then provided to the system for processing. The results can be stored in cache for later use by the system. For each rule associated with each input, the system determines if the test conditions are met. If the test conditions are met, the transaction data with respect to that test type is considered valid. The system may use the cached results to determine if the test conditions are met. The results indicate which of the transactions are valid and can therefore be utilized to determine which sales agents to compensation for a particular transaction.

The methodology for collectively submitting credential checks to the system for processing in accordance with one embodiment of the invention is described in further detail below (see e.g., Section entitled License and Appointments Validation).

Introduction to Licenses and Appointments

So that the reader gains an understanding of the type of credential information that may be validated by embodiments of the invention, a brief description of credentials such as licenses and/or appointments follows. Licenses within an embodiment of the invention may equate to physical licenses issued by jurisdictions (e.g., federal, state/province). To receive compensation for a sale, the system ensures that distributors are appropriately licensed and that each individual who receives compensation is appointed to make such sales (e.g., an agent).

The system may also determine whether parties associated with the transaction (e.g., distributors and/or sales representatives) have an up to date and valid credential (e.g., license). For example, the system may keep track of continuing education credits to determine how many courses a distributor has taken. The system may use the continuing education credits to determine if a distributor meets credential (e.g., appointment and/or license) requirements. An institution is typically required when defining appointment types. Like individuals, institutions may be represented in the system as parties, agents, sales representatives or distributors. The system may also require a regulatory jurisdiction when defining certain credential types. An embodiment of the invention comprises a mechanism for specifying credential information and defining the rules that govern credentials (e.g., licenses) held by parties. FIG. **1** provides an example of some of the decisions that may be made when checking the validity of credentials such as licenses or appointments. For example, the user may specify rules that define one or more of the following types of credential (e.g., license) information:

1. The educational credits required in order to hold a specific type of credential (e.g., step **102**). For example, License L requires X units of education credit C.
2. The renewal requirements for a specific type of credential (e.g., step **104**). For example, License L must be renewed every T units of time.
3. The residency rules associated with a specific type of credential (e.g., step **106**). For example, License L is required in jurisdiction J. The user may associate credential types with product types and a jurisdiction through credential entries in a distributor's credential record. The record may include <credential type, product, and jurisdiction>. Access to the credential rules through the distributor credential record enables the user to define information relating to the following questions, while factoring in such elements as the type of product to be sold or the state in which it will be sold:
   a. Is a distributor qualified to hold a credential (for instance, does the distributor have sufficient educational credits)?
   b. Does the distributor have the right credential to sell (e.g., step **100**), Credentials, Jurisdiction, Education Credits, Products service, or illustrate a product?

Does the distributor have a credential that will expire (e.g., step **108**) within a specified period of time? If any of the above conditions indicates the transaction is not valid, the system executes step **110** where it may stop execution of the transaction relating to the invalid credential. Thus, the sales representative may not receive any compensation for invalid transactions. The system's credentialing mechanism may be utilized to define credential parameters relating to any party in the system (e.g., institutions, distributors, sales representatives, agents, etc . . .).

An embodiment of the invention also provides a mechanism for identifying and defining the rules that govern appointments held by parties. For example, the user may specify rules that define one or more of the following types of information:

1. Does a specific appointment require a certain license (e.g., step **112**)? For example, Appointment A requires license L.
2. Does an appointment require errors and omissions (E & O) coverage (e.g., step **114**)? For example, Appointment A requires E&O coverage by Distributor D.
3. What are the renewal requirements for a specific type of appointment (e.g., step **116**)? For example, Appointment A must be renewed every T units of time.

4. What are the residency rules associated with a specific type of appointment (e.g., step **118**)? For example, Appointment A is required in jurisdiction J. The association of an appointment type with a product type, a jurisdiction, and an institution is made in the appointment record associated with a distributor. The record specifies <appointment type, product, jurisdiction, and institution>. The user can access the appointment rules through the distributor license record. These rules enable the user to determine outcomes associated with the following questions, while factoring in such elements as the type of product to be sold or the state in which the product will be sold:
   a. Is a distributor qualified to hold an appointment? For example, do does the distributor have sufficient E&O coverage?
   b. Does the distributor have the right appointment to sell a product?
   c. Does the distributor have an appointment that will expire within a specified period (e.g., step **120**)?
   d. What are the cancellation rules associated with an appointment? The set of appointment rules of the system software can be Appointments, Licenses, Products, Jurisdiction

If any of the above conditions indicate the appointment if not valid, the system may execute step **126** where it stops execution of the transaction relating to the invalid appointment. If the conditions are met, the system executes step **122**, where it flags the transaction being processed as valid and passes the transaction data to commission engine for processing.

Transaction Processing Overview

Once the credential information (e.g., licensing and appointment data) is defined. The system may be configured to process transaction data associated with the sale of different products. The system may be configured to ensure that the terms of a selling agreement (e.g., an agreement between the parties involved) are followed and that the credential (e.g., licensing and/or appointment or other agreed upon constraints) requirements are not violated with respect to each transaction executed by the system. Sales transaction data comprises the information associated with the sale of one or more products. The system is configured to process one or more transactions at a time and may perform transaction processing collectively (e.g., in batch) if such processing is desirable. However, the invention also contemplates other forms of transaction processing and may, for example, process each transaction entered into the system when it is entered.

In an embodiment of the invention, the system converts the transaction data into a form that can be processed by the system. For example, the transaction data may be loaded into an object model configured to interface with the system embodying one or more aspects of the invention. The transaction data may indicate which party sold what to whom and identify the appropriate agreements associated with the sale. For example in accordance with one embodiment of the invention, the transaction data identifies which distributor was responsible for the sale and what agreement that distributor is operating under. The system resolves the associations contained in the transaction data and thereby determines the scope of analysis to be performed.

In an embodiment of the invention, the system also checks on credentials (e.g., licenses and/or appointments) for the distributor's supervisors. The system may require a license validation when appointments are processed. The logic associated with such processing in accordance with one embodiment of the invention performs the following steps:

1. Determines the credential (e.g., license and/or appointment) requirements for the distributor based on the values of the product, jurisdiction, and institution parameters passed to the function.
2. Determines whether the distributor possesses the required credential (e.g., license and/or appointment) types, or a blanket assignment. For example, some states do not permit a corporation to be licensed, but instead require them to have a blanket assignment. The rules evaluation used to determine the required license and/or appointments can also include other factors such as the compensation type (for example, the first year commission or renewal), the residency of the distributor, or the role of the distributor.

If the credential requirements are met, the system may perform commission processing. Otherwise an error results and the transaction associated with the error is not processed by the system.

In an embodiment of the invention, the system also identifies any other agreement objects affected by the input transaction. If the system locates an affected agreement object, it creates additional transactions that process compensation according to the newly identified agreement commission models. Once all input transactions have been associated with agreements, the system may invoke the commission engine and performs commission processing. However, the system may also enforce credentials and/or constraints independent of any agreement. For instance, companies may use the system to enforce an internal set of credential requirements, policies and/or constraints.

Commission processing involves determining the amounts to be paid to parties involved in the sales transaction. In one embodiment of the invention this occurs by processing the transaction based on rules defined by the selling agreement. However, the rules utilized by the system are not required to be defined in selling agreements. For example, the system may use rules defined in a manner independent of any selling agreement.

Distributor Data Object Model

FIG. **2** shows a class diagram and relationships representing object models for credentials (e.g., licenses) in an embodiment of the invention. The specific objects described herein are provided for illustrative purposes only and the reader should note that the invention also contemplates other software or hardware configurations that provide the functionality described herein. A distributor data object model **230** defines the data that is associated with a distributor and that is utilized to manage the Licensing and Appointments package. The distributor data object model has several properties comprising a SelfInsured property that may indicate if the distributor is self-insured. If not, then there may be associated FSEOPolicy objects. For example, the system may include a set of components (e.g., methods) configured to implement the following general functionality:

RecontractStatus may indicate whether or not an inactive distributor may enter into another contract (Valid only if IsActive( ) returns false);

RecontractReason may indicate why the distributor may not be recontracted (if applicable, Valid recontract reason codes can be defined in XML or any other structured data format);

IsActive( ) which may indicate if the distributor is active, that it, has appointments still in effect;

IsAppointed( ) which may indicate if the distributor is properly credentialed (e.g., licensed and/or appointed) to receive credit for a transaction (Ensures that there is a valid credential such as an appointment and/or associ-

ated license for the date of the transaction). In one embodiment of the invention, the IsAppointed method evaluates whether a given party in a specific jurisdiction is legally capable of selling a specific product;

IsLicensed( ) which may indicate if the distributor is properly licensed (ensures that there is a valid credential (e.g., license) for the date of the transaction. The IsLicensed method evaluates whether a given party in a specific jurisdiction is legally permitted to sell a specific product;

IsBonded( ) which may indicate if the distributor is bonded (i.e., has an EOPolicy of type Bond Info);

HasGeneralLiability( ) which may indicates if the distributor has general liability insurance (i.e., has an EOPolicy of type General Liability Insurance);

getLicenses( ) which may return a collection of all FSLicense objects associated with the distributor;

getAppointments( ) which may return a collection of FSAppointment objects associated with the distributor;

getAllEOCoverages( ) which may return a collection of FSEOPolicy objects associated with the distributor;

getBackgroundChecks( ) which may denote a collection of FSBackgroundCheck objects associated with the distributor;

getCECredits( ) which may denote a collection of FSContinuingEducationCredit objects associated with the distributor;

getEOPolicies( ) which may return a collection of all FSEOPolicy objects of type Errors and Omissions Policy associated with the distributor;

getBondInfo( ) which may return a collection of all FSEOPolicy objects of type Bond Info associated with the distributor;

getGeneralLiability( ) which may return a collection of all FSEOPolicy objects of type General Liability Insurance associated with the distributor.

The names utilized to describe components, objects, and/or methods referred to above and throughout this description are for example only. The invention contemplates any component or set of components that implements the functionality described therein.

Licensing Object Models

In an embodiment of the invention, the system comprises a License class which represents a physical license issued to a distributor. The license class has several properties comprising a LicenseType denoting the type of license (for example, agent, broker, and so on). The license types may be defined in a structured file such as an XML file. The system may include the following components:

a LicenseClass denoting the class of license (for example, individual, corporate, partnership and may define the license classes in a structured file;

a LicenseNumber denoting the license number. This can be any alphanumeric string;

Jurisdiction denotes the jurisdiction (state/province) associated with the license. Jurisdiction codes are defined in a structured file such as XML;

The ResidentStatus may indicate whether the party associated with the appointment is a resident of the jurisdiction for which it is valid. The class may also include a LegalName denoting the legal name of the distributor as it appears on the license;

a DBAName denoting the "Doing Business As" name as it appears on the license;

a DistributorData denoting a backpointer to the FSDistributor Data;

a Terminate( ) to mark the license as being terminated;

a Renew( ) to renew the license for the specified period;

a getLicenseLines( ) providing a helper function that returns a collection of FSRequests associated with this FSLicense;

a getRequests( ) providing a helper function that returns a collection of FSRequests associated with this FSLicense; LicenseLine **210** class may represent the line of insurance covered by particular license. Licenseline **210** class has several properties comprising a LicenseLine denoting the line of authority for the license;

a License denoting the associated FSLicenseDocumentation;

a Terminate to mark the license line as being terminated;

a Renew to renew the license line for the specified period;

one or more LicenseLine classes may be instantiated by a License class **220**.

a License **220** class may represent a physical license issued to a distributor. The license class **220** can have several methods and properties comprising:

a LicenseType, a LicenseClass, a LicenseNumber, a Jurisdiction, ResidentStatus and a LegalName. LicenseType may designate the type of license (for example, agent, broker, and so on).

LicenseClass designates the class of license (for example, individual, corporate, partnership).

LicenseNumber designates the license number. Jurisdiction designates the jurisdiction (state/province) associated with the license (Jurisdiction codes may be defined in an XML format).

ResidentStatus indicates whether the party associated with the appointment is a resident of the jurisdiction for which it is valid.

LegalName designates the legal name of the distributor as it appears on the license. A helper function that returns a collection of requests associated with this License **220**. In an embodiment of the invention, one or more instances of the License **220** class may be associated with a status class **1050** and an appointment class **240**.

Appointment Object Model

In an embodiment of the invention, an appointment class **240** encapsulates the data associated with an appointment (e.g., a type of credential). The appointment object model may comprises the following:

a License denoting the License associated with this appointment;

a Jurisdiction denoting the jurisdiction (state/province) associated with the appointment (The jurisdiction is determined by the licenses associated with the appointment. It is provided on the appointment for convenience. Jurisdiction codes can be defined in XML format or some other format.);

a SubJurisdiction denoting the sub-jurisdiction (county) associated with the appointment (This field is only applicable for certain jurisdictions. Sub-jurisdiction codes are defined in an XML format);

a Company denoting the financial services company for which the appointment is being issued;

a ResidentStatus indicating whether the party associated with the appointment is a resident of the jurisdiction for which it is valid; a Parent indicating the distributor firm from which the blanket appointment comes;

a Distributor Data denoting a backpointer to the FSDistributorData.

License and Appointments Validation

FIG. **3** shows a block diagram illustrating data communication during the credential (e.g., license) validation process in accordance with an embodiment of the invention. When

one or more transaction inputs **340** are received, the rule engine **320** queries the database to retrieve data related to the sales party involved in the transaction. The rule engine may load test rule **330** files. Test rule files are designed by users to specify tests to be carried out on the transaction data. Test rules can be stored in files using a standardized format (e.g. XML files, text, or any other type of structured data file). The rule engine also loads the distributors' credential information such as the license and/or appointment data **350**. Once the rule engine validates the credential information associated with the transaction against the test rules, it may store the results in one or more validation results files **360**. The transaction data may then be updated with the validated credential information and returned to update the database.

In an embodiment of the invention, the system is configured to process one or more transactions at a time and may perform transaction processing collectively if such processing is desirable. The system configured in accordance with an embodiment of the invention may be composed of several entities allowing for performing one or more steps of the transaction data processing. An entity such as the commission engine may determine the arrangement of input such that validation can be performed more efficiently (e.g., collectively). The commission engine or some other component may ready the data for processing during an initialization process. The system may implement a rule engine, capable of determining the set of tests that need be validated. For example, the RuleSet class and a set of associated objects reachable from that class (e.g., preconditions, test, etc . . .) may provide the functionality referred to as the rule engine. Thus, the rule engine may comprise a collection of objects working together.

The rule engine is capable of arranging the input to be passed along to an associated test part (e.g., iTestPart) and the compensation engine (e.g., part of the DMS system) runs an initialization step where data can be denormalized. The system can then pass off the data to a representative instance of an object containing the set of tests (e.g., iTtestPart). The tests may comprise an interface that supports the ability to perform batch validation for all other instances of tests given that they contain input data. In one embodiment of the invention, the ruleset comprises a list of rules for testing input to determine if data satisfies the requirements. The rules evaluate distributor's data (information about distributors, products, and so on) determining if it meets requirements (or preconditions) for the system rules. For example, the APPOINTMENT_TEST in the Appointment Rule may evaluate whether a particular distributor has the appointments necessary to sell a product in a particular jurisdiction. The rule engine can determine whether compensation should be paid and whether or not a particular distributor is eligible to sell a particular product.

The system may contain a set of defined rule sets. If the data satisfies the requirements, the rule is set considered. Each rule is made of one or more elements including:

- A precondition—Defines circumstances under which the rule applies. If the precondition is not satisfied, the rule does not apply.
- A test—A Boolean expression that determines if the rule is satisfied.
- An explanation—An optional message that explains the rule failure.

In an embodiment of the invention, preconditions to a rule comprise a list of either generic preconditions or specialized preconditions (for example, a rule may apply to a particular product or jurisdiction) designed to cover common cases. A product precondition may be satisfied if the input refers to a given product specified in the precondition. This precondition can map to an object (SCCMProduct.Name).

A product class precondition may be satisfied if the input refers to a product that has the class specified in the precondition. This precondition maps to SCCMProduct.ProductClass. In an embodiment of the invention, a jurisdiction set precondition is satisfied if the input refers to one of a set of jurisdictions specified in the precondition.

A jurisdiction precondition may be satisfied if the input refers to a jurisdiction specified in the precondition. A start date precondition may be satisfied if the date of the input is later than or equal to the date specified.

An end date precondition is satisfied if the date of the input is earlier than the date specified.

A generic precondition is useful when more specific preconditions are inadequate. It is satisfied if the specified property on the specified input object has the specified value.

In an embodiment of the invention, all transactions are required to pass however other requirements may be set. Tests can be further combined using standard Boolean operators AND, OR, and NOT.

The license line test may be satisfied if the distributor referred to by the input has the specified license line in the specified jurisdiction. For example: does John Smith have a Series 66 license for California?

The appointment test may be satisfied if the distributor referred to by the input has the specified appointment in the specified jurisdiction. For example: is John appointed for Variable Life in New York?

The background check test may be satisfied if the distributor referred to by the input has passed the specified background check with the specified decision.

The errors and omissions test may be satisfied if the distributor referred to by the input has the specified level of errors and omissions coverage.

The liability test may be satisfied if the distributor referred to by the input has the specified level of liability coverage.

The continuing education test may be satisfied if the distributor referred to by the input has the specified number of continuing education credit hours.

A generic test is useful when more specific tests are inadequate. It is satisfied if the specified property on the specified input object has the specified value.

FIG. **4** shows a flowchart illustrating the steps involved in validating credential data in accordance with an embodiment of the invention. Transaction data is received by the system in **410**. Step **410** involves access to the system automatically or manually by users through one or more means for interfacing the system with users (e.g. Web interface, API) described above. The system can determine in **420** the set of distributors associated with the transaction. The system then determines a set of tests to be performed for each transaction or allocation in **430**. The system executes the set of tests in batch in **435**. The system tests whether each distributor is properly licensed for of the transactions processed in **440**. If the distributor's credentials satisfy the tests, the distributor's data is appointed for the transaction in **460** (e.g., the distributor is compensated). If a distributor's license does not satisfy the test rules in **440** then the distributor is dismissed from the current transaction in **450** (e.g., no compensation is credited), and the next distributor on the list of distributors involved in the transaction is selected for further license and appointments testing. Upon completion of the evaluation, the process may iterate back to step **410** or **440**.

In an embodiment of the invention, a distributor may be considered as appropriately credentialed for a transaction if for example, on a given date, the distributor has a credentials

(e.g., a license) that is valid for the jurisdiction in which the transaction occurred. The code below (in Object Query Language, OQL) performs an example of a license check against the data as stored in the database, according to the object model described above:

```
SELECT II
FROMPSLicenseLine II,
   FSLicense lic,
   FSStatus II.cStatus,
   FSStatus IIStatus
WHERE II.LicenseLine =[License LINE]
ANDII.License =lic
ANDlic.DistributorData =[DistributorGID]
AND licJurisdiction =[Jurisdiction]
AND licStatus.Object =lic
AND IIStatus.Object =II
AND (licStatus.StartDate <=[Transaction Date]
AND licStatus.EndDate >[Transaction Date]
AND (IIStatus.StartDate <=[Transaction Date]
AND IIStatus.EndDate >[Transaction Date]
AND lic.StatusCode NOT IN (<List of Invalid Statuses>)
AND II.StatusCode NOT IN (<List of Invalid Statuses>)
```

A non-empty result set indicates that the distributor is properly licensed. As the above OQL indicates, a join is required across four (4) logical tables. This method however is costly in terms of processing time. Since the query performs joins on several tables, utilizing database table indexing functionality may increase the speed. With this method the cost of determining if a distributor is licensed can be significant, especially given the number of rows that will be in the tables, and especially the table associated with FSStatus.

Distributor credential validation may be performed in steps wherein each step yields only a subset of data to be processed resulting in a faster search and thus faster processing.

FIG. **5** comprises a flowchart illustrating the steps involved in validating credentials such as licenses using an alternative approach to credential validation in an embodiment of the invention. Data processing starts with the denormalization of the data from several tables to be input into a denormalized table in **510**. The system obtains a distributor's credential information in **520**. The system obtains the transaction information in **530**. The system obtains test rules information in **540** and then checks for credential (e.g., license) validity based on distributor's information, transaction information and credential information in **550**. The system then joins the results of the validation of distributor's licenses with the denormalized data.

A sample Object Query Language (OQL) code performing this check against the data as stored according to the object model described above is as follows:

```
SELECT app.Parent
FROM FSLicenseLine II,
   FSLicense lic,
   FSAppointment app,
   FSStatus appStatus,
   FSStatus licStatus,
   FSStatus IIStatus
WHERE II.LicenseLine =[License Line]
AND II.License Line =lic
AND app.License =lic
AND app.LicenseLines =II
AND app.DistributorData =[Distributor GID]
AND app.Jurisdiction =[Jurisdiction]
AND (app.SubJurisdiction =[Sub-Jurisdiction]OR app.Sub-
   Jurisdiction =-1)
AND app.Status.Object =app
AND licStatus.Object =lic
AND IIStatus Object =II
AND (appStatus.StartDate <=[Transaction Date]
AND appStatus.EndDate >[Transaction Date]
AND (IIcStatus.StartDate <=[Transaction Date]
AND IIStatus.EndDate >[Transaction Date]
AND app.StatusCode NOT IN (<List of Invalid Statuses>)
AND lic. StatusCode NOT IN (<List of Invalid Statuses>)
AND II. StatusCode NOT IN (<List of Invalid Statuses>)
```

A non-empty result set indicates that the distributor is appointed.

The system may perform credential checks when running a compensation engine. The reader should note, however, that such credential checks may be performed at other times and by other engines or components. The process of validating distributors' credentials can be referred to in an embodiment of the invention as the license check phase. The compensation engine may be run on a periodic basis to calculate compensation for new sales transactions since the most recent run of the engine. A transaction will result in multiple allocations. If any of these allocations are associated with the sale of any products that require the distributor be credential (e.g., licensed or appointed) then the allocation passes through the license check phase. The number of transactions and allocations that are processed in any given run varies per deployment, ranging from tens of thousands to several million. Thus the performance of the credential check phase may affect performance of the entire system.

An embodiment of the invention ensures that credential validation can be efficiently performed. First, the system denormalizes the credential information (e.g., license and appointment data) into separate tables. To determine if a distributor is appropriately credentialed, the system may perform a query against a single table. In one embodiment of the invention, a single SELECT statement (with the exception of blanket appointments, which result in as many queries as the depth of the blanket appointment) can be utilized to query the database. The invention also contemplates other queries. To further ensure the performance of the credential check phase, the system is enabled to collectively perform license and appointment checks (also referred to herein as credential checks). In an embodiment of the invention, the size of the collection of data to be submitted (e.g., a batch) is determined by the commission engine's batch size. In an embodiment of the invention, the collection size is in the range of five thousand to ten thousand items. However, the size of the batch submitted may vary depending upon the capacity of the system. To perform the query collectively, the system inputs the selection criteria in an input table as a single INSERT statement. Then, the system performs a single join from the input table against the denormalized data table. In the case of blanket appointments, subsequent queries of inherited appointments can be collectively batched as well.

For example, to validate 100,000 allocations while verifying only licenses, the original query would have resulted in 100,000 queries, each requiring a four-table join. Not only is this extremely costly in terms of database performance, but it also results in 100,000 network round trips to communicate with the database. In the same example, using the method proposed in the invention, there is an initial cost to denormalize the license table. However, this operation needs to be performed only once at the beginning of the engine run. Once the data is denormalized, the system may use the collective processing technique described herein. Thus, for each collection of data (e.g., a batch of 5,000), the system requires only two network round-trips: one to insert the criteria into the input table, and one to perform a join of the input table against the denormalized data table. Considering the batched

INSERT as a single statement, to validate the 100,000 allocations, the system incurs only the cost of 40 network roundtrips, and 40 queries, plus the cost of the initial denormalization.

An embodiment of the invention is configured to interface with a Distributor Management System (DMS). An example of such a DMS system can be found in the co-pending application (U.S. Ser. No. 09/810,514) entitled "Method and System for Managing Distributor Information", the specification of which is incorporated herein by reference.

Thus, a method and apparatus for collectively processing credential information is described. Particular embodiments described herein are illustrative only and should not limit the present invention thereby. The claims and their full scope of equivalents define the invention.

What is claimed is:

1. In a computer system, a method for collectively performing validation of credential information of one or more product distributors associated with one or more product distribution transactions, the method comprising:

obtaining a set of available credential information of each of the one or more product distributors associated with the one or more product distribution transactions;

storing the set of credential information in the computer system, wherein the credential information is stored in a form that can be processed by the computer system;

loading from at least one data source a set of credential validation rule data;

obtaining the one or more product distribution transactions associated with the one or more product distributors; and

processing in the computer system the one or more product distribution transactions and the credential validation rule data to validate the obtained one or more product distribution transactions associated with the one or more product distributors in accordance with predetermined validation criteria to determine if the one or more transactions can be used for compensating one or more product distributors, to validate the obtained credential information of one or more product distributors associated with one or more transactions to determine whether the one or more product distributors meet eligibility requirements for compensation associated with each of the obtained product distribution transactions for the one or more product distributors, and to generate results data representing at least any validated transactions and determined-eligible product distributors; and

generating compensation data from the results data for each of the one or more product distributers to be compensated for the one or more product distribution transactions.

2. The method of claim 1 wherein said obtaining said set of available credential information further comprises denormalizing data from a plurality of database tables.

3. The method of claim 1 wherein said loading from at least one data source said set of credential validation rule data further comprises loading said set of rule data from a standard format data file.

4. The method of claim 3 wherein said loading said set of rule data from standard format data file further comprises parsing data from a file having an Extensible Markup Language (XML) format.

5. The method of claim 1 wherein processing in the computer system the rule data further comprises:

determining a set of rules associated with said collective group by using a set of preconditions to filter among a plurality of rules, said rule data comprising at least one test having an associated type;

partitioning said set of rules based on said type of said at least one test associated with said set of rules;

preparing said collective group wherein said collective group comprises tests associated with said test type; and

determining for said set of rule data whether said at least one test associated with said set of rules are valid.

6. The method of claim 5 wherein the set of preconditions comprises at least one member of the group comprising:

a product class precondition;

a jurisdiction precondition; and

an end date precondition.

7. The method in claim 1 wherein the compensation data represents an amount of compensation for each of the one or more product distributers to be compensated for the one or more product distribution transactions, the method further comprising:

computing the amount of compensation for each of the one or more product distributors to be compensated.

8. The method of claim 7 wherein compensation comprises a commission.

9. The method of claim 1 further comprising:

obtaining the set of available credential information for at least one of the distributors from two or more tables;

denormalizing said set of available credential information from said two or more tables into a denormalized database table;

wherein the rule data comprises a set of test conditions data from at least one data source; and

processing in the computer system the rule data comprises applying a credential test by querying said denormalized table with said set of test conditions data.

10. The method of claim 1 wherein said obtaining a set of available credential information further comprises using database connections.

11. The method of claim 9 wherein said denormalizing said set of credential information further comprises creating one or more database tables.

12. The method of claim 9 wherein said denormalizing said set of credential information further comprises joining at least two database tables into at least one database table.

13. The method of claim 1 further comprising:

obtaining the rule data from a data file.

14. The method of claim 3 wherein said data file further comprises a data file having an Extensible Markup Language (XML) format.

15. The method of claim 9 further comprising:

defining the rule data.

16. The method of claim 15 further comprising storing said rule data into a database table.

17. The method of claim 9 wherein said applying a credential test further comprises joining said set of test conditions data with said denormalized database table.

18. The method of claim 1 wherein product distribution transactions comprise data related to sales of a product.

19. The method of claim 1 wherein the one or more product distributors comprise one or more members of the group consisting of sales agents, sales representatives, supervisors of the sales agents, and supervisors of the sales representatives.

20. The method of claim 1 wherein:

the rule data comprises credential information identifying regulatory constraints for each of the obtained sales transactions placed on at least one of the one or more distributors associated with said obtained sales transaction; and

processing in the computer system the rule data to validate the obtained credential information comprises deter-

mining if said credential information obtained sales transactions placed on at least one of the one or more distributors conforms to said regulatory constraints.

21. The method of claim 1 wherein predetermined validation criteria comprises at least one member of the group consisting of:

required educational credits;

required licenses;

required level of liability coverage;

license renewal requirements;

background check; and

residency rules.

22. The method of claim 1 processing in the computer system the rule data further comprises processing the rule data for multiple product distribution transactions comprises batch processing the rule data for multiple product distribution transactions for batches of product distribution transactions.

* * * * *

EXHIBIT B

US007908304B2

(12) **United States Patent**
Chao et al.

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(45) **Date of Patent: Mar. 15, 2011**

(54) **METHOD AND SYSTEM FOR MANAGING DISTRIBUTOR INFORMATION**

(75) Inventors: **David Chao**, Austin, TX (US); **Brian Blount**, Austin, TX (US); **Charles Erickson**, Cedar Park, TX (US); **Shari Gharavy**, Austin, TX (US); **Cheng Zhou**, Austin, TX (US); **Joshua Toub**, Austin, TX (US)

(73) Assignee: **Versata Development Group, Inc.**, Austin, TX (US)

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See application file for complete search history.

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Primary Examiner — Andrew Joseph Rudy
(74) *Attorney, Agent, or Firm* — Hamilton & Terrile, LLP; Kent B. Chambers

(57) **ABSTRACT**

An embodiment of the invention provides a system that enables financial services companies to manage and track information about a sales force. The system includes components for managing distributors information, for validating and tracking licenses and credentials, for creating customized contracts, and for maintaining compensation structures. The system allows for configuring compensations, providing financial services companies a toolkit for creating and modeling their complex commission schedules used to compensate their sales force. The system also provides modeling tools for agreements and contracts between a financial services company or provider and the distributors who sell products. The system has a multi-component architecture comprising multiple modules, multiple data processing engines, a backbone and multiple data sources. The processing modules carry out information processing using one or more data processing engines. The data processing provides the tools to fetch data from the databases and process it.

46 Claims, 4 Drawing Sheets

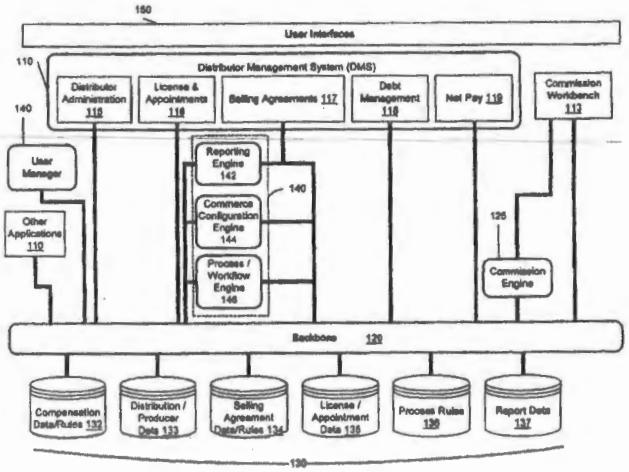

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Figure 1

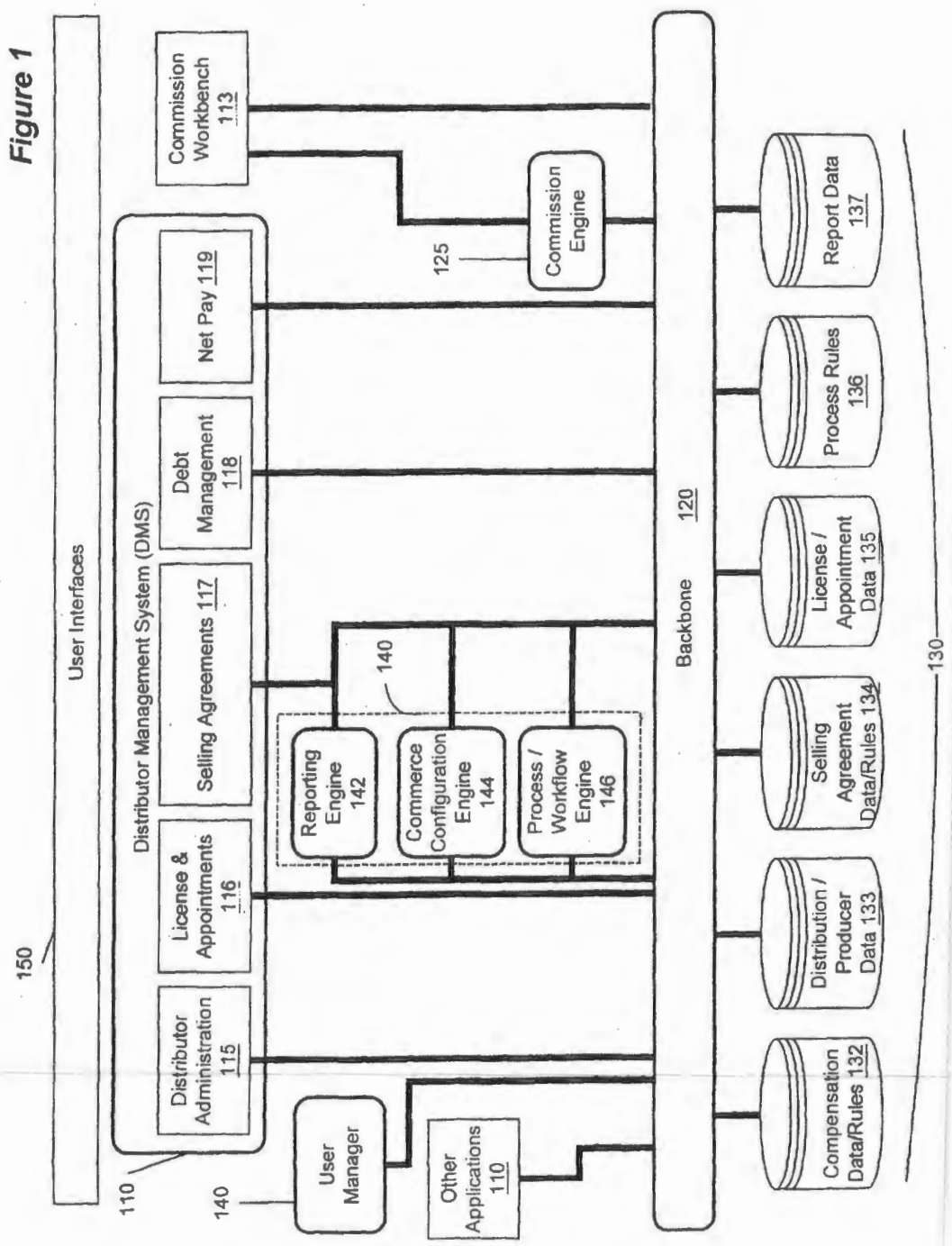

User Interfaces
150
Distributor Management System (DMS)
110
Commission Workbench 113
Net Pay 119
Debt Management 118
Selling Agreements 117
License & Appointments 116
Distributor Administration 115
140
Reporting Engine 142
Commerce Configuration Engine 144
Process / Workflow Engine 146
User Manager
Other Applications 110
125
Commission Engine
Backbone 120
Report Data 137
Process Rules 136
License / Appointment Data 135
Selling Agreement Data/Rules 134
Distribution / Producer Data 133
Compensation Data/Rules 132
130

Figure 2

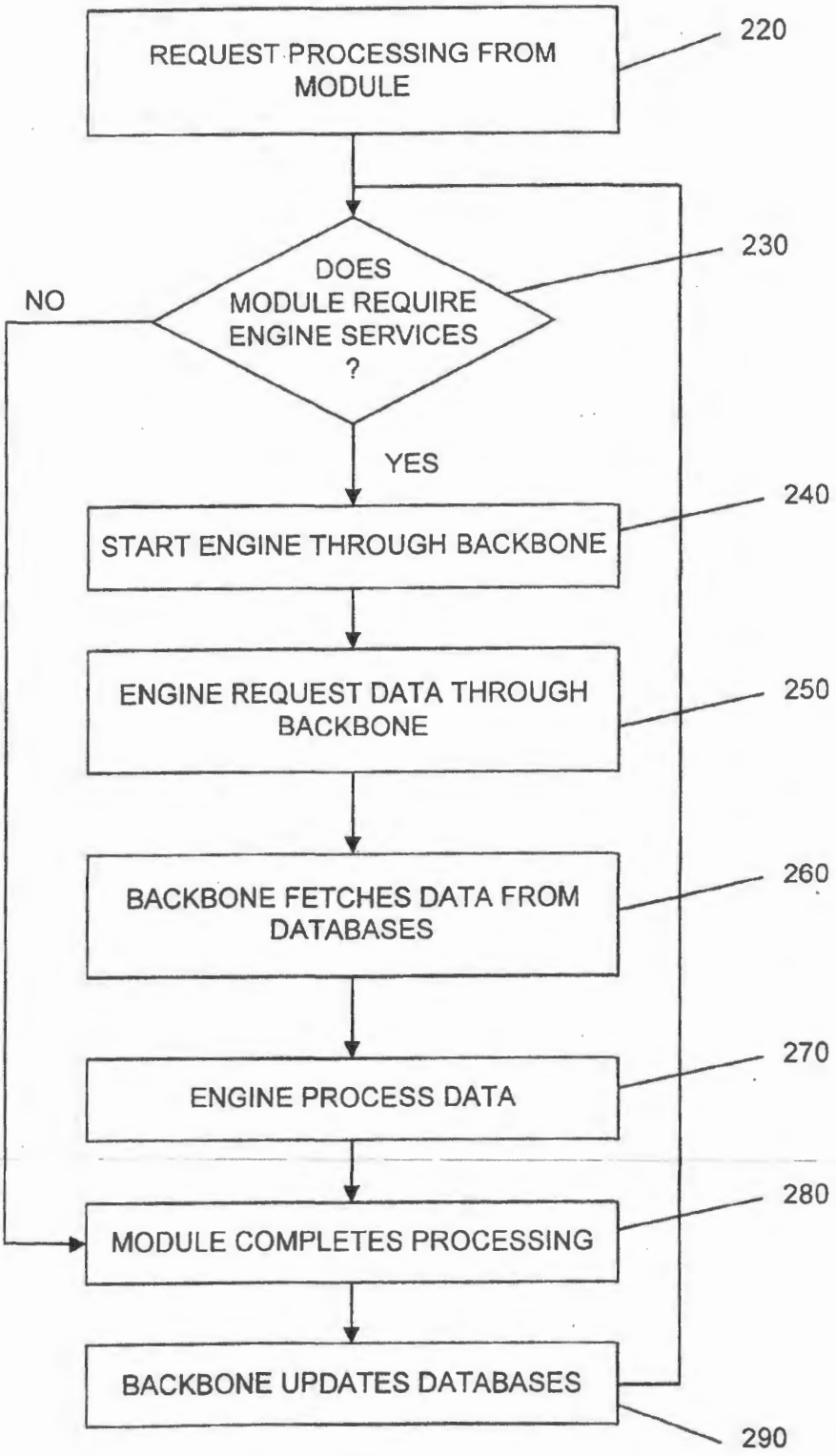
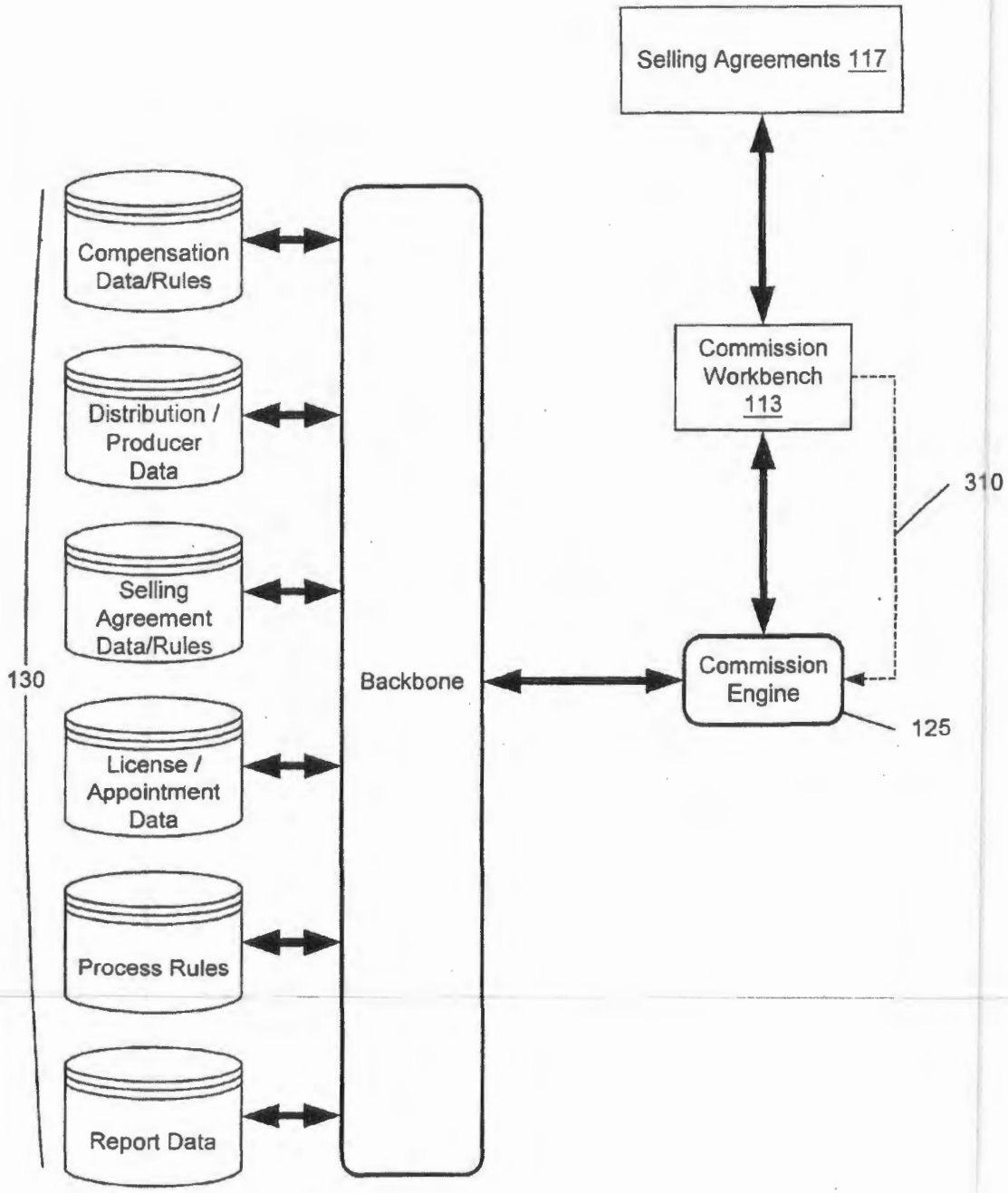

REQUEST PROCESSING FROM MODULE
220
DOES MODULE REQUIRE ENGINE SERVICES ?
230
NO
YES
START ENGINE THROUGH BACKBONE
240
ENGINE REQUEST DATA THROUGH BACKBONE
250
BACKBONE FETCHES DATA FROM DATABASES
260
ENGINE PROCESS DATA
270
MODULE COMPLETES PROCESSING
280
BACKBONE UPDATES DATABASES
290

Figure 3


Selling Agreements 117
Commission Workbench 113
310
Compensation Data/Rules
Distribution / Producer Data
Selling Agreement Data/Rules
License / Appointment Data
Process Rules
Report Data
130
Backbone
Commission Engine
125

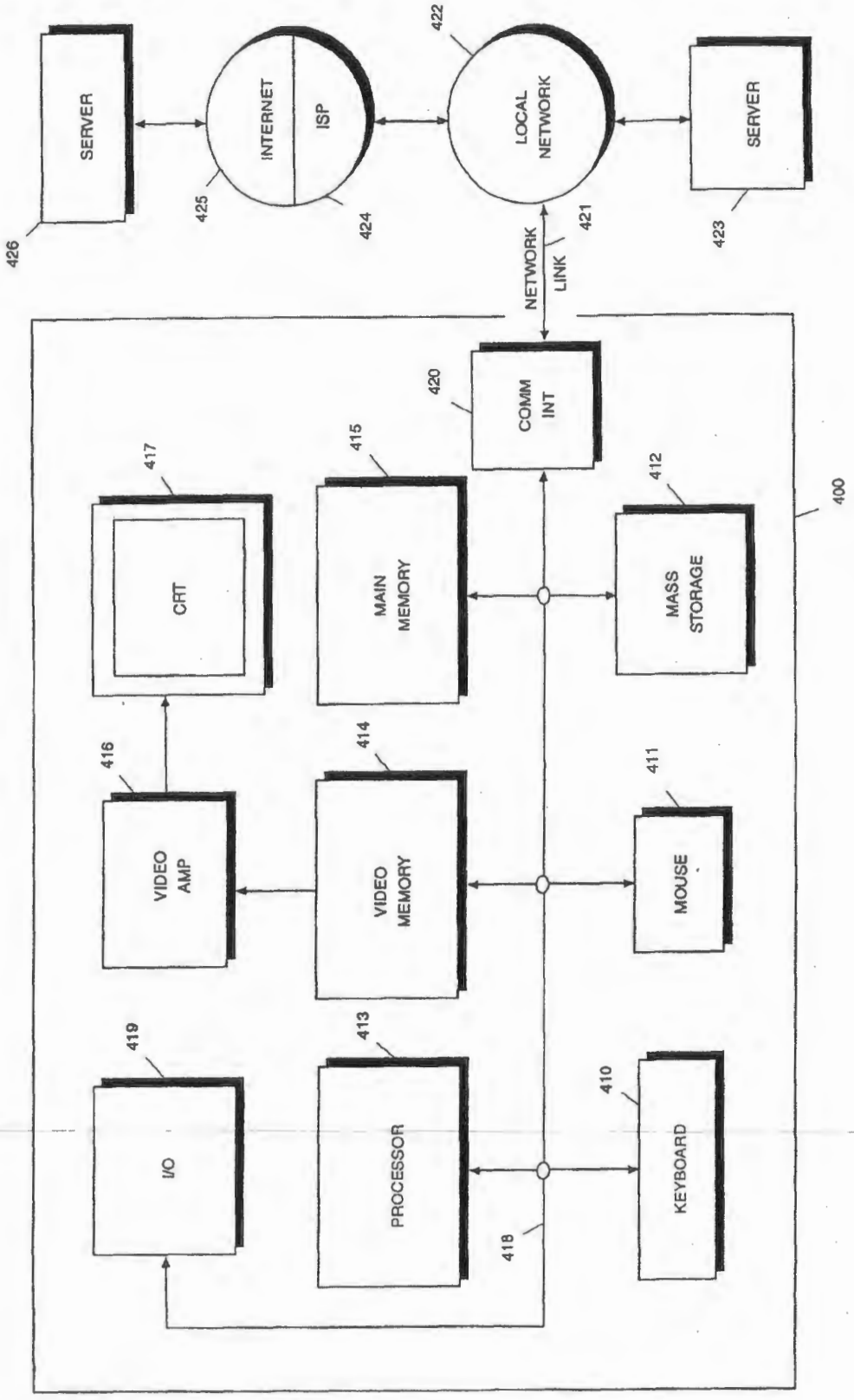

SERVER
INTERNET
ISP
LOCAL NETWORK
SERVER
426
425
424
422
423
421
NETWORK LINK
COMM INT
420
CRT
417
MAIN MEMORY
415
MASS STORAGE
412
400
VIDEO AMP
416
VIDEO MEMORY
414
MOUSE
411
I/O
419
PROCESSOR
413
KEYBOARD
410
418

FIGURE 4

METHOD AND SYSTEM FOR MANAGING DISTRIBUTOR INFORMATION

FIELD OF THE INVENTION

This invention relates to the field of computer technology. More specifically, the invention relates to a method and system for managing distributor information.

BACKGROUND

Managing sales and distribution channels has become a difficult task in today's business environment where it is necessary to quickly and fairly administer incentives for salespeople and distribution channel partners while coping with regulatory issues. To keep revenues growing and keep up with customer demands, financial services providers have to move quickly even when regulation, competition and new sales distribution channels inhibit growth. Management is expected to provide new opportunities for improved revenues and margins, while providing customers with better, faster information and services.

The distribution channel model within the financial services industry is very complex. Products are sold across multiple distribution channels and the workforce is very fluid, with individual distributors working for multiple companies and engaging in multiple agreements with service providers. There are regulatory constraints on the sales force in that all distributors who sell products must be licensed and appointed, or authorized, to sell those products. Financial services companies must track all of this information about their sales force, maintain a history of all of this information, provide incentive based compensation to their sales force, and calculate their compensation based upon numerous variables. Consequently, any plan for distribution channel management must consider the number of channels, the number of distributors, compensation complexity, regulatory and licensing requirements and the number and types of products that will be sold.

Financial service companies are being driven by increased competition to consider the use of independent agents in place of captive sales staff. Firms may wish to enhance and reward cross distribution channel interactions. They must be able to enhance distributor reporting and communication and effectively manage independent brokers and captive sales staff. They must reduce the time required to market new products and implement new compensation plans and differentiate themselves based on services offered to customers. In addition, they must be able to rapidly integrate new distribution channel acquisitions and grow distribution capabilities, while reducing administration costs.

Cost avoidance is essential as mergers and acquisitions have led to many disparate systems, some of which are antiquated. Firms must reduce implementation time for new products and compensation plans on these antiquated systems and reduce the potential for overpayment. The goal must be a reduction in the overall cost of administration. Accordingly, these companies must interact with the producers (of sales) using preferred methods and quickly model new and creative compensation plans, while consolidating compensation administration systems.

In order to provide sales representatives with an incentive to sell as much as possible, or to sell more of a desired product or products at certain prices, sales organizations create incentive plans where commissions are provided or offered to the sales representatives when specific sales goals or targets are achieved during particular period of time. In addition, an incentive plan may apportion credit to everyone on a sales representative's sales team, to the representative's manager, or someone other than the sales representative himself. Sales representatives typically receive compensation based on a salary, the hours worked, and/or on the goods or services sold. When basing compensation on transactions, specifically on the goods or services sold, sales representatives receive a commission that can be based on profits, net sales, the number of products sold, or some other variable. Other primary compensation includes gross dealer concessions. Secondary compensation includes expense allowances, persistency bonuses and overrides that can be allocated among sales teams and accumulated over time if desired.

Sales compensation for direct and indirect channels can be one of the most effective levers for aligning sales performance with business goals. Unfortunately, designing and administering effective incentive programs is a difficult management challenge. The management of a business can spend a great deal of time and money in developing incentive plans. In the prior art, the creation and distribution of incentive plans is a slow process that is prone to error. It can take months to implement a new compensation plan, and dependencies on computer software can frustrate sales managers who want to make even simple changes. Moreover, a lack of measurement tools can make it impossible to develop a "closed loop", continuous improvement process. Businesses must be able to design, process, and communicate sophisticated incentive programs that drive revenue growth across all sales channels. Businesses need to streamline the administration of quotas, territories, and commissions, and also require tools to measure and improve the effectiveness of incentive programs. This would greatly simplify the management challenge of aligning tactical business performance with strategic objectives, making it possible to react more quickly and effectively to changes in market and competitive conditions.

Quotas are a necessary component of most sales compensation plans, yet they are notoriously difficult to administer, especially when they involve multiple hierarchies. Not only is it easy to introduce problems like double counting and under- or over-payment, but also changes typically require long turnaround times while they are implemented by changes in computer software. The management of sales quotas is difficult and there is a need to be able to manage them easily and accurately, allowing business users to assign quotas by territory or position and across multiple hierarchies. Managers also require a capability to accurately track sales results and forecast future performance. Needed elements include the ability to tie quotas between positions and sales teams or positions and territories, make sales projections, a provision for quick and easy quota setting and editing, and a simple interface for use from the field.

Managing sales territories involves analyzing past results, assigning territories, and forecasting future sales performance. For most organizations, it is a difficult and time-consuming process with the result that it is commonly only undertaken once a year. Unfortunately, market conditions change continuously, making it practically impossible to keep sales territories aligned with business needs for more than a short period of time. A more automated process for territory management is needed to allow large sales organizations to keep up with the market.

Another need of firms in financial services is an ability to manage sales producer payment accounts by defining multiple accounts per representative, setting up payment rules for each account and procedures for adjustments. Loan issuance against customer accounts must also be managed. Loan and repayment schedules, and appropriate records, must be maintained. As a part of this activity, it is necessary to track eligible compensation against parameters established for the loan and to be able to track collection of the loan and initiate charge-back and from the producer if appropriate.

In the area of distributor administration, firms also would like to manage a shared repository for all producer information, including personal information, professional information and preferences. There is a need to provide a view of the roles played by individuals with an organization, and active selling agreements and reporting relationships. Firms would like a centralized distributor repository in order to be able to view, report and compensate producer relationships individually and holistically. In addition, they must reduce errors or miscalculations leading to overpayment. At the same time, these firms must assist new agent distribution channels in learning how to sell new types of products and create new distribution capabilities for existing products.

Credential management is a critical issue for many firms. They must track professional accreditation including licenses, appointments, National Association of Securities Dealers (NASD) registration and continuing education requirements for the maintenance of these professional accreditations to ensure that they are represented by appropriately credentialed representatives. This need is made more acute by constantly changing government rules and regulations, as well as by different regulations imposed by the different jurisdictions in which a firm operates. Firms must determine when renewal processing is required and manage new and renewal application processes to ensure regulatory compliance in every jurisdiction. A further problem is presented by representatives who may move from jurisdiction to jurisdiction in the course of their representation of a firm. Further, there is substantial turnover in representation resulting in a continuing need to ascertain the credentials of new representatives as well as to maintain contact with former representatives in the event that issues arise from their former representation.

In order to appropriately manage their representatives, firms must also be able to create customized contracts and selling agreements by combining reusable compensation components and personalizing agreement templates to fit individual producers. A selling contract defines a hierarchy of sales people that can sell products under that contract and it defines what products can be sold under that agreement. The selling contract also specifies commission schedules and identifies which sales people participate under a particular commission schedule. As multiple versions of such agreements may come into use over time, a procedure is needed to allow multiple users to maintain agreements through versioning, or version control, and a method must be provided to manage the approval process for agreement components and templates.

Any distribution management channel solution, in order to be useful, must have a capability for error correction, including manually inputting and adjusting all transaction information, making retroactive adjustments and viewing and managing ledger items. Other features that are desirable include the ability to cancel and rerun transactions.

Many financial services firms would like to be able to communicate distribution channel management information over the Internet so that producers can view the state of their

relationship with a firm, including profile information, licenses, appointments, product information, contract and compensation information. Firms would also like to be able to perform modeling and "what if" analysis and have the ability to capture historical data to make strategic decisions about the effectiveness of future plans. A set of Web-based incentive management products that can be deployed to practically any sales or distribution channel would be useful. Such tools could greatly simplify the burden of designing, forecasting, launching, measuring, and refining incentives programs.

Computer software is necessary to implement the solution to these problems and fulfill the perceived needs just described. Such software commonly utilizes multiple related functions and data structures. To encapsulate these related functions and data structures, the software often utilizes a standard object oriented programming (OOP) language approach.

In conclusion, there is a need for a solution, implemented on a computer in an object oriented programming environment, that manages the contracts between the manufacturers of a product, which may include financial services, and the distributors of their product in an industry where there is multiple channel selling, a fluid workforce, and regulatory constraints. This solution should track information, such as contact points, payment methods, and the organizational hierarchies, on all parties in the system. It must manage regulatory information and ensure that distributors are licensed and appointed to sell the products manufactured, or distributed, by the provider. In addition, the solution must allow for compensation configuration and provide financial services companies with a toolkit for creating and modeling their complex commission schedules used to compensate their sales forces. This should include a provision for charge-back of commissions if appropriate. Also, the solution must model contracts between the financial services company, or provider, and the distributors who sell the products. The solution must calculate compensation for all distributors and should allow for access through the Internet.

SUMMARY OF THE INVENTION

The invention provides a method and system for managing contracts between manufactures of a product and the distributors of their product in an industry comprising multiple channel selling, a fluid workforce, and regulatory constraints. An embodiment of the invention provides a system that enables financial services companies to track information about their sales force, maintain a history of all of the information, provide incentive based compensation to their sales force, and calculate their compensation based upon numerous variables. The system referred to hereinafter as Distributor Management System Suite (DMSS) comprises a suite of applications that provide tracking information, such as contact points, payment methods, and organizational hierarchies on all parties in the system, managing regulatory information and ensuring that distributors are licensed and appointed to sell the products manufactured by the provider. The DMSS provides financial services institutions with the means to maintain distributor records, contracts, and commissions. The DMSS includes components for managing information related to distributors, validating and tracking licenses, creating customized contracts, and maintaining compensation structures. The information stored in the DMSS database includes contract components and rules, distributor financial information, bonus schedules, and license and appointment data.

In an embodiment of the invention, the DMSS allows for configuring compensations, providing financial services companies a toolkit for creating and modeling their complex commission schedules used to compensate their sales force. The DMSS provides modeling capabilities for agreements and contracts between a financial services company or provider and the distributors who sell products. In an embodiment of the invention, the DMSS calculates compensations for all distributors, processes payment and manages dept.

In an embodiment of the invention, the DMSS comprises several components comprising management modules, a backbone, one or more data processing engines, databases, and storage management components. The backbone allows for data exchange between components of the DMSS comprising module-to-engine and engine-to-database data exchange.

In an embodiment of the invention, the DMSS comprises data processing engines. These system components are designed to draw information from the DMSS databases, process the information, and store the result in a database for further use by the DMSS modules and engines.

In an embodiment of the invention, the DMSS is composed of several modules comprising a distributor administration module, a license and appointment module, a selling agreements module, a debt management module, and a payment module. These modules interact with the backbone and engines to maintain relationships between financial services institutions and their distributors.

DESCRIPTION OF THE DRAWINGS

FIG. **1** shows a block diagram representing an embodiment of a system that utilizes the Distributor Management System Suite (DMSS).

FIG. **2** comprises a flowchart showing the process of communicating between modules, the data processing engine, the DMSS backbone and the databases in an embodiment of the invention.

FIG. **3** show a block diagram representing an example of interactions occurring within DMSS modules and engines in an embodiment of the invention.

FIG. **4** shows a hardware environment for executing one or more aspects of the invention.

DETAILED DESCRIPTION

The invention provides a method and system for managing distributor information. In the following description, numerous specific details are set forth in order to provide a more thorough understanding of the invention. It will be apparent, however, to one skilled in the art, that the invention may be practiced without these specific details. In other instances, well-known features have not been described in detail in order to avoid unnecessarily obscuring the invention.

System Overview:

An embodiment of the invention comprises an extensible method for managing relationships between institutions (e.g., suppliers/ manufacturers) of a product or service and the distributors of their product. Aspects of the invention are targeted at industries where there is multiple channel selling, a fluid workforce, and regulatory constraints upon products sales. For example, systems embodying the invention provide a way to manage the agreements that financial services companies have with the distributors who sell their products. Thus, organizations such as life insurances companies may utilize embodiments of the invention to manage the sale and distribution of life insurance plans in a way that coincides with the regulatory constraints of government organizations.

Such companies can utilize embodiments of the invention to track information about the company's sales force, maintain a transaction history of the information associated with multiple products, provide incentive based compensation to the company's sales force, and calculate sales force compensation based upon numerous variables. For example, the system referred to hereinafter as Distributor Management System Suite (DMSS) comprises a suite of applications that provide tracking information, such as contact points, payment methods, and organizational hierarchies on all parties in the system, managing regulatory information and ensuring that distributors are licensed and appointed to sell the products manufactured by the provider.

In one embodiment of the invention, DMSS comprises a suite of multiple engines and modules each configured to provide functionality that helps manage the flow of information between distributors and suppliers. Generally, DMSS provides users with a mechanism for managing information related to distributors, validating and tracking licenses, creating customized contracts, and maintaining compensation structures. To perform such functions the system configured in accordance with one embodiment of the invention stores information such as contract components and rules, distributor financial information, bonus schedules, and license and appointment data. The engines and modules of DMSS may, for example, be configured to perform at least the following functions:

1) Provide financial services institutions with the means to maintain organization hierarchies associated with parties on the system (e.g., distributor records), track information such as contracts, and payment methods (e.g. how a distributor is paid).
2) Manage regulatory information and ensures that distributors are licensed and appointed to sell the products manufactured by the provider.
3) Perform compensation configuration. It provides financial services companies a toolkit for creating and modeling their complex commission schedules used to compensate their sales force. For example, the system may calculate compensation for all distributors by building on top of a commission engine and using the engine, the commission models, and the agreement models to calculate the compensation for all of its sales force.
4) Models agreements or contracts between the financial services company or provider and the distributors who sell the products. These agreements are termed 'Selling Agreements'. A selling agreement defines a hierarchy of sales people that can sell products under that contract, it defines what products can be sold in that agreement, it defines what commission schedules can be used in that agreement, and it defines which sales people participate in which commission schedule. The DMSS may utilize the terms defined in selling agreements to calculate compensations for all distributors.
5) Managing information related to distributors, validating and tracking licenses, creating customized contracts, and maintaining compensation structures. The information stored in the DMSS database comprises information such as contract components and rules, distributor financial information, bonus schedules, and license and appointment data.
6) Manages payment and debt to distributors/sales representatives (e.g., net-pay and debt management).

In accordance with one embodiment of the invention DMSS is built on top of a commission engine configured to

model and calculate commission for the sales force. A commission engine takes two inputs, a commission model and a set of transactions, and generates ledger items (that correspond to payments) as output. Each transaction represents a physical sales transaction, such as distributor selling a life insurance policy. The commission model represents two critical pieces of data: the sales team hierarchy and the commission schedules. The sales team hierarchy comprises a hierarchy of all sales people that will be responsible for a transaction. The commission schedules define formula for translating transactions into ledger items. Commission schedules may be modeled through quota, bonus, and plan objects. The commission model utilized in one or more embodiments of the invention is described in further detail in pending patent application Ser. No. 09/081857, entitled "Method and Apparatus For Determining Commission", which in incorporated herein by reference.

DMSS complements the commission engine in that it provides a mechanism for modeling selling agreements with commission models. In accordance with one embodiment of the invention, at least one commission model exists for each selling agreement in DMSS. Agreement hierarchies are modeled within the sales team hierarchy. The agreement commission schedules are stored in accordance with one embodiment of the invention in the commission model's quota, bonus, and plan objects.

The commission schedules used in an agreement are often the same or similar across agreements. Therefore, the agreements are put together from contract kits. A contract kit contains a set of commission schedules (also referred to as compensation components) that can be used within an agreement. Each compensation component and contract kit is versioned, and the compensation component contains the commission schedule information needed to generate a complete commission schedule in the commission model. Each agreement is then created from one contract kit, and when the agreement is created a user can selected which components from the kit to include in the agreement. When a new version of a component or kit is created, a user can select to cascade the new version to all the agreements that use it, or to leave the agreement using the old version.

DMS provides additional functionality by allowing dependencies between models through linked hierarchies and pooling agreements. It is often common for one party to receive credit or rollup from somebody's work in a different agreement. This is accomplished through linked hierarchies. A distributor (Ted) in one agreement (AG1) make be linked to another distributor (Fred) in another agreement (AG2). This allows transactions for Fred and all of his descendants to also be credited to Ted.

It is also common for multiple parties to want to share work across agreements. For example, one may wish to use one quota to calculate qualification on a quota level, and another quota to calculate payout. In this example, one would want several parties performance to contribute to the qualification quota, even parties in different agreements. Pooling agreements provide this functionality, by pooling work from different agreement participants from potentially different agreements into one quota. An extensible object model in accordance with one embodiment of the invention provides a framework for representing such agreements.

System Components:

FIG. **1** shows a block diagram representing an embodiment of a system that utilizes the Distributor Management System Suite (DMSS) **105**. As shown in FIG. **1**, the DMSS comprises management modules **110**, a backbone **120** allowing data exchange between applications and databases, and between applications, a commission engine **125**, a number of additional data processing engines **140**, and data storage and storage management components **130**. The DMSS is also configured to allow for the addition of more applications and plugins **110** to provide additional services.

In an embodiment of the invention, the DMS comprises several modules and applications. In this example, the system is used by financial organizations to manage sales agreements, distributor credentials, and sales compensation. However, the reader should note that the system embodying the invention is also applicable outside of the financial services industry and that the term financial organization is utilized for illustrative purpose only. The invention is not limited solely to the financial services industry, but may be applied to other industries. For example, the system may be utilized in any business environment having a need to determine if individuals associated with a sale are appropriately licensed, compensated. The invention may also be applied to other business situations were companies must operate pursuant to the terms of an agreement.

DMSS comprises a DMS Database which may exchange data with modules and engines via backbone **120**. In accordance with one embodiment of the invention, backbone **120** comprises an information infrastructure used to integrate applications **110**, engines **140** and **125**, and databases **130**. Backbone **120** facilitates communication between data resources and modules, and integration of different computing equipment, including local networks, web interfaces, and back-office systems. Thus, backbone **120** provides a mechanism for maintaining data storage and retrieval, in addition to communicating changes and updates to the other modules. Backbone **120** is configured to retrieve data from the database in response to the needs of DMSS modules and engines and transmit that data to its requestor. Backbone **120** provides an extensible framework suitable for building and integrating applications customized for the needs of individual clients. Backbone **120** receives information from the DMSS modules and acts on it, storing the resulting object or sending it back to the module. As modules perform their tasks and functions, the backbone communicates changes and updates to the rest of the applications. Backbone **120** also provides communication between the modules by sharing data and functions. The DMSS and other applications **110**, engines **140**, and databases **130** may execute bidirectional requests and responses across backbone **120**. Backbone **120** is configured to retrieve data from the database in response to the needs of DMSS modules and engines and transmit that data to its requester. Backbone **120** eliminates some of the need for developing custom code, and allows developers to integrate new applications without knowing all the other applications in the system.

Engines **140** and **125** may be launched by the DMSS modules via the backbone and draw information from the DMSS databases. The engines process the information, and store the resulting object in a database or the backbone for further use by the DMSS modules and engines. A commission engine **125**, configured in accordance with one embodiment of the invention, utilizes backbone **120** to gather information about agreements from the database.

Commission engine **125** may, for example, identify relevant data in the database and produce a set of objects. Once the engine has processed all the objects, commission engine **125** can generate payments based on the agreements.

Workflow process engine **146**, operating in accordance with one embodiment of the invention, starts and responds to workflow events received from the DMSS modules through backbone **120**. Workflow process engine **146** completes the

desired workflow event and sends that information back through backbone **120**. In an embodiment of the invention workflow engine **146** enables users to create and run one or more business processes. The processes may be created in a formatted data input (e.g. XML or Java) and become objects (business rules) in the backbone. The workflow engine **146** enables the flow of information in the DMSS and provides users with a customizable mechanism for creating business processes.

The DMSS may comprise a commerce configuration engine **144** that allows users to define and enforce the set of rules governing how contract kit components (e.g., document components and compensation components) are combined into agreements for each distributor. The internal processes utilized by configuration engine **144** are described in further detail in U.S. Pat. No. 5,825,651, entitled "Method and Apparatus For Maintaining and Configuring System", which in incorporated herein by reference. The commerce configuration engine **144** utilizes the contract kit for creating agreements between a distributor and a financial services company.

A reporting engine **142** may be added to the DMSS and configured to generate reports and store such reports in the database. Each component of an agreement has a corresponding document, generated from report templates, which describes that component. The DMSS may also have additional modules comprising a distributor administration module **115**, a license and appointment module **116**, a selling agreements module **117**, a debt management module **118**, and a payment module to which is may be referred to also as Net Pay module **119**. These modules interact with backbone **120** and engines to maintain relationships between financial services institutions and their distributors.

In one embodiment of the invention, distributor administration module **115** enables a financial services institution to record and track a broad set of information associated with the institution's distributors. The distributor information may be stored in a central database and used by all other modules of the DMS suite. Distributor information may comprise personal contact information (e.g. address, telephone, facsimile, email etc.), including information about multiple contact points, information from background checks (e.g. education, previous relationships with financial services institutions, personal credentials etc.), financial information (e.g. bank address/account information and payment, advance, repayment history etc.), license and appointment information (e.g. state and product eligibility), including current and historical license and appointment data, information about errors and omissions coverage.

Distributor information may also comprise any other type of information associated with the distributor and/or the sales of product on behalf of the institution. Distributor administration module **115** may also provide services for creating and managing distributor database information, setting up organizational entities, such as sales teams, placing individual distributors in the teams, modifying the distributor information, and creating and managing a repository for data about selling agreements established between the financial services institutions and distributors. Also, distributor administration module **115** may provide services for defining and managing relationships between different organizations (e.g. such as the financial services institution and a distributor or between regional directors and sales offices), identifying and managing calendar-based events associated with distributors such as selling agreement, licensing, and appointment renewals, background check renewals, and errors and omissions coverage renewals.

A licensing and appointments module **116** may also be integrated into the DMSS and configured to enable financial services institutions to manage the license and appointment credentials for distributors and to validate compliance with industry regulations. The licensing and appointment rules enforced by the DMS suite are applied to distributors managed by the system, whether they are employees of the financial services institution or employed by an external distributor. However, the licensing and appointment rules may be selectively enforced in the event that a user defines a set of rules defined a decision tree for performing selective enforcement.

Licensing and appointments module **116** may also provide several services comprising defining license/appointment types by company, state, and either product or product line, determining the license and appointment requirements for producers (e.g., distributors or sales representatives) based on their state of operation, the products the producer sells, the kind of compensation paid to such producers and their role, monitoring license and appointment information associated with individual producers on a calendar and schedule basis and determine when renewal application processing is required, managing the license application process for renewals, updating licenses (e.g. for new products or states). In one embodiment of the invention, licensing and appointments module **116** includes the documentation and workflow for the application approval process providing services comprising managing the appointment application process for both renewals and new appointment requests, including the documentation and workflow for the application approval process, providing license and appointment checking as required (e.g. for sales compensation or processing new business), validating that licensing/appointment requirements are met and holding activity until requirements are met.

When selling agreements module **117** is integrated into the DMSS in accordance with one embodiment of the invention, the selling agreements module **117** enables a financial services institution to define and create individual business contracts with distributors. A selling agreement defines the scope and terms of the relationship between the parties involved, commission and bonus schedules, and documents describing the relationship. In one embodiment of the invention, each selling agreement defines a hierarchy of sales people that can sell products under that contract, it defines what products can be sold in that agreement, it defines what commission schedules can be used in that agreement, and it defines which sales people participate in which commission schedule. Selling agreements are built from pre-defined contract kit components customized during negotiations. For example, a selling agreement may be formulated using contract kits comprised of components such as compensation components and document components. Each selling agreement is assembled by the system using rules (e.g., a component may be required, optional, or standard) defining the relationships between each of the components. Compensation components define the commission structure associated with a product to be sold and document components provide other information related to the agreement (e.g., contract terms etc. . . .).

The distributor's performance is measured and commission is paid according to the terms of the agreement (e.g., defined in compensation components). In an embodiment of the invention, customizable contract kit components enable a financial services institution to define the content of contracts and the processes by which they are administered. The kits detail the rules and documentation required for the administration of the agreement. A financial services institution defines the events that may occur and provides a set of pos-

sible responses to each event using various contract kit components. Selling agreements module **117** may use contract kits to perform several tasks comprising: defining agreements that consist of contract components, defining the set of rules governing how contract kit components are combined into selling agreements for each distributor, managing the approval process for contract kit components and contract kits prior to their promotion to active use, activating contract kit components and contract kits for use, retiring contract kit components from active use, integrating with the commission engine to enable compensation calculations based upon the parameters set in the selling agreement.

In an embodiment of the invention, DMSS comprises an integrated debt management module **118** which enables a financial services institution to manage distributor advances and repayments. The debt management module enables a user to define and manage the business rules and parameters for the approval and payment of advances (e.g., via an interface). A user may make adjustments to advance balances based on actual value received from commission and accelerate repayment schedules if commissions are insufficient. The debt management module enables a user to define the rules and parameters associated with advances. The debt management module enables a user to define the following: classes of distributors who qualify for advances, qualification criteria for advances (e.g. the distributor's length of service, sales history, and past earnings), ratio of advances to projected income, taking into account any outstanding advances, repayment schedule and interest rate to be paid, source of repayment income or the policy the advance is to be recouped from, whether the amount is a percentage or flat rate, accelerated repayment schedules. For example, if a distributor's income projections fall below repayments, a user may modify the repayment terms, a user may also perform other activities such as initiating advances and repayment schedules, and tracking performance of debts.

The DMSS may also comprise a payment module **119** that enables financial institutions to track and calculate payments to distributors. Payment module **119** (also referred to as a net pay module) determines a distributor's net pay by adjusting the party's total earned compensation (calculated by commission engine **125**) according to a set of payment adjustment rules. The commission engine utilized in one embodiment of the invention is described in further detail in pending patent application Ser. No. 09/081857, entitled "Method and Apparatus For Determining Commission", which in incorporated herein by reference. These rules can be used to capture repayment schedules for outstanding debt, and transfer payments to an alternate payee. In accordance with one embodiment of the invention, payment module **119** also allows splitting up net payments into individual disbursements, directing different parts of compensation to different accounts.

In one embodiment of the invention DMSS may also comprise a user manager application **140** which defines and restricts user access and usage of the DMS suite. The system may use role-based access control, where roles are given specific permissions to data and entities. Users of the DMS suite have several levels of usage and control in the application based on the pre-defined roles. A user may customize these roles through the application user manager **140**. In an embodiment of the invention, a workbench application **113** is provided to enable users to view and manage sales transactions and distributor performance data, and to run the DMS engine.

The DMSS comprises, in addition to modules and engines, a set of user interfaces **150**. User interfaces comprise a browser-based system for managing the DMSS applications. This browser-based system may be implemented using any network enabling communication protocols and applications. For example, the browser-based user interface may include Java Server Pages, script based common gateway interface or any application capable of accessing the databases and producing intangible data that can be rendered by a client browser.

Information Types:

In an embodiment of the invention, the DMSS comprises several types data stored in the databases and corresponding modules, and used in module-to-module, module-to-engine, and engine-to-engine communication. The system may represent such data in data objects. Compensation data and compensation rules data objects **132** store information for the agreements module of the DMSS. This data may include contract components such as quota levels, bonus rules, and commission-based rules for eligibility. Distributor data and producer data objects **133** store information about a financial services institution's distributors for the distributor administration **115** and the other modules of the DMSS. This data includes contact information, background checks, continuing education credits, and financial information.

Selling agreements data and selling agreement rules data objects **134** provides sharing data with the Agreements module **117** of the DMSS. Information in this database includes rules for contracts between financial services institutions and distributors, data defining the terms of contracts, and commission and bonus schedules. License data and appointment data objects **135** are used by the license and appointments module **116** of the DMSS. This data includes license and appointment credentials and variations of license and appointment types (such as variations by state or product). The data is also used to validate that requirements for a license are met. Process rules data objects **136** contain information relating to the DMSS workflow service. This data includes agreement components and business rules and data. Report data objects **137** contain report data and agreement components and may share information with the report engine.

System Components Interactions

In an embodiment of the invention, modules perform their tasks and functions using the backbone **120**. The backbone **120** communicates changes and updates to the rest of the applications. The Backbone also provides communication between the modules by sharing data and functions. The backbone **120** maintains data storage and retrieval, in addition to communicating changes and updates to the other modules. The backbone retrieves data from the database in response to requests from DMSS modules and engines and transmits that data to its requestor.

FIG. **2** is flowchart showing the process of communicating between modules, the data processing engine, the DMSS backbone and the databases in an embodiment of the invention. In step **220** a request is received by the DMSS to perform a data processing task. This step involves starting the modules required to handle the data processing task. The module data processing task may require one or more services provided by specific data processing engines. The module determines, if a specific engine's services are needed in step **230** and may start the designated engine by issuing a request through the backbone in step **240**. In one embodiment of the invention, the module calls directly to the engine and the engine loads data through the backbone. In either case, the engine may request the data necessary for processing the modules request in step **250** though the backbone. The backbone fetches the data from different sources of databases in step **260**. The engine processes the modules request in step **270** and returns the pro-

cessing result through the backbone to the module. The module completes the processing in step **280** and continues processing the data. The backbone updates the databases and other modules in the DMSS in step **290**.

FIG. **3** show a block diagram representing an example of interactions occurring within DMSS modules and engines in an embodiment of the invention. In this example, the selling agreements module **117** of the DMSS, acts through the workbench **113**. The workbench **113** starts commission engine **125** by sending a request **310**. In response, the engine obtains the appropriate agreements information from the databases via the backbone **120** for its calculations and compensation functions. The commission engine gathers information about agreements from the database through the backbone. The commission engine identifies relevant data in the database and produces a set of objects for the selling agreements module. Once the engine has processed all the objects, it can generate payments based on the agreements. The resulting information is stored in the database for extraction by the DMSS applications.

FIG. **5** provides an illustration of the process flow utilized in accordance with one or more embodiments of the invention. The figures shows that the system described above may be utilized to generate the selling agreement that defines a relationship between multiple parties (e.g., step **500**). Once the selling agreement is generated the system may determine a commission amount associated with a sales transaction performed by one of the parties based on said selling agreement (e.g., step **502**). However, before the system pays out the commission amount it may determine if the parties associated with the sales transaction conform to regulatory or business requirements (e.g., step **504**). For example, the system may determine whether the parties are validly licensed or authorized to perform such sales transactions. If the second party is not validly licensed, the system may reject the sales transaction (e.g., step, **506**). Once that determination is performed the system may distribute an appropriate payment (e.g., commission amount) to individuals associated with said sales transaction (e.g., step **508**). In one embodiment of the invention, the distributed amount takes into account any deductions or credits (e.g., via the payment engine or debt engine) that are to be applied to the commission amount. For example, the person responsible for the transaction (e.g., sales representative) may be paid some amount minus an amount owed.

Computer Execution Environment (Hardware)

An embodiment of the invention can be implemented as computer software in the form of computer readable code executed on a general purpose computer such as computer **400** illustrated in FIG. **4**, or in the form of byte code class files executable within a Java™ runtime environment running on such a computer, or in the form of byte codes running on a processor (or devices enabled to process byte codes) existing in a distributed environment (e.g., one or more processors on a network). A keyboard **410** and mouse **411** are coupled to a system bus **418**. The keyboard and mouse are for introducing user input to the computer system and communicating that user input to processor **413**. Other suitable input devices may be used in addition to, or in place of, the mouse **411** and keyboard **410**. I/O (input/output) unit **419** coupled to system bus **418** represents such I/O elements as a printer, A/V (audio/video) I/O, etc.

Computer **400** includes a video memory **414**, main memory **415** and mass storage **412**, all coupled to system bus **418** along with keyboard **410**, mouse **411** and processor **413**. The mass storage **412** may include both fixed and removable media, such as magnetic, optical or magnetic optical storage systems or any other available mass storage technology. Bus **418** may contain, for example, thirty-two address lines for addressing video memory **414** or main memory **415**. The system bus **418** also includes, for example, a 64-bit data bus for transferring data between and among the components, such as processor **413**, main memory **415**, video memory **414** and mass storage **412**. Alternatively, multiplex data/address lines may be used instead of separate data and address lines.

In one embodiment of the invention, the processor **413** is any suitable microprocessor or microcomputer for processing data. Main memory **415** is comprised of dynamic random access memory (DRAM). Video memory **414** is a dual-ported video random access memory. One port of the video memory **414** is coupled to video amplifier **416**. The video amplifier **416** is used to drive the cathode ray tube (CRT) raster monitor **417**. Video amplifier **416** is well known in the art and may be implemented by any suitable apparatus. This circuitry converts pixel data stored in video memory **414** to a raster signal suitable for use by monitor **417**. Monitor **417** is a type of monitor suitable for displaying graphic images.

Computer **400** may also include a communication interface **420** coupled to bus **418**. Communication interface **420** provides a two-way data communication coupling via a network link **421** to a local network **422**. For example, if communication interface **420** is an integrated services digital network (ISDN) card or a modem, communication interface **420** provides a data communication connection to the corresponding type of telephone line, which comprises part of network link **421**. If communication interface **420** is a local area network (LAN) card, communication interface **420** provides a data communication connection via network link **421** to a compatible LAN. Wireless links are also possible. In any such implementation, communication interface **420** sends and receives electrical, electromagnetic or optical signals that carry digital data streams representing various types of information.

Network link **421** typically provides data communication through one or more networks to other data devices. For example, network link **421** may provide a connection through local network **422** to local server computer **423** or to data equipment operated by an Internet Service Provider (ISP) **424**. ISP **424** in turn provides data communication services through the worldwide packet data communication network now commonly referred to as the "Internet" **425**. Local network **422** and Internet **425** both use electrical, electromagnetic or optical signals that carry digital data streams. The signals through the various networks and the signals on network link **421** and through communication interface **420**, which carry the digital data to and from computer **400**, are exemplary forms of carrier waves transporting the information.

Computer **400** can send messages and receive data, including program code, through the network(s), network link **421**, and communication interface **420**. In the Internet example, remote server computer **426** might transmit a requested code for an application program through Internet **425**, ISP **424**, local network **422** and communication interface **420**.

Processor **413** may execute the received code as it is received, and/or stored in mass storage **412**, or other non-volatile storage for later execution. In this manner, computer **400** may obtain application code in the form of a carrier wave.

Application code may be embodied in any form of computer program product. A computer program product comprises a medium configured to store or transport computer readable code, or in which computer readable code may be embedded. Some examples of computer program products

are CD-ROM disks, ROM cards, floppy disks, magnetic tapes, computer hard drives, servers on a network, and carrier waves.

The computer systems programs, apparatus, and/or methods described above are for purposes of example only. An embodiment of the invention may be implemented in any type of computer system or programming or processing environment. Thus, a method and system for managing distributor information is described in conjunction with one or more specific embodiments. The invention is defined by the claims and their full scope of equivalents.

What is claimed is:

1. A system for managing relationships between a first party and a second party comprising:
- at least one processor;
- memory coupled to said at least one processor;
- said memory comprising a plurality of modules configured to manage distributor information;
- said plurality of modules comprising a selling agreements module configured to generate a selling agreement;
- said plurality of modules comprising a commission module configured to determine commission amounts associated with a sales transaction based on said selling agreement;
- said plurality of modules comprising a licensing module configured to determine if a party associated with said sales transaction has a valid license to sell products associated with the sales transaction; and
- said plurality of modules comprising a payment module for determining payment associated with said sales transaction to said party in accordance with (i) a determination of said commission amounts determined by said commission module and (ii) a determination by said licensing module of whether said party has a valid license to sell the products associated with said sales transaction.

2. The system of claim 1 wherein said licensing module is further configured to determine if a party associated with said sales transaction comprises a valid appointment.

3. The system of claim 1 wherein said plurality of modules further comprises a distributor administration module configured to manage information associated with a plurality of distributors.

4. The system of claim 1 wherein said selling agreement comprises compensation components.

5. The system of claim 4 wherein said selling agreement comprises document components.

6. The system of claim 5 wherein said selling agreements module configured to generate said selling agreement utilizes a configuration engine to determine which of said compensation components and said document components to include.

7. The method of claim 6 wherein said commission module accesses a commission engine to determine said commission amounts.

8. The system of claim 1 wherein said selling agreement comprises a binding contract between an institution having at least one product and a distributor.

9. The system of claim 8 wherein said institution comprises financial institution.

10. The system of claim 8 wherein said product comprise financial product.

11. The system of claim 10 wherein said financial product comprises life insurance.

12. A system for managing relationships between parties to a selling agreement, the system comprising:
- a database source comprising a plurality of data objects representative of at least one distributing party, at least one selling agreement, and at least one license or appointment associated with said at least one distributing party; and
- a distributor management engine configured to obtain at least one of said plurality of data objects from said database source and determine whether said at least one distributing party conforms with said at least one selling agreement and said at least one license or appointment is valid to allow the at least one distributing party to sell one or more products of the first party in accordance with the selling agreement.

13. The system of claim 12 further comprising:
- a backbone coupled to said distributor management engine, said backbone configured to transport said at least one of said plurality of data objects.

14. The system of claim 12 further comprising:
- an interface for obtaining a plurality of business rules defining relationships between an institution and said at least one distributing party.

15. The system of claim 13 further comprising:
- a commission engine configured to utilize said backbone to fetch said at least one selling agreement from said database source.

16. The system of claim 15 wherein said commission engine generates commission schemes utilized to model a set of selling agreement objects.

17. The system of claim 16 wherein said distributor management engine generates payments based on said selling agreement objects.

18. The system of claim 12 further comprising:
- a workflow process engine configured to process workflow events.

19. The system of claim 18 wherein said workflow process events are determined by business rules defined by a user.

20. The system of claim 19 further comprising:
- a commerce configuration engine configured to provide a configuration engine access to said business rules.

21. The system of claim 12 further comprising:
- a report engine configured to generate a plurality of reports associated with said at least one distributing party.

22. The system of claim 21 wherein said report engine utilizes report templates to generate said plurality of reports.

23. The system of claim 12 further comprising:
- a distributor administration module for managing said plurality of data objects.

24. The system of claim 12 further comprising:
- a licensing and appointment module configured to enable the first party to manage said at least one license or appointments data object for at least one said distributor.

25. The system of claim 24 wherein said licensing and appointment module is configured to validate license or appointment compliance with a set of industry regulations by evaluating said at least one license or appointment data object.

26. The system of claim 12 further comprising:
- a selling agreements module configured to enable said institution to define and create a business contract with said at least one distributing party.

27. The system of claim 26 wherein said selling agreements module manages a set of business rules governing how contract components are combined into said at least one selling agreement associated with each of said at least one distributing party.

28. The system of claim 27 further comprising:
- a debt management module configured to enable said institution to manage distributor advances and repayments.

29. The system of claim 28 wherein said debt management module is utilized to define and manage a set of payment rules defining parameters for paying said at least one distributing party.

30. The system of claim 12 further comprising:

a net pay module enabling said institution to track and calculate payments to distributors.

31. The system of claim 12 wherein said institution comprises a financial services institution.

32. A system for managing relationships between a first party and a second party comprising:

an interface for obtaining a plurality of business rules defining relationships between a product provider and at least one distributor;

a database source comprising a plurality of data objects representative of said at least one distributor, at least one selling agreement and at least one license or appointment associated with said at least one distributor;

a commission engine configured to determine a commission amount associated with said at least one distributor by evaluating said at least one selling agreement data object;

a plurality of modules comprising, a distributor administration module for managing said plurality of data objects;

said plurality of modules comprising, a licensing and appointment module configured to determine if said at least one license or appointment data object associated with said at least one distributor is in compliance with a set of industry regulations;

said plurality of modules comprising, a selling agreements module configured to enable said product provider to define and create a selling agreement with said at least one distributor; and

said plurality of modules comprising, a payment module configured to determine said commission amount to said at least one distributor.

33. The system of claim 32 wherein said commission engine utilizes said backbone to fetch said at least one selling agreement from said database source.

34. The system of claim 32 further comprising:

a workflow process engine configured to process workflow events, said workflow process events determined by said business rules.

35. The system of claim 32 further comprising:

a commerce configuration engine configured to provide access to said business rules.

36. The system of claim 32 further comprising:

a report engine configured to generate a plurality of reports associated with said at least one distributor.

37. The system of claim 36 wherein said report engine utilizes report templates to generate said plurality of reports.

38. The system of claim 32 wherein said selling agreement comprises a contract between said product provider and said at least one distributor.

39. The system of claim 38 wherein said selling agreements module manages a set of business rules governing how contract components are combined into said at least one selling agreement associated with each of said at least one distributors.

40. The system of claim 32 further comprising:

a debt management module configured to enable said product provider to manage distributor advances and repayments.

41. The system of claim 28 wherein said debt management module is utilized to define and manage a set of payment rules defining parameters for paying said at least one distributor.

42. The system of claim 12 wherein said first party comprises a financial services institution.

43. The system of claim 12 further comprising a payment module for determining payment to said at least one distributing party in association with a sales of the one or more products in accordance with (i) a determination of commission amounts in accordance with the at least one selling agreement and (ii) a determination of whether said at least one distributing party has a valid license to sell the one or more products associated with said sales transaction.

44. The system of claim 32 further comprising a backbone coupled to said distributor management engine to transport said at least one of said plurality of data objects to the plurality of modules.

45. The system of claim 32 wherein the payment module is further configured to determine payment to said at least one distributor in association with a sales of one or more products of said product provider in accordance with (i) a determination of commission amounts in accordance with the at least one selling agreement and (ii) a determination of whether said at least one distributor has a valid license to sell the one or more products associated with said sales transaction.

46. The system of claim 32 wherein said product provider comprises a financial services institution.

* * * * *

EXHIBIT C

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Chao et al.

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(54) **METHOD AND APPARATUS FOR PROCESSING SALES TRANSACTION DATA**

(75) Inventors: **David Chao**, Austin, TX (US); **Brian Blount**, Austin, TX (US); **Joshua Toub**, Austin, TX (US); **Shari Gharavy**, Austin, TX (US); **Cheng Zhou**, Austin, TX (US); **Charles Erickson**, Cedar Park, TX (US)

(73) Assignee: **Versata Development Group, Inc.**, Austin, TX (US)

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G06Q 40/00 (2006.01)

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(58) **Field of Classification Search** 705/35, 705/39, 40, 38

See application file for complete search history.

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Primary Examiner — Lalita M Hamilton

(74) *Attorney, Agent, or Firm* — Hamilton & Terrille, LLP; Kent B. Chambers

(57) **ABSTRACT**

A system provides a way to manage agreements that institutions such as financial services companies have with distributors who sell their products. Each distributor has a plurality of sales representatives that earn commissions for selling such products. The commissions earned and any other constraints imposed on the sales representatives may be defined within a selling agreement. The system can generate each selling agreement utilizing a set of components representative of the type of agreement formed between the institutions and the distributor. The components of each selling agreement contain an associated rule set that enables a configuration engine to generate an appropriate document. The system also contains a set of regulatory conditions for each sale made by the sales representatives. The system may be utilized to process sales transaction data to ensure that selling agreement terms are followed and that regulations for each sale are satisfied.

47 Claims, 8 Drawing Sheets

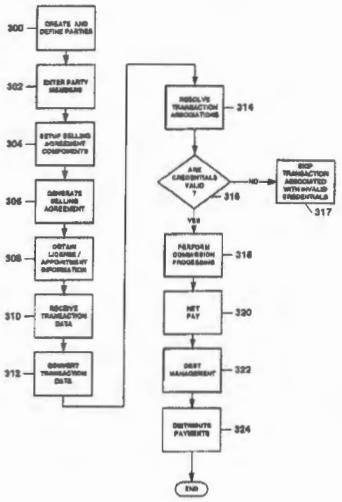

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Figure 1

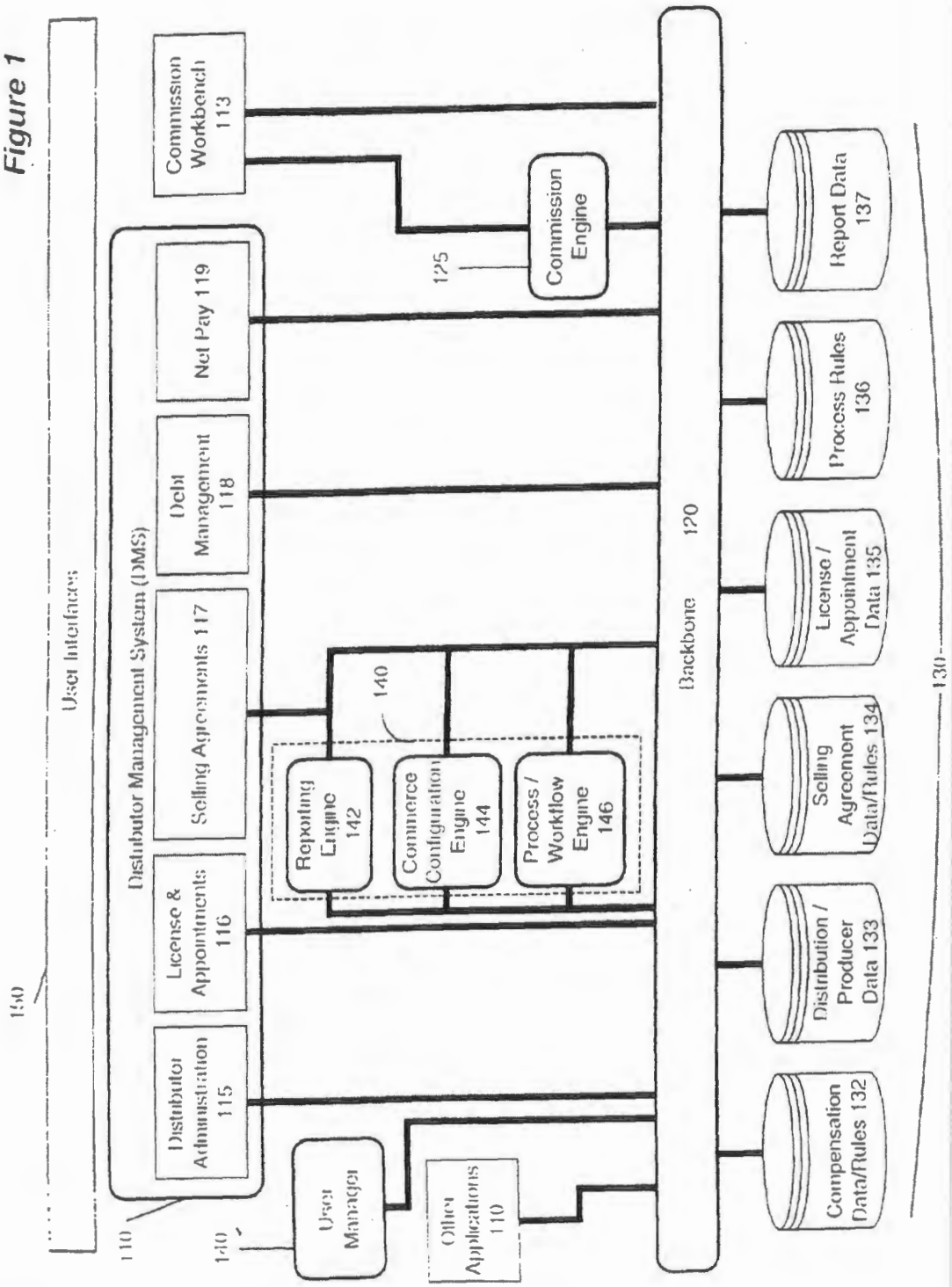

User Interfaces
150
Distributor Management System (DMS)
110
Commission Workbench 113
Net Pay 119
Debt Management 118
Selling Agreements 117
License & Appointments 116
Distributor Administration 115
140
Reporting Engine 142
Commerce Configuration Engine 144
Process / Workflow Engine 146
125
Commission Engine
User Manager
Other Applications 110
Backbone 120
Report Data 137
Process Rules 136
License / Appointment Data 135
Selling Agreement Data/Rules 134
Distribution / Producer Data 133
Compensation Data/Rules 132
130

Figure 2

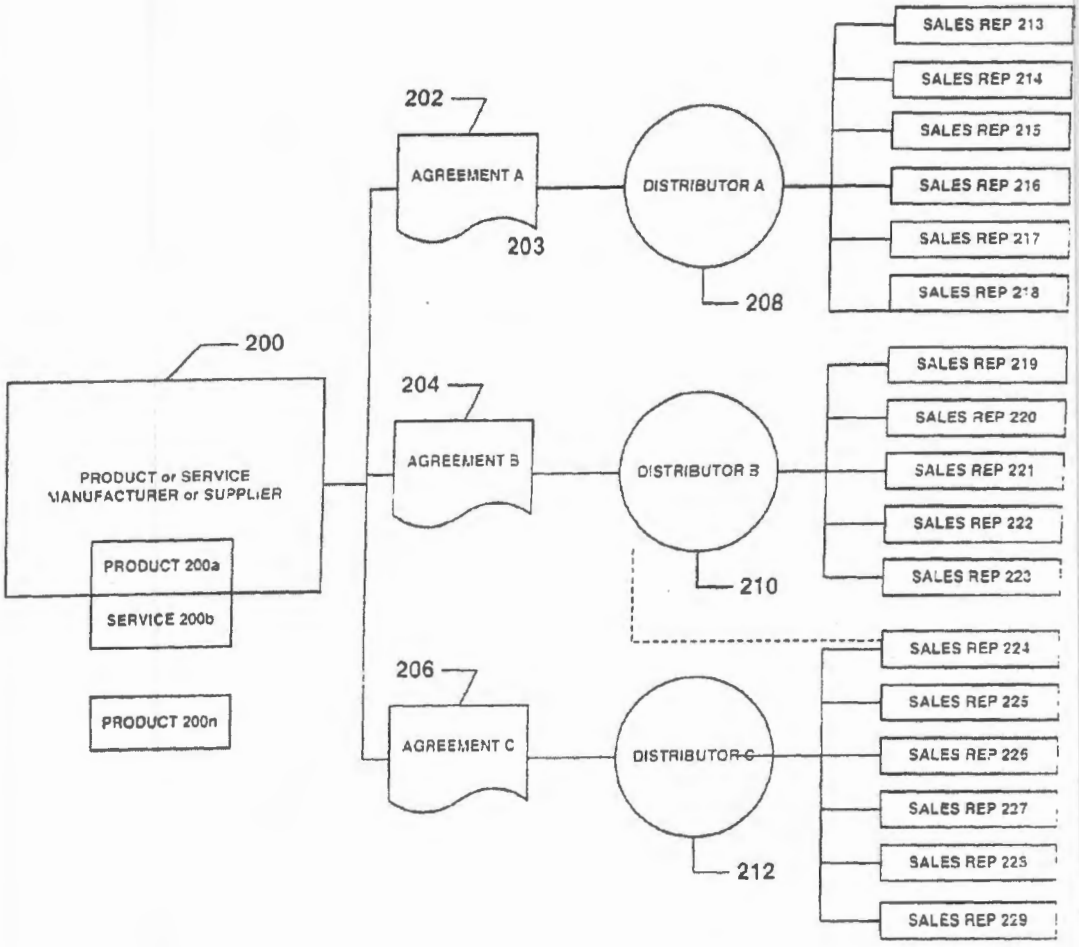

200
PRODUCT or SERVICE
MANUFACTURER or SUPPLIER
PRODUCT 200a
SERVICE 200b
PRODUCT 200n
202
AGREEMENT A
203
DISTRIBUTOR A
208
SALES REP 213
SALES REP 214
SALES REP 215
SALES REP 216
SALES REP 217
SALES REP 218
204
AGREEMENT B
DISTRIBUTOR B
210
SALES REP 219
SALES REP 220
SALES REP 221
SALES REP 222
SALES REP 223
206
AGREEMENT C
DISTRIBUTOR C
212
SALES REP 224
SALES REP 225
SALES REP 226
SALES REP 227
SALES REP 228
SALES REP 229

Figure 3

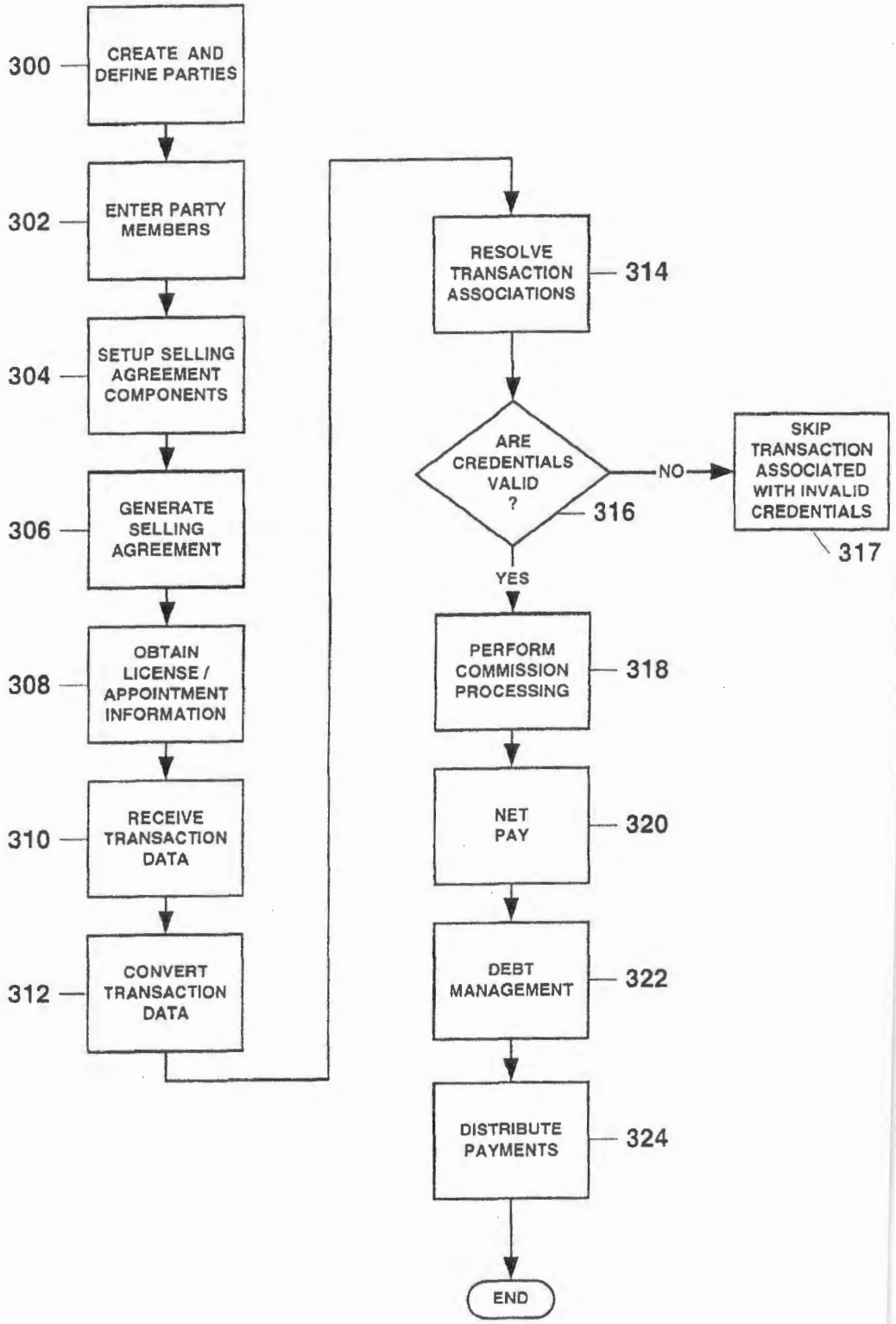

300
CREATE AND DEFINE PARTIES
302
ENTER PARTY MEMBERS
304
SETUP SELLING AGREEMENT COMPONENTS
306
GENERATE SELLING AGREEMENT
308
OBTAIN LICENSE / APPOINTMENT INFORMATION
310
RECEIVE TRANSACTION DATA
312
CONVERT TRANSACTION DATA
314
RESOLVE TRANSACTION ASSOCIATIONS
ARE CREDENTIALS VALID ?
316
NO
SKIP TRANSACTION ASSOCIATED WITH INVALID CREDENTIALS
317
YES
318
PERFORM COMMISSION PROCESSING
320
NET PAY
322
DEBT MANAGEMENT
324
DISTRIBUTE PAYMENTS
END

Figure 4

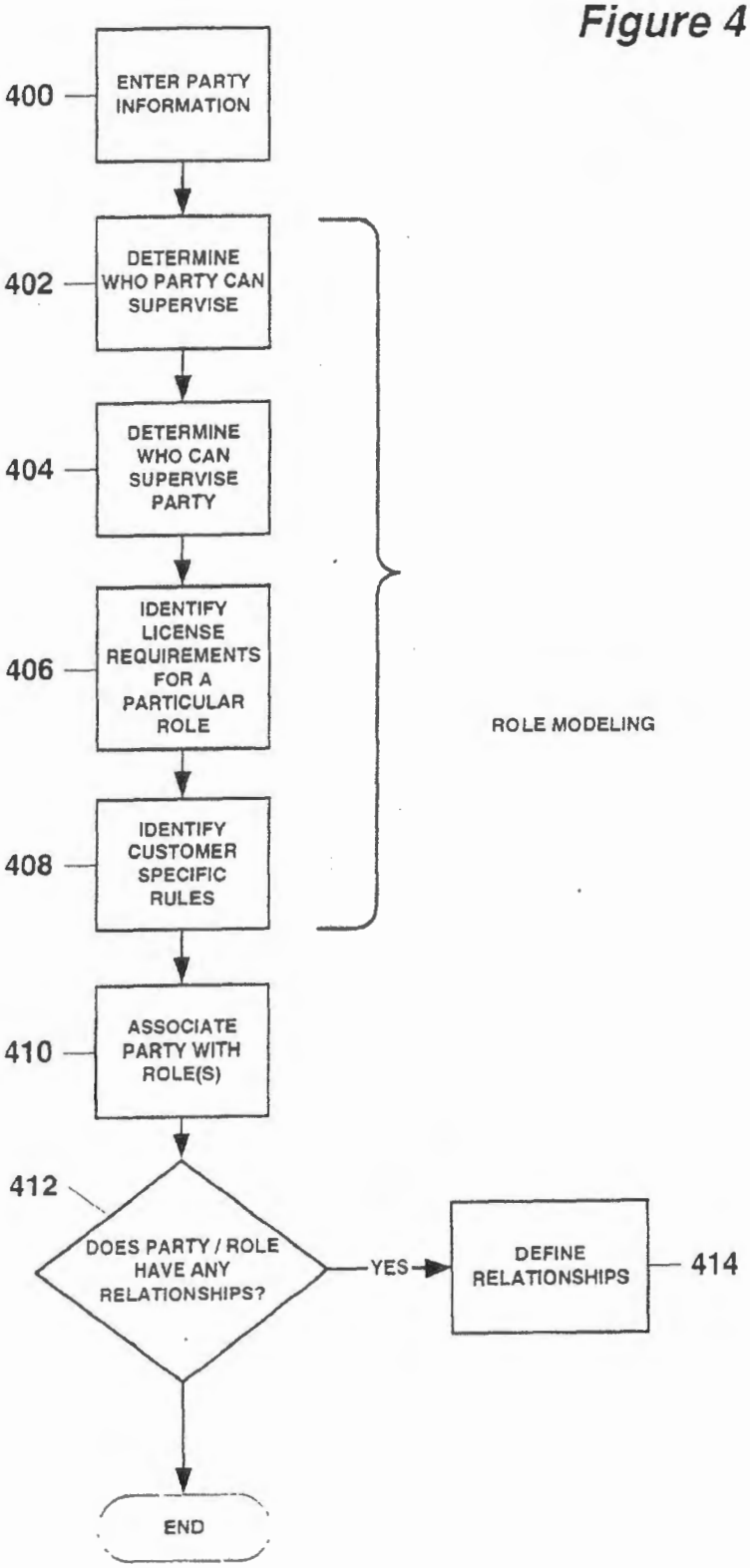

400
ENTER PARTY INFORMATION
402
DETERMINE WHO PARTY CAN SUPERVISE
404
DETERMINE WHO CAN SUPERVISE PARTY
406
IDENTIFY LICENSE REQUIREMENTS FOR A PARTICULAR ROLE
408
IDENTIFY CUSTOMER SPECIFIC RULES
ROLE MODELING
410
ASSOCIATE PARTY WITH ROLE(S)
412
DOES PARTY / ROLE HAVE ANY RELATIONSHIPS?
YES
DEFINE RELATIONSHIPS
414
END

Figure 5

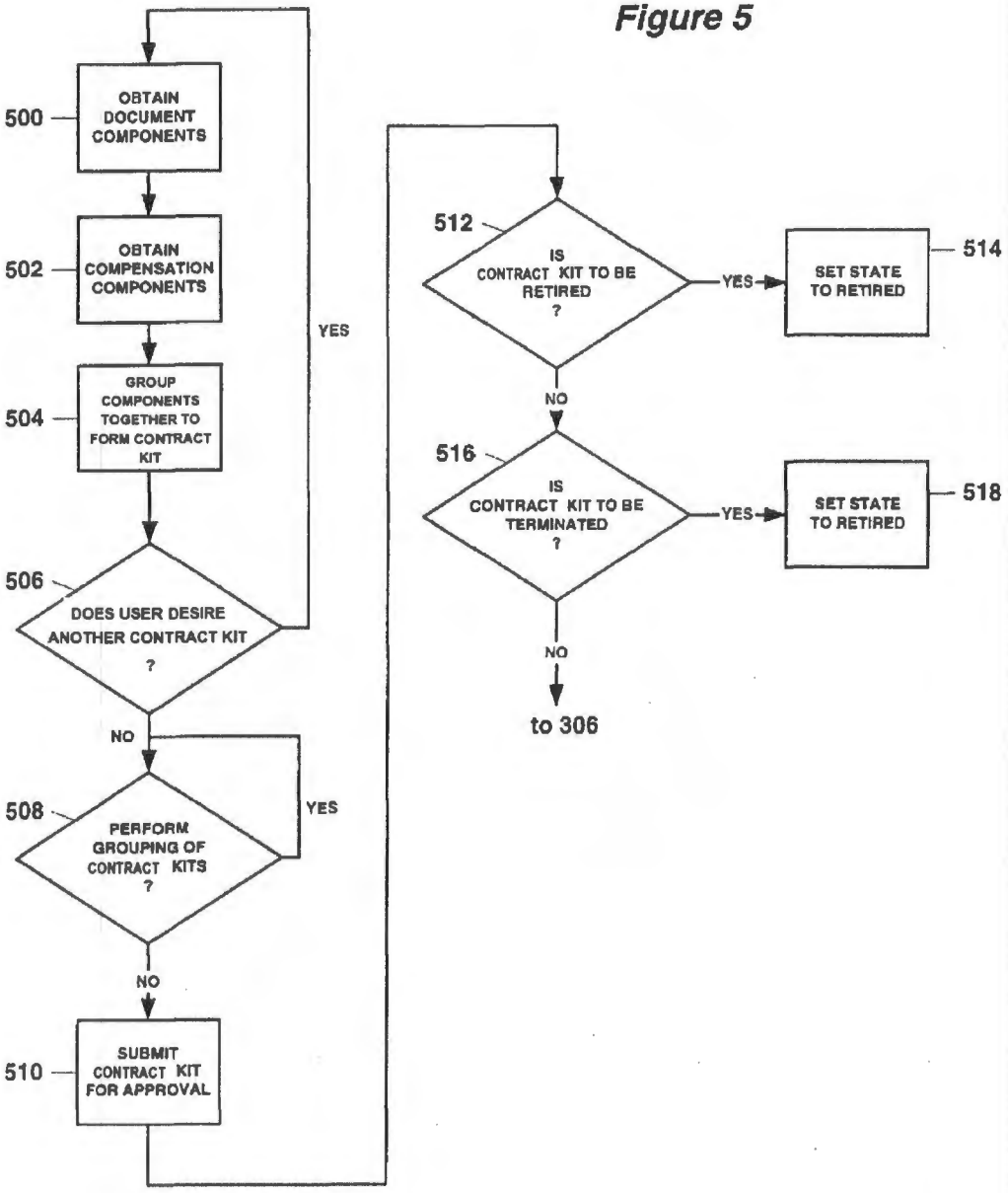

500
OBTAIN DOCUMENT COMPONENTS
502
OBTAIN COMPENSATION COMPONENTS
504
GROUP COMPONENTS TOGETHER TO FORM CONTRACT KIT
506
DOES USER DESIRE ANOTHER CONTRACT KIT ?
YES
NO
508
PERFORM GROUPING OF CONTRACT KITS ?
YES
NO
510
SUBMIT CONTRACT KIT FOR APPROVAL
512
IS CONTRACT KIT TO BE RETIRED ?
YES
514
SET STATE TO RETIRED
NO
516
IS CONTRACT KIT TO BE TERMINATED ?
YES
518
SET STATE TO RETIRED
NO
to 306

Figure 6

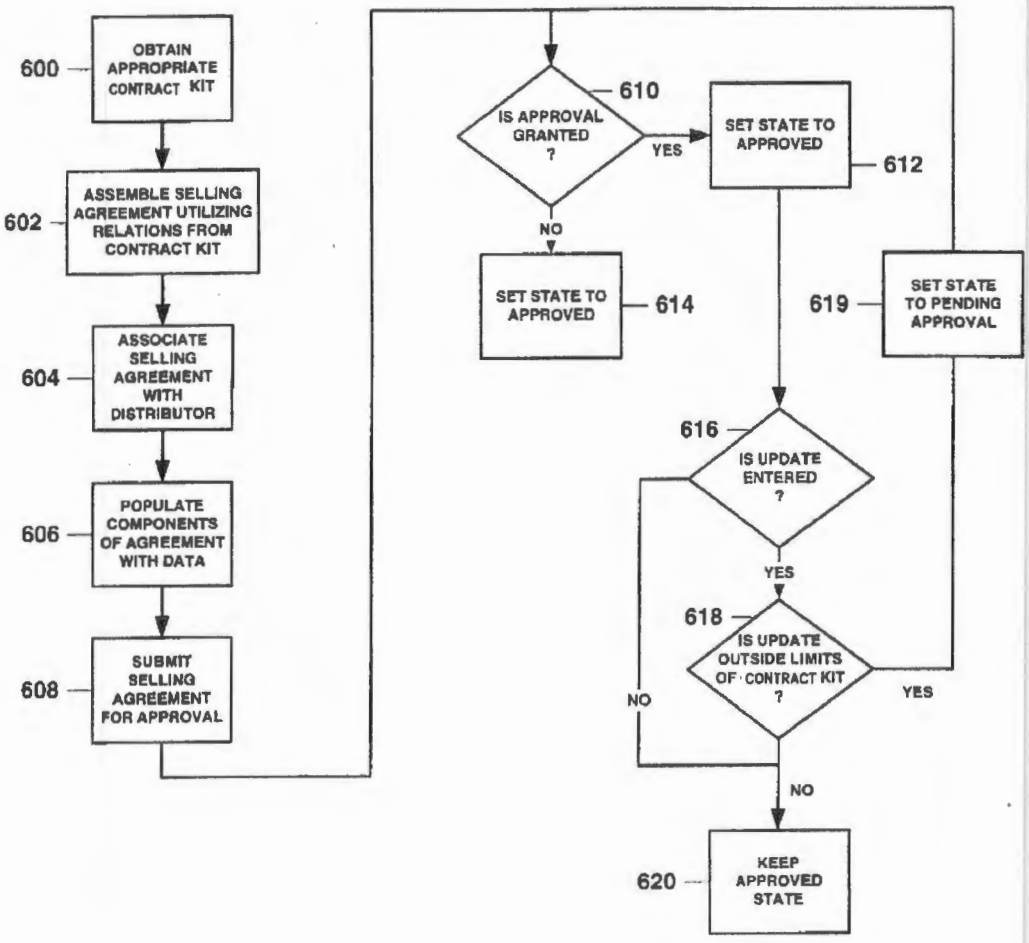

600
OBTAIN APPROPRIATE CONTRACT KIT
602
ASSEMBLE SELLING AGREEMENT UTILIZING RELATIONS FROM CONTRACT KIT
604
ASSOCIATE SELLING AGREEMENT WITH DISTRIBUTOR
606
POPULATE COMPONENTS OF AGREEMENT WITH DATA
608
SUBMIT SELLING AGREEMENT FOR APPROVAL
610
IS APPROVAL GRANTED ?
YES
NO
612
SET STATE TO APPROVED
614
SET STATE TO APPROVED
619
SET STATE TO PENDING APPROVAL
616
IS UPDATE ENTERED ?
YES
NO
618
IS UPDATE OUTSIDE LIMITS OF CONTRACT KIT ?
YES
NO
620
KEEP APPROVED STATE

Figure 7a

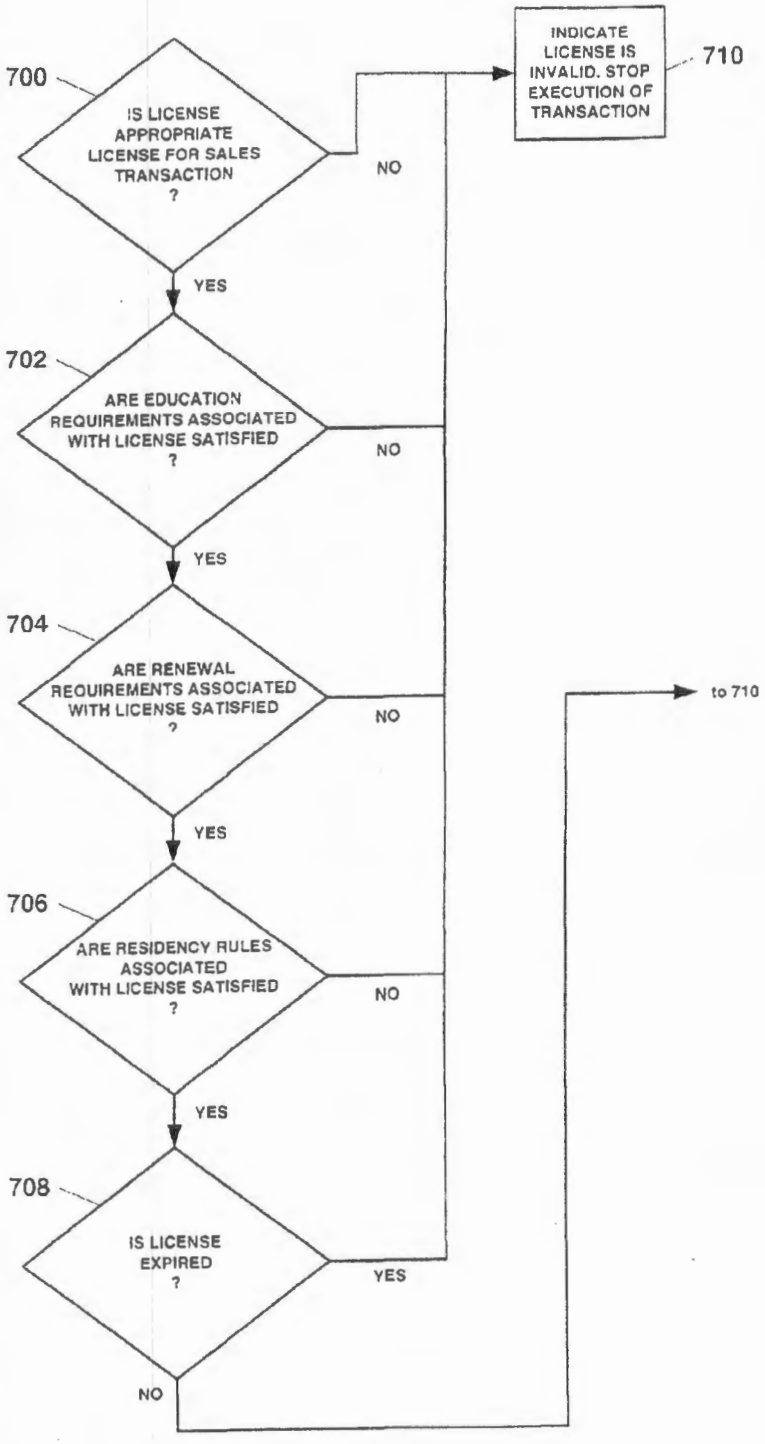
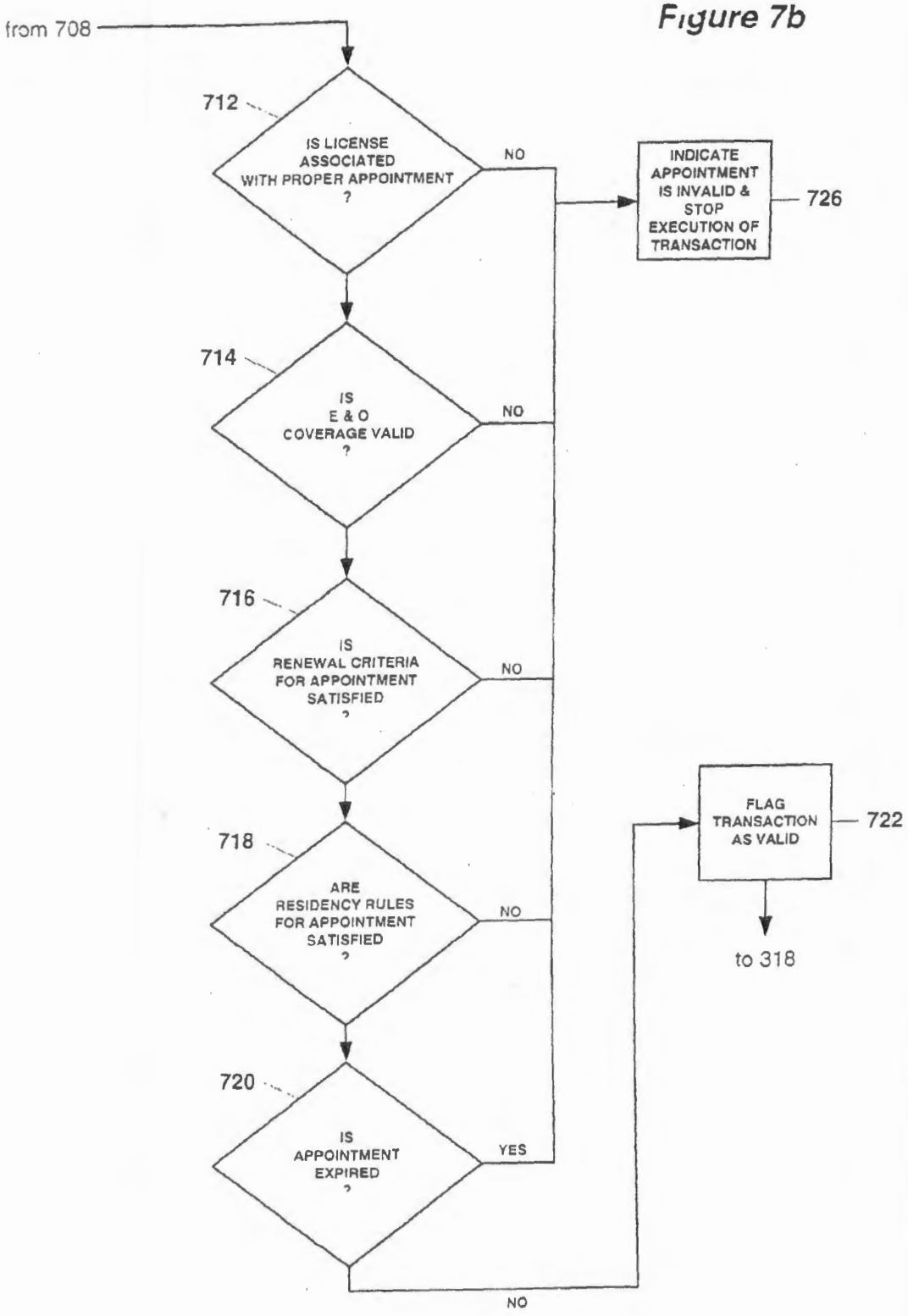

700
IS LICENSE APPROPRIATE LICENSE FOR SALES TRANSACTION ?
NO
INDICATE LICENSE IS INVALID. STOP EXECUTION OF TRANSACTION
710
YES
702
ARE EDUCATION REQUIREMENTS ASSOCIATED WITH LICENSE SATISFIED ?
NO
YES
704
ARE RENEWAL REQUIREMENTS ASSOCIATED WITH LICENSE SATISFIED ?
NO
to 710
YES
706
ARE RESIDENCY RULES ASSOCIATED WITH LICENSE SATISFIED ?
NO
YES
708
IS LICENSE EXPIRED ?
YES
NO

Figure 7b


from 708
712
IS LICENSE ASSOCIATED WITH PROPER APPOINTMENT ?
NO
INDICATE APPOINTMENT IS INVALID & STOP EXECUTION OF TRANSACTION
726
714
IS E & O COVERAGE VALID ?
NO
716
IS RENEWAL CRITERIA FOR APPOINTMENT SATISFIED ?
NO
718
ARE RESIDENCY RULES FOR APPOINTMENT SATISFIED ?
NO
720
IS APPOINTMENT EXPIRED ?
YES
NO
FLAG TRANSACTION AS VALID
722
to 318

METHOD AND APPARATUS FOR PROCESSING SALES TRANSACTION DATA

FIELD OF THE INVENTION

This invention relates to the field of computer technology. More specifically, the invention relates to a method and apparatus for performing processing sales transaction data.

BACKGROUND

Managing sales and distribution channels has become a difficult task in today's business environment where it is necessary to quickly and fairly administer incentives for salespeople and distribution channel partners while coping with regulatory issues. To keep revenues growing and keep up with customer demands, financial services providers have to move quickly even when regulation, competition and new sales distribution channels inhibit growth. Management is expected to provide new opportunities for improved revenues and margins, while providing customers with better, faster information and services.

The distribution channel model within the financial services industry is very complex. Products are sold across multiple distribution channels and the workforce is very fluid, with individual distributors working for multiple companies and engaging in multiple agreements with service providers. There are regulatory constraints on the sales force in that all distributors who sell products must be licensed and appointed, or authorized, to sell those products. Financial services companies must track all of this information about their sales force, maintain a history of all of this information, provide incentive based compensation to their sales force, and calculate their compensation based upon numerous variables. Consequently, any plan for distribution channel management must consider the number of channels, the number of distributors, compensation complexity, regulatory and licensing requirements and the number and types of products that will be sold.

Financial service companies are being driven by increased competition to consider the use of independent agents in place of captive sales staff. Firms may wish to enhance and reward cross distribution channel interactions. They must be able to enhance distributor reporting and communication and effectively manage independent brokers and captive sales staff. They must reduce the time required to market new products and implement new compensation plans and differentiate themselves based on services offered to customers. In addition, they must be able to rapidly integrate new distribution channel acquisitions and grow distribution capabilities, while reducing administration costs.

Cost avoidance is essential as mergers and acquisitions have led to many disparate systems, some of which are antiquated. Firms must reduce implementation time for new products and compensation plans on these antiquated systems and reduce the potential for overpayment. The goal must be a reduction in the overall cost of administration. Accordingly, these companies must interact with the producers (of sales) using preferred methods and quickly model new and creative compensation plans, while consolidating compensation administration systems.

In order to provide sales representatives with an incentive to sell as much as possible, or to sell more of a desired product or products at certain prices, sales organizations create incentive plans where commissions are provided or offered to the sales representatives when specific sales goals or targets are achieved during particular period of time. In addition, an incentive plan may apportion credit to everyone on a sales representative's sales team, to the representative's manager, or someone other than the sales representative himself. Sales representatives typically receive compensation based on a salary, the hours worked, and/or on the goods or services sold. When basing compensation on transactions, specifically on the goods or services sold, sales representatives receive a commission that can be based on profits, net sales, the number of products sold, or some other variable. Other primary compensation includes gross dealer concessions. Secondary compensation includes expense allowances, persistency bonuses and overrides that can be allocated among sales teams and accumulated over time if desired.

Sales compensation for direct and indirect channels can be one of the most effective levers for aligning sales performance with business goals. Unfortunately, designing and administering effective incentive programs is a difficult management challenge. The management of a business can spend a great deal of time and money in developing incentive plans. In the prior art, the creation and distribution of incentive plans is a slow process that is prone to error. It can take months to implement a new compensation plan, and dependencies on computer software can frustrate sales managers who want to make even simple changes. Moreover, a lack of measurement tools can make it impossible to develop a "closed loop", continuous improvement process. Businesses must be able to design, process, and communicate sophisticated incentive programs that drive revenue growth across all sales channels. Businesses need to streamline the administration of quotas, territories, and commissions, and also require tools to measure and improve the effectiveness of incentive programs. This would greatly simplify the management challenge of aligning tactical business performance with strategic objectives, making it possible to react more quickly and effectively to changes in market and competitive conditions.

Quotas are a necessary component of most sales compensation plans, yet they are notoriously difficult to administer, especially when they involve multiple hierarchies. Not only is it easy to introduce problems like double counting and under- or over-payment, but also changes typically require long turnaround times while they are implemented by changes in computer software. The management of sales quotas is difficult and there is a need to be able to manage them easily and accurately, allowing business users to assign quotas by territory or position and across multiple hierarchies. Managers also require a capability to accurately track sales results and forecast future performance. Needed elements include the ability to tie quotas between positions and sales teams or positions and territories, make sales projections, a provision for quick and easy quota setting and editing, and a simple interface for use from the field.

Managing sales territories involves analyzing past results, assigning territories, and forecasting future sales performance. For most organizations, it is a difficult and time-consuming process with the result that it is commonly only undertaken once a year. Unfortunately, market conditions change continuously, making it practically impossible to keep sales territories aligned with business needs for more than a short period of time. A more automated process for territory management is needed to allow large sales organizations to keep up with the market.

Another need of firms in financial services is an ability to manage sales producer payment accounts by defining multiple accounts per representative, setting up payment rules for each account and procedures for adjustments. Loan issuance against customer accounts must also be managed. Loan and repayment schedules, and appropriate records, must be maintained. As a part of this activity, it is necessary to track eligible compensation against parameters established for the loan and to be able to track collection of the loan and initiate charge-back and from the producer if appropriate.

In the area of distributor administration, firms also would like to manage a shared repository for all producer information, including personal information, professional information and preferences. There is a need to provide a view of the roles played by individuals with an organization, and active selling agreements and reporting relationships. Firms would like a centralized distributor repository in order to be able to view, report and compensate producer relationships individually and holistically. In addition, they must reduce errors or miscalculations leading to overpayment. At the same time, these firms must assist new agent distribution channels in learning how to sell new types of products and create new distribution capabilities for existing products.

Credential management is a critical issue for many firms. They must track professional accreditation including licenses, appointments, National Association of Securities Dealers (NASD) registration and continuing education requirements for the maintenance of these professional accreditations to ensure that they are represented by appropriately credentialed representatives. This need is made more acute by constantly changing government rules and regulations, as well as by different regulations imposed by the different jurisdictions in which a firm operates. Firms must determine when renewal processing is required and manage new and renewal application processes to ensure regulatory compliance in every jurisdiction. A further problem is presented by representatives who may move from jurisdiction to jurisdiction in the course of their representation of a firm. Further, there is substantial turnover in representation resulting in a continuing need to ascertain the credentials of new representatives as well as to maintain contact with former representatives in the event that issues arise from their former representation.

In order to appropriately manage their representatives, firms must also be able to create customized contracts and selling agreements by combining reusable compensation components and personalizing agreement templates to fit individual producers. A selling contract defines a hierarchy of sales people that can sell products under that contract and it defines what products can be sold under that agreement. The selling contract also specifies commission schedules and identifies which sales people participate under a particular commission schedule. As multiple versions of such agreements may come into use over time, a procedure is needed to allow multiple users to maintain agreements through versioning, or version control, and a method must be provided to manage the approval process for agreement components and templates.

Any distribution management channel solution, in order to be useful, must have a capability for error correction, including manually inputting and adjusting all transaction information, making retroactive adjustments and viewing and managing ledger items. Other features that are desirable include the ability to cancel and rerun transactions.

Many financial services firms would like to be able to communicate distribution channel management information over the Internet so that producers can view the state of their

relationship with a firm, including profile information, licenses, appointments, product information, contract and compensation information. Firms would also like to be able to perform modeling and "what if" analysis and have the ability to capture historical data to make strategic decisions about the effectiveness of future plans. A set of Web-based incentive management products that can be deployed to practically any sales or distribution channel would be useful. Such tools could greatly simplify the burden of designing, forecasting, launching, measuring, and refining incentives programs.

Computer software is necessary to implement the solution to these problems and fulfill the perceived needs just described. Such software commonly utilizes multiple related functions and data structures. To encapsulate these related functions and data structures, the software often utilizes a standard object oriented progranuning (OOP) language approach. in conclusion, there is a need for a solution, implemented on a computer in an object oriented programming environment, that manages the contracts between the manufacturers of a product, which may include financial services, and the distributors of their product in an industry where there is multiple channel selling, a fluid workforce, and regulatory constraints. This solution should track information, such as contact points, payment methods, and the organizational hierarchies, on all parties in the system. It must manage regulatory information and ensure that distributors are licensed and appointed to sell the products manufactured, or distributed, by the provider. In addition, the solution must allow for compensation configuration and provide financial services companies with a toolkit for creating and modeling their complex commission schedules used to compensate their sales forces. This should include a provision for charge-back of commissions if appropriate. Also, the solution must model contracts between the financial services company, or provider, and the distributors who sell the products. The solution must calculate compensation for all distributors and should allow for access through the Internet.

SUMMARY OF THE INVENTION

An embodiment of the invention comprises an extensible method for managing relationships between institutions (e.g., manufacturers/supplier) associated with a product or service and the distributors of their product. Aspects of the invention are targeted at industries where there is multiple channel selling, a fluid workforce, and regulatory constraints upon products sales. For example, systems embodying the invention provide a way to manage the agreements that financial services companies have with the distributors who sell their products. Thus, organizations such as life insurances companies may utilize embodiments of the invention to manage the sale and distribution of life insurance plans in a way that coincides with the regulatory constraints put in place on such sales by government organizations.

The invention provides a way to track information about distributor's sales force, ensure that regulatory constraints are followed, maintain a transaction history of the information associated with multiple products, provide incentive based compensation to the company's sales force, and calculate sales force compensation based upon numerous variables.

One or more embodiments of the invention comprise a system executing with a computer. The computer system is configured to process transaction data by obtaining data associated with an institution (e.g., a financial institution) that has one or more instruments (e.g., product or services) it wishes to sell through a distributor. The distributor comprises a plurality of sales representatives that earn commissions for sell-

ing such products. The commissions earned and any other constraints imposed on the sales representatives may be defined within a selling agreement that is generated using the system. In one embodiment of the invention, the system generates each selling agreement utilizes a set of components representative of the type of agreement formed between the institutions and the distributor. The system may present the selling agreement to representatives associated with the institution and distributor upon completion of the agreement. The components of each selling agreement contain an associated rule set that enables a configuration engine to generate an appropriate document. The system may also contain a set of regulatory conditions that must be met for each sale made by the sales representatives. Examples, of such regulatory conditions include licenses or appointments associated with the sales of the product the selling agreement relates to. The system verifies that licenses or appointments are valid (e.g., continuing education credits are satisfied, license renewed, residency requirements satisfied, etc . . .).

When the selling agreement and the regulatory information is entered into the system, embodiments of the invention may be utilized to process sales transaction data to ensure that the terms of the selling agreement are followed (e.g., commission are appropriately paid) and that regulations relating to such sales are satisfied. For instance, embodiments of the invention may capture data associated with sales performed by a the sales representatives; determine if that transaction data conforms to a set of regulatory conditions associated with the sales; compute a plurality of compensation amounts based on the sale transactions data and the regulatory conditions; and execute a payment process to compensate said plurality of sales representatives for said sales.

DESCRIPTION OF THE DRAWINGS

FIG. **1** illustrates a block diagram representing an embodiment of a system that utilizes the Distributor Management System Suite.

FIG. **2** illustrates the relationships between manufactures or suppliers of products and distributors in accordance with an embodiment of the invention.

FIG. **3** illustrates the relationships between manufactures or suppliers of products and distributors in accordance with an embodiment of the invention.

FIG. **4** illustrates the relationships between manufactures or suppliers of products and distributors in accordance with an embodiment of the invention.

FIG. **5** illustrates the relationships between manufactures or suppliers of products and distributors in accordance with an embodiment of the invention.

FIG. **6** illustrates the relationships between manufactures or suppliers of products and distributors in accordance with an embodiment of the invention.

FIG. **7***a* is a process flow that illustrates some of the decisions that may be made when checking the validity of licensing or appointment credentials in accordance with in embodiment of the invention.

FIG. **7***b* is a process flow that illustrates some of the decisions that may be made when checking the validity of licensing or appointment credentials in accordance with in embodiment of the invention.

DETAILED DESCRIPTION

A method and apparatus for processing sales transaction data is described. In the following description numerous specific details are set forth in order to provide a more thorough understanding of the present invention. It will be apparent, however, to one skilled in the art, that the present invention may be practiced without these specific details. In other instances, well-known features have not been described in detail so as not to obscure the invention.

System Overview:

An embodiment of the invention comprises an extensible method for managing relationships between institutions (e.g., suppliers/manufacturers) of a product or service and the distributors of their product. Aspects of the invention are targeted at industries where there is multiple channel selling, a fluid workforce, and regulatory constraints upon products sales. For example, systems embodying the invention provide a way to manage the agreements that financial services companies have with the distributors who sell their products. Thus, organizations such as life insurances companies may utilize embodiments of the invention to manage the sale and distribution of life insurance plans in a way that coincides with the regulatory constraints of government organizations.

Such companies can utilize embodiments of the invention to track information about the company's sales force, maintain a transaction history of the information associated with multiple products, provide incentive based compensation to the company's sales force, and calculate sales force compensation based upon numerous variables. For example, the system referred to hereinafter as Distributor Management System Suite (DMSS) comprises a suite of applications that provide tracking information, such as contact points, payment methods, and organizational hierarchies on all parties in the system, managing regulatory information and ensuring that distributors are licensed and appointed to sell the products manufactured by the provider.

In one embodiment of the invention, DMSS comprises a suite of multiple engines and modules each configured to provide functionality that helps manage the flow of information between distributors and suppliers. Generally, DMSS provides users with a mechanism for managing information related to distributors, validating and tracking licenses, creating customized contracts, and maintaining compensation structures. To perform such functions the system configured in accordance with one embodiment of the invention stores information such as contract components and rules, distributor financial information, bonus schedules, and license and appointment data. The engines and modules of DMSS may, for example, be configured to perform at least the following functions:

1) Provide financial services institutions with the means to maintain organization hierarchies associated with parties on the system (e.g., distributor records), track information such as contracts, and payment methods (e.g. how a distributor is paid).
2) Manage regulatory information and ensures that distributors are licensed and appointed to sell the products manufactured by the provider.
3) Perform compensation configuration. It provides financial services companies a toolkit for creating and modeling their complex commission schedules used to compensate their sales force. For example, the system may calculate compensation for all distributors by building on top of a commission engine and using the engine, the commission models, and the agreement models to calculate the compensation for all of its sales force.
4) Models agreements or contracts between the financial services company or provider and the distributors who sell the products. These agreements are termed 'Selling Agreements'. A selling agreement defines a hierarchy of sales people that can sell products under that contract, it

defines what products can be sold in that agreement, it defines what commission schedules can be used in that agreement, and it defines which sales people participate in which commission schedule. The DMSS may utilize the terms defined in selling agreements to calculate compensations for all distributors.

5) Managing information related to distributors, validating and tracking licenses, creating customized contracts, and maintaining compensation structures. The information stored in the DMSS database comprises information such as contract components and rules, distributor financial information, bonus schedules, and license and appointment data.

6) Manages payment and debt to distributors/sales representatives (e.g., net-pay and debt management).

In accordance with one embodiment of the invention DMSS is built on top of a commission engine configured to model and calculate commission for the sales force. A commission engine takes two inputs, a commission model and a set of transactions, and generates ledger items (that correspond to payments) as output. Each transaction represents a physical sales transaction, such as distributor selling a life insurance policy. The commission model represents two critical pieces of data: the sales team hierarchy and the commission schedules. The sales team hierarchy comprises a hierarchy of all sales people that will be responsible for a transaction. The commission schedules define formula for translating transactions into ledger items. Commission schedules may be modeled through quota, bonus, and plan objects. The commission model utilized in one or more embodiments of the invention is described in further detail in pending patent application Ser. No. 09/081857, entitled "Method and Apparatus For Determining Commission", which in incorporated herein by reference.

DMSS complements the commission engine in that it provides a mechanism for modeling selling agreements with commission models. In accordance with one embodiment of the invention, at least one commission model exists for each selling agreement in DMSS. Agreement hierarchies are modeled within the sales team hierarchy. The agreement commission schedules are stored in accordance with one embodiment of the invention in the commission model's quota, bonus, and plan objects.

The commission schedules used in an agreement are often the same or similar across agreements. Therefore, the agreements are put together from contract kits. A contract kit contains a set of commission schedules (also referred to as compensation components) that can be used within an agreement. Each compensation component and contract kit is versioned, and the compensation component contains the commission schedule information needed to generate a complete commission schedule in the commission model. Each agreement is then created from one contract kit, and when the agreement is created a user can selected which components from the kit to include in the agreement. When a new version of a component or kit is created, a user can select to cascade the new version to all the agreements that use it, or to leave the agreement using the old version.

DMS provides additional functionality by allowing dependencies between models through linked hierarchies and pooling agreements. It is often common for one party to receive credit or rollup from somebody's work in a different agreement. This is accomplished through linked hierarchies. A distributor (Ted) in one agreement (AG1) make be linked to another distributor (Fred) in another agreement (AG2). This allows transactions for Fred and all of his descendants to also be credited to Ted.

It is also common for multiple parties to want to share work across agreements. For example, one may wish to use one quota to calculate qualification on a quota level, and another quota to calculate payout. In this example, one would want several parties performance to contribute to the qualification quota, even parties in different agreements. Pooling agreements provide this functionality, by pooling work from different agreement participants from potentially different agreements into one quota. An extensible object model in accordance with one embodiment of the invention provides a framework for representing such agreements.

System Components:

FIG. **1** shows a block diagram representing an embodiment of a system that utilizes the Distributor Management System Suite (DMSS) **105**. As shown in FIG. **1**, the DMSS comprises management modules **110**, a backbone **120** allowing data exchange between applications and databases, and between applications, a commission engine **125**, a number of additional data processing engines **140**, and data storage and storage management components **130**. The DMSS is also configured to allow for the addition of more applications and plugins **110** to provide additional services.

In an embodiment of the invention, the DMS comprises several modules and applications. In this example, the system is used by financial organizations to manage sales agreements, distributor credentials, and sales compensation. However, the reader should note that the system embodying the invention is also applicable outside of the financial services industry and that the term financial organization is utilized for illustrative purpose only. The invention is not limited solely to the financial services industry, but may be applied to other industries. For example, the system may be utilized in any business environment having a need to determine if individuals associated with a sale are appropriately licensed, compensated. The invention may also be applied to other business situations were companies must operate pursuant to the terms of an agreement.

DMSS comprises a DMS Database which may exchange data with modules and engines via backbone **120**. In accordance with one embodiment of the invention, backbone **120** comprises an information infrastructure used to integrate applications **110**, engines **140** and **125**, and databases **130**. Backbone **120** facilitates communication between data resources and modules, and integration of different computing equipment, including local networks, web interfaces, and back-office systems. Thus, backbone **120** provides a mechanism for maintaining data storage and retrieval, in addition to communicating changes and updates to the other modules. Backbone **120** is configured to retrieve data from the database in response to the needs of DMSS modules and engines and transmit that data to its requester. Backbone **120** provides an extensible framework suitable for building and integrating applications customized for the needs of individual clients. Backbone **120** receives information from the DMSS modules and acts on it, storing the resulting object or sending it back to the module. As modules perform their tasks and functions, the backbone communicates changes and updates to the rest of the applications. Backbone **120** also provides communication between the modules by sharing data and functions. The DMSS and other applications **110**, engines **140**, and databases **130** may execute bi-directional requests and responses across backbone **120**. Backbone **120** is configured to retrieve data from the database in response to the needs of DMSS modules and engines and transmit that data to its requester. Backbone **120** eliminates some of the need for developing

custom code, and allows developers to integrate new applications without knowing all the other applications in the system.

Engines **140** and **125** may be launched by the DMSS modules via the backbone and draw information from the DMSS databases. The engines process the information, and store the resulting object in a database or the backbone for further use by the DMSS modules and engines. A commission engine **125**, configured in accordance with one embodiment of the invention, utilizes backbone **120** to gather information about agreements from the database. Commission engine **125** may, for example, identify relevant data in the database and produce a set of objects. Once the engine has processed all the objects, commission engine **125** can generate payments based on the agreements.

Workflow process engine **146**, operating in accordance with one embodiment of the invention, starts and responds to workflow events received from the DMSS modules through backbone **120**. Workflow process engine **146** completes the desired workflow event and sends that information back through backbone **120**. In an embodiment of the invention workflow engine **146** enables users to create and run one or more business processes. The processes may be created in a formatted data input (e.g. XML or Java) and become objects (business rules) in the backbone. The workflow engine **146** enables the flow of information in the DMSS and provides users with a customizable mechanism for creating business processes.

The DMSS may comprise a commerce configuration engine **144** that allows users to define and enforce the set of rules governing how contract kit components (e.g., document components and compensation components) are combined into agreements for each distributor. The internal processes utilized by configuration engine **144** are described in further detail in U.S. Pat. No. 5,825,651, entitled "Method and Apparatus For Maintaining and Configuring System", which in incorporated herein by reference. The commerce configuration engine **144** utilizes the contract kit for creating agreements between a distributor and a financial services company.

A reporting engine **142** may be added to the DMSS and configured to generate reports and store such reports in the database. Each component of an agreement has a corresponding document, generated from report templates, which describes that component. The DMSS may also have additional modules comprising a distributor administration module **115**, a license and appointment module **116**, a selling agreements module **117**, a debt management module **118**, and a payment module to which is may be referred to also as Net Pay module **119**. These modules interact with backbone **120** and engines to maintain relationships between financial services institutions and their distributors.

In one embodiment of the invention, distributor administration module **115** enables a financial services institution to record and track a broad set of information associated with the institution's distributors. The distributor information may be stored in a central database and used by all other modules of the DMS suite. Distributor information may comprise personal contact information (e.g. address, telephone, facsimile, email etc.), including information about multiple contact points, information from background checks (e.g. education, previous relationships with financial services institutions, personal credentials etc.), financial information (e.g. bank address/account information and payment, advance, repayment history etc.), license and appointment information (e.g. state and product eligibility), including current and historical license and appointment data, information about errors and omissions coverage.

Distributor information may also comprise any other type of information associated with the distributor and/or the sales of product on behalf of the institution. Distributor administration module **115** may also provide services for creating and managing distributor database information, setting up organizational entities, such as sales teams, placing individual distributors in the teams, modifying the distributor information, and creating and managing a repository for data about selling agreements established between the financial services institutions and distributors. Also, distributor administration module **115** may provide services for defining and managing relationships between different organizations (e.g. such as the financial services institution and a distributor or between regional directors and sales offices), identifying and managing calendar-based events associated with distributors such as selling agreement, licensing, and appointment renewals, background check renewals, and errors and omissions coverage renewals.

A licensing and appointments module **116** may also be integrated into the DMSS and configured to enable financial services institutions to manage the license and appointment credentials for distributors and to validate compliance with industry regulations. The licensing and appointment rules enforced by the DMS suite are applied to distributors managed by the system, whether they are employees of the financial services institution or employed by an external distributor. However, the licensing and appointment rules may be selectively enforced in the event that a user defines a set of rules defined a decision tree for performing selective enforcement.

Licensing and appointments module **116** may also provide several services comprising defining license/appointment types by company, state, and either product or product line, determining the license and appointment requirements for producers (e.g., distributors or sales representatives) based on their state of operation, the products the producer sells, the kind of compensation paid to such producers and their role, monitoring license and appointment information associated with individual producers on a calendar and schedule basis and determine when renewal application processing is required, managing the license application process for renewals, updating licenses (e.g. for new products or states). In one embodiment of the invention, licensing and appointments module **116** includes the documentation and workflow for the application approval process providing services comprising managing the appointment application process for both renewals and new appointment requests, including the documentation and workflow for the application approval process, providing license and appointment checking as required (e.g. for sales compensation or processing new business), validating that licensing/appointment requirements are met and holding activity until requirements are met.

When selling agreements module **117** is integrated into the DMSS in accordance with one embodiment of the invention, the selling agreements module **117** enables a financial services institution to define and create individual business contracts with distributors. A selling agreement defines the scope and terms of the relationship between the parties involved, commission and bonus schedules, and documents describing the relationship. In one embodiment of the invention, each selling agreement defines a hierarchy of sales people that can sell products under that contract, it defines what products can be sold in that agreement, it defines what commission schedules can be used in that agreement, and it defines which sales people participate in which commission schedule. Selling agreements are built from pre-defined contract kit components customized during negotiations. For example, a selling

agreement may be formulated using contract kits comprised of components such as compensation components and document components. Each selling agreement is assembled by the system using rules (e.g., a component may be required, optional, or standard) defining the relationships between each of the components. Compensation components define the commission structure associated with a product to be sold and document components provide other information related to the agreement (e.g., contract terms etc . . .).

The distributor's performance is measured and commission is paid according to the terms of the agreement (e.g., defined in compensation components). In an embodiment of the invention, customizable contract kit components enable a financial services institution to define the content of contracts and the processes by which they are administered. The kits detail the rules and documentation required for the administration of the agreement. A financial services institution defines the events that may occur and provides a set of possible responses to each event using various contract kit components. Selling agreements module **117** may use contract kits to perform several tasks comprising: defining agreements that consist of contract components, defining the set of rules governing how contract kit components are combined into selling agreements for each distributor, managing the approval process for contract kit components and contract kits prior to their promotion to active use, activating contract kit components and contract kits for use, retiring contract kit components from active use, integrating with the commission engine to enable compensation calculations based upon the parameters set in the selling agreement.

In an embodiment of the invention, DMSS comprises an integrated debt management module **118** which enables a financial services institution to manage distributor advances and repayments. The debt management module enables a user to define and manage the business rules and parameters for the approval and payment of advances (e.g., via an interface). A user may make adjustments to advance balances based on actual value received from commission and accelerate repayment schedules if commissions are insufficient. The debt management module enables a user to define the rules and parameters associated with advances. The debt management module enables a user to define the following: classes of distributors who qualify for advances, qualification criteria for advances (e.g. the distributor's length of service, sales history, and past earnings), ratio of advances to projected income, taking into account any outstanding advances, repayment schedule and interest rate to be paid, source of repayment income or the policy the advance is to be recouped from, whether the amount is a percentage or flat rate, accelerated repayment schedules. For example, if a distributor's income projections fall below repayments, a user may modify the repayment terms, a user may also perform other activities such as initiating advances and repayment schedules, and tracking performance of debts.

The DMSS may also comprise a payment module **119** that enables financial institutions to track and calculate payments to distributors. Payment module **119** (also referred to as a net pay module) determines a distributor's net pay by adjusting the party's total earned compensation (calculated by commission engine **125**) according to a set of payment adjustment rules. The commission engine utilized in one embodiment of the invention is described in further detail in pending patent application Ser. No. 09/081857, entitled "Method and Apparatus For Determining Commission", which in incorporated herein by reference. These rules can be used to capture repayment schedules for outstanding debt, and transfer payments to an alternate payee. In accordance with one embodiment of the invention, payment module **119** also allows splitting up net payments into individual disbursements, directing different parts of compensation to different accounts.

In one embodiment of the invention DMSS may also comprise a user manager application **140** which defines and restricts user access and usage of the DMS suite. The system may use role-based access control, where roles are given specific permissions to data and entities. Users of the DMS suite have several levels of usage and control in the application based on the pre-defined roles. A user may customize these roles through the application user manager **140**. In an embodiment of the invention, a workbench application **113** is provided to enable users to view and manage sales transactions and distributor performance data, and to run the DMS engine.

The DMSS comprises, in addition to modules and engines, a set of user interfaces **150**. User interfaces comprise a browser-based system for managing the DMSS applications. This browser-based system may be implemented using any network enabling communication protocols and applications. For example, the browser-based user interface may include Java Server Pages, script based common gateway interface or any application capable of accessing the databases and producing intangible data that can be rendered by a client browser.

Information Types:

In an embodiment of the invention, the DMSS comprises several types data stored in the databases and corresponding modules, and used in module-to-module, module-to-engine, and engine-to-engine communication. The system may represent such data in data objects. Compensation data and compensation rules data objects **132** store information for the agreements module of the DMSS. This data may include contract components such as quota levels, bonus rules, and commission-based rules for eligibility. Distributor data and producer data objects **133** store information about a financial services institution's distributors for the distributor administration **115** and the other modules of the DMSS. This data includes contact information, background checks, continuing education credits, and financial information.

Selling agreements data and selling agreement rules data objects **134** provides sharing data with the Agreements module **117** of the DMSS. Information in this database includes rules for contracts between financial services institutions and distributors, data defining the terms of contracts, and commission and bonus schedules. License data and appointment data objects **135** are used by the license and appointments module **116** of the DMSS. This data includes license and appointment credentials and variations of license and appointment types (such as variations by state or product). The data is also used to validate that requirements for a license are met. Process rules data objects **136** contain information relating to the DMSS workflow service. This data includes agreement components and business rules and data. Report data objects **137** contain report data and agreement components and may share information with the report engine.

System Relationships:

FIG. **2** illustrates the relationships between institutions and distributors in accordance with an embodiment of the invention. An institution may represent any party acting as the manufacturer, wholesaler, retailer, or provider for products or services distributors sell. Each institution **200** has one or more products or services to sell and may establish one or more relationships with different distributors **210** in order to sell its products or services. Each distributor has one or more sales representatives for selling products on behalf of the institu-

tion. However, a distributor may also sell products on behalf of the institution without any sales representatives. A distributor as described herein is any entity that distributes or sells products on behalf of an institution. Institutions, distributors, and sales representatives may be collectively referred to as parties and individual referred to as a party. In accordance with one embodiment of the invention the relationships between the parties are defined in an agreement. Thus, embodiments of the invention provide a mechanism for defining the agreement as it relates to the product or service to be sold by the institutions. For instance, the agreement defines the compensation amounts to be awarded to sales representatives associated with the distributor when certain products are sold. Each institution **200** may have multiple distributors **208-212** and at least one agreement is established for each relationship. For example, distributor A (**208**) and supplier **200** operate according to the terms set forth in agreement A (**202**). In some instances, more than one agreement between each party may exist. Agreement **202**, for instance, may have a supplement or addendum **203** added at any time. Addendum **203** may also represent a separate agreement between the parties. In accordance with one embodiment of the invention, each distributor (**208**, **210**, & **212**) has one or more sales representatives **214-229** that are tasked with selling the product or service associated with institution **200**.

When an institution reaches an agreement with a distributor, the terms of that agreement are entered into the system. The system is configured to ensure that the terms of the agreement are followed for each transaction involved between the parties. These agreements are termed selling agreements (e.g., agreements **202-206**). In one embodiment of the invention selling agreements are contracts between an institution and a distributor that grant the distributor the right to represent the institution in the sale of certain products. It includes details about the conditions under which certain products may be sold, standards of conduct, and compensation schedules. It may also include distributor information such as contact points, financial information, and license and appointment pointers. Each selling agreement defines a hierarchy of sales people that can sell products (e.g., products **200***a*, **200***b*, **200***n*) under that contract, it defines what products can be sold in that agreement, it defines what commission schedules can be used in that agreement, and it defines which sales people participate in which commission schedule. Each institution may sell any number of products or services and there may be many different institutions.

When a sales representative sells a product the sales representative is compensated based on the agreement the distributor that sales representative works for has with the institution providing the product. If, for example, sales representative **225** sells a product on behalf of distributor C (**212**), sales representative **225** will earn a commission amount specified in agreement **206**. The system embodying the invention contains data representative of the agreement (e.g., agreement **206**) and utilizes that data to determine compensation amounts associated with each sales transaction.

When a sales representative changes distributors (e.g., starts working for a different distributor), that sales representative is associated with a different selling agreement. For example, if sales representative **224** stops working with Distributor C and begins working with distributor B (**210**), the selling agreement that sales representative is working pursuant to changes from agreement C (**212**) to agreement B (**204**). If the two agreements contain differing terms, the sales representative becomes subject to the differing term once that representative begins working for a different distributor. In accordance with one embodiment of the invention, the system tracks such changes and adjusts the compensation amounts accordingly.

Process Flow:

A) Define Parties and Party Roles:

To define a selling agreement, the information about the parties involved in selling a particular product are created and then defined (e.g., at step **300**). The process of creating and defining parties is illustrated in further detail in FIG. **4**. For instance, each party in the distribution channel hierarchy is defined by entering identifying information about the party (e.g., step **400**). A party is an entity that can represent an individual, organization or financial services institution. Identifying information includes things such as the parties name, address, type, or any other information about a party.

Once the party information is entered into the system the each party may be identified with a role (e.g., step **408**). A party may have one or more roles assigned to it. Roles indicate how a party fits into the corporate organization (e.g., identify a party's business purpose). In one embodiment of the invention, each party is associated with one of the following default roles: distributor, employer, employee, financial services organization, alternate payee. For instance, designating an individual as an employee of a distributor indicates the employee may be subject to a selling agreement the distributor has with a certain institution.

Designating a party as a distributor indicates that party is an individual or organization that may be licensed and appointed to sell products (e.g., insurance) for a manufacture or supplier (e.g., a financial services institution). The distributor receives direct or indirect compensation for the sale and delivery of the product or service of a financial services institution. Institution **200** can be either the main provider of financial products or a subsidiary of the main provider. Distributors are not examples of an institution. Roles are modeled as part of the deployment of the system. When defined for an implementation of the system, these rules include, for example:

- A statement of who can supervise that role (e.g., step **402**), and by whom it can be supervised (e.g., step **404**). For example: role R must supervise role Re and role R must be supervised by role Rm.
- The license requirements for a particular role (e.g., step **406**). For example, role R requires license L.
- The set of role rules associated with a specific implementation of the system can be extended to include customer-specific rules (e.g., step **408**). Thus, the system is extensible such that other roles can be created. At deployment, the system may be customized for the specific needs of each installation and adapted to complement the company's business practices.

Once the role is modeled, each party is associated with a particular role (e.g., step **410**). For example, a party is designated as a distributor, employer, employee, financial services organization or alternate payee.

In some instances, roles can also have defined relationships. If a role is to have an associated relationship (e.g., step **412**), that relationship is defined in the system (e.g., step **414**). Relationships are used in the system to represent any arbitrary relation between two entities or objects in the system. For example, a relationship links a party role to another object, usually another party or an agreement. Relationships are date-effective and have a set type, which defines the relationship between the party role and the object. For example, a party with a role of Alternate Payee may be related as a "Beneficiary" to another party.

Referring back to FIG. **3**, once the party information and the roles associated with each party are defined, party mem-

ber information (e.g., sales representatives, mangers, organization members) is entered into the system (e.g., step **302**). One embodiment of the invention comprises a hierarchy management system that allows the user to enter and update arbitrary party hierarchies. A party hierarchy includes both organizational entities within the distribution channel and individuals (individual producers and supervisory/managerial positions). The hierarchy can also include individuals who do not play a sales or service role. Updates to party hierarchies include merging and splitting hierarchies. Updates to the sales hierarchy can have effective dates associated with them to allow future and backdated changes. This hierarchy management system includes the following set of business operations:

- Distributor hierarchy and information
- Record a new distributor
- Record and manage organizations
- Define and manage relationship between distributor and financial institutions/organizations
- Define and manage information associated
- Distributor and associated Distributor data records with a distributor
- Request background checks for a distributor
- Request Errors & Omissions (E&O) coverage information for a distributor
- License and Appointments: (the product, jurisdiction, and institution data associated with an individual is required in order to determine licensing and appointment requirements)
- Request and manage licenses for distributors
- Request and manage appointments for distributors
- Debt Management
- Manage advance information for a distributor.

B) Setup and Generate Selling Agreement:

Once the party information and the roles associated with each party are defined, an agreement that represents the working relationship between each of the parties is setup (e.g., step **304**). In one embodiment of the invention, each agreement is assembled of contact components. The process of setting up agreements is illustrated in further detail in FIG. **5**. The system provides the user with an interface for creating, viewing, retiring, and terminating contract components. There are multiple types of contract components. Contract components may represent the terms and conditions of a contract, or agreement. Components can be either textual or compensation plans and include rules regarding transactions, quotas, and bonuses. In one embodiment of the invention each there are document, compensation, or service components. To setup a selling agreement, the user identifies a set of one or more document components and one or more compensation components that may be utilized to define aspects of the relationship between the parties (e.g., at step **500** and **502**). Document components include the correspondence and documentation that describes the formal relationship between the institution and a distributor organization. Document components may also be referred to as textual components. Compensation components include the customizable compensation schedules that govern the credits and debits made against a distributor's accounts. In one embodiment of the invention compensation components are associated with the commission model discussed above. When components are group together a contract kit is formulated (e.g., step **504**). The contract kit contains the details required to represent the administration and obligations of an agreement. For example, each contract kit may represent a selling agreement that defines the relationship between an institution and a plurality of distributors. Thus, a contract kit may define which contract components make up a particular type of selling agreement and whether the components are required or optional. The user may continue to setup contract kits until the user does not wish to define any additional contract kits (e.g., step **506**).

An embodiment of the invention provides users with an interface for managing contract kits. The user may create (define components belonging to a contract kit), view, retire, and terminate a contract kit. Individual components may be grouped together to form groups of components (e.g., step **508**). For example, the user may associate components that relate to a particular product together. Other grouping by distributor, institution, or any other desirable grouping may be performed. Once all the groupings are complete or no more grouping are desirable, the contract kit may be submitted individually or in groupings for approval (e.g., at step **510**).

Once a contract kit is complete, it is submitted for approval. An authenticated user who has been given permissions to perform such approvals may approve contract kits. Thus, an embodiment of the invention contains a function that enable a user with the appropriate level of authority to approve or reject a contract kit or group of contract kits. If the contract kit is approved, the state is set to "approved"; if the contract kit is rejected, the user can associate notes with the contact. Users with the appropriate level of authority may also retire or terminate a contract kit. If the contract kit is retired (e.g., step **512**), the state is set to retired (e.g., step **514**), and it is no longer available for use in new active selling agreements. However, users can still update contract components and a retired contract kit. In these cases, once the updates are approved, the changes cascade to selling agreements based on the contract kit. If the contract kit is to be terminated (e.g. step **516**), the state is set to "terminated" (e.g., step **518**). When a contract kit is terminated, it is no longer available for use with any new or current active selling agreements. A contract kit can be terminated when all of the selling agreements based on it have been terminated. At this point the contract kit may be archived and removed from usage.

The system may utilize contract kits that remain in usage to generate selling agreements. In accordance with one embodiment of the invention, the system comprises a mechanism for creating selling agreements from a contract kit (see e.g., step **306** of FIG. **3**). The specifics associated with creating a selling agreement in accordance with one embodiment of the invention are illustrated in FIG. **6**. To create a selling agreement, the user identifies an appropriate contract kit from a group of one or more contract kit (e.g., step **600**). The selling agreement is then assembled from the contract kit according to a set of rules and constraints that enable the system to properly generate the agreement (e.g., step **602**). Each generated selling agreement is associated with a single distributor organization (e.g., step **604**).

Once created, the components of the selling agreement (documentation and compensation) can be populated or customized (e.g., step **606**). Once the user completes all required components, the selling agreement may be submitted for approval (e.g., step **608**). If the definition of the selling agreement is within the limits defined for automatic approval, the system changes the agreements state to approved; otherwise system submits the agreement for approval by an authorized user. Users with the appropriate level of authority (e.g., mangers or directors) may approve or reject a selling agreement (e.g., step **610**). If approvers have update authority, they may also update the components of the selling agreement. If the selling agreement is approved, the system sets the state to approved (e.g., step **612**); if the selling agreement is rejected, the user can append notes to the agreement and the state is set to rejected (e.g., step **614**).

Users may also update a selling agreement that is in the approved state (e.g., step **616**). If the updates go outside the limits associated with the contract kit on which the selling agreement is based (e.g., step **618**), the state is set to pending approval (e.g., step **619**) and the approval cycle is be performed (e.g., step **610**). Otherwise the state is kept as approved (e.g., step **620**).

One embodiment of the invention comprises a mechanism for performing analysis of selling agreements. Users with the appropriate level of authority may execute an analysis of selling agreements managed by the system. The analysis evaluates the state of the selling agreements and generates an exception list, which includes 1) contract kits awaiting approval, 2) selling agreements awaiting approval, and/or 3) retired contract kits with no active selling agreements associated with them. The user can structure the exception list so that different users of the system can view and respond to subsets of the full list. The system may also analyze selling agreements using historical database analysis to provide the ability to monitor profit and loss (P&L) for a selling agreement or for a group of selling agreements. An embodiment of the invention provides simulation analysis which may aid the selling agreement negotiation process by allowing simulated selling agreements to be created and their data manipulated to view the projected performance of a selling agreement.

C) Define Licensing and/or Appointments:

Referring back to FIG. **3**, once a selling agreement is generated licensing information is obtained and entered into the system (e.g., at step **308**). Licenses within an embodiment of the invention equate to physical licenses issued by jurisdictions (e.g., federal, state/province). To receive compensation for a sale, the system ensures that distributors are appropriately licensed and that each individual who receives compensation is appointed to make such sales (e.g., an agent). Licensing and appointments may also include those who sell or service products and others, like managers, who are paid based on someone else's sales. Continuing education credits track courses a distributor has taken. Companies may use these credits to help determine if a distributor meets appointment or license requirements. An institution is typically required when defining appointment types. (Institutions are parties in the system, just as individuals are). The system may also require a regulatory jurisdiction when defining license and appointment types. It identifies the geographical locations where licenses and appointments are applicable and valid. Jurisdictions are defined for the system in any manner conceptually linked to the licensing scheme. For example, the system may be configured to enforce federal, state, or local licensing schemes.

An embodiment of the invention comprises a mechanism for specifying licensing information and defining the rules that govern licenses held by parties. FIGS. *7a* and *7b* provides and example of some of the decisions that may be made when checking the validity of licensing or appointment credentials. (e.g., step **316**). For example, the user may specify rules that define the following types of information:

1. The educational credits required in order to hold a specific type of license (e.g., step **702**). For example, License L requires X units of education credit C.
2. The renewal requirements for a specific type of license (e.g., step **704**). For example, License L must be renewed every T units of time.
3. The residency rules associated with a specific type of license (e.g., step **706**). For example, License L is required in jurisdiction J. The user may associate license types with product types and a jurisdiction through license entries in a distributor's license record. The record may include <license type, product, jurisdiction>. Access to the license rules through the distributor license record enables the user to define information relating to the following questions, while factoring in such elements as the type of product to be sold or the state in which it will be sold:
   a) Is a distributor qualified to hold a license (for instance, does the distributor have sufficient educational credits)?
   b) Does the distributor have the right license to sell (e.g., step **700**), Licenses, Jurisdiction, Education Credits, Products service, or illustrate a product?
   c) Does the distributor have a license that will expire (e.g., step **708**) within a specified period of time?

If any of the above conditions indicate the license if not valid, the system executes step **710** where it stops execution of the transaction relating to the invalid license. Thus, the sales representative will not receive any compensation for invalid transactions. The system's licensing mechanism may be utilized to define licensing parameters relating to any party in the system (e.g., institutions, distributors, sales representatives, etc . . .).

An embodiment of the invention also provides a mechanism for identifying and defining the rules that govern appointments held by parties. For example, the user may specify rules that define the following types of information:

1. Does a specific appointment require a certain license (e.g., step **712**) ? For example, Appointment A requires license L.
2. Does an appointment require errors and omissions (E & O) coverage (e.g., step **714**)? For example, Appointment A requires E&O coverage by Distributor D.
3. What are the renewal requirements for a specific type of appointment (e.g., step **716**)? For example, Appointment A must be renewed every T units of time.
4. What are the residency rules associated with a specific type of appointment (e.g., step **718**)? For example, Appointment A is required in jurisdiction J. The association of an appointment type with a product type, a jurisdiction, and an institution is made in the appointment record associated with a distributor. The record specifies <appointment type, product, jurisdiction, institution>. The user can access the appointment rules through the distributor license record. These rules enable the user to determine outcomes associated with the following questions, while factoring in such elements as the type of product to be sold or the state in which the product will be sold:
   a) Is a distributor qualified to hold an appointment? For example, do does the distributor have sufficient E&O coverage?
   b) Does the distributor have the right appointment to sell a product?
   c) Does the distributor have an appointment that will expire within a specified period of time (e.g., step **720**)?
   d) What are the cancellation rules associated with an appointment? The set of appointment rules of the system software can be Appointments, Licenses, Products, Jurisdiction

If any of the above conditions indicate the appointment if not valid, the system executes step **726** where it stops execution of the transaction relating to the invalid appointment. If the conditions are met, the system executes step **722**, where it flags the transaction being processed as valid and passes the transaction data to commission engine for processing (e.g., step **318** of FIG. **3**: described in further detail below).

D) Transaction Processing:

Once the licensing and appointment data is defined. The system may be configured to process transaction data associated with the sale of different products. The system will ensure that the terms of the selling agreement are followed and that the licensing and appointment requirements are not violated with respect to each transaction executed by the system. Referring back to FIG. **3**, when an embodiment receives transaction data (e.g., at step **310**) that data is converted to interface with the system (e.g., at step **312**). Transaction data comprises the information associated with the sale of a product. The system is configured to process one or more transactions at a time and may perform transaction processing in batches if such processing is desirable. However, the invention also contemplates other forms of transaction processing and may, for example, process each transaction entered into the system when it is entered.

Step **312** may be performed in accordance with one embodiment of the invention by a transaction loader. The transaction loader converts the transaction data into a form that can be processed by the system. For example, the transaction data may be loaded into an object model configured to interface with the system embodying one or more aspects of the invention. The transaction data (e.g., transaction objects) may indicate which party sold what to whom and identify the appropriate agreements associated with the sale. For example in accordance with one embodiment of the invention, the transaction data identifies which distributor was responsible for the sale and what agreement that distributor is operating under. As step **314**, the system resolves the associations contained in the transaction data and thereby determines the scope of analysis to be performed by the system.

In one embodiment of the invention, input transactions refer to an Agreement Relationship ID that indicates which parties were involved in the transaction and what agreement is application. The Agreement Relationship ID is a customizable string value associated with every selling agreement relationship entered into the system. In the following example, the Agreement Relationship ID is made to be readable but unique.

Transaction 1	Transaction 2	Transaction 3
AgentCode = TexA4 Product = Variable Packaged: n/a	AgentCode = TexA4 Product = Variable Packaged: by Ed in A2	AgentCode = TexA3 Product = Traditional Packaged: n/a

To process the input transactions, the system embodying the invention provides a commission engine preprocessor, (referred to as the DMS engine). The DMS engine (or some other component of the system) evaluates the input transactions (e.g., in batches until all available have been processed) and for each transaction associates an agreement (e.g., agreement object) and sales team member (e.g., sales representative).

During the evaluation process the system determines whether the sales team member and the distributor associated with the transaction have valid credentials (e.g., step **316**). Credentials are evaluated according to the license and appointment rules stored in the system and associated with the distributor or sales representative responsible for the transaction. For example, the system may determine if the sales representative is appropriately licensed and if the distributor that sales representative works for has properly appointed that sales representative. The system may check to see if an individual in the distributor hierarchy has the necessary license and appointment. The license/appointment check is performed in order to compensate a distributor for a specific sale or service transaction. Compensation may be paid for events such as the following:

1. When the distributor wants to perform a product illustration.
2. At the time of new business installation.
3. At the point of service.

The system can also check on licenses and appointments for the distributor's supervisors. The system requires a license validation when appointments are processed. The logic associated with this function performs the following steps:

1. Determines the license and appointment requirements for the distributor based on the values of the product, jurisdiction, and institution parameters passed to the function.
2. Determines whether the distributor possesses the required license and appointment types, or a blanket assignment. For example, some states do not permit a corporation to be licensed require them to have a blanket assignment. The rules evaluation used to determine the required license and appointments can also include other factors such as the compensation type (for example, the first year commission or renewal), the residency of the distributor, or the role of the distributor.

If the credentials are valid, the system may perform commission processing. Otherwise an error results and the transaction associated with the error is not processed by the system (e.g., step **317**).

The system also identifies any other agreement objects affected by the input transaction. If the system locates an affected agreement object, it creates additional transactions that process compensation according to the newly identified agreement commission models. Once all input transactions have been associated with agreements, the system (e.g., DMS engine) invokes the commission engine and performs commission processing (e.g., at step **318**). Commission processing involves determining the amounts to be paid to parties involved in the transaction by processing the transaction based on rules defined by the selling agreement. The commission engine may utilize the commission model referenced above to determine the amounts paid.

When a transaction is processed the ID on the transaction is used to identify the agreement relationship related to the party or parties submitting the business. The agreement relationship provides access to the compensation component that references the commission model utilized in the agreement and identifies the parties involved in the transaction. The following table shows which distributors are compensated based on the compensation elements of some sample agreements. The shading highlights the effect of an agreement.

Case	Party A	Based-on	Party B	Based-on	Party C	Based-on	Party D	Based-on	Party E	Based-on
1	[illegible]	[illegible]	[illegible]	[illegible]	0	n/a	[illegible]	[illegible]	1%	Agmt 5
2	0	Agmt 4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1%	Agmt 5
3	[illegible]	[illegible]	0	n/a	[illegible]	[illegible]	[illegible]	[illegible]	1%	Agmt 5

For example, the table above illustrates that under agreement 1 (e.g., Agmt 1) Party D, will be compensated 1% for each of the 3 submitted transactions. Party A will receive 0 dollars under agreement 4, but receives 50% pursuant to agreement 3. Party B on the other hand receives 80% under agreement 4. The compensation component of agreement 2 defines that party C receives 15% of transaction performed under that agreement. Party C also receives 45% of transactions performed pursuant to agreement 3. Agreement 5 provides that Party E receives 1% of the transactions performed pursuant to the agreement. The compensation components associated with each selling agreement define the commission structures illustrated in Table 1.

When the commission amounts are calculated, the system may process the amounts using the debt management/payment modules to determine an actual amount paid to the user (e.g., step **320** and **322**). The functionality for determining payment taking into account any debts may be encapsulated into the debt management module and a payment module. The debt management module enables the user to administer and maintain the issuance, transference, and recovery of debt (for example, advances, draws, or loans). In addition to encapsulating these debt rules, the debt management module also provides an automated process for advancing funds according to debt rules defined in the system. Thus, the debt management module enables a financial services institution to manage distributor advances and repayments. For example, the debt management module may deduct an amount from the commission paid pursuant to a set of rules for debt repayment established by the user. So that the debt management module may perform this and other operations discussed above, the commission engine provides the debt management module with a set of ledger items 1 through N. These ledger items represent the outputs of the commission engine. The debt management module enables a financial services institution to manage party advances and repayments. With the debt management module, the user can define and manage the business rules and parameters associated with the approval and payment of advances. Users can also make adjustments to advance balances based on actual dollars received from commission and accelerate repayment schedules if commissions fall short. The debt management module also enables the user to define the rules and parameters associated with advances. In accordance with one embodiment of the invention, the user can utilize the debt management module to define at least the following items:

- Classes of distributors who qualify for advances.
- Qualification criteria for advances, such as the distributor's length of service, sales history, and past earnings.
- Ratio of advances to projected income, taking into account any outstanding advances.
- Repayment schedule and interest rate to be paid.
- Source of repayment income or the policy the advance is to be recouped from.
- Whether the amount is a percentage or flat rate.
- Accelerated repayment schedules. For example, if a distributor's income projections fall below repayments, the user may wish to re-negotiate the repayment terms to accelerate them. The debt management module also enables the user to perform activities such as initiate advances and repayment schedules and track performance of debts. The system identifies debts as performing or non-performing (no repayment activity). In one embodiment of the invention, the debt management module comprises a debt management viewer that enables the user to view debt management rules and data definitions, a debt management editor that manages debt management rules and data definitions. A debt management user with the appropriate level of authorization can review and approve financial debt management requests. The debt management engine automates the process of issuing and maintaining debt and may execute within a payment engine (described in further detail below) or individually instantiated and dispatched. In one embodiment of the invention the debt management module is executed as a background process (to perform routine debt management operations). However, users can also initiate the debt management process manually. When the debt management process executes it examines the states of financially related attributes of one or more parties managed by the system and makes debt-maintenance decisions based upon the predefined debt management rules active for each party.

One embodiment of the invention allows issuance of debt (e.g., advances, draws, or loans) for a party in a multiple step process. First the user has to set up debt issuance rules; these rules could apply to all parties in the system, group of parties or may be party specific. The user can also specify a rule based on some criteria in the object model. After setting up debt rules, debt could be issued to the party depending on their qualification. The system offers the flexibility to choose the method of payment for each debt being issued. Additionally, embodiments of the invention provide a method for approval of the debt, whereby debt repayment rules are introduced so that the debt could be repaid from the available earnings of the distributor. Debt collection mechanisms for defaulters are also provided. Debt management may also include the follow-up steps associated with an unpaid debt. Some examples of such riles include the following:

1. The user may define how long a debt may remain unpaid before the first notification is sent.
2. How long after the first notification before a reminder letter is sent.
3. How long after the reminder letter is sent before the collection agency procedure begins.

The system designed in accordance with one embodiment of the invention provides a mechanism that enables users with the appropriate level of authority to analyze advances (e.g., debts). This analysis evaluates the state of advances and generates an exception list. The exception list includes advances awaiting approval. The analysis can also include an assessment of actual advance repayment compared to projected repayment. The user can use this assessment to initiate the collection process for cases in which legal action is required. The exception list can be structured so that different users of the system can view and respond to subsets of the full list.

In an embodiment of the invention the functions for consolidating net payment are incorporated into a net pay module (executed e.g., at step **322**). The net pay module enables financial institutions to track and calculate payments to distributors. Thus, the net pay module provides functionality for initiating payments to parties defined in the system. For example, the module may determine a party's net pay by adjusting the party's total earned compensation (calculated by the commission engine described above) according to a set of payment adjustment rules. These rules can be used to capture repayment schedules for outstanding debt, model IRS garnishing, and transfer payments to an alternate payee. In accordance with one embodiment of the invention this module also allows parties to split up net payments into individual disbursements and direct different parts of compensation to different accounts. In one embodiment of the invention, the net pay module is associated with a net pay viewer that enables system users to view payment rules and data defini-

tions as well as a net pay editor which enables the user to manage payment rules and data definitions.

In one embodiment of the invention the net pay module comprises a payment engine that utilizes the ledger items created by the commission engine for a distributor as input. Thus, the payment engine is responsible for processing incoming compensation and debt issuances. For example, the payment engine may utilize ledger items to compute total compensation (i.e., payments) for the distributor, to distribute payments into accounts specified by the distributor, and to pay debts of the distributor. Once the commission amounts are processed by the payment system, the amounts earned may be distributed to the appropriate parties. The payment engine may also provide the ability to split the total compensation for a party into various methods of payments. These splits can be tracked by adding various constraints (related to a financial industries business model). The system user (which may be an authorized party) has the flexibility to model or customize the payment rule/constraints. Payment splits support pay-outs to alternate payee from funds of a party. The user may specify deduction rules which can be applied to party earnings to facilitate deductions for items such as taxes, mutual funds etc. The system comprises global deduction components, which form the template for adding deduction rules for a party.

Misc. System Functions:

A) Rule Processing:

In accordance with one embodiment of the invention, the system comprises mechanisms that enable the user to specify the functions that execute various types of rules on the information managed by the system. The user may specify the functions associated with executing rules against the information managed by the system. The system executes rules implicitly as a result of a user-driven change to the data state, or explicitly as a result of a calendar-scheduled event. The user may use arbitrary dates, or anniversary or expiration dates as a basis for the calendar-scheduled events. The user can also set up explicit function calls that result in the execution of rules. For example, the user may configure the system to evaluate the rules as a result of a change in the distributor hierarchy, contract kit change, or selling agreement change. In some instances, the system can be utilized to determine if a background check is required. The rules and outcomes determined by these rules are evaluated in accordance with one embodiment of the invention by a configuration engine. The rule processing performed by the configuration engine is described in further detail in U.S. Pat. No. 5,825,651, entitled "Method and Apparatus for Configuring Systems", which is incorporated herein by reference.

The system embodying the invention may utilize the configuration engine to process rules. For example, the user may execute rules associated with the position of individuals and their role(s) within the distributor hierarchy. The function includes the evaluation of the licensing and appointment requirements and rules for each individual. The rules associated with supervised and supervising individuals can also evaluated.

The system also provides a mechanism that executes the rules associated with the change of a contract kit. When a contract kit is changed, active selling agreements based on the contract kit may be evaluated against the new contract kit definition. This includes evaluating whether required components are present in the active selling agreement and whether the parameters associated with the active selling agreement are within the automatic approval limits set by the contract kit.

Embodiments of the invention provide functions for executing the rules associated with the change of a selling agreement. When a selling agreement is changed, the selling agreement is evaluated against the contract kit definition from which the agreement was derived. This includes evaluating whether required components are present in the selling agreement and whether the parameters associated with the selling agreement are within the automatic approval limits set by the contract kit.

If it is desirable to determine background information about a distributor, the user may execute the system function that determines whether a background check is required for a certain distributor. The role(s) associated with the distributor determine which decision rules are used in determining if a background check is required.

B) Information Analysis:

Embodiments of the invention may provide users with a technique for performing information analysis. For example, the system has multiple functions for analysis routines executed against the information managed by the system. During analysis, the system may track requests and status. A major component of the analyze information category is the tracking of requests and status. Analyzing information can result in the invocation of rules managed within the system. Some examples of the types of analysis functions the system may perform, and the type of data acted upon follow:

For example, the system may be utilized to analyze distributor hierarchy for tracked items: This function enables a user with the appropriate level of authority to execute an analysis of the distributor hierarchy. This analysis causes an evaluation of the distributor hierarchy rules and generates an exception list, which can be viewed. The user may define the set of exceptions during deployment. Examples of exceptions include:

- Distributors with no/invalid licenses or appointments, where one is required given their current role (including the time since expiration of the previous valid license/appointment).
- Distributors with licenses or appointments that will expire within a pre-determined period
- Distributors with educational credit requirements that will expire within a pre-determined period
- Distributors who have a grace period in which to acquire a license or appointment, or to complete educational credits
- Distributors whose grace period in which to acquire a license or appointment, or to complete educational credits, has expired
- Distributors whose E&O insurance will expire within a pre-determined period
- Distributor background check status
- Distributors without valid selling agreements
- Distributors whose selling agreements will expire within a pre-determined period
- Advances on which repayment conditions are not being met. The exception list can be structured such that different users of the DMS suite can view and respond to subsets of the full list.

Embodiments of the invention also provide for integration of the system with external software applications and databases. The backbone-based architecture enables companies to integrate with enterprise software and databases. The backbone's programming interface provides bi-directional requests and responses with external software, as well as access to company databases or those of a third party, such as a regulatory body. The company's implementation of the

system may involve integration with several software systems and databases. Examples include:

External software applications

Appointment resources, such as Pictorial's AppointPAK service

Appointment resources, such as provided by state web sites

Licensing resources, such as Pictorial's PAL service

Licensing resources, such as provided by state web sites

Word processing or similar programs, such as Microsoft Word TM

Email applications, such as Microsoft ExchangeTM or Lotus Notes®

New business applications

Policy administration applications

External databases

Producer databases, such as those provided via state web sites

C) Workflow:

Embodiments of the invention contain a workflow service that enables the user to create and run business processes. These processes become objects (business rules) in the backbone. The workflow service works with the backbone and databases, passing objects, functions, and data into the backbone. Thus, the workflow service provides a mechanism for enabling user to control and mange the flow of information. The elements of workflow in the system in accordance with one embodiment of the invention are requests for approval, approvals, and denials. The user can customize the system to send email notifications at these points. To set up such email notification, the user may execute code that causes system workflow triggers to fire, initiating the notification. The appropriate user can then take action if, for example, a request is not approved.

Reporting—Specifies the functions associated with generating reports about the information managed by the DMS suite. The Reporting category specifies the functions for generating reports about the information managed by the DMS suite. The suite provides a standard set of data views for the information it manages. These views give the user the ability to define and create customer-specific reports, using the users own reporting tool. The standard data views include data from the following sources:

e) Distributor hierarchy

f) License and appointment status and statistics

g) Selling agreement status and statistics

h) Debt management status and statistics

Security—Specifies the functions associated with the management of different types of users and the access control that permits them to perform specific tasks within the DMS software. The Security category specifies the functions associated with managing users and the access controls that enable them to perform specific tasks within the DMS suite.

DMS software uses role-based access control, in which each role has specific permissions for accessing processes. When the user creates users in the system, the user can assign them one or more of these access roles. Users' roles determine the tasks they can perform. These tasks include the ability to manage, view, and approve new and updated data about distributors. The user's role also flags users who should receive analysis results and event notifications. Users can customize user roles to suit a particular set of business practices. The following table describes each security function and identifies the data acted upon by this function.

Create, view, update, and delete user access role. Enables a user with the appropriate level of authority to enter, update, and delete user access roles within the DMS suite. Definition of a user role includes the rights that a user has to manage, view, and approve specific data and entities. A user access role identifies which of these tasks and data a user may access. When a user executes a task or manipulates data, the system checks to see if the currently logged-in user profile includes a role with access to the task. The DMS suite includes a set of default access roles. Users can add or modify the defaults when deploying the system.

Create, view, update, and delete user. Enables a user with the appropriate level of authority to enter, update, and delete users within the DMS suite. When the system creates users, it specifies the user role(s) associated with them.

Thus, a method and apparatus for processing sales transaction data has been described. Particular embodiments described herein are illustrative only and should not limit the present invention thereby. The claims and their full scope of equivalents define the invention.

What is claimed is:

1. A method for processing sales transaction data comprising:

using a distributer management system to perform:

capturing transaction data associated with sales performed by a plurality of sales representatives;

determining if said sales representatives associated with said transaction data are in conformity with a set of regulatory conditions applicable to said sales;

computing a plurality of compensation amounts based on said sale transactions data and said set of regulatory conditions; and

executing a payment process to compensate said plurality of sales representatives for said sales in accordance with said compensation amounts.

2. The method of claim **1** further comprising:

using the distributer management system to perform:

generating a selling agreement to define a relationship between an institution and a distributor, wherein said plurality of sales representatives work on behalf of said distributor and said institution is a source of products to said distributor and sold by said sales representatives working on behalf of the distributor.

3. The method of claim **2** wherein said selling agreement comprises compensation components defining commission amounts.

4. The method of claim **3** wherein said computing utilizes said compensation components to determine said plurality of compensation amounts.

5. The method of claim **3** wherein said set of regulatory conditions defines at least one license associated with performing said sales.

6. The method of claim **5** wherein said at least one license equates to physical licenses issued by jurisdictions controlling said sales.

7. The method of claim **3** wherein said determining if said transaction data conforms to said set of regulatory conditions associated with said sales further comprises:

determining if continuing education credits associated with maintaining said at least one license have been earned.

8. The method of claim **3** wherein said determining if said transaction data conforms to said set of regulatory conditions associated with said sales further comprises:

determining if renewal requirements for a specific type of said at least one license are satisfied.

9. The method of claim **3** wherein said determining if said transaction data conforms to said set of regulatory conditions associated with said sales further comprises:

determining if said at least one licenses is expired.

10. The method of claim 3 wherein said determining if said transaction data conforms to said set of regulatory conditions associated with said sales further comprises:

determining if renewal requirements for said at least one license are satisfied.

11. The method of claim 3 wherein said set of regulatory conditions defines at least one appointment associated with performing said sales.

12. The method of claim 11 wherein said determining if said transaction data conforms to regulatory conditions associated with said sales further comprises:

determining if said at least one appointment requires said at least one license.

13. The method of claim 11 wherein said determining if said transaction data conforms to regulatory conditions associated with said sales further comprises:

determining if said at least one appointment requires errors and omissions coverage.

14. The method of claim 11 wherein said determining if said transaction data conforms to regulatory conditions associated with said sales further comprises:

determining if renewal requirements for said at least one appointment are satisfied.

15. The method of claim 11 wherein said determining if said transaction data conforms to regulatory conditions associated with said sales further comprises:

determining if residency rules associated with said at least one appointment are satisfied.

16. The method of claim 11 wherein said regulatory conditions relates to said sales of a particular product type.

17. The method of claim 11 wherein said determining if said transaction data conforms to regulatory conditions associated with said sales further comprises:

determining if said at least one appointment is valid.

18. The method of claim 2 wherein said selling agreement comprises compensation components defining commission amounts.

19. The method of claim 18 wherein said computing utilizes said compensation components to determine said plurality of compensation amounts.

20. The method of claim 18 wherein said set of regulatory conditions defines at least one license associated with performing said sales.

21. The method of claim 20 wherein said at least one license equates to physical licenses issued by jurisdictions controlling said sales.

22. The method of claim 18 wherein said determining if said transaction data conforms to said set of regulatory conditions associated with said sales further comprises:

determining if continuing education credits associated with maintaining said at least one license have been earned.

23. The method of claim 18 wherein said determining if said transaction data conforms to said set of regulatory conditions associated with said sales further comprises:

determining if renewal requirements for a specific type of said at least one license are satisfied.

24. The method of claim 18 wherein said determining if said transaction data conforms to said set of regulatory conditions associated with said sales further comprises:

determining if said at least one licenses is expired.

25. The method of claim 18 wherein said determining if said transaction data conforms to said set of regulatory conditions associated with said sales further comprises:

determining if renewal requirements for said at least one license are satisfied.

26. The method of claim 18 wherein said set of regulatory conditions defines at least one appointment associated with performing said sales.

27. The method of claim 26 wherein said determining if said transaction data conforms to regulatory conditions associated with said sales further comprises:

determining if said at least one appointment requires said at least one license.

28. The method of claim 26 wherein said determining if said transaction data conforms to regulatory conditions associated with said sales further comprises:

determining if said at least one appointment requires errors and omissions coverage.

29. The method of claim 26 wherein said determining if said transaction data conforms to regulatory conditions associated with said sales further comprises:

determining if renewal requirements for said at least one appointment are satisfied.

30. The method of claim 26 wherein said determining if said transaction data conforms to regulatory conditions associated with said sales further comprises:

determining if residency rules associated with said at least one appointment are satisfied.

31. The method of claim 26 wherein said regulatory conditions relates to said sales of a particular product type.

32. The method of claim 26 wherein said determining if said transaction data conforms to regulatory conditions associated with said sales further comprises:

determining if said at least one appointment is valid.

33. The method of claim 32 wherein said at least one appointment is associated with said distributor.

34. The method of claim 32 wherein said at least one appointment is associated with said distributor.

35. The method of claim 1 further comprising:

generating a plurality of reports about said at least one sales representative.

36. The method of claim 1 further comprising:

generating a plurality of reports about said sale transaction data.

37. The method of claim 1 wherein said determining if said transaction data conforms to said set of regulatory conditions associated with said sales further comprises: for each sales representative and each sale associated with the transaction data and performed by the sales representative, determining if the sales representative performed the sale in conformance with regulatory constraints put in place by government organizations.

38. The method of claim 1 further comprising:

generating a plurality of reports about said at least one sales representative.

39. The method of claim 1 further comprising:

generating a plurality of reports about said sale transaction data.

40. A system for processing sales transaction data comprising:

a means for capturing transaction data associated with sales performed by a plurality of sales representatives;

a means for determining if said sales representatives associated with said transaction data are in conformity with a set of regulatory conditions applicable to said sales;

a means for computing a plurality of compensation amounts based on said sale transactions data and said set of regulatory conditions; and

a means for executing a payment process to compensate said plurality of sales representatives for said sales in accordance with said compensation amounts.

41. The system of claim 40 further comprising:

means to generate a selling agreement to define a relationship between an institution and a distributor, wherein said plurality of sales representatives work on behalf of said distributor and said institution is a source of products to said distributor and sold by said sales representatives working on behalf of the distributor.

42. A computer readable medium comprising computer readable code embodied therein and executable by a processor to:

capture transaction data associated with sales performed by a plurality of sales representatives;

determine if said sales representatives associated with said transaction data are in conformity with a set of regulatory conditions applicable to said sales;

compute a plurality of compensation amounts based on said sale transactions data and said set of regulatory conditions; and

execute a payment process to compensate said plurality of sales representatives for said sales in accordance with said compensation amounts.

43. The computer readable medium of claim 42 wherein said computer readable code is further executable by the processor to:

for each sales representative and each sale associated with the transaction data and performed by the sales representative, determine if the sales representative performed the sale in conformance with regulatory constraints put in place by government organizations.

44. The computer program of claim 42 wherein said computer readable code is further executable by the processor to:

generate a selling agreement to define a relationship between an institution and a distributor, wherein said plurality of sales representatives work on behalf of said distributor and said institution is a source of products to said distributor and sold by said sales representatives working on behalf of the distributor.

45. A system comprising:

a processor; and

a memory, coupled to the processor, wherein the memory includes computer readable code executable by the processor to:

capture transaction data associated with sales performed by a plurality of sales representatives;

determine if said sales representatives associated with said transaction data applicable to said sales;

compute a plurality of compensation amounts based on said sale transactions data and said set of regulatory conditions; and

execute a payment process to compensate said plurality of sales representatives for said sales in accordance with said compensation amounts.

46. The system of claim 45 wherein said computer readable code is further executable by the processor to:

for each sales representative and each sale associated with the transaction data and performed by the sales representative, determine if the sales representative performed the sale in conformance with regulatory constraints put in place by government organizations.

47. The system of claim 45 wherein said computer readable code is further executable by the processor to:

generate a selling agreement to define a relationship between an institution and a distributor, wherein said plurality of sales representatives work on behalf of said distributor and said institution is a source of products to said distributor and sold by said sales representatives working on behalf of the distributor.

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