



US 20120259736A1

(19) **United States**(12) **Patent Application Publication**
Bennett et al.(10) **Pub. No.: US 2012/0259736 A1**(43) **Pub. Date: Oct. 11, 2012**(54) **ON-LINE SALES CHAIN INFRASTRUCTURE
SUPPORTING MULTIPLE DIFFERING
BRIDGING TRANSACTIONS WITH SELLER
SYSTEMS**(75) Inventors: **James D. Bennett**, Hroznetin (CZ);
Christopher C. Winslade,
Chicago, IL (US)(73) Assignee: **ENPULZ, LLC**, Chicago, IL (US)(21) Appl. No.: **13/528,442**(22) Filed: **Jun. 20, 2012****Related U.S. Application Data**

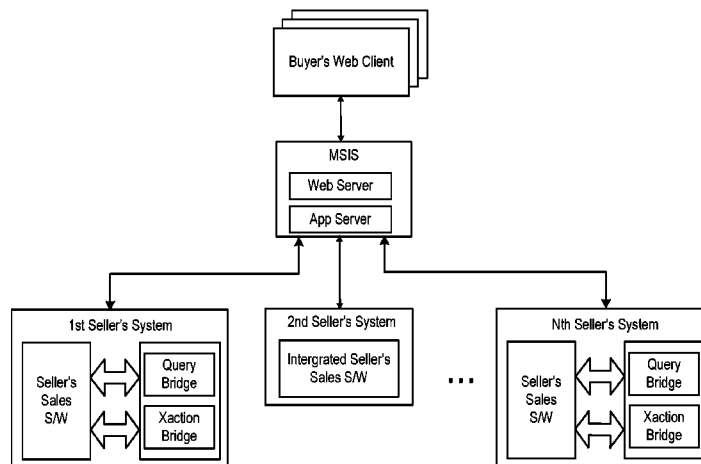
(63) Continuation of application No. 13/423,391, filed on Mar. 19, 2012, which is a continuation of application No. 13/109,093, filed on May 17, 2011, now Pat. No. 8,181,851, which is a continuation of application No. 12/467,557, filed on May 18, 2009, now Pat. No. 7,942,316, which is a continuation of application No. 09/808,717, filed on Mar. 14, 2001, now Pat. No. 7,539,628, said application No. 13/423,391 is a continuation of application No. 13/224,052, filed on Sep. 1, 2011, which is a continuation of application No. 09/808,722, filed on Mar. 14, 2001, now Pat. No. 8,036,941, said application No. 13/423,391 is a continuation of application No. 13/104,311, filed on May 10, 2011, now Pat. No. 8,177,124, which is a continuation of application No. 12/467,664, filed on May 18, 2009, now Pat. No. 7,938,316, which is a continuation of application No. 09/808,723, filed on Mar. 14, 2001, now Pat. No. 7,542,922, said application No. 13/423,391 is a continuation of application No. 09/687,499, filed on Oct. 13, 2000, which is a continuation-in-part of application No. 09/547,162, filed on Apr. 11, 2000, now abandoned.

(60) Provisional application No. 60/214,136, filed on Jun. 26, 2000, provisional application No. 60/214,183, filed on Jun. 26, 2000, provisional application No. 60/190,825, filed on Mar. 21, 2000, provisional appli-

cation No. 60/213,912, filed on Jun. 26, 2000, provisional application No. 60/214,183, filed on Jun. 26, 2000, provisional application No. 60/190,825, filed on Mar. 21, 2000, provisional application No. 60/190,825, filed on Mar. 21, 2000, provisional application No. 60/214,183, filed on Jun. 26, 2000, provisional application No. 60/214,188, filed on Jun. 26, 2000, provisional application No. 60/130,082, filed on Apr. 19, 1999, provisional application No. 60/130,083, filed on Apr. 19, 1999, provisional application No. 60/130,084, filed on Apr. 19, 1999, provisional application No. 60/131,008, filed on Apr. 23, 1999, provisional application No. 60/144,584, filed on Jul. 19, 1999, provisional application No. 60/146,208, filed on Jul. 28, 1999, provisional application No. 60/147,062, filed on Aug. 4, 1999, provisional application No. 60/159,388, filed on Oct. 14, 1999.

Publication Classification(51) **Int. Cl.**
G06Q 30/00 (2012.01)(52) **U.S. Cl. 705/26.41; 705/26.1**(57) **ABSTRACT**

A sales system supports sales between a plurality of buyers and a plurality of sellers in a communication network. A sales server has a seller interface used by both a first seller and a second seller respectively via a first seller's computer and a second seller's computer to register availability for sale of a first product and a second product. The sales server, based upon received buyer input from an identified buyer via a buyer computer that includes buyer orders for the first product and the second product dispenses a first sales order to the first seller's computer for the first product and a second sales order to the second seller's computer for the second product. The sales server provides instructions to the first seller's computer for fulfillment of the first sales order and to the second sales computer for the fulfillment of the second sales order.



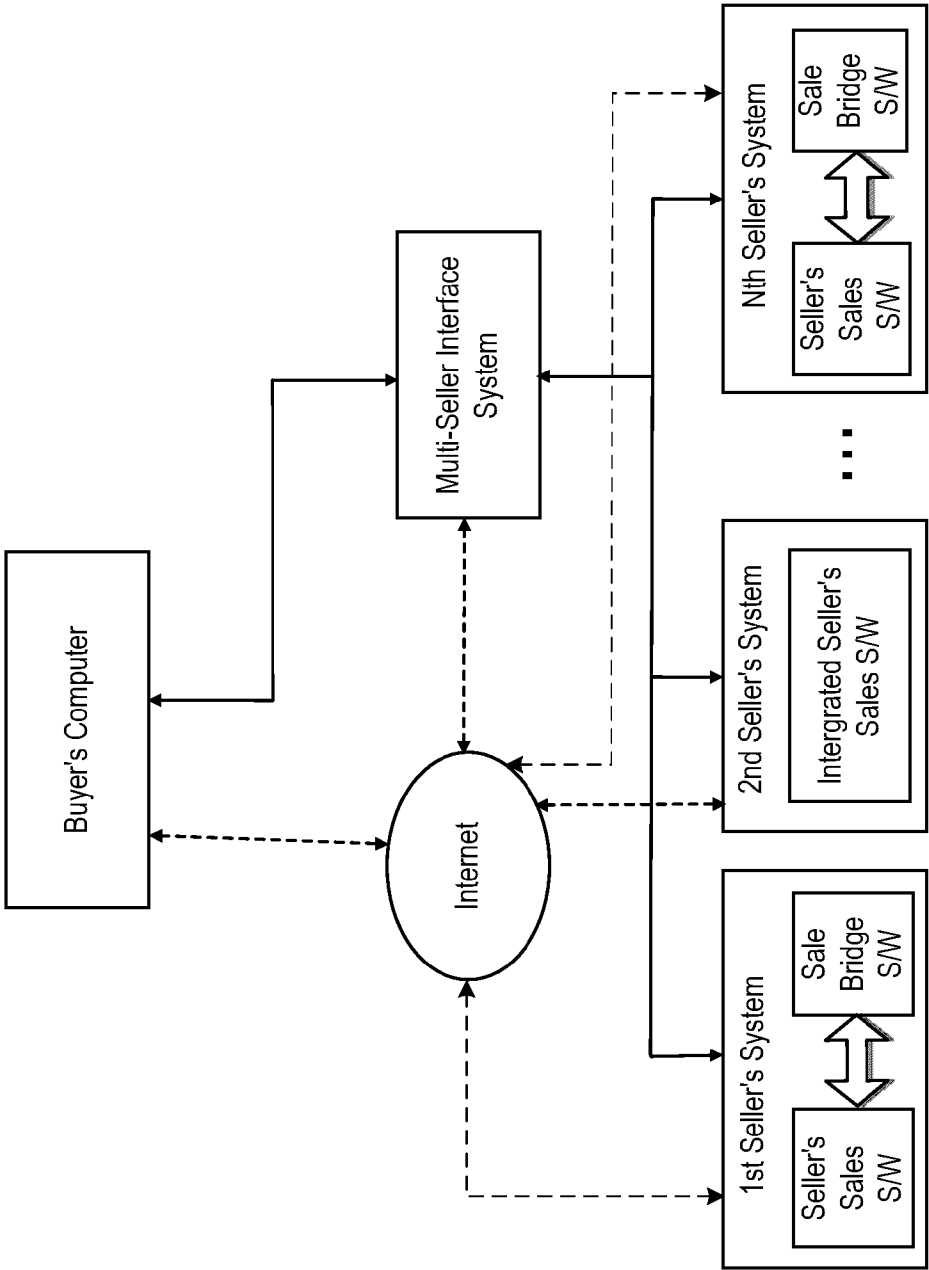


FIG. 1

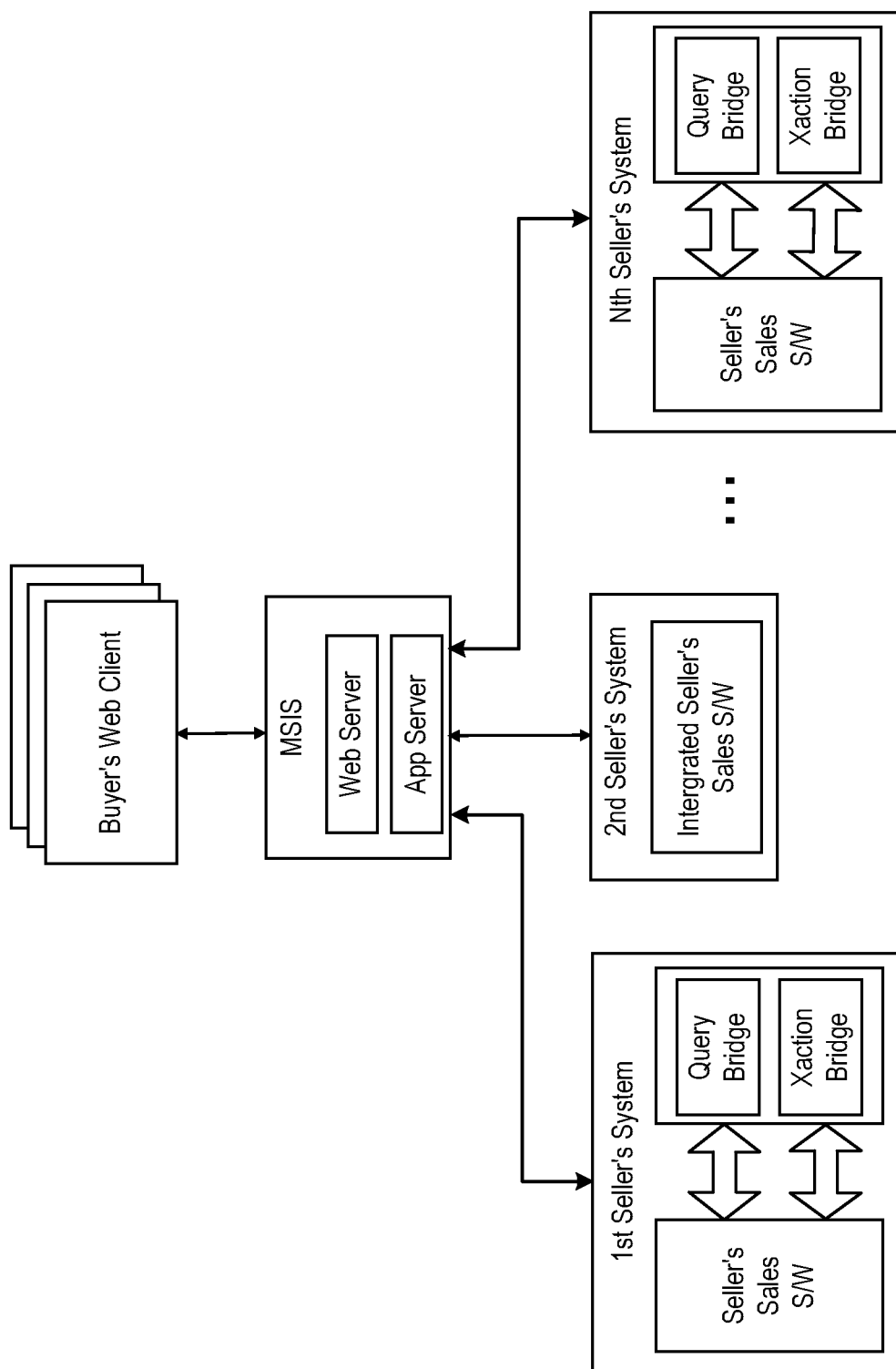


FIG. 2

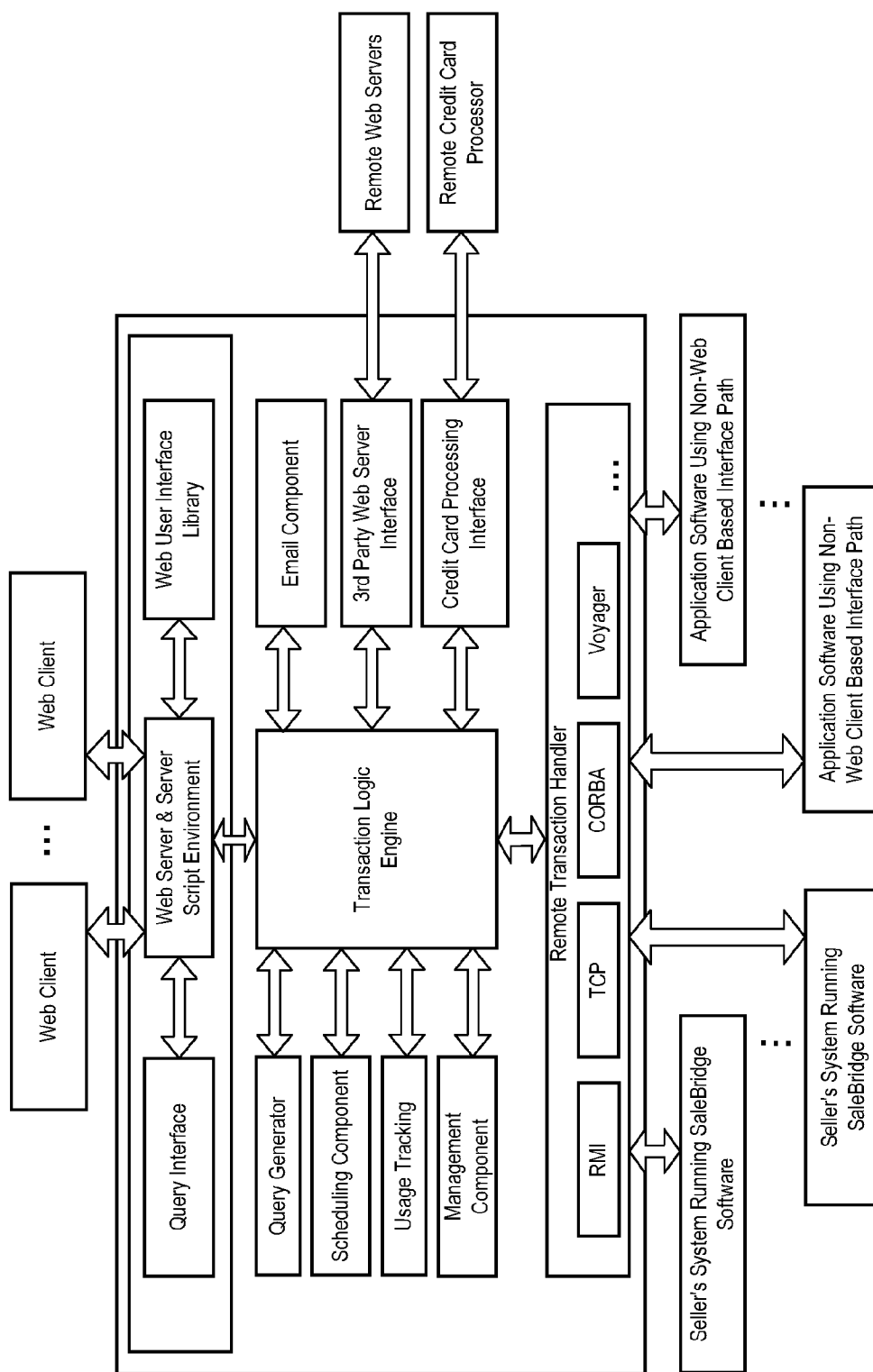


FIG. 3

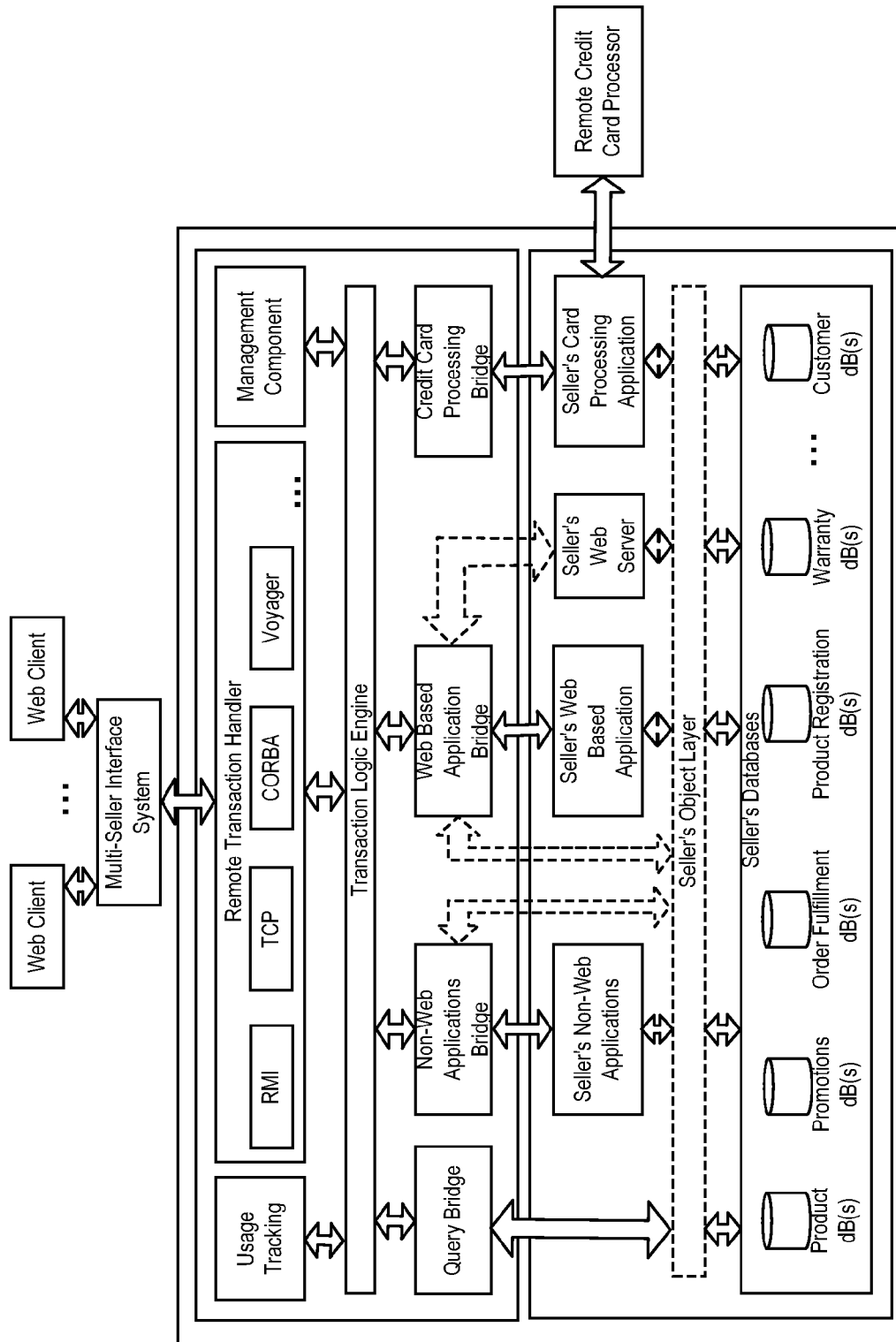


FIG. 4

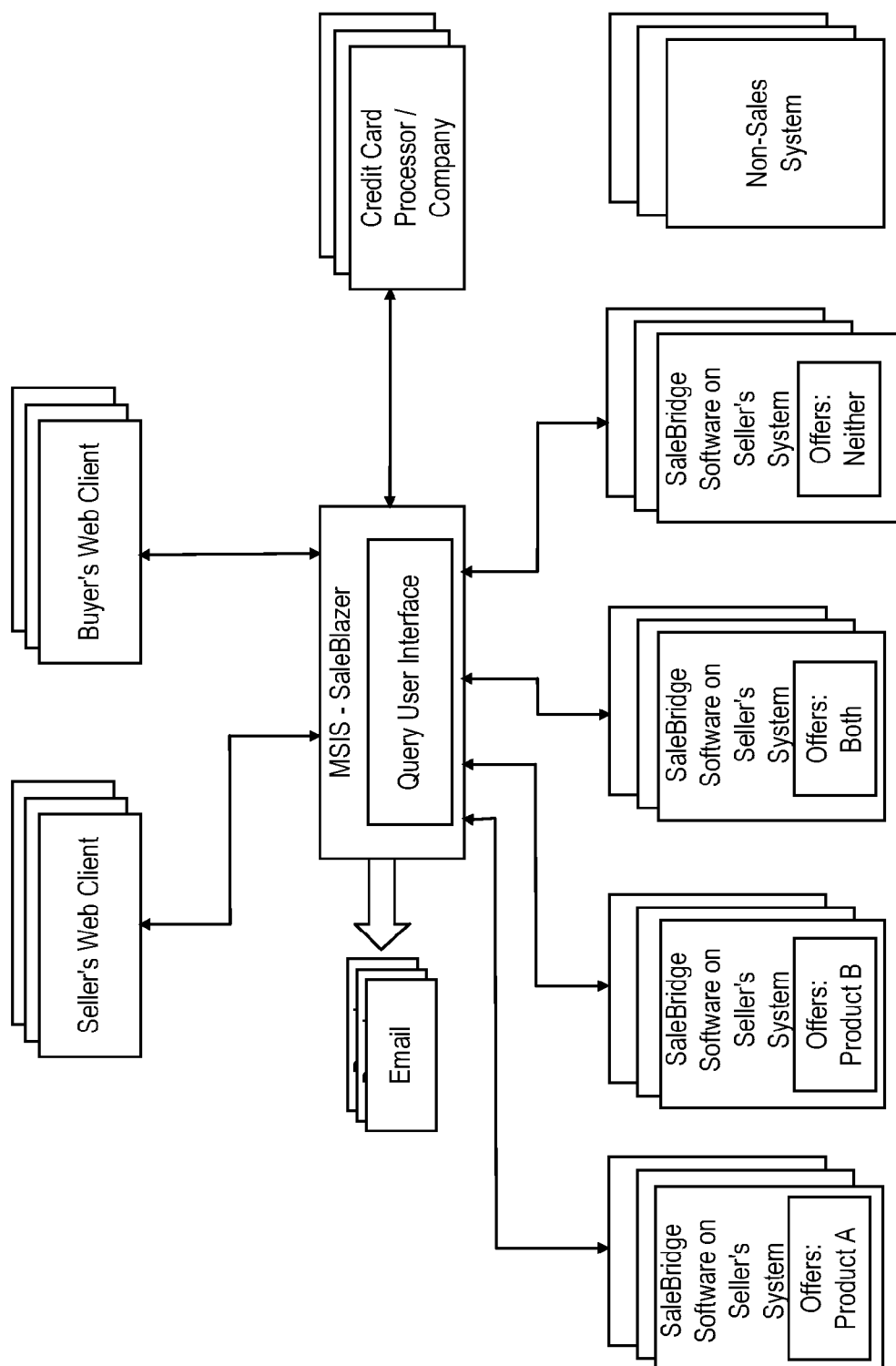


FIG. 5

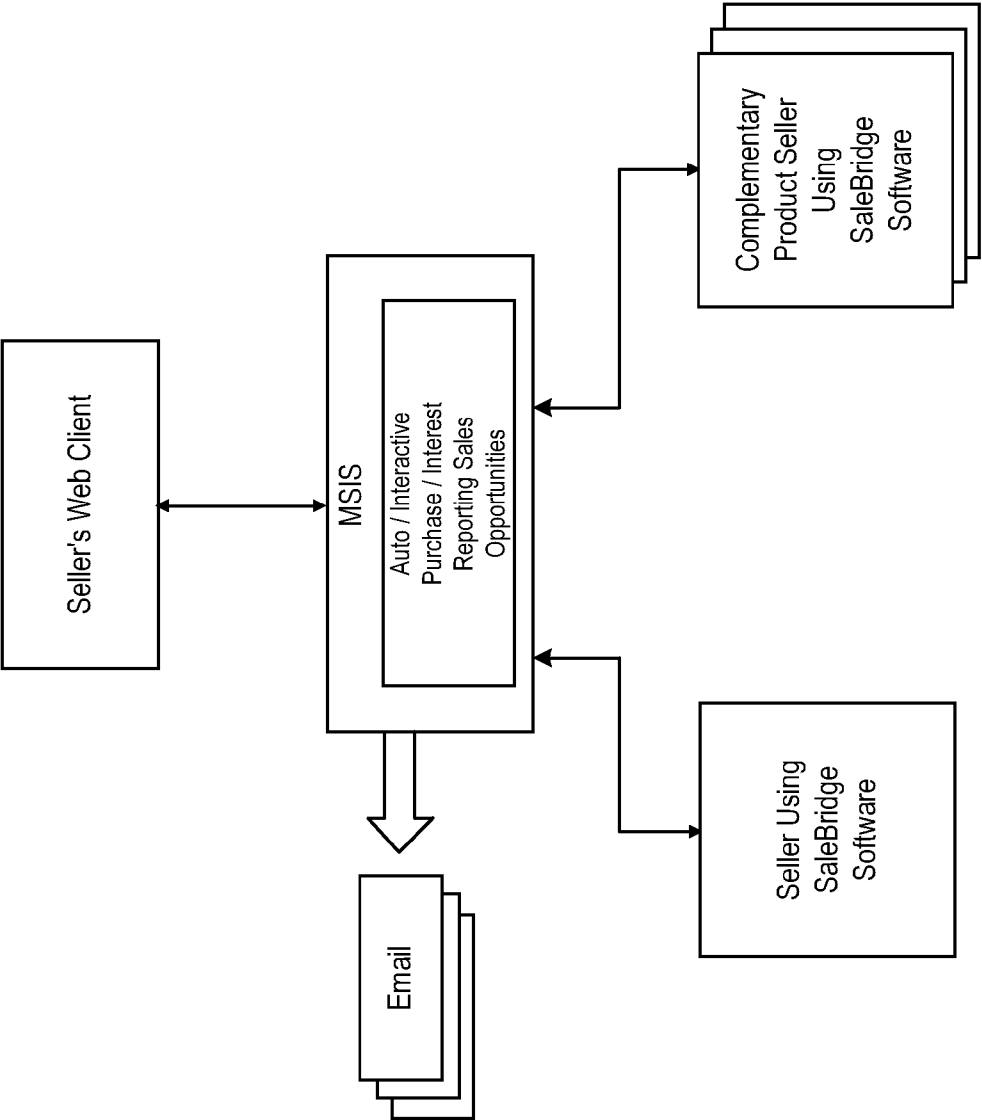


FIG. 6

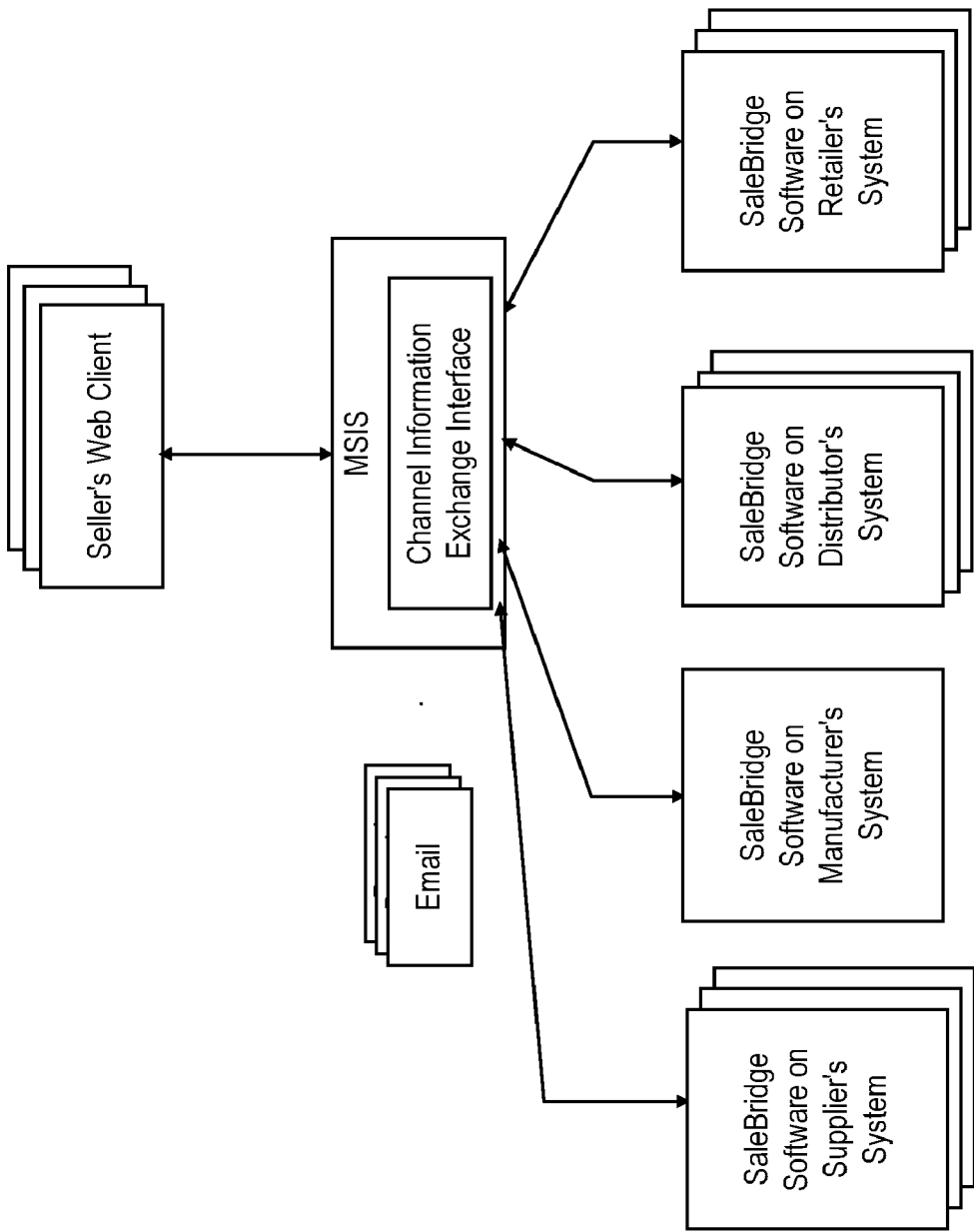


FIG. 7

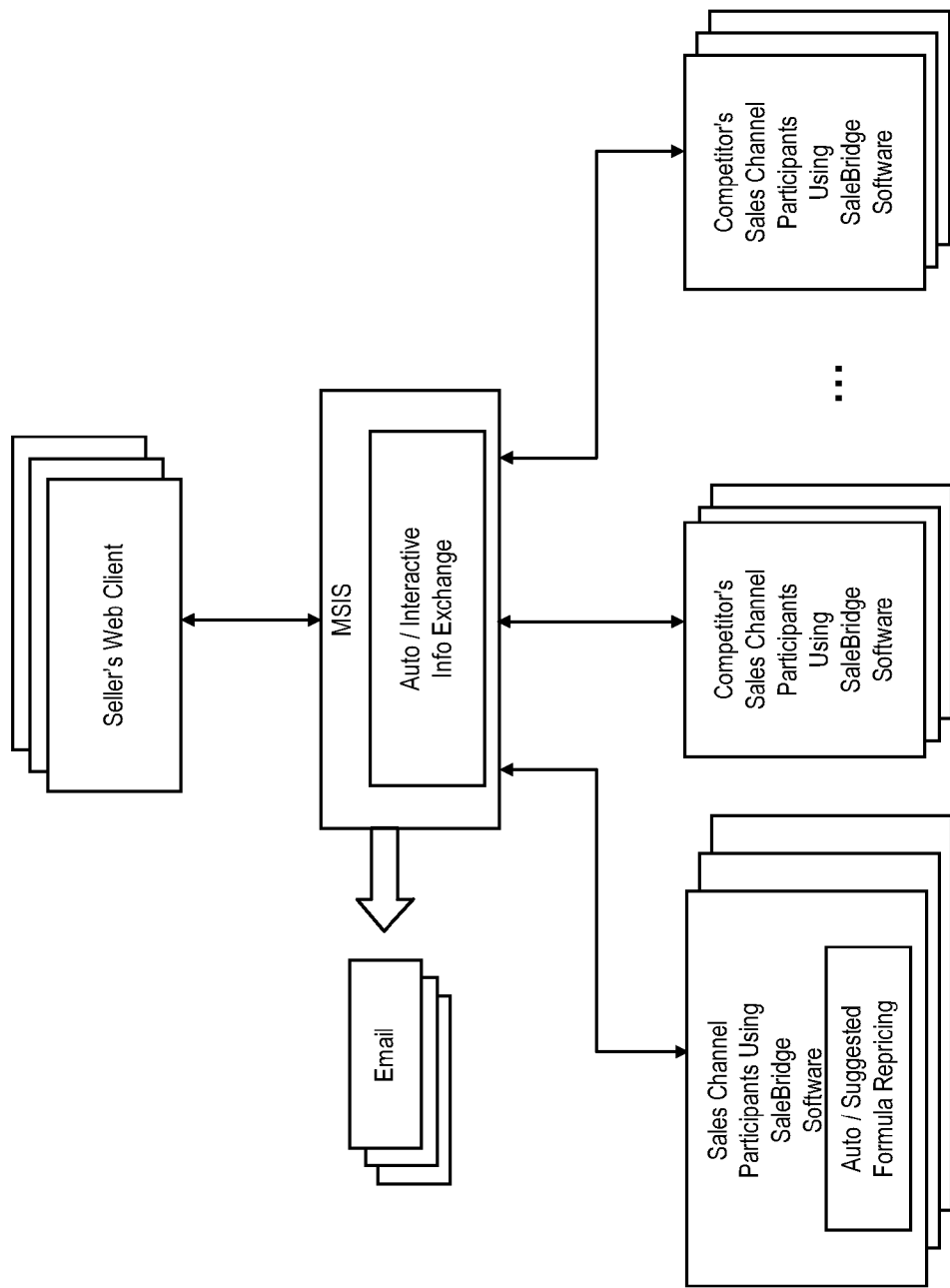


FIG. 8

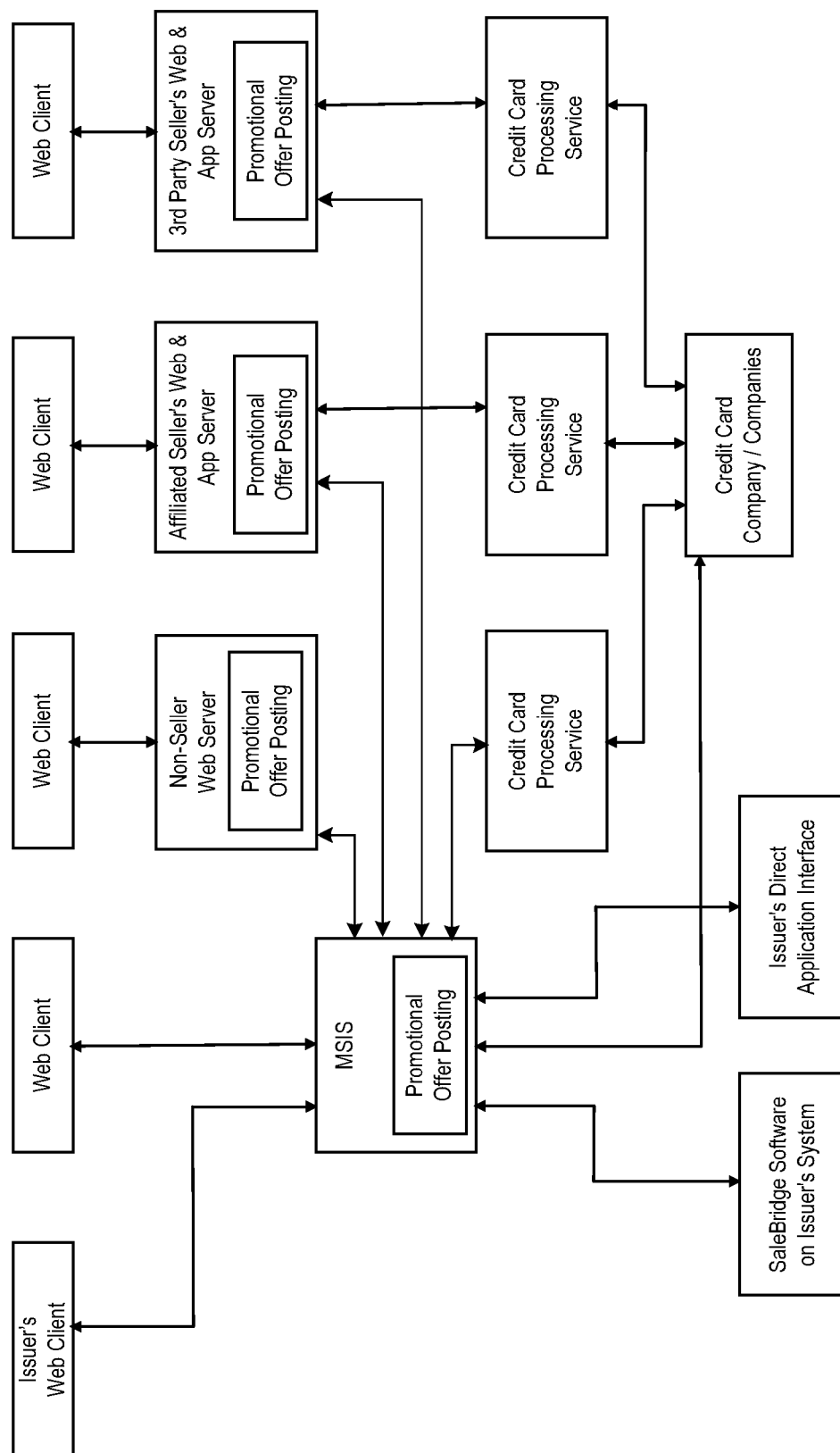


FIG. 9

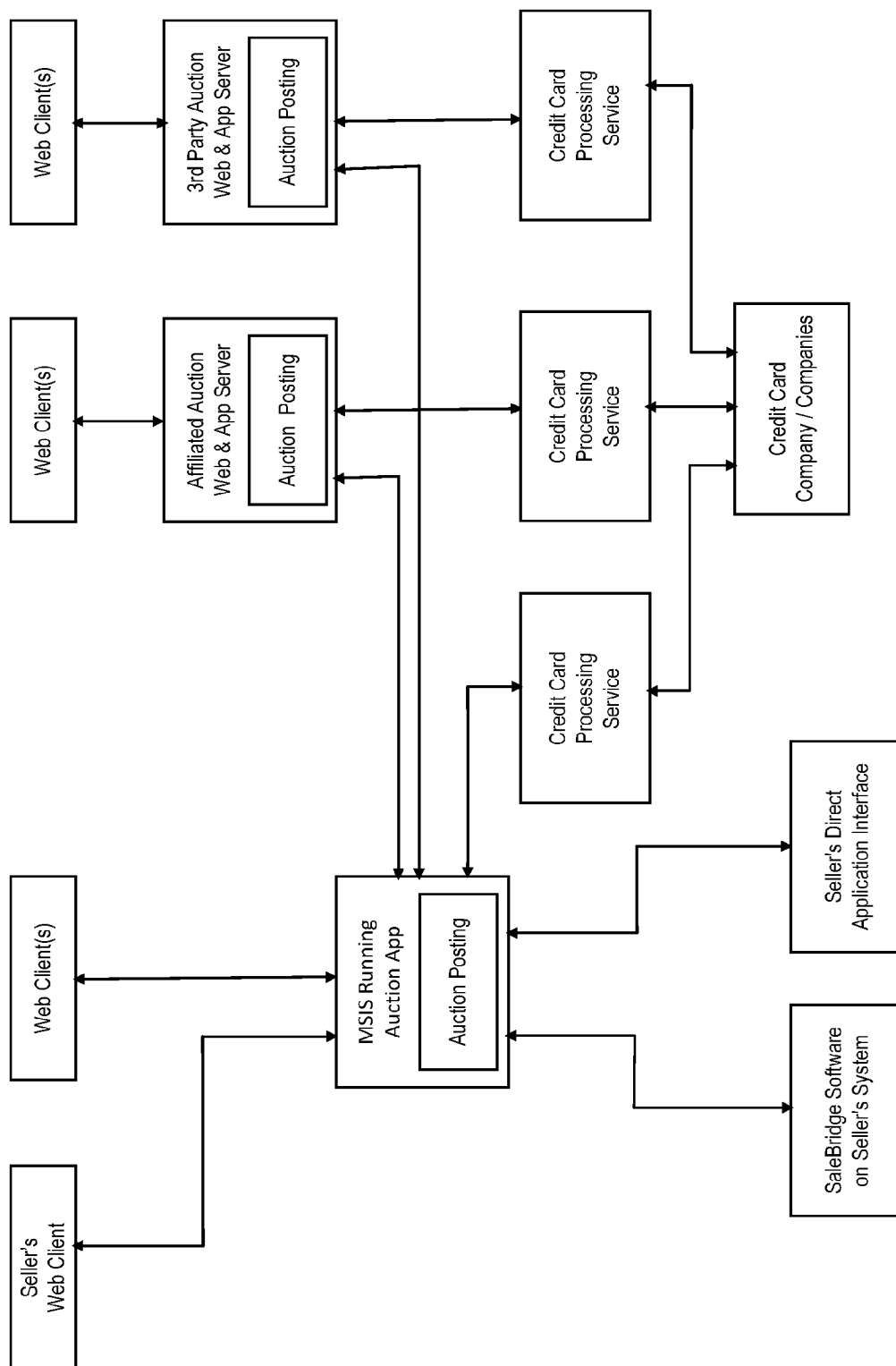


FIG. 10

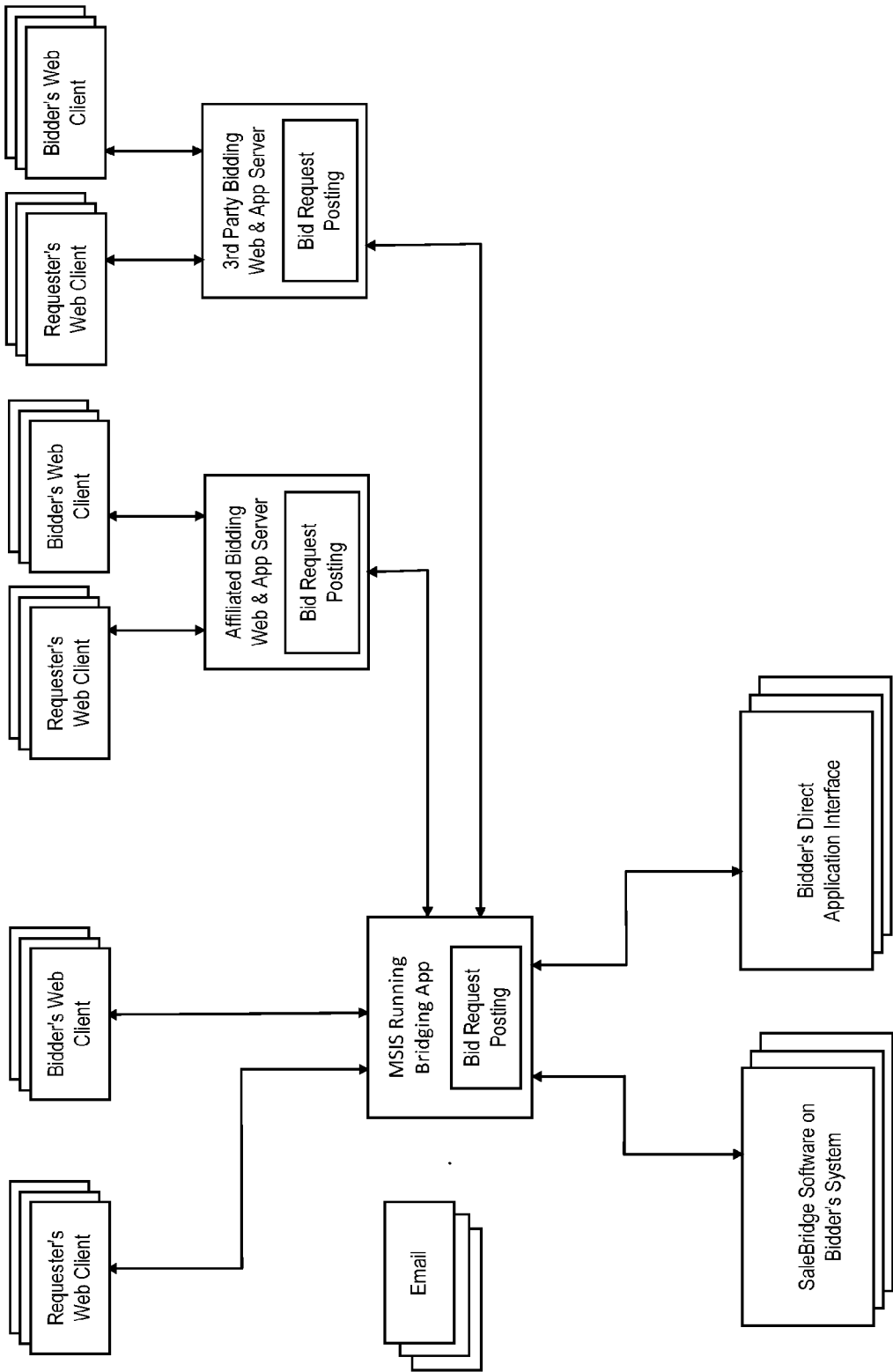


FIG. 11

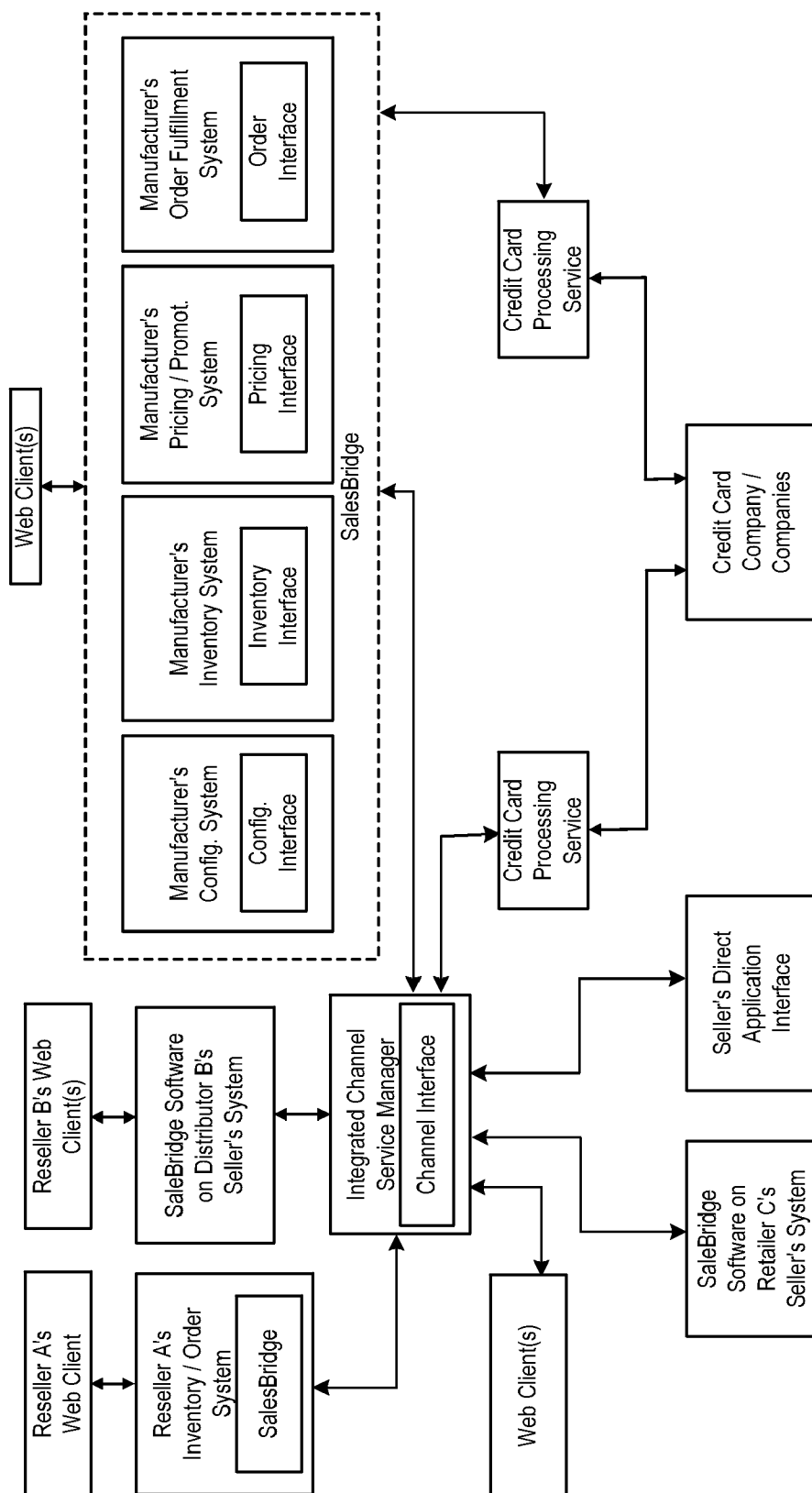


FIG. 12

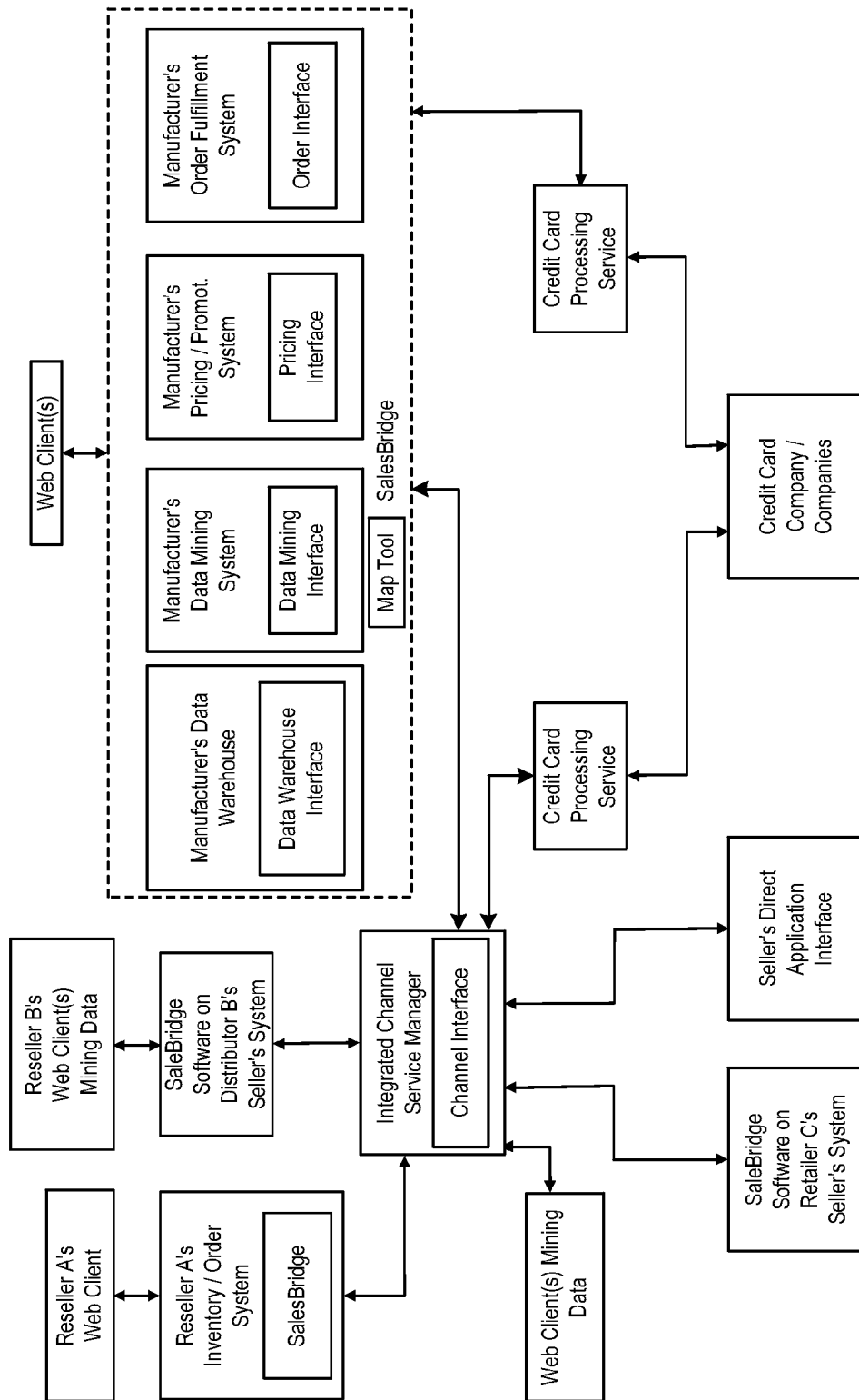


FIG. 13

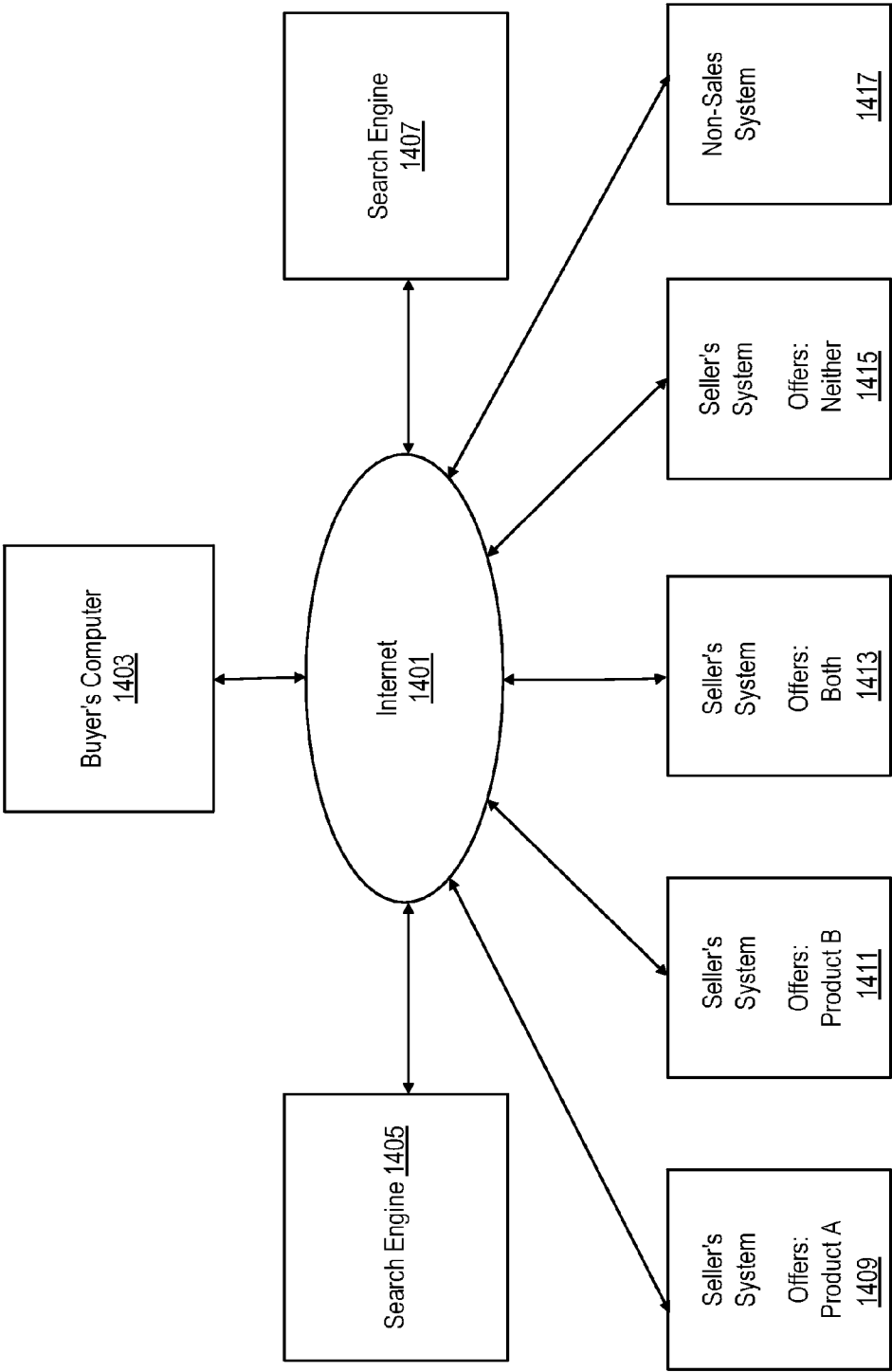
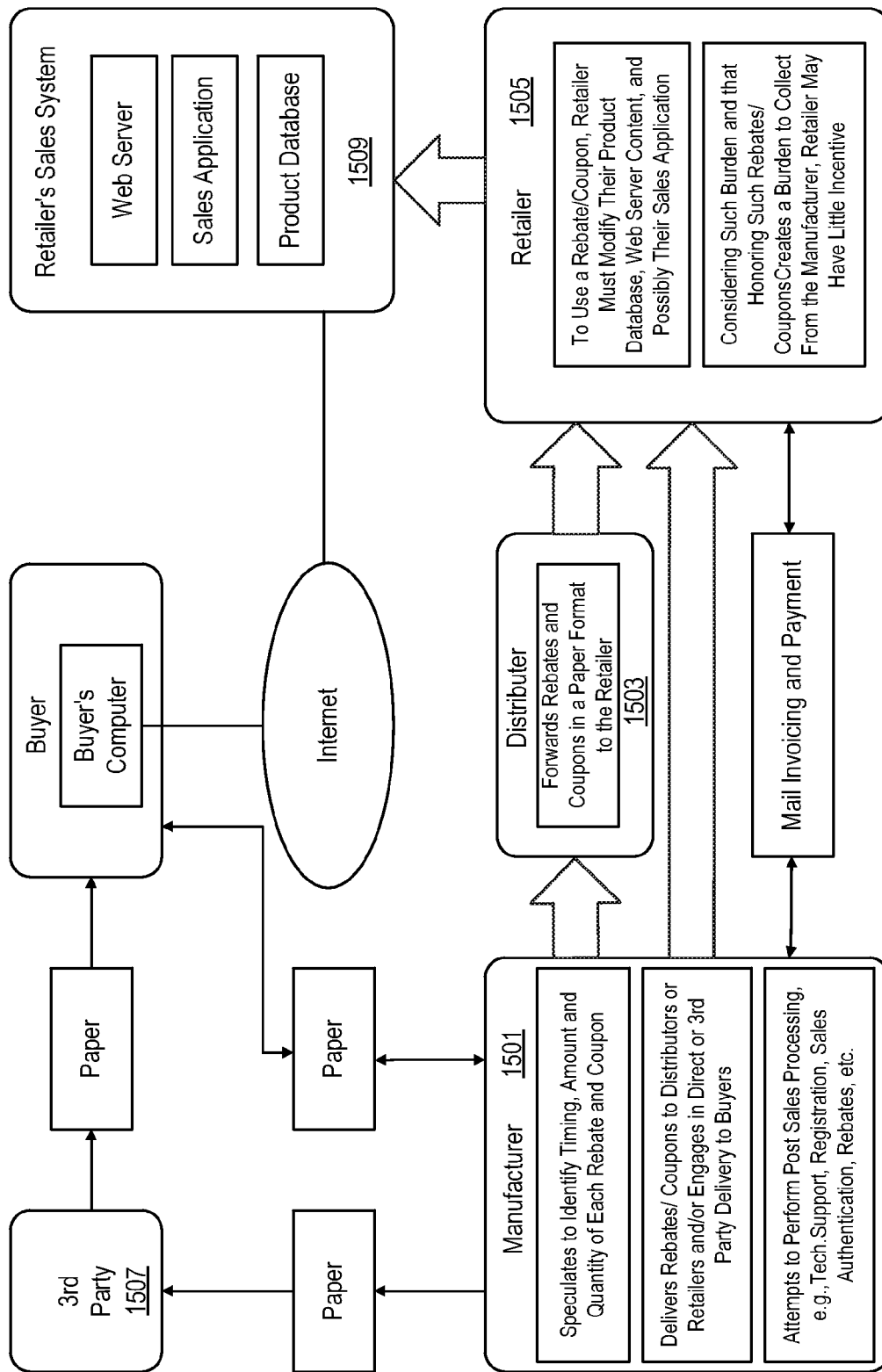


FIG. 14



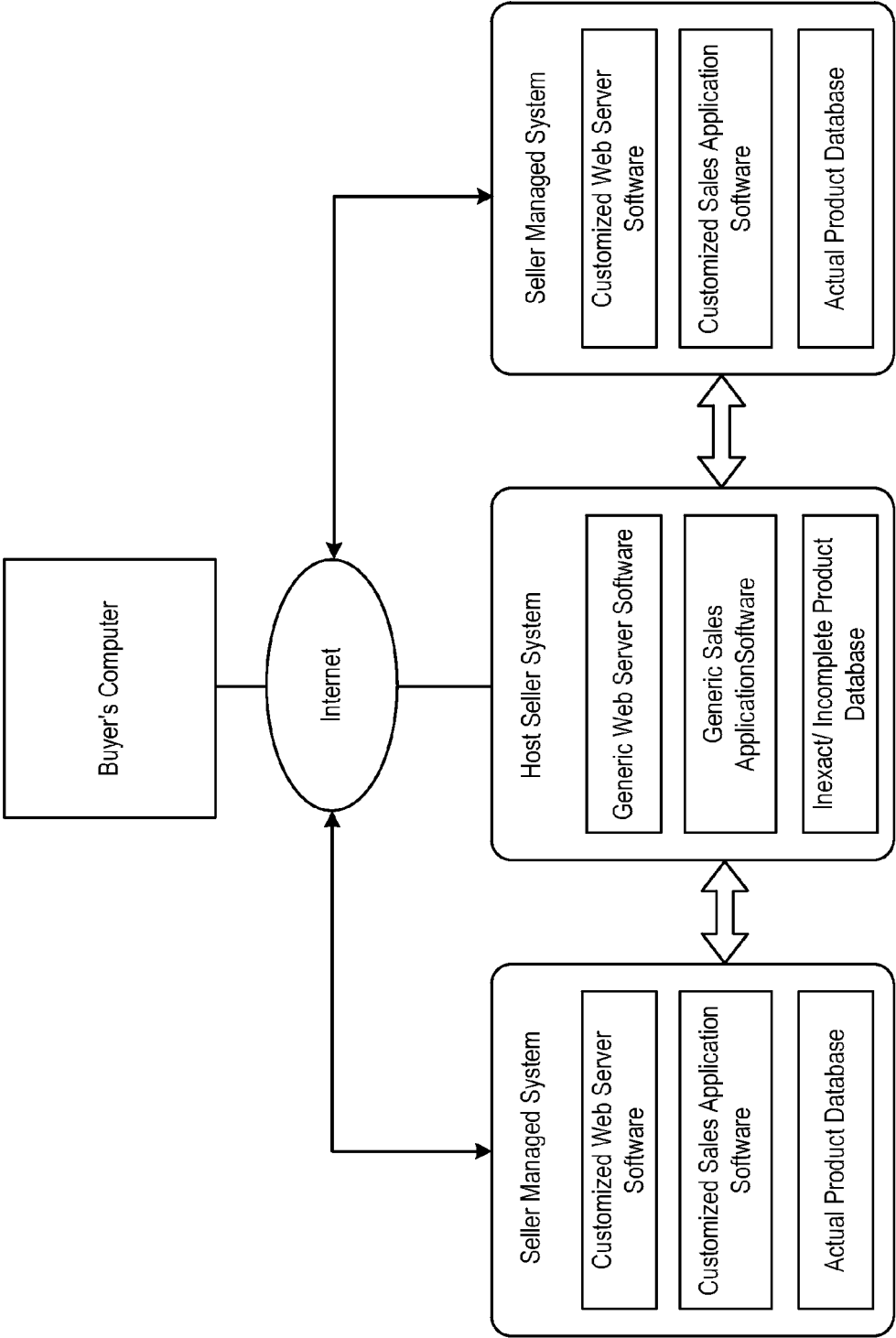


FIG. 16

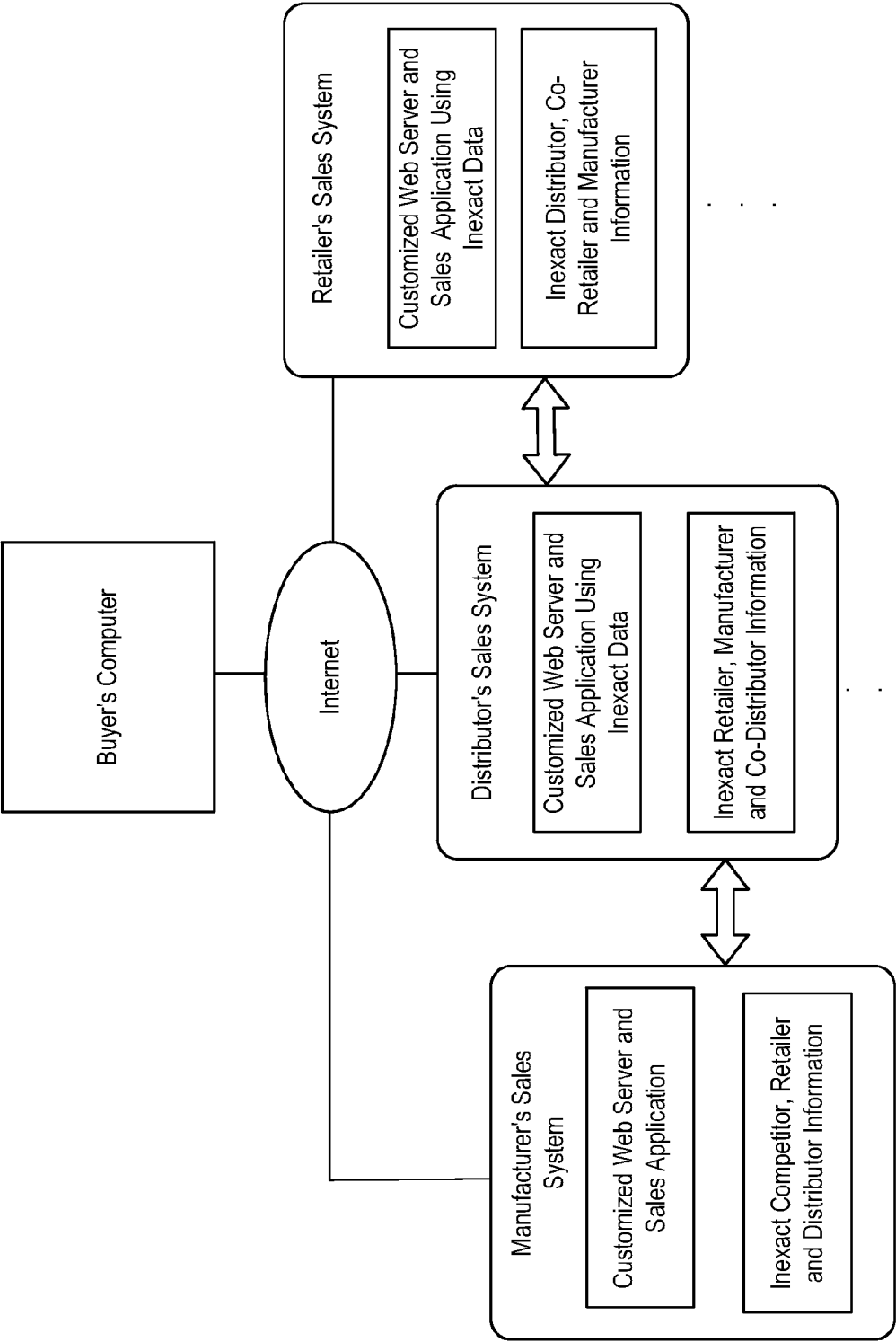


FIG. 17

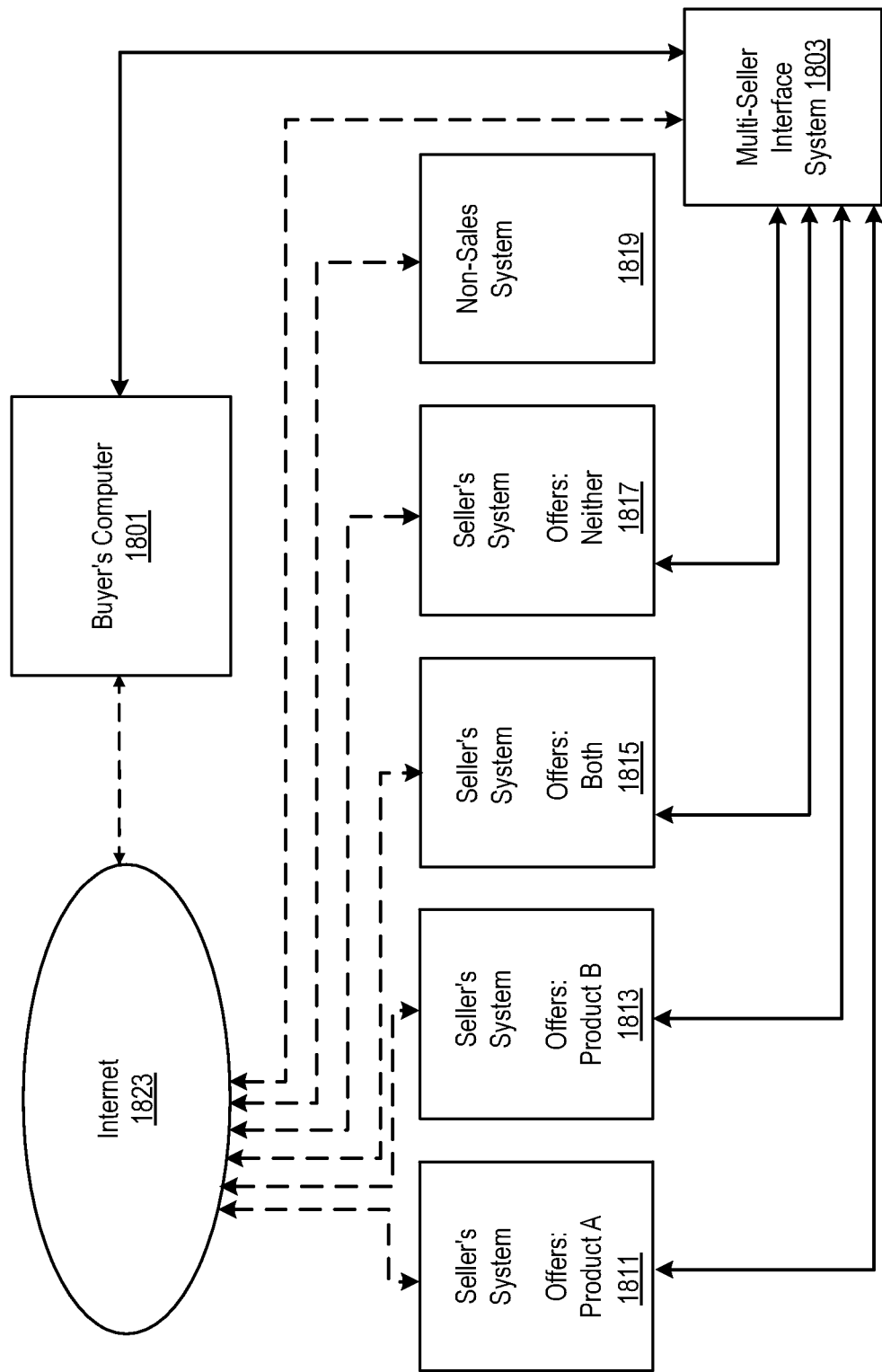


FIG. 18

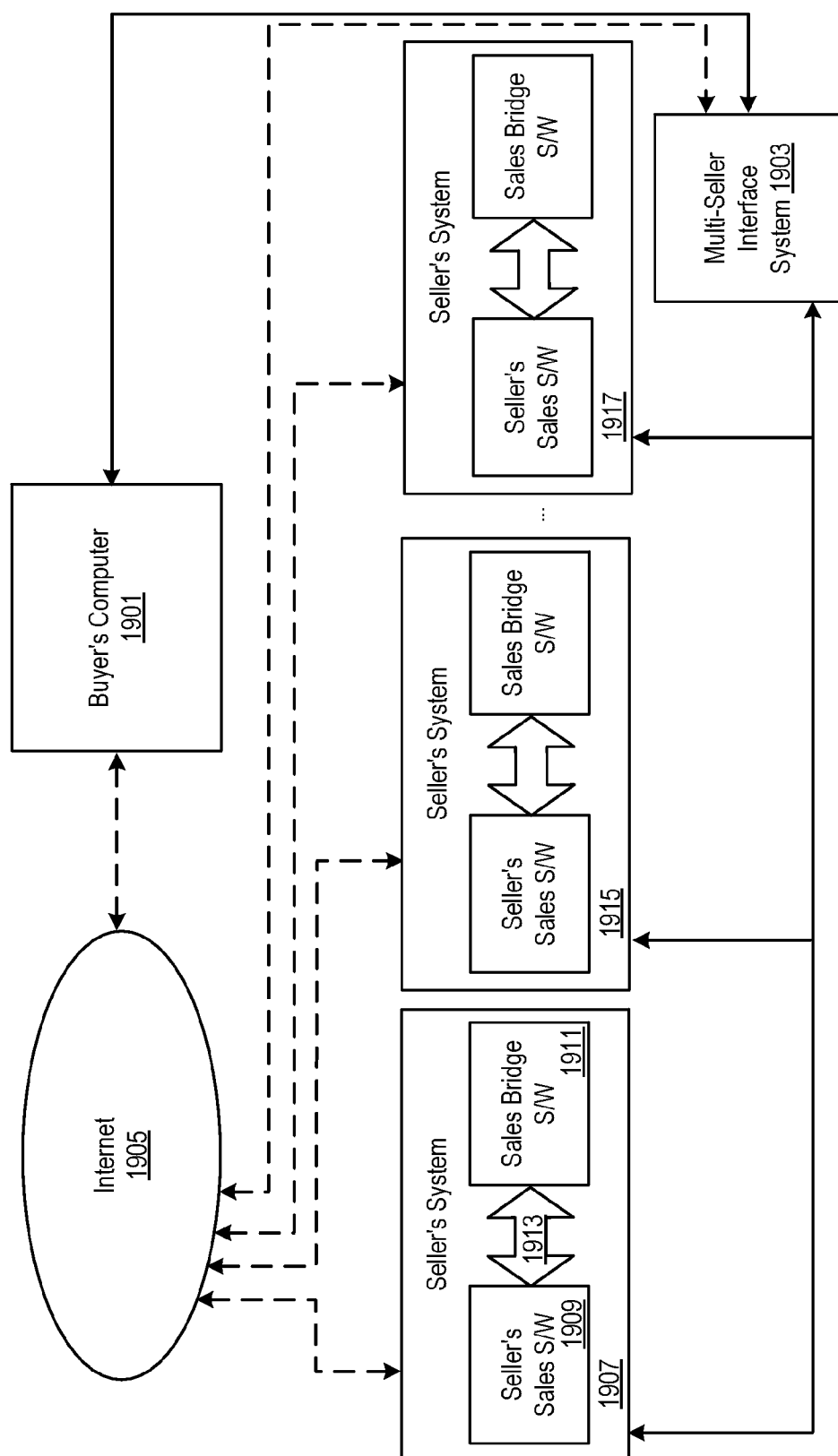
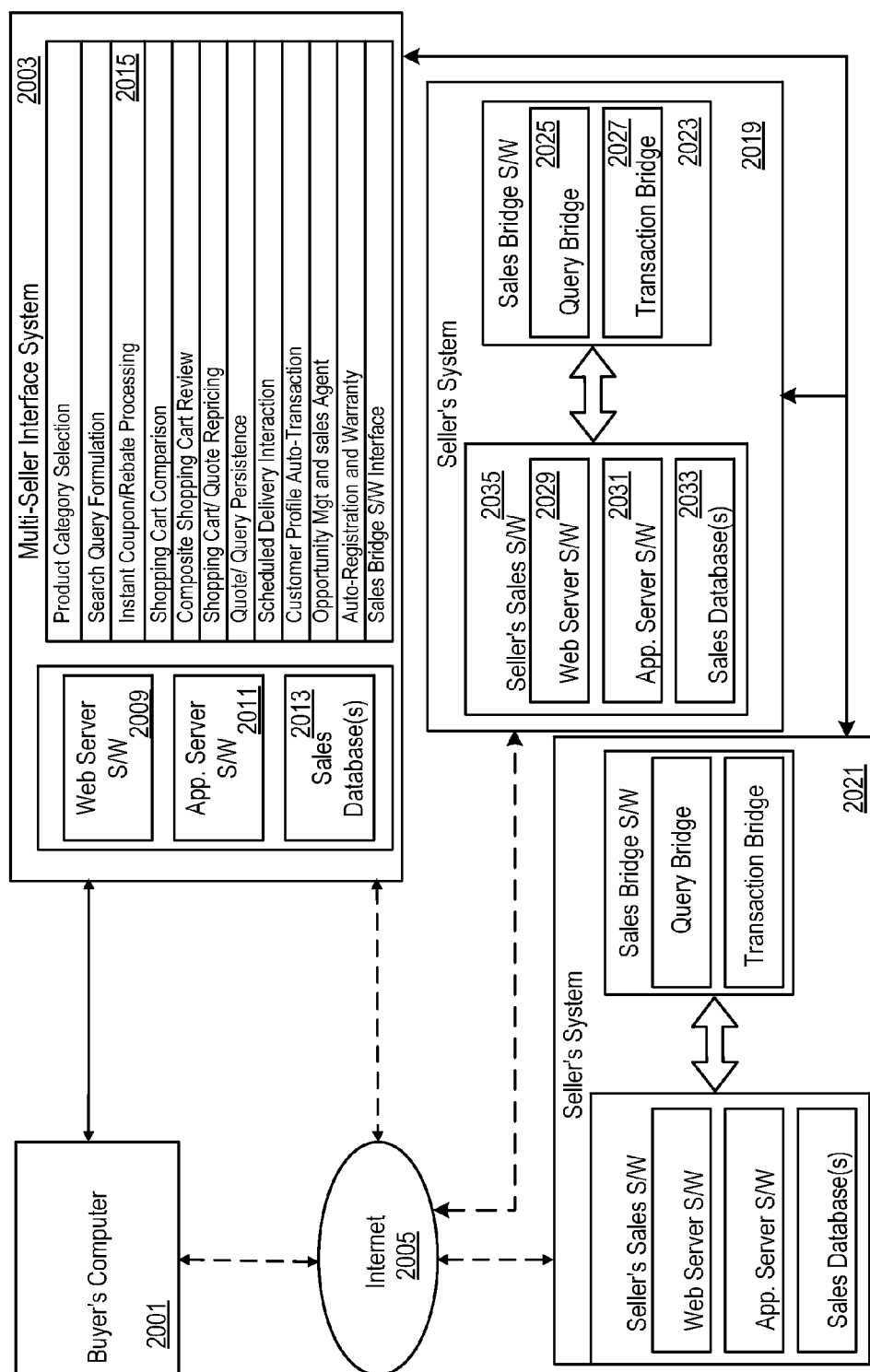


FIG. 19



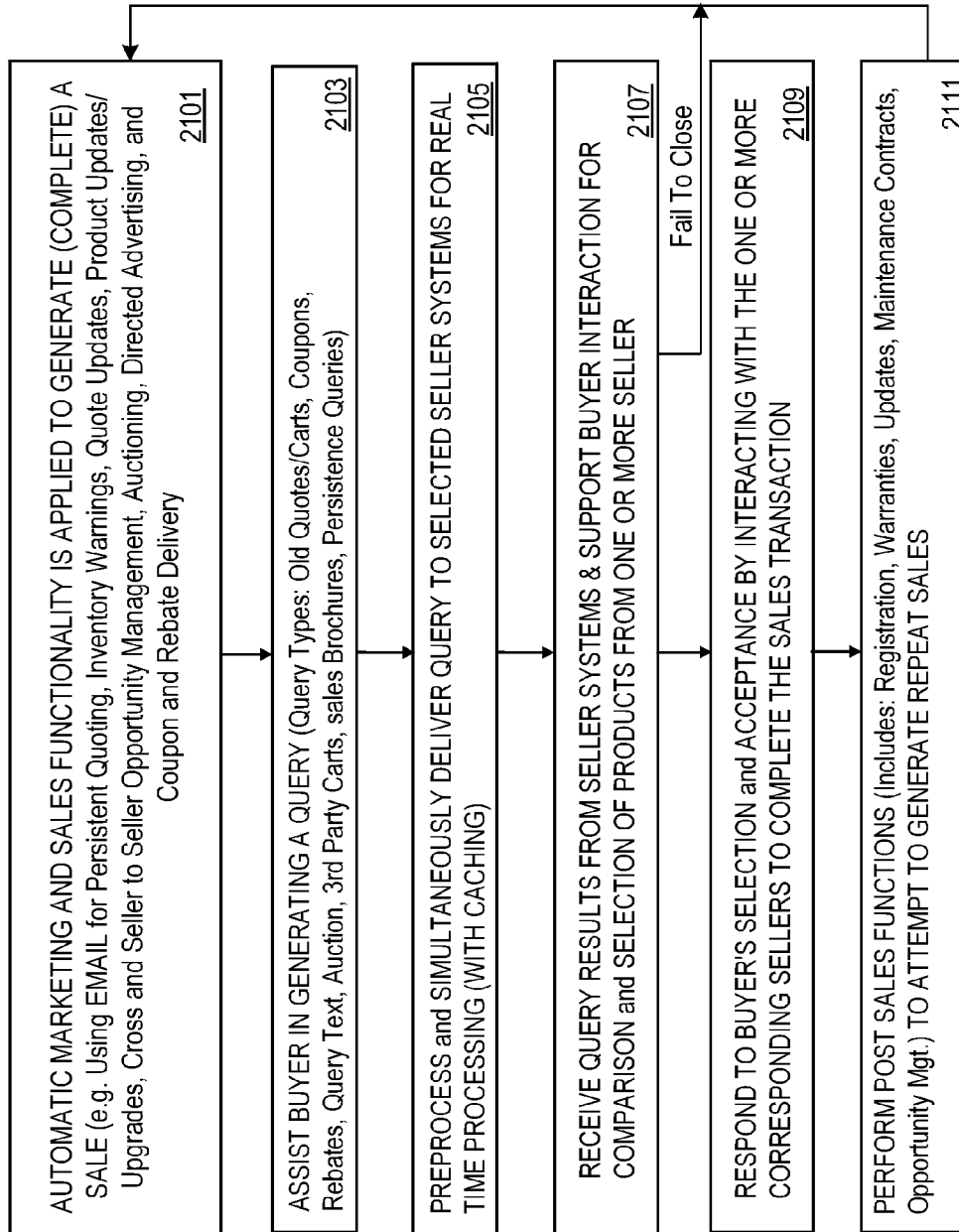


FIG. 21

Query Terms	Query Text	Send Query	View Hits
<div>Cars</div> <div>Clothing</div> <div>Compact Discs</div> <div>Computers</div> <div>Accessories</div> <div>Desktop</div> <div>Home</div> <div>Business</div> <div>PDA</div> <div>Portable</div> <div>Server</div>			

FIG. 22

Review Selection	Buy Selection
------------------	---------------

Seller: Dell Computer Corp. *****

\$1999.00 - Pentium 300MHz PII, 15" Monitor ...

\$2299.00 - Pentium 350MHz PII, 15" Monitor ...

Seller: Compaq Computer Corp. *****

\$1699.00 - Pentium 200MHz MMX, 17" Monitor ...

\$2199.00 - Pentium 300MHz PII, 15" Monitor ...

\$499.00 - 15" IBM Flatscreen Monitor, NI, ...

Seller: ABC Computer Corp. **

\$1599.00 - Compaq Pentium 300MHz PII, No Monitor ...

\$2499.00 - IBM Pentium 300MHz PII, 15" Monitor ...

\$2899.00 - IBM Pentium 350MHz PII, 17" Monitor ...

FIG. 23

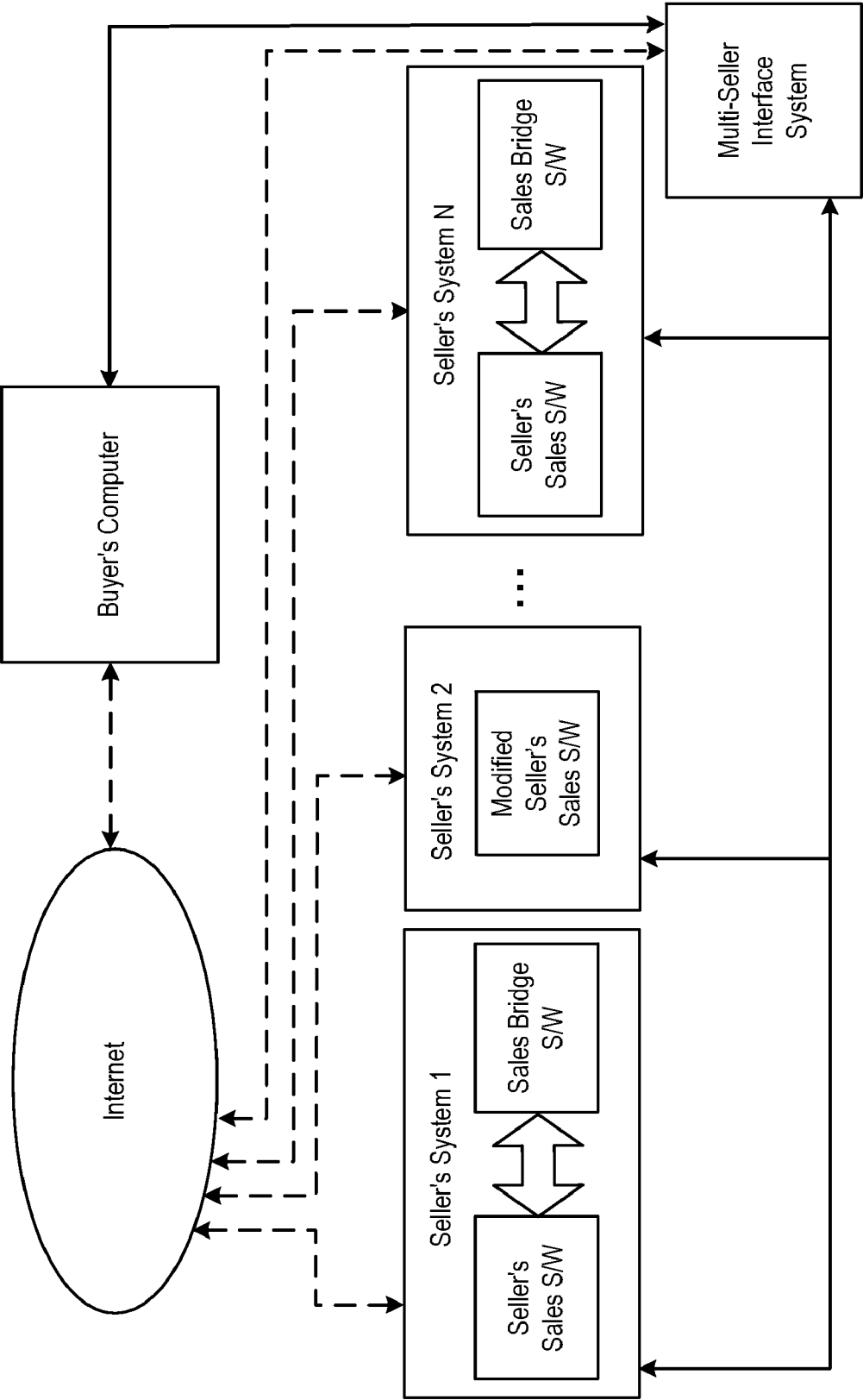


FIG. 24

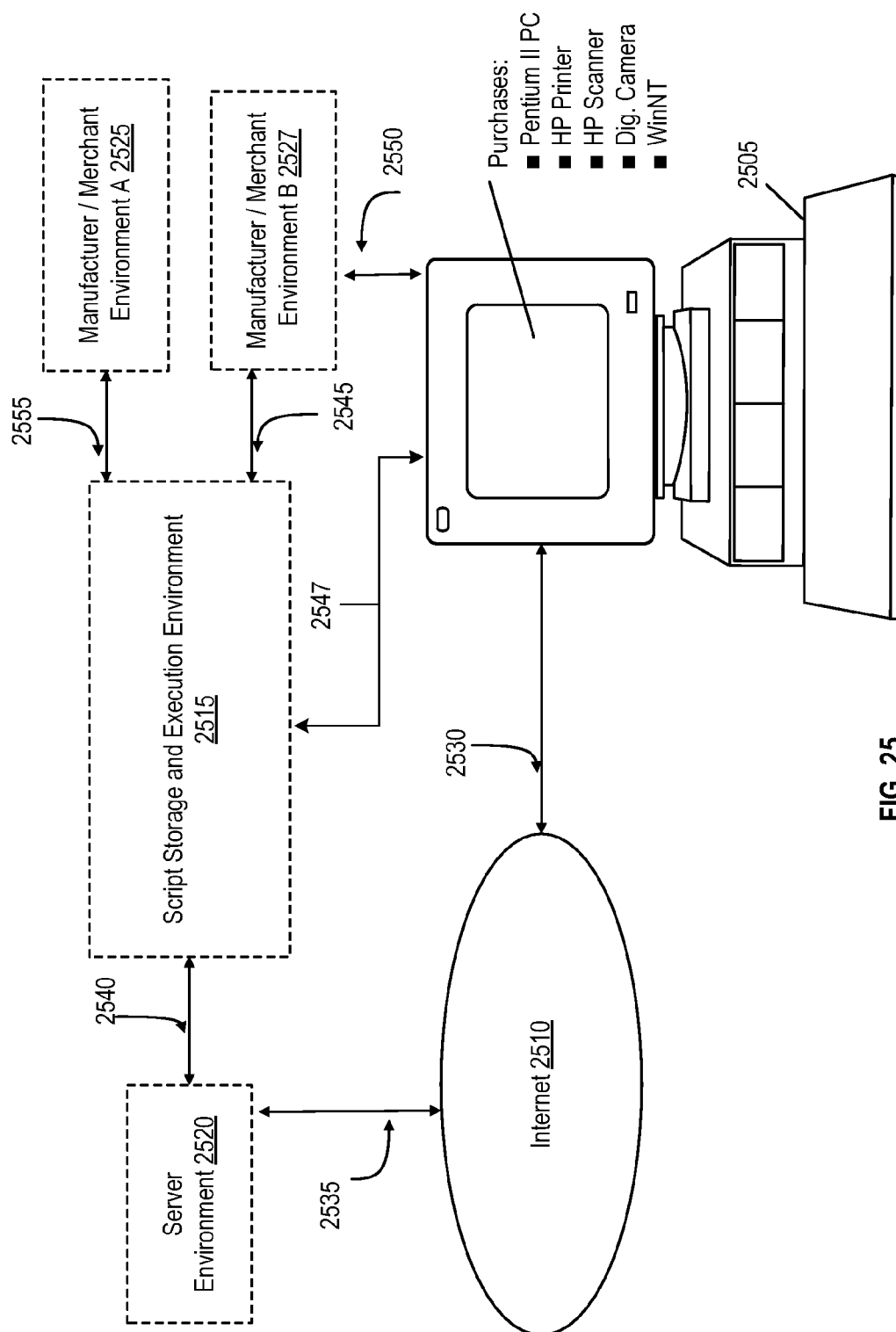
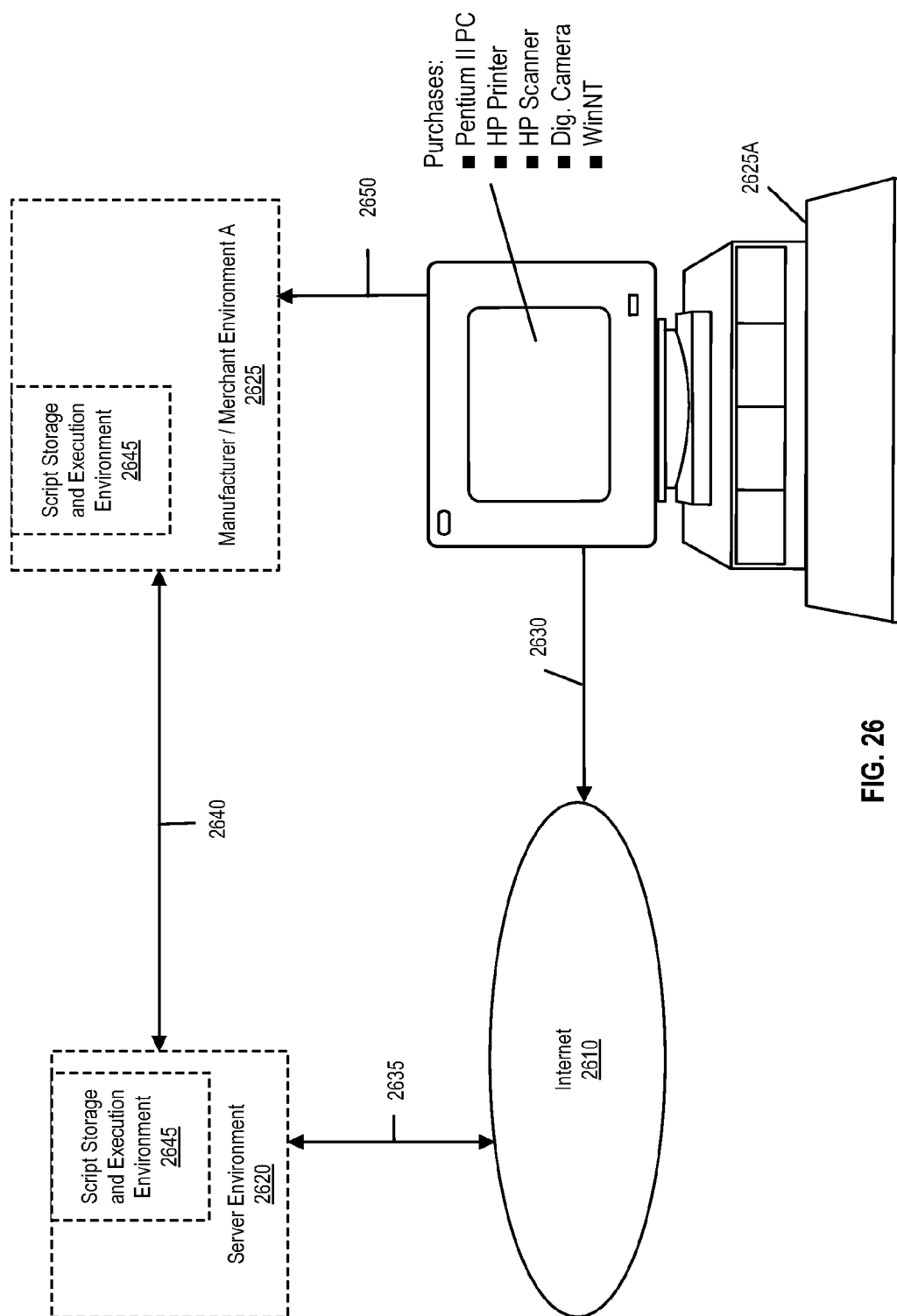


FIG. 25



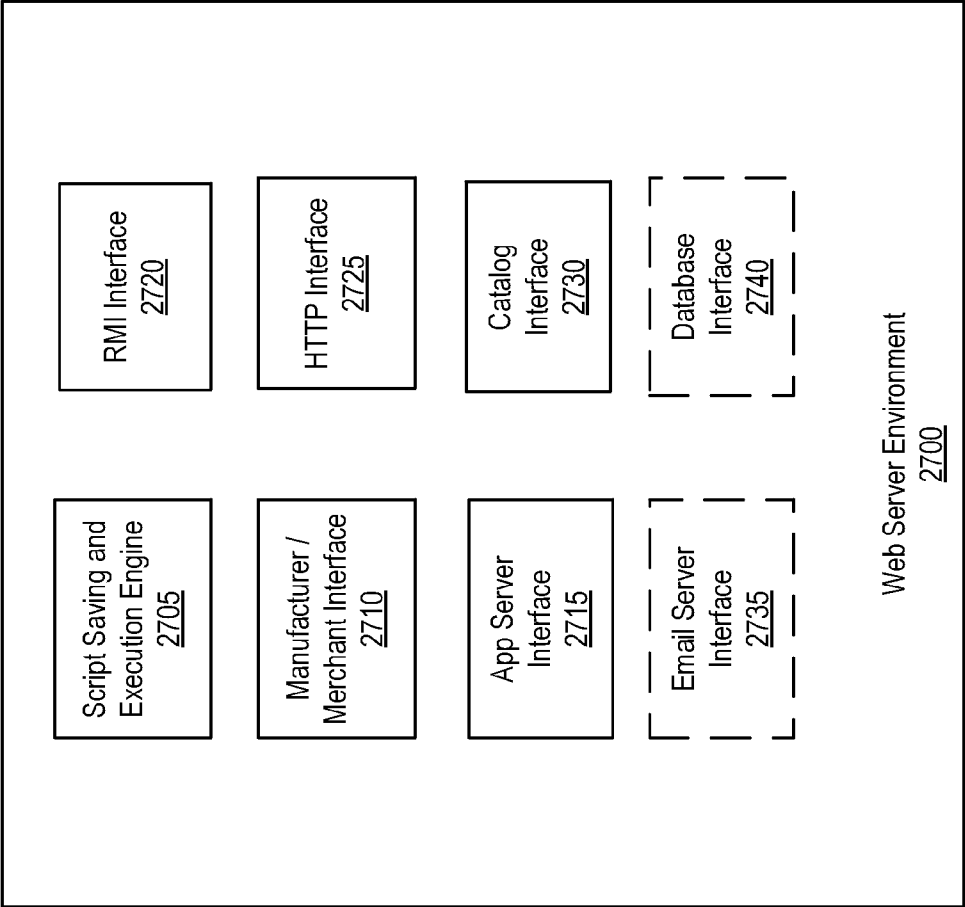


FIG. 27

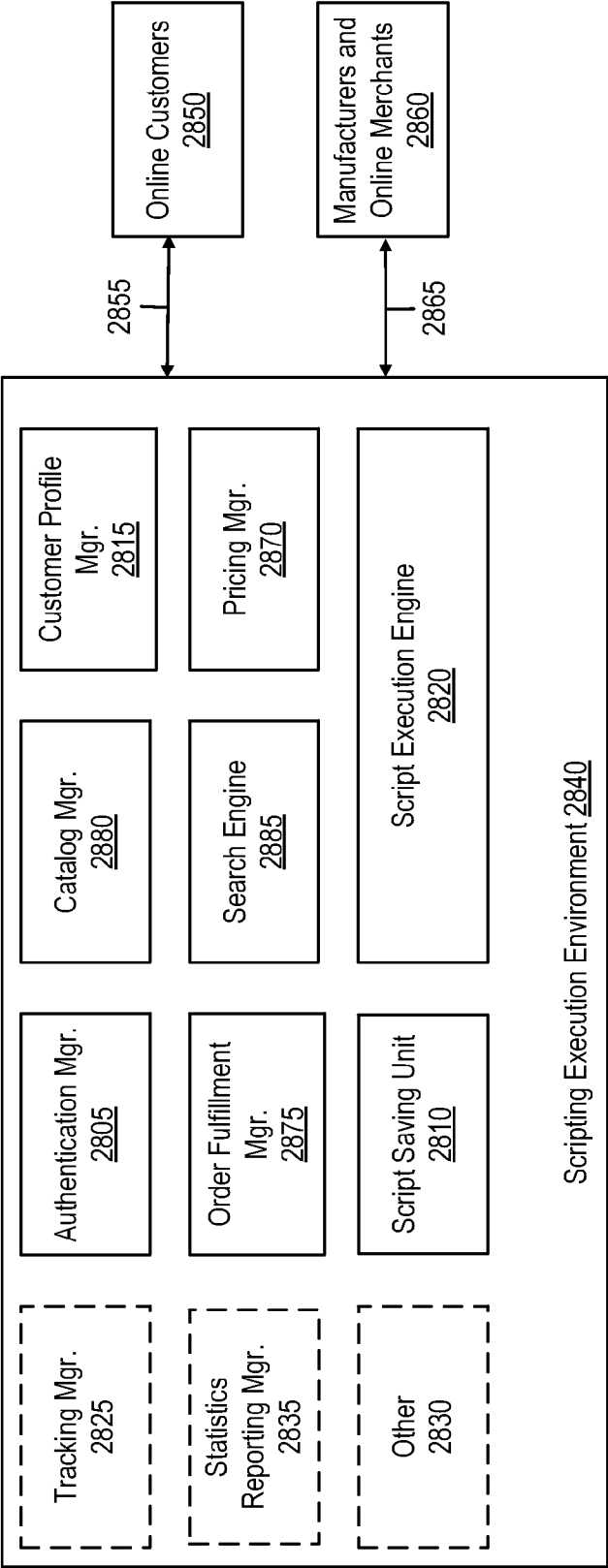
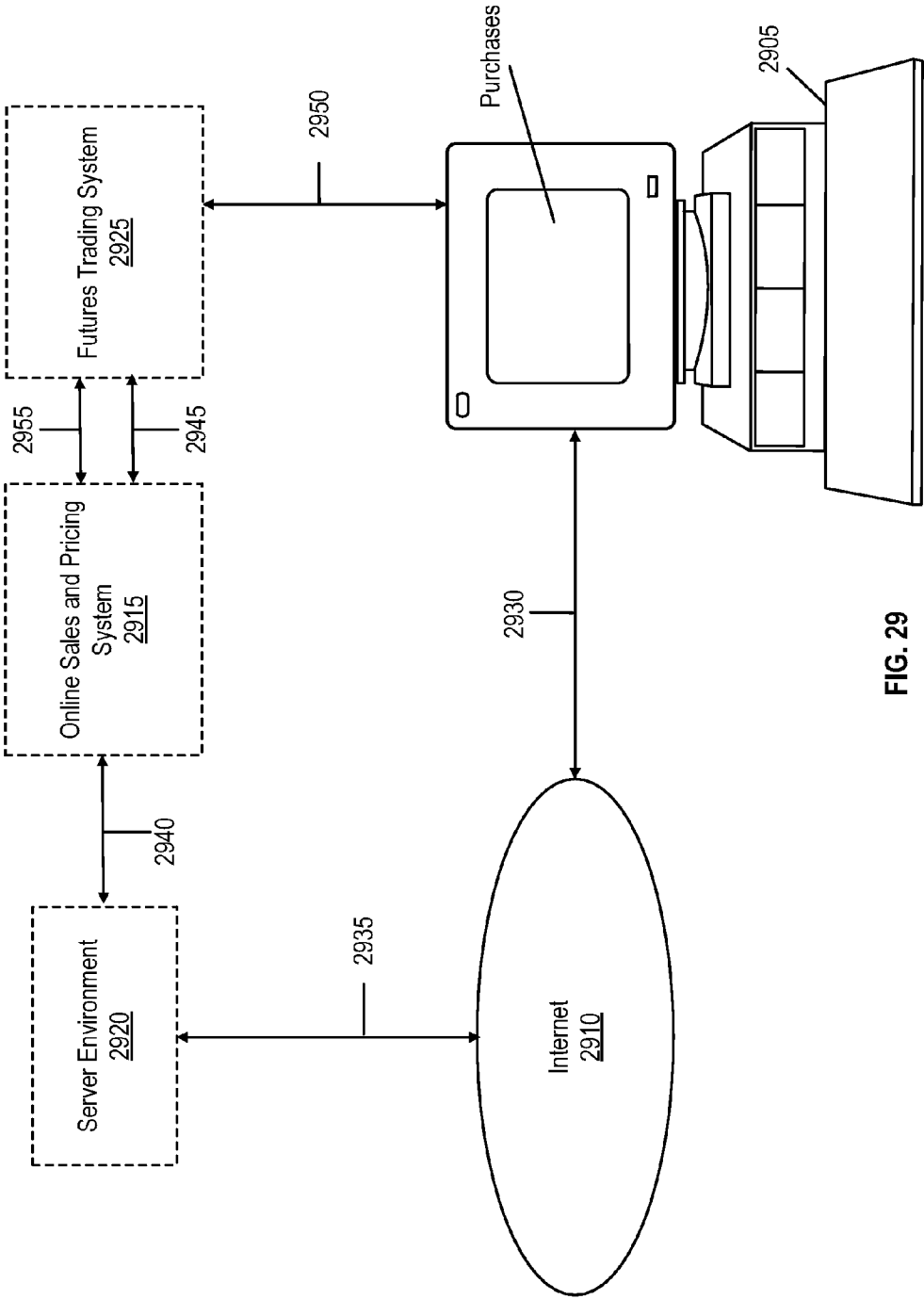
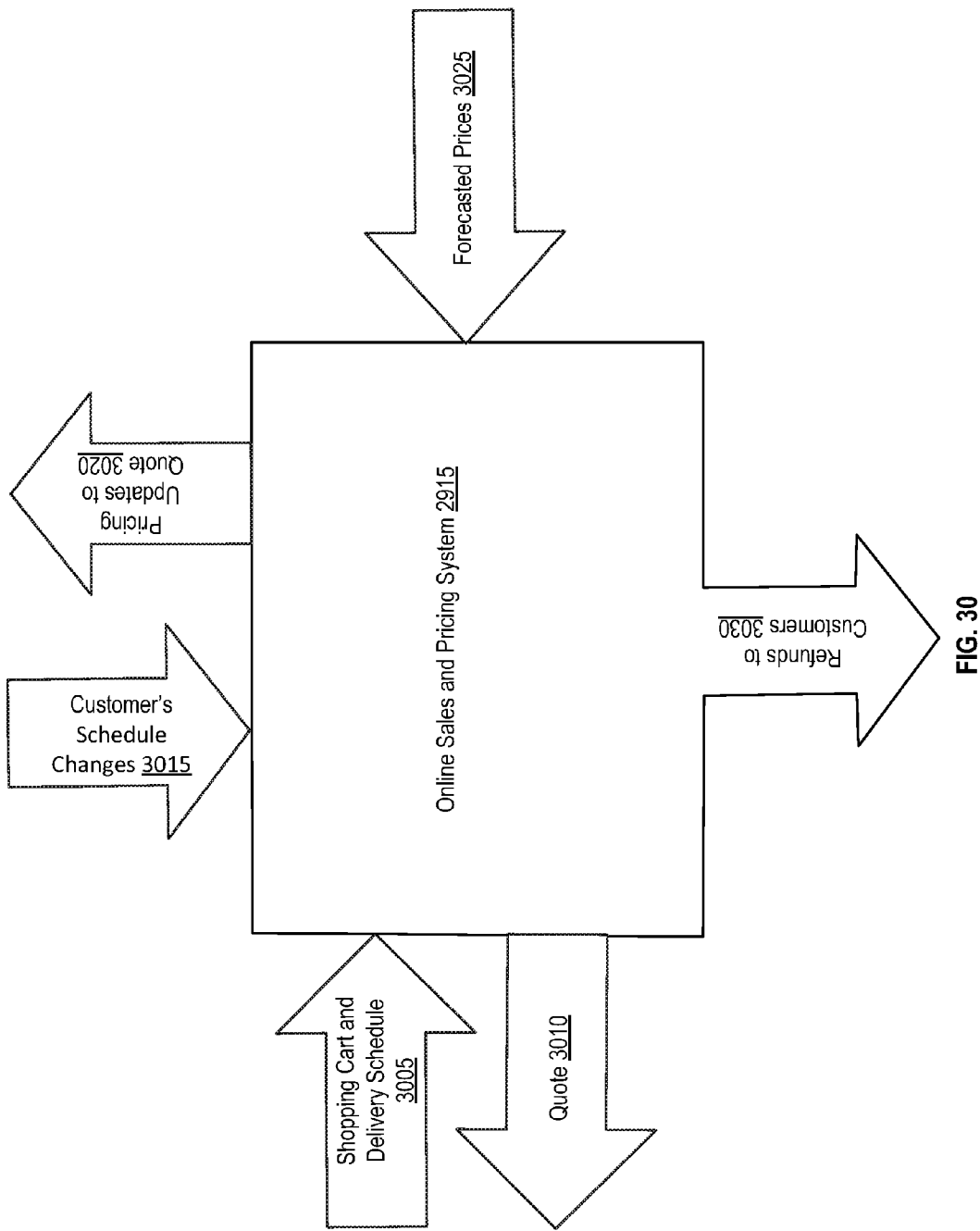


FIG. 28





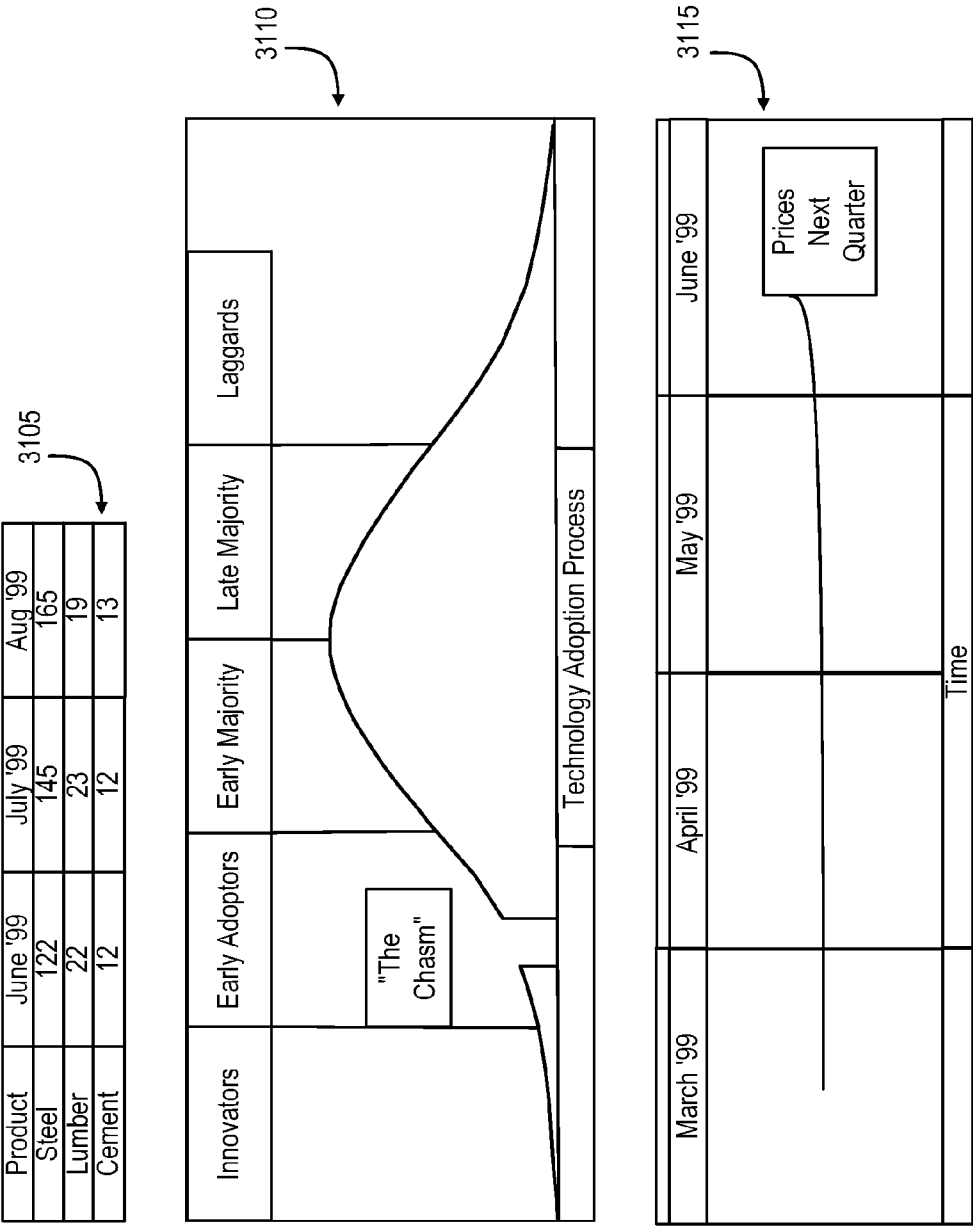


FIG. 31

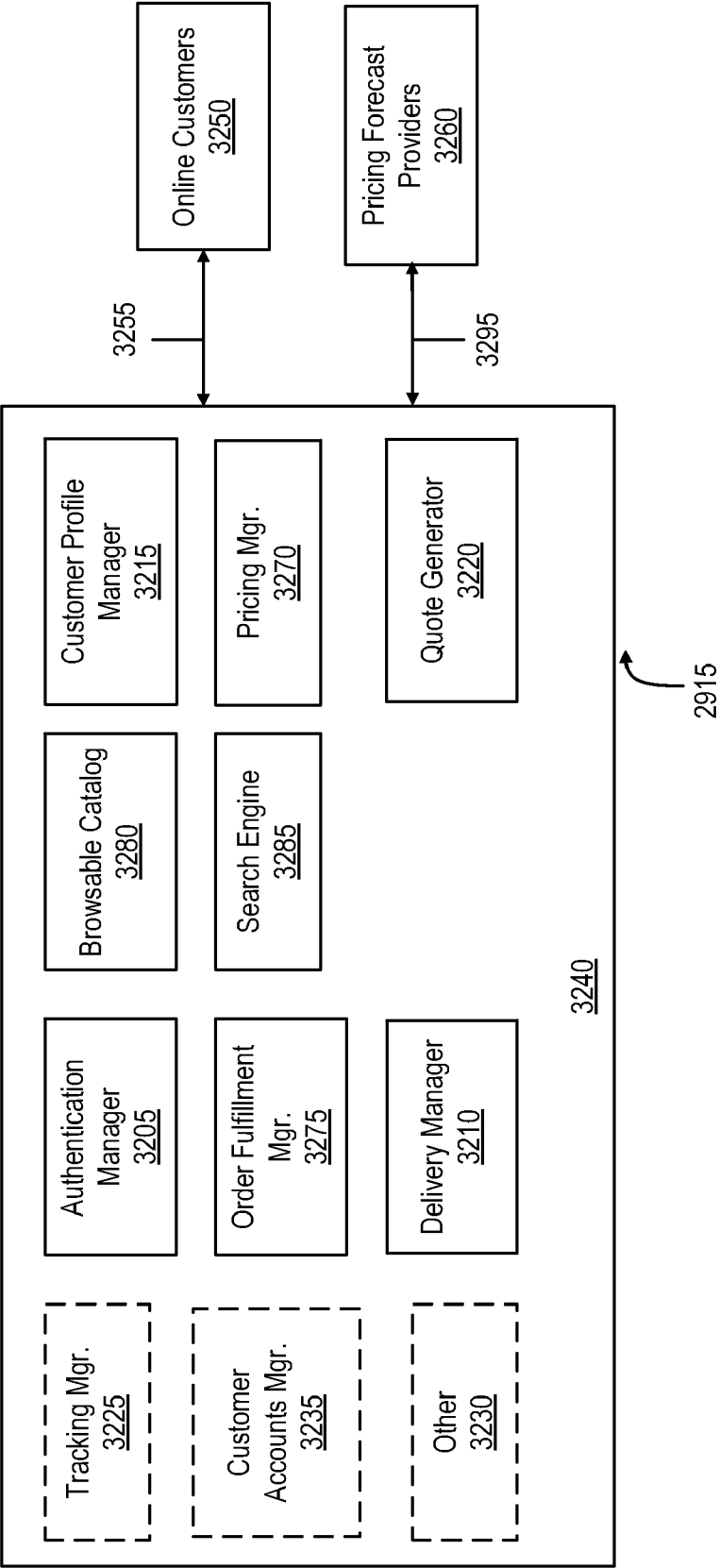


FIG. 32

Customer No. 12555 Schedule 1 3305						
	May '99	June '99	July '99	Aug '99	Sept '99	
6Gig Hard Drives	100				100	
32Meg SDRAM		300		300		
CDROM		100	100		100	

Forecasted Prices 3310						
	May '99	June '99	July '99	Aug '99	Sept '99	
6Gig Hard Drives	300	275	250	225	225	
32Meg SDRAM	80	70	70	70	60	
CDROM	67	67	50	50	50	

Quote for Customer 12555 3315		
	Jan Price	
6Gig Hard Drives	300; 225	52500
32Meg SDRAM	70; 70	42000
CDROM	67; 50; 50	16700
Total		111200
Discounted Total	10%	100080

FIG. 33

**ON-LINE SALES CHAIN INFRASTRUCTURE
SUPPORTING MULTIPLE DIFFERING
BRIDGING TRANSACTIONS WITH SELLER
SYSTEMS**

**CROSS-REFERENCE TO PRIORITY
APPLICATIONS**

[0001] This application is a continuation of Ser. No. 13/423,391 (Docket No. 0020-C-1), filed Mar. 19, 2012, which is a continuation of the following applications:

[0002] U.S. application Ser. No. 13/109,093 (Docket No. B011C2), filed May 17, 2011, now issued as U.S. Pat. No. 8,181,851, which is a continuation of U.S. application Ser. No. 12/467,557 (Docket No. B011C), filed May 18, 2009, now issued as U.S. Pat. No. 7,942,316, which is a continuation of U.S. application Ser. No. 09/808,717 (Docket No. B011), filed Mar. 14, 2001, now issued as U.S. Pat. No. 7,539,628, which is based on and claims the benefit of U.S. Provisional Nos. 60/214,136 (Docket No. 00A011), filed Jun. 26, 2000, 60/214,183 (Docket No. 00A01), filed Jun. 26, 2000, and 60/190,825 (Docket No. 00GP0001P), filed Mar. 21, 2000;

[0003] U.S. application Ser. No. 13/224,052 (Docket No. B012C), filed Sep. 1, 2011, which is a continuation of U.S. application Ser. No. 09/808,722, filed Mar. 14, 2001 (Docket No. B012), now issued as U.S. Pat. No. 8,036,941, which is based on and claims the benefit of U.S. Provisional Nos. 60/213,912 (Docket No. 00A012), filed Jun. 26, 2000, 60/214,183 (Docket No. 00A01), filed Jun. 26, 2000, and 60/190,825 (Docket No. 00GP0001P), filed Mar. 21, 2000;

[0004] U.S. application Ser. No. 13/104,311 (Docket No. B013C2), filed May 10, 2011, now issued as U.S. Pat. No. 8,177,124, which is a continuation of U.S. application Ser. No. 12/467,664 (Docket No. B013C), filed May 18, 2009, now issued as U.S. Pat. No. 7,938,316, which is a continuation of U.S. application Ser. No. 09/808,723 (Docket No. B013), filed Mar. 14, 2001, now issued as U.S. Pat. No. 7,542,922, which is based on and claims the benefit of U.S. Provisional Nos. 60/190,825 (Docket No. 00GP0001P), filed Mar. 21, 2000, 60/214,183 (Docket No. 00A01), filed Jun. 26, 2000, and 60/214,188 (Docket No. 00A013), filed Jun. 26, 2000; and

[0005] U.S. application Ser. No. 09/687,499 (Docket No. 020), filed Oct. 13, 2000, which is a continuation-in-part of U.S. application Ser. No. 09/547,162, filed Apr. 11, 2000, now abandoned, which is based on and claims the benefit of U.S. Provisional Nos. 60/130,082, filed Apr. 19, 1999, 60/130,083, filed Apr. 19, 1999, 60/130,084, filed Apr. 19, 1999; 60/131,008, filed Apr. 23, 1999, 60/144,584, filed Jul. 19, 1999, 60/146,208, filed Jul. 28, 1999, 60/147,062, filed Aug. 4, 1999, and 60/159,388, filed Oct. 14, 1999.

[0006] The above-identified applications are all hereby incorporated herein by reference in their entirety and constitute part of the present application.

BACKGROUND

[0007] 1. Technical Field

[0008] The present invention relates generally to online sales and marketing, and, more specifically, to online sales during online purchase on the Internet.

[0009] 2. Related Art

[0010] The past ten years have seen tremendous growth in online Internet sales. Integration of key sales functions into

sales software and hardware systems account for much of the penetration of online sales systems by manufacturers, distributors, and retailers. As buyers become more comfortable with Internet and online credit card processing, and begin to appreciate the associated ease and benefits of online purchasing, online sales revenues should experience exceptional growth. For 1998, online sales reached approximately 60 billion dollars in revenue, while projections for 2003 anticipate over 1.4 trillion. Corporate buyers and sellers generate over 90% of such revenues.

[0011] Conventional sales systems, such as (1) sales or shopping robot ("shopping bot" or "sales bot") systems, (2) purported instant rebate and coupon systems, (3) auctioning systems, (4) parallel web hosted systems, (5) custom sales channel software development, etc., however, are deficient in many respects and offer only partial solutions. For example, the above systems require an excessive investment of human labor for operation, suffer from inherent and significant deficiencies in performance, and have difficulties in collecting revenue.

[0012] More specifically, shopping bots act as a front end to the sales process by attempting to assist an individual buyer in comparison shopping of items across sellers on the web. Shopping bots require human intensive interaction not only in setting up an interface to each seller's site, but also in the ongoing maintenance of each interface to each seller's site. Shopping bots attempt to read and process information from the web pages of each seller's site which are often changed or deleted or moved to a differing URL. Shopping bots also fail to identify new products at each seller's site without having an employee revisit the seller's site, revisit all the links there, identify new URL's and associated new web page content, and formulate new interfaces thereto.

[0013] Without (and often in spite of) sufficient employee interaction, shopping bots will and do suffer from providing incorrect, incomplete and outdated information. Shopping bots also (1) fail to provide interfaces with underlying seller product information, e.g., further database information involved in the selection process only available during buyer purchasing, hypertext linked ("nested") product information, etc., (2) fail to provide interfaces with underlying, backend database information, e.g., inventory, restocking schedules, etc., (3) cannot determine whether or not a purchase was made, making it difficult to collect revenues, (4) cannot perform credit card transaction processing, (5) cannot handle order fulfillment, and so on.

[0014] Purported online, instant coupons and rebate sites also suffer with many of the same deficiencies. For example, without human intervention, no mechanisms exist for (1) verifying that a manufacturer's rebate or coupon applies to an independent retailer's offering; (2) instantly applying such rebates or coupons; (3) placing control in the manufacturer for designating or modifying the number of distributed and/or applied coupons or rebates in real time; and (4) advertising a rebate or coupon on any web server selected by the manufacturer with processing through another. Thus, purported instant coupon and rebate sites require human intensive processing, and merely vector buyers to sellers' publicly offered web pages that indicate, in a poor attempt at mimicking instant processing, that a coupon is being applied.

[0015] Online auction systems also suffer from many of the same problems. Among such problems, and perhaps most importantly, conventional online auction systems fail to provide sufficient integration with sellers to enable automated,

effective use of auctioning as a vehicle to “dump” excess or discontinued inventory or for promotional purposes.

[0016] Custom software development within a wholly controlled sales channel provides a costly approach for exchanging product information, pricing, etc. When the sales channel is not wholly controlled, such information is difficult if not impossible to collect. For example, a manufacture may not be able to afford the cost of integrating with a plurality of distributors and retailers that also sell other manufacturers’ goods, wherein each use significantly different sales systems that often change.

[0017] Many other problems and disadvantages associated with prior systems will become apparent to one of skill in the art upon review of such prior systems and in light of the teachings herein.

SUMMARY OF THE INVENTION

[0018] The present invention relates to an add-on or enhancement to the current e-commerce marketplace. The present invention may integrate into the current online sales or act as a means to replace current online retailers that carry no inventory. The present invention enables a system to position itself between each buyer and seller for every Internet sales transaction. Such positioning involves offering buyers a unique and exclusive Internet sales presence that simplifies the sales process, while providing sellers with better sales information, seller to seller interaction, and additional sales opportunities. The present invention offers a modular product line and application toolkit targeting not only on the independent buyer, but also corporate buyers where the majority of sales transactions occur.

[0019] Many other aspects and variations of the promotion system of the present invention can be appreciated by one of skill in the art through review of the detailed description, corresponding drawings, and claims.

BRIEF DESCRIPTION OF THE DIAGRAMS

[0020] The numerous objects and advantages of the present invention may be better understood by those skilled in the art by reference to the accompanying figures in which:

[0021] FIG. 1 is a functional block diagram of buyer and seller system interaction with the Multi-Seller Interface System (MSIS) of the present invention;

[0022] FIG. 2 is a diagram illustrating the SalesPoint Software supporting web based, interactive access by buyers and sellers through their web clients, and non-web based, automatic access by the sellers through an interface of the present invention;

[0023] FIG. 3 is a diagram illustrating buyers using their web client software to select and request server pages for one of a plurality of application services in the present invention;

[0024] FIG. 4 is a diagram illustrating the interactions between the software and the Seller’s system of the present invention;

[0025] FIG. 5 illustrates an individual buyer interface system that runs on the MSIS of the present invention;

[0026] FIG. 6 illustrates an Opportunity Management application service that provides for up, cross and seller to seller opportunity management for automated, email-based target marketing without the need to release buyer or specific seller information to another participating seller according to the present invention;

[0027] FIG. 7 illustrates Supply, Competition & Sales Channel Services (“Channel Services”) offered in accordance with the present invention;

[0028] FIG. 8 illustrates Supply, Competition & Sales Channel Services (“Channel Services”) offered in accordance with the present invention;

[0029] FIG. 9 illustrates Sales Promotion Services offered in accordance with the present invention;

[0030] FIG. 10 illustrates an auction function offered in accordance with the present invention;

[0031] FIG. 11 illustrates a Corporate and Government Bidding Service offered in accordance with the present invention;

[0032] FIG. 12 is a schematic diagram of an Integrated Channel System comprising an Integrated Channel Service Manager, a manufacturer environment comprising an Inventory system, a Pricing system, a Configuration system, and an Order fulfillment system, a Reseller system for Reseller A comprising an inventory system and an order system, a Reseller system for Distributor B comprising a Seller’s system, and a Retailer system for Retailer C comprising a Seller’s system in accordance with the present invention;

[0033] FIG. 13 is a schematic diagram of an Integrated Channel System comprising an Integrated Channel Service Manager and a manufacturer environment in accordance with the present invention;

[0034] FIG. 14 is a block diagram of a Multi-Seller Interface System in accordance with the present invention;

[0035] FIG. 15 is a block diagram illustrating a Multi-Seller Interface System with regard to coupons and rebates offered by a Seller in accordance with the present invention;

[0036] FIG. 16 is a block diagram of a Multi-Seller Interface System illustrating multiple distributors and retailers in accordance with the present invention;

[0037] FIG. 17 is a block diagram of a Multi-Seller Interface System illustrating a Seller determining the selling price of specific Products being offered for sale by other online Sellers in accordance with the present invention;

[0038] FIG. 18 is a block diagram illustrating the Multi-Seller Interface System’s role in the identification of Sellers for a Buyer attempting to purchase products Product A and Product B over the internet in the present invention;

[0039] FIG. 19 is a block diagram illustrating the Multi-Seller Interface System capable of interacting with Seller’s systems employing a Sales Bridge software that is installed on each of the Seller’s systems in the present invention;

[0040] FIG. 20 is a schematic block diagram illustrating various functionality of a Multi-Seller Interface System’s and Seller’s systems of the present invention;

[0041] FIG. 21 is an exemplary flowchart illustrating typical workflow at the Multi-Seller Interface System of the present invention;

[0042] FIG. 22 is an exemplary screen layout that a Buyer interacts with in order to select products and obtain product prices during an online purchasing activity supported by the MSIS in the present invention;

[0043] FIG. 23 is a diagram illustrating a list of products with prices provided to Buyer by the MSIS in the present invention;

[0044] FIG. 24 is a functional block diagram of buyer and seller system interaction with the system of the present invention;

[0045] FIG. 25 is a perspective diagram of an online buyer interacting with a server, via the internet, to specify products

that are to be purchased periodically, to selectively save the specification of products that are to be purchased periodically in a Script Storage and Execution Environment, and to selectively retrieve previously saved specification of products from the Script Storage and Execution Environment for modification or for purchasing;

[0046] FIG. 26 is a diagram showing the incorporation of the Script Storage and Execution Environment into both the web server and the manufacturer/merchant environment;

[0047] FIG. 27 is a block diagram showing the different functional components of a web server environment that facilitates email and script based sales transactions;

[0048] FIG. 28 is a block diagram of a scripting execution environment that provides access to various resources and data via appropriate interfaces during the execution of scripts;

[0049] FIG. 29 is a perspective diagram of an online customer using a computer interacting with an online sales and pricing system, via the internet, to conduct online purchases during which the pricing computation employs, among other things, the customer's schedule of product delivery, the forecasts of product prices provided by online futures trading systems and the projected needs of the customer;

[0050] FIG. 30 is a diagram showing the various inputs and outputs of the online sales and pricing system;

[0051] FIG. 31 shows various forms of product price forecasting information received by the online sales and pricing system from pricing forecasting systems such as futures trading systems, commodity trading organizations, market research institutions, manufacturers, etc.;

[0052] FIG. 32 is a block diagram showing exemplary components of the online sales and pricing system; and

[0053] FIG. 33 shows the operation of the pricing logic based on unit prices of the products as determined by forecasted pricing information obtained from pricing forecast providers and the delivery schedule provided by the customer.

DETAILED DESCRIPTION OF THE DIAGRAMS

[0054] FIG. 1 provides a functional block diagram of buyer and seller system interaction with the Multi-Seller Interface System (MSIS) of the present invention. The MSIS comprises SalesPoint and SalesBridge Software. The SalesPoint Software runs on one or more conventional web and application servers to provide a multi-seller interface.

[0055] The SalesBridge Software is placed on each seller's online sales system to bridge communication between the SalesPoint Software and each seller's online sales databases and applications. Buyers may then simultaneously access many independent and different seller's sales systems. Similarly, groups of sellers (within one or more sales channels) can easily and automatically share sales and product information.

[0056] As shown in FIG. 2, the SalesPoint Software will support web based, interactive access by buyers and sellers through their web clients, and non-web based automatic access by the sellers through an interface.

[0057] The SalesBridge Software uses both query and transaction bridging functionality to couple each seller's system with the SalesPoint Software. Alternatively, such bridging functionality may be partially or entirely integrated into the seller's system.

[0058] FIGS. 3 and 4 are detailed drawings of the SalesPoint and SalesBridge Software. As shown in FIG. 3, buyers use their web client software (e.g., a browser) to select and request server pages for one of a plurality of application

services. A web server and server script environment responds by serving html files, server pages and images that correspond to the selected application service. The server pages executed by the environment typically incorporate method invocations on objects stored in an object layer or object backbone and associated databases. In addition, the server pages identify transaction logic for the selected application service.

[0059] For each of the application services, transaction logic (a high level scripting language) is written to include a sequence of tasks that each manipulate data or objects, with each of the tasks executed by underlying task specific transaction logic or compiled code (hereinafter a "workflow object"), or both. Although transaction logic is specifically written for each of the application services, many of the workflow objects and underlying task specific transaction logic are shared by different application services.

[0060] Some examples of the application services contemplated by the present invention can be found with reference to FIGS. 5-11 below. The tasks executed by the transaction logic engine may include, for example, credit card related transactions, database searches, database updates, remote transactions executed on one or more seller's systems, etc.

[0061] The transaction logic engine interacts with several other web server components of the SalePoint Software, such as a query generator, scheduling component, usage tracking, management component, email component, third party web server interface, credit card processing interface and a remote transaction handler. The query generator creates queries based on information provided by buyer, data retrieved from database(s), information provided via method invocations from non-web server interface, etc. The queries generated by the query generator are selectively sent to SalesBridge Software associated with remote Seller's systems to extract various kinds of sales information.

[0062] The scheduling component is used to periodically initiate various tasks, transaction logic, and activities such as reporting or re-pricing, etc. For example, a buyer or seller can schedule various activities and specify when and how frequently they should be executed through associated application services. The schedules and the activities are saved in databases by the scheduling component for subsequent retrieval and execution by the transaction logic engine.

[0063] Although usage tracking might have been implemented via transaction logic, it is implemented as a separate component to collect, process and report information regarding the use of the SalePoint Software by buyers and sellers. The usage tracking component provides information on products sold by various sellers, product sales volume, type of products being sold, inventory information, and various other sales related information. The usage tracking component provides information with different levels of granularity, as required and authorized by various buyers and sellers.

[0064] The management component is used to manage various activities, scheduled or unscheduled, for buyers and sellers. It is also used to manage initializations, application service deployment, updates, recycling, and shutdown of various resources.

[0065] The email component is used to send email to one or more buyers or buyer groups after the processing of certain events or after the execution of a scheduled or unscheduled transaction logic command. It is also used to send various information, such as, for example, buyer purchasing and

query profiles, to sellers and to email promotional material such as coupons and rebates to one or more buyers.

[0066] The third party web server interface is used to interact with remote web servers to retrieve or to provide various kinds of information. Using this interface, it is possible to interact with remote web servers just like web clients on those web servers.

[0067] The credit card processing component is used to interact or conduct transactions with remote credit card processing units. Such remote credit card processing units may be located at seller's environments or incorporated into a seller's system. The credit card processing component enables a buyer to selectively spread purchases over one or more credit cards owned by the buyer, and to spread a buyer's shopping cart purchase over several sellers.

[0068] The remote transaction handler provides support for interactions with SalesBridge Software installed with one or more remote seller's sales systems. It employs one or more communication mechanisms such as Remote Method Invocation (RMI), Common Object Request Broker Architecture (CORBA), TCPIIP, Voyager, etc., to communicate with remote software and retrieve information. Remote SalesBridge Software can initiate communications with the SalePoint Software in order to retrieve information, provide information, or request some service. It also supports communication with external systems such as third party credit-card systems and monitoring tools.

[0069] FIG. 4 shows the interactions between the SalesBridge Software and the Seller's system. The seller's system may have its own web server to provide an interface to web clients. The seller's system also typically incorporates seller's database that comprise, among other things, product, promotional, order fulfillment, product registration, warranty and customer databases. An object layer on top of the database layer enables the application layer to manipulate objects.

[0070] The seller's system may also contain the seller's non-web applications, web based applications, and card processing application. The SalesBridge Software may also interact with the seller's applications to extract product, pricing and inventory information as well as to conduct credit-card based transactions.

[0071] If the seller's system includes a web server, the SalesBridge Software may also provide a web based application bridge to assist the query bridge in extracting product, pricing and inventory information. The query bridge is responsible for mapping or translating queries sent by SalePoint Software into one or more queries executable on the seller's databases to retrieve, and possibly update, information in the seller's databases.

[0072] The SalesBridge Software also provides a non-web based application bridge to extract information from the seller's system via the seller's non-web applications interface. The non-web based application bridge is employed via an interface supporting remote access based on CORBA, RMI, etc.

[0073] The SalesBridge Software also includes a transaction bridge that can be used to interact with the seller's card processing application to process credit card purchases. For example, a buyer's credit card and shopping cart related information may be communicated to the seller's card processing application to complete a transaction for the buyer.

[0074] FIG. 5 illustrates an individual buyer interface system, SaleBlazer, that runs on the MSIS. The interface may

also be tailored to the corporate buyer, with extended functionality supporting, for example, scheduled buying and just-in-time delivery.

[0075] To interact with the SaleBlazer service, a buyer merely uses conventional web browser software on the buyer's computer. The buyer interacts to define a query relating to one or more desired products. The SaleBlazer service via the SalePoint Software identifies those of the plurality of participating sellers that might carry such products. Once defined, the SalePoint Software simultaneously communicates the query to SalesBridge Software at each of the identified participating sellers.

[0076] Using the query and transaction bridging approach of the present invention, each SalesBridge Software component performs a search of product, pricing, inventory, etc., databases based on the query. All sales information relating to each product identified in the search is delivered to the SalePoint Software for presentation to the buyer. The buyer may review, compare and select one or more of the products returned from one or more of the participating sellers. Caching of common queries on a day to day basis will also be supported by the SaleBlazer service to minimize communication overhead.

[0077] From an individual buyer's online perspective, the SaleBlazer service will perform a single transaction (e.g., credit card) processing of multiple product selections spanning more than one seller. Based on final configuration, the underlying transaction may actually involve (1) a plurality of transaction processes between each seller and the buyer using the buyer's credit card information, and/or (2) a single credit card transaction for the total from the buyer to the MSIS along with a plurality of transaction processes with each seller involving account information of the MSIS.

[0078] As part of the sales transaction or in follow up thereto, the SaleBlazer service will perform automated registration, warranty delivery and acceptance, maintenance contract offerings and purchases, and emailed product information regarding updates and upgrades services. Stored buyer profiles will minimize buyer interaction required to carry out sales transaction and such associated services.

[0079] FIG. 6 illustrates an Opportunity Management application service that provides for up, cross and seller to seller opportunity management for automated, email based target marketing without the need to release buyer or specific seller information to another participating seller. For example, the Opportunity Management service will permit a first seller to contact a buyer that has completed a sales transaction for a product of a second seller. Similarly, a buyer showing interest but not buying one of a seller's products can be automatically contacted via email offering another of the seller's products. The buyer may choose to remain anonymous and still receive such email through our email forwarding functionality of the Opportunity Management service.

[0080] FIGS. 7 and 8 illustrate Supply, Competition & Sales Channel Services ("Channel Services") offered in accordance with the present invention. Each seller's sales system contains complete, real time public and private sales information. The Channel Services will provide each participating seller with access to other participating seller's sales information. For example, in response to manually or automatically generated queries from a seller, the Channel Services instantly deliver public information such as pricing and product descriptions from competing participating sellers. For queries generated within a sales channel (i.e., by a manu-

facturer and the manufacture's distributors and retailers), private information relating to each product such as inventory, inventory projections, numbers sold, margins, etc., can be instantly exchanged. Such public and private information will also be used by SFA (Sales Force Automation), ERP (Enterprise Resource Planning), and SC (Supply Channel) tool vendors to forecasting inventory, pricing, promotional activities (e.g., instant coupons, auctioning and rebate programs), and production planning, for example.

[0081] FIG. 9 illustrates Sales Promotion Services offered in accordance with the present invention. Using the Sales Promotion Services, a buyer can generate a query from online rebate and coupon information for true instant processing, unlike current online rebate and coupon vendors who incorrectly claim to do the same. Further, queries may be generated from advertising information, e.g., online auction descriptions, online sales brochures, etc., whether or not such information originates within the MSIS.

[0082] FIG. 10 illustrates an auction function offered in accordance with the present invention. The MSIS supports auctioning of products by one or more Seller's in an environment where a Buyer using a Web Client(s) can make a bid for one or more products put up for auction by a Seller via the Seller's Web Client software. The Sellers typically employ Auction Posting to which Buyers send bids. The MSIS Running Auction Application maintains bids offered by potential Buyers for one or more Auction Postings put up for auction by Sellers. When the Seller selects one or more Buyers to consummate an auction sale, the MSIS makes it possible to execute credit-card based transactions employing the Credit Card Processing Service and one or more Credit Card Companies.

[0083] FIG. 11 illustrates a Corporate and Government Bidding Service offered in accordance with the present invention. The MSIS can be used as a bid processing system to support bidding by multiple Seller's to meet the requirements of Buyers, typically corporate buyers. The MSIS Running Bidding Application interacts with multiple Sellers who can participate in the bidding process in response to a bid request posting (BRP) from Buyers. Buyers or Requesters can access bidding information on the MSIS via the Requester's Web Client. Using the Bidder's Web Client, Bidders can review or selectively change their bids and also review the status of the BRP.

[0084] SalesBridge Software on Bidder's System is employed by the MSIS to interact with the bidder's system and periodically update information on the status on bids. In addition, the inventory of various products available on the bidder's system is selectively accessed by the MSIS via the SalesBridge.

[0085] Requesters using a Requester's Web Client and Bidders using a Bidder's Web Client may interact with the MSIS via an Affiliated Bidding Web & App Server, which selectively sends Requests or bids to the MSIS and provides information about them to Requesters and Bidders. Similarly, Third Party Bidding Web & App Servers employ the services of the MSIS to save bid-related information and to conduct the bid resolution activities. The various participants in the request and bidding process are periodically informed about the status of the bids via email. When bids are decided and the Requester selects a Bidder, say a lowest bidder, the MSIS facilitates the execution of the transactions to consummate the purchase of the products by the Requester.

[0086] In one embodiment, the MSIS automatically provides to the Requester a reference bid that comprises lowest bids for individual products from multiple Bidders, thereby assembling the lowest total bid to be used, whether as a reference or as an actual bid which can be used for purchase by the Requester. Multiple Sellers may be included in such a reference bid. When multiple Bidders are selected by a Requester, where each Bidder supplies part of the Request, the MSIS facilitates the completion of the purchase by the Request from multiple Bidders.

[0087] FIG. 12 is a schematic diagram of an Integrated Channel System comprising an Integrated Channel Service Manager, a manufacturer environment comprising an Inventory system, a Pricing system, a Configuration system, and an Order fulfillment system, a Reseller system for Reseller A comprising an inventory system and an order system, a Reseller system for Distributor B comprising a Seller's system, and a Retailer system for Retailer C comprising a Seller's system. In addition, a retailer sales system for Retailer C is also incorporated.

[0088] In general, the Integrated Channel Service Manager communicates with SalesBridge Software integrated with individual Seller systems. Specifically, the Integrated Channel Service Manager communicates with the SalesBridge Software installed with each of the Seller systems, namely, the manufacturer environment, Reseller A, Distributor B, and Retailer C.

[0089] More specifically, the Integrated Channel Service Manager sends queries related to order status, inventory levels, pricing and product configuration to the manufacturer environment and receives information from the manufacturer environment. It also selectively sends information related to product sales, pricing, inventory, order status, etc. retrieved from Reseller A and Distributor B to the manufacturer environment. In addition, the Integrated Channel Service Manager facilitates the selective exchange of sales, inventory, pricing, configuration, order status, etc. between the manufacturer environment, the Reseller A, Distributor B and Retailer C. Such selective exchange of information between the manufacturer environment, Reseller A and Reseller B occurs via the SalesBridge Software integrated with their respective systems, under the supervision or control of the Integrated Channel Service Manager.

[0090] As discussed above, quite often, manufacturers of products employ several distributors, resellers and retailers to sell their products. Often these distributors and retailers have their own internet sales presence and endeavor to sell the manufacturers products on the internet. One of the common problems faced by these distributors and retailers is their inability to assure Buyers of the availability of products, whether the product is coming from their own or the manufacturer's inventory. This causes problems during order fulfillment activities after a Buyer makes a purchase and delay in delivery follows. In general, manufacturers do not have the ability to determine the sales executed by their various retailers and distributors. This causes (the Seller) problems in determining production targets.

[0091] These problems are solved by integrating the sales, order fulfillment and manufacturing systems of all sellers in the channel, as shown, for example, in FIG. 12. Such integration is facilitated by the Integrated Channel service Manager and the individual SalesBridge Software incorporated in the software of each of the partners in the channel.

[0092] Specifically, in the manufacturing environment, in accordance with the present invention, the sales systems of manufacturers and their distributors is integrated with (a) the order fulfillment systems of the manufacturer and all the resellers and distributors, (b) the inventory management systems of the manufacturer, (c) the pricing systems of the manufacturer(s) and distributors (d) the promotion systems of all Sellers, and (e) the Configuration systems of the manufacturer which may be shared by all the distributors and resellers. This makes it possible to not only provide the ability to fulfill orders for an individual Buyer from multiple sellers (i.e. one or more distributors and manufacturers) but also the ability to incorporate different pricing schemes and promotional schemes in fulfilling the order. In addition, such integration makes it possible to incorporate information about the inventory levels of the manufacturer and distributors in determining the delivery date and shipping costs for the Buyer.

[0093] In an environment where a manufacturer is not directly involved, such as in a sales environment incorporating a large master reseller and their distributors and retailers, the sales systems of master resellers and their distributors and retailers is integrated with each Seller's (a) order fulfillment systems, (b) inventory management systems, (c) pricing systems, and (d) promotion systems to accrue the benefits described in the previous paragraph.

[0094] Often a Seller, such as a manufacturer, desires to determine the selling price of specific Products being offered for sale by other online Sellers, and their current inventory levels of those Products, especially if the other Sellers are the Seller's own distributors. This, however, is not easy. Such information may be gathered by visiting the online sales sites of various Sellers (distributors) and browsing or executing queries on each of those sales sites to extract pricing information. However, the integration of the sales systems and inventory management systems of the various distributors and retailers of a Product manufacturer makes it possible for the manufacturer to extract pricing and inventory information from the various distributors and retailers. It is also possible for the manufacturer to not only provide the distributors and retailers with a centrally maintained and shared set of product information and marketing collateral, but also provide forecasts of future pricing changes, delivery schedules, manufacturing schedules and inventory levels.

[0095] Another benefit of such integration is the ability to control promotions. For example, the integration of sales and inventory systems from multiple sellers such as those of a manufacturer and the manufacturer's distributors and retailers would make it possible to control the flow of promotional offerings (coupons, rebates, etc.) in an automated way that would also permit adjusting the promotional offerings dynamically to meet sales targets. In such an integrated environment, the adjustments of promotional offerings is driven by several parameters, including the volume of sales from the distributors and retailers, the product inventory levels at various shelves and warehouses maintained by the manufacturer and distributors, the shelf life of the products, etc. In the online internet based sales environment, the value of coupons and rebates dispensed to Buyers are thus easily tracked altered dynamically.

[0096] The integration of sales systems from multiple sellers, especially the integration of sales systems of manufacturers and their distributors, makes it possible to determine

the sale prices for similar products from different retailers and distributors that sell the same family of products from a manufacturer.

[0097] The partners of an integrated channel can retrieve configuration related information from the Manufacturer's configuration system, via the Integrated Channel Service Manager. Such information may also be selectively cached by the Integrated Channel Service Manager. The same is true for Pricing information. Similarly, catalogs of products may be maintained by the manufacturer which are then accessed by the resellers, distributors and retailers via the Integrated Channel Service Manager, and optionally directly from the manufacturer environment in coordination with the Integrated Channel Service Manager.

[0098] The integration of sales, order fulfillment, inventory management systems, pricing systems and promotion systems from various Selling entities that form a part of a manufacturer's channel organization is achieved by (a) specifying interactions between these systems, (b) identifying information exchange (c) specifying programming interfaces (APIs) and protocols for information exchange and (d) constructing transactional systems that support such interactions based on the protocols.

[0099] The interactions between the various systems are expressed as Use-Cases and scenarios. The Use-Cases also capture details of information exchange. Information exchange is typically expressed in terms of business objects such as Quotes, Line Items, Shopping Carts, Prices, Discounts, Orders, Contracts, etc. that are exchanged between systems. The actual transfer of information is carried out in one of two ways: (1) using XML based information structures for transfer of structured data between systems or (2) exchanging references to objects that are saved or instantiated in a common data exchange layer that is accessible to all participating systems.

[0100] In one embodiment of the present invention, the Integrated Channel Service Manager is capable of interacting with Seller's systems (manufacturers, resellers, distributors and retailers) employing a SalesBridge Software that is installed on each of the Seller's systems. The SalesBridge Software is used by the Integrated Channel Service Manager to execute queries sent to the Seller's systems from the Integrated Channel Service Manager. The Seller systems of the manufacturers, resellers, distributors and retailers, in response, return shopping carts with prices back to the Integrated Channel Service Manager. In general, the SalesBridge is used by the Integrated Channel Service Manager as a remote database layer that is capable of translating queries received from the Integrated Channel Service Manager into queries and processes that retrieve the requested information, such as configuration, pricing and inventory, from the Seller's Sales and other software.

[0101] The Integrated Channel Service Manager includes one or more web server software components with which Buyers' computers interact, one or more Application server software components that provide various Sales services to Buyers accessing them over the internet, and one or more Sales databases that is used to save various kinds of information such as customer profile, saved quotes, product categories, etc.

[0102] Among other things, the Integrated Channel Service Manager also supports product category selection, search query formulation, instant coupon and rebate processing, shopping cart comparison, composite shopping cart review,

shopping cart pricing and saved quote re-pricing, quote persistence and query persistence, scheduled delivery information from Buyers, customer profile auto transactions, opportunity management and sales agent support, automatic registration of products on behalf of Buyers, and Warranty management. In addition, it also includes a SalesBridge Software interface that makes it possible to interact with the Sellers' systems.

[0103] The Integrated Channel Service Manager activities include identifying potential Sellers for Buyers based on the Buyer's preferences and the actual inventory levels of the Sellers in the Channel. In addition, it identifies one or more Seller systems in the Channel as potential participants in a sale. Should the Buyer decide to consummate a sale based on the recommendation of Sellers by the Integrated Channel Service Manager, the Seller systems participating in the sale are informed of their role in fulfilling the Buyer's order by the Integrated Channel Service Manager. Subsequently, the order fulfillment systems of the Sellers are queried by the Integrated Channel Service Manager to retrieve order status information on behalf of the Buyer.

[0104] The Integrated Channel Service Manager assists Buyers in generating a query for subsequent submission of those queries to Seller's systems. Queries can take the form of old saved quotes or shopping carts, coupons selected, rebates selected, query text, third party shopping carts, sales brochures, persistent queries, etc. The Integrated Channel Service Manager preprocesses Buyer specified queries and delivers them to selected Seller systems that are identified based on one or more search criteria including, in some cases, product categories, customer profiles, inventory levels, pricing information, etc.

[0105] When the Seller's systems respond with product and pricing information, for example, with priced shopping carts that include all or a subset of the Buyer's product list, the Integrated Channel Service Manager presents the information to Buyer for interaction with the Buyer. Optionally, such information is presented as a comparison of products and prices.

[0106] Typically, if a Buyer's order cannot be fulfilled by one individual Seller, the Integrated Channel Service Manager responds to Buyer's specification of product and pricing selection by interacting with one or more corresponding Seller's systems to complete the sales transactions. Subsequently, the Integrated Channel Service Manager performs post sales functions which selectively include registration, warranties, updates, maintenance contracts, opportunity management etc. Opportunity management is employed to generate additional sales or repeat sales.

[0107] In one embodiment, in order to share information in the channel, the Integrated Channel Service Manager provides an information exchange layer that is populated with relevant data extracted from each of the participants in the Integrated Channel. Such information is later accessed by other participants under the control and coordination of the Integrated Channel Service Manager. The information exchange layer is implemented using an object-oriented database, objects of information being transferred to or retrieved from the participants of an Integrated Channel as XML based structured data. In another embodiment, the information exchange layer maintained by the Integrated Channel Service Manager is an object-oriented layer of software and associated processing software implemented over a relational database.

[0108] The Integrated Channel Service Manager thus makes it possible to provide a Buyer with a quote for the set of products the Buyer desires, the quote being assembled from information extracted from one or more participants of the Integrated Channel System and including products and prices provided by one or more of such participants. When such a quote is found acceptable by the Buyer and the Buyer places an order based on the quote provided, the Integrated Channel Service Manager disassembles the quote to provide relevant portions of the quote to the actual participant selling the product to the Buyer as sub-quotes, and then forwards the sub-quotes to the participants involved. The Integrated Channel Service Manager selectively, when required, executes credit card processing to execute a single sales transaction for the Buyer that covers all of the sub-quotes, and thus stands in and executes sales transactions on behalf of all the participants.

[0109] In addition, order status information is retrieved, as necessary and when required, to enable the Buyer to follow-up on the order placed.

[0110] FIG. 13 is a schematic diagram of an Integrated Channel System comprising an Integrated Channel Service Manager and a manufacturer environment. The manufacturer environment comprises a data warehouse, a data mining system, and a SalesBridge Software component, a Pricing system and an Order fulfillment system (and other Configuration and Inventory Systems not shown). The Integrated Channel System further comprises a Reseller system for Reseller A comprising an inventory system and an order system, a Reseller system for Distributor B comprising a Seller's system, and a Retailer system for Retailer C comprising a Seller's system.

[0111] In general, the Integrated Channel Service Manager communicates with SalesBridge Software integrated with individual Seller systems. Specifically, the Integrated Channel Service Manager communicates with the SalesBridge Software installed with each of the Seller systems, namely, the manufacturer environment, Reseller A, Distributor B, and Retailer C.

[0112] More specifically, the Integrated Channel Service Manager sends queries related to order status, inventory levels, pricing, and product configuration to the manufacturer environment and receives information from the manufacturer environment. It also selectively sends information related to product sales, pricing, inventory, order status, etc. retrieved from Reseller A and Distributor B to the manufacturer environment. In addition, the Integrated Channel Service Manager facilitates the selective exchange of sales, inventory, pricing, configuration, order status, etc. between the manufacturer environment, the Reseller A, Distributor B and Retailer C. Such selective exchange of information between the manufacturer environment, Reseller A, Distributor B and Retailer C occurs via the SalesBridge Software integrated with their respective systems, under the supervision or control of the Integrated Channel Service Manager.

[0113] As discussed above, quite often, manufacturers of products employ several distributors, resellers and retailers to sell their products. Often these distributors and retailers have their own internet sales presence and endeavor to sell the manufacturers' products on the internet. One of the common problems faced by these distributors and retailers is their inability to assure Buyers of the availability of products, whether the product is coming from their own or the manufacturer's inventory. This causes problems during order ful-

fillment activities after a Buyer makes a purchase and delay in delivery follows. In general, manufacturers do not have the ability to determine the sales executed by their various retailers and distributors. This causes (the Seller) problems in determining production targets.

[0114] These problems are solved by integrating the sales, order fulfillment and manufacturing systems of all sellers in the channel, as shown, for example in FIG. 20. Such integration is facilitated by the Integrated Channel Service Manager and the individual SalesBridge Software incorporated in the software of each of the partners in the channel.

[0115] SalesBridge Software, in addition to facilitating sales transactions and providing a querying interface, also provides support for the following services:

[0116] Mapping tool

[0117] Data Warehousing

[0118] Data Mining

As sales software and the ERP market becomes more mature, a critical need arises for tools that allow two communicating systems to query each other and selectively exchange data. An obvious example of this is the scenario where a company is using SAP as their back-office system, and wishes to make it interact with the SalesBridge Software. An overriding concern for customers will probably be SalesBridge integration with their current system. The front office suite (e.g., Multi Seller Interface System (MSIS) or the Integrated Channel System would need to be able to send quotes, configurations, pricing details, etc. to a seller having SAP for order fulfillment, inventory and manufacturing. The main point of integration then becomes the data exchange that needs to take place: The SalesBridge Software translates its quote object and its config object into the details the SAP system needs, and sends those details to the SAP database. In addition, the SalesBridge Software translates queries sent by the Integrated Channel System or MSIS into queries that can be executed on the databases or back-office systems available at the Seller (e.g., the manufacturer, reseller, distributor or retailer).

[0119] SalesBridge MapTool (or simply MapTool) is a data mapping system or tool. It consists of the three pieces mentioned above:

[0120] a) a GUI and programmatic events that allow a consultant to map SalesBridge objects to/from fields and tables in a foreign database;

[0121] b) a data transfer engine which (at run time) connects to the foreign database and allows the actual transfer of information between the two systems; and

[0122] c) a report kit that provides reporting functionality.

[0123] In addition, the SalesBridge Software makes use of some of the artifacts captured by the SalesBridge MapTool to extract information, save information and to modify information, as necessary, in the database or associated software systems at the Seller's environment. The mapping between the Seller's database or run-time systems and the SalesBridge component is performed as follows:

[0124] 1. The MapTool, using JDBC or ODBC (or JDBC/ODBC) based programming apis, interacts with the foreign database (Seller's database) and retrieves schema information using Seller provided username and passwords.

[0125] 2. The MapTool accesses SalesBridge metadata information from the SalesBridge Software (or retrieves them from the MSIS system) to identify mapping requirements.

[0126] 3. The MapTool facilitates the creation of mapping information for mapping the SalesBridge metadata to the Seller's database.

[0127] 4. It also identifies mapping necessary but not possible, so that it may be remedied via additional tables created in the Seller's and or SalesBridge environment.

[0128] 5. It also facilitates identification of metadata mapping that is to be supported by programmatically creating mapping code components. Once the mapping is created, it is saved in the SalesBridge component at the Seller's environment.

[0129] Mapping is used, for example, for all the following types of information handled by the SalesBridge Software:

[0130] Inventory

[0131] Product Information

[0132] Configuration

[0133] Pricing

[0134] Supplier Related Information

[0135] Promotional Information

[0136] Order Fulfillment

[0137] Transaction Completion (Credit Card Info, etc.)

[0138] Order Status

[0139] Shipping

[0140] Billing

[0141] Other . . .

[0142] While SalesBridge enables the Seller to execute sales, inventory and other related activities, it is desirable to facilitate the collection, processing and archival of such information over time in a Data Warehouse. The SalesBridge Software, via its MapTool, makes it possible to not only map sales, inventory and other related information into a Data Warehouse, but also makes it possible to populate such a Data Warehouse with relevant information at run-time. This enables the SalesBridge Software to act as an interface to the Data Warehouse for other systems on an Integrated Channel System or an MSIS system.

[0143] Thus, SalesBridge Data Warehouse capabilities include:

[0144] Providing a means of creating a mapping between sales, inventory and other related information and a data warehouse.

[0145] Providing means to save such mapping information in the SalesBridge.

[0146] Providing the means to selectively populate such a Data Warehouse at run-time.

[0147] Providing means to retrieve information from the Data Warehouse using the SalesBridge querying interface as well as by a special Data Warehouse service. Additionally, the SalesBridge Software can be installed with its own Data Warehouse so as to provide warehousing services to the Seller.

[0148] Data Mining is supported by SalesBridge by providing an ad hoc querying interface to a Data Warehouse that is populated. Such ad hoc querying interface makes it possible for other managers of information in the Integrated Channel system or at the Seller's environment to extract information to enhance their decision making capabilities. In addition, third party decision support systems are provided an interface to interact with the Data Mining service.

[0149] The partners of an integrated channel can perform Data Mining transactions and retrieve configuration, pricing, different types of forecasts, sales, marketing, and other related information from the Manufacturer's Data Warehouse using the Data Mining tool. The access to such information is

coordinated by the Integrated Channel Service Manager. Such information may also be selectively cached by the Integrated Channel Service Manager. The same is true for access to archived information maintained by the manufacturer at the Data Warehouse. Similarly, statistical information on products and sales may be maintained by the manufacturer which is then accessed by resellers, distributors and retailers via the Integrated Channel Service Manager, the SalesBridge Software and the Data Mining Tool. Optionally, a reseller or retailer can directly access such information from the manufacturer environment by interacting with the SalesBridge Software in coordination with the Integrated Channel Service Manager.

[0150] The integration of a Data Warehouse and Data Mining tool that forms a part of a manufacturer's channel organization is achieved by a) specifying interactions between these systems and the SalesBridge, b) identifying information exchange, c) specifying programming interfaces (APIs) and protocols for information exchange between these systems and the SalesBridge; and d) constructing transactional systems that support such interactions based on the protocols.

[0151] The interactions between the various systems are expressed as Use-Cases and scenarios. The Use-Cases also capture details of information exchange. Information exchange is typically expressed in terms of business objects such as Quotes, Line Items, Shopping Carts, Prices, Discounts, Orders, Contracts, etc. that are exchanged between systems. The actual transfer of information is carried out in one of several ways: a) using XML based information structures for transfer of structured data between these systems and the SalesBridge Software, b) exchanging references to objects that are saved or instantiated in a common data exchange layer that is accessible to all participating systems, c) providing a query interface on the Data warehouse and the Data Mining tool that is accessed by the SalesBridge Software, or d) providing a set of application programming interfaces using programs written to enable the SalesBridge Software to interact with the Data Warehouse and the Data Mining tool.

[0152] The SalesBridge Software is used by the Integrated Channel Service Manager to execute Data Mining queries sent to the Seller's systems from the Integrated Channel Service Manager or from other resellers and retailers in the Channel. The Seller's systems of the manufacturers, resellers, distributors and retailers, in response, return the retrieved information, if any, back to the Integrated Channel Service Manager or to the Seller that sent the query. In general, the

[0153] SalesBridge Software is used by the Integrated Channel Service Manager as a remote database layer that is capable of translating queries received from the Integrated Channel Service Manager into queries and processes that retrieve the requested information from the Data Mining tool or directly from the Data Warehouse.

[0154] The SalesBridge Software is used to populate data into the Data Warehouse, either directly or via a pipeline of processing software that massages the data before entering it into the Data Warehouse.

[0155] Referring to FIG. 14, when a Buyer (i.e., individuals or business entities, such as, for example, corporations, distributors, or retailers) desires to purchase several Products (i.e., goods or services) from a plurality of Sellers (i.e., manufacturers, distributors, or retailers) via the internet **1401**, the Buyer typically must first, via the Buyer's computer **1403**, search for the Products and locate the various Sellers online

using, for example, a listing site **1405** and/or search engine **1407**. The search results may, for example, identify a Seller System **1409** that only sells a desired Product A, a Seller's System **1411** that only sells a desired Product B, a Seller's System **1413** that sells both desired Products, a Seller's System **1415** that sells neither of the desired Products and a Seller that maintains a Non-Sales System **1417**. The Buyer, however, does not know which System identified will support the desired purchase until the Buyer undertakes the time-consuming process of accessing and navigating each of the identified Seller's Systems. The Buyer must then find the prices for the Products and select the Seller or Sellers from which to buy the Products. Often, during the selection process, the Buyer must access and re-access selected Seller's System(s) to compare the Products and their prices.

[0156] In other words, the Buyer is faced with the problem of identifying the type and model of the Products desired, the Seller(s) that carry them, and whether those Seller(s) support on-line purchases. In addition, if the Buyer eventually identifies several Products that might meet the desired requirements, the Buyer has no easy way to compare the Products or their prices, regardless of whether the Buyer is looking for the Same Products (i.e., identical Products from a single manufacturer sold by multiple Sellers) or Similar Products (i.e., like Products from different manufacturers sold by multiple Sellers). Moreover, once the Product(s) and Seller(s) are finally selected, the Buyer must often undertake multiple transactions, with at least one transaction for each Seller.

[0157] The above process is further complicated by the fact that the initial step of identifying via the internet the desired Products and the Sellers who provide the Products is not inherently easy. Search engines often provide unorganized results. The Buyer is therefore required to undergo the further time consuming process of sifting through the search results just to locate possible matches.

[0158] In general, therefore, even though comparing Products and prices by conducting searches using a search engine or listing site (such as Excite or Yahoo) is possible, the process is not very productive, especially if the Buyer wants to specify an upper limit to the price the Buyer is willing to pay for one or more Products. Search query formulations on typical search engines simply do not enable a Buyer to specify upper limits for Product prices. In addition, as mentioned above, if a Buyer locates one or more Sellers, the Buyer must interact with each one individually, and often sequentially, to determine if a purchase can be made. Of course, no two sales systems picked at random are likely to be similar. Therefore, the Buyer must learn to query the sales system of each and every Seller.

[0159] To make matters more complicated, Buyers often like to receive quotes for the cost of purchasing a set of Products from different Sellers without having to consummate any purchase right away. The Buyer is usually not permitted to save such quotes at the Sellers' System, requiring the Buyer to re-request quotes every time the System is accessed. This problem is compounded when a Buyer identifies Products desired from different Sellers and views quotes for some of those Products without the ability to save any of the quotes for subsequent access and use.

[0160] Even if a Buyer prints quotes provided by multiple Sellers, if the Buyer wants to change the desired Product list and generate a new quote for the changed Product list from a particular Seller, the Buyer is often required to interact with that Seller's online Sales System to enter the information all

over again. In the rare situation where a Seller allows a Buyer to save quotes for some duration, those saved quotes are likely to be discarded by the Seller after a period of suspended sales activity.

[0161] Once the Buyer finally gets to the point of actually purchasing Products via the internet, the Buyer must interact with each Seller individually, and sequentially, to provide the Buyer's shipping information and credit card related information. Usually, the Buyer is prompted to provide such information before the Buyer can consummate a purchase. If the amount quoted by an online Seller for the currently selected Products from a Buyer's list is larger than the available credit on the credit card provided by the Buyer, the sales activity is often terminated. Even when the Buyer is in possession of multiple credit cards and their combined available credit exceeds the quoted amount for a Products list, it is often not possible for the Buyer to complete the purchase due to the inability of the online Sales System of the Seller to handle such complicated transactions.

[0162] In addition to the problems discussed above, a Buyer that is also a corporation experiences its own unique set of problems when it buys in bulk from online Sellers. For example, the Buyer often must have sufficient storage capacity to house the Product purchased before the Product can be distributed. In addition, when a Buyer is purchasing and storing the Product as such, the Buyer is often paying a higher price for the Product than it would have paid if the Buyer had simply waited and bought the Product when the Buyer was ready to distribute it. This is particularly true of high technology Products, such as, for example, computers, whose prices drop rapidly as the state of the art improves. Thus, it is often desirable for a Buyer to determine the cost of purchasing just some of the desired Products in the near future as opposed to purchasing them all at a current time period. There is currently no online sales system in widespread usage that enables a Buyer to obtain graduated quotes as such. Consequently, the advantages of buying in bulk online are often vitiated.

[0163] Additionally, when a Seller sells one or more Products to a Buyer on the internet, there is often an opportunity for the Seller, or for other Sellers, to sell a related but distinct item to the Buyer that is perhaps available at another Seller's online Sales System. For example, a Buyer purchasing a computer from an online Seller may also be in the market for a computer desk and a computer chair. However, nearly all such sales opportunities go undetected and untapped because Sellers do not have the ability or motivation to automatically share sales related activity information with each other.

[0164] Further, if a Seller has built up inventory of one or more Products that it wants to dispose of at an accelerated rate, it has no means to offload such inventory online.

[0165] Small Sellers experience even more difficulty in selling Products online. Before even buying Products via the internet, Buyers generally need to have confidence in the Sellers, which may not be the case unless the seller is well known or has a good reputation. Absent such confidence, Buyers may decide to pay a higher price simply for the comfort of dealing with a known Seller.

[0166] In addition, small online Sellers often do not have the Sales Systems necessary to provide online sales support. Such online Sales Systems often require web hosting services, product configuration and pricing databases, credit-card processing systems, etc. Small online Sellers often purchase web-hosting and sales support services from internet

service providers or from online malls. However, Buyers can only get to such Seller's Sales System when Buyers locate and subsequently migrate to them for browsing.

[0167] Sellers often provide coupons and rebates as an incentive to promote sales of specific Products. Sellers who offer coupons on the internet experience their own unique set of problems. More specifically, referring to FIG. 15, in a typical scenario, a manufacturer **1501** first must speculate to identify the timing, amount and quantity of each rebate and coupon. The manufacturer **1501** creates and delivers paper rebates/coupons to a distributor **1503**, who forwards the paper rebates/coupons to a retailer **1505**. The manufacturer **1501** may deliver the paper rebates/coupons directly to the retailer **1505**. To use a rebate/coupon, the retailer **1505** must modify their product database, web server content, and, possibly, their sales application. This burden, along with the burden of having to collect from the manufacturer **1501**, dissuades the retailer **1505** from participating in the rebate/coupon process.

[0168] Alternatively, the manufacturer may use a third party **1507** to deliver the coupons/rebates directly to the Buyer.

[0169] In addition, Sellers who provide coupons and rebates for Products on the internet often do not have the ability to control the amounts dispensed or to whom they are dispensed. This often leads to problems when too many, or too few, rebates/coupons, are dispensed online by a Seller. A manufacturer desires to determine the rate at which the rebates/coupons are accessed and redeemed by Buyers so as to alter the volume of rebates/coupons offered or discount given. However, rebates offered on the internet cannot be easily tracked, and without such tracking, a Seller cannot determine when to alter the rebate/coupon value or the number of rebates/coupons dispensed.

[0170] Furthermore, in most situations, retail Sellers on the internet do not have the ability or the facility to honor rebates supplied by manufacturers or distributors. This is also true for coupons. Buyers are then left with no option for redeeming such coupons and rebates. In the case of rebates, Buyers might be able to send the rebates along with the Buyer's sales receipts to manufacturers via post (snail mail) and subsequently redeem them via post.

[0171] Additionally, when Buyers are typically provided a quote by the online sales system of online Sellers for the products selected for purchase, the Buyers have the option to cancel the transactions and not purchase any Products. When they choose not to consummate a sale after a quote is provided to them, the Sellers do not have a second opportunity to provide a better quote or "sweeten the deal", causing the Seller to lose a potential sale.

[0172] After receiving the Products purchased from various Sellers, if the Buyer is interested in registering the Products with the manufacturers for technical support reasons or for Product update reasons, the Buyer must typically fill in registration cards and mail them to the manufacturers via post (snail mail). In the case of software purchased over the internet, the buyer is often prompted by the software during its installation to fill in a registration form full of questions. Such online registrations for each software purchased are a chore that Buyers often bypass at the risk of foregoing tech support from the manufacturer.

[0173] In general, without registering the product purchased, Buyers are not likely to receive warranty support or tech support. If Buyers are interested in registering the Product purchased with the manufacturer, the Buyer must mail

receipts of the Products purchased, and sometimes even proofs of purchase, such as barcodes, along with registration cards, to the manufacturer. If a Buyer misplaces either the receipt or the registration card, registering the products with the manufacturers is very difficult.

[0174] When manufacturers offer rebates on specific Products, the Buyer, in general, must mail in the rebates that apply to the Products purchased. Again, mailing in rebates to manufacturers requires an investment of time and energy. For rebates being offered over the internet, Sellers must request and collect the information, print it, and mail it with receipts and sales information for redemption.

[0175] The problems related to redemption of rebates are in some ways similar to the problems with the redemption of coupons. Even if buyers can locate coupons for some of the products that they intend to buy on the internet, typically there is no easy way to redeem them on internet purchases.

[0176] Referring now to FIG. 16, quite often, manufacturers of products employ several distributors and retailers to sell their products. Often these distributors and retailers have their own internet sales presence and endeavor to sell the manufacturers products on the internet. One of the common problems faced by these distributors and retailers is their inability to assure Buyers of the availability of products, whether the product is coming from theirs or the manufacturer's inventory. This causes problems during order fulfillment activities after a Buyer makes a purchase and delay in delivery follows. Manufacturers do not have the ability to determine the sales executed by their various retailers and distributors. This causes the Seller problems in determining production targets.

[0177] Often, a Seller would want to determine the selling price of specific Products being offered for sale by other online Sellers (see, e.g. FIG. 17). This, however, is not easy. Such information may be gathered by visiting the online sales sites of various vendors and browsing or executing queries on each of those sales sites to extract pricing information. This solution does not scale up.

[0178] If manufacturers want to control the flow of rebates in an automated way, they require information, such as the volume of sales, from their distributors and retailers. In the online internet based sales environment, coupons and rebates dispensed to Buyers cannot be easily tracked and reported, especially if the individual distributors and retailers have online sales systems that don't interact with each other and don't communicate information easily, as is the situation when they all have heterogeneous sales environments. A related problem is one of determining the sale prices for similar products from different retailers and distributors that sell the same family of products from a manufacturer.

[0179] Quite often, third party web-hosting companies host online sales systems for multiple vendors, some of whom might be involved in selling Similar or Same Products (see e.g., FIG. 16). If online vendors have to determine prices of similar Products or the same Products sold by their competition, it is often difficult to obtain such information in a timely manner even when the competing vendors are hosted by the same web-hosting service provider. Among other reasons for this, one important reason is the fact that each vendor employs their own proprietary tools and system design to store product information, customer information, sales information etc.

[0180] If a product manufacturer, their distributors and retailers each manage their own online sales system, then it is difficult for them to correlate similar or the same information contained in each of their systems. If they choose to install

and use similar sales systems to alleviate this problem, then the distributors and retailers are either constrained to carrying products from that single manufacturer or they are forced to support several such manufacturer specific proprietary sales systems. Therefore, in order to minimize the number of such sales systems that they have to support and interact with and yet not limit themselves to a few manufacturers, distributors and retailers are often forced to maintain their own individual and customized sales system that is not necessarily tied to any individual manufacturer. By doing so, they encounter the problems of correlation of data in their sales systems and in those of the manufacturers.

[0181] FIG. 18 is a block diagram showing the Multi-Seller Interface System's **1803** role in the identification of Seller's for a Buyer attempting to purchase products Product A and Product B over the internet. The Buyer, using the Buyer's computer **1801**, interacts with the Multi-Seller Interface System **1803** to specify information about the products Product A and Product B that he intends to purchase from online Sellers on the internet. The Multi-Seller Interface System **1803** identifies the various Seller's systems based on the category of products the Sellers carry, the Seller's capability to provide quality goods and services, and other criteria. For example, the Multi-Seller Interface System (MSIS) **1803** identifies Seller's systems **1811**, **1813**, **1815** as those that are capable of selling one or more products desired by the Buyer. It also determines that the Seller's System **1817** is incapable of selling one or more products desired by the Buyer and that the Non-Sales System **1819** should be ignored for possible sales transactions initiated by the Buyer.

[0182] The Buyer's computer **1801** interacts with the MSIS **1803** via internet **1823**. Similarly, the MSIS **1403** interacts with the Seller's systems **1811**, **1813**, **1815**, **1817** and **1819** via internet **1823**. Optionally, the MSIS **1803** may choose to interact with any of the Seller's systems **1811**, **1813**, **1815**, **1817** and **1819** via a dedicated network or via an intranet.

[0183] Typically, in response to a Buyer's selection of product categories, the MSIS **1803** sends queries to one or more Seller's systems **1811**, **1813**, **1815**, **1817**, **1819** to extract product and pricing information from the corresponding Seller's system. In response, the Seller's systems typically return shopping carts filled with those Buyer specified products that they are capable of selling, along with prices for the products and, optionally, their inventory of the products.

[0184] FIG. 19 is a block diagram showing the Multi-Seller Interface System's **1903** capable of interacting with Seller's systems **1907**, **1915**, **1917** employing a Sales Bridge software **1911** that is installed on each of the Seller's systems **1907**, **1915**, **1917**. The Sales Bridge software **1911** is used by the MSIS **1903** to execute queries sent to the Seller's systems **1909**, **1915**, **1917** from the MSIS **1903** and, in response, return shopping carts with prices back to the MSIS **1903**. In general, the Sales Bridge **1911** is used by the MSIS **1903** as a remote database layer that is capable of translating queries received from the MSIS **1903** into queries and processes that retrieve the requested information, such as configuration, pricing and inventory, from the Seller's Sales software **1909**.

[0185] A Buyer using a Buyer's computer **1901** interacts with the MSIS **1903** over internet **1905** to specify queries related to products that he intends to purchase. Such interactions typically involve navigating down a hierarchy of product categories to identify those that the Buyer is interested in, or specifying a search criteria via a search interface to extract

information on products and product categories and to identify relevant product categories.

[0186] FIG. 20 is a schematic block diagram illustrating various functionality of a Multi-Seller Interface System's 2003 and Seller's systems 2019 and 2021. The MSIS 2003 includes one or more web server software 2009 with which Buyer's computers 2001 interact, one or more Application server software 2011 that provide various Sales services to buyers accessing them over internet 2005 and one or more Sales databases 2013 that is used to save various kinds of information such as customer profile, saved quotes, product categories, etc.

[0187] Among other things, the MSIS also supports product category selection, search query formulation, instant coupon and rebate processing, shopping cart comparison, composite shopping cart review, shopping cart pricing and saved quote repricing, quote persistence and query persistence, scheduled delivery information from Buyers, customer profile auto transactions, opportunity management and sales agent support, automatic registration of products on behalf of Buyers, Warranty management. In addition, it also includes Sales Bridge software interface that makes it possible to interact with Seller's systems 2019 and 2021.

[0188] Seller's systems 2019 comprises a Seller's sales software 2035 and a Sales Bridge software 2023. The Seller's Sales software 2035 includes a web server software 2029, an Application server software 2031 and a Sales databases 2033. The Sales Bridge software 2023 comprises a Query Bridge 2025 and a Transaction Bridge 2027.

[0189] The Query Bridge 2025 is used to query one or more Sales databases 2033 using queries formulated by the MSIS 2003 or queries created from search information sent by the MSIS 2003. Information extracted by the Query Bridge 2025 is communicated to the MSIS 2003 over communication links 2037. The Transaction Bridge 2027 is typically employed by the MSIS 2003 to conduct credit-card based sales transactions with the Seller's system 2019.

[0190] FIG. 21 is an exemplary flow chart showing typical work flow at the Multi-Seller Interface System's 2003. At a block 2101, the MSIS 2003 attempts to generate a sale employing automatic marketing and sales functionality. These activities include emailing potential buyers information such as saved persistent quotes, current inventory information, quote updates based on repricing existing quotes, product upgrades that might have become available, up and cross-selling opportunity detection from an individual Seller's sales activity or from monitoring sales activities across multiple Sellers. The automatic marketing and sales functionality activities also include directed advertising, coupon and rebate delivery to potential Buyers based on Buyer profile provided by Buyers or based on information gathered by tracking Buyer's buying habits.

[0191] Later, at a block 2103, the MSIS 2003 assists Buyers in generating a query for subsequent submission of those queries to Seller's systems. Queries can take the form of old saved quotes or shopping carts, coupons selected, rebates selected, query text, third party shopping carts, sales brochures, persistent queries, etc.

[0192] Later, at a block 2105, the MSIS 2003 preprocesses Buyer specified queries and delivers them to selected Seller systems that are identified based on one or more search criteria including, in some cases, product categories, customer profiles, etc. Some of these queries are selectively cached in memory by the MSIS 2003.

[0193] When the Seller's systems respond with product and pricing information, for example, with priced shopping carts that include all or a subset of the Buyer's product list, the MSIS 2003 presents the information to Buyer for interaction with the Buyer. Optionally, such information is presented as a comparison of products and prices. If a customer's query fails to retrieve results from Seller's systems, the MSIS 2003 makes a transition to the block 2101.

[0194] Otherwise, the MSIS 2003 continues to a block 2109 where it responds to Buyer's selection and acceptance of product prices by interacting with none or more corresponding Seller's systems to complete the sales transactions. Subsequently, at a block 2111, the MSIS 2003 performs post sales functions which selectively includes registration, warranties, updates, maintenance contracts, opportunity management etc. Opportunity management is employed to generate additional sales or repeat sales.

[0195] FIG. 22 is an exemplary screen layout that a Buyer interacts with in order to select products and obtain product prices during an online purchasing activity supported by the MSIS 2003. The MSIS presents a Buyer with a screen of information that includes a button for Query terms that the Buyer can select from, a button for Query Text that is optionally entered by the user to facilitate product and price searches, a button that when activated, results in sending a query to one or more Seller's systems, and a button that makes it possible to view the hits following the receipt of responses to Buyer's queries.

[0196] FIG. 23 is a diagram that shows a list of products with prices provided to Buyer by the MSIS 2003. It shows a comparison of prices, for products acquired from two different shopping carts. In this exemplary scenario, products bought from two different Sellers add up to a total that is less than the total quoted by another single Seller. Additionally, the Sellers are rated with asterisks (**) indicating the ratings.

[0197] FIG. 24 provides a functional block diagram of buyer and seller system interaction with the system of the present invention. Therein, the system comprises a web based, Multi-Seller Interface System (MSIS) and a plurality of Sales Bridge Software (SBS) modules through which buyer's computers can simultaneously access many independent and differing sellers' sales systems.

[0198] To interact with the system of the present invention, a buyer, corporate or individual, merely accesses web pages provided by the MSIS with conventional web browser software on the buyer's computer. The buyer interacts with the MSIS to define queries relating to one or more desired products. The MSIS automatically attempts to identify those of the plurality of participating sellers that might carry such products. Once defined, each query is simultaneously communicated by the MSIS to each of Seller's Sales System (SSS) via the SBS modules of the identified ones of the plurality of participating sellers. Using a query bridging approach, each SBS module performs a search of product, pricing, inventory, etc., database(s) based on the query. All sales information relating to each product identified in the search is delivered to the MSIS for the buyer's review, comparison and selection. The MSIS permits concurrent selection and single transaction purchasing of products from more than one seller. Caching of common queries on a day to day basis is also supported by the MSIS to minimize communication overhead.

[0199] The sales information returned from each SSS represents complete, real time public and private sales information, catering not only to individual buyers, but, more impor-

tantly, to sellers. For example, in response to queries from individual buyers or competitors, the query bridge of the present invention may easily be configured to deliver public information such as pricing and product descriptions. For queries generated within a selling channel (i.e., by a manufacturer, distributor or retailer or by their sales systems), private information relating to each product such as inventory, inventory projections, numbers sold, margins, etc., may be easily and automatically exchanged. Such information can be used for forecasting inventory, pricing, planning promotional activities (e.g., instant coupons, auctioning and rebate programs), and production planning, for example.

[0200] The MSIS supports query definition in several ways to provide the buyer with greatly needed yet currently unavailable functionality. For example, through a category selection process and/or textual search term entry, a buyer can construct a query to simultaneously retrieve from all sellers all underlying product sales information matching the query. The buyer can also generate a query from online rebate and coupon information for true instant processing, unlike current online rebate and coupon vendors who incorrectly claim to do the same. Queries may be generated from third party seller shopping carts for comparison with participating sellers' products. Saved quotes may be converted to queries for updating and verification, and may be used as a persistent basis via sales email for attempting to complete the transaction with the buyer. Further, queries may be generated from advertising information, e.g., online auction descriptions, online sales brochures, etc., whether or not such information originates within the MSIS.

[0201] Selling channel systems also generate queries in a number of, ways with or without interaction through a web client (user interface). Automatic data gathering between participants in the selling channel will permit an application (based on a toolkit) to automatically (1) place or suggest placing orders to replenish inventory, (2) identify new product offerings, (3) suggest pricing changes, (4) facilitate just in time delivery, (5) identify and/or maintain appropriate inventory levels, (6) suggest or carry out changes or additions to advertising and promotional programs, (7) schedule release of upgraded or superseding products, etc. Competing selling channel systems may also be queried (automatically or otherwise) to gather public information regarding competing product lines. Such information may be used to supplement the automatic processes identified in items 1-7 above, for example. A toolkit underlying the MSIS simplifies preparation of application software to carry out such and other processes. Such application software may run on any or all system(s) within a sales channel. In fact, such application software, or portions thereof, may be placed at many locations within a single organization to carry out internal, enterprise sales functions.

[0202] The toolkit underlying the MSIS also provides for up, cross and seller to seller opportunity management for automated, email-based target marketing without the need to release buyer information to a participating seller. For example, the MSIS permits a first seller to establish relationships between completed and/or queried sales transactions within categories and/or by a specified second seller. Based thereon, predefined email is automatically sent to buyers or potential buyers advertising sales of the first seller's products that relate to the category or to the second seller's product.

[0203] From a buyer's online perspective, the MSIS performs a single transaction (e.g., credit card) processing of

multiple product selections spanning more than one seller. Based on final configuration, the underlying transaction may actually involve (1) a plurality of transaction processes between each seller and the buyer using the buyer's credit card information, and/or (2) a single credit card transaction for the total from the buyer to the MSIS along with a plurality of transaction processes with each seller involving account information of the MSIS.

[0204] As part of the sales transaction, or in follow up thereto, the MSIS performs automated registration, warranty delivery and acceptance, maintenance contract offerings and purchases, and emailed product information regarding updates and upgrades services. Stored buyer profiles minimize buyer interaction required to carry out sales transactions and such associated services. Stored buyer transaction records enable targeted email advertising, persistent query support, opportunity management, etc.

[0205] The MSIS can, upon a seller's request and in addition to or in replacement of the seller's sales system, perform transaction and/or other sales processing for the seller. In addition, the MSIS provides each seller with real time access to product sales information from the seller's competitors and own sales chain. The query protocol and the SBS enable a corporate buyer to develop specifically desired sales interfaces into one or more seller systems. The underlying functionality and software libraries used in the MSIS may be specifically licensed for such purpose. Corporate buyers are also supported through scheduled purchasing and just in time delivery functionality within the MSIS.

[0206] The present invention may generate revenue by taking a percentage of each completed sales transaction conducted through the MSIS. To generate further revenue, the MSIS tracks each buyer's use of the web-site, whether or not a transaction is completed, and offers to provide sellers with information for potential future sales opportunities. Similarly, the System offers instant rebate and coupon processing, direct email targeted sales, advertising space, and persistence in exchange for transaction percentages. Credit card processing, delivery tracking, customer support, and other backend sales functions can be offered, generating further revenue streams.

[0207] The System may be based on web server and application server software products offered by Trilogy Development Group, a company located in Austin, Tex.

[0208] FIG. 25 is a perspective diagram of an online buyer using a computer 2505 interacting with a server 2520, via the internet 2510, to specify products that are to be purchased periodically, to selectively save the specification of products that are to be purchased periodically in a Script Storage and Execution Environment 2515, and to selectively retrieve previously saved specification of products from the Script Storage and Execution Environment 2515 for modification or for purchasing. The Script Storage and Execution Environment 2515 is typically associated with a web server 2520 that provides internet-based web hosting services. In addition, the Script Storage and Execution Environment 2515 is linked via appropriate connections 2545, 2555 to information systems at one or more manufacturer or merchant environments 2525, 2527. Such information systems include appropriate internet web hosting services.

[0209] In one embodiment of the present invention, customers to the web server 2520 are presented with lists of products extracted from one or more catalogs or from one or more web content providers such as manufacturers 2526,

2527. If the customer selects one or more products from the catalogs or list of products provided by the web server **2520**, the customer is provided with the option of either purchasing the products selected, saving a selection of products, preferably as a script, or purchasing as well as saving the selection of products. The customer is also provided with the option of downloading the selection of products as a script that can be used to purchase those products at a future time.

[0210] If the customer chooses to save the selection of products for subsequent retrieval and purchase, the web server **2520** saves it as a script in the Script Storage and Execution Environment **2515**. Subsequently, the customer can establish a new session with the web server **2520** to request execution of the saved script by the Script Storage and Execution Environment **2515** resulting in the purchase of the product. Alternatively, the customer can send an email from the customer's computer **2505** to the Script Storage and Execution Environment **2515** over the link **2547** or via the internet **2510** requesting execution of one or more previously saved scripts. In response, the Script Storage and Execution Environment **2515** retrieves the saved scripts for the customer and executes the scripts. It also creates a report including the results from the execution of the scripts and sends it to the customer as an acknowledgement.

[0211] If the customer elects to interactively purchase the selected products from the web server **2520**, the customer can consummate the purchase by using a credit card for payment or by accessing a previously established customer account. The customer is then given the option of saving the details of the online sales transactions, including the credit card information or customer account used for the sale, for a repetition of the sales transaction on another occasion. The customer can selectively retrieve saved sales transaction information in the form of scripts of structured data, and download it to the customer's computer **2505**.

[0212] The web server **2520** is used by customers to create customer profiles. A customer profile includes shipping address, credit card related information, etc. Once a customer profile is created, it is used to expedite subsequent customer purchases. Customers who choose not to have a profile created for them may be required to enter their shipping address, credit card related information, etc., during each purchasing activity.

[0213] Customer profiles, typically provided by customers during a customer profile generation activity, are selectively saved by the web server **2520** so that they may be used during the execution of a saved sales transaction script. Such saved customer profiles are then used to complete sales transactions and to ship products after executing saved scripts.

[0214] Products are located for purchase either by browsing through several categories of products presented by the web server **2520** or by searching for them. In one embodiment of the present invention, a customer, using the computer **2505**, and the internet connection **2530**, accesses one or more catalogs presented by the web server environment **2520** associated with, and operatively coupled to the Script Storage and Execution Environment **2515**. The customer then activates a purchase button to purchase the products selected. In response, the web server **2520** creates a transaction script and communicates the transaction script to the Script Storage and Execution Environment **2515** via connection **2540**. The Script Storage and Execution Environment **2515** completes a purchase order for the customer incorporating all the products selected by the customer and optionally applying all appli-

cable rebates and coupons, based on the transaction script. Also, based on the transaction script, it performs order fulfillment operations aimed at assigning products from the inventory of one or more manufacturers **2525**, **2527** (or retailers or distributors, not shown) to the customer.

[0215] In one embodiment, the inventory of some of the products purchasable from the web server **2520** is selectively maintained by the manufacturer/merchant environment **2525**. For such products, to perform order fulfillment activities, the Script Storage and Execution Environment **2515** interacts with the manufacturer/merchant environment **2525**, over the connection **2545**, in one of two approaches. In the first approach, the manufacturer/merchant environment **2525** receives purchase orders or purchase order scripts to some products currently available in their inventory from the Script Storage and Execution Environment **2515**, in order to perform order fulfillment for the customer. The manufacturer/merchant environment **2525** executes the received script or processes the purchase order to perform order fulfillment. To provide the customer profile to the manufacturer/merchant environment, the customer's profile or a subset thereof, is made visible or is sent to the manufacturer/merchant environment **2525**, which then ships the products to the customer. In a second approach, the Script Storage and Execution Environment **2515** executes the script representing the customer's sales transaction in its environment and interacts with the manufacturer/merchant environment **2525** to retrieve order fulfillment information and to convey shipping information.

[0216] In addition to sales transaction scripts, customers may create order status scripts, report generation scripts, etc. and save them in the Script Storage and Execution Environment **2515**. Such scripts may subsequently be executed at the web server. They may also be sent to the manufacturer environment **2525** for execution. The manufacturer environment **2525** can be made capable of executing scripts by incorporating an instance of the Script Storage and Execution Environment **2515** within its environment.

[0217] In another embodiment, the manufacturer **2525** is capable of saving and or executing saved sales transaction scripts or other scripts sent to it by the web server **2520**. Such scripts are executed by the manufacturer environment **2525**, and the results of the execution are selectively communicated to the web server **2520** and to the customer using the computer **2505**.

[0218] Customers can create and save scripts at the Script Storage and Execution Environment **2515** specifying their preferred vendor list, product preferences, accounting preferences, payment methods, reporting preferences, etc. Such scripts are subsequently accessed by the Script Storage and Execution Environment **2515** during the execution of sales transaction scripts.

[0219] In one embodiment, the web server **2520** serves as a front end to the e-commerce sites of manufacturers and merchants wherein customers purchase products from the web server **2520** and pay for the products purchased via credit cards. The web server **2520** in turn acquires the products purchased by the customer from customer designated suppliers (via scripts) such as manufacturers, distributors or retail merchants. A supplier is selected based on customer's profile, the saved scripts indicating the customer's preferred vendor list, the product category, the inventories of products at the various suppliers, the business arrangements made by the customers or by the owners of the web server **2520** with various suppliers, and other criteria. In effect, one or more

suppliers sells the products to the web server **2520** which uses the Script Storage and Execution Environment **2515** to execute the sales transactions and to save such sales transactions information.

[0220] In one embodiment, the web server **2520** sends promotional material via email to customers and attaches a script associated with the purchase of the products being promoted. The customer selectively edits the attached script and emails it back to the web server **2520**. The web server **2520** selectively forwards the received script attachments to the Script Storage and Execution Environment **2515** for execution. The Script Storage and Execution Environment **2515** selectively executes the scripts and collects the results of the execution to the web server **2520** and to the customer.

[0221] In a similar embodiment, the customer sends an email to an email address associated with the web server **2520**. The email includes a script that extracts product and pricing information from the web server **2520** and specifies a destination for the extracted information. The web server **2520** receives the email and the script via the associated email address, forwards the script to the Script Storage and Execution Environment **2515**, and sends an acknowledgement email to the customer. The Script Storage and Execution Environment **2515** executes the script received from the customer and extracts the required information and forwards it to the destination specified by the customer in the script.

[0222] In one embodiment of the present invention, the script executed by the Script Storage and Execution Environment **2515** comprises one or more of the commands supported by the PANINI Language presented in the Appendix A. In this embodiment, customers email scripts written in the PANINI Language to the web server **2520** or directly to the Script Storage and Execution Environment **2515** for execution. In addition, the web server **2520** creates scripts in the PANINI language specifying sales transactions from online customers and sends it to the Script Storage and Execution Environment **2515** for execution.

[0223] In another embodiment of the present invention, a scripting language other than the PANINI language is employed by customers, the web server **2520** and the Script Storage and Execution Environment **2515**. The Script Storage and Execution Environment may be incorporated into the web server **2520** or into a manufacturer's environment **2525**, **2527**.

[0224] FIG. 26 is a diagram showing the incorporation of a Script Storage and Execution Environment **2645** into both a web server **2620** and a manufacturer/merchant environment **2625**. The web server **2620** downloads scripts (of different kinds) to the manufacturer/merchant environment **2625**, as needed, and requests the manufacturer/merchant environment **2625** to execute them. The manufacturer/merchant environment **2625** saves the downloaded scripts in its Script Storage and Execution Environment **2645** and executes the required scripts as necessary. For example, it executes scripts under the direction of the Script Storage and Execution Environment **2645**, in response to events during computation of certain services provided by the manufacturer/merchant environment **2625**, or in response to requests received from the customer's computer **2625A** via link **2650** or **2630**. The scripts saved in the manufacturer/merchant environment **2625** can be selectively updated by the Script Storage and Execution Environment **2645** when better or newer versions of the scripts become available. Customers can send requests directly to the manufacturer/merchant environment **2625** and

to the Script Storage and Execution Environment **2645** as email based scripts. In addition, they can also send requests via GUI based interactions with web servers, such as web server **2620**.

[0225] FIG. 27 is a block diagram showing the different functional components of a web server environment **2700** that facilitates email and script based sales transactions. The web server environment **2700** comprises a script saving and execution engine **2705**, a manufacturer/merchant interface **2710**, an app server interface **2715**, an email server interface **2735**, an RMI interface **2720**, an HTTP interface **2725**, a catalog interface **2730**, and a database interface **2740**. Other interfaces may also be incorporated into the web server environment **2700**.

[0226] The script saving and execution engine **2705** is used to execute scripts received from customers, manufacturers, merchants and those retrieved from script repository such as a database. The email server interface **2735** is used to retrieve scripts sent as email from customers, manufacturers and merchants. It is also used to send email to customers, manufacturers and merchants along with attachments of scripts or reports. The email server interface **2735** provides an interface that is used to communicate with mail servers such as SMTP servers, POP mail servers and IMAP servers.

[0227] FIG. 28 is a block diagram of a scripting execution environment **2800** that provides access to various resources and information via appropriate interfaces during the execution of scripts. The Scripting Execution Environment **2800** comprises a script execution engine **2820**, a script saving unit **2810**, an order fulfillment manager **2875**, an authentication manager **2805**, a catalog manager **2880**, a customer profile manager **2815**, a pricing manager **2870**, a search engine **2885**, a tracking manager **2825**, a statistics reporting manager **2835**, and other related functionality **2830**. The various managers provide a mechanism to access associated services during the execution of scripts by the script execution engine **2820** within the scripting execution environment **2800**.

[0228] Online customers **2850** interact with the scripting execution environment **2800** via communication links **2855**. Online customers **2850** can download scripts from the scripting execution environment **2800**. They can also communicate scripts to the scripting execution environment **2800** for execution. Similarly, manufacturers and online merchant environments interact with the scripting execution environment **2800** via communication links **2865**.

[0229] FIG. 29 is a perspective diagram of an online customer using a computer **2905** interacting with an online sales and pricing system **2915**, via the internet **2910**, to conduct online purchases during which the pricing computation employs, among other things, the customer's schedule of product delivery, the forecasts of product prices provided by online futures trading systems and the projected needs of the customer. The online sales and pricing system **2915** is typically associated with a web server **2920** that provides internet-based web hosting services. In addition, the online sales and pricing system **2915** is linked via appropriate connections **2945** to information systems at one or more online futures trading system **2925**. Such information systems include appropriate internet web hosting services.

[0230] Customers are presented with a catalog of products to choose from by the web server **2920** associates with the online sales and pricing system **2915** when they visit the online sales and pricing system **2915**. If the customer selects one or more products from the catalog or list of products

available at the online sales and pricing system **2915**, they are provided with the option of purchasing the products.

[0231] If the customer elects to purchase the selected products from the online sales and pricing system **2915**, all applicable rebates and coupons are applied to the customer's purchases by the online sales and pricing system **2915** in the determination of a final purchase price for the customer. The customer can consummate the purchase by using a credit card for payment. The online sales and pricing system **2915** processes customer's credit cards for sales processing. Corporate customers are allowed to open an account with the online sales and pricing system **2915** that will permit them to purchase products online and settle their accounts periodically.

[0232] Customer profiles, typically provided by customers during a customer profile generation activity, is selectively used by the online sales and pricing system **2915** to complete sales transactions and to ship products. Customer profile includes shipping address, credit card related information, etc. Once a customer profile is created, it is used to expedite subsequent customer purchases. Customers who choose not to have a profile created for them may be required to enter their shipping address, credit card related information, etc. during each purchasing activity.

[0233] In one embodiment of the present invention, a customer, using the computer **2905**, and the internet connection **2930**, accesses one or more catalogs presented by a server environment **2920** associated with, and connectively coupled to, the online sales and pricing system **2915**. In this embodiment, the customer would optionally retrieve product information on one or more products that the customer plans to purchase by browsing through several categories of products presented by the online sales and pricing system **2915**. The customer then activates a purchase button to purchase the products selected. The online sales and pricing system **2915** completes a quote containing a price for the customer incorporating all the products selected by the customer and optionally applying all applicable rebates and coupons. If the customer agrees to the quote, the quote is converted into a purchase order for the customer.

[0234] The quote and the purchase order would therefore include prices that are determined by incorporating the schedule of delivery optionally provided by the customer. The computation of the prices for the products would also involve information on the forecasted prices for the products acquired from one or more online futures trading systems. For some products, such forecasted pricing information are accessed from the manufacturers.

[0235] In one embodiment, forecasted pricing information for both the short-term and the long-term of some of the products purchasable from the online sales and pricing system **2915** are selectively maintained by the online futures trading system **2925**. For such products, to perform pricing activities, the online sales and pricing system **2915** interacts with the online futures trading system **2925**, over the connection **2945**, in one of two approaches. In the first approach, the online futures trading system **2925** receives a list of products from the online sales and pricing system **2915** in order to provide futures related forecasted prices. The online futures trading system **2925** then returns the forecasted prices to the online sales and pricing system **2915**. The returned forecasted prices are used by online sales and pricing system **2915** in determining the prices for the products purchased by the customer.

[0236] In the second approach, the online sales and pricing system **2915** requests live data (or periodically delivered data) on various products from one or more futures trading systems and processes such received futures related information in order to calculate the product prices for the quotes and purchase orders of online customers.

[0237] The determination of the total purchase order price involves identification of delivery schedules for each of the products on the purchase order and the calculation of prices for those products using the forecasted prices derived from futures information provided by the online futures trading systems. In forecasting the price of a product in the future, sources of information other than online future trading systems may also be selectively employed.

[0238] In one embodiment, the online sales and pricing system **2915** serves as a front end to the e-commerce sites of manufacturers and merchants wherein customers purchase products from the online sales and pricing system **2915** and reimburse it, say via credit cards, for the products purchased online. The online sales and pricing system **2915** in turn acquires the products purchased by the customer from designated suppliers such as manufacturers, distributors or retail merchants. A supplier is selected based on the product category, the inventories of products at the various suppliers, the business arrangements made with various suppliers and other criteria. In effect, the supplier sells the products to the online sales and pricing system **2915** which ensures the pricing of products in a customer's purchase order based on their delivery schedules and the forecasted prices for the various products. The online sales and pricing system **2915** selectively charges the suppliers a transaction fee for generating their business. The customer is also selectively made to pay a service charge to the online sales and pricing system **2915** for its services.

[0239] To submit online information on forecasted prices of products to the online sales and pricing system **2915** so that they can be used to determine purchase prices for customers, one or more online futures trading systems **2925** establish connections **2955** with the online sales and pricing system **2915**. In some embodiments, the connection **2955** is the internet.

[0240] FIG. 30 is a diagram showing the various inputs and outputs of the online sales and pricing system **2915**. The online sales and pricing system **2915** receives Shopping Cart and Delivery Schedule **3005** and, in response, returns a Quote **3010** containing the prices for various products. In addition, it optionally receives Customer's Schedule Changes **3015** from customers subsequent to a sale and, in response, it returns Pricing Updates to Quote **3020**. It also receives scheduled and unscheduled Forecasted Prices **3025** from various sources such as future trading systems and market research firms. Future trading systems typically provide information on various commodities markets and forecasts of prices of various products from those markets. Market research firms such as Gartner Group, Forester Research, etc. provide periodic research reports on various technologies and products. In order to selectively provide automatic refunds to customers when the actual costs of products previously purchased by customers is considerably below the purchasing price paid for by the customer via an initial quote, the online sales and pricing system **2915** returns selective Refunds to Customers **3030**.

[0241] FIG. 31 shows various forms of product price forecasting information received by the online sales and pricing

system 2915 from pricing forecasting systems such as futures trading systems, commodity trading organizations, market research institutions, manufacturers, etc. Price forecasting information may be received as a table of forecasted product prices 3105, as a graph 3115 showing quarterly variation in product prices, or as a graph showing trends 3110 such as the graph depicting an exemplary technology adoption process.

[0242] The online sales and pricing system 2915 may receive pricing forecasts categorized by geographic region where they apply. Some of the pricing forecast information presented to the online sales and pricing system 2915 from information providers such as the online futures trading system 2925 may selectively be encrypted for subsequent decryption and processing by the online sales and pricing system 2915.

[0243] In general, pricing quotes for products purchase and the price forecasts that they are based on may be selectively saved by customers for subsequent processing. The online futures trading system 2925 may choose not to honor coupons that have expired.

[0244] In another embodiment, the pricing and forecasting information dispensed by information providers such as the online futures trading system 2925 and received by the online sales and pricing system 2915 is generated in eXtensible Manipulation Language (XML) format. Such XML formatted forecasting information sent by the online futures trading system 2925 is processed by the online sales and pricing system 2915.

[0245] FIG. 32 is a block diagram showing exemplary components of the online sales and pricing system 2915. The online sales and pricing system 2915 includes a browsable catalog 3280 through which customers can select one or more products for purchasing, a search engine 3285 for searching for specific products based on one or more criteria, an Authentication Manager 3205 for verifying the authenticity of customer account information, and a Delivery Manager 3210 which manages the delivery of products to the customer based on the customer's schedule of delivery, and a Quote Generator 3220 that generates quotes for the customer employing product prices generated by a Pricing Manager 3270. It also includes a Customer Profile Manager 3215 which is used to gather profile information of customers and an optional Tracking Manager 3225 that is used to track user buying patterns over a long term. An optional Statistics Reporting Unit 3235 selectively provides various statistical information and pricing related forecast information to customers periodically or on-demand.

[0246] When customers decide to purchase products from the online sales and pricing system 2915, the pricing manager 3270 provides pricing functionality that incorporates calculation of prices based on several factors including the customer's schedule of product delivery and the forecast of prices provided by pricing forecast providers 3260. The pricing manager 3270 also includes a credit card processing unit that processes customer sales that are based on credit cards, and a pricer database employed to store pricing related data. An order fulfillment manager 3275 provides information on available inventory of products. If a product purchased by a customer is not in stock or not stored locally at the online sales and pricing system 2915, the order fulfillment manager 3275 makes it possible to purchase that product from the manufacturer, distributors or merchants. Such purchases are done in one of two ways—seamlessly where the customer does not realize that the product is being acquired from a manufacturer

or merchant, or explicitly where the customer is aware of the participation of a manufacturer or merchant in the fulfillment of his purchase order.

[0247] Online Customers 3250 access the online sales and pricing system 2915 over the connection 3255. They can browse through the online browsable catalog of products and services 3280 or search for a specific product or service based on criteria such as product category, geographical region, brand names, etc. Pricing forecast providers 3260 access the online sales and pricing system 2915 over the connection 3295.

[0248] In a similar embodiment of the present invention, quote generation is performed by the electronic commerce software of a manufacturer or online merchant to which a customer migrates to from the browsable indexed coupon selection software, along with a shopping cart with one or more selected products, a delivery schedule for the products, and forecasted prices for the products corresponding with their delivery schedule. This implies that a customer can consummate a purchase of a product at a merchant or manufacturer's e-commerce site following the selection of products from the online sales and pricing system 2915 and subsequent vectoring with pricing forecasts and delivery schedule to the e-commerce site.

[0249] Quotes created by the online sales and pricing system 2915 may be printed by customers for tracking of the delivery of the products. The printing is facilitated by a print engine that is either available at the customer's computer or can be easily downloaded to the customer's computer.

[0250] In one embodiment, the online sales and pricing system 2915 provides insurance to customers, via an insurance company, for optionally insurance against losses occurring from an overestimated quote which, by the time of delivery per the customer's schedule, is worth substantially less than the purchasing price of the quote. In another embodiment, the online sales and pricing system 2915 dispenses refunds or coupons for subsequent purchases to those customers based on the price difference between the actual sales price taking into account the actual prices of the purchased products at delivery time and the quoted sales price for the products. The coupons may be redeemed by the customers during subsequent online purchases at the online sales and pricing system 2915.

[0251] To facilitate location of products by a customer, in one embodiment, the online sales and pricing system 2915 provides a web interface where products are categorized into different product categories. A customer browses, using a web browser, through categories and sub-categories of products to locate and purchase one or more products. The online sales and pricing system 2915 also categorizes products by manufacturers and merchants. If a customer purchases one or more products on the online sales and pricing system 2915, the rebates and coupons, if any, are automatically applied to the final price for the customer.

[0252] Internet portals, such as Yahoo, and internet web services, such as internet service providers (ISPs), can provide an automatic connection to the online sales and pricing system 2915, so as to provide their readers information on available products, including forecasted prices for the short or long term, associated with one or more products on the currently displayed web page. Alternatively, these portals can route web browsers automatically to the online sales and pricing system 2915 to retrieve associated pricing information if necessary, say in a pop-up screen (or frame) automati-

cally created by the currently visible web-page provided by the portal. Thus, readers of web content provided by web page hosts and portals can retrieve forecasted prices (for short term and/or long term) while they browse product information.

[0253] The online sales and pricing system 2915 makes it possible to integrate purchasing with software registration and product surveys. Customers who buy and install software are often reluctant to register them with the vendor. This situation is true for other types of products, too. In order to provide an incentive for registration of products, the manufacturers or vendors of such products can integrate the online sales and pricing system 2915 with the registration process so that customers might be enticed with coupons for their next purchases.

[0254] FIG. 33 shows the operation of the pricing logic based on unit prices of the products as determined by forecasted pricing information obtained from pricing forecast providers and the delivery schedule provided by the customer. The customer's delivery schedule 3305 provides information on when the customer plans to use or consume the products being purchased. The forecasted prices 3310 provides pricing forecasts obtained from one or more pricing forecast providers for one or more products being purchased by the customer, for the entire duration of the delivery schedule. The online sales and pricing system 2915 generates an online quote 3315 for the customer using the delivery schedule 3305 and forecasted pricing 3310. The online sales and pricing system 2915 provides support for applying various types of discounts to the quote of the customer and generates a total price for the customer. Subsequently, the purchase order is selectively updated by the application of rebates and coupons that may become available before the delivery of the products to the customer, thereby automatically providing savings to the customer.

[0255] In general, delivery schedules are provided by the customer to determine pricing based on proposed consumption rate, consumption schedule or deployment plans of the products. Refunds or coupons are optionally provided to customers if the quoted price is significantly greater than the actual selling price.

[0256] Although a system and method according to the present invention has been described in connection with the preferred embodiment, it is not intended to be limited to the specific form set forth herein, but on the contrary, it is intended to cover such alternatives, modifications, and equivalents, as can be reasonably included within the spirit and scope of the invention as defined by this disclosure and appended diagrams.

1. A first computing system of a first entity that acts as a first link in a sales chain, the first computing system supporting interaction with a second link in the sales chain, the second link being a second computing system of a second entity, the first link and the second link being related to at least one sales offering, the second computing system having a database, the first entity and the second entity being independent business concerns, the first computing system comprising:

- a first service that interacts with a bridging module of the second computing system to support access to content within the database; and

- a second service that interacts with an application program interface of the second computing system, the application program interface supporting a set of predefined functions carried out on the second computing system.

2. The first computing system of claim 1, wherein the first service interacts with the bridging module to obtain sales related information regarding the at least one sales offering.

3. The first computing system of claim 2, wherein the set of predefined functions comprises an offering of a promotion related to the at least one sales offering.

4. The first computing system of claim 3, wherein the offering of the promotion is based on the sales related information.

5. The first computing system of claim 4, wherein the sales related information comprises a quantity of sales of the at least one sales offering.

6. The first computing system of claim 1, wherein the first service interacts with the bridging module to obtain sales related information regarding the at least one sales offering, and wherein the set of predefined functions comprises a modification of a promotion related to the at least one sales offering.

7. The first computing system of claim 6, wherein the modification of the promotion is based on the sales related information.

8. The first computing system of claim 7, wherein the sales related information comprises a quantity of sales of the at least one sales offering.

9. The first computing system of claim 1, wherein the first service interacts with the bridging module to obtain sales related information regarding the at least one sales offering, and the set of predefined functions comprises an adjustment in the sales related information.

10. The first computing system of claim 9, wherein adjustment in the sales related information comprises a modification to a price of the at least one sales offering.

11. The first computing system of claim 10, wherein the modification to the price of the at least one sales offering is based on a quantity of sales of the at least one sales offering.

12. A first computing system of a first entity that acts as a first link in a sales chain, the first computing system supporting interaction with a second link in the sales chain, the second link being a second computing system of a second entity, the first link and the second link being related to a sales offering, the second computing system having a database that stores sales offering related data, the first entity and the second entity being independent business concerns, the first computing system comprising:

- a first service that interacts with a bridging module of the second computing system to support access to the sales offering related data from the database;

- a second service that examines the sales offering related data; and

- the first service, based at least in part on the examination by the second service, modifies at least a portion of the sales offering related data via the bridging module.

13. The first computing system of claim 12, wherein the modification the at least a portion of the sales offering related data comprises offering a promotion related to the sales offering.

14. The first computing system of claim 13, wherein the offering of the promotion is based on the sales offering related data.

15. The first computing system of claim 14, wherein the sales offering related data comprises a quantity of sales of the sales offering.

16. The first computing system of claim **12**, wherein the modification of the at least a portion of the sales offering related data comprises a modification of a promotion related to the sales offering.

17. The first computing system of claim **16**, wherein the modification of the promotion is based on the sales offering related data.

18. The first computing system of claim **17**, wherein the sales offering related data comprises a quantity of sales of the sales offering.

19. The first computing system of claim **12**, wherein the modification of the at least a portion of the sales offering related data comprises a modification to a price of the sales offering.

20. The first computing system of claim **19**, wherein the modification to the price of the at least a portion of the sales offering related data is based on a quantity of sales of the at least one sales offering.

21. A method used by a first computing system of a first of a plurality of entities, the plurality of entities including at least one of each of a manufacturer, a distributor and a retailer, the plurality of entities being involved in a sales chain, the method comprising:

interacting with a second computing system of a second of the plurality of entities via a first bridging module of the

second computing system, the interaction involving a promotion data associated with a product sales offering; and

interacting with a third computing system of a third of the plurality of entities via a second bridging module of the third computing system, the interaction involving the promotion data associated with the product sales offering.

22. The method of claim **21**, wherein one or both of the interacting with the second computing system and the interacting with the third computing system comprises offering a promotion corresponding to the promotion data.

23. The method of claim **22**, wherein one or both of the interacting with the second computing system and the interacting with the third computing system comprises modifying the promotion data associated with the product sales offering.

24. The method of claim **21**, wherein one or both of the interacting with the second computing system and the interacting with the third computing system comprises modifying the promotion data associated with the product sales offering.

25. The method of claim **21**, wherein the interacting with the second computing system comprises determining activity related to the promotion data associated with the product sales offering, and the interacting with the third computing system comprises modifying the promotion data based on the determined activity.

* * * * *