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(57) Abstract

The present invention provides a method and system for facilitating the establishment of economic marketplaces between business units. According to one embodiment, business units may enter into transactions with one another for revenue generators, which establishes a currency. A revenue generator possesses inherent value by providing an enticement for a viewer to perform an action with respect to a business unit including viewing branding information, viewing advertising, generating a sales lead, establishing a transaction, etc. The present invention also provides a system for automated content management based upon content effectiveness as a function of viewer interaction with content.

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METHOD AND SYSTEM FOR FACILITATING ESTABLISHMENT OF ECONOMIC MARKETPLACES AMONG BUSINESS UNITS AND DYNAMIC ANALYSIS AND REORGANIZATION OF CONTENT TO IMPROVE CONTENT EFFECTIVENESS

PRIOR PROVISIONAL PATENT APPLICATION

The present application claims the benefit under 35 U.S.C. § 119(e) of U.S. Provisional Application No. 60/131,225 filed April 27, 1999.

FIELD OF THE INVENTION

The present invention relates generally to methods for conducting business and computer based information systems and structures. In particular, the present invention provides a method for establishing economic marketplaces between a plurality of business units. The present invention also provides a method and system for structuring, linking and displaying computer based content using a container architecture as well as analyzing user interaction with the content. The system provides for real-time analysis of content effectiveness as a function of user interaction with content in order to perform content management and restructuring based upon content effectiveness analysis.

BACKGROUND INFORMATION

Achieving a profitable and sustainable revenue stream model has always posed a major challenge in business. The modern economy has demonstrated the power of collaborative marketing in lowering start-up and maintenance costs, while providing significant numbers of revenue streams. Although, the World-Wide-Web (the "Web") has initiated a revolution in business methods and practices, business methods effected on the Web have failed to capitalize on collaborative relationships between businesses.

In the modern Internet economy it is imperative that businesses maintain a Web site, which includes marketing and advertising content. Over time, company Web sites will function as the primary locus of business activity. However, the viability of the conventional Web site in generating sustained and significant revenue is hotly debated. Successful revenue generation is a function of driving top-line revenue while maintaining low operating costs. Web sites face inherent economic

barriers as a function of the traditional Web site model. In particular, top-line sales growth is limited because of a dearth of revenue streams and the fact that advertising rates are in decline as a result of the failure of banner advertisements. In addition, operating expenses are high due to the initial and maintenance costs associated with building site traffic, the scarcity of quality content, rising acquisition costs and escalating site administration costs. Moreover, customer value is often low with the traditional Web model.

Web sites face two major issues related to their business viability. First, stand-alone Web sites face tremendous difficulty in driving and attracting traffic due to the sheer number and competition of Web sites. For example, today there are millions of Web sites available to viewers and this number is growing rapidly. Search engines cannot adequately nor effectively catalogue every Web site, which impedes driving of traffic to Web sites. Second, the costs faced by Web sites in generating, delivering and maintaining on-line and off-line advertising in order to drive traffic has become cost prohibitive. Many Web sites are driven out of business as a result. Other rising costs such as content acquisition and Web site administration are impeding the viability of Web sites. Traditional Web site business models that rely solely on revenue generation through banner advertising or e-commerce have rarely been able to turn a profit. In general, the general profitability issues facing Web sites is a function of a dearth of revenue streams and the inability to acquire significant customer levels.

The traditional Web model is also fundamentally deficient in that it does not foster a collaborative marketing environment between business units. Typically, individual companies and businesses maintain an insular self-contained Web site that includes marketing, advertising, informational and other resources related solely to the company. Under the conventional Web paradigm, viewers interact with a single Web site of a particular company one at a time. This conventional Web model does not tap the potential for building economic marketplaces within vertical and horizontal markets. Among other deficiencies, this paradigm does not account for nor provide any mechanism to capitalize on synergetic relationships between business units.

In particular, the conventional Web model does not facilitate the establishment of integrated peer networks related to a specific industry or market destination.

Viewers, business units and advertisers mutually benefit when brought together by relevant content related to an industry or community. This synergy is propagated vertically and horizontally as vertical and horizontal suppliers, distributors, retailers, etc. may also gain in a collaborative community.

Because traditional Web models do not recognize nor foster collaborative marketing and in fact often run counter to this paradigm, Web visitors and viewers also suffer. Ultimately the harm to viewers is reflected in lower profits for Web sites as visitors rely on the Web less for business purposes. Often Web users wish to obtain information and/or to find products or services related to areas of interest. Thus, as is often the case, Web users do not deliberately log on to the Internet seeking particular marketing and/or advertising information or necessarily for transactional purposes. They may instead desire to casually obtain "neutral" information relevant to particular communities or interests. However, "neutral" content may be highly valuable to companies because it often inspires and incites economic transactions such as purchases and/or alerts potential customers about the existence of a company and its offerings.

For example, typically a Web user desires to learn about a particular industry or community, which may include receiving neutral content information as well as marketing and advertising information from businesses within that industry. This behavior presents significant opportunity for Web based businesses because once viewers associate a particular site with a specific industry or community, these viewers will often return to the site, which may lead to marketing opportunities in the future.

That is, stickiness is a desirable property on the Web. "Stickiness" refers to a metric for gauging the effectiveness of a Web site in maintaining and attracting repeat viewers over a sustained period. "Stickiness" relates to how successful a Web site is in attracting targeted viewers, how long viewers stay at a Web site when they visit and how often they come back.

"Stickness" and content effectiveness in general are essential to Web sites, because they greatly determine revenue on the Web, which is traditionally derived from advertising. Typically, Web sites provide "on line" advertising in the form of banner advertising or sponsorships to underwrite the cost of providing information or marketing costs in selling products. The success of advertising as a method to

provide sufficient revenue to produce a profit has enjoyed varying degrees of success by businesses over time.

However, the success of "on-line" advertising on the Web remains an open question. In advertising "off-line" or "on-line" measurement of advertising content effectiveness is essential to determine the success rate of a given advertisement in its ability to persuade a viewer or reader to perform some action related to the advertiser such as inquiring about the product or even performing an immediate purchase. Advertisers and advertising agencies have typically been unsuccessful in attempts to measure and improve effectiveness of advertising messages based upon an analysis of advertising content. Conventional methods employed by advertisers include market research techniques such as mall intercepts, focus groups and mock copy and creative advertising testing. Generally advertising agencies substitute self-defined metrics as a measurement criteria, which are generally not effective in providing true measurement of advertising effectiveness, which is a function of cause and effect of actual viewers.

In on-line advertising (i.e., on the Web), demographic targeting and customer profiling techniques have provided the primary methods for measuring content effectiveness. In these methods, personal customer information related to age, gender, income, race, geographical location, work and social activities, past purchasing habits, etc., are gathered and analyzed in an attempt to target advertisements to viewers. That is, past measures of customer demographic patterns are utilized to predict or identify individuals or groups of individuals that may be more likely to react positively or "be in the market" to purchase advertisers' products. For example, some known techniques rely upon demographic patterns of usage for known IP addresses, which are matched to that IP address.

Commercial Web sites relying upon demographic analysis to deliver advertising are usually managed either by an on-site (or off-site) server running a process to deliver advertising content based upon demographic analysis. For example, a central server may retain a database of IP ("Internet Protocol") addresses linking each IP address with categories of information content. The database may be based upon data contained on log reports, which are generated on an HTML server. The log reports contain basic information about user interaction with a Web site such as the time a user with a particular IP address requested certain HTML content, etc.

Particular advertising content delivered is based upon a rough analysis of the past history of a user with a particular IP address.

When a Web server detects a particular IP address, the demographic information is used to determine advertising content to be delivered to a viewer based solely upon past patterns associated with that IP address or the patterns of other users fitting similar demographic statistics. Conventional models employ "push" technology to deploy banner advertisements, which are characterized by small billboard-type hyperlinks displayed on the periphery of a Web page. A viewer is invited to respond to an advertisement, typically by selecting the advertisement icon with a mouse, which usually results in retrieving the home page of the advertiser's Web site. Advertising revenues are derived from the number of viewers visiting a Web page containing a banner advertisement and/or the number of viewers responding to a banner advertisement.

Another known method for tracking users' interaction with a Web site is known as a "cookie." Because HTTP ("Hypertext Transport Protocol") is stateless, traditionally, Web browsers treat content as read-only. A cookie provides a method for Web sites to save state and session information to a Web client so that the information can be retrieved and analyzed later. Thus, for example, advertisers on Web sites may use cookies to track user visits to particular sites or viewing of particular content, to aid in the construction of an advertiser's demographic database. Cookies are normally used by CGI ("Common Gateway Interface") scripts and related server-side code and are managed by Web browsers. Browsers normally store the data in a database or in one or more files. Cookies are implemented via the use of particular HTTP headers, "Cookie" and "Set-Cookie". A cookie transaction is initiated by a server asking a client to save a cookie. The server sends the data via the "Set-Cookie" header. If the client is able and willing to do so, it saves the data. Later, if the user revisits the site or any URL associated with the cookie, the browser returns the data via the Cookie header. In this way, an advertiser can track past user behavior. Clearly though cookies are limited because they permit tracking of only limited information about Web users.

A major limitation of using databases generated by cookies is the reliance upon users' IP addresses for tracking past history, which can produce misleading, and inaccurate information. Since the vast majority of Internet users today employ dial-up

connections, IP addresses are dynamically assigned at the datalink layer, and thus, a user's IP address changes every time the user connects.

Collaborative filtering is another known technique that matches content choices to the user based on the patterns of previous users who indicated similar interests.

Known methods for analyzing Web traffic such as cookies and collaborative filtering (i.e., based primarily on demographics) do not provide a sufficient level of granularity to derive meaningful information about the value of content to users. For example, there does not exist a known method for studying the value of particular content and its structural placement. Because of these limitations, the capability to reorganize Web content based on traffic patterns is diminished.

Furthermore, while customer targeting and profiling are accepted advertising methods, they are deficient in that they raise significant concerns related to personal privacy. Furthermore, these methods do not provide a method for measuring content effectiveness, nor for dynamically adjusting content as a function of analysis of customer behavior.

In general, content effectiveness is a dynamic entity, which changes continually over time. No known methods exist for analyzing the content effectiveness on the Web as a function of user interaction with the content. Typically, a data structure such as a linked set of HTML ("Hypertext Markup Language") pages is not responsive to feedback based upon the characteristics of viewer interaction with the data. In particular, a conventional Web site, which typically includes a linked data structure of HTML pages, does not provide any mechanism for sensing how viewers choose to traverse the Web site nor for analyzing or improving content effectiveness as a function of viewer behavior at the Web site.

The deficiencies of conventional Web models present significant problems for businesses that utilize the Web to market their goods and services. In particular, conventional Web models do not foster collaborative marketing or establishment of economic relationships between business units. In addition, the inability to monitor and dynamically modify Web content and its structure as a function of its effectiveness significantly impairs content delivery and dissemination on the Web and its value to businesses.

SUMMARY OF THE INVENTION

The present invention provides a method and system for facilitating the establishment of economic marketplaces between business units. According to one embodiment, business units may enter into transactions with one another for revenue generators, which establishes a currency. A revenue generator possesses inherent value by providing an enticement for a viewer to perform an action with respect to a business unit including viewing branding information, viewing advertising, generating a sales lead, establishing a transaction, etc.

The present invention also provides a system for automated content management based upon content effectiveness as a function of viewer interaction with content. According to one embodiment, the invention provides a container architecture for structuring, representing and storing content of business units, wherein the container architecture facilitates analysis and reporting of viewer interaction with the content. The container architecture provides an object-oriented structure for defining a set of content elements and content modules and a structural relationship between content elements and content modules. By analyzing viewer interaction with the container architecture, content effectiveness may be analyzed and reported. According to one embodiment, content is restructured as a function of an analysis of content effectiveness.

According to one embodiment, the present invention is implemented on the Internet. A port-site, which is coupled to the Internet, provides a locus for the establishment of an economic marketplace between business units. A port-site may be directed toward a particular community or industry sector, in which case, business units associated with a port site may include vendors, sellers, information providers and other entities that have a direct or indirect relationship to the site community. In order to drive the establishment of revenue, a port site utilizes a revenue generator currency element, which provides a basis for economic relationships between business units at the port site. According to one embodiment, a revenue generator currency element is based upon measurement of incitation of an affirmative act by a viewer with respect to a business unit including viewing branding or advertising information, generation of a sales lead or establishing a transaction for a product or service. A port-site organizer is associated with the port-site, the port-site organizer

itself forming a separate business unit, which may participate in the revenue model and thereby enter into transactions for revenue generators.

The port site includes an automated accounting process for representing economic relationships and associated revenue generators established between business units, monitoring and tracking revenue streams between business units and providing reporting of revenue streams to business units associated with the port site.

A port site also provides automated content management for business units associated with the port site. In particular, a port-site provides a container architecture for storing, managing and structuring content of individual business entities, analyzing and reporting content and its structure with respect to content effectiveness and dynamic reorganization and restructuring of content as a function of content effectiveness. A port-site performs a host of functions for business units associated with the port-site, facilitated by the container architecture, including monitoring and analyzing visitor traffic, providing real-time traffic reporting and providing automated content management based upon an analysis of content effectiveness with respect to each business unit. According to one embodiment, a port site also provides content effectiveness analysis for each business unit associated with the port site as a function of viewer interaction with content and dynamic restructuring of content as a function of content effectiveness.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1, which is prior art, is a block diagram illustrating a network architecture.

FIG. 2 is a block diagram of a network architecture depicting the deployment of a port site 210 on the Internet according to one embodiment of the present invention.

FIG. 3a is a block diagram depicting a logical architecture of a port site according to one embodiment of the present invention

FIG. 3b depicts an operation of a revenue generator element according to one embodiment of the present invention.

FIG. 3c is a block diagram depicting an exemplary revenue stream structure established between a port organizer and a plurality of sub-ports, hubs and sub-hubs according to one embodiment of the present invention.

FIG. 3d is a block diagram depicting an exemplary relationship between a number of business units with respect to a revenue stream structure and a corresponding set of revenue generator incitation elements according to one embodiment of the present invention.

FIG. 4 depicts an exemplary template structure for a particular content element, referred to as an application according to one embodiment of the present invention.

FIG. 5 depicts an exemplary scenario relating a number of content elements associated with particular business units and a set of revenue generator incitation elements linking content between business units

FIG. 6a depicts a navigational GUI for a port site according to one embodiment of the present invention.

FIG. 6b depicts an exemplary embodiment illustrating an arrangement of navigational GUIs within a port site according to one embodiment of the present invention.

FIG. 6c is a block diagram depicting a further example of an interspersed information architecture at a port site and its relationship to generation of revenue streams according to one embodiment of the present invention.

FIG. 7 is a block diagram depicting an example of the architecture of a port-site 210 according to one embodiment of the present invention.

FIG. 8 is a schema diagram depicting the architecture of an ACM database according to one embodiment of the present invention.

FIG. 9 shows an example of the structure of a log report file, which is stored in a log report database according to one embodiment of the present invention.

FIG. 10 is a block diagram depicting an architecture of a revenue generator module in relationship to various databases for tracking viewer interaction and associated revenue generator incitation elements that are stored at a port site according to one embodiment of the present invention.

FIG. 11 is a flowchart showing a set of steps executed by an analysis/reporting module in order to determine revenue established by business units at a port site as a function of revenue generator elements and viewer interaction with the port site according to one embodiment of the present invention.

FIG. 12 is a flowchart of a set of steps executed by a content effectiveness reporting/analysis module according to one embodiment of the present invention.

FIG. 13 is a block diagram illustrating dynamic content restructuring according to one embodiment of the present invention.

FIG. 14 is a block diagram depicting a relationship of a content effectiveness analysis and restructuring engine in relationship to various databases for determining content effectiveness and performing dynamic restructuring of content as a function of content effectiveness.

FIG. 15 is a flowchart showing a set of steps executed by a CE analysis/reporting module in order to analyze content effectiveness at a port site according to one embodiment of the present invention.

FIG. 16 is a flowchart of a set of steps executed by a MLE module in order to perform content restructuring as a function of content effectiveness.

DETAILED DESCRIPTION

The embodiments described herein are implemented on the Internet and Web utilizing an object referred to herein as a port-site. As will become evident, a port-site provides a platform for establishing an economic marketplace between business units by facilitating generation of economic transactions and related revenue streams. Business units may include any type of entity that desires to establish economic relationships with others including advertisers, corporations, information providers, distributors, resellers, retail units, etc. The port site establishes a currency element referred to as a revenue generator, which drives the creation of revenue streams between business units. The port site also provides a myriad of functionality for automated content management, analysis and reporting based upon an analysis of content effectiveness.

The embodiments described herein are not intended to limit the scope of the claims appended hereto. The present invention may be implemented in any type of environment whether it is electronically based such as an information network or in a more traditional business context. Thus, for example, the present invention is not limited to deployment on the Internet. For example, it could be deployed on a company-wide or other intranet or any site with a definable audience.

One embodiment described herein pertains to automated content management of advertising information. However, the present invention may be applied in a myriad of contexts to manage, analyze or dynamically structure any type of information to be disseminated. For example, the present invention could be applied in the context of dynamic market research or for providing and evaluating educational content.

FIG. 1, which is prior art, is a block diagram illustrating a network architecture. Viewer 105 utilizes personal computer 110 to navigate Internet/World-Wide-Web 130 via browser software 117, mouse 114 and display device 112. Personal computer 110 is coupled to and sends digital signals representing digital data to modem 115. Typically, personal computer 110 assembles this data for transmission over Internet 130 in the form of digital IP ("Internet Protocol") packets. Personal computer 110 also receives digital signals from Internet 130 through modem 115. As in the case of data transmission over Internet 130, data received from Internet 130 is typically in the form of IP packets.

Personal computer 110 communicates with Internet service provider ("ISP") 120 through dial-up connection from modem 115, through POTS ("Plain Old Telephone System") line 116, central office 125 and public switched telephone network ("PSTN") 145. Typically, the transmission path from modem 115 through POTS line 116 to central office ("CO") 125 is analog. At CO 125, signals are sampled for digital transmission through PSTN 145 to ISP 120. Due to the analog nature of the transmission path from modem 115, local line 114 to CO 125, modem 115 performs modulation of digital signals generated by personal computer 110 onto analog carrier signal for transmission to CO 125. Modem 115 also performs demodulation of signals received over POTS lines (e.g. 116) from CO 125, extracting digital byte codes from a modulated analog carrier.

ISP 120 is coupled to PSTN 145 through modem bank 121, which converts an analog modulated signal to a digital signal. Digital IP packets are then transmitted to router 135a and transmitted through Internet 130 via routers 135 to a particular Web server (e.g., Web servers 140a-140d). IP packets are also transmitted in the reverse direction from a Web server (e.g., 140a-140d) to personal computer 110 via a path through Internet 130 and routers 135, 135a, through ISP 120, modem bank 121, PSTN 145, CO 125 and modem 115.

Although the embodiment depicted in FIG. 1 shows a dial-up connection, in alternative embodiments personal computer 110 may be connected to Internet 130 through a dedicated connection utilizing, for example, an ISDN ("Integrated Services Digital Network") connection, a cable modem, a LAN ("Local Area Network") or an ADSL ("Asymmetric Digital Subscriber Line"). Note that because content is distributed across multiple servers on the Internet, in general, viewer 105 will communicate with different servers at different times depending upon the content requested via a hyperlink. Negotiation with different servers, of course, is transparent to client 105, and accomplished by browser 117 running a HTTP and TCP/IP ("Transmission Control Protocol/Internet Protocol") stack. FIG. 1 shows, for example, four servers, 140a-140d connected on Internet 130. The dotted lines between Servers 140a-140d indicate hyperlinks between HTML content on one server and HTML content on another. Thus, according to the example depicted in FIG. 1, viewer 105 may select a hyperlink on an HTML page on Server 140a that is linked to HTML content on either servers 140b or 140d. Similarly, server 140d contains HTML content with a hyperlink to HTML content on server 140c.

In some instances, a Web site will consist of multiple servers containing related HTML content. Nevertheless, viewer 105 may wander between different Web sites by following a particular hyperlink and in general a particular site will typically contain a very narrowly defined content base, such as information related to a particular company.

FIG. 2 is a block diagram of a network architecture depicting the deployment of a port site 210 on the Internet according to one embodiment of the present invention. As will become evident as the invention is further described, port-site 210 provides a locus for the establishment of an economic marketplace and community between any number of business units 250 and provides a myriad of functionality for managing, analyzing reporting and dynamically modifying content of business units associated with port site 210. Port site 210 may house content for a plurality of business units 250, which would normally be aggregated across multiple Web sites (e.g., servers 140a-140d). As will become evident, by housing multiple business units 250, port site 210 forms the locus of a business marketplace and may perform functions for analysis, reporting and structuring of business unit content as a function of an analysis of content effectiveness.

In particular, port site 210 provides a system and method for structuring, managing, reporting and automating commerce transactions involving multiple revenue streams and provides a locus for supporting and managing multiple revenue streams between discrete nested business units 250. For example, port site 210 may function as a globally linked commerce microcosm including a plurality of business units 250 occupying an economic relationship with one another. The economic relationship between business units 250 defines revenue streams and associated parameters linking the business units 250, which may be fixed or dynamically changing depending upon the design of port site 210. Thus, port site 210 fosters discrete combinations of collaborative efforts among and between business units 250. Individual and group collaborations of business units 250 generate multiple buyer and seller relationships among and between business units 250.

According to one embodiment, port site 210 houses a plurality of business units 250 that are directly related to a particular industry or community. Business units 250 having a function and purpose related to the port site community may associate themselves with port site 210. Associated business units 250 may then participate in an economic marketplace established by the port site. Port site 210 also houses and manages content of associated business units 250. Content may include any type of information desired to be disseminated to viewers. Thus, content may include purely informational content, branding content, advertising content, etc.

For example, port site 210 may be devoted to telecommunications. In this case, port site 210 might serve business units 250 including manufacturers of telecommunications products, telecommunications service providers such as telephone companies, retail stores selling telecommunications equipment, resellers, universities providing telecommunications courses, etc. Port site 210 may also provide informational content not directly related to business such as technical articles of general interest to the telecommunications community such as white papers, events, etc. In addition, port site 210 may include content related to prominent researchers or developers in the field. For example, port site 210 might house advertising content provided by business units 250 supplying or manufacturing products directed toward the telecommunications industry. As will be described further below, according to one embodiment of the present invention, information content on port site 210 utilizes an interspersed format in which advertising content is

intermingled with non-advertising content and viewers may traverse content on port site 210 in either a vertical or horizontal manner.

FIG. 3a is a block diagram depicting a logical architecture of a port site according to one embodiment of the present invention. The logical architecture depicted in FIG. 3a provides a basis for establishment of an economic marketplace and revenue structure as will become evident as the invention is further described. According to one embodiment, port site 210 is organized and managed by a central body, port organizer 305. Port organizer 305 may be, for example, a trade association made up of a number of member companies with the goal of promoting a specific industry or an individual corporation that is interested in promoting its individual products or providing information to its employees. Port site organizer 305 may alternatively be an individual corporation, which may provide, for example, an overview of the company, a product line overview, a daily stock quote, etc.

Port site 210 includes sub-ports 315. Sub-ports 315 may house business units 250 that are logically related to one another. For example, a port site 210 addressing the telecommunications industry might include a number of sub-ports 315, each addressing a different sector or market of the industry. Each sub-port 315 may be associated with one or more hubs 320. Each hub 320 forms the logical locus of a discrete business unit 250. In particular, hubs 320 providing a logical container for all business activities of a business unit 250 including maintenance and representation of economic relationships to other business units 250 located at port site 210, housing information content such as advertising for dissemination to viewers, maintenance and representation of business rules related to management of content, etc. Each hub 320 may in turn be associated with one or more sub-hubs 325. Although, not depicted in FIG. 3a, any level of nesting is possible. Thus, for example, sub-hubs 325 may be associated with sub-sub hubs, which in turn may be associated with sub-sub-sub hubs, etc.

FIG. 3a for example, shows port organizer 305 associated with port site 210. Port site 210 includes sub-ports 315a-315c. Sub-port 315b includes hubs 320a-320h. Hub 320h includes sub-hubs 325a-325h. Although, not depicted in FIG. 3a, it is assumed that sub-ports 315a and 315c also include a myriad of hubs 320 and sub-hubs 325.

The logical structure defining the various entities shown in FIG. 3a defines a revenue stream structure between the various entities including port site 210, port organizer 305, sub-ports 315, hubs 320 and sub-hubs 325. According to one embodiment, port organizer 305 derives a revenue stream as a function of economic relationships executed between all entities at port site 210. In particular, port site 210 provides a fertile economic environment in which business units 250 are free to enter into economic relationships with other business units 250 at the hub 320 or sub-hub 325 level.

According to one embodiment, business units 250 associated with port site 210 may enter into economic relationships related to revenue generator elements. A revenue generator element provides a currency for economic transactions between business units 250 associated with port site 210. FIG. 3b depicts an operation of a revenue generator element according to one embodiment of the present invention. Referring to FIG. 3b, a single revenue stream is established from business unit 250b housed in hub 315b to business unit 250a housed in hub 315a. With respect to this example, it is assumed that business unit 250b has entered into a transaction relating to a revenue generator element with business unit 250a.

In particular, FIG. 3b shows an illustration of single economic transaction in which business unit 250b has purchased a revenue generator element from business unit 250a. Hub 315a provides a virtual container for business unit 250a including content element 397. In consideration for business unit 250b's purchase of a revenue generator element from business unit 250a, business unit 250a provides a revenue generator incitation element 337 within a content element 397 of business unit 250a. Revenue generator incitation 337 element may include branding of business unit 250b, advertising related to business unit 250b, solicitation of a sales lead with respect to business unit 250b, opportunities to directly perform a transaction with business unit 250b or a myriad of other possible revenue generating options. Revenue generation incitation element 337 may also include a hyperlink, which when selected by a viewer 105 transports the viewer to content associated with business unit 250b.

In general, revenue generator incitation element 337 serves to incite viewers 105 to undertake an action with respect to a business unit 250 (e.g., view advertising, enter into a transaction, etc.). For example, referring to FIG. 3b, business unit 250b provides payment to business unit 250a as a function of actions undertaken by

viewers 105 as a function of revenue generator excitation element 337 delivered to viewer 105 via content element 397 of business unit 250a. Thus, effectively, as shown in FIG. 3b, a revenue stream is established flowing from business unit 250b as purchaser to business unit 250a as seller as a function of actions exercised by viewer 105 with respect to revenue generator incitation element 337.

Revenue generators may include but are not limited to sales, maintenance fees, branding, click-throughs, sales leads, market research, e-mail newsletters, auctions, e-commerce, micro-information transactions, content management services, sign posts, name captures, custom reporting, sponsorship advertisements, etc.

FIG. 3c is a block diagram depicting an exemplary revenue stream structure established between a port organizer and a plurality of sub-ports, hubs and sub-hubs according to one embodiment of the present invention. As shown in FIG. 3c, port organizer 305 derives revenue streams from sub-ports 315a-315c. Sub-ports 315a-315c each include a plurality of hubs 320 which are associated with a particular revenue stream structure. In particular, sub-port 315a includes hubs 320a-320h, which have an associated revenue stream structure, defined by relationships entered between hubs 320a-320h. Likewise, sub-port 315b and sub-port 315c respectively include hubs 320i-320p and hubs 320q-320x. Furthermore, hubs 320h and 320r are respectively associated with sub-hubs 325a-325h and sub-hubs 325i-325p.

According to one embodiment, port organizer 305 establishes a dynamic self-perpetuating business microcosm in which it derives a recursive revenue stream from all revenue streams generated within sub-ports 315a-315c. That is, port organizer 305 enjoys a revenue stream derived from the current revenue stream structure existing within sub-ports 315a-315c, hubs 320 and all sub-hubs 325a-325c as well as any future revenue streams that may come into existence as a function of sub-ports 315a-315c. Thus, for example, sub-hubs 325e may associate itself with a plurality of sub-sub-hubs. In this case, port organizer 305 would necessarily derive revenue from all revenue streams created between sub-hub 325e and its sub-sub-hubs.

According to one embodiment, hubs and or sub-hubs may establish their recursive revenue structure. For example, hub 320h may have established an economic relationship with sub-hubs 325a-325h, in which hub 320h derives a revenue stream with respect to all revenue streams established among sub-hubs 325a-325h. Furthermore, this may be a dynamic arrangement in which hub 320h receives a

portion of all revenue streams associated with 320h including revenue streams generated in the future as a result of future transactions between any sub-hub 325a-325h and other business units 250. For example, sub-hub 325d may decide to establish a transaction with a group of business units 250, wherein these business units 250 would reside on a sub-sub-hub level. In this case, sub-hub 325d would derive revenue from all transactions established currently and in the future among its sub-sub-hubs. In addition, the revenue stream established between sub-hub 325d and its sub-sub hubs would propagate up to hub 320h and to port organizer 305.

The revenue stream structure may vary with the size and complexity of the transactions and the number of discrete products and services to be offered and promoted at port site 210. For example, port organizers 305 may determine, a structure and occupancy of a port site 210 with respect to nested sub-ports 315, hubs 320, sub-hub 325. A port organizer 305 may also determine, for example, based on natural or artificial differentiators, to establish a revenue pricing system between the various nested layers of a port site 210. For example, port organizer 305 may establish a scenario in which business units 250 will pay fees to the port organizer, based upon criteria and mutually established metrics, including but not limited to transaction and user volumes. Business units 250 at port site 210 may also derive revenue by engaging in similar revenue generating functions as those engaged in by port organizer 305 with other business units 250 associated with port site 210. Port organizer 305 and business units 250 may also earn development, site servicing, and reporting fees from other business units 250 associated with port site 210. Revenues are propagated among business units 250 associated with port site 210 as a function of the revenue stream structure associated with port site 210.

FIG. 3d is a block diagram depicting an exemplary relationship between a number of business units with respect to a revenue stream structure and a corresponding set of revenue generator incitation elements according to one embodiment of the present invention. In particular, FIG. 3d illustrates a revenue generator structure corresponding to the relationship between hubs 320a, 320d, 320g and 320h and sub-hub 325a as shown in FIG. 3c. As shown in FIG. 3d, each hub (i.e., 320a, 320d, 320g, 320h) and sub-hubs 325a houses content 333a-333e respectively. As will become evident as the invention is described further, according to one embodiment content 333 may be arranged in a unique structural relationship

described herein as a content element structure (see FIG. 4 and accompanying explanation), which facilitates automated content management and dynamic reorganization of content as a function of analysis of content effectiveness. It is convenient to think of viewer interaction with port site 210 as effectively comprising viewer traversal thorough content housed within hubs 320 and sub-hubs 325, which are linked to one another through revenue generator incitation elements 397. The organization of revenue generator incitation elements among content 333 associated with business units 250 at port site 210 is a function of a revenue stream structure established between business units 250 at port site 210.

Comparing FIGS. 3c and 3d, note that hub 320g and hub 320a and hub 320g and 320d are linked in a bi-directional revenue generation relationship. Corresponding to this relationship, FIG. 3d shows that hub 320g houses content that includes a revenue generator incitation element 397 linking to content housed in hub 320a and hub 320a houses content that includes a revenue generator incitation element linking to content housed in hub 320g. Similarly, hub 320g houses content that includes a revenue generator incitation element 397 linking content in hub 320g to content in hub 320d and vice versa. Note that FIG. 3d depicts a scenario in which revenue generator incitation elements are actual hyperlinks. However, as discussed above, a revenue generator incitation element may correspond simply to branding or advertising. For example, the revenue generator relationship between hubs 320a and 320g might be exercised as a simple promotional message provided in content housed in hub 320a referencing the business unit 250 associated with hub 320g and vice versa. Or, as shown in FIG. 3d, revenue generator incitation elements 397 may include an actual hyperlink, for example a link from content in hub 320a to content in hub 320g. In this case, a user viewing content associated with hub 320a would be presented with a hyperlink, which would transport them to content housed with hub 320g. In this manner, a revenue generating scenario is established, in which a bi-directional revenue stream is established between hubs 320a and 320g and 320g and 320d as a function of viewer interaction and/or selection with revenue generator incitation elements included in respective content in hubs 320a and/or 320g.

Similarly, comparing FIGS. 3c and 3d, the unidirectional revenue stream between hub 320g and 320h is reflected by revenue generator incitation elements 397 linking content in hub 320g to content in hub 320h. FIG. 3d also shows a revenue

generator incitation element structure linking content housed in hub 320h to content included in sub-hub 325a, reflecting the revenue stream shown in FIG. 3c from sub-hubs 325a-325h to hub 320h.

According to one embodiment, each hub 320 and/or sub-hub 325 on port site 210 utilizes a modularized container architecture to represent, classify, structure and provide navigational paths of related content. As will become evident, as the invention is further described, this container architecture provides significant benefits in allowing analysis of content effectiveness and dynamic restructuring of content as a function of content effectiveness. The container architecture also provides significant advantages to facilitating the creation of revenue streams between business units 250 associated with port site 210.

According to one embodiment, a content module is defined, which is a structured relationship between any number of content modules, each content module comprising a basic building block of the container architecture. According to one embodiment of the present invention, each module is an HTML file (i.e., a single HTML page) including text and/or graphical information, which may be displayed to a viewer via browser software 117. According to one embodiment, a set of module types are defined for classifying content based upon its function. For example, with respect to advertising, according to one embodiment, modules are categorized by function as either "informing", "persuading" or "closing" a viewer with respect to a particular business unit 250 or product. Modules are stored in an automated content management database (described in detail below) at port site 210.

A content element is defined by a fixed architecture of module types and a link structure between the module types. Thus, a content element is defined by a template consisting of a series of module types and the links that interrelate them. A series of content element types, defined by the unique architecture of modules that comprise each one (i.e., a unique template) may be created for a particular port site 210, or business units 250 may define their own. Each business unit 250 associated with port site 210 may have defined any number of content elements, which are logically housed in the respective hub or sub-hub. In addition, each business unit 250 associated with port site 210 may have defined any number of content modules, defining substantive content associated with the business unit 250, wherein the content modules are also housed via the respective hub or sub hub. As will become

evident, the storage of a set of content elements and modules for a particular business unit 250 provides a foundation for automated content management with respect to analysis of content effectiveness as described in detail below. Physically, the architecture of the content element types (i.e., the template or blueprint of each content element) and the modules themselves utilized in a particular port site 210 are stored in an automated content management database, which will be described in detail below.

FIG. 4 depicts an exemplary template structure for a particular content element, referred to as an application according to one embodiment of the present invention. As shown in FIG. 4, content element 405 includes ten different types of modules, indicated as 420a-420j arranged according to content element structure 405, which defines a link structure between content modules 420a-420j as well as the functional roles of content modules 420a-420j. Note that modules 420a-420c, although distinct, share a common function, indicated by ring 430a. Similarly, modules 420d-420g share a common function (ring 430b) as do modules 420h-420i (ring 430c). Also, note that modules 420a-420j are arranged in a particular architecture in which the module types may be visited only in a particular order by viewers 105 as indicated by the arrows in FIG. 4. According to one embodiment of the present invention, a template (depicting the architecture of the module types forming that content element) for each content element type is stored in an automated content management database described in detail below using an appropriate data structure.

According to one embodiment, modules 420 are imbued with particular functional attributes. For example, content element 405 may include an objective module 420j, which is the desired goal of viewer interaction with the content element. That is, it is desired that a viewer select objective module 420j directly or by traversing a path through content modules 420a-420i. Although not shown in FIG. 4, according to one embodiment of the present invention all content modules 420a-420i include a link to objective module 420j. According to one embodiment, for example, objective module 420j allows a viewer 105 to voluntarily fill out a form divulging personal information. According to one embodiment, having viewers 105 navigate toward and submit information when arriving at an objective module (e.g., 420j) is the

goal of the functional design of each content element type (e.g., content element structure 405).

For example, in an advertising context, objective module 420j may be a module a user selects that causes a representative to contact a viewer 105 (either through e-mail or via a telephone number). Or, objective module 420j, when selected by a viewer 105, may result in additional product information being sent to the viewer via a request. In either case, if the present invention is applied in advertising or marketing, objective module 420j may be described as generating a lead, which indicates that a particular viewer 105 has expressed a sufficient degree of interest in a particular advertiser and/or advertiser's product to indicate to the advertiser that the viewer 105 is a serious candidate in performing some transaction with the business unit 250 providing the content element 405.

Note that the paths taken by the aggregate of viewers 105 either moving toward objective module 420j or not choosing objective module 420j provide meaningful feedback regarding the perceived value of content to the viewers 105 of the content and its structure. Thus, for example, comparing two content elements 405 of the same type (i.e., having the same structure comprising the same set of modules with identical link structure) it may be found that many viewers 105 interacting with the first content element do not ultimately move to a lead module (i.e. module 420j). In the second content element 405, however, it may be found that the majority of viewers 105 choose to move to the lead-generating module (i.e., objective module 420j) very quickly, perhaps visiting only a handful of modules beforehand. This could indicate that the second content element 405 included very effective content or placement as opposed to the first content element 405. This particular functionality will be described in detail below with respect to automated content management and dynamic restructuring of content as a function of content effectiveness.

According to one embodiment, the particular architecture of each type of content element (i.e., the number, type and paths linking the modules) are adapted to a particular port site 210 and type of content provided there.

According to one embodiment, a particular content element 405 has associated with it one or more entry point modules (e.g., 420x), which like other modules, comprise, for example, HTML content and links directly to one or more content elements. The content element structure described with respect to FIG. 4 provides

significant flexibility with respect to the generation of revenue streams between business units 250 associated with port site 210. In particular, and as described above, business units 250 may transact for revenue generators, which are implemented as revenue generator incitation elements included on modules 420 within content elements 410. For example, businesses may transact for links to an entry point module to their content, wherein these links may reside on a content module 420 of another business unit 250. Entry point modules (e.g., 420x) can be located both within the hierarchy of port site 210 and also as pages accessible directly from a Web search engine. An entry point module (e.g., 420x) is particularly useful in an advertising model to determine the quality and positioning of the content that led users most frequently to a particular content element.

FIG. 5 depicts an exemplary scenario relating a number of content elements associated with particular business units 250 and a set of revenue generator incitation elements linking content between business units 250. In particular, FIG. 5 shows content elements 405a-405e, which might respectively be associated with five separate business units 250. A revenue stream structure is established between the business units 250 as defined by a link structure of revenue generator incitation elements shown in FIG. 5. For example, module 420a1 in content element 405a includes a link to module 420b1 in content element 405b. Similarly, module 420b3 in content element 405b is linked to module 420c1 in content element 405c, module 420a2 in content element 405a is linked to module 420e1 in content element 405e, module 420b2 in content element 405b is linked to module 420d1 in content element 405d, module 420d2 in content element 405d is linked to module 420c2 in content element 405c and module 420d3 in content element 405d is linked to module 420b3 in content element 405b. Each link between content modules 420 of separate content elements 405 of businesses provides a separate revenue stream. Although FIG. 5 depicts an actual link structure between content of business units 250, it is to be understood, as described above, that revenue generator incitation elements may include any other type of material including a simple brand or advertisement, that does not actually provide a link between content of one business unit 250 and another.

According to one embodiment, port site 210 utilizes a navigational graphical user interface ("GUI") that further enhances the economic marketplace and provides additional opportunities for revenue generator elements facilitating transactions

between business units 250. FIG. 6a depicts a navigational GUI for a port site 210 according to one embodiment of the present invention. As will become evident as the invention is further described, navigational GUI 620 provides additional methods for revenue generation between business units 250 at port site 210. According to one embodiment of the present invention, navigational GUI 620 includes nine graphical icons (610a-610i) implemented in the shape of a square. Navigational GUI is presented to viewers when navigating port site 210.

Referring to FIG. 6a, according to one embodiment, graphical icons 610a-610i included in navigational GUI 620 are divided into two groups. A first group is defined by a diamond configuration 622 comprising buttons 610b, 610d, 610f and 610h, referred to herein as the "power diamond." According to one embodiment, buttons associated with power diamond 622 invoke particular functional modules for interacting with business units 250 associated with site port 210. For example, according to one embodiment, the four power diamond buttons 610b, 610d, 601f and 610h invoke a calendar module, a user forum module, a products module and a jobs module respectively. These functional modules provide viewer access to generic functionality such as a calendar or job bank but also provide access to content, which is directly related to business units 250. The calendar module, for example, provides viewers with a computer-based calendar for viewing events associated with one or more business units 250 associated with port site 210.

Although navigational GUI 620 provides a universal navigational interface, which is displayed consistently throughout port site 210, it also provides access to content relative to a business unit 250 housed in a particular hub 320 and/or sub-hub 325 that a viewer 105 is currently accessing as well as content accessible via generator incitation elements that has been defined by a revenue stream model defined between business units 250. The latter functionality will become clear as the invention is further described.

Thus, for example, while a viewer 105 is viewing content associated with hub 320g, selection of the calendar icon in navigational GUI 620, would invoke a computer based calendar, which would display content associated with the business unit 250 housed in hub 320g. On the other hand, if a viewer were viewing content associated with hub 320a, selection of the calendar icon in navigational GUI 620 would invoke the computer based calendar module, but in this case content displayed

within the calendar module would be related to the business unit 250 associated with hub 320a. For instance, if a viewer 105 performed a search using the calendar module for events within the viewer's state, the viewer 105 might find an advertiser trade show. The viewer 105 could then click on a hyperlink displayed in the calendar module, which would retrieve a content element for one of the products of that business unit 250 to be featured at the show, which could ultimately entice the viewer 105 to fill out a form requesting more information about the product.

However, as described below, business units 250 may also enter into transactions with one another for revenue generator elements with respect to content included within functional modules such as the calendar module. In this case, a revenue generator incitation element could be displayed to a viewer while viewing content associated with a functional module that is directed to a separate business unit 250. This functionality permits collaborative module functionality, which is dependent upon a revenue stream structure established between business units 250 at port site 210.

According to one embodiment, selection of a particular icon within power diamond 622 allows a viewer 105 to enter personal content, which is then automatically posted and stored so that it is available to viewers 105 in the future. This posted content may also appear during other invocations of the respective module, even when invoked to different business units 250, dependent upon the revenue stream structure established at port site 210. For example, according to one embodiment, selection of any of the four power diamond icons 610b, 610d, 610f or 610h invokes a respective input module allowing a viewer 105 to post information to port site 210, edit the information at a later date and review material posted by others. For security purposes, according to one embodiment, each viewer 105 is provided a user name and password. Furthermore, all information provided by viewers 105 for posting is presented to port organizer 305 for approval. Upon approved by an automated administrative process, the information submitted by a viewer 105 is available through custom searches and filtering at port site 210. The advantage of these features is the ability of content to be generated by viewers 105, while still being approved for content appropriateness by port organizer 305.

A second set of icons of navigational GUI 620 is defined by the four corner icons, 610a, 610c, 610g and 610i. According to one embodiment, these icons are

customizable with respect to any particular business unit 250. According to one embodiment, selection of corner icons 610a, 610c, 610g and 610i leads to content associated with the business unit 250 associated with the current hub 320 or a business unit 250 associated with another hub 320.

Furthermore, corner icons 610a, 610c, 610g and 610i provide another source for the establishment of revenue streams between business units 250 associated with port site 210. In particular, corner icons 610a, 610c, 610g and 610i may function as revenue generator incitation elements, which when selected may transport a viewer 105 from content of one business unit 250 to another. Thus, business units 250 may enter into transactions with other business units 250 for links to their content via corner icons.

For example, a first business unit 250 housed in a hub 320 or sub-hub 325 may enter into a transaction with a second business unit 250 so that selection of a corner icon 610a, 610c, 610g or 610i in a navigational GUI associated with the first business unit transports a viewer 105 to particular content associated with the second business unit 250, thus providing a revenue generator incitation element 397.

Or, in the alternative, corner icons 610a, 610c, 610g and 610i may invoke another navigational GUI 620 related to the current hub 320 or sub-hub 325 or an associated hub 320, but may not necessarily provide drill down into content associated with business units 250. This allows any degree of nesting of navigational GUIs 620. In general, the display of navigational GUI 620 to viewers 105 will include four corner icons 610a, 610c, 610g and 610i, which are customized to the particular hub 320 and related business unit 250 a viewer 105 is currently traversing.

According to one embodiment, center icon 610e retrieves information related to port organizer 305. As described above, port site organizer 305 may be, for example, a trade association made up of a number of member corporations. In this case, icon 610e may provide, for example, an overview of the trade association, its goals, member corporations, membership information, etc.

It is to be understood that navigational icons 610a-610i may correspond to any number of topics or functional modules. However, in general, power diamond icons 610b, 610d, 610f and 610h correspond to functional modules, while corner icons 610a, 610c, 610g and 610i correspond to particular topics defined by a business unit 250 that are instrumental in navigating content related to that business unit 250.

However, navigational GUI 620 provides significant revenue generation potential for business units 250 associated with port site 210 as described above. In particular, as described above, with respect to icons selecting functional modules (the power diamond icons), business units 250 may transact for revenue generation incitation elements, which are displayed within the functional modules themselves.

Corner icons provide interspersed information functionality. That is, each corner icon provides a potential hyperlink from one business unit's content to another's, which provides an inherent basis for the generation of revenue streams. This navigational paradigm allows a viewer 105 to traverse the port site 210 both vertically (with respect to content related to a particular advertiser) and horizontally (between content of different business units 250). For example, content disseminated to viewers 105 via functional modules such as the calendar allows viewers 105 to directly retrieve content of business units 250. According to one embodiment, the functional modules such as the calendar, provide hyperlinks to a series of entry point modules (420x), which when selected allow the viewer 105 to begin viewing business unit related content.

The quality of the content and the architecture's ability to transport viewers 105 through the content provides tangible benefits to business units 250. The power diamond directs viewers 105 to the content accessible via the four corner icons.

According to one embodiment, navigational GUI 620 is replicated within each platform of port site 210. For a large port site 210, the consistent GUI 620 is maintained and the information is interspersed throughout the platforms. Thus, calendars may be nested within calendars, since calendar events in the entire industry are shown on the top (home page) level, but only specific calendar events are shown on the specific advertiser's calendar. Thus, for a viewer 105, this filtering is beneficial if they desire focused information, but the entire calendar is only one click away if they prefer less specific information. Because of the nested structure, each platform may be established as a single business unit 250 in which economic transactions are conducted both internally and between other business units 250 established on port site 210.

FIG. 6b depicts an exemplary embodiment illustrating an arrangement of navigational GUIs within a port site and related navigational functionality according to one embodiment of the present invention. According to the example shown in FIG.

6b, the general theme of port site 210 pertains to country and western topics. In this exemplary embodiment, it is highly likely that viewers entering port site 210 are generally interested in the general theme, e.g., country and western topics. Thus business units 250 associated with port site 210 recognize that a vast majority of viewers 105 that enter port site 210 belong to the audience that the business unit 250 wishes to target, e.g., individuals interested in country and western topics. However, because a viewer 105 performs selections by traversing port site 210, effectively a viewer 105 is targeting a business unit 250, rather than the business unit 250 targeting the viewer 105 and forcing content on the viewer 105. Thus, the arrangement of port site 210 allows viewers 105 to be matched by their own selection of business unit content.

In the exemplary embodiment shown in FIG. 6b, navigation GUI 620a includes calendar 610b, user forum 610d, products 610f and jobs 610h arranged within power diamond 622a. A center icon 610e pertains to port organizer information. As described above, power diamond icons 610b, 610d, 610f and 610h (power diamond icons) invoke various functional modules (i.e., calendar 610b, user forum 610d, products 610f and jobs 610h).

As shown in FIG. 6b, navigational GUI 620a, which includes topics of entertainment, sports, store and culture (icons 610a, 610c, 610g and 610i respectively), provides access to navigational GUIs 620b, 620c, 620d and 620e. Business units 250 at port site 210 may enter into transactions for links from corner icons of other business units 250 at port site 210.

For example, entertainment icon 610a in navigational GUI 620a, when selected, invokes navigational icon 620b, which itself provides links to entertainment themes of movie westerns, country music, country television and country attire via icons 610b1, 610b3, 610b7 and 610b9 respectively. Similarly, store icon 610g, when selected, invokes navigational icon 620d, which itself provides links to country meats, country hats, country quilts and country books via icons 620d1, 620d3, 620d7 and 620d9 respectively. Sports icon 610c, when selected, invokes navigational icon 620c, which itself provides links to stock car racing, rodeos, fishing and football via icons 610c1, 610c3, 610c7 and 610c9 respectively. Culture icon 610i, when selected, invokes navigational GUI 620e, which itself provides links to topics of country icons, country classical, country art and country culinary via icons 610e1, 610e3, 610e7 and

610e9 respectively. Furthermore, country TV icon 610b7 links to navigational GUI 620f, country attire icon 610b9 links to navigational GUI 620g, rodeos icon 610c3 links to navigational GUI 620i, football icon 610c9 links to navigational GUI 620h, country meats icon 620d1 links to navigational GUI 620j, country quilts icon 620d7 links to navigational GUI 620k and country classical icon 620e3 links to navigational GUI 620l. Note that selection of a navigational icon may both invoke content associated with the business unit 250 in the current hub and invoke further levels of nested navigational icons 620.

Rather than invoking a new navigational GUI 620 when selected, selection of certain icons 610 may retrieve content. For example, movie western icon 610b1 links to content element 405a, country music icon 610b3 links to content element 405b, stock car racing icon 610c1 links to content element 405c, fishing icon 610c7 links to content element 405e, country hats icon 610c3 links to content element 405f, country books icon 610d9 links to content element 405g, country icons element 610e1 links to content element 405h, country culinary icon 610e9 links to content element 405j and country art icon 610e7 links to content element 405i.

As described above, icons 610 may function as revenue generator incitation elements 397. Thus, for example, navigational GUI 620a may belong to a business unit 250 associated with country western themes in general such as a trade organization, while navigational GUI 620c might belong to a business unit 250 devoted to sporting events. In this case, an economic transaction may be established between the business unit 250 associated with navigational GUI 620a and the business associated with navigational GUI 620c. In particular, a revenue stream would be generated flowing from the sports business unit 250 to the trade association as a function of viewers 105 selecting sports icon 610c.

The sports business unit 250 associated with navigational icon 620c may have established relationships with other business units 250, which generate revenue streams as a function of viewers 105 selection of icons 610c1, 610c3, 610c7 and 610c9. Any level of nesting of navigational GUIs 620 is possible.

Continuing with the example shown in FIG. 6b, a viewer 105 may hold an interest in country westerns and may therefore select entertainment icon 610a, which invokes navigational GUI 620b. Navigational GUI 620b may belong to a movie studio. The movie studio business unit 250 could then arrange the corner icons of

navigational GUI 620b (i.e., 610b1, 610b3, 610b7 and 610b9) to suit their purposes, such as establishing a revenue relationship with a business unit 250 by providing a link from one of the corner icons to content associated with another business unit 250.

Note that upon a viewer's selection of navigational icon 620b, the movie studio has enticed viewer 105. In this case, the movie studio business unit 250 may lead viewer 105 to content elements 405 the movie studio wishes the user to view. For example, as shown in FIG. 6b, country music icon 610b3, when selected may retrieve content associated with a country music collective or radio station. In this case, the movie studio associated with navigational GUI 620b might have established a relationship with the business unit 250 associated with the country music icon 610b3. Also, as shown in FIG. 6b, movie western icon 610b1 provides a link to content element 405a, which might include content describing the latest release from an independent movie studio. For example, note that movie westerns icon 610b1 and country music icon 610b3 provide links to content elements 405a and 405b respectively. Thus, a viewer selecting either of these icons will begin to traverse content associated with the movie studio business unit 250. For example, viewer 105 may be interested in movie westerns and select movie western icon 610b1, thus entering content element 405a. Content element 405a may itself have embedded revenue generator incitation elements 397 that lead to content of other business units 250 providing a separate basis for revenue generation.

FIG. 6c is a block diagram depicting a further example of an interspersed information architecture at a port site and its relationship to generation of revenue streams according to one embodiment of the present invention. FIG. 6c shows a single navigational GUI 620, functional modules 680a-680d and hubs 320a-320d each respectively housing content elements 405a-405d. Selection of calendar icon 610b invokes calendar 680a. Similarly, selection of icons 610d, 610f 610h invokes functional modules 680b, 680c and 680d respectively. Note that calendar module 680a includes two revenue generation incitation elements 397a and 397b respectively providing links to content elements 405b and 405c. Revenue generation incitation elements 397a and 397b provide revenue streams as indicated by the dollar signs from the business unit 250 associated with hub 320c and the business unit 250 associated with hub 320c to the business unit 250 associated with navigational GUI 620.

Functional modules 680b-680d may also provide revenue generation via associated revenue generation incitation elements 397.

Also, note that icons 610a, 610g and 610i respectively provide links to content elements 405a, 405c and 405d housed in hubs 320b, 320c and 320d respectively. These links may also provide revenue streams from business units 250 associated with hubs 320b, 320c and 320d to the business unit 250 associated with navigational GUI 620. In effect, icons 610a, 610g and 610i function as revenue generation incitation elements 397.

In general, revenue generator currency elements at a port site 210 provide almost unlimited possibilities for establishment of revenue streams between business units 250 at a port site 210. As described herein, a primary method for revenue generation between business units 250 is derived from the establishment of transactions between business units 250 for revenue generator currency elements. In particular, a first business unit 250 provides revenue to a second business unit 250 as a function of the second business unit 250 providing a revenue generation currency element within its content modules 420. Revenue streams may be established in this manner on a flat fee basis or as a function of viewer acts with respect to the revenue generation incitation elements 397 such as clicking on a hyperlink, or viewing branding. For example, if the movie studio business unit 250 described above included revenue generation incitation relating to a local theatre, a revenue stream would be established between the local theatre and the movie studio.

Navigational GUIs 620 also provide significant revenue generation possibilities for business units 250 associated with port site 210. In particular, as described above, corner icons 610a, 610c, 610g and 610i effectively provide revenue generation incitation elements, which may be the basis of transactions between business units 250. For example, as described above, exemplary navigational GUI 620b includes movie western icon 610b1. The movie studio business unit 250 may not have an interest in this area, but it may derive revenue by providing a link from icon 610b1 to content and or navigational GUIs 620 associated with another business unit 250, e.g., a television network that runs movie westerns exclusively. The television network business unit 250 could then provide links within its own navigational GUI 620 to its own content or content of other business units 250 to establish its own

revenue stream generation. Examples of content could include a program schedule of movies or capsules of each of the movies currently running on the television network.

Port site organizer 305 may also derive revenue streams based upon relationships established at port site 210 and viewer interaction with content at port site 210. For example, a business unit 250 may pay a port site organizer 305 based on the number of viewers that select the business unit's navigational GUI 620 and/or content elements 405. This scheme may provide that a business unit 250 pays a higher fee the deeper a viewer 105 drills down into a content element. In another example, a business unit 250 may pay the port site organizer 305 based on the amount of space the business unit 250 requires for storage of its content at port site 210. A further example includes a combination of the two revenue schemes. For example, a scheme might be established wherein the business unit 250 movie studio described above must provide a flat fee for port site 210 to provide a link from entertainment icon 610a to navigational GUI 620b as well as fees based upon the number of viewers 105 that select icon 610i invoking navigational GUI 620e. Continuing with this example, a higher rate could be exacted based upon viewers that choose to view content elements 405a and 405b. As will be described in detail below, port site 210 provides a myriad of functionality for tracking viewer traversal and navigation through port site, which allows reporting and analysis of revenue streams based upon revenue structures established between business units 250 at port site 210.

As mentioned above, port site 210 provides a myriad of functionality to analyze and track viewer 105 interaction with content at port site 210. This analysis provides at least the functions of: (1) determining aggregate revenue streams accrued by business units 250 at port site 210 as a function of relationships established with other business units 250 and (2) providing analysis of content effectiveness of business units 250 associated with port site 210 in order to facilitate dynamic restructuring and reorganization of content as a function of content effectiveness.

FIG. 7 is a block diagram depicting an example of the architecture of a port-site 210 according to one embodiment of the present invention. Port site includes front-end subsystem 740, back end server 140b, reporting database 710b, billing database 710c, ACM ("Automated Content Management") database 710d and log report database 710e.

FIG. 7 depicts viewers 105a-105d and business unit 250a-250b coupled to port site 210 via Internet 170. Because port site 210 provides both a revenue stream model and a container architecture for content of business units 250 associated with port site 210, viewer interaction with port site 210 may be analyzed both to drive the revenue streams between business units 250 and to provide feedback regarding content effectiveness in order to modify content structures of business units 250 at port site 210 as a function of content effectiveness. As will become evident as the invention is further described, business units 250 may obtain real-time measures of revenue generation as well as real time reports of content effectiveness in order to maximize market penetration. As described previously, business unit 250 may be, for example, a manufacturer, reseller, retailer, trade association, advertiser, etc., that desires to disseminate content to viewers 105. Although FIG. 7 only depicts four viewers 105a-105d and two business units 250a-250b, it will be recognized by those skilled in the art that the present invention is compatible and port-site may be coupled to any number of viewers 105 and/or business units 250.

Front-end subsystem 740 provides a graphical user interface, which allows viewer and business unit 250 interaction with port site 210. In particular, Web server 140a serves HTML pages stored in HTML database 710a to viewers 105a-105d and business units 250a-250b, which are coupled to port site 210 via Internet 170. Front-end subsystem 140a also allows receipt of input from viewers 105a-105d and business units 250a-250b via Internet 170. Although FIG. 7, shows HTML database 710a, it will be understood by those skilled in the art that the present invention may be implemented using any type of content representation and/or presentation language including XML ("Extensible Markup Language") and XSL ("Extensible Style Language").

Back end server 140b provides a computational engine, which serves as a locus for processes executed at port site 210 including revenue analysis and reporting, content effectiveness analysis, dynamic restructuring of content, etc. In particular, back end server 140b executes a number of processes including analysis/reporting module 770a, billing module 770b, MLE module 770c and CE analysis/reporting module 770d. The function of these processes will become evident as the invention is further described.

In general, it will be recognized by those skilled in the art that the architecture of port site 210 shown in FIG. 7 is merely illustrative and is therefore not intended to limit the scope of the claims appended hereto. Thus, port site 210 may utilize any number of servers in order perform and distribute processing tasks at port site 210. Furthermore, the distribution of data among databases and data structures described herein may be accommodated as necessary to provide efficient operation and processing. Furthermore, port site 210 may be implemented using any information network, not only the Internet as shown in FIG. 7. Port site 210, viewers 105 and business units 250 may be coupled to Internet 170 utilizing any means including a T1 line, DSL ("Digital Subscriber Line"), cable modem, wireless connection, etc.

FIG. 8 is a schema diagram depicting the architecture of an ACM database according to one embodiment of the present invention. ACM database provides a relational structure for representing the content structure of business units 250 at port site 210 as well as representing revenue transactions established between business units 250 at port site 210. As shown in FIG. 8, ACM database provides a linked structure between business units table 841, relationships table 898, content element table 891, pages table 895 and revenue generator table 821.

Business units table 841 provides a data structure for storing information related to each business unit 250 associated with port site 210. In particular, business units table 841 includes business unit ID field 842, business unit name field 844, business unit type field 846 and pricing model field 848. Business unit ID field 842 stores a unique 32-bit value for identifying a business unit 250 associated with port site 210. Business unit name field stores an ASCII ("American Standard Code for Information Interchange") record of a business unit name. Business unit type field 846 stores a 16-bit data element representing a type of business. Pricing model field 848 stores a data structure that represents various pricing information utilized with respect to determination of revenue streams.

Relationships table 898 includes relationship ID field 861, paying business unit ID field 868, receiving business unit ID field 865, relationship type field 812, rate field 869 and page ID relationship field 820. As described above, business units 250 may enter into transactions with one another for revenue generator elements, which may be presented as revenue generator incitation elements 397 including links, click-throughs, branding, etc. Relationships table 898 provides a locus for storing all

relationship information with respect to business units 250 at port site 210. For each relationship executed between business units 250 at port site 210, relationships table stores a unique 32-bit value in relationship ID field 861. Paying business unit ID field 868 stores a 32-bit integer value of a business unit 250 that is a source of revenue stream (i.e., has agreed to provide revenue to a receiving business unit 250 in exchange for revenue generator elements). Likewise, receiving business unit field 865 stores a 32-bit integer value of a business unit 250 that has agreed to provide one or more revenue generator elements in exchange for revenue from the paying business unit 250. Relationship type field 812 stores a 16-bit code representing a type of revenue generator relationship entered between business units 250. For example, revenue generator relationships may include branding, advertising click-throughs, links, etc. Rate field 869 stores a data structure representing one or more values representing a rate agreed to between the paying business unit 250 and the receiving business unit 250 in exchange for revenue generator elements. Page ID relationship field 820 stores an identifier of an HTML page where a revenue generator incitation element 397 resides.

Pages table 895 stores data for each content module 420 (i.e., HTML page) at port site 210. As shown in FIG. 8, pages table includes page ID field 888, URL field 885, business unit ID field 827,content element ID field 899, active/inactive field 881 and merit value field 893. Page ID field 888 stores a unique 32-bit integer value of the page (i.e., content module 420). URL field 885 stores an associated URL for the content module. Business unit ID field 827 stores the 32-bit integer identifier of the business associated with the content module. Content element ID field 899 stores a 32-bit integer value of the content element 405 to which the content module 420 belongs. According to one alternative embodiment, content element ID field 899 may store a set of identifiers if the module 420 is included in multiple content elements 405. Active/inactive field 881 stores a binary value indicating whether content module (i.e., HTML page) is active or inactive. Merit value field 893 stores an integer value that represents the effectiveness of the content module. This field is calculated by MLE 770c as described below. The purpose of this field will become evident as the invention is further described.

Content element table 891 includes content element ID field 851, content element name field 858, business unit ID field 855, type field 817, active/inactive

field 859 and merit value field 895. Content element ID field 851 stores a unique 32-bit integer value of a content element 405. Content element name field 858 stores an ASCII string representing a name of the content element. Business unit ID filed 855 stores a unique 32-bit integer value of a business unit 250 to which the content element 405 belongs. Type field 817 stores a 16-bit value representing a type of content element. Active/inactive field 859 stores a binary value indicating whether the content element 405 is active or not. Merit value field 895 stores an integer value that represents the effectiveness of the content element. This field is calculated by MLE 770c as described below. The purpose of this field will become evident as the invention is further described.

Revenue generator table 821 stores information relating to the placement of content generation incitation elements within content modules 420 (i.e., HTML pages). As shown in FIG. 8, revenue generator table 821 includes page ID field 837, URL field 885 and business unit ID field 897. Page ID field 837 stores a unique 32-bit integer value of a content module 420. URL 885 stores a URL to be placed on the module page (i.e., a hyperlink) to a particular revenue generator incitation element. Business unit ID field 897 stores the unique 32-bit integer value of the business unit 250 that has purchased the revenue generator.

According to one embodiment, business units 250 may provide data to port site 210 remotely. In particular, business units 250 may upload content and/or provide information regarding economic transactions entered with other business units 250 remotely. In either case, ACM database 710d is populated with any new information by receiving input via front-end subsystem 740 from business units 250 associated with port site 210. Thus, upon receipt from business units 250, business unit information, business unit content and revenue generator relationships are stored in ACM database 710d.

FIG. 9 shows an example of the structure of a log report file, which is stored in a log report database according to one embodiment of the present invention. Log report file 905 is prior art and is generated by servers based upon viewer interaction with site port 210. According to one embodiment of the present invention, log report file 905 is utilized to determine revenue generation between business units 250 associated with port site 210, and perform analysis of content effectiveness of content associated with business units 250 at port site 210. In particular, as viewers 105

interact with site port 210, each HTTP request (i.e., Get, Post or Head) generates a log entry at the server. Log report file 905 is generated by server (e.g., 140a) running information server software (not shown). FIG. 9 depicts a number of log entries 907a-907z. According to one embodiment of the present invention, a number of fields are generated for each log entry, and FIG. 9 depicts only five exemplary fields, which are directly related to the present invention. According to one embodiment, log report file 905 is a text file with each field of each log entry delimited by commas. Typically, a log entry is generated based on every GET request issued by viewer 105 (via browser software 117 to front end server 140a.

Depicted in FIG. 9 are IP address field 910, date field 920, time field 930, target file field 940 and referring URL field 950. IP address field 910 stores the IP address of viewer 105 making the request. Date field 920 and time field 930 respectively store the date and time a request was made. Target file field 940 stores the filename of the file requested (i.e., the directory path of the HTML file requested). Referring URL field 950 stores the URL previously requested by viewer 105 having the designated IP address.

FIG. 10 is a block diagram depicting the architecture of a revenue generator module in relationship to various databases for tracking viewer interaction and associated revenue generator incitation elements that are stored at a port site according to one embodiment of the present invention. According to one embodiment, revenue generator module 1005 is executed on back end server 140b at port site 210. As shown in FIG. 10, according to one embodiment, revenue generator module 1005 includes analysis/reporting module 770a and billing module 770b. Analysis and reporting module 770a performs analysis of viewer interaction with port site 210 to determine an aggregate of revenue streams generated between business units 250 as a function of viewer interaction and previously established revenue generators established by business units 250. Billing module 770b provides further analysis and formatting of data generated by analysis/reporting module 770a to generate reports and statements, which are available to business units 250 either electronically via front end subsystem 740 or in hard-copy format. Output of analysis/reporting module 770a provides input for billing module 770b.

Analysis and reporting module 770a utilizes input from log report files 905 stored in log report database 710e and ACM database 710d and generates output,

which is stored in reporting database 710b. Billing module 770b utilizes input provided from ACM database 710d and reporting database 710b to generate output which is stored in billing database 710c.

FIG. 11 is a flowchart showing a set of steps executed by an analysis/reporting module in order to determine revenue established by business units 250 at a port site as a function of revenue generator elements and viewer interaction with the port site according to one embodiment of the present invention. In particular, analysis and reporting module 770a analyzes viewer interaction with port site 210 to generate a revenue tally based upon a revenue stream structure established between business units 250 at port site 210. The determination of revenue totals for business units 250 associated with port site 210 is a function of viewer interaction with revenue generator incitation elements 397 as described above. According to one embodiment, the process is executed on back end server 140b and operates by analyzing each module (i.e., HTML page) and viewer interaction with that module. The process is initiated in step 1105. In step 1110, processing of the next content module 420 is initiated. According to one embodiment, content is analyzed on a module by module basis.

In step 1120, using input from log report files 905 stored in log report database 710e and ACM database 710d, potential revenue generator events with respect to the current module are determined. Revenue generator events may include any act in which a viewer exercised an action with respect to a business unit 250. In the current context, for exemplary purposes, it is assumed that a revenue generator event includes only an act in which a viewer 105 actually viewed the current module 420 under consideration. Thus, for each instance in which a viewer 105 viewed the current module, a revenue generator event is noted. In step 1125, using input from log report files 905 stored in log report database 710e and ACM database 710d, for each instance of a revenue generator event, a referring module (i.e., HTML page) is determined. According to one embodiment, a referring module is a module that transported the viewer 105 to the current module 420 under consideration. In step 1130, the business unit 250 associated with the referring module 420 is determined.

In step 1140, it is determined whether a revenue transaction relationship had previously been established between the business unit 250 associated with the module under consideration and the business unit 250 associated with the referring module

420. If a relationship had been established ('yes' branch of step 1140), in step 1145, revenue is calculated for the current revenue generator instance and stored in reporting database 710b database. If not ('no' branch of step 1140), flow continues with step 1150. In step 1150, it is determined whether all modules 420 have been considered. If not ('no' branch of 1150), flow continues with step 1110 and the next module is considered. If so ('yes' branch of step 1150), in step 1160 totals are calculated and results stored in reporting database 710b.

FIG. 12 is a flowchart of a set of steps executed by a content effectiveness analysis/reporting module according to one embodiment of the present invention. Billing module 770b relies on analysis stored in reporting database 710b and calculates revenue totals which are transformed into profit/loss reports, billing invoices, billing statements and other revenue activity reports for business units 250 associated with port site 210. According to one embodiment, business units 250 may remotely monitor revenue generated at port site 210 using statements, invoices, etc. generated by billing module 770b. According to one embodiment, billing module is executed on back end server 140b. As shown in FIG. 10, according to one embodiment of the present invention, billing module 770b receives input from analysis stored in reporting database 770b (see FIG. 11 and accompanying text) and a pricing model for each business unit 250 to generate profit/loss reports, billing invoices etc.

According to one embodiment, billing module 770b analyzes revenue generated by each business unit 250 associated with port site 210. The process is initiated in step 1205. In step 1210, the next business unit 250 is considered and the pricing model (i.e., field 848 of table 841) associated with the current business unit 250 under consideration is retrieved from ACM database 710d. In step 1210, all revenue events are retrieved from reporting database associated with the current business unit 250. In particular, all instances of viewer interaction with the current business unit 250 for the current reporting cycle are determined. In step 1230, the pricing model (i.e., field 848 of table 841) is applied to all revenue events, which were previously stored in reporting database 710b (see FIG. 11 and accompanying text). The output of the application of pricing model 848 with respect to all revenue events is then stored in billing database 710c. In step 1240, it is determined whether all business units 250 have been processed. If not ('no' branch of step 1240), flow

continues with step 1210. If so ('yes' branch of step 1240), flow continues with step 1250.

In step 1250, utilizing output stored in billing database 710c with respect to each business unit 250, further processing is performed on the raw data to generate customized reports, statements, invoices etc., which may be transmitted to business units 250 associated with port site 210. For example, according to one embodiment, these customized reports may be stored as HTML pages, which would be made available to business units 250 over Internet 170 via front-end subsystem 740. The process ends in step 1260.

As described above, port site 210 also provides a method and system for analysis of content effectiveness of each business unit 250 associated with port site 210. Furthermore, this content effectiveness analysis may provide input to MLE module 770c to perform automated and dynamic restructuring and reorganization of content of business units 250 as a function of an analysis of content effectiveness.

FIG. 13 is a block diagram illustrating dynamic content restructuring according to one embodiment of the present invention. Hub 315 houses various content element structures 405(1)-405(N). Typically, one content element 405 is active at any given time, indicated by solid shading (i.e., content modules 405(2)-405(N) are dashed). However, as shown in FIG. 13, content modules may be swapped with one another as a function of analysis of content module effectiveness. Also, as shown in FIG. 13, individual modules 420 within content elements 405 may be swapped as a function of an analysis of content effectiveness. For example, FIG. 13 shows that modules 420a-420c may be replaced with modules 420(1)-420(3) respectively. Replacement may be effected upon an analysis that content modules 420a-420c were not successful in generating particular results with respect to a business unit 250 while content modules 420(1)-420(3) were.

According to one embodiment, analysis of content effectiveness at port site 210 is based upon analysis of viewer interaction with content. According to one embodiment, determination of viewer interaction with content at port site 210 is achieved utilizing log report file 905. According to one embodiment of the present invention, a consistent set of naming conventions and file directory structure is used to store the HTML content within ACM database 710d. The results of this analysis may then provide feedback to permit dynamic reorganization of either the choice of

modular content or the link structure relating the content. In addition, a multi-dimensional graphical representation of users' behavior may also be generated for analysis and reporting purposes.

According to one embodiment of the present invention, analysis of users' interaction with a port site 210 relies upon a log report file generated on one or more servers (e.g., 140a) at port site 210 as well as ACM database 710d representing the architecture of the modular content stored at port site 210. According to one embodiment, analysis of content effectiveness is performed by CE analysis/reporting module 770d, which may be implemented as a separate process running on back end server 140d.

FIG. 14 is a block diagram depicting a relationship of a content effectiveness analysis and restructuring engine in relationship to various databases for determining content effectiveness and performing dynamic restructuring of content as a function of content effectiveness. In particular, as shown in FIG. 14, content effectiveness analysis and restructuring engine ("CEARE") 1410 includes CE analysis and reporting module 770d and MLE module 770c. CE analysis/reporting module performs analysis of content effectiveness as a function of viewer interaction with content at port site 210. MLE module performs dynamic restructuring and reorganization of content as a function of an analysis of content effectiveness at port site 210. CEARE 1410 receives input and provides output to ACM database. Also, CEARE relies upon input from reporting database 710b and log report database 710e. According to one embodiment, CEARE may be implemented as a separate process running on back-end server 140b.

FIG. 15 is a flowchart showing a set of steps executed by a CE analysis/reporting module in order to analyze content effectiveness at a port site according to one embodiment of the present invention. According to one embodiment, analysis of content effectiveness is performed for each content element 405 associated with each business unit 250 at port site 210. According to one embodiment of the present invention, CE analysis/reporting module 770d monitors viewer activity in real time or near real-time and thus can provide a temporally accurate depiction of viewer navigation within port site 210 to business units 250. According to one embodiment of the present invention, particular business units 250 and or port organizer 305, can monitor viewer interaction with port site 210 via

graphical or text report generation. However, according to an alternative embodiment, CE analysis/reporting module 770d may be executed on a less frequent basis (e.g., daily or weekly).

In step 1510, the procedure is initiated. In step 1520, the next content element 405 for analysis is considered. In step 1530, using input from ACM database 710d and log report database 710e, CE analysis/reporting module 770d calculates a number of viewers viewing each module included in the particular content element 405 under examination. In step 1540, based upon input from log report files 905 stored in log report database 710e and ACM database 710d, a number of viewers taking each path linking content modules 420 is calculated. The results of steps 1530-1540 form statistical data regarding Web traffic within a particular content element 405 and may then be stored in a database (e.g., reporting database 710b) for further processing. In step 1550, it is determined whether all content elements have been examined. If not ('no' branch of step 1550), flow continues with step 1520. In step 1560, using the data generated showing users interaction with various content elements on port site 210, a graphical and/or text report is generated. The frequency of user requests for particular content module and frequency of use for a particular path between modules may be depicted using color coding as a function of frequency. The generated text/graphical reports may be stored on a particular server within port site 210. In one alternative embodiment, graphical reports are generated as HTML documents to be served to business units 250. In this way, a business unit 250 may evaluate the efficacy of particular content in real-time or near real-time. If all content elements 405 have been analyzed ('yes' branch of step 1550), the process ends in step 1580.

According to one embodiment, viewer interaction with each content elements 405 of the same type included on port site 210 is performed discretely. This allows comparison of the efficacy of like content elements 405. For example, in an advertising model, a particular business unit 250 may provide six content elements 405 of the same type each oriented toward a single product. After analysis, it may be determined that some of the six content elements 405 performed better in generating lead results. Or, it may be determined that certain content modules 420 or their placement in a particular path within the content element 405 were more effective in generating lead results. Thus, the results of this analysis could be used to dynamically reorganize content or links within a particular content element 405.

For example, according to one embodiment of the present invention, the following analyses may be performed with respect to content elements 405:

Which of a set of content elements 405 yielded the greatest number of leads?

How many leads were generated by each module 420?

What were the top two paths taken to the most popular lead-generating module 420?

Was there a common secondary module present in the majority of these paths?

According to one embodiment, these query elements are translated into an appropriate programming language such as C or C++ in order to analyze the statistical data generated by CE analysis/reporting module 770d. For example, according to one embodiment, a separate database (not shown) may represent queries utilizing custom query language scripts that perform statistical analysis. This will yield a separate data file indicating the results of application of the query elements. This data file can then be analyzed further or utilized for report generation.

Note that the analysis steps depicted in FIG. 15 and the queries described above represented above are merely illustrative and are not intended to limit the scope of the invention. Practitioners skilled in the art will recognize that any type of analysis could be conducted based upon user interaction with the modularized content provided by the container architecture. Furthermore, any number or type of queries could be created to analyze specific aspects of viewer interaction with content on site port 210.

According to one embodiment of the present invention, based upon an analysis of viewer interaction with content stored at port site, dynamic reorganization and restructuring of the content may be performed (see FIG. 13). FIG. 16 is a flowchart of a set of steps executed by a MLE module in order to perform content restructuring as a function of content effectiveness. The process is initiated in step 1610. In step 1620, based upon input from log report files 905 stored in log report database 710e, all paths taken by viewers within content elements 405 that led to a lead content module 420 are identified. In step 1630, a weighting value is assigned to each path identified in step 1620 using a defined weighting function. Practitioners skilled in the art will recognize that a myriad of techniques exist to assign weighting values based upon a weighting function. In particular, weights may be assigned based upon any number of factors with respect to the particular paths taken, the type of content

traversed, time of day analysis, etc. In step 1640, using the identified paths from step 1620, the URLs associated with the traversed content modules 420 are identified using ACM database (i.e., fields 885 and 888). In step 1650, merit value field 893 of each content module 420 is updated using the weighting values calculated in step 1630. Based upon the analysis of content modules performed in step 1650, in step 1660 content modules 420 are associated with their respective content elements 405 using table 895 in ACM database 710d. In step 1670, merit value field 895 in table 891 is updated based upon merit values of all associated content modules 420 included in the content element 405.

In step 1680, restructuring and swapping of content is performed as a function of the analysis performed in steps 1660-1670. Practitioners skilled in the art will recognize that many types of algorithms or heuristics may be employed to perform the restructuring process. Thus, for example, if it is determined that a particular module 420 is very effective in generating lead results in a particular content element 405 the effective module 420 be used to replace a less effective module 420 in a different content element 405.

For example, referring to FIG. 6b, the advertiser may also place new content at predetermined times or rearrange the content if the content element is not drawing in users. For example, referring to FIG. 6b, the movie studio business described above may change the focus of the content of the latest movie release in content element 405a if a minimum number of viewers 105 are not viewing content in content element 405a. The movie studio business unit 250 might also swap content modules 420 included in content element 405a when the studio offers a new release.

According to one embodiment of the present invention, not only is it possible to reorganize the content itself, but the actual links between modules 420 defining a content element 405 may be reorganized based upon a set of analysis rules. Entry point modules 420 can also be accounted for, evaluated according to their individual contribution to the desired objective and reorganized if necessary in the same way. Furthermore, according to one embodiment of the present invention, it is possible to create new content element types 405 (i.e., to define new content element templates) for a particular site port 210 depending upon need.

A method and system for establishing economic marketplaces between business units 250 and automated content management has been described. A port

site 210 provides for efficient traffic building as a result of collaborative marketing between business units 250 associated with port site 210 and dynamic content management as a function of analysis of content effectiveness.

What is Claimed Is:

1. A method for establishing an economic marketplace between a plurality of business units, comprising the steps of:
   (a) associating a plurality of business units with a port site, wherein the port site provides a locus for viewer interaction with each of the plurality of business units;
   (b) storing at least one content element for each business unit associated with the port site;
   (c) storing a plurality of revenue generator elements, wherein each revenue generator element defines a revenue stream between a seller business unit and at least one buyer business unit; and
   (d) calculating a revenue total for each business unit as a function of at least one viewer interaction with at least one content element stored at the port site.

2. The method according to claim 1, wherein each of the revenue generator elements is associated with a content incitation element.

3. The method according to claim 1, wherein each content element includes at least one content module.

4. The method according to claim 3, further including the step of associating a content enticement element with a content module of the seller business unit for each revenue generator element, wherein the content enticement element provides an incentive to a viewer.

5. The method according to claim 4, wherein each revenue generator element includes a price element, wherein the price element defines a payment to be provided from the buyer business unit to the seller business unit as a function of a viewer interaction with the content enticement element.

6. The method according to claim 5, wherein step (d) further includes the steps of:

(i) for each business unit associated with the port site, generating a record of viewer interaction with at least one content enticement element; and

(ii) for each business unit calculating a revenue total as a function of step (i).

7. A port site for establishing an economic marketplace between a plurality of business units, comprising:

(a) a front-end subsystem, wherein the front-end subsystem provides an interface between the port site and at least one viewer;

(b) a memory device for storing at least one content element, wherein a content element is associated with a business unit and at least one revenue generator element, wherein each revenue generator element defines a revenue stream between a seller business unit and a buyer business unit;

(c) a processor, wherein the processor is adapted to:

(i) generate a record of a viewer interaction with the at least one content element; and

(ii) calculate a revenue total for each business unit as a function of the at least one viewer interaction with the at least one content element.

8. The port site according to claim 7, wherein the port site is coupled to an information network, which is accessed by at least one viewer.

9. The port site according to claim 7, wherein the processor is further adapted to generate an analysis of content effectiveness as a function of the record of viewer interaction with the at least one content element.

10. The port site according to claim 7, wherein the at least one content element is arranged in a linked structure.

11. The method according to claim 7, wherein the at least one content element includes a content link structure defining a relationship between a plurality of content modules.

12. The method according to claim 7, wherein the processor is further adapted to at least one of perform a restructuring of the link structure and the content element link structure as a function of a content effectiveness analysis.

13. A method for establishing transactions between a plurality of business units comprising the steps of:
    (a) storing at least one revenue generator parameter, wherein each revenue generator parameter corresponds to a revenue generating relationship between a first business unit and a second business unit;
    (b) storing a plurality of content elements, wherein each content element is associated with a business unit;
    (c) associating at least one revenue generator element with a content element;
    (d) presenting content elements to a viewer, as a function of a viewer's selection of desired content; and
    (e) recording an interaction of the viewer with the plurality of content elements and the associated revenue generating parameters.

14. The method according to claim 13, wherein the revenue generator parameter is associated with a hyperlink linking a content element of the first business unit to a content element of the second business unit.

15. The method according to claim 13, wherein each revenue generator parameter includes a cost metric parameter, wherein the cost metric parameter represents a monetary amount to be transferred from a first business unit to a second business unit as a function of a viewer's selection of the revenue generator.

16. The method according to claim 15, further including the step of calculating a total revenue stream for a business unit as a function of the viewer's interaction with the content elements and the associated the associated revenue generating parameters.

17. A method for determining effectiveness of content comprising the steps of:

(a) establishing a link structure between a plurality of content modules, wherein the link structure defines at least one traversal path;

(b) recording a traversal path of at least one viewer with respect to the link structure of content modules;

(c) analyzing the traversal path of the at least one viewer to determine at least one effective content module with respect to at least one effectiveness parameter.

18. The method according to claim 17, wherein each content module is one of an HTML ("Hypertext Markup Language") page and an XML ("Extensible Markup Language") page.

19. The method according to claim 17, wherein the effectiveness parameter is a frequency of a generation of a lead.

20. A method for establishing an economic marketplace between a plurality of business units, comprising the steps of:

(a) storing at least one content element for each of a plurality of business units;

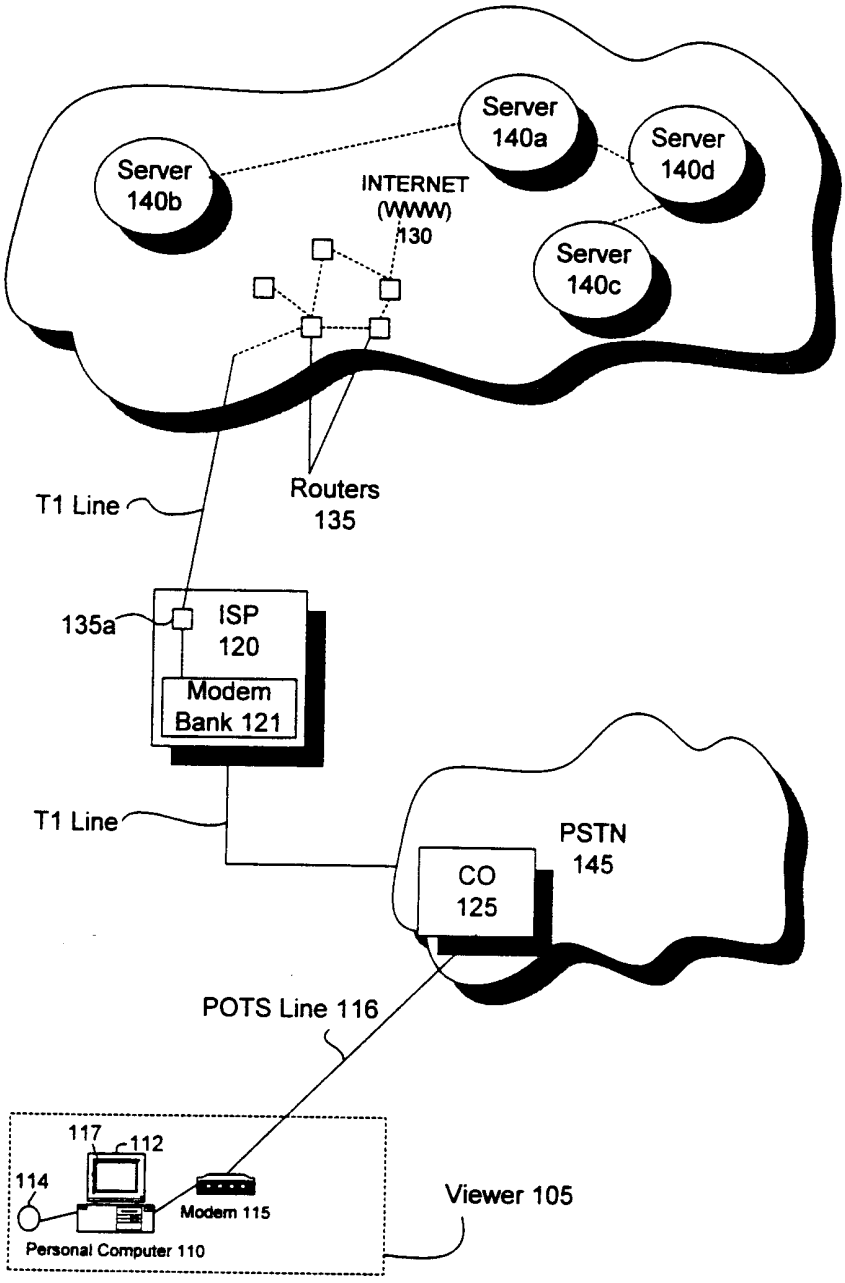
(b) storing a plurality of revenue generator elements, wherein each revenue generator element defines a revenue stream between a seller business unit and at least one buyer business unit; and

(c) calculating a revenue total for each business unit as a function of at least one viewer interaction with at least one content element.

21. A program storage device, wherein the program storage device includes instructions for causing a processor to:

(a) store at least one content element, wherein a content element is associated with a business unit and at least one revenue generator element, wherein each revenue generator element defines a revenue stream between a seller business unit and a buyer business unit; and

(b) calculate a revenue total for each business unit as a function of at least one viewer interaction with at least one content element.



PRIOR ART

FIG. 1

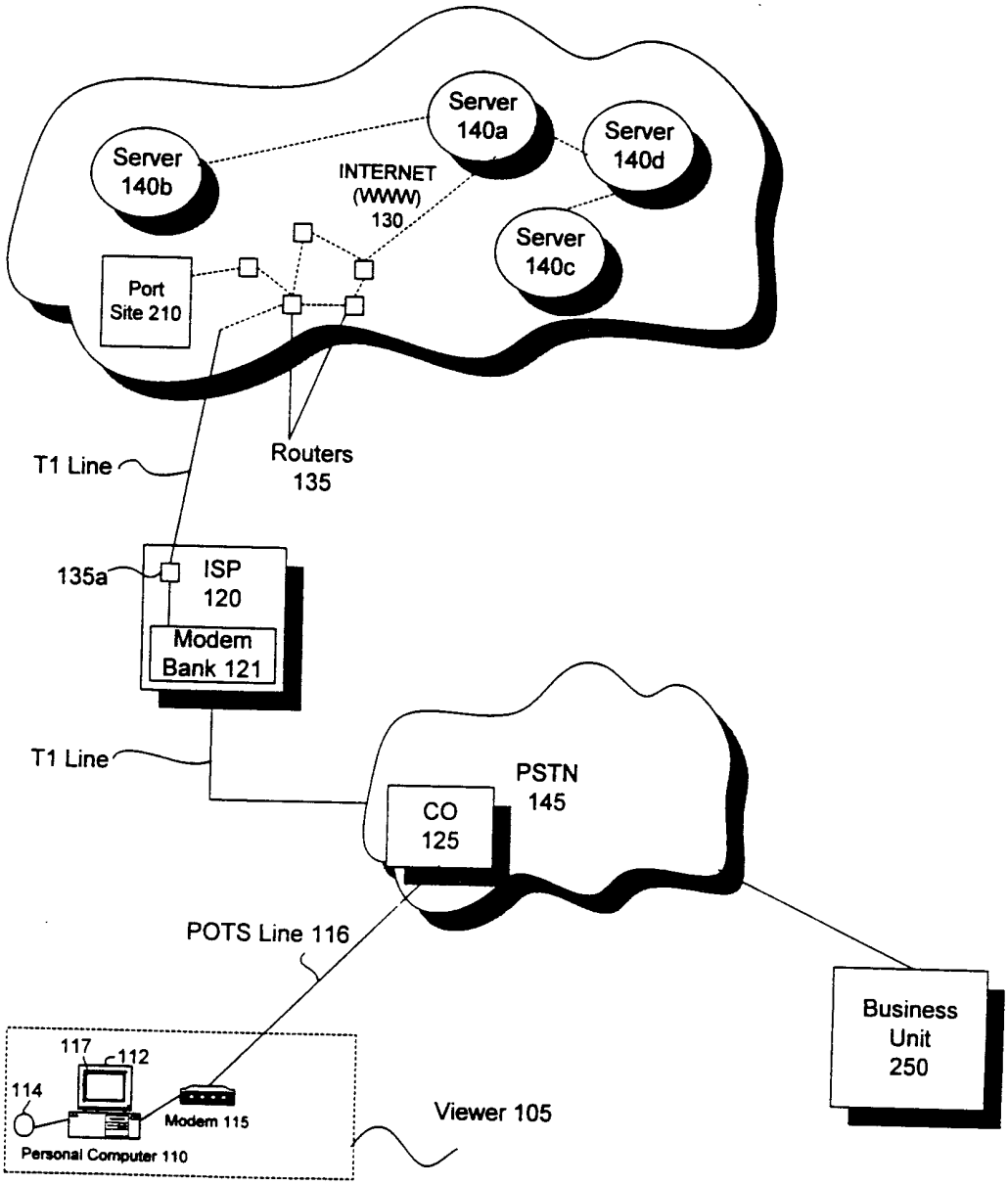

Server
140a
Server
140b
Server
140d
Server
140c
INTERNET
(WWW)
130
Port
Site 210
T1 Line
Routers
135
135a
ISP
120
Modem
Bank 121
T1 Line
PSTN
145
CO
125
POTS Line 116
Business
Unit
250
117
112
114
Modem 115
Personal Computer 110
Viewer 105

FIG. 2

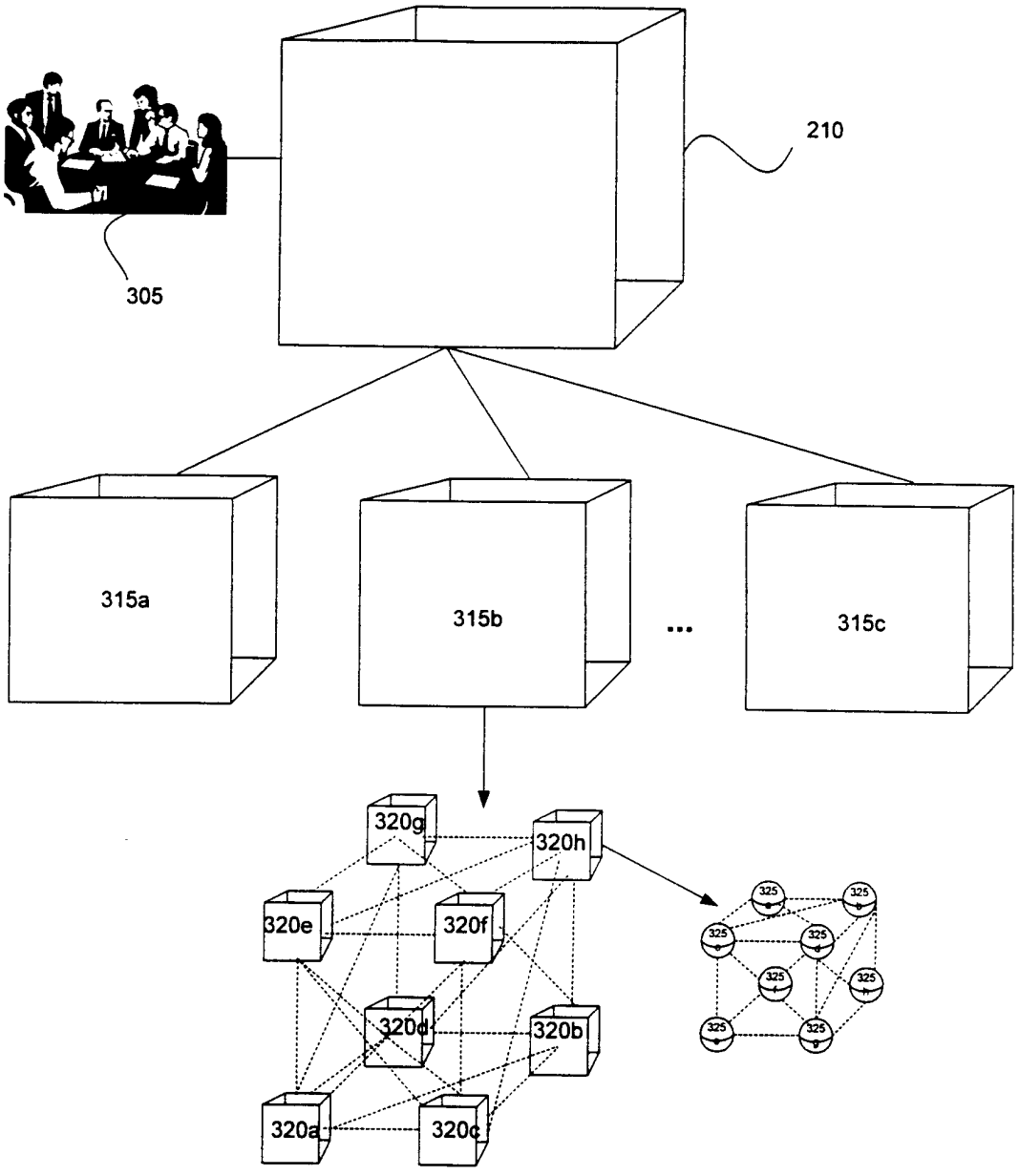

210
305
315a
315b
...
315c
320g
320h
320e
320f
320d
320b
320a
320c
325

FIG. 3a

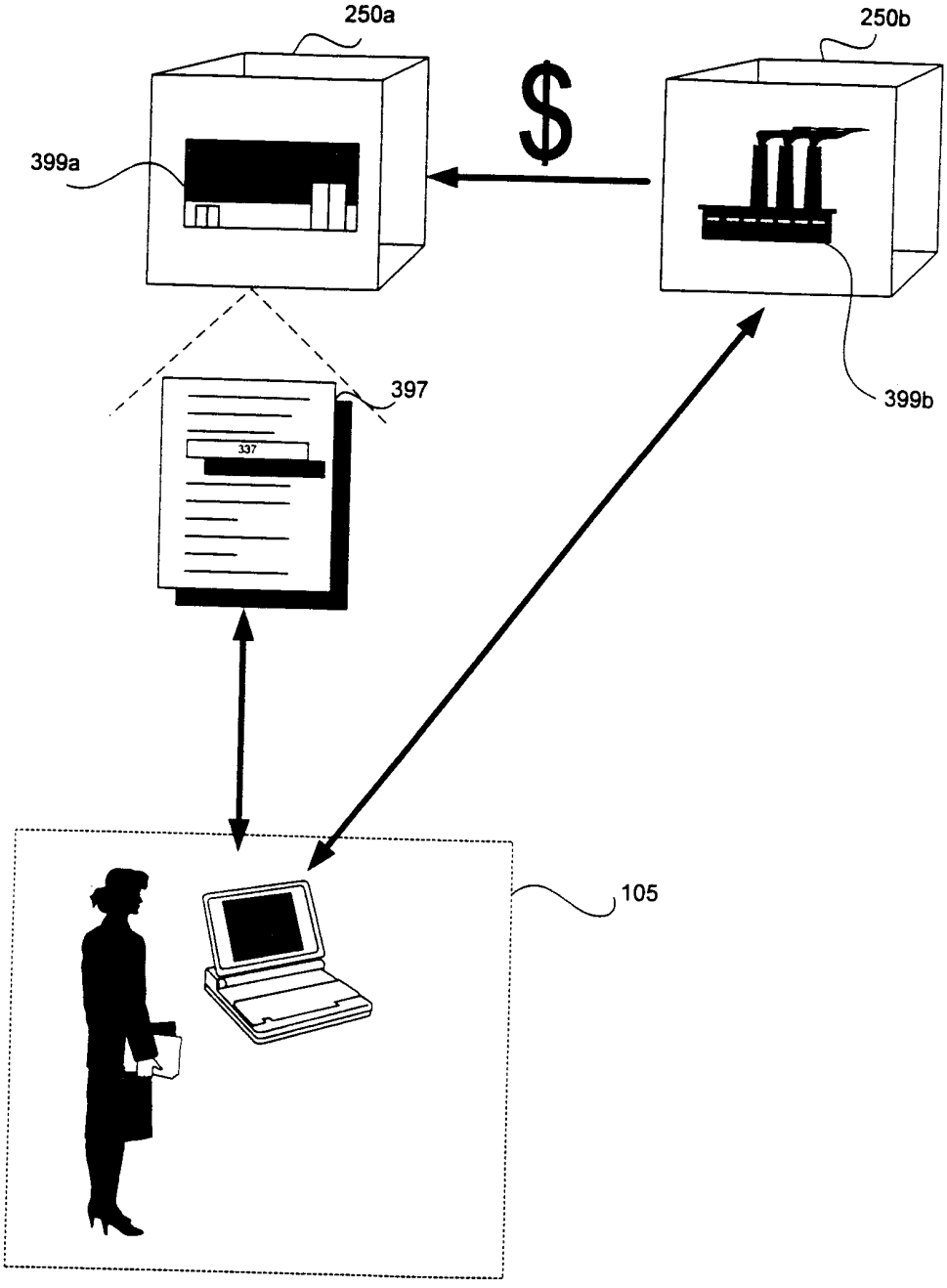


FIG. 3b

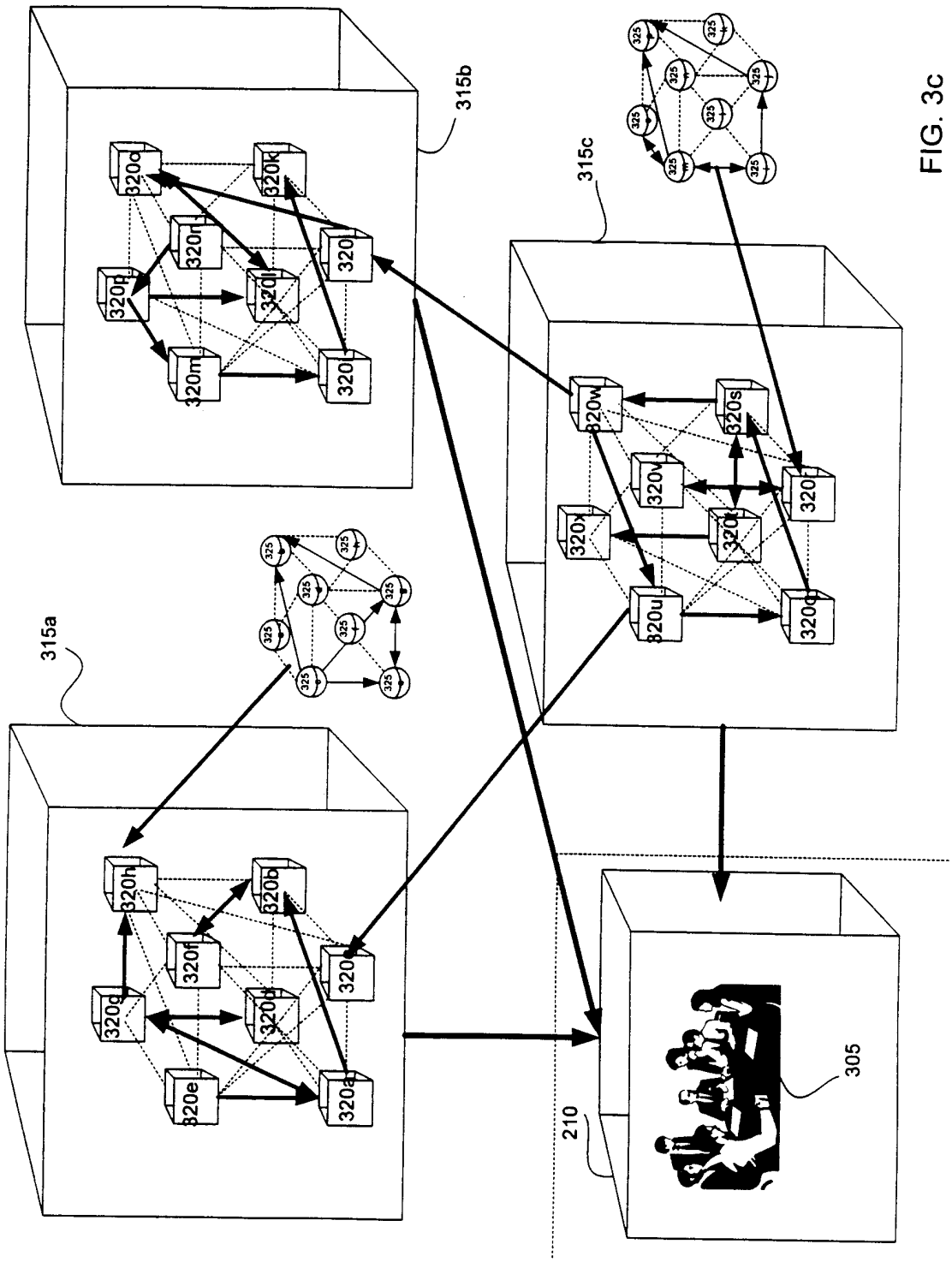

315b
315c
315a
320q
320k
320n
320g
320l
320m
320w
320s
320v
320x
320u
320h
320b
320f
320d
320e
320a
325
305
210

FIG. 3c

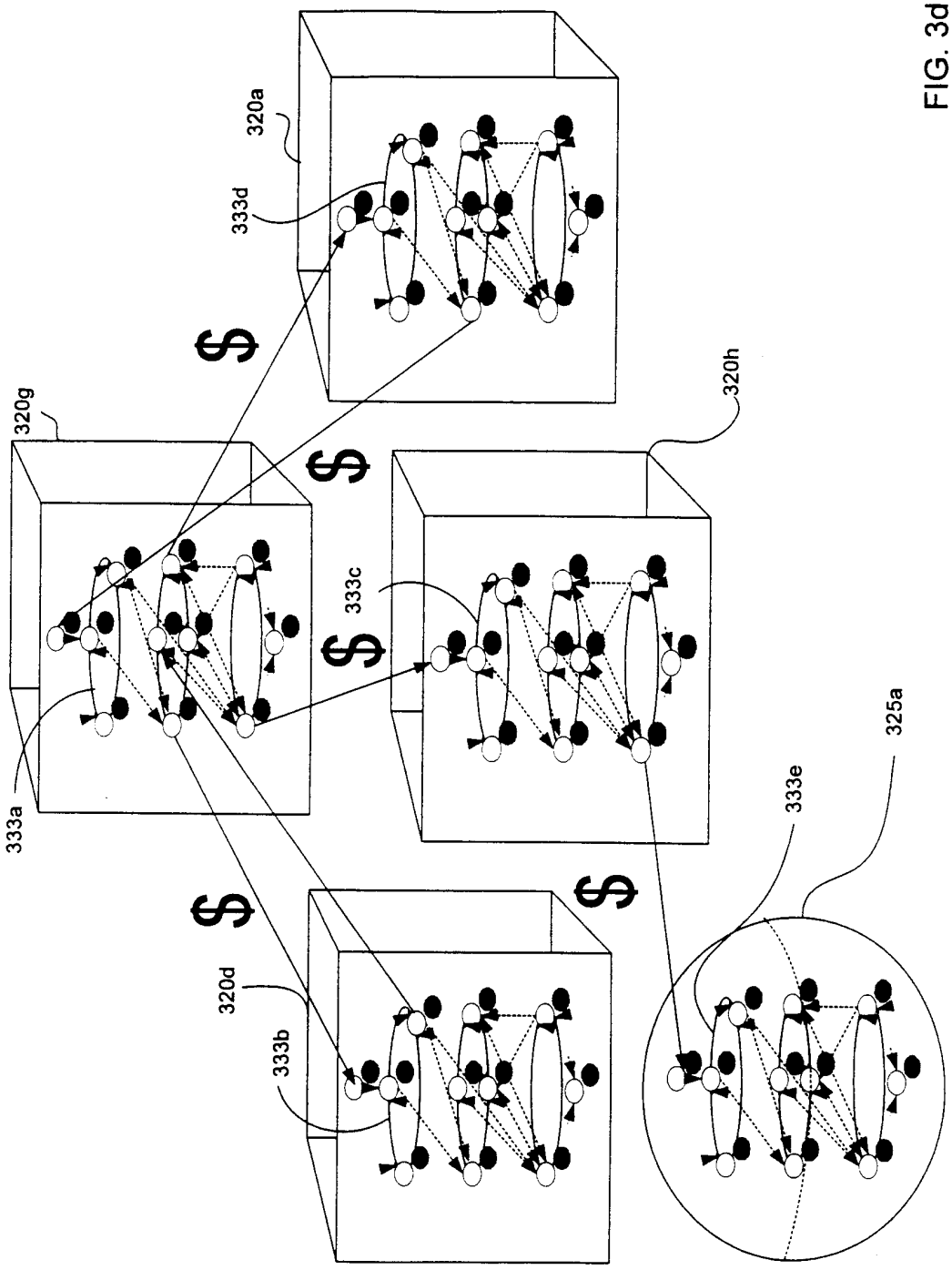


FIG. 3d

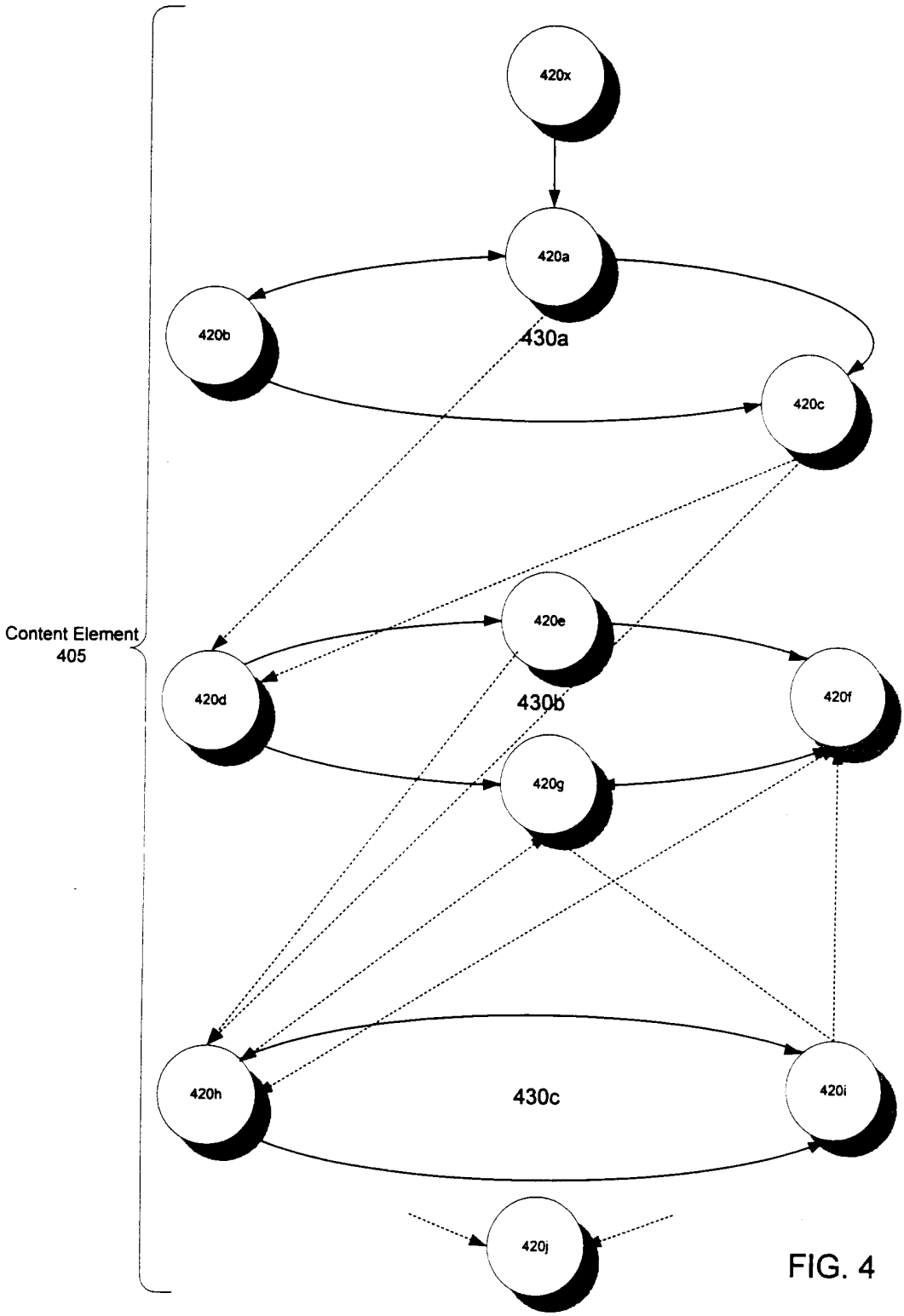

Content Element
405
420x
420a
420b
430a
420c
420e
420d
430b
420f
420g
420h
430c
420i
420j

FIG. 4

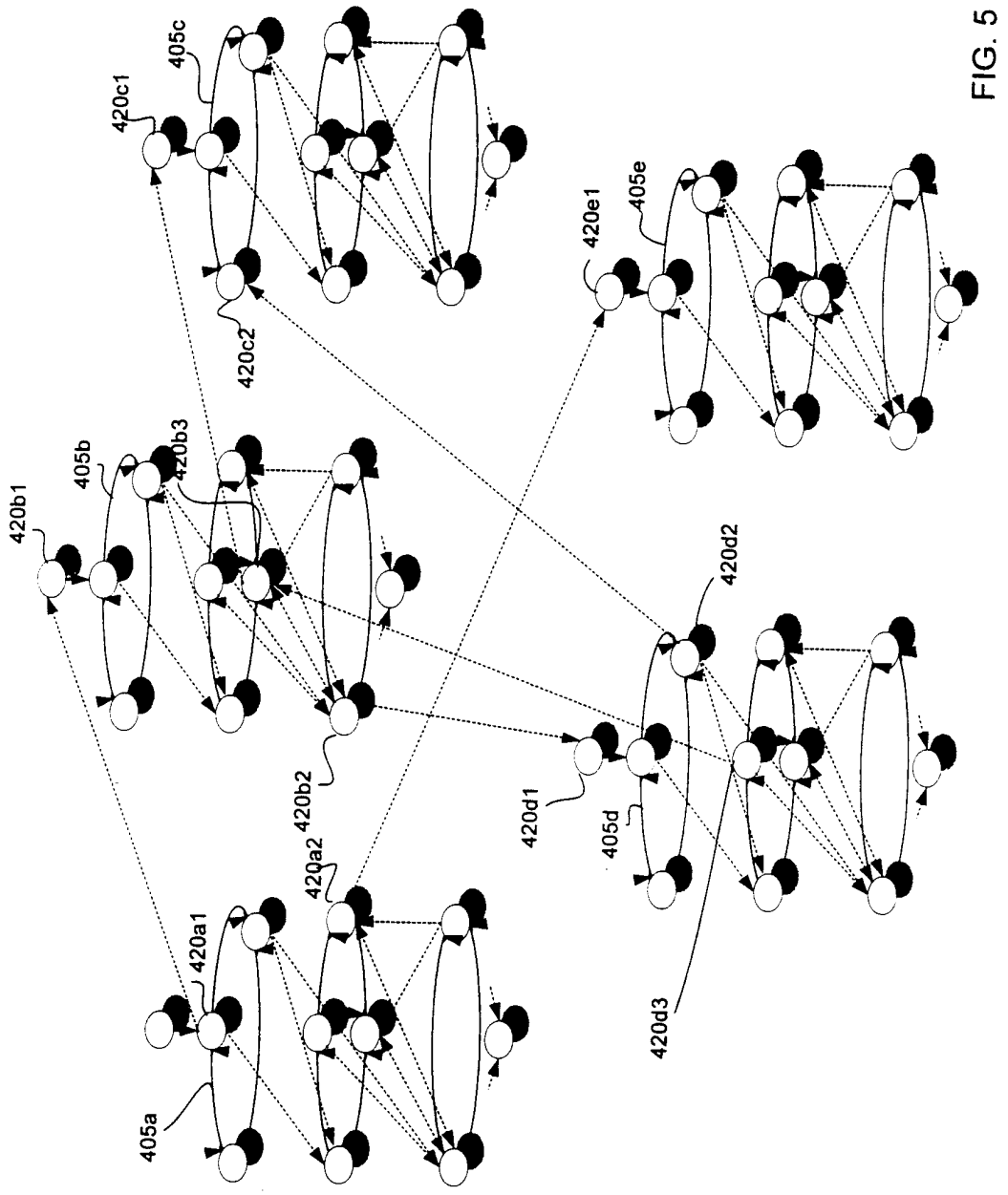

405c
420c1
420c2
405e
420e1
405b
420b3
420b1
420b2
420d2
420d1
405d
420a2
420a1
405a
420d3

FIG. 5

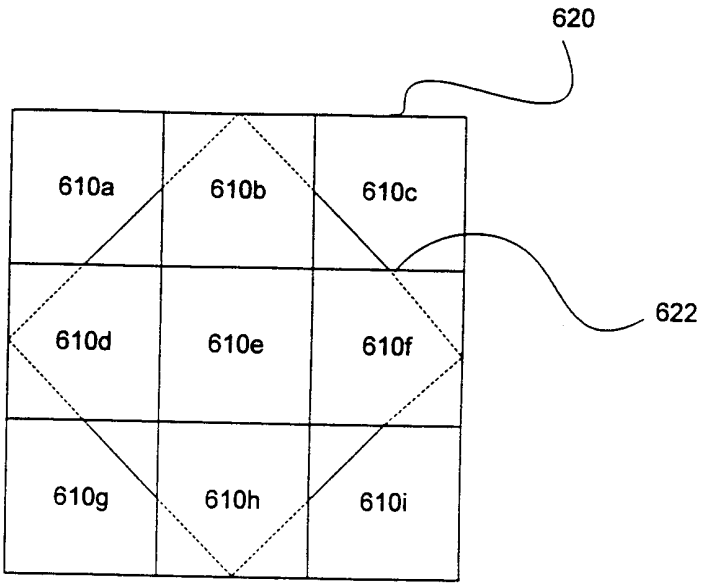


FIG. 6a

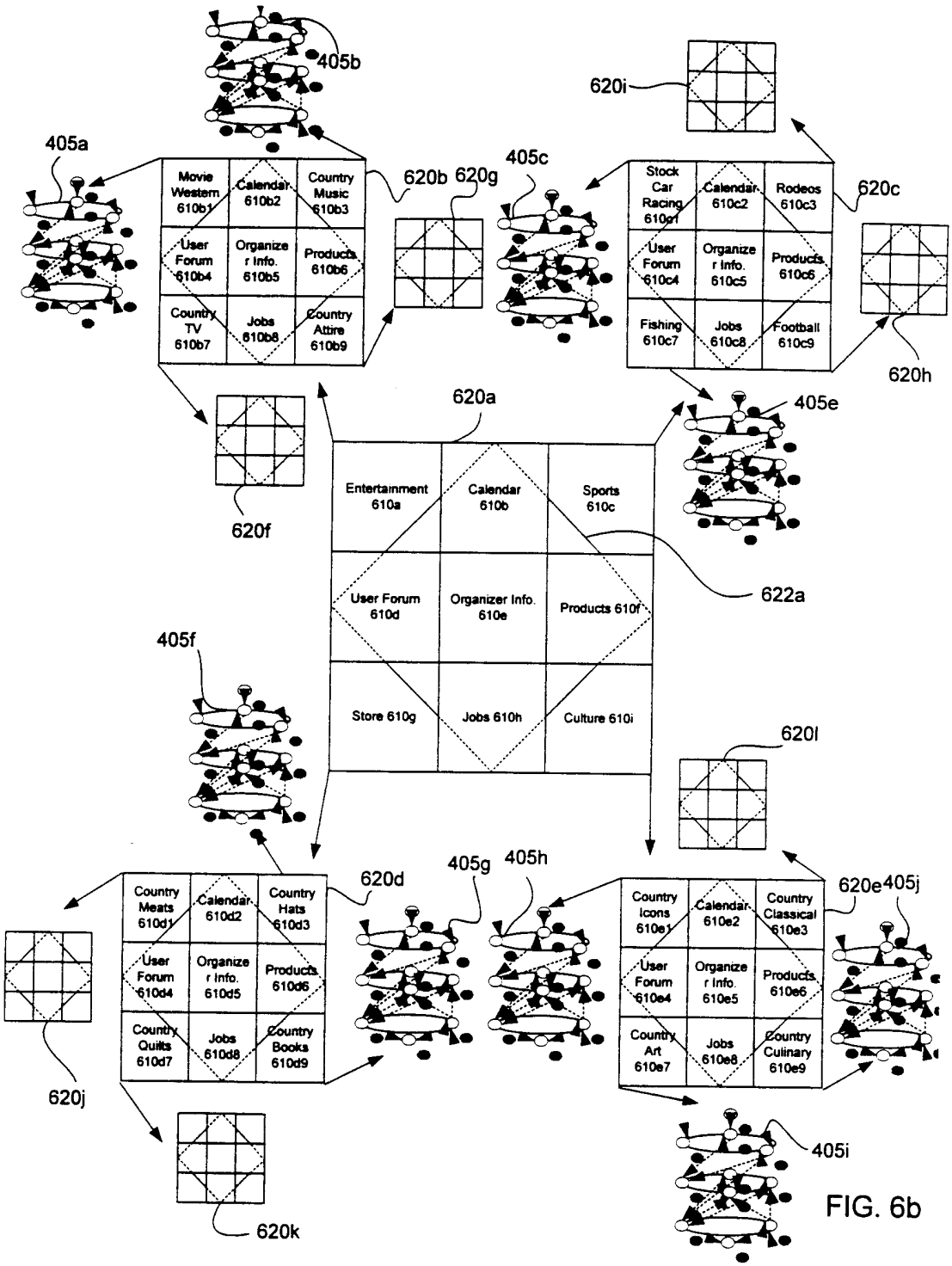

405b
405a
620i
405c
620b
620g
620c
620h
620a
405e
620f
622a
405f
620l
405g
405h
620d
620e
405j
620j
405i
620k
Movie Western 610b1
Calendar 610b2
Country Music 610b3
User Forum 610b4
Organizer Info. 610b5
Products 610b6
Country TV 610b7
Jobs 610b8
Country Attire 610b9
Stock Car Racing 610c1
Calendar 610c2
Rodeos 610c3
User Forum 610c4
Organizer Info. 610c5
Products 610c6
Fishing 610c7
Jobs 610c8
Football 610c9
Entertainment 610a
Calendar 610b
Sports 610c
User Forum 610d
Organizer Info. 610e
Products 610f
Store 610g
Jobs 610h
Culture 610i
Country Meats 610d1
Calendar 610d2
Country Hats 610d3
User Forum 610d4
Organizer Info. 610d5
Products 610d6
Country Quilts 610d7
Jobs 610d8
Country Books 610d9
Country Icons 610e1
Calendar 610e2
Country Classical 610e3
User Forum 610e4
Organizer Info. 610e5
Products 610e6
Country Art 610e7
Jobs 610e8
Country Culinary 610e9

FIG. 6b

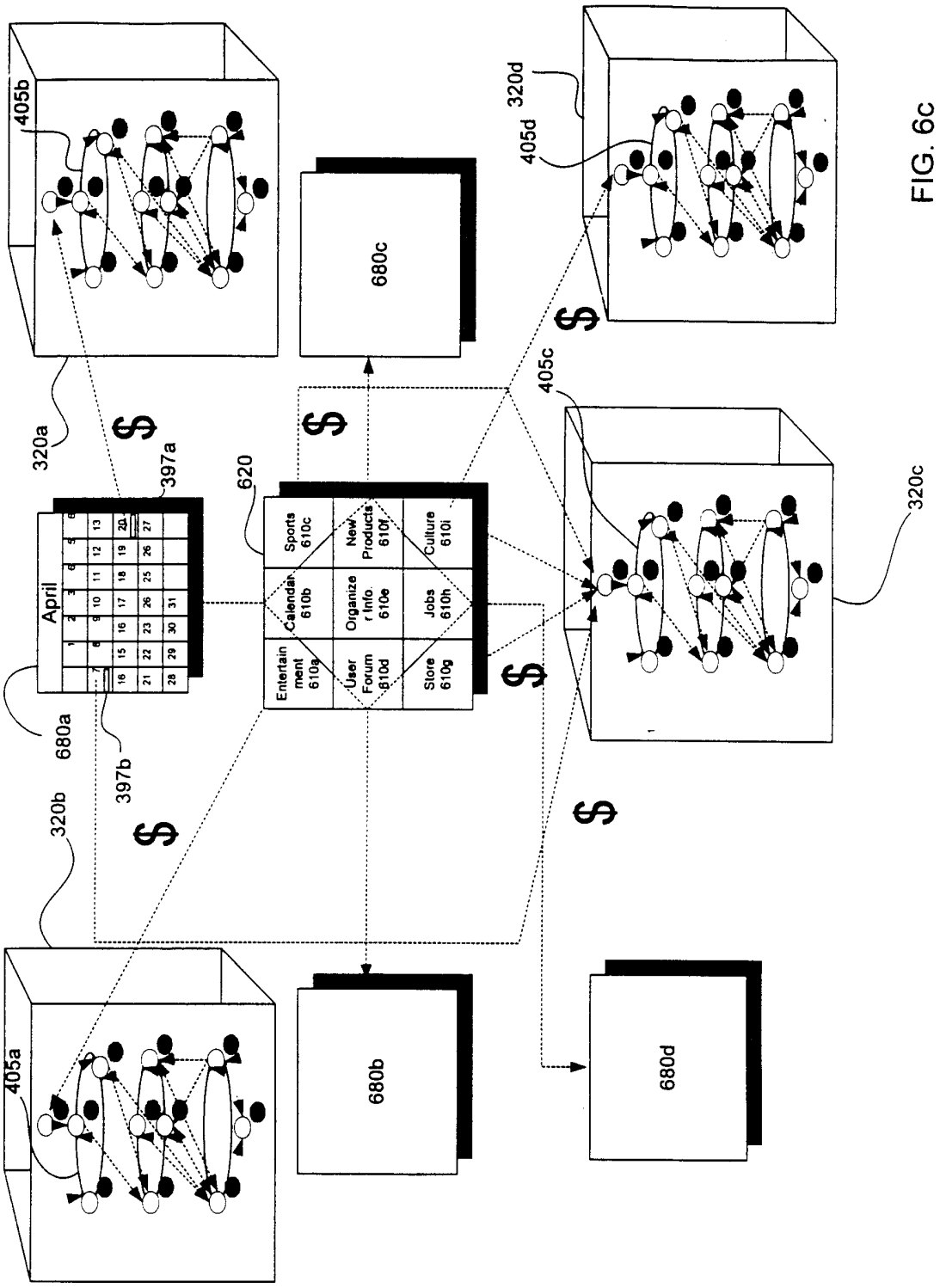

405b
320d
405d
680c
320a
405c
397a
620
320c
April
Sports 610c
New Products 610f
Culture 610i
Calendar 610b
Organizer Info. 610e
Jobs 610h
Entertainment 610a
User Forum 610d
Store 610g
680a
397b
320b
405a
680b
680d

FIG. 6c

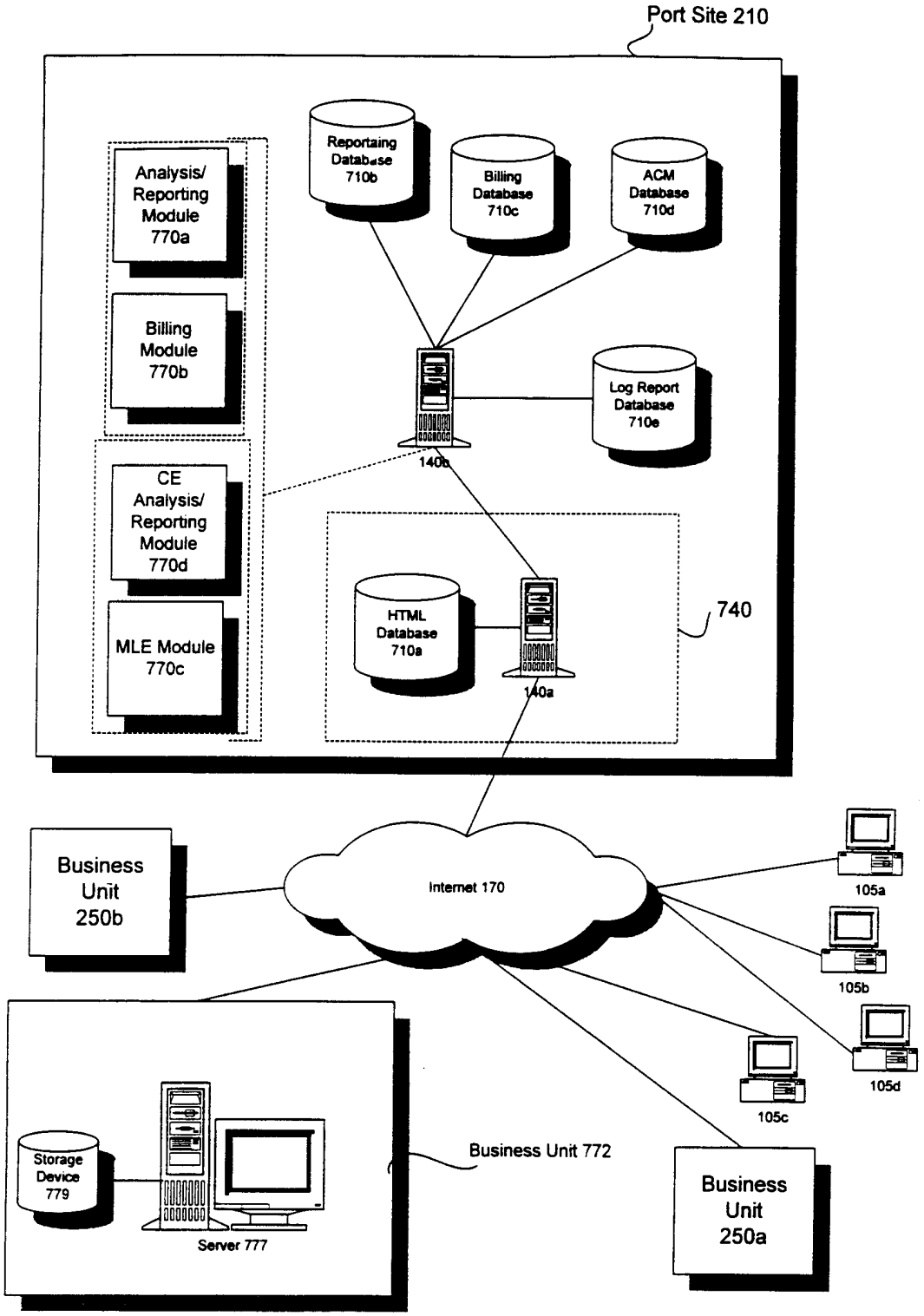

Port Site 210
Reportaing Database 710b
Billing Database 710c
ACM Database 710d
Analysis/ Reporting Module 770a
Billing Module 770b
Log Report Database 710e
CE Analysis/ Reporting Module 770d
MLE Module 770c
HTML Database 710a
740
Business Unit 250b
Internet 170
105a
105b
105c
105d
Storage Device 779
Server 777
Business Unit 772
Business Unit 250a

FIG. 7

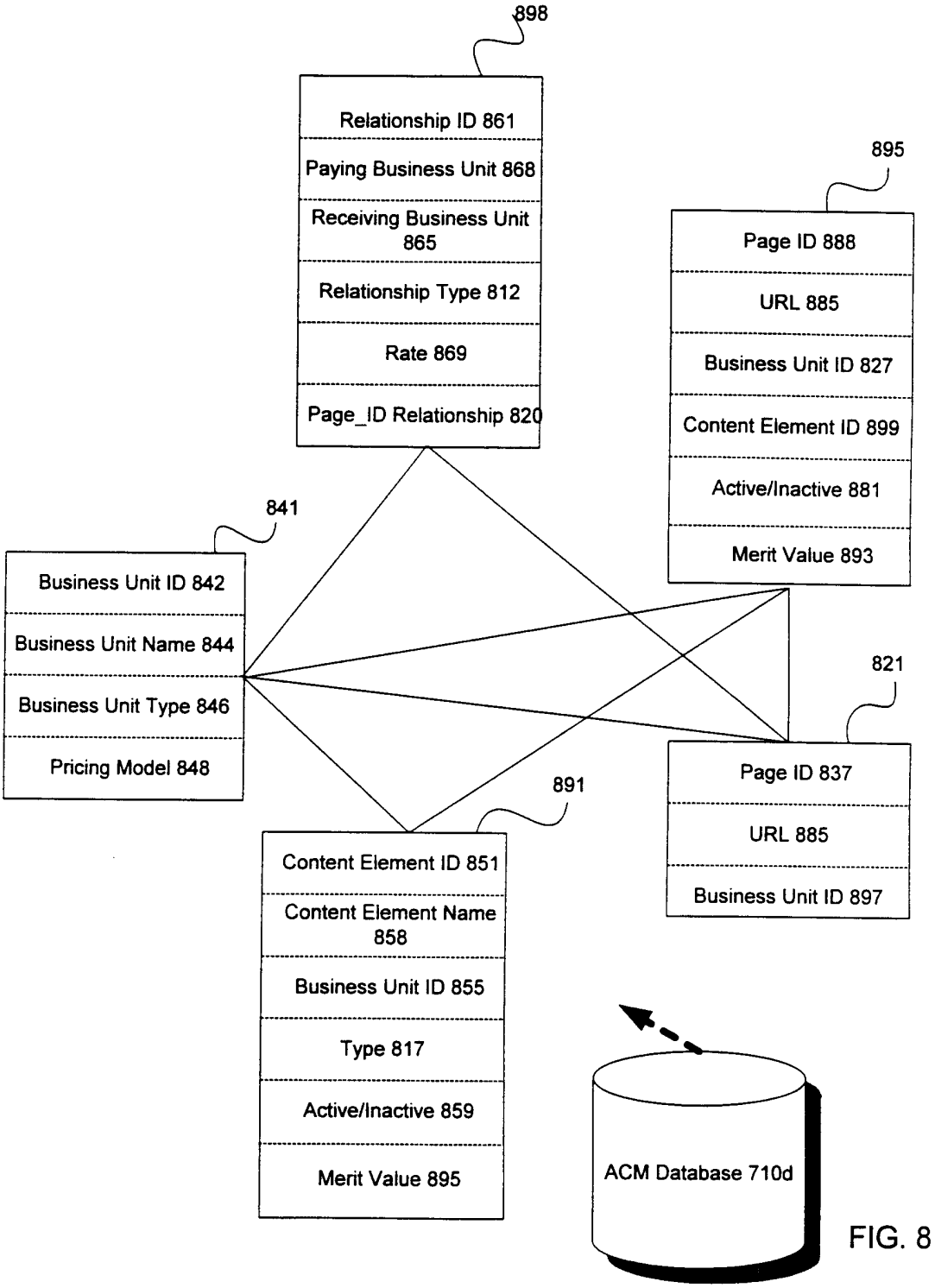

898
Relationship ID 861
Paying Business Unit 868
Receiving Business Unit 865
Relationship Type 812
Rate 869
Page_ID Relationship 820
895
Page ID 888
URL 885
Business Unit ID 827
Content Element ID 899
Active/Inactive 881
Merit Value 893
841
Business Unit ID 842
Business Unit Name 844
Business Unit Type 846
Pricing Model 848
821
Page ID 837
URL 885
Business Unit ID 897
891
Content Element ID 851
Content Element Name 858
Business Unit ID 855
Type 817
Active/Inactive 859
Merit Value 895
ACM Database 710d

FIG. 8

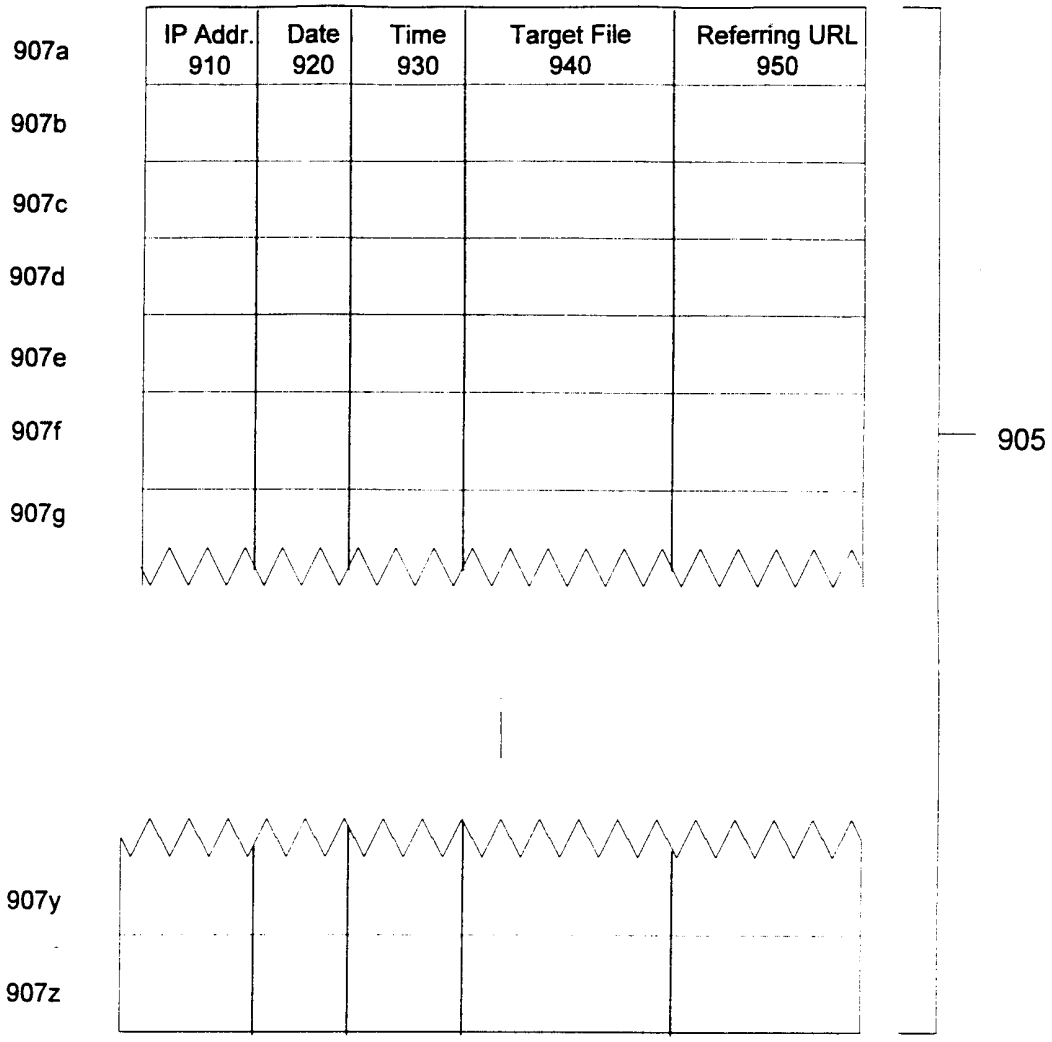

907a
907b
907c
907d
907e
907f
907g
907y
907z
IP Addr. 910
Date 920
Time 930
Target File 940
Referring URL 950
905

FIG. 9

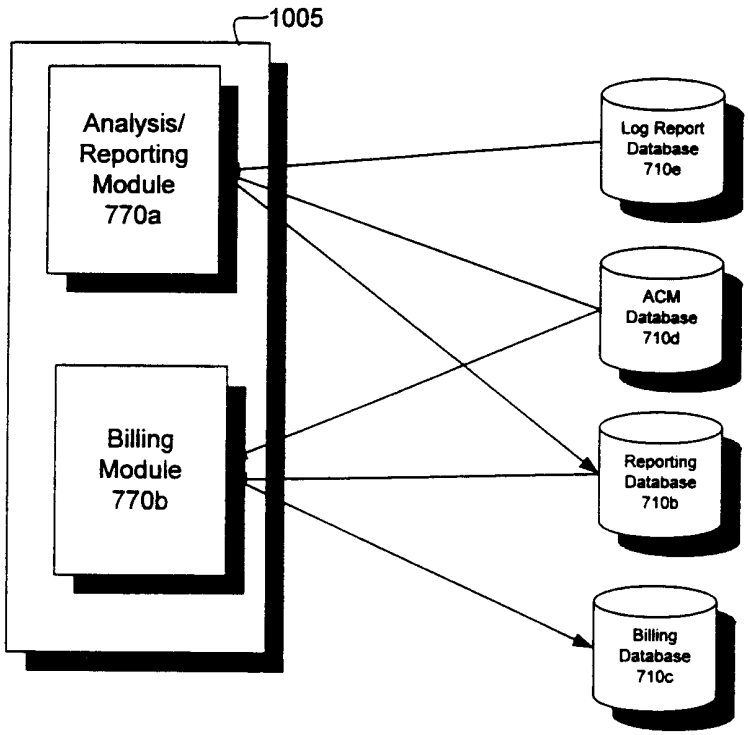

1005
Analysis/ Reporting Module 770a
Billing Module 770b
Log Report Database 710e
ACM Database 710d
Reporting Database 710b
Billing Database 710c

FIG. 10

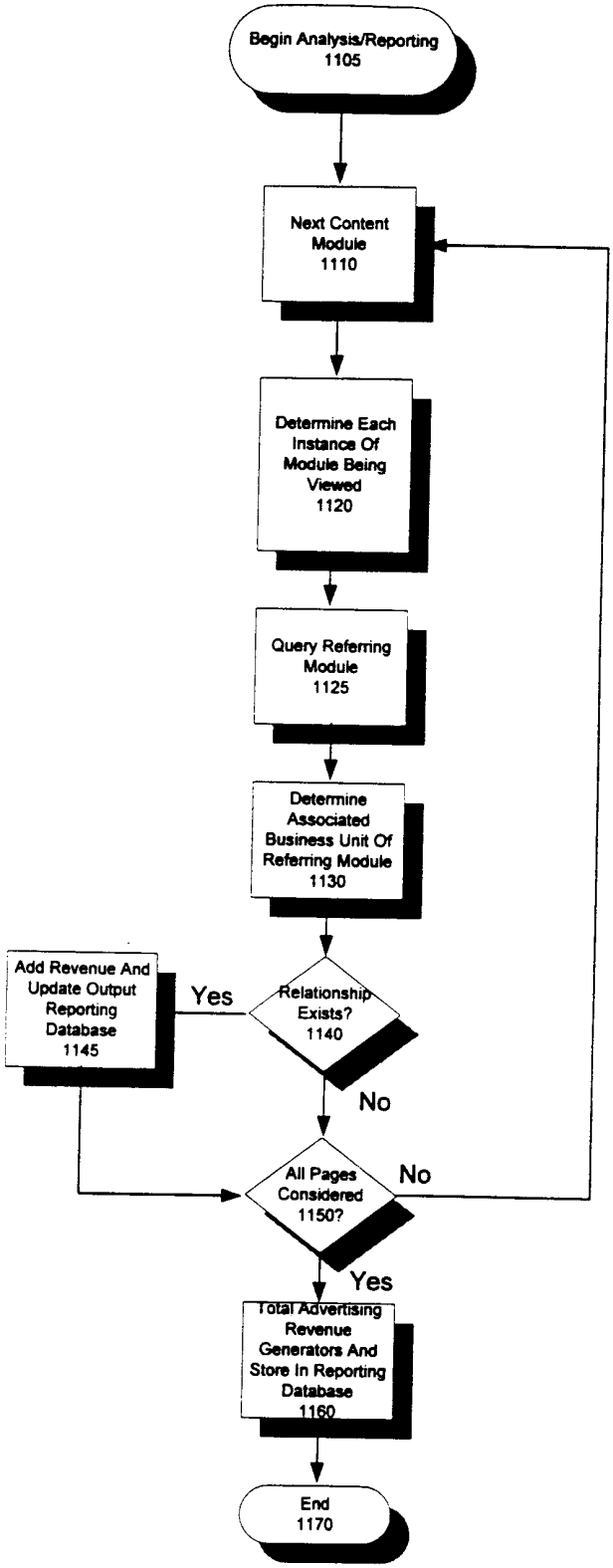

Begin Analysis/Reporting 1105
Next Content Module 1110
Determine Each Instance Of Module Being Viewed 1120
Query Referring Module 1125
Determine Associated Business Unit Of Referring Module 1130
Relationship Exists? 1140
Yes
Add Revenue And Update Output Reporting Database 1145
No
All Pages Considered 1150?
No
Yes
Total Advertising Revenue Generators And Store In Reporting Database 1160
End 1170

FIG. 11

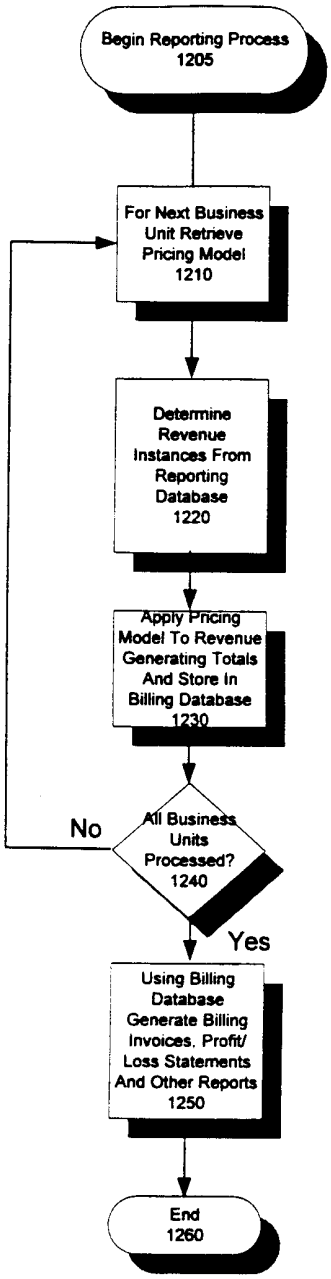

Begin Reporting Process
1205
For Next Business Unit Retrieve Pricing Model
1210
Determine Revenue Instances From Reporting Database
1220
Apply Pricing Model To Revenue Generating Totals And Store In Billing Database
1230
All Business Units Processed?
1240
No
Yes
Using Billing Database Generate Billing Invoices, Profit/ Loss Statements And Other Reports
1250
End
1260

FIG. 12

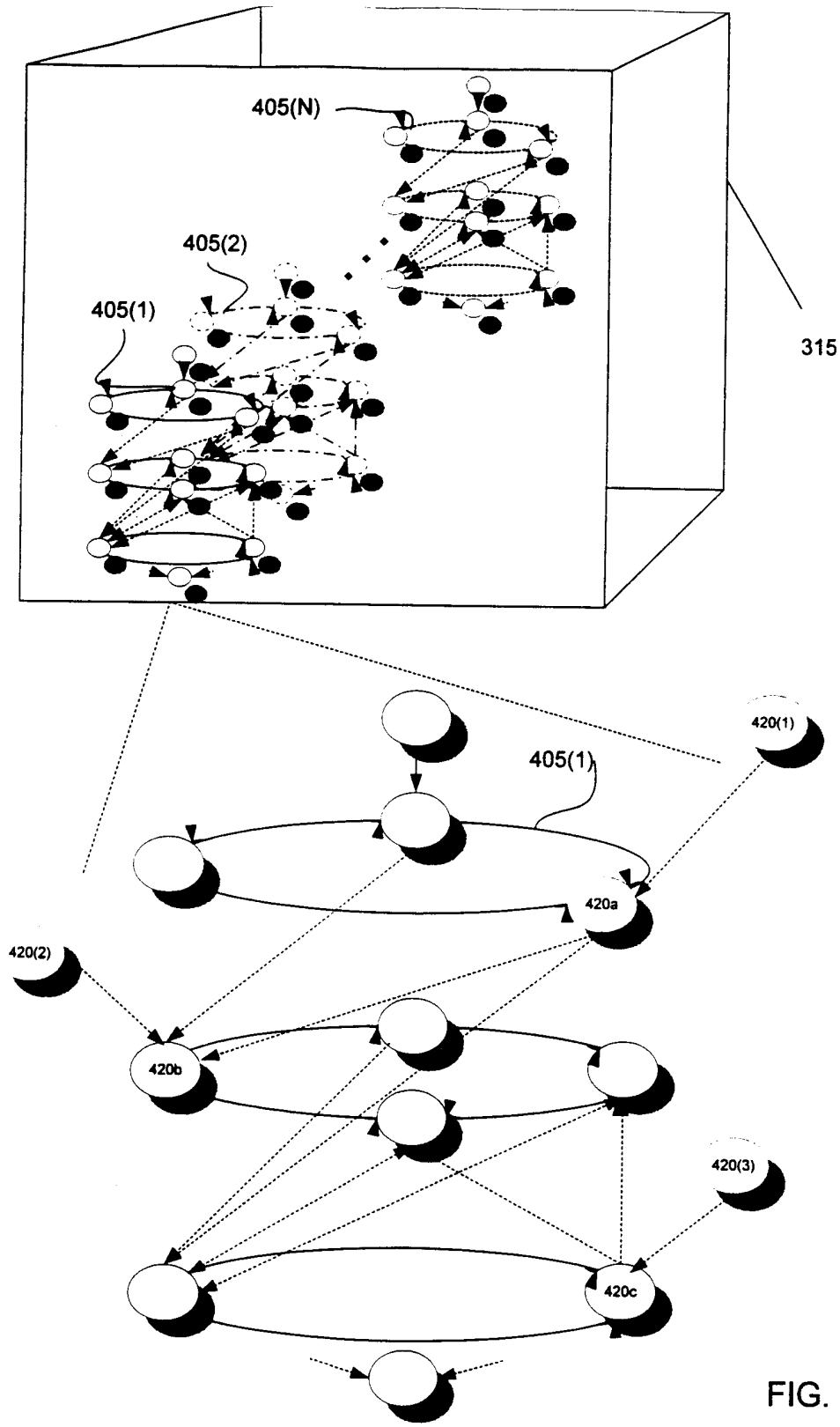


FIG. 13

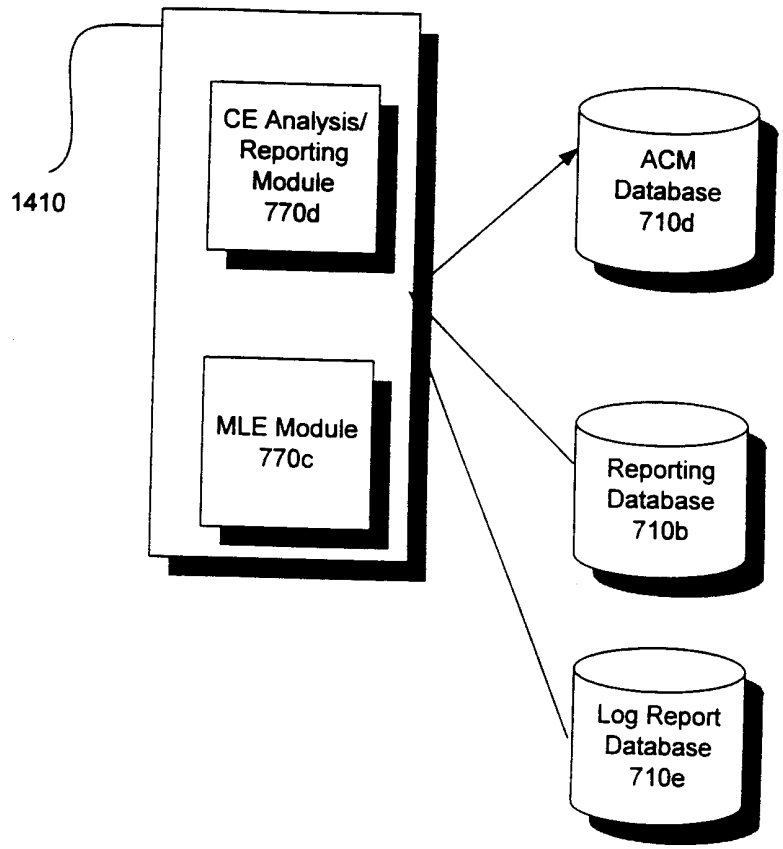

1410
CE Analysis/
Reporting
Module
770d
MLE Module
770c
ACM
Database
710d
Reporting
Database
710b
Log Report
Database
710e

FIG. 14

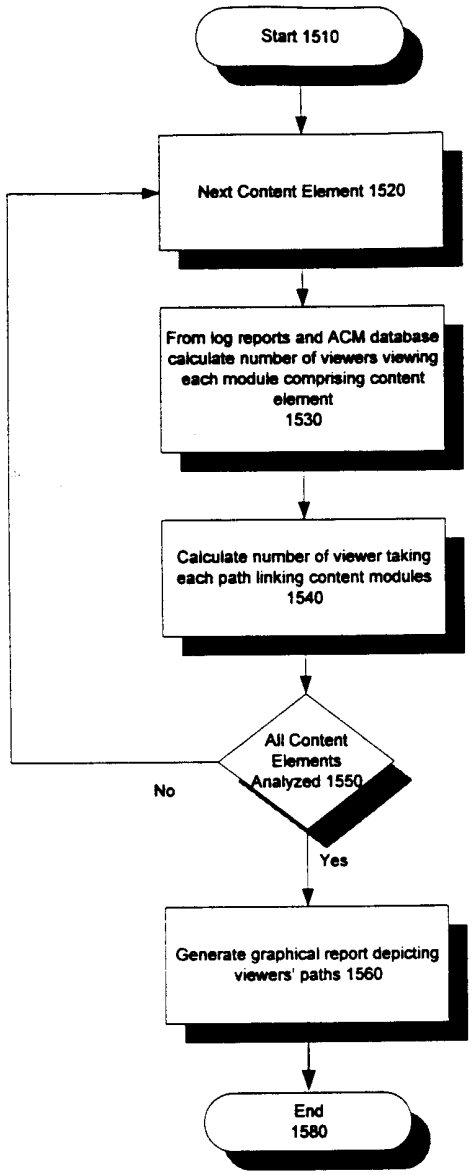

Start 1510
Next Content Element 1520
From log reports and ACM database calculate number of viewers viewing each module comprising content element 1530
Calculate number of viewer taking each path linking content modules 1540
All Content Elements Analyzed 1550
No
Yes
Generate graphical report depicting viewers' paths 1560
End 1580

FIG. 15

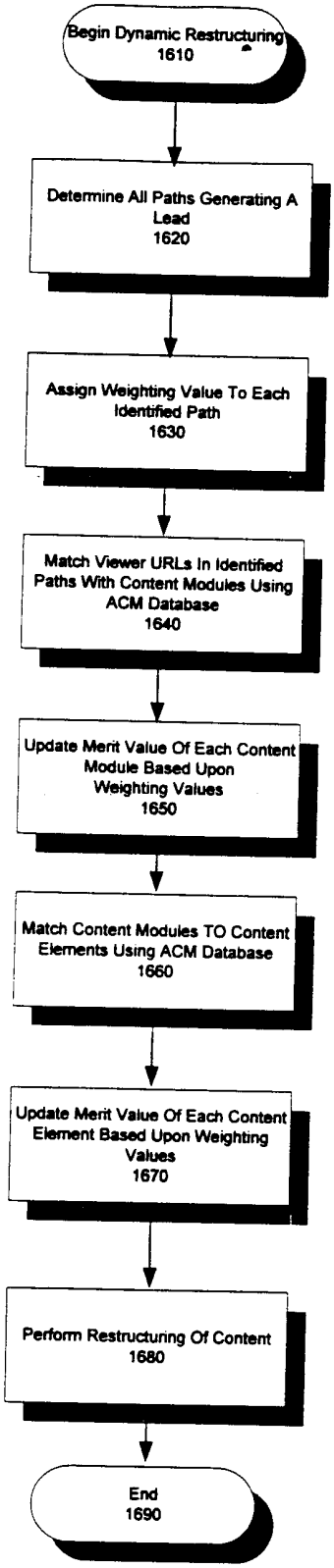

Begin Dynamic Restructuring
1610
Determine All Paths Generating A Lead
1620
Assign Weighting Value To Each Identified Path
1630
Match Viewer URLs In Identified Paths With Content Modules Using ACM Database
1640
Update Merit Value Of Each Content Module Based Upon Weighting Values
1650
Match Content Modules TO Content Elements Using ACM Database
1660
Update Merit Value Of Each Content Element Based Upon Weighting Values
1670
Perform Restructuring Of Content
1680
End
1690

FIG. 16