Exhibit 5
Part 9
To Third Declaration of
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said at least one data processing subsystem to a corresponding some of said at least one first local area network of said one or more data access subsystems through said at least one wide area network.	analog public telephone network. Circuit switching implies that the communications channel is not dedicated 24 h per day, but must be brought on line when needed (via a process called call setup) and then taken down when no longer needed. Minoli, p. 263.
18. A system as in claim 1 further comprising at least one data collecting subsystem for collecting and sending the electronic or paper transaction data comprising a further management subsystem for managing the collecting and sending of the transaction data.	Campbell et al. A bank of first deposit 36 (remote subsystem) may transmit images through an intermediary bank 14 (collecting subsystem), which forwards received images to the check processing node 12 (central subsystem). Check images may be transmitted in a "forward flow path from a bank of first deposit [through the check processing node 12] to a payor bank." Campbell, et al., Col. 7, lns. 65-68. The bank of first deposit may have check processing equipment for generating images of the checks. Campbell, et al., Col. 4, lns 18-21; Col. 3, lns 46-48. Thus, the bank of first deposit 36 may be considered a remote data access subsystem that transmits images to the check processing node 12 (a central data access subsystem), for the forward presented of check images. Thus, this may be considered another teaching of claim 1. Furthermore, an intermediate bank 14 may be located in between the bank of first deposit 36 and the check processing node 12, "[o]ne or both institutions 14 and 16 may also be check clearance flows between a bank of first deposit and a payor bank." Campbell, et al., Col. 2, lns 46-49. Thus, the workflow is: (1) images are captured at the bank of first deposit 36; (2) the images are transmitted from the bank of first deposit 36 to an intermediate bank 14; the images are transmitted from the intermediate bank 14 to the check processing node 12.
19. A system as in claim 18 wherein said further data management subsystem of said at least one data collecting subsystem comprises:	Campbell et al. in view of Owens, et al. (4,264,808) and Minoli Intermediary bank 14 = data collecting subsystem
at least one server for polling said one or more remote data access subsystems for transaction data;	Hardware at a receiving bank: "Check images are received in a network interface 30 in the receiving institution 16. The interface 30 transforms the signals from the network 10 into a form suitable for use by check image processing equipment 32 located in the receiving institution 16. The check image processing equipment 32 may be similar to the imaging equipment 18 located in the sending institution 14. The equipment 32 may also be facsimile equipment, character recognition equipment, e-mail systems, or any other image processing equipment by which the images received may be displayed or used by the receiving institution." Campbell, et al., Col. 3, lns 41-52. Multiple types of servers may be used in image interchange. Minoli, 33; 250.
a database for storing the transaction data in a useful form;	"All images and data coming into or going out of the IPC 14 are controlled by the communication means 88, which performs all handshake protocol, logical addressing and communications packaging, and which directs all incoming images and data to the appropriate file means, as for example, image file means 100. The image file means 100 is processor controlled and broadly includes a primary storage

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	104 which represents, for example, a plurality of high-capacity magnetic discs and a back-up storage or archival file system, shown, for example, as a video disc 106." Owens, et al., Col. 12, lns 18-27. "The data associated with a transaction group of documents 18 is extracted from the data file means 114, and is put in the appropriate format by a conventional interface 124. From the interface 124, the data associated with the "on-us" documents 18 is presented in the desired format to the conventional application systems 126 where reports and application posting are performed." Owens, Col. 14, lns 12-18.
at least one central processing unit for managing the collecting of the transaction data;	"A system manager 108 at the IPC 14 (FIG. 1) provides common support functions such as operator consoles 110 (only one being shown), line printers (not shown), program libraries, and non-volatile storage and retrieval of system information needed by other subsystems. The system manager 108 also provides the operator interface to all subsystems of the banking system 10, and conventionally provides the control of initiation, termination and re-start processes." Owens, Col. 12, lns 27-36.
a domain name services program for dynamically assigning one of said at least one server to receive portions of the transaction data for balancing the transaction data among said at least one server; and	"The communications controllers 232, 234, and 236 (FIG. 5A) act as buffers in controlling the flow of the entry records 74 to the communications nodes 246, 248 which also include memory to store portions of an entry record 74." Owens, Col. 21, lns 1-17. "Bridges connect two or more LANs at the MAC layer. A bridge receiving packets (frames of information will pass the packets to the interconnected LAN based on some forwarding algorithm selected by the manufacturer (explicit route, dynamic address filtering, static address filtering, etc.) Minoli, p. 248-49.
a memory hierarchy.	"The image file means 100 is processor controlled and broadly includes a primary storage 104 which represents, for example, a plurality of high-capacity magnetic discs and a back-up storage or archival file system, shown, for example, as a video disc 106." Owens, Col. 12, lns 23-27.
20. A system as in claim 19 wherein said memory hierarchy comprises at least one primary memory for collecting transaction data and at least one secondary memory for backup storage of the transaction data.	Campbell et al. in view of Owens, et al. (4,264,808) and Minoli "The image file means 100 is processor controlled and broadly includes a primary storage 104 which represents, for example, a plurality of high-capacity magnetic discs and a back-up storage or archival file system, shown, for example, as a video disc 106." Owens, et al., Col. 12, lns 23-27. "The storage device 48 may be a rewritable mass storage device which can at least temporarily store or archive compressed or uncompressed check images prior to transmission to their destinations." Campbell, et al., Col. 6, lns 57-60. "In addition to temporary storage of check images, the storage mechanism 48 may be configured to provide long term archiving of check images." Campbell, et al., Col. 7, lns 6-8.
21. A system as in claim 20 wherein said at	Campbell et al. in view of Owens, et al. (4,264,808) and Minoli

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least one secondary memory comprises at least one DLT jukebox.	DLT = Digital Linear Tape, a type of magnetic tape storage device. "The data file means 114 is processor controlled and broadly includes a primary storage 116 which represents, for example, a plurality of high-capacity magnetic discs and magnetic tape units, and an optionally-provided back-up storage or archival file system, shown for example, as a video disc 118." Owens, et al., Col. 12, lns 23-27.
22. A system as in claim 18 wherein said at least one communication network comprises:	Campbell et al. in view of Minoli Minoli teaches that 3 LANs may be interconnected by a WAN. Minoli, p. 31; 269-270.
at least one first local area network for transmitting data within a corresponding one of said one or more remote data access subsystems;	Remote subsystem = bank of first deposit 36. "The imaging equipment may be large multiworkstation systems available from companies such as IBM, UNISYS, or NCR." Campbell, et al., Col. 3, ln. 10-12. "The images produced by the equipment 18 are directed to a network interface 20 which converts the signals from the equipment 18 into signals suitable for transmission on the telephone network 10." Campbell, et al., Col. 3, ln 17-20. "The output of the network interface 20 is connected to one or more network access lines 22 in FIG. 1. The network access lines 22 may comprise any form of transmission line suitable for carrying the expected volume of check image traffic between the sending institution 14 and the telephone network 10. For example, the network access lines 22 may comprise one or more digital transmission lines operating at speeds of about 2400 bits per second to about 1.544 megabits per second or more. Connection to the network 10 may be by an ordinary dial up line or by a dedicated private line." Campbell, et al., Col. 3, ln 20-31.
at least one second local area network for transmitting data within a corresponding one of said at least one data collection subsystem;	Intermediary bank 14 = data collecting subsystem "The imaging equipment may be large multiworkstation systems available from companies such as IBM, UNISYS, or NCR." Campbell, et al., Col. 3, ln. 10-12. "The images produced by the equipment 18 are directed to a network interface 20 which converts the signals from the equipment 18 into signals suitable for transmission on the telephone network 10." Campbell, et al., Col. 3, ln 17-20. "The output of the network interface 20 is connected to one or more network access lines 22 in FIG. 1. The network access lines 22 may comprise any form of transmission line suitable for carrying the expected volume of check image traffic between the sending institution 14 and the telephone network 10. For example, the network access lines 22 may comprise one or more digital transmission lines operating at speeds of about 2400 bits per second to about 1.544 megabits per second or more. Connection to the network 10 may be by an ordinary dial up line or by a dedicated private line." Campbell, et al., Col. 3, ln 20-31.
at least one third local area network for transmitting data within a corresponding one of said at least one data processing subsystem;	"A local area network 56 connects the subsystems of the node 12 described above." Campbell, et al., Col. 4, lns. 56-58. "The node controller and router 42 provides interfaces to systems external to the node 12. It is connected to all the other subsystems in the node 12 by way of the local area network 56.

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and	The controller 42 provides access to the database 46 and directs check images to appropriate subsystems in the node 12 connected to the local area network 56. The controller 42 also routes the check images from the node 12 to their ultimate destinations by way of the assembler/disassembler 40 and the frame relay network 38. The controller 42 may read some data accompanying check images, for example, it may identify that TCP/IP protocol information accompanying those images." Campbell, et al., Col. 5, lns. 14-26.
at least one wide area network for transmitting data between said one or more remote data access subsystems, said at least one data collection subsystem and said at least one data processing subsystem.	The public switched telephone network 10 may be a frame relay network, a WAN. Campbell, et al., Col. 2, ln 61.
23. A system as in claim 22 wherein said at least one communication network further comprises:	Campbell et al. in view of Minoli
at least one first modem for connecting said at least one first local area network of said one or more data access subsystems to a corresponding one of said at least one second local area network through said at least one wide area network;	Dial-up link between LAN routers. This approach involves the use of modems connected to the LAN server (bridge or router), to utilize the analog public telephone network. Circuit switching implies that the communications channel is not dedicated 24 h per day, but must be brought on line when needed (via a process called call setup) and then taken down when no longer needed. Minoli, p. 263.
at least one bank of modems for connecting said at least one second local area network of said at least one data collection subsystem to a corresponding some of said at least one first local area network of said one or more data access subsystems through said at least one wide area network;	Dial-up link between LAN routers. This approach involves the use of modems connected to the LAN server (bridge or router), to utilize the analog public telephone network. Circuit switching implies that the communications channel is not dedicated 24 h per day, but must be brought on line when needed (via a process called call setup) and then taken down when no longer needed. Minoli, p. 263.
at least one first wide area network router for connecting a corresponding one of said at least one second local area network of said at least one data collecting subsystem to said at least one wide area network; and	Minoli Fig. 9.7 (pg. 269) First router connecting two or more LANs over a WAN. The public switched telephone network 10 may be a frame relay network, a WAN. Campbell, et al., Col. 2, ln 61.
at least one second wide area network router	

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for connecting a corresponding one of said at least one third local area network of said at least one data processing subsystem to said at least one wide area network.	
24. A system as in claim 23 wherein said at least one first wide area network and said at least one second wide area network comprises a carrier cloud, said carrier cloud using a frame relay method for transmitting the transaction data.	Campbell et al. in view of Minoli "Frame relay service provides interconnection among n sites by requiring only that each site be connected to the "network cloud" via an access line. ... The cloud consists of switching nodes interconnected by trunks used to carry traffic aggregated from many users (see Fig. 9.7). In a public frame relay network the switches and the trunks are put in place by a carrier for use by many corporations. Carrier networks based on frame relay provide communications at up to 1.544 Mbps (in the United States), shared bandwidth on demand, and multiple user sessions over a single access line. The throughput is much higher than that available for packet switching, making the service attractive for imaging applications. In a private frame relay network, the switches and trunks are put in place (typically) by the corporate communications department of the company in question." Minoli, p. 268 The public switched telephone network 10 may be a frame relay network, a WAN. Campbell, et al., Col. 2, ln 61.
25. A system as in claim 22 wherein said at least one second local area network and said at least one third local area network further comprises a corresponding one of at least one network switch for routing transaction data within said at least one second local area network and said at least one third local area network.	Campbell et al. in view of Minoli "Frame relay service provides interconnection among n sites by requiring only that each site be connected to the "network cloud" via an access line. ... The cloud consists of switching nodes interconnected by trunks used to carry traffic aggregated from many users (see Fig. 9.7). In a public frame relay network the switches and the trunks are put in place by a carrier for use by many corporations. Carrier networks based on frame relay provide communications at up to 1.544 Mbps (in the United States), shared bandwidth on demand, and multiple user sessions over a single access line. The throughput is much higher than that available for packet switching, making the service attractive for imaging applications. In a private frame relay network, the switches and trunks are put in place (typically) by the corporate communications department of the company in question." Minoli, p. 268 The public switched telephone network 10 may be a frame relay network, a WAN. Campbell, et al., Col. 2, ln 61.
	Campbell et al.
26. A method for central management, storage and verification of remotely captured paper transactions from documents and receipts	Checks used to effectuate commercial and private transactions may be cleared through the banking system by transporting images of those checks between sending institutions and receiving institutions in forward and reverse flow paths between banks of first deposit and payor banks. The check images are

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comprising the steps of:	transported through a public switched telephone network which contains a special check imaging node which provides a network based check clearing service for customers of telephone network. The check imaging node receives images of checks from institutions which subscribe to this service and routes those images through the telephone network to intended subscriber and non-subscriber recipients. Campbell, et al., Abstract.
26a. capturing an image of the paper transaction data	"The sending institution 14 possesses check imaging equipment 18 which produces electrical or optical signals representing the image of a check. .... The imaging equipment may be large multiworkstation systems available from companies such as IBM, UNISYS, or NCR. Campbell, et al., Col. 2, ln. 64 – Col. 3, ln. 12.
at one or more remote locations and	Remote location = sending institution 14.
sending a captured image of the paper transaction data;	"The images produced by the equipment 18 are directed to a network interface 20 which converts the signals from the equipment 18 into signals suitable for transmission on the telephone network 10." Campbell, et al.,Col. 3, ln 17-20. "The output of the network interface 20 is connected to one or more network access lines 22 in FIG. 1. Campbell, et al., Col. 3, ln 20-31.
26b. managing the capturing and sending of the transaction data;	"The images produced by the equipment 18 are directed to a network interface 20 which converts the signals from the equipment 18 into signals suitable for transmission on the telephone network 10." Campbell, et al.,Col. 3, ln 17-20. "The imaging equipment may be large multiworkstation systems available from companies such as IBM, UNISYS, or NCR." Campbell, et al., Col. 3, ln. 10-12
26c. collecting, processing, sending and	The network 10 contains at least one check image processing node 12 which provides check clearance services. The node 12 receives images of checks from a sending institution 14 transmitted through the network 10. The node 12 processes the check images and sends them to a receiving institution 16." Campbell, et al., Col. 2, lns. 26-32.
storing the transaction data at a central location;	"[T]he processing node 12 receives check images and performs certain processing procedures on those images, including at least temporary storage of the received check images." Campbell, et al.,Col. 3, lns. 43-58. "The node 12 contains a frame relay assembler/disassembler 40 which receives frames of digital information representing check images sent by service subscribers to the network 38. The assembler/disassembler 40 also transmits frames of digital information representing check images to the network 38 after those images have been processed by the node 12. A node controller and router 42 controls the routing of check images to their intended destinations, both in the controller and to their ultimate destinations outside the network 38." Campbell, et al., Col. 3, ln 30 – 39. "The controller 42 may receive instructions from the work center 54 through the interface 52 to control changes made to the information in the database 46. These changes may include the addition or changes to personal identification numbers or bank related data." "The controller 42 may read some data

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	accompanying check images, for example, it may identify that TCP/IP protocol information accompanying those images. That information may instruct the node 12 about the identity of the sending institution and the intended receiving institution." Campbell, et al., Col. 5, ln 23-28.
26d. managing the collecting, processing, sending and storing of the transaction data;	"A node controller and router 42 controls the routing of check images to their intended destinations, both in the controller and to their ultimate destinations outside the network 38." Campbell, et al., Col. 3, ln 30 – 39. "The node controller and router 42 provides interfaces to systems external to the node 12. It is connected to all the other subsystems in the node 12 by way of the local area network 56. The controller 42 provides access to the database 46 and directs check images to appropriate subsystems in the node 12 connected to the local area network 56. The controller 42 also routes the check images from the node 12 to their ultimate destinations by way of the assembler/disassembler 40 and the frame relay network 38. The controller 42 may read some data accompanying check images, for example, it may identify that TCP/IP protocol information accompanying those images. That information may instruct the node 12 about the identity of the sending institution and the intended receiving institution. ... The controller 42 may also be configured to handle information encrypted by sending institutions to provide security for the images transported by the network 38. The controller 42 may have its own encryption and decryption equipment to provide a secure environment in the node 12." Campbell, et al., Col 5, ln 14-60.
26e. encrypting subsystem identification information and the transaction data; and	"The controller 42 may also be configured to handle information encrypted by sending institutions to provide security for the images transported by the network 38. The controller 42 may have its own encryption and decryption equipment to provide a secure environment in the node 12." Campbell, et al., Col. 5, lns. 55-60. This implies that the sending bank 14 sends encrypted information. This information includes check images and also information "about the identity of the sending institution." Campbell, et al., Col. 5, ln 26-27. Thus, both the check images and the identifying information may be encrypted.
26f. transmitting the transaction data and the subsystem identification information	"The image of a check is created in a sending institution and sent to a receiving institution by means of the public switched telephone network." Campbell, et al., Col. 2, lns. 20-22. "The controller 42 may read some data accompanying check images, for example, it may identify that TCP/IP protocol information accompanying those images. That information may instruct the node 12 about the identity of the sending institution and the intended receiving institution." Campbell, et al., Col. 5, ln 23-28.
within and	Within the node 12: "A local area network 56 connects the subsystems of the node 12 described above." Campbell, et al. Col. 4, lns. 56-58. Within the sending bank 14: "The images produced by the equipment 18 are directed to a network

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	interface 10 which converts the signals from the equipment 18 into signals suitable for transmission on the telephone network 10." Campbell, et al., Col. 3, ln 17-20.
between the remote location(s) and the central location.	Between: "The public switched telephone network 10 may be a telephone network provided by a local exchange carrier ... Campbell, et al., Col. 2, lns. 50-63. "The network access lines 22 may comprise any form of transmission line suitable for carrying the expected volume of check image traffic between the sending institution 14 and the telephone network 10." Campbell, et al., Col. 3, lns. 20-43.
27. The method as in claim 26 wherein said managing the capturing and sending step comprises the steps of:	Campbell et al.
successively transforming the captured transaction data to a bitmap image, a compressed bitmap image, an encrypted, compressed bitmap image and an encrypted, compressed bitmap image tagged with information identifying a location and time of the transaction data capturing; and	Campbell et al. in view of prior art admission "Since there are no universally adopted standards regarding imaging formats and compression standards, the node 12 contains a signal converter 50 which converts signals received by the node 12 in one format used by a sender into another format usable by a recipient. The converter 50 uses information stored in the database 46 regarding the formats and compression algorithms involved. This information will be relayed from the database 46 to the signal converter 50 by the node controller 42. The converter 50 may contain multi-vendor image format and compression processors which can uncompress and reconstruct images from one imaging system to another." Campbell, et al., Col. 7, lns. 15 – 27. Thus, the sending institution 14 may compress the images before transmitting to the node 12. Bitmap compression is one known compression standard. The node is designed to handle all compression formats. "The assembler/disassembler 40 [at the processing node 12] may read certain overhead information accompanying the images, including frame relay flags, identifiers, address bits, indicators, and other overhead information." Campbell, et al., Col. 5, ln 2-5.
storing the tagged, encrypted, compressed bitmap image.	"A storage device 48, which may be an electronic mailbox as shown in FIG. 2, stores at least temporarily some or all of check images received by the node 12. A signal converter 50 contains information used by the node 12 to convert images in a format used by the sending institutions into a format understanable by the receiving institution." Campbell, et al., Col. 4, lns. 45-52. "The storage device 48 may be a rewritable mass storage device which can at least temporarily store or archive comppressed or uncompressed check images prior to transmission to their destinations." Campbell, et al., Col. 6, lns 57-60.
28. The method as in claim 27 wherein said managing the capturing and sending step also captures electronic transactions from credit cards, smart cards and debit cards, signature	Campbell et al. in view of prior art admission Applicants' admission

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data or biometric data, further comprising the steps of:	
initiating an electronic transaction;	Applicants' admission
capturing signature data;	Applicants' admission
capturing biometric data; and	Applicants' admission
printing a paper transaction with data glyphs for the initiated electronic transaction.	Applicants' admission
29. A method as in claim 26 wherein:	Campbell et al.
said capturing and sending step occurs at a plurality of remote locations; and	"The network 10 contains at least one check image processing node 12 which provides check clearance services. The node 12 receives images of checks from a sending institution 14 transmitted through the network 10. The node 12 processes the check images and sends them to a receiving institution 16. The sending institution 14 is a subscriber to the telecommunications services provided by the node 12. The receiving institution 16 may or may not be a subscriber to the services of node 12. The sending institution 14 and the receiving institution 16 may be banks or other entities involved in a check clearing procedure." Campbell, et al., Col. 2, lns. 27-49.
said collecting, processing, sending and storing step occurs at a plurality of central locations.	"The network 10 contains at least one check image processing node 12 which provides check clearance services. The node 12 receives images of checks from a sending institution 14 transmitted through the network 10. The node 12 processes the check images and sends them to a receiving institution 16." Campbell, et al., Col. 27-49.
30. A method as in claim 29 wherein said collecting, processing, sending and storing step comprises the steps of:	Campbell et al. in view of Owens, et al. (4,264,808) and Minoli
polling the remote locations for transaction data with servers at the central locations;	"As the 'images' of the documents 18 included in a transaction group or batch are received in the form of entry records 74 (FIG. 3B) by the communication means 88, they are routed to the image file means 100 via a system bus 102 which may be any conventional high-speed bit serial bus." Owens, et al., Col. 12, lns 12-16. Minoli describes several servers suitable in imaging applications. Minoli, pg. 33; 250.
storing the transaction data at the central	At the central processing center, "[t]he image file means 100 is processor controlled and broadly

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location in a memory hierarchy, said storing maintains recently accessed transaction data in a primary memory and other transaction data in a secondary memory; and	includes a primary storage 104 which represents, for example, a plurality of high-capacity magnetic discs and a back-up storage or archival file system, shown, for example, as a video disc 106." Owens, et al., Col. 12, lns 23-27.
dynamically assigning the servers at the central location to receive portions of the transaction data for balancing the transaction data among the servers; and	"The communications controllers 232, 234, and 236 (FIG. 5A) act as buffers in controlling the flow of the entry records 74 to the communications nodes 246, 248 which also include memory to store portions of an entry record 74. Conventional direct link adapters 252 are used to couple the communication nodes 246, 248 to the system bus 102. When all the portions of an entry record 74 are received at one of the communication nodes 246, 248 all of these portions of an entry record are then routed to the image file means 100 (FIG. 1) under the control of an image file processor 254 (FIG. 5B) which is included in the image file means 100. When all the entry records 74 for a transaction group are received at the image file means 100, an end of documents 18 signal from the input hopper 24 shown in FIG. 3A indicates this fact to the system manager 108." Owens, Col. 21, lns 1-17. "Bridges connect two or more LANs at the MAC layer. A bridge receiving packets (frames of information will pass the packets to the interconnected LAN based on some forwarding algorithm selected by the manufacturer (explicit route, dynamic address filtering, static address filtering, etc.) Minoli, p. 248-49.
generating reports from the transaction data and providing data to software applications.	At the central processing center, "[t]he data associated with a transaction group of documents 18 is extracted from the data file means 114, and is put in the appropriate format by a conventional interface 124. From the interface 124, the data associated with the "on-us" documents 18 is presented in the desired format to the conventional application systems 126 where reports and application posting are performed." Owens, et al., Col. 14, lns 12-18.
31. A method as in claim 30 wherein said storing the transaction data step comprises the steps of:	Campbell et al. in view of Owens, et al. (4,264,808) and Minoli
partitioning the stored transaction data with predefined templates into panels; and	At the central processing center, "[t]he data associated with a transaction group of documents 18 is extracted from the data file means 114, and is put in the appropriate format by a conventional interface 124. Owens, et al., Col. 14, lns 12-18. MPR (machine pattern recognition) units connected to processors at the IPC (FIG. 5C) "include[] a conventional character recognition reader which reads the decompressed image of a document 18 and ascertains the monetary amount thereon." Owens, et al., Col. 23, lns 44-47.
identifying locations of the panels.	At the central processing center, "[t]he data associated with a transaction group of documents 18 is

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	extracted from the data file means 114, and is put in the appropriate format by a conventional interface 124. Owens, et al., Col. 14, lns 12-18. MPR (machine pattern recognition) units connected to processors at the IPC (FIG. 5C) "include[] a conventional character recognition reader which reads the decompressed image of a document 18 and ascertains the monetary amount thereon." Owens, et al., Col. 23, lns 44-47.
32. A method as in claim 31 wherein said managing the collecting, processing, sending and storing of the transaction data step comprises correcting errors in the panels of stored transaction data.	Campbell et al. in view of Owens, et al. (4,264,808) and Minoli "After completion at the MPR unit 140, all the developed data for a document 18 is analyzed for completeness. When data is missing, the associated image is routed to one of the processors 396, 398 for display on one of the CRTS 150 where an operator keys in the appropriate data on an associated keyboard 152. The image display controllers 410 and 412 have conventional decompression units associated therewith for the purpose of permitting operator viewing of the images from the file means 100. The operators complete the data completion function 148 (FIG. 10) by keying in the appropriate data such as monetary amounts (if necessary) while using the keyboards 152." Owens, et al., Col. 23, lns 47-52.
33. A method as in claim 32 further comprising the steps of:	Campbell et al. in view of Owens, et al. (4,264,808) and Minoli and prior art admission
polling the remote locations for captured electronic data, captured signature data and captured biometric data with servers at the central locations; and	Applicants' admission "IPC 230 in FIG. 9 may be configured to handle special entries such as those associated with the use of a credit card (as for example, VISA). In this situation the images or entry records 74 (FIG. 3) could be produced at any POA within the banking system 10 and transmitted to the IPC 230 for processing thereat as already explained." Owens, et al., Col. 20, lns 31-37.
comparing the captured signature data and the captured biometric data to stored signature data and stored biometric data respectively for identification verification.	"With regard to FIG. 8, the various reports (non-image application reports) shown as 214, various reporting data 216, the associated images 218 from the image file means 100, qualified transaction data 220 from the data file means 114 and the associated signatures 222 from a signature file means located at IPC 14 are used to create image reports 224 at the associated IPC 14." Owens, et al., Col. 19, lns 3-9.
34. A method as in claim 32 wherein said transmitting the transaction data step comprises the steps of:	Campbell et al. in view of Owens, et al. (4,264,808) and Minoli

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transmitting data within the remote locations;	Sending bank 14 includes check imaging equipment 18 and a network interface 20. Campbell, et al., FIG 1.
transmitting data from each remote location to a corresponding central location; and	The node 12 receives images of checks from a sending institution 14 transmitted through the network 10. The node 12 processes the check images and sends them to a receiving institution 16." Campbell, et al., Col. 2, lns. 26-32.
transmitting data within the central locations.	Receiving bank 16 includes check imaging processing equipment 32 and a network interface 30 on a LAN. Campbell, et al., FIG 1. "Check images are received in a network interface 30 in the receiving institution 16. The interface 30 transforms the signals from the network 10 into a form suitable for use by check image processing equipment 32 located in the receiving institution 16. The check image processing equipment 32 may be similar to the imaging equipment 18 located in the sending institution 14. The equipment 32 may also be facsimile equipment, character recognition equipment, e-mail systems, or any other image processing equipment by which the images received may be displayed or used by the receiving institution." Campbell, et al., Col. 3, ln 41-52.
35. A method as in claim 34 wherein said transmitting data from each remote location to a corresponding central location step comprises the steps of:	Campbell et al. in view of Owens, et al. (4,264,808) and Minoli
connecting each remote location to a corresponding central location; and	"The network access lines 22 may comprise any form of transmission line suitable for carrying the expected volume of check image traffic between the sending institution 14 and the telephone network 10." Campbell, et al., Col. 3, lns. 20-43.
connecting each central location to corresponding remote locations.	"The signals received by the network on line 22 may be transmitted through the network 10 via one or more trunks and one or more central offices to the check image processing node 12 as represented schematically by a dotted line 24. The check image processing node 12 then routes the received check image via one or more trunks and one or more central offices, as represented schematically by a dotted line 26, to a network access line 28 of suitable capacity which may be the same as or different from the network access line 22. Check images are received in a network interface 30 in the receiving institution 16. The interface 30 transforms the signals from the network 10 into a form suitable for use by check image processing equipment 32 located in the receiving institution 16. The check image processing equipment 32 may be similar to the imaging equipment 18 located in the sending institution 14. The equipment 32 may also be facsimile equipment, character recognition equipment, e-mail systems, or any other image processing equipment by which the images received may be displayed or used by the receiving institution." Campbell, et al., Col. 3, ln 32-52.

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36. A method as in claim 29 further comprising the steps of:	Campbell, et al.
collecting and sending the electronic or paper transaction data at intermediate locations;	A bank of first deposit 36 (remote location) may transmit images through an intermediary bank 14 (intermediate location), which forwards received images to the check processing node 12 (central location). Check images may be transmitted in a "forward flow path from a bank of first deposit [through the check processing node 12] to a payor bank." Campbell, et al., Col. 7, lns. 65-68. The bank of first deposit may have check processing equipment for generating images of the checks. Campbell, et al., Col. 4, lns 18-21; Col. 3, lns 46-48. Thus, the bank of first deposit 36 may be considered a remote data access subsystem that transmits images to the check processing node 12 (a central data access subsystem), for the forward presented of check images. Thus, this may be considered another teaching of claim 26. Furthermore, an intermediate bank 14 may be located in between the bank of first deposit 36 and the check processing node 12, "[o]ne or both institutions 14 and 16 may also be check clearance flows between a bank of first deposit and a payor bank." Campbell, et al., Col. 2, lns 46-49. Thus, the workflow is: (1) images are captured at the bank of first deposit 36; (2) the images are transmitted from the bank of first deposit 36 to an intermediate bank 14; the images are transmitted from the intermediate bank 14 to the check processing node 12.
managing the collecting and sending of the transaction data; and	Each bank, such as the intermediate bank 14 may have the equipment 18 and the associated hardware. Campbell, et al., Col. 3, lns. 46-48. "The images produced by the equipment 18 are directed to a network interface 20 which converts the signals from the equipment 18 into signals suitable for transmission on the telephone network 10." Campbell, et al., Col. 3, ln 17-20. "The output of the network interface 20 is connected to one or more network access lines 22 in FIG. 1." Campbell, et al., Col. 3, ln 20-31.
transmitting the transaction data within the intermediate location and between the intermediate locations and the remote locations and the central locations.	"A local area network 56 connects the subsystems of the node 12 described above." Campbell, et al., Col. 4, lns. 56-58. "The node 12 receives images of checks from a sending institution 14 transmitted through the network 10." Campbell, et al., Col. 2, lns 25-33. "The node controller and router 42 provides interfaces to systems external to the node 12. It is connected to all the other subsystems in the node 12 by way of the local area network 56. The controller 42 provides access to the database 46 and directs check images to appropriate subsystems in the node 12 connected to the local area network 56. Campbell, et al., Col. 5, lns. 14-26.
37. A method as in claim 36 wherein said managing the collecting and sending step comprises the steps of:	Campbell, et al. in view of Minoli "The system of FIG. 1 comprises a public switched telephone network 10. The network 10 contains at least one check image processing node 12 which provides check clearance services. The node 12 receives images of checks from a sending institution 14 transmitted through the network 10. The node 12 processes the check images and sends them to a receiving institution 16." Campbell, et al., Col. 2,

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	lns 25-33.
polling the remote locations for transaction data with servers in the intermediate locations;	"The node 12 contains a frame relay assembler/disassembler 40 which receives frames of digital information representing check images sent by service subscribers to the network 38. The assembler/disassembler 40 also transmits frames of digital information representing check images to the network 38 after those images have been processed by the node 12. A node controller and router 42 controls the routing of check images to their intended destinations, both in the controller and to their ultimate destinations outside the network 38." Campbell, et al., Col. 3, lns 30-39. "The controller 42 may read some data accompanying check images, for example, it may identify that TCP/IP protocol information accompanying those images. That information may instruct the node 12 about the identity of the sending institution and the intended receiving institution." Campbell, et al.; Col. 5, lns 23-28. Several severs are suitable for imaging applications. Minoli, p. 33; 250.
storing the transaction data in the intermediate locations in a useful form, said storing maintains the transaction data in a primary memory of a memory hierarchy and performs backup storage of the transaction data into a secondary memory of the memory hierarchy; and	"[T]he processing node 12 receives check images and performs certain processing procedures on those images, including at least temporary storage of the received check images." Campbell, et al., Col. 3, lns. 43-58.
dynamically assigning the servers to receive portions of the transaction data for balancing the transaction data among the servers.	"The node 12 contains a frame relay assembler/disassembler 40 which receives frames of digital information representing check images sent by service subscribers to the network 38. The assembler/disassembler 40 also transmits frames of digital information representing check images to the network 38 after those images have been processed by the node 12. A node controller and router 42 controls the routing of check images to their intended destinations, both in the controller and to their ultimate destinations outside the network 38." Campbell, et al., Col. 3, lns 30-39. "Bridges connect two or more LANs at the MAC layer. A bridge receiving packets (frames of information will pass the packets to the interconnected LAN based on some forwarding algorithm selected by the manufacturer (explicit route, dynamic address filtering, static address filtering, etc.) Minoli, p. 248-49.
38. The method as in claim 36 wherein said transmitting the transaction data step comprises the steps of:	Campbell, et al. Remote location = bank of first deposit 36; Intermediate location = bank 14; Central location = check processing node 12.

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	Campbell, et al., Col. 2, lns. 46-49; FIG. 2.
transmitting data within the remote locations;	The bank of first deposit may have check processing equipment for generating images of the checks. Campbell, et al., Col. 4, lns 18-21; Col. 3, lns 46-48.
transmitting data from each remote location to a corresponding intermediate location;	Intermediate bank 14 may be located in between the bank of first deposit 36 and the check processing node 12, "[o]ne or both institutions 14 and 16 may also be check clearance flows between a bank of first deposit and a payor bank." Campbell, et al., Col. 2, lns 46-49.
transmitting data within the intermediate locations;	Intermediate bank 14 includes check imaging equipment 18 and a network interface 20. Campbell, et al., FIG 1.
transmitting data from each intermediate location to corresponding central locations; and	The node 12 receives images of checks from [bank] 14 transmitted through the network 10." Campbell, et al., Col. 2, lns 25-33.
transmitting data within the central locations.	"A local area network 56 connects the subsystems of the node 12 described above." Campbell, et al., Col. 4, lns. 56-58.
39. A method as in claim 38 wherein said transmitting data from each remote location to corresponding intermediate locations step comprises the steps of:	Campbell, et al. Remote location = bank of first deposit 36; Intermediate location = bank 14; Central location = check processing node 12.
connecting each remote location to a corresponding intermediate location; and	Intermediate bank 14 may be located in between the bank of first deposit 36 and the check processing node 12, "[o]ne or both institutions 14 and 16 may also be check clearance flows between a bank of first deposit and a payor bank." Campbell, et al., Col. 2, lns 46-49. "The output of the network interface 20 is connected to one or more network access lines 22 in FIG. 1. The network access lines 22 may comprise any form of transmission line suitable for carrying the expected volume of check image traffic between the sending institution 14 and the telephone network 10. For example, the network access lines 22 may comprise one or more digital transmission lines operating at speeds of about 2400 bits per second to about 1.544 megabits per second or more. Connection to the network 10 may be by an ordinary dial up line or by a dedicated private line." Campbell, et al., Col. 3, ln 20-31.
connecting the intermediate locations to corresponding remote locations.	The node 12 receives images of checks from a sending institution 14 transmitted through the network 10." Campbell, et al., Col. 2, lns 25-33. "The node 12 contains a frame relay assembler/disassembler 40 which receives frames of digital information representing check images sent by service subscribers to the network 38." Campbell, et al., Col. 3, lns 30-39.

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40. A method as in claim 38 wherein said transmitting data from each intermediate location to corresponding central locations comprises the steps of:	Campbell, et al. Remote location = bank of first deposit 36; Intermediate location = bank 14; Central location = check processing node 12.
connecting each intermediate location to an external communication network; and	The node 12 receives images of checks from a sending institution 14 transmitted through the network 10." Campbell, et al., Col. 2, lns 25-33. "The output of the network interface 20 is connected to one or more network access lines 22 in FIG. 1. The network access lines 22 may comprise any form of transmission line suitable for carrying the expected volume of check image traffic between the sending institution 14 and the telephone network 10. For example, the network access lines 22 may comprise one or more digital transmission lines operating at speeds of about 2400 bits per second to about 1.544 megabits per second or more. Connection to the network 10 may be by an ordinary dial up line or by a dedicated private line." Campbell, et al., Col. 3, ln 20-31.
connecting the corresponding central locations to the communication network.	The node 12 receives images of checks from a sending institution 14 transmitted through the network 10." Campbell, et al., Col. 2, lns 25-33. "The node 12 accepts the images transmitted over the frame relay network 38... The node 12 contains frame relay assembler/disassembler 40 which receives frames of digital information representing check images sent by service subscribers to the network 38." Campbell, et al., Col. 4, lns. 26-33.
41. A method as in claim 40 wherein said transmitting data from each intermediate location to corresponding central locations step further comprises the steps of:	Campbell ,et al.
packaging the transaction data into frames; and	"The node 12 contains a frame relay assembler/disassembler 40 which receives frames of digital information representing check images sent by service subscribers to the network 38. The assembler/disassembler 40 also transmits frames of digital information representing check images to the network 38 after those images have been processed by the node 12. A node controller and router 42 controls the routing of check images to their intended destinations, both in the controller and to their ultimate destinations outside the network 38." Campbell, et al., Col. 3, lns 30-39.
transmitting the frames through the external communication network.	"The node 12 contains a frame relay assembler/disassembler 40 which receives frames of digital information representing check images sent by service subscribers to the network 38. The assembler/disassembler 40 also transmits frames of digital information representing check images to the network 38 after those images have been processed by the node 12. A node controller and router 42

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	controls the routing of check images to their intended destinations, both in the controller and to their ultimate destinations outside the network 38." Campbell, et al., Col. 3, lns 30-39.

Element by element comparison of claims 46-50 of the '988 Patent to Campbell, et al. (USP 5,373,550).

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46. A method for transmitting data within and between one or more remote subsystems, at least one intermediate subsystem and at least one central subsystem in a tiered manner wherein each of the central subsystems communicate with at least one intermediate subsystem and each of the intermediate subsystems communicate with at least one remote subsystems comprising the steps of:	"The system of FIG. 1 comprises a public switched telephone network 10. The network 10 contains at least one check image processing node 12 which provides check clearance services. The node 12 receives images of checks from a sending institution 14 transmitted through the network 10. The node 12 processes the check images and sends them to a receiving institution 16." Campbell, et al., Col. 2, ln 25-33.
46a. capturing an image of documents and receipts and extracting data therefrom;	The sending institution 14 possesses check impanging equipment 18 which produces electrical or optical signals representing the image of a check. Campbell, et al., Col. 2, lns 64-66. "The imaging equipment may be large multiworkstation systems available from companies such as IBM, UNISYS, or NCR." Campbell, et al., Col. 3, ln. 10-12. "The images produced by the equipment 18 are directed to a network interface 20 which converts the signals from the equipment 18 into signals suitable for transmission on the telephone network 10." Campbell, et al., Col. 3, ln 17-20. Extracting: "The destination identifying data may be manually entered by an operator at the time the image is generated in institution 14. The data may also be entered by character recognition equipment or the like in response to the image produced by the equipment 18. One alternative to the sending institution producing data relating to the destination of the check image is to install character recognition equipment in the check image processing node 12. The character recognition in the node 12 then can read the check image and determine its destination from certain characteristics of the image such as the endorsements on the check" Campbell, et al., Col. 3, ln 65 – Col. 4, ln 9.
46b. transmitting data within the remote locations;	"The imaging equipment may be large multiworkstation systems available from companies such as IBM, UNISYS, or NCR." Campbell, et al., Col. 3, ln. 10-12. "The images produced by the equipment 18 are directed to a network interface 20 which converts the signals from the equipment 18 into signals suitable for transmission on the telephone network 10." Campbell, et al., Col. 3, ln 17-20.
46c. transmitting data from each remote location to corresponding intermediate location;	"The network 10 contains at least one check image processing node 12 which provides check clearance services. The node 12 receives images of checks from a sending institution 14 transmitted through the network 10." Campbell, et al., Col. 2, lns. 26-32.
46d. transmitting data within the intermediate locations;	"A local area network 56 connects the subsystems of the node 12 described above." Campbell, et al., Col. 4, lns. 56-58. "The node controller and router 42 provides interfaces to systems external to the node 12. It is connected to all the other subsystems in the node 12 by way of the local area network 56. The controller 42 provides access to the database 46 and directs check images to appropriate subsystems in the node 12 connected to the local area network 56." Campbell, et al., Col. 5, lns. 14-26.

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46e. transmitting data from each intermediate location to corresponding central locations; and	"The network 10 contains at least one check image processing node 12 which provides check clearance services. The node 12 receives images of checks from a sending institution 14 transmitted through the network 10. The node 12 processes the check images and sends them to a receiving institution 16." Campbell, et al., Col. 2, lns. 26-32.
46f. transmitting data within the central locations.	"Check images are received in a network interface 30 in the receiving institution 16. The interface 30 transforms the signals from the network 10 into a form suitable for use by check image processing equipment 32 located in the receiving institution 16. The check image processing equipment 32 may be similar to the imaging equipment 18 located in the sending institution 14. The equipment 32 may also be facsimile equipment, character recognition equipment, e-mail systems, or any other image processing equipment by which the images received may be displayed or used by the receiving institution." Campbell, et al., Col. 3, ln 41-52.
47. A method as in claim 46 wherein said transmitting data from each remote location to corresponding intermediate locations step comprises the steps of:	See claim 46
47a. connecting each remote location to a corresponding intermediate location; and	"The images produced by the equipment 18 are directed to a network interface 20 which converts the signals from the equipment 18 into signals suitable for transmission on the telephone network 10. The output of the network interface 20 is connected to one or more network access lines 22 in FIG. 1. The network access lines 22 may comprise any form of transmission line suitable for carrying the expected volume of check image traffic between the sending institution 14 and the telephone network 10. For example, the network access lines 22 may comprise one or more digital transmission lines operating at speeds of about 2400 bits per second to about 1.544 megabits per second or more. Connection to the network 10 may be by an ordinary dial up line or by a dedicated private line." Campbell, et al., Col. 3, lns 17- 31.
47b. connecting the intermediate locations to corresponding remote locations.	"The node 12 contains a frame relay assembler/disassembler 40 which receives frames of digital information representing check images sent by service subscribers to the network 38." Campbell, et al., Col. 4, ln 30-34.
48. A method as in claim 47 wherein said transmitting data from each intermediate location to corresponding central locations comprises the steps of:	See Claim 47
48a. connecting each intermediate location to an external communication network; and	"The images produced by the equipment 18 are directed to a network interface 20 which converts the signals from the equipment 18 into signals suitable for transmission on the telephone network 10. The output of the network interface 20 is connected to one or more network access lines 22 in FIG. 1. The network access lines 22 may comprise any form of transmission line suitable for carrying the

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	expected volume of check image traffic between the sending institution 14 and the telephone network 10. For example, the network access lines 22 may comprise one or more digital transmission lines operating at speeds of about 2400 bits per second to about 1.544 megabits per second or more. Connection to the network 10 may be by an ordinary dial up line or by a dedicated private line." Campbell, et al., Col. 3, lns 17- 31.
48b. connecting the corresponding central locations to the external communication network.	"The node 12 contains a frame relay assembler/disassembler 40 which receives frames of digital information representing check images sent by service subscribers to the network 38." Campbell, et al., Col. 4, ln 30-34.
49. A method as in claim 48 wherein said transmitting data from each intermediate location to, corresponding central locations step further comprises the steps of:	See Claim 48
49a. packaging the transaction data into frames; and	"An image of the front and back faces of the dishonored check is generated by the payor bank 34 and sent to a public switched telephone network in the form of a frame relay network 38. The frame relay network 38 may be the frame relay network in the AT&T switched network. The image of the dishonored check is sent through an appropriate path in the network 38 to the check image processing node 12." Campbell, et al., Col. 4, lns 18-25.
49b. transmitting the frames through the external communication network.	"The node 12 accepts the images transmitted over the frame relay network 38 and uses specific subscriber data to process check images and retransmit those images through the network 38 to their final destination. The node 12 contains a frame relay assembler/disassembler 40 which receives frames of digital information representing check images sent by service subscribers to the network 38. The assembler/disassembler 40 also transmits frames of digital information representing check images to the network 38 after those images have been processed by the node 12." Campbell, et al., Col. 4, lns 18-36.
50. A method as in claim 46 wherein said data is obtained from (a) electronic transactions from credit cards, smart cards and debit cards, signature data or biometric data, or (b) paper transactions from documents and receipts.	"The network 10 contains at least one check image processing node 12 which provides check clearance services. The node 12 receives images of checks from a sending institution 14 transmitted through the network 10. The node 12 processes the check images and sends them to a receiving institution 16." Campbell, et al., Col. 2, lns. 26-32.