(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
14 December 2000 (14.12.2000)

PCT

(10) International Publication Number
WO 00/75835 A2

(51) International Patent Classification[7]: G06F 17/60, G07F 19/00

(21) International Application Number: PCT/US00/15371

(22) International Filing Date: 2 June 2000 (02.06.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/137,575	4 June 1999 (04.06.1999)	US
60/141,380	28 June 1999 (28.06.1999)	US
09/480,883	10 January 2000 (10.01.2000)	US

(71) Applicant: **RECEIPTCITY.COM, INC.** [US/US]; 3051 N. 1st Street, San Jose, CA 95134 (US).

(72) Inventors: **ALLAN, Scott, T.**; 2924 Hillside Drive, Burlingame, CA 94010 (US). **MILES, Jeffery, T.**; 6196 Gilder Drive, San Jose, CA 95123 (US). **STOUT, J., Gregory**; 642 Caliente #23, Sunnyvale, CA 94086 (US). **VALLIANI, Aziz**; 1111 Tewa Court, Fremont, CA 94539 (US). **RAFII, Abbas**; 1546 Wisteria Court, Los Altos, CA 94024 (US). **KAREEMI, Nazim**; 2145 Emerson Street, Palo Alto, CA 94301 (US).

(74) Agents: **KAUFMAN, Michael, A.** et al.; Flehr Hohbach Test Albritton & Herbert LLP, 4 Embarcadero Center, Suite 3400, San Francisco, CA 94111-4187 (US).

(81) Designated States *(national)*: CA, JP.

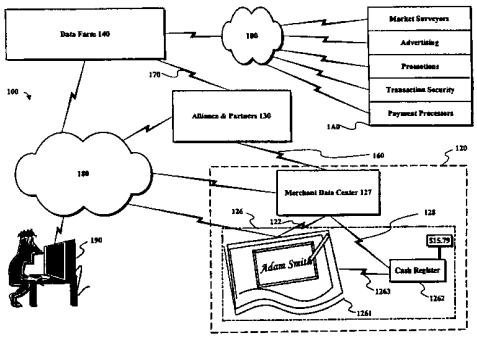
(84) Designated States *(regional)*: European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published:

— *Without international search report and to be republished upon receipt of that report.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A SECURE INTERNET VAULT FOR CONSUMER RECEIPTS, LEGAL DOCUMENTS AND COMMERCE



(57) Abstract: Apparatus and methods for providing an Internet site serving as a secure, electronic vault, repository or file cabinet for consumer's transaction records, legal documents, insurance policies and other secure information that consumers may wish to store on a website. This storage, provides commerce services that save the consumer time. In various embodiments, the invention is as follows: participating merchants send transactions records to the Internet site for viewing from the consumer website. To view the electronic record, the consumer visits the site, identifies himself and selects the record they wish to view. The consumer may search for a particular record using multiple criteria and view an image of the record. Once the record is selected, the consumer may download data related to the record personal-finance programs. This saves time for consumers tracking personal spending or creating expense reports. As transactions are identified and viewed, the website displays advertisements to the consumer. These ads may be targeted, based upon consumer demographics, stated preferences, purchasing history or other methods in order to have a higher probability of relevance to the consumer. The consumer may register for advance notice of special events or reminder services for special shopping occasions (anniversary, birthdays, etc.) with specific merchandise recommendations. Consumers may reorder products or be taken to a merchant's purchasing website for spare parts or accessories-by selecting ("clicking on," for example) the line item of choice of a record.

WO 00/75835 A2

A SECURE INTERNET VAULT FOR CONSUMER RECEIPTS, LEGAL DOCUMENTS AND COMMERCE

A portion of the disclosure of this patent document contains material subject to copyright protection. The copyright owner has no objection to the facsimile reproduction by anyone of the patent document or the patent disclosure, as it appears in the Patent and Trademark Office patent file or records, but otherwise reserves all copyright rights whatsoever.

This application claims the benefit of the filing date(s) of the following earlier application(s):

U.S. Patent Application No. 60/137,575, entitled, "A Web-Enabled Point-of-Sale Device," filed June 4, 1999, naming Scott T. Allan, Timothy L. Droz, Alexander F. Fraikor, Jeffrey T. Miles and J. G. Stout as inventors, with Attorney Docket No. P-68133/MAK/LM, and commonly assigned to @POS.COM of San Jose, California (formerly PenWare, Inc. of Sunnyvale, California); and

U.S. Patent Application No. 60/141,380, entitled, "An Electronic-Receipts Service," filed June 28, 1999, naming Llavanya Fernando and Aziz Valliani as joint inventors, with Attorney Docket No. P-68207/MAK/LM, and commonly assigned to @POS.COM of San Jose, California.

This application is a divisional application of:

U.S. Patent Application No. 09/480,883, entitled, "An Electronic-Receipts Service," filed January 10, 2000, naming Scott T. Allan et al as inventors, with attorney docket number A-65188-1/MAK/LM, and under an obligation of assignment to ReceiptCity.com of San Jose, California, itself a continuation in part of U.S. Patent Application No. 08/957,757, entitled,

"Method and System for Automated Electronic Receipt of Transactions," filed October 24, 1997, naming Aziz Valliani, Abbas Rafii and Nazim Kareemi as joint inventors, with Attorney Docket No. A-65188/MAK/LM, and commonly assigned to @POS.COM (formerly PenWare, Inc. of Sunnyvale, California), itself a continuation in part of U.S. Patent No. 08/853,955, entitled, "Modular Signature and Data-Capture System and Point of Transaction Payment and Reward System," filed May 9, 1997, naming Aziz Valliani, Abbas Rafii and Nazim Kareemi as inventors, with Attorney Docket No. A-63562/MAK, and commonly assigned to @POS.COM of San Jose, California.

U.S. Patent Applications No. 60/137,575, 60/141,380, 08/957,757 and 08/853,955 are incorporated by reference herein.

BACKGROUND

This invention relates to electronic commerce. More specifically, this invention relates to transaction-records depositories for electronic-data warehousing and retrieval and the availability of these depositories and electronic receipts over the web.

Successful world-wide-web ("web") portals appeal to advertisers and other marketers. Such portals provide an advertiser access to large numbers of potential customers targeted according to their buying or browsing interests. For that access, an advertiser will readily pay a web-portal provider.

For the provider of a web portal, the problem becomes one of achieving a scale that provides a potential advertiser with an adequate number of consumer viewers such that the advertiser would pay for access to them.

Turning to a different art, it is believed that worldwide point-of-sale (POS) locations number about seventeen million, eight million of which are in the United States. Retail POS sites account for two million of these

locations, and the remaining six million are located in hotels, health clubs, hospitals, commercial banks, health-care providers, insurance agencies, etc.

Electronic cash registers, no-frills card-swipe electronic-funds-transfer units and signature-capture platforms dominate these U.S. POS locations. A consumer pays presenting cash, a check, a debit or credit card, an electronic-funds transfer card (automated-teller-machine card) or a smart card. The genesis of prior-art cash registers was, of course, the receipt of currency. The register evolved to generate a paper transaction receipt and, still later, to accept and perform the initial processing of paper checks. With the introduction of debit and credit cards, cash registers evolved still further to incorporate card readers. The card readers are integral to the main body of the cash register or are distally located closer to the customer as compared to the register operator but nonetheless connected directly to the cash register. (In the latter distally located incarnations, these card readers are termed "stand besides.") Finally, registers today incorporate signature capture mechanisms to facilitate debit and credit card transactions.

With the introduction of payment by electronic fund transfer, cash registers sprouted stand besides that incorporated not only card readers for debit, credit and EFT cards but also keypads for entry of validating personal identification numbers (PINs).

On a somewhat orthogonal track, the cash registers evolved from paper-receipt generators without any display to their current state: still paper-receipt generators but with simultaneous readout of a (somewhat brief) description of the one item currently being priced along with the price of the item. The stand-beside with the card reader and keypad also includes a small (typically two-line) alphanumeric liquid crystal display (LCD) presenting transaction totals, labels for keys on the keypad and minimal instructions to the consumer on how to proceed.

Estimates of the time a consumer typically spends at various

points-of-sale (POS) platforms range from 30 seconds at convenience stores to 3.5 minutes at supermarkets. Averaging across POS platforms, the consumer spends 1.7 minutes at a POS. Assuming an average of 30 visits per day for the typical POS, these visits represent 240 million individuals per day captured at POS platforms for 1.7 minutes each time in the U.S. alone.

Accordingly, it is desirable to aggregate POS sites to achieve a scale of consumer viewers such that providing content to the aggregate POS sites becomes economically desirable.

Assuming a 10-second impression and an average cost-per-thousand-impressions (CPM) rate of $25, the U.S. POS platforms alone represent 2.4 billion impressions in one day, for a value of nearly $22 billion annually.

It is desirable to leverage the installed base of POS devices and enable them with graphic abilities to permit advertising at a POS location, leveraging a captive audience that is in a "spending mode."

Indeed, it is desirable to further leverage the near ubiquity of POS devices by enabling them to present web-based information (including advertising, surveys and promotions) to the customer and to use web technologies.

A portal provider seeking to operate in a retail environment faces the barrier of the installed base of traditional, non-web-enabled POS payment platforms. Merchants are familiar with their traditional platforms and not overly willing to discard the capital investment that they represent. Many large retailers operate in legacy environments with limited technical functionality in their networks and computers. These limitations include older electronic cash registers with limited memory and proprietary operating systems, as well as legacy software and limited-bandwidth in-store networks.

It is therefore desirable to extend the life of traditional POS platforms to incorporate web technologies and advanced POS-device

capabilities. (This includes placing the web-enabled POS device as a stand beside with limited connection to the non-web-enabled POS payment platform. The web-based data center associates the stand beside and the traditional POS platform (through the merchant data center).)

Once such advanced capability is signature capture. Advances in signature-capture platforms have made such platforms popular in the industry. However, integrating electronic-signature capture and storage into legacy systems can be both complex and costly.

It is therefore desirable to extend the life of traditional POS platforms by getting them to cooperate with stand besides that incorporate web technologies and advanced POS-device capabilities.

Nearly catholic in merchant-consumer interactions, particularly face-to-face transactions, is the generation of a receipt to summarize and memorialize a transaction. Even where the transaction has otherwise been completely electronic (the purchase of an e-ticket on an airline's internet web site, for example) and even where the business has otherwise automated its operations, the generation of a receipt is necessary for many reasons. Receipts facilitate exchanges, returns and the resolution of disputed charges, for example.

With receipts generated for the vast majority of transactions, the presence of so many receipts may be counterproductive. The costs to process, store and retrieve these receipts in a timely manner can force a merchant to adopt policies under which it accepts losses rather than disputes a charge or return.

For example, when a customer disputes a credit transaction with his bank, the bank submits a formal transaction-dispute record on paper to the subject merchant. At some appreciably later time, the merchant then faxes to the bank a copy of the paper transaction receipt that the merchant maintains. The delay can frustrate the customer, and

the on-again, off-again nature of the transaction investigation is inefficient for the bank.

Accordingly, it is desirable to achieve both of the seemingly conflicting goals of reducing customer-service costs, on the one hand, and improving the quality of service to the consumer, on the other hand.

It is desirable to severely reduce or even eliminate altogether the costs associated with paper receipts (including labor, storage, retrieval, transaction disputes and charge back) while nonetheless providing relatively immediate access to the information contained on such paper receipts.

The POS payment terminal model 3100, available from the assignee of the instant application, is an example of a prior-art POS device.

Nichtberger et al., U.S. Re-Issue 34,915 (1995) teaches an electronic display of coupons valid for use in a particular store presented to customers in that store. The display presents coupons after the customer inserts a card into the unit. The customer then selects the coupons he hopes to redeem and then proceeds to shop.

The Nichtberger et al. system records the selection and makes information identifying the customer and the selected coupons available to each of the checkout stations in the system. A receipt identifying the selected coupons may be printed for the customer's convenience.

After the customer has made his purchases, he presents his card to the attendant at the checkout station. A card reader reads the card. The Nichtberger et al. system automatically credits the customer for the previously selected coupons that correspond to actual purchases against which the coupons are to be applied.

Thereafter, information regarding the redeemed coupon is transmitted to an operations center that then automatically debits the manufacturer who distributed the coupons and credits the supermarket (corresponding to the checkout station) where the coupon was redeemed.

(The operations center also enables the initial presentation of video images of the coupons.)

The use of a personal computer (typically an "IBM-compatible personal computer" or PC) as a POS device is known. However, the amount of space available at a POS site is limited and a PC tends to be too big for the available space. Also, a PC customized for POS activities can be costly.

It is desirable, therefore, to better use the limited valuable retail space with POS devices with smaller footprints.

It is desirable to eliminate the expensive magnetic pens used by competitors.

These and other goals of the invention will be readily apparent to one of skill in the art on reading the background above and the description below.

SUMMARY

Herein are described apparatus and methods for providing a an Internet site serving as a secure, electronic vault, repository or file cabinet for consumer's transaction records, legal documents, insurance policies and other secure information that consumers may wish to store on a website. This storage, provides commerce services that save the consumer time.

In various embodiments, the invention is as follows:

Participating merchants send transactions records to the Internet site for viewing from the consumer website. To view the electronic record, the consumer visits the site, identifies himself and selects the record they wish to view. The consumer may search for a particular record using multiple criteria and view an image of the record.

Once the record is selected, the consumer may download data related to the record personal-finance programs. This saves time for

consumers tracking personal spending or creating expense reports.

As transactions are identified and viewed, the website displays advertisements to the consumer. These ads may be targeted, based upon consumer demographics, stated preferences, purchasing history or other methods in order to have a higher probability of relevance to the consumer.

The consumer may register for advance notice of special events or reminder services for special shopping occasions (anniversary, birthdays, etc.) with specific merchandise recommendations.

Consumers may reorder products or be taken to a merchant's purchasing website for spare parts or accessories — by selecting ("clicking on," for example) the line item of choice of a record. The consumer may use an electronic notary service or execute powers of attorney or other legal documents.

A consumer may store electronic records for safekeeping. These records may include insurance policies, wills, banking records and receipts with tax or warranty use, for example. A receipt may contain an electronic signature.

Consumers may upload other items for safekeeping, including digital photos, for example.

Consumers may enter profiles to receive electronic bids from service providers desiring to market to the consumer. With auto insurance, for example, the consumer may submit relevant information (auto type, residence address, age of drover, etc.) as the policy is up for renewal. The consumer may change deductible amount, update driving-record information and receive bids from services providers that match. Then the consumer may select from the bids. The site operator may take a commission from the winning service provider.

Consumers let the service providers present to them and let the service providers determine whether they meet the consumer's buying criteria. This saves the consumer time.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a diagram illustrating an electronic transaction system **100** incorporating one embodiment of the invention.

Figures 2 and **3** illustrate embodiments of the transaction computer (TC) portion of a web-enabled interactive point-of-sale (iPOS) device.

Figure 4 is a block diagram illustrating the subsystems of a generalized transaction computer in a POS system.

Figure 5 is a block diagram illustrating an electronic-transaction system that is an expansion of the electronic-transaction system of **Figure 1**.

Figure 6 illustrates the hierarchy and relative breadth of control of roles.

Figure 7 illustrates the point at which the log is updated in the sequence from searching for transaction details to receiving the same.

Figures 8 and **9** show trees of web pages for the electronic-receipts service according to one embodiment. **Figure 8** shows the web pages accessible from the home page of the service.

Figure 9 shows the web pages accessible from the server of the electronics-receipts service.

Figures WP1 - WP30 are example web pages for the electronic-receipts service, particularly from the viewpoint of a user of the service.

Figures A1 - A3 show the relationship of web pages of **Figures WP1 - WP16** and **WP20 - WP28** to each other.

DESCRIPTION OF SPECIFIC EMBODIMENTS

TABLE OF CONTENTS

Abbreviations 10
Definitions 11
Overview 12
Devices 16
Web-Enabled Interactive Point-of-Sale Device 16
An Electronic-Transaction System 19
The Data Farm 20
The Merchant Data Center 20
Protocols 21
Primary-Channel Priority 21
Electronic-Receipts (e-Receipts) Service 23
Adding a New Site Group 27
Configuring a Site 28
The Electronic-Receipts Storage Service 28
The Electronic-Receipts Search Service 31
Electronic Advertising and Market Research 31
The Secure-Internet-Vault Service 32
Expanded Illustration 33
WHAT IS CLAIMED IS 40

ABBREVIATIONS

Following are abbreviations which may appear in this description, along with their expanded meaning:

eReceipts, electronic receipts.

POS, point of sale.

SIV, secure internet vault.

TC, transaction computer.

TUID, transaction-unique identifiers.

DEFINITIONS

Administrator:	A manager of group users and users in sites.
Administrator manager:	A merchant employee responsible for a site group. An administrator manager may manage administrators, users and sites.
Batch:	See "offline."
Field map:	See "mapping."
Group guest:	A user that can search and see information from all sites in a group.
Group user:	See "group guest."
Guest:	A user that can see information from one site. "Guest" and "group user" are used interchangeably.
Mapping:	The use of generic fields in the data-farm database, which fields are available for a site to use. For example, only Federated uses "STT" to identify a transaction. The service does not store "STT" as a field but rather gives Federated a generic field and allows the merchant to refer to it with the store-specific name.
Merchant:	The store or location entity storing transactional information in electronic receipts. The user usually is located at a merchant or merchant headquarters site.
Offline:	The store-and-forward model of transferring information to and/or from the Web host.
Row:	A dictionary of strings. In one embodiment, the row is the foundation of information transfer for eReceipts objects.
Search service:	The visual and interactive part of the data farm, which

part executes on a web server and browser.

Service administrator: The data-farm person responsible for administrating data-farm internal data (for example, site groups, administrator-managers).

Site: A specific store within a site group, q.v. For example, Macy's store #182.

Site group: The group of sites that compose a merchant's stores. Sometimes a client but usually a merchant.

Storage service: The part of the data farm that stores transactional and consumer information in the databases.

Table: A dictionary of rows.

Transaction keys: The keys in a transaction that make the record unique from all others. In one embodiment of the data farm, the transaction keys are the TUIDs. Each consumer has his own transaction key (which the data farm refers to internally as the transaction indexes).

User: The individual accessing the electronic-receipts service through a web browser.

OVERVIEW

Figure 1 is a diagram illustrating an electronic transaction system **100** incorporating one embodiment of the invention. The system **100** includes one or more merchants **120**, optional, intermediate data center(s) **130**, a central data farm **140** and a personal computer **190**. The system **100** also includes communications links **160**, **170** and an internet **180**.

Each merchant **120** and some or all of the optional intermediate partner data center(s) **130** communicate over the communications link **160**, typically a private network. The optional intermediate partner data center(s) **130** communicate(s) with the data farm **140** using the communications link **170**, also typically a private network. (Where no intermediate data center **130** is present, the

merchant(s) **120** and the data farm **140** communicate directly using the then-unitary communications links **160**, **170**.)

In addition to communicating using the private networks **160**, **170**, the merchant(s) **120**, any optional intermediate data center(s) **130** and the data farm **140** are each communicatively connected as hosts on the internet 180, allowing any one to communicate with any other one through that internet 180. (The personal computer **190** is viewed as a host on the internet 180, although its actual status is more likely to depend on the directness of its connection to that internet 180, for example, through optional service providers not shown.)

A merchant **120** includes a merchant data center **127** and one or more point-of-sale (POS) systems **126**. A POS system **126** and the merchant data center **127** communicate over a communications link **128** (typically a serial link) or a communications link **122**. In addition to communicating using the link(s) **128**, **122**, the POS system **126** is communicatively connected as a host on the internet **180**, allowing communication with any other host on the internet **180**.

In one embodiment, the POS system **126** includes a portion **1262** that is typically a non-web-enabled cash register (although the portion **1262** may be web-enabled). An optionally web-enabled portion **1261** is herein termed the "transaction computer." A communications link **1263** may communicatively couple the portions **1261**, **1262**. The web-enabled transaction computer **1261** connects the POS system **126** to the internet **180**.

The POS system **126** may integrate the typically non-web-enabled ("cash-register") and web-enabled portions **1262**, **1261** of the POS payment platform, may maintain them distinct from but directly connected to each other or may only associate the non-web-enabled and web-enabled portions **1262**, **1261** of the POS platform (i.e., indirectly connect the cash-register and interactive web-enabled portions **1262**, **1261** of the payment platform.) Alternatively, the POS system **126** may omit the non-

web-enabled portion **1262** of the POS platform altogether, as would typically be the case with small merchants **120**.

An alternative embodiment of the POS system **126** is as a web server where consumers can purchase products.

A walk-through of a typical transaction illustrates the system **100** in situ: A customer of a merchant **120** enters the merchant **120**'s POS location or web site having the POS system **126**. The customer wishes to purchase a selection of the merchant **120**'s goods.

The customer presents to the merchant **120**'s sales agent the selected goods. The sales agent identifies each each of the selected items, by scanning each past a bar-code scanner (not shown) in the POS system **126**, for example. (The currently popular form of marking items for subsequent scanning for purchase is by Uniform Product Code (UPC). The use of UPC is well known in the art and is, therefore, not described herein.) Say, the customer is buying a personal portable Walkman (tm)-type stereo, inter alia.

With each item identified, the POS system **126** and the merchant data center **127** communicate. The result of the communications is that the customer is shown a description of the item last identified, its price, a running total of items identified for purchase so far, a running tax amount, etc. These descriptions may display on the transaction computer **126**.

The POS system **126** also communicates with the data farm **140** as the items are identified. The result of the communications is that the customer is presented with content that the data center **140** determines is appropriate for the customer buying the identified items. Because the customer is expected to be at the POS system **126** about 90 seconds, the data center **140** instructs the POS system **126** to display a multiplicity of distinct contents. For example, the customer may see an instantly redeemable coupon for the personal portable stereo that he is currently purchasing. He may see a coupon for the type of batteries that power the

portable stereo he is purchasing. He may see a survey from the merchant **120** regarding service at the merchant **120**'s store (or web site) or from a manufacturer **130** regarding consumer electronics. He may see an interactive advertisement.

In a batch system **100**, items are identified and stored in the merchant data center **127** and bulk (batch) data is communicated to the data farm **140** at predetermined times.

Each transmitted content encourages the customer to attend to and, as appropriate, to indicate consent to its proposition. For the case of the instantly redeemable coupon, the content encourages the customer to select the coupon by touching an area of the screen of the POS system **126** or clicking on an area of a web page, for example.

Any response to a content is communicated to the data farm **140**. The farm **140** may alter the current or any subsequent presentation of content to conform with the response it received. (The lack of a response, which is of itself useful information, may or may not be explicitly communicated to the data farm **140**.) Additionally or alternatively, the interactive portion **1261** may be so responsive.

At some point in the transaction, usually after the sales agent has identified all of the items that the customer selected and the POS system **126** has displayed the transaction summary, including a total, the customer presents a form of payment. Where the payment is a credit card, the customer swipes the card through the POS system **126** and signs electronically, allowing the POS system **126** to capture his signature. The POS system **126** forwards the transaction data and captured electronic signature to any of the merchant data center **120**, the optional partner data centers **130** and the data farm **140**, directly or through forwarding.

Where the customer presents an electronic-funds-transfer card for payment, he swipes the card through the POS system **126** and enters his validating PIN number.

After the form of payment has been accepted, the POS system

may ask the customer whether he would like a printed receipt, informing the customer that the merchant **120** will maintain an electronic, non-paper receipt available to the customer at all times (should the customer desire this availability), regardless of the customer's preference for a printed receipt.

On completion of the transaction, the POS system **126** forwards to the data center **140** such additional information as necessary to allow the data center **140** to reconstruct the transaction from its records. (This may happen immediately or later in batch processing.) The data center **140** thus may store data from multiple merchants **120.**

Later, the consumer may visit a website to access this receipt for initiating a charge dispute, downloading into a personal finance application, returning an item, reporting taxes, etc. The merchant **120** can also visit a web site to view the receipt.

Where the merchant **120** is a service provider rather than a purveyor of goods, a typical transaction may instead proceed as follows: An estates-and-trusts law firm **120** completes a will for a client. The client executes the will, signing electronically. The will (including the signature) is transmitted to the data farm **140** for storage and for viewing using the client's personal computer **190.**

Identification of the customer may occur early in the transaction. This early identification may help target the contents for display to the identified customer.

DEVICES

- Web-Enabled Interactive Point-of-Sale Device

Figures 2 and **3** illustrate embodiments of the transaction computer (TC) **1261** of a web-enabled interactive POS system **126.**

Figure 2 is an illustration of a TC **200** of a POS system **126** according to one embodiment of the invention. The TC **200** includes a screen **210**, a display **220**, a touch screen **230** and electronic-signature-

capture system **240**, a card reader **250**, a CPU **260**, memory **270**, a pen **2A0** and a stand **290**.

The display **220** may be a full or partial VGA, SVGA or XGA display, in some embodiments one-quarter VGA. The display **220** may be monochromatic, limited color or full color, but preferably the last.

The touch system (including the touch screen **230** and its supporting hardware and software) translates contact with the screen **210** into coordinates in the display **220**.

The electronic signature-capture system is explained more fully in U.S. Patent Application No. 08/853,955, incorporated by reference herein.

Figure 4 is a block diagram illustrating the subsystems of a generalized transaction computer **200** or **300** in a POS system **126**. The TC **200, 300** includes a processor subsystem **510**, a security subsystem **520**, an input subsystem **530**, an output subsystem **540**, a payment subsystem **550**, a communications subsystem **560** and a bus **570**. The bus **570** communicatively couples all of the security, input, output, payment and communications subsystems **520, 530, 540, 550, 560** to each other and to the processor subsystem **510**.

The processor subsystem **510** includes a CPU **511**, a memory **512** and a bus **513**. The memory **512** includes random-access memory (RAM) **5122** and an optional flash memory **5121**. The bus **513** communicatively couples the CPU **511** and the memory **512** and may be wholly or partly integral with the bus **570**.

The memory **512** includes software (not shown) as follows: a web-directed language processor, a protocols stack separate from or integral with the language processor, an input/output subsystem capable of driving ports in the communications subsystem **560** and other drivers as necessary to operate the input, output, payment and security subsystems **530, 540, 550, 560**. Hyper-Text Markup Language (HTML) and Java (available from Sun Microsystems of Mountain View, CA) are the web-directed languages currently enjoying the most popularity, while the

HyperText Transmission Protocol (HTTP), Transmission and Control Protocol (TCP) and Internet Protocol (IP) are currently the most popular protocols. Extensible Markup Language (XML) and Secure Socket Layers (SSL) are examples of other applicable, popular protocols.

The memory **512** may also include application software (not shown) for processing data from the input subsystem **530**. For example, certain application software can convert an electronic signature that the subsystem **530** captured into its equivalent ASCII character sequence.

The input subsystem **530** may include a keypad (not shown), a touch screen 531, a keyboard (not shown) and a voice-recognition system (not shown).

The output subsystem **540** may include a display 541 that is preferably a color liquid crystal display (LCD), a sound system 542 that is preferably a speaker and a bus **543**. The bus 543 communicatively couples the display 541 and the sound system 542 to the bus **570** and may be wholly or partly integral with the bus **570**.

The payment subsystem **550** may include a magnetic-strip reader 551, a smart-card processor 552 and a bus 553. The bus 553 communicatively couples the magnetic-strip reader 551, the smart-card processor 552 and the bus **570**. The bus 553 may be wholly or partly integral with the bus **570**. (In one embodiment, the input system can also handle the other types of payment mentioned herein.)

The communications subsystem **560** includes a serial port **564** that is preferably an RS-232 or RS-485 port, an auxiliary port **563** that is preferably an RS-232 port, a parallel port **562** (preferably a Universal Serial Bus (USB) port), a high-speed communications port **561** and a bus **565**. The bus **565** communicatively couples the ports **564**, **563**, **562**, **561** to the bus **570**. In some embodiments, the bus **565** is wholly or partly integral with the bus **570**.

In some embodiments, the TC **200** includes or supports at least one of the following peripherals (not shown): a check reader, a printer, a

scanner and a system for electronically capturing biogenic content such as fingerprints or retinal images.

The touch pad **230, 531** typically underlies the display **541**, although it need not be co-extensive with the display **541**. Where, for example, the display **541** is full VGA or XGA and the touch pad **230, 531** is only one-quarter so, that portion of the display **541** over the touch pad **230, 531** may be reserved for touch-pad activities such as electronic-signature capture on an HTML page not otherwise requiring touch-pad support.

- **An Electronic-Transaction System**

Figure 5 is a block diagram illustrating an electronic-transaction system **600** that expands on the electronic-transaction system **100** of **Figure 1**. The system **600** includes a merchant **120** and a web-enabled data farm **140**. The system **600** also includes communications links **160/170** and an internet 180.

A brick-and-mortar merchant **120** includes an interactive POS system **126** (here elided to its constituent TC **1261**), a dumb host 121, a smart host 122, a store controller 123 and a corporate server 124, as well as a communications link **128**. Each of the POS system **126**, smart host 122, store controller 123 and corporate server 124 includes a software agent with sufficient intelligence to communicate with the data farm **140**.

A web-based merchant **120** includes a POS system/server **126/124**. The POS system/server **126/124** includes a software agent with sufficient intelligence to communicate with the data farm **140**.

The merchant **120** and the data farm **140** communicate directly using the communications links **160/170**.

- The Data Farm

The data farm **140** maintains a database **141** of one or more of the following and similar documents: transaction records, legal documents, banking records, credit-card records, bills, photographs, consumer data and billing information. The transaction records include receipts useable for tax, warranty or expense-report purposes. The legal documents include documents such as wills, insurance polices and contracts.

The data farm **140** stores the documents in electronic text form (typically when the document was created electronically as in a word processor) or in a digital-image form (as results from scanning or faxing, for example). An electronic signature may accompany any particular document, and a document (with or without an accompanying electronic signature) may have an authenticating digital signature. XML is an example electronic-text format.

In securely maintaining all of these documents important to the consumer, the data farm **140** takes on the nature of a vault. As such, services related to the storage of documents are herein termed "secure internet-vault services."

- The Merchant Data Center

For the electronic-receipts service, the merchant data center **120** maintains a database **125** of product UPCs, SKUs or like codes, product descriptions and product prices for products that the merchant stocks. The merchant data center **120** can thus translate a given product code from a customer-selected product into a product description and a product price. (The product description is typically not more than ten to twenty characters in length).

The merchant data center **120** also maintains a database of POS platforms to which it responds. Thus, when the POS system **126** sends a product code to the merchant data center **120**, the center **120** recognizes

that iPOS platform and responds to the same.

The merchant data center **120** includes first, second and third communications ports (not shown) and a processor (not shown). The processor and the first communications port enable communications with the POS system **126** over the communications link **128**. The processor and second communications port enable communications with any partners over communications link **160**, and the processor and third communications port enable communications over the internet 180.

Where the POS platform is capable, some of this intelligence may reside in the platform.

PROTOCOLS

The protocols enabling the invention are more fully described below.

- **Primary-Channel Priority**

As illustrated in **Figure 1**, the TC **1261** receives input from three sources: the customer, the merchant data center **127** (via the communications links **128**, **1263**) and the data farm **140** (over the internet 180). As information critical to the transaction (for example, instructions to go into electronic-signature-capture mode) flows over the link **1263**, that link **1263** between the merchant and the TC **1261** is herein termed the "primary channel."

As bandwidth necessary on the primary channel to carry the expected command instructions is very low, the primary channel is preferably a low-cost, low-speed channel such as RS-232 or RS-485.

The second channel connected to the TC, the internet 180, carries customer-targeted information secondary to the transaction (insurance claims, loyalty-program details, new credit-card-account offers, for example) and returns customer-supplied information (for example, survey responses, coupon selections and menu choices). As this

information is secondary to the transaction, this channel is herein termed the "secondary channel."

The second channel provides a high bandwidth in order to carry the expected graphics- and/or audio-intensive web information.

As described above, the TC **1261** displays information from both the primary and secondary channels simultaneously to the customer. In one embodiment, the (second) area of the TC display used for displaying secondary (customer-targeted) information overlaps areas of the TC display used for primary (transaction-critical) information. For example, with the transaction drawing to a close, the customer needs to use the signature-capture portion of the input subsystem 531, but the area of the TC display used for signature capture is actively being used to display an advertisement.

As another example, even where the first and second areas for the first and second channels do not overlap, the CPU **511** may be so involved in the processing of information from the secondary channel, it may not respond to information available on the primary channel in a satisfactory human-factors manner.

The issue then is one of control. The TC **1261** is designed such that information (including instructions) received on the primary channel overrides information (again, including instructions) received on the secondary channel. Thus, the customer and (perhaps more importantly) the customers in line behind the customer do not have to wait for the secondary information processing to complete before the customer completes his business at the POS site.

A real-time operating system in the TC **1261** facilitates this primary-channel priority. When running both the low-speed primary port **564** and the high-speed secondary port **561** from interrupts, giving the low-speed primary port **564** a higher priority than the high-speed port **561** enables the CPU **511** to handle more expeditiously the transaction-critical primary-port data. Similarly, placing the low-speed primary port on

interrupts while polling the high-speed secondary port enables the CPU **511** to handle more expeditiously the primary-port data.

Giving a low-speed port higher priority than the high-speed port is counter to the general tenets of computer science: Usually, the better use of the CPU **511**'s cycles is to handle the high-bandwidth channel before the low-bandwidth channel. More data is received per cycle, and the potential bandwidth of the high-speed channel is realized as fully as possible. The counter-intuitive approach nonetheless achieves the ends of the invention.

Significant amounts of data may be available at the high-bandwidth channel, data to which the CPU **511** cannot immediately attend. Accordingly, the communications subsystem **560** may include a buffer **566** associated with the high-bandwidth channel in order to capture that available data without involving a CPU **511** committed to higher-priority data. Such a buffer **566** helps to realize the high bandwidth of channel **561**.

- Electronic-Receipts (e-Receipts) Service

The electronic-receipts service described herein is a web server-based application that communicates with a client using a web-directed language. Typically, the client is a web browser and the web-directed language is HTML or XML. Among the objectives of the electronic-receipts service are the delivery of the receipt to the browser and a focus on the needs of the merchant.

The electronic-receipts service provides consumer-transaction details from a central database and presents this transaction information to the service user (typically, the consumer that performed the transaction). Transaction information may include the date and time of the transaction, as well as merchant-oriented fields, rendered signatures and line items. The gathering of information may apply to "physical" transaction occurring at a merchant location as well as to cyberspace transactions occurring at an

e-commerce website.

When fully deployed as envisioned, the electronic-receipts service has many users, sites and transactions.

-- **Roles**

The electronics-receipt service establishes hierarchical roles for a user. In one embodiment, there are five (5) possible roles: service administrator, administrator-manager, administrator, guest and data.

Figure 6 illustrates the hierarchy and relative breadth of control of each of these roles. In **Figure 6**, a higher level has control over lower levels. For example, an administrator-manager's control includes and exceeds any control a guest has.

The exception is that all roles — except a service administrator — are able to search for transactions.

--- **Data Role**

To prevent each user from having to have access to information for every table in its database, the electronic-receipts service uses the data-access roles of "system," "data" and "administration" to facilitate a user's access to data.

The system-data role gives access to the relational-database management system (RDMS) engine to read and initialize the current user's system. It also allows access to update the logs.

The data role has permission to read data tables (for example, transaction, line-item and non-searchable tables).

The administration-data role has permission to read and update information related to the administration of the electronic-receipts service.

--- Guest Role

The guest role has basic access and viewing rights to the electronic-receipts service. The guest role may be used, for example, for short-term access for executives or remote support personnel.

--- Administrator Role

The administrator role has the responsibility to maintain group users and users.

--- Administrator-Manager Role

The administrator-manager has the additional responsibilities of maintaining sites and administrators and of handling exceptions. As to the last, if the electronic-receipts storage service has any exceptions, the administrator-manager handles the data corrections and provides the corrected data to the electronic-receipts storage service.

Where the administrator manager does not create administrators, the administrator manager takes on the responsibilities of those absent administrators.

--- Service-Administrator Role

An-electronic receipts-service service administrator has the most control over the electronic-receipts service. A service administrator's responsibilities include maintaining all of the role data, the field maps and administrator-managers. A service administrator's responsibilities also include setting up new site groups and search capabilities.

The administration of site groups includes adding, removing and changing a site group (including adding a field map for a site group) and adding an administrator-manager for a site group. In one embodiment, the service administrator is the only role that adds, removes or changes site groups. It is also the only role that removes sites.

-- Security

Security is a prime focus on electronic-receipts service. Most security relating to the transmitted data relies on the Secure Socket Layers Protocol, available from Netscape Communications Corporation (now a part of America Online, Dulles, VA, itself announced to merge with Time Warner of New York, NY) and well known in the art. To protect consumer information, for example, the electronic-receipts service may mask a portion(s) of a credit-card number or apply a grid over a signature. The service may restrict access to user information by requiring a password (matching the user name). Also, as described above, access to database data is restricted by role — in the manner of a need-to-know policy. Merchants can have an administrator that can give access to outside entities to their data, to payment processors, auditors credit-card companies, as a few examples.

-- Logging

The electronics-receipt service generates billing events to enable its billing system to assemble information for billing purposes. The billing system charges only once for successive views of a transaction.

A user's viewing a transaction or receipt triggers the billing event reflecting that viewing. **Figure 7** illustrates the point at which the billing event is created in the sequence from searching for transaction details to receiving the same. The data in the billing events contain all the information needed to track and bill for the recreation of a consumer's transaction and receipt.

Figures 8 and **9** each show a tree of web pages for the electronic-receipts service according to one embodiment, particularly for the administration of the service. **Figure 8** shows the site map to the electronic-receipt service. Users typically start at the Home Page and select pages as desired. **Figure 9** shows the site map for the administrator's

access to the electronic-receipts administrative functions, allowing such administrators to look up, add and delete users.

The Appendix attached hereto includes **Figures A1 - A3** as well as **Figures WP1 - WP30**. **Figures WP1 - WP30** are example web pages for the electronic-receipts service, particularly from the viewpoint of a user of the service. **Figures A1 - A3** show the relationship of the web pages of **Figures WP1 - WP16** and **WP20 - WP28** to each other. To avoid repetition and clutter, **Figures A1 - A3** omit the menu frame at the extreme left of **Figures WP1 - WP30** after detailing each version of the menu frame when it first appears. Similarly, **Figures A1 - A3** omit the menu bar across the top of the Welcome (**Figure WP5**) and dependent web pages — after detailing the menu bar when it first appears. Further, **Figures A1 - A3** omit self-referential links on a web page: for example, "Home" on the homepage (**Figure WP1**) and "My Personal Home Page" on the welcome web page (**Figure WP5**).

Figure WP30, WP29 and **WP17** are alternate embodiments of the Receipt-Details webpage of **Figure WP8**. Likewise, **Figure WP18** is an alternate embodiment of the Personal-Reminders webpage of **Figure WP14**, and **Figure WP19** an alternate of the View-New-Receipts **Figure WP7**.

The Appendix is incorporated herein by reference.

-- Adding a New Site Group

When the electronics-receipts service adds a new site group, it follows the following processes: The service administrator adds a new site group and adds a field mapping and a super-administrator manager for the site group. The administrator manager in turn adds sites and administrators for the site group. The administrator(s) add(s) users for the site group as necessary and add(s) users for each site in the site group. (Where an administrator manager does not add an administrator, the administrator manager takes on the role of such an administrator.)

--- Configuring a Site

The electronic-receipts service provides a new site with its site identification ("site ID"). The new site stores its site ID into a location that the machine may use when talking to the electronic-receipts service. The site may get the site ID manually (that is to say that the administrator himself seeks the site ID from the electronic-receipts service), or the site may get the site ID automatically. In the latter case, the site accesses an electronic-receipts-service service. The machine contacts the service, gives it its site name and requests a site ID. (The machine may encrypt the site ID before storing the same.)

-- The Electronic-Receipts Storage Service

The electronic-receipt storage service receives transaction information from a POS platform or bulk data transfer (i.e., batch) from a merchant and stores the information in the data farm, typically in a relational-database management system (RDBMS).

The electronic-receipts service may indirectly store the information. An electronic-receipts transaction service listens for transaction messages. The transaction service disassembles the message and stores the data into a database.

Where there is no temporary database the data is incorporated into the permanent database. Exceptions in either processing (temporary or non-temporary) the merchant or the data farm handles automatically.

The transaction service may be a combination of two services: a temporary-database service and a permanent-database service. When the transaction service gets a message, it tells the temporary-database service which then stores the data into a temporary database.

The electronic-receipts service periodically merges the temporary-database data with the real electronic-receipts-service

database. This merge happens since batch processing also feeds data into the temporary-transaction database. This merge and store is the function of the permanent-database service.

A site and the electronic-receipts service may communicate using messages that are name-value pairs. The following is an example of a transaction communication used to create a transaction table:

SiteID=981&TUID1=8171123&TUID2=0&TranType=0&PayType=1&AcctNum=4430928209&ExprDate=1999/12/02& . . .

The temporary-database service splits the name-value pairs apart and places the data into an SQL-server table.

The set of names for such transaction-table name-value pairs may include the following: SiteGpID (the site group ID), SiteID (the site ID), TUID1 and TUID2 (transaction unique identifiers), TranType (the transaction type), DeptID (the ID of the department where the transaction occurred), AcctType (the account type), AcctNum (the account number), ExprDate (the expiration date of the card), AuthCode (the authorization code), AuthSrc (the ID of the authorizer), MerchID (the merchant ID), DateStmp (stamped date and time), and Customer_Signature. The set of names also includes site-defined names mapped to generic fields.

Of the foregoing, the electronic-receipts service requires a site to provide the SiteID, TUID1, TUID2, TranType and AcctType pairs. The service itself provides the SiteGpID pair. The remaining pairs the site itself provides at its option.

The transaction type may be a sales, return or void. The department ID may be unspecified or one of a dictionary of department IDs. The account type may include credit card, cash, debit card, check, smart card or unspecified. The account number is the number of the customer's payment card, checking account, proprietary card, etc. The ID of the Authorizer is, for example, NPC, FirstData or unspecified.

The service maintains a table of line items. The set of names for line-item-table name-value pairs may include the following: TUID1, TUID2, LineNum (the line number for each item in a transaction), Descr (the description of the item), SKU (stock keeping unit), UPC (the Universal Product Code for the item) and DeptID.

Of the foregoing, the electronic-receipts service requires a site to provide the TUID1, TUID2 and Descr pairs. The service itself generates the LineNum pair. The remaining pairs the site itself provides at its option.

The permanent-database service periodically looks at the temporary-database data and merges the information into the electronic-receipts service permanent database. It may add to the data (for example, SiteGpID) and split the data as necessary (customer payment information, for example). It also processes exceptions by logging all bad data with a comment for handling at a later time.

The permanent-database service may back up and then lock the temporary database. The permanent-database service reads the first record and validates field names. (Of course, the INSERT() function for the permanent database typically performs its own field validation.) The service uses the SiteID to find the SiteGpID. The service splits data apart and inserts a transaction record, creating an exception record as necessary. A payment record is inserted, again with an exception record created as necessary. The service updates the log for the billing system.

If the table is not locked, the record is deleted and the service moves on to the next record. If the table is locked, the service clears the table at the end of the merge.

In an alternative embodiment, the permanent-database service again backs up and then locks the temporary database. The service uses the SiteID to find the SiteGpID. The service splits data apart (Trans and Payment). The service runs an INSERT() or BATCH_MERGE() against the temporary table into the split-data tables, with exceptions recorded as necessary. The temporary table is then cleared. This

alternative embodiment has the advantage of speed.

-- **The Electronic-Receipts Search Service**

The search service allows an electronic-receipts-service user to search the electronic receipts data base. The search service handles presentations to the user. Broadly speaking, the search service involves all that the user sees and interacts with.

A user logs in before using the electronics-receipt service. This allows the electronics-receipt service to authorize, authenticate and validate the user. Once logged in, the service determines the user's role and routes the user routed to the appropriate pages.

-Electronic Advertising and Market Research

The TC **200**, **300** displays graphical content (including targeted advertising) to customers. This may include dynamic offers for goods that a consumer may purchase and have shipped to his home. The data farm **140**'s access to purchasing data by line item or demographics enables the farm **140** to target content to a particular consumer.

The TC **200**, **300** engages the customer to extract information such as customer-survey responses.

At the other end, namely, at the computer **190**, the electronic-receipts or secure internet-vault services may display content (including graphics and targeted advertising) to the consumer. A service may target the content based upon the consumer's demographics, stated preferences, purchasing history or inventory of documents in the secure internet vault, based upon any method for determining that particular information is more likely to be relevant to the consumer than other information or based upon consumer-ignorant methods, including random selection.

Merchants and advertisers may subsidize the cost of the electronic-receipts and secure internet-vault services, although a service

may assess a consumer a fee for storing data above a predetermined amount. Also, a service may charge network access fees —monthly, for example — or per-transaction service fees.

- **The Secure-Internet-Vault Service**

A consumer may register for advance notice of special events or for reminders of special occasions. "Special events" are events of which the consumer would typically not have knowledge, while "special occasions" are dates which the consumer supplies to the service. The service may remind the customer of a special occasion, and given the type of occasion (birthday, graduation, twenty-fifth anniversary, for example), recommend gifts for the occasion.

A consumer may register to receive bids from merchants desiring to sell to the consumer. For example, where the consumer maintains his automobile insurance policy in the secure internet vault, the service may note its expiration date, type of vehicle, address, age of driver(s) and other profile information. With the consumer's permission, the service provides this profile information to interested insurers who then provide bids to the consumer. The consumer then may select from the resulting bids. (Of course, the consumer can manually provide profile information. The operator of the services' site may take a commission from the winning merchant.)

Prior-art services represent multiple merchants and permit a consumer to shop among these merchants. With the instant invention, a consumer permits the merchants to present to him, and an individual merchant determines whether it meets the consumer's buying criteria. This invention schema saves the consumer's time.

- Expanded Illustration

With the descriptions of devices and protocols given herein, a more detailed version of the illustrative overview walk-through follows: A customer of a merchant **120** enters the merchant **120**'s POS location or web site having the POS system **126**. The customer wishes to purchase a selection of the merchant **120**'s goods.

The customer presents to the merchant **120**'s sales agent the selected goods. The sales agent identifies each of the selected items, by scanning each past the bar-code scanner (not shown) in the POS system **126**, for example. The "cash-register" portion **1262** enters the UPC information of the item into its RAM. As before, the customer is buying a personal portable Walkman (tm)-type stereo.

With each item identified, the POS system **126** and the merchant data center **127** communicate over the link **128**. The "cash-register" portion **1262** presents the item's UPC information to the merchant data center **127**.

The merchant data center **127** responds with the item's description and price. The POS system **126** shows the item description and price to the customer, possibly along with a running sum of items identified so far, a running tax amount, etc, in a first area of its display. This first area is typically the display of the "cash-register" portion **1262**.

The merchant data center **127** and the data farm **140** communicate as the items are identified. The data center **127** forwards the UPC product information over the internet 180 (or other communications link) to the data farm **140**. The farm **140** determines what content graphics to show the customer buying the item with the received UPC product information (and buying any other items associated with this transaction).

The data farm **140** communicates with the TC **1261** as the items are identified. The TC-data farm communications use the internet 180. The farm **140** relays to the TC **1261** the content it determined to show the

customer.

With the customer expected to be at the POS system **126** for 90 seconds, the data center **140** forwards to the TC **1261** a multiplicity of distinct content graphics, say, a coupon for the personal portable stereo and a coupon for batteries for the portable stereo. The data farm **140** presents these to the TC **1261** in HTML and/or Java (tm) (that is to say, some predetermined web-directed language(s)), and the TC **1261** converts the HTML/Java (tm) instructions into a (multi-)media presentation for the customer on a second area of the display. This second area is typically the display **220** of the transaction computer.

The data farm **140** may divide this second area so that multiple contents are visible to the customer simultaneously. An acceptable way of implementing these multiple sub-divisions is using frames, as is known in the web-browser art. Indeed, one frame may present content that the non-web-enabled "cash-register" portion **1262** of the POS system **126** forwards while another frame may present content that the web-enabled TC **1261** forwards.

In one embodiment, the multiple content graphics are all presented substantially simultaneously to the customer. In another embodiment, subsets of the multiple content graphics are presented over time. (The POS system shows each subset for a predetermined period of time.) In the degenerate case, the subsets consists of exactly one content graphics, and the multiplicity of content graphics is presented serially.

The data farm **140** may form an expectation for the amount of time the customer will spend at the iPOS platform and develop a multiplicity of content graphics accordingly. However, the data farm **140** typically will not know the actual amount of time beforehand. It may be shorter than the expected 90 seconds. In this situation, the TC **1261** may not have enough time to present all of the multiplicity of content graphics received from the data farm **140**.

On the other hand, the customer may spend longer than the

expected 90 seconds at the POS system **126**. In this situation, the TC **1261** may have more time than necessary to present to the customer all of the multiplicity of content graphics received from the data farm **140**. The TC **1261** may re-present some or even all of the multiplicity of content graphics.

The information that the data farm **140** directs the TC **1261** to present may be only visual information, only audio information, or a combination of visual and audio information. Indeed, in one embodiment, the data farm **140** views the TC **1261** as a fully capable web browser and directs the TC **1261** as any web content provider would direct a web browser. (A particularly useful piece of content is an attention-grabbing burst of sound -- possibly with an animated visual -- that draws the customer's eyes to the display of the TC **1261**.)

By an express communication or by the lack of any appropriate communication, the TC **1261** informs the data farm **140** that the user has not responded to any of the content received from the farm **140** and that the transaction is continuing (that is to say, the user is still at the POS system **126**). The data farm **140** then determines that the next content to forward to the TC **1261** is, say, a survey question or a series of survey questions from the merchant **120** or from the manufacturer **130** regarding consumer electronics. (The farm **140** has previously received the survey from the manufacturer **130**, possibly over the internet 180, or gets it as it needs it from the manufacturer **130** or other participant **1A0** over the internet 180.) The farm forwards the survey in the web-directed language to the TC **1261**.

The TC converts the instructions from the farm **140** into a presentation for the customer. Disinclined to accept coupons but inclined to complete surveys, the hypothetical customer uses, say, the touch screen portion **531** of the TC input subsystem **530** to complete the survey question(s).

As the survey is being completed or after the customer

indicates that the survey question(s) has (have) been completed (or possibly both), the TC **1261** communicates to the data farm **140** the consumer's response to the survey results. The farm **140** may alter any subsequent presentation of graphics content to conform with the response it received.

For example, the customer may have indicated on the survey that he is interested in new personal-stereo technologies. The data farm **140** forwards to the TC **1261** an advertisement for an MP3 player and for a DAT player. The TC **1261** displays these advertisements in the second area **220** of its display.

All the while, the sales agent continues to identify items for purchase into the system **100**. Where, for example, the agent identifies a large pack of batteries subsequent to identifying the personal stereo, the data farm **140** may determine that content regarding a coupon for batteries is inappropriate. The farm **140** then re-instructs the TC **1261** not to display the content for batteries previously forwarded.

The graphics content encourage the customer to select the coupon by touching an area of the screen of the TC **1261** (or otherwise indicate consent).

After the sales agent has identified all of the items that the customer selected and the POS system **126** has displayed the transaction summary, including a total, the customer presents a form of payment. Where the payment is a credit card, the customer swipes the card through the transaction computer and signs electronically, allowing the TC to capture his signature. The POS system **126** forwards the captured electronic signature to any of the merchant data center **120**, the optional partner data center **130**, the data farm **140** and participants **1A0**, directly or through forwarding.

Where the customer presents an electronic-funds-transfer card for payment, he swipes the card through the TC of the POS system **126** and enters his validating PIN number.

After the form of payment has been accepted, the POS system asks the customer whether he would like a printed receipt, informing the customer that the merchant **120** will maintain an electronic receipt available to the customer at all times, regardless of the customer's preference for a printed receipt.

Later, while using the computer **190**, the consumer may visit a website enabling him to retrieve, view, verify and correct his transactions (physical or virtual). The consumer may access the receipt for the above transaction in order to initiate a charge dispute, download it into a personal finance application, return an item, report taxes, etc. The consumer's choice of websites includes the website of the merchant **120** and the website of the electronic-receipts service.

The website of the merchant **120** is "hot linked" to that of the electronic-receipts service: Clicking on a link (or entering the URL) for the merchant **120**'s electronic-receipts service sends the consumer onto the website of the electronic-receipts service of the data farm **140**. Some information as to how the consumer came to be on the electronic-receipts service website comes along with the consumer. (Alternatively, the merchant website may provide forms for the consumer to complete and submit the forms for the electronic-receipt service to process and provide a response, unbeknownst to the consumer.)

One piece of that information is the identity of the merchant from whose website the consumer came. The electronic-receipts service uses this merchant-identity information to limit the activities of the consumer to activities related to the identified merchant -- or, at the least, to activities not related to competitors. For example, the consumer may view receipts of his transactions with the identified merchant, may get refunds from the identified merchant, may re-order items from the identified merchant and may order parts or accessories for a selected item, but the consumer may not view receipts of transactions with merchants in competition with the identified merchant, cannot get refunds from these competitors and

cannot re-order items from these competitors. Similarly, the consumer may see advertisements from the identified merchant but does not see advertisements for competitors of the identified merchant.

When the consumer comes directly to the website of the electronic-receipts service, that is to say, without arriving via a hot link, his activities are not so restricted. He may, for example, see information about (including receipts for) all of his transactions. These transactions may include transactions from a merchant A and any number of merchant A's competitors. Likewise, advertising directed to the consumer may include advertising from a merchant A and advertising from a competitor of merchant A.

The consumer optionally directs the translation of the transaction data into a format for personal-finance or spreadsheet software on his personal computer **190** and downloads the transaction data onto the computer **190**. The consumer thus saves time in tracking his personal spending or in creating expense reports. (Quicken®, Microsoft Money® and Excel®are examples of personal finance and spreadsheet applications.)

While the above description of the electronic-receipts service is more from the consumer's point of view than the merchant's, a routine practioner in the art will readily realize the invention's applications in the merchant's environment. For example, the electronics-receipt service provides benefits for the merchant as well. The service provides storage and administration of (all of the merchant's) transaction data, which data the merchant can access for its use when needed. By offering the data to the consumer, the service relieves the merchant of many customer-service tasks that it would normally need to provide.

As illustrated, the service provides the merchant an opportunity to re-market goods and services to the consumer in a very targeted manner as he accesses transaction from activities on the merchant or service's site. The merchant may sell complimentary goods and services

like warranty extensions and maintenance plans.

Indeed, the invention now being fully described, many changes and modifications that can be made thereto without departing from the spirit or scope of the appended claims will be apparent to one of ordinary skill in the art.

This specification incorporates by reference all publications and patent applications mentioned herein, to the same extent if the specification had specifically and individually incorporated by reference each such individual publication or patent application.

WHAT IS CLAIMED IS:

1. A method for storing and retrieving electronic records, the method comprising:

forwarding an electronic record to an electronic-record repository;

storing the electronic record for later retrieval over an internet.

2. The method of claim 1, wherein the step of forwarding comprises

forwarding one record from the set of electronic records comprising consumer-transaction receipts, legal documents, insurance policies.

3. The method of claim 2, wherein the step of forwarding comprises

forwarding the electronic record to an electronic-record repository containing an electronic record with details of a transaction created at business other than the merchant.

4. The method of claim 1, further comprising the step of retrieving the electronic record.

5. The method of claim 4, wherein before the step of retrieving, the following step is performed:

searching for the electronic record in the repository.

6. The method of claim 4, further comprising the step of downloading the retrieved electronic record.

7. The method of claim 4, further comprising the step of

viewing an advertisement during the step of retrieving.

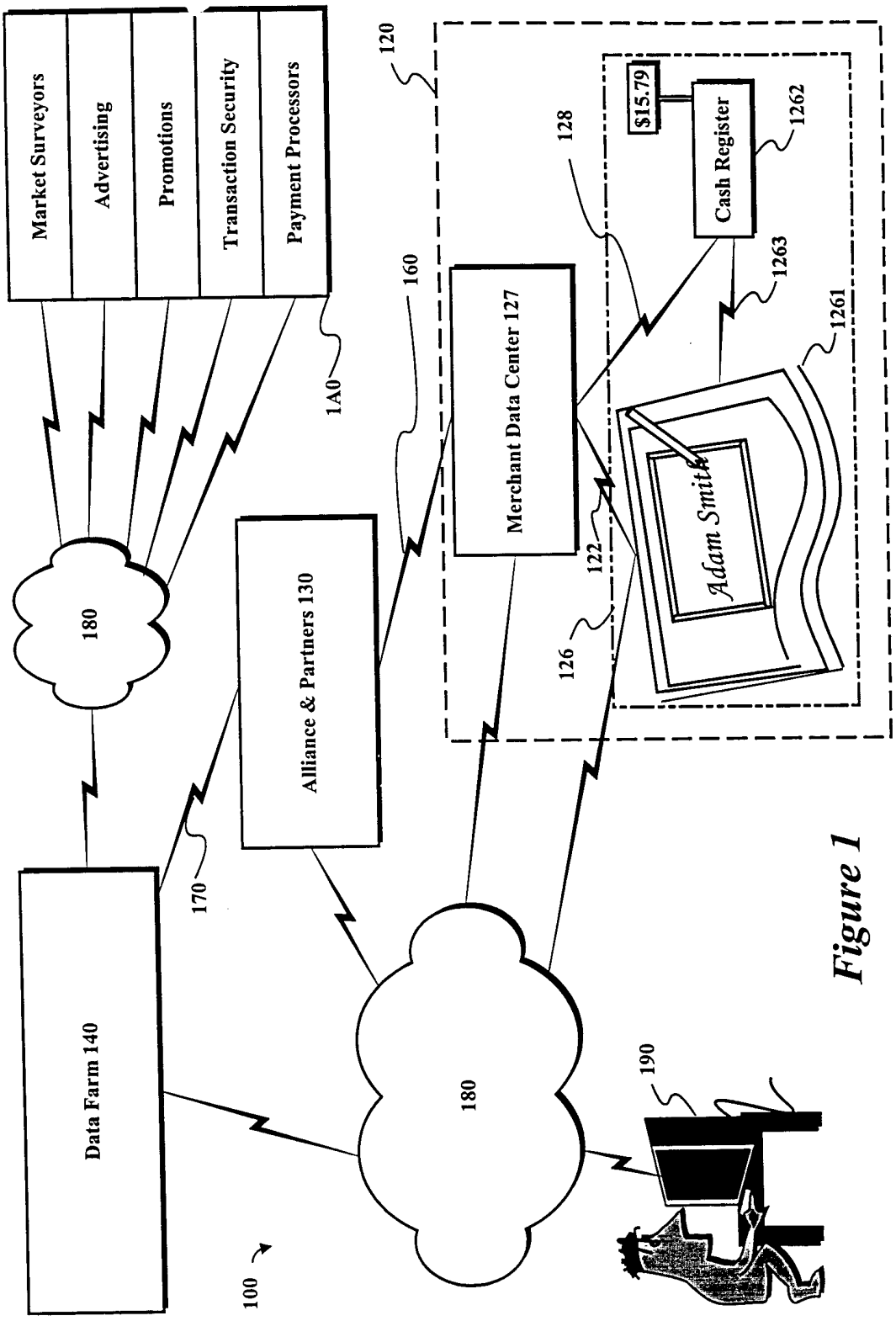

Market Surveyors
Advertising
Promotions
Transaction Security
Payment Processors
1A0
180
Alliance & Partners 130
160
Merchant Data Center 127
120
128
$15.79
Cash Register
1262
1263
1261
Adam Smith
122
126
170
Data Farm 140
180
190
100

Figure 1

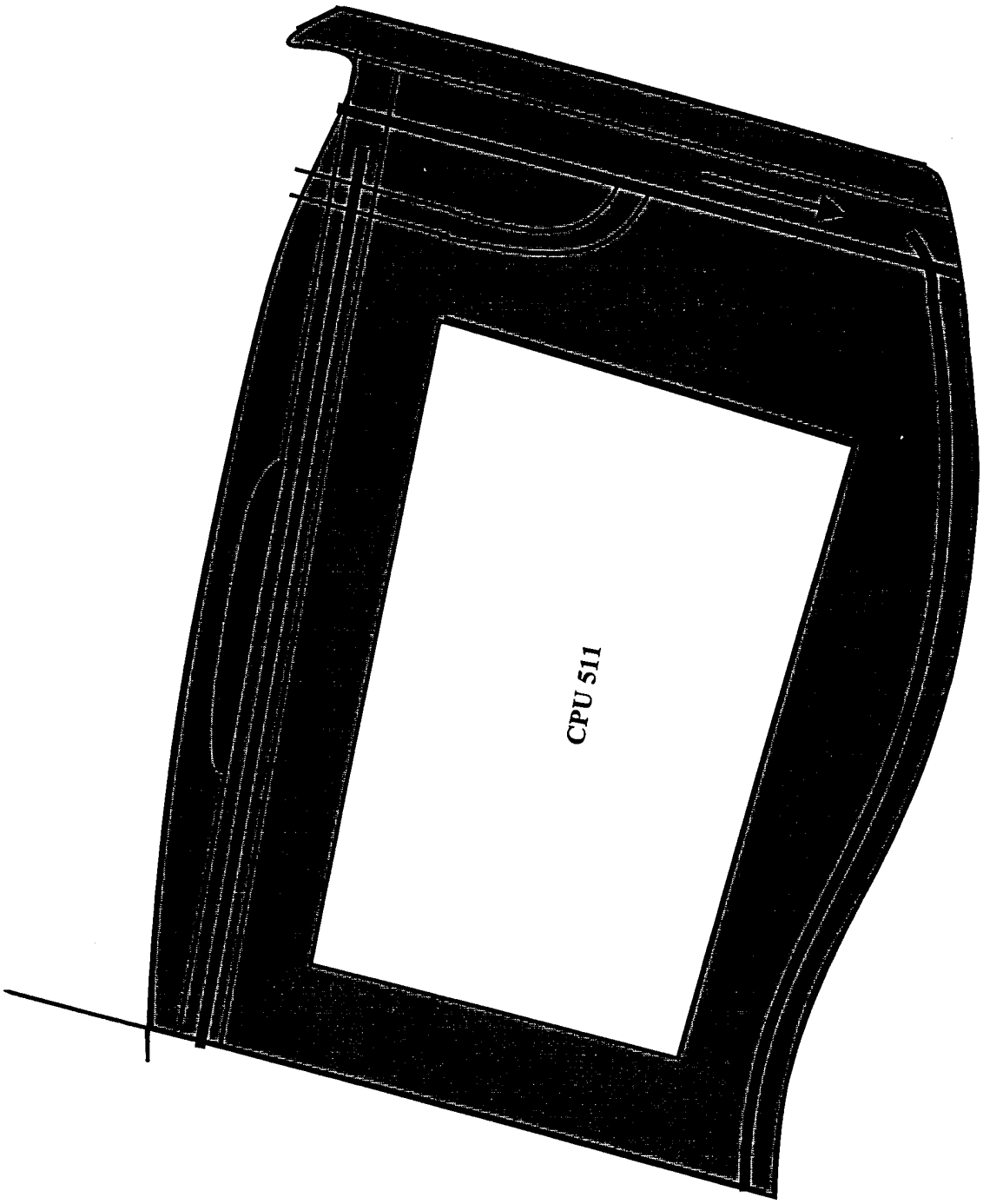


Figure 2

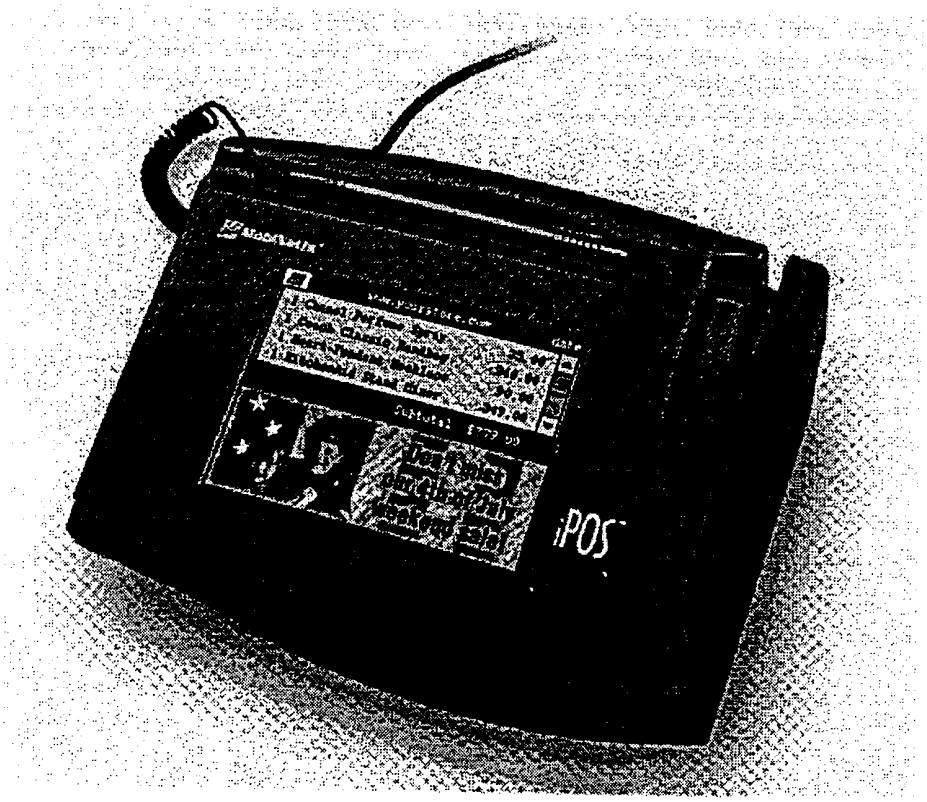


Figure 3

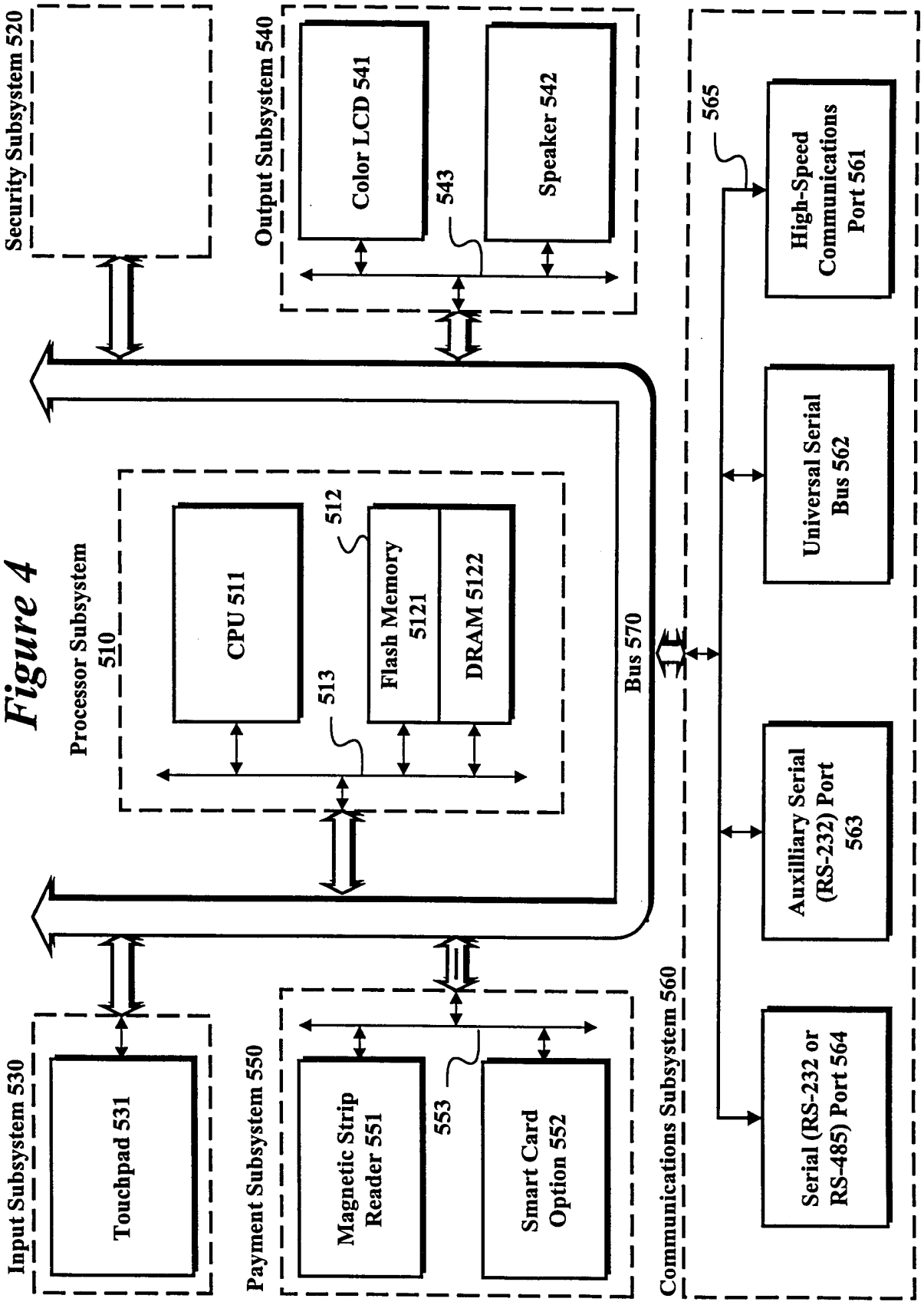

Security Subsystem 520
Output Subsystem 540
Color LCD 541
543
Speaker 542
565
High-Speed Communications Port 561
Universal Serial Bus 562
Auxilliary Serial (RS-232) Port 563
Serial (RS-232 or RS-485) Port 564
Communications Subsystem 560
Processor Subsystem 510
CPU 511
512
Flash Memory 5121
DRAM 5122
513
Bus 570
Input Subsystem 530
Touchpad 531
Payment Subsystem 550
Magnetic Strip Reader 551
553
Smart Card Option 552

Figure 4

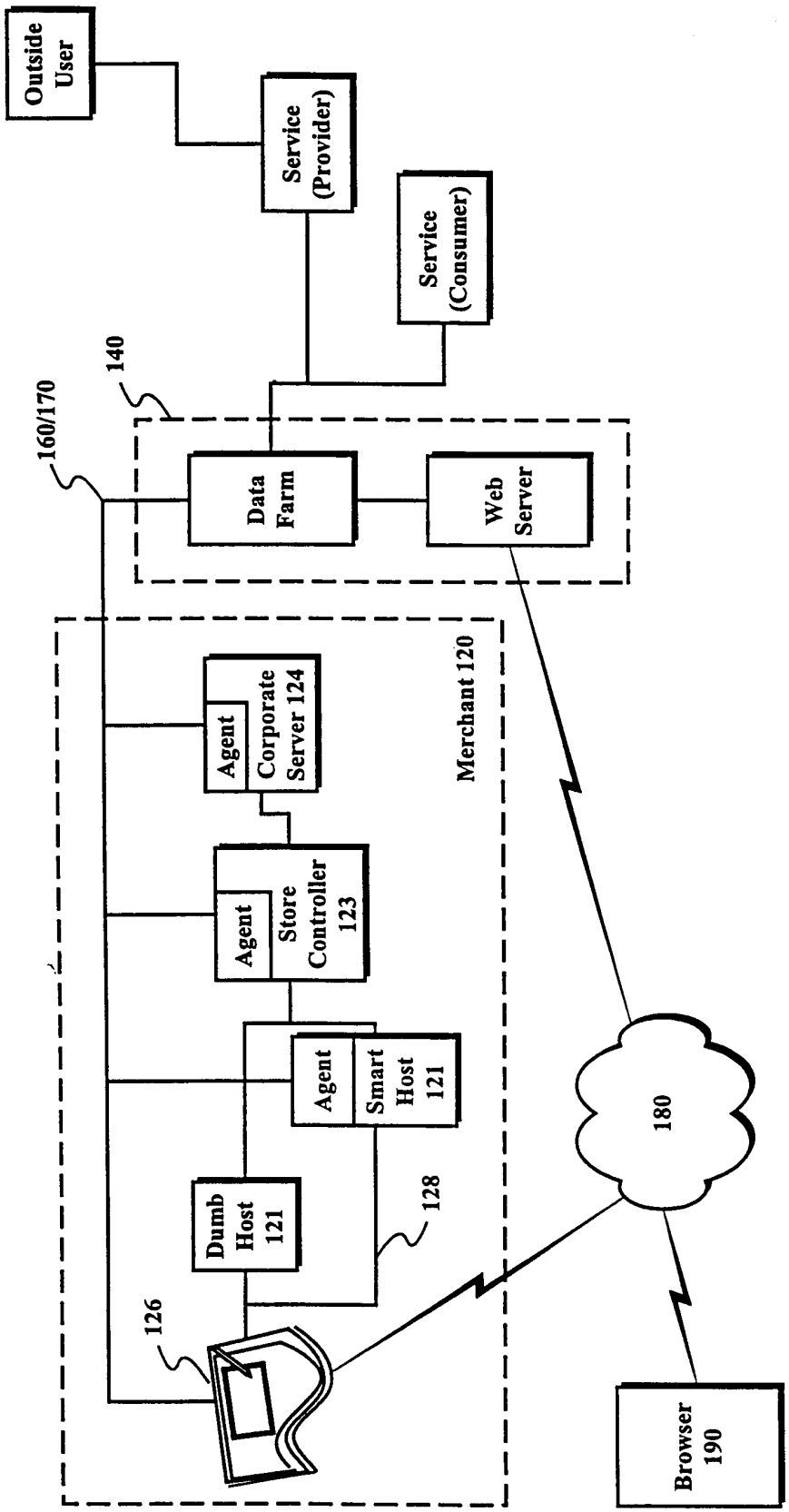

Outside User
Service (Provider)
Service (Consumer)
140
160/170
Data Farm
Web Server
Merchant 120
Agent
Corporate Server 124
Agent
Store Controller 123
Agent
Smart Host 121
Dumb Host 121
128
126
180
Browser 190

Figure 5

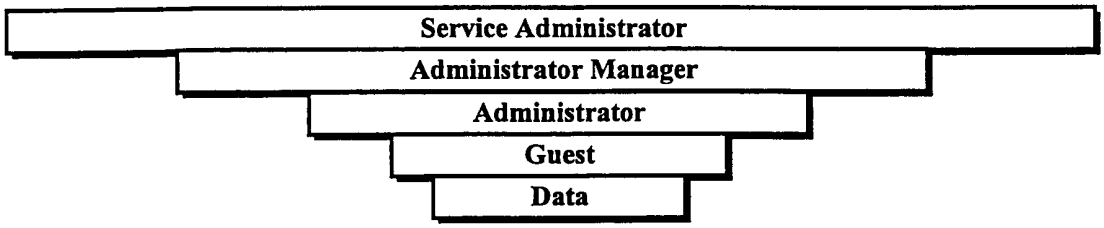


Figure 6

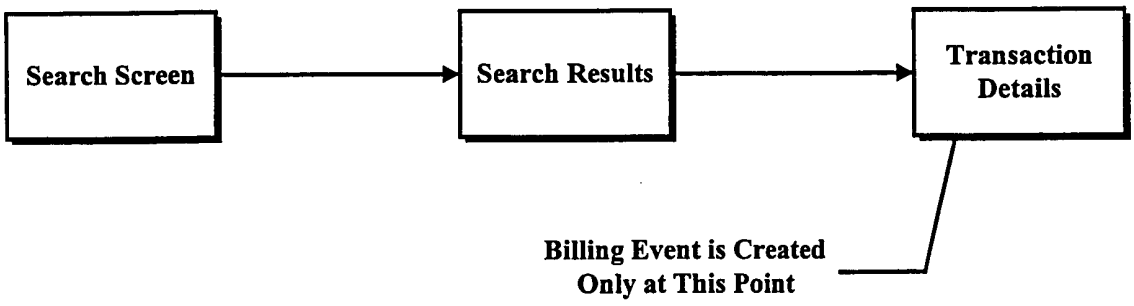


Figure 7

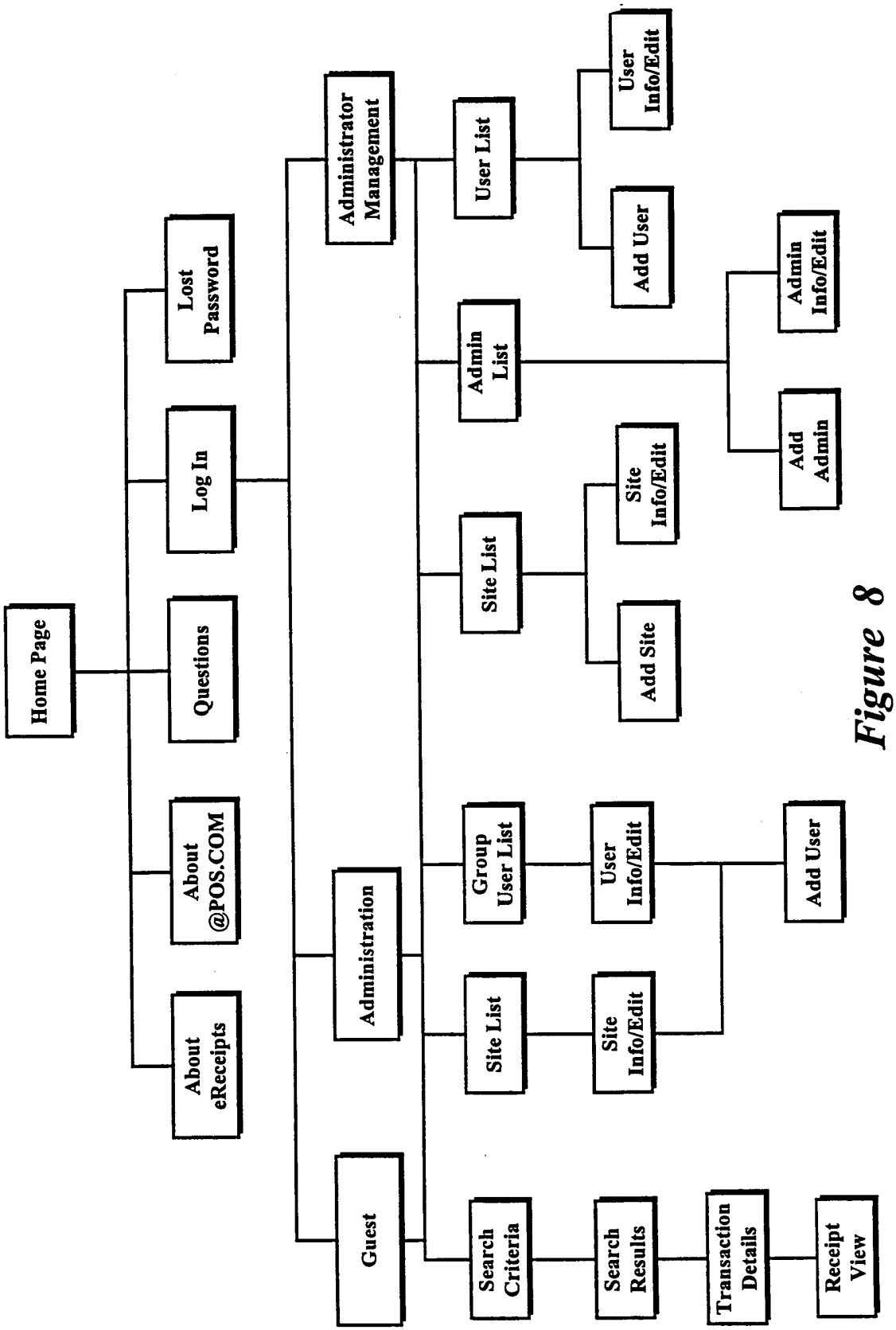
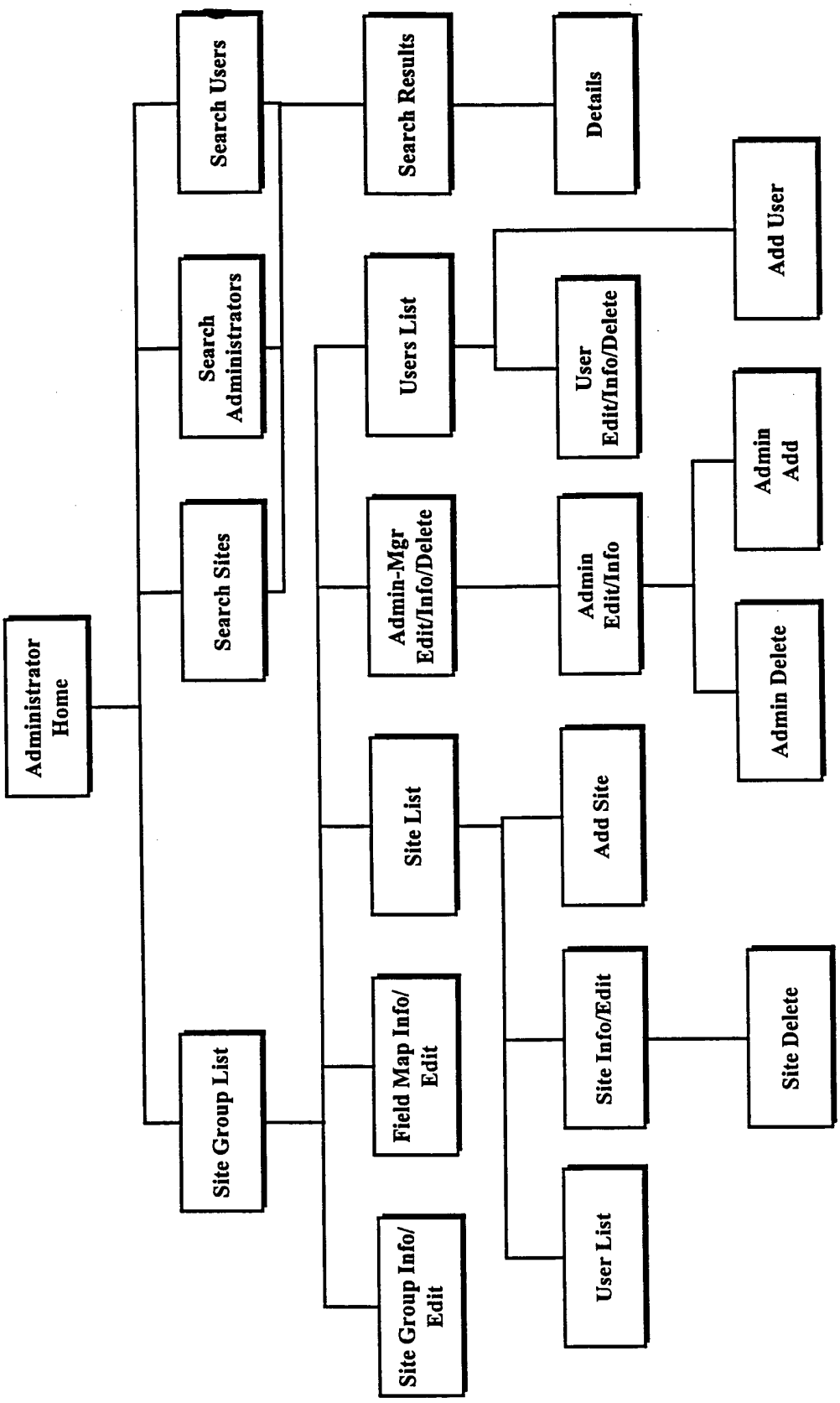

Home Page
Questions
About @POS.COM
About eReceipts
Lost Password
Log In
Guest
Search Criteria
Search Results
Transaction Details
Receipt View
Administration
Site List
Site Info/Edit
Group User List
User Info/Edit
Add User
Administrator Management
User List
User Info/Edit
Add User
Admin List
Admin Info/Edit
Add Admin
Site List
Site Info/Edit
Add Site

Figure 8


Administrator Home
Search Users
Search Administrators
Search Sites
Site Group List
Search Results
Details
Users List
Admin-Mgr Edit/Info/Delete
Site List
Field Map Info/ Edit
Site Group Info/ Edit
User Edit/Info/Delete
Admin Edit/Info
Add Site
Site Info/Edit
User List
Add User
Admin Add
Admin Delete
Site Delete

8/45

Figure 9

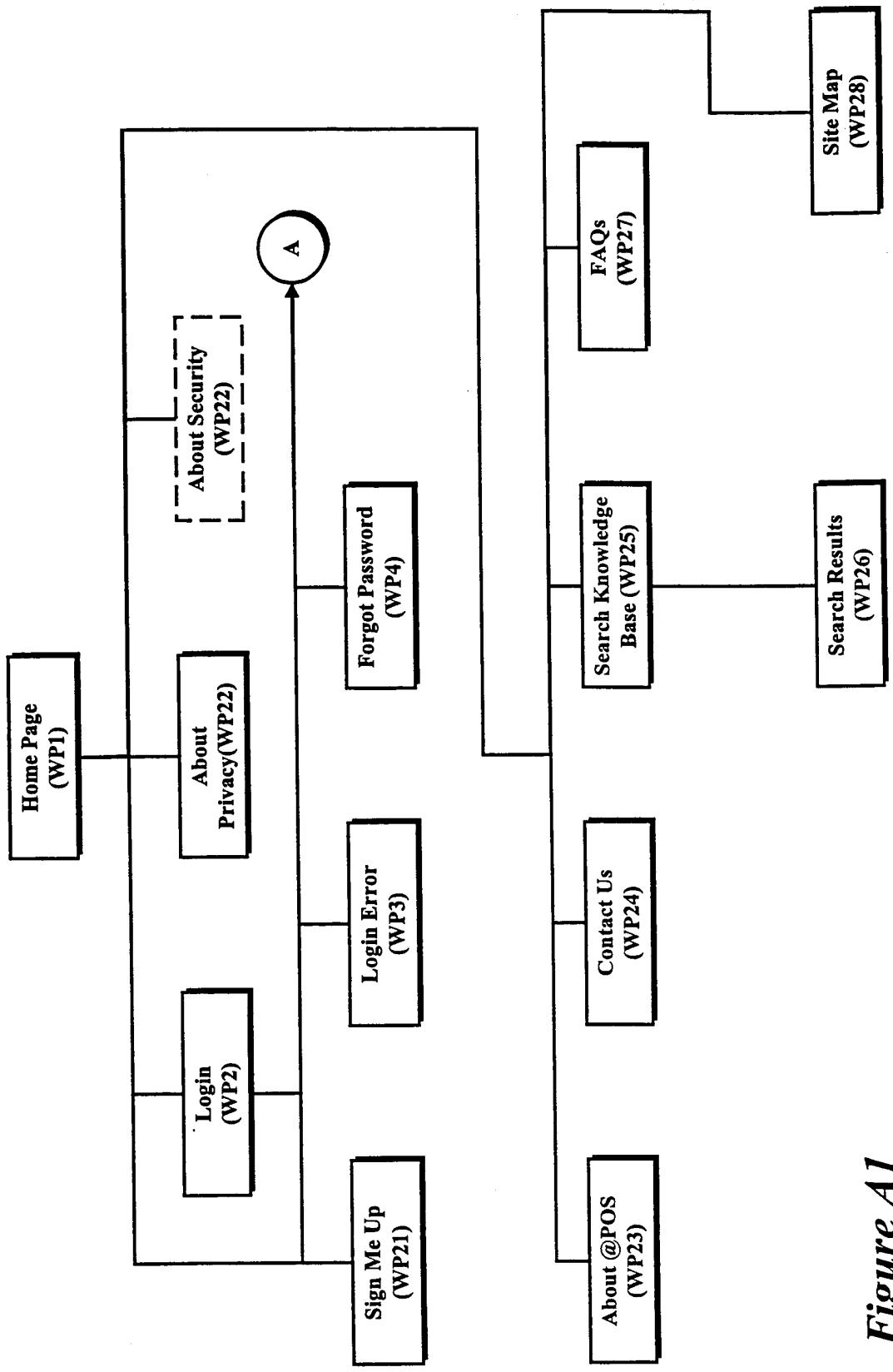

Home Page (WP1)
About Privacy(WP22)
About Security (WP22)
A
Forgot Password (WP4)
Login (WP2)
Login Error (WP3)
Sign Me Up (WP21)
FAQs (WP27)
Site Map (WP28)
Search Knowledge Base (WP25)
Search Results (WP26)
Contact Us (WP24)
About @POS (WP23)

Figure A1

APPENDIX

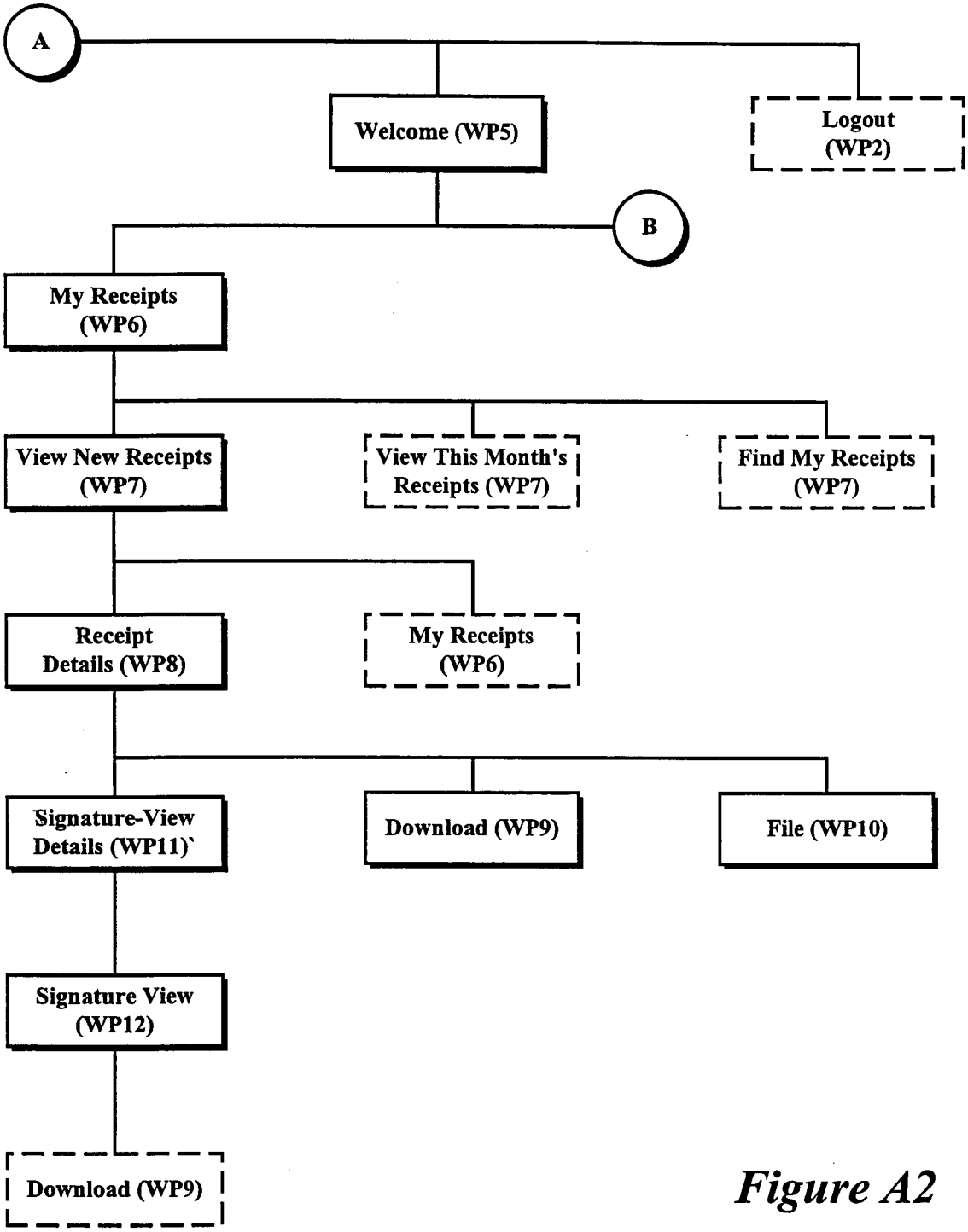

A
Welcome (WP5)
Logout (WP2)
B
My Receipts (WP6)
View New Receipts (WP7)
View This Month's Receipts (WP7)
Find My Receipts (WP7)
Receipt Details (WP8)
My Receipts (WP6)
Signature-View Details (WP11)`
Download (WP9)
File (WP10)
Signature View (WP12)
Download (WP9)

Figure A2

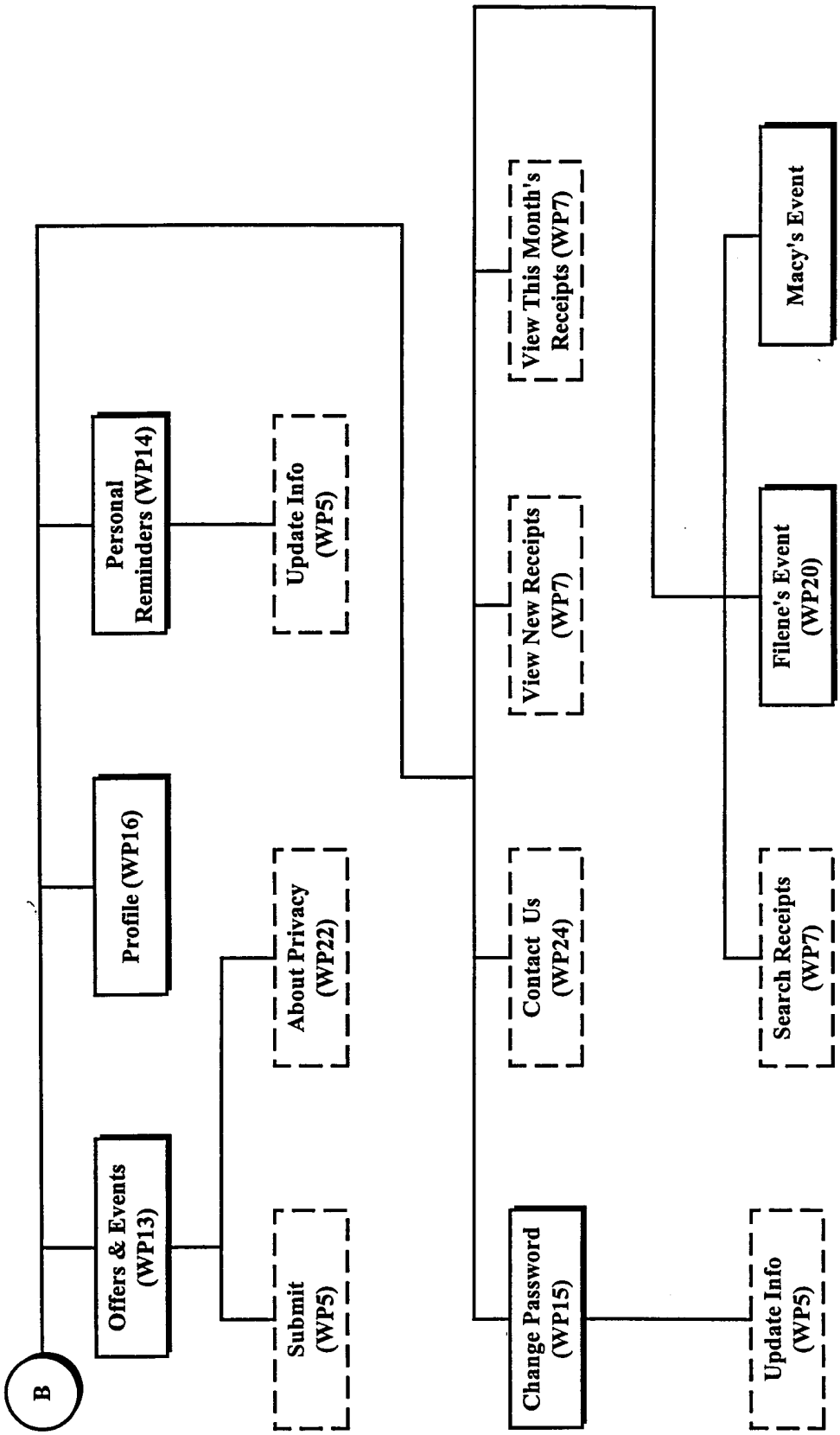

B
Offers & Events (WP13)
Profile (WP16)
Personal Reminders (WP14)
Submit (WP5)
About Privacy (WP22)
Update Info (WP5)
Change Password (WP15)
Contact Us (WP24)
View New Receipts (WP7)
View This Month's Receipts (WP7)
Update Info (WP5)
Search Receipts (WP7)
Filene's Event (WP20)
Macy's Event

Figure A3



Welcome to ReceiptCity, the web's leading site for electronic receipts (e-receipts) and your personal e-receipts vault. At this site you can,

- Store and quickly find your e-receipts and register your favorite cards
- Download transaction data into leading Personal Finance applications such as Quicken
- View original receipt images if you have questions about a purchase
- See special offers designed to save you time and money

[Home]
[Login]
[Sign me up]
[About Privacy]
[About Security]
[About @POS]
[Contact Us]
[Search Knowledge Base]
[FAQs]
[Site Map]

POWERED BY: @ .com

With ReceiptCity, you'll never misplace important receipts again. ReceiptCity is currently working with leading retail stores, online merchants and other companies to send receipts to ReceiptCity for you to access.

By signing up now, you can ensure your receipts are identified as these merchants come online later this year. By signing up, you can also tell us which retailers and online merchants you'd like to get e-Receipts from here.

Login
Sign Up Now
Why Sign Up?
Ensuring Privacy
Ensuring Security

reviewed by TRUSTe site privacy statement



Copyright © 1999, @POS.COM Inc. All rights reserved. @POS.COM, ReceiptCity, and logos are trademarks of @POS.COM. Patent pending.
Please contact our Webmaster with questions or comments.

Figure WP1

start.asp at www.receiptcity.com (secure Web ... Page 1 of 1

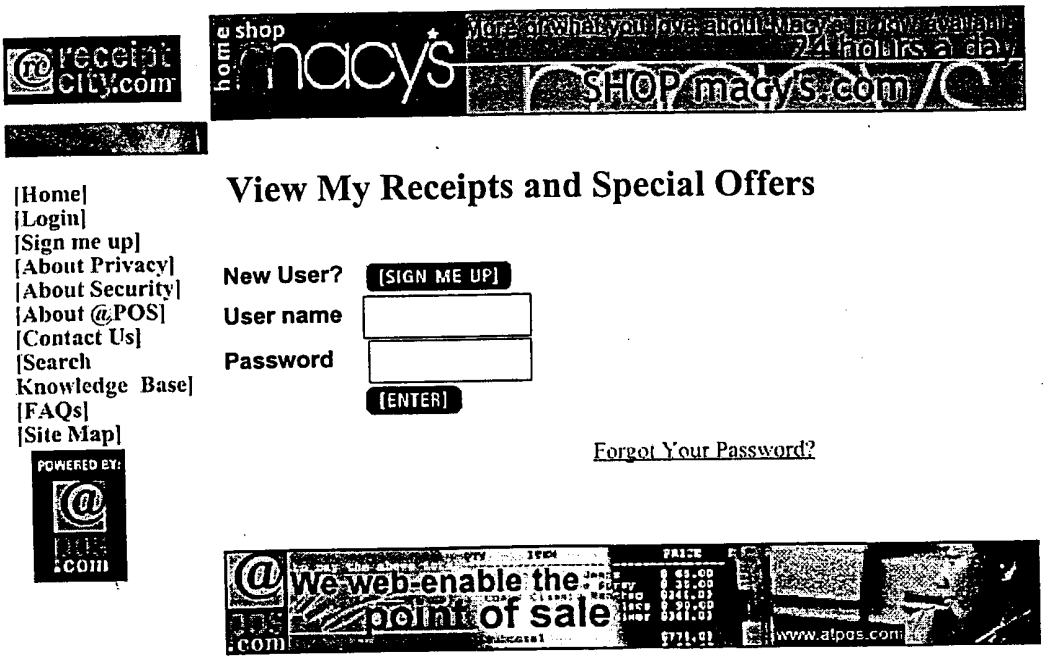


Figure WP2

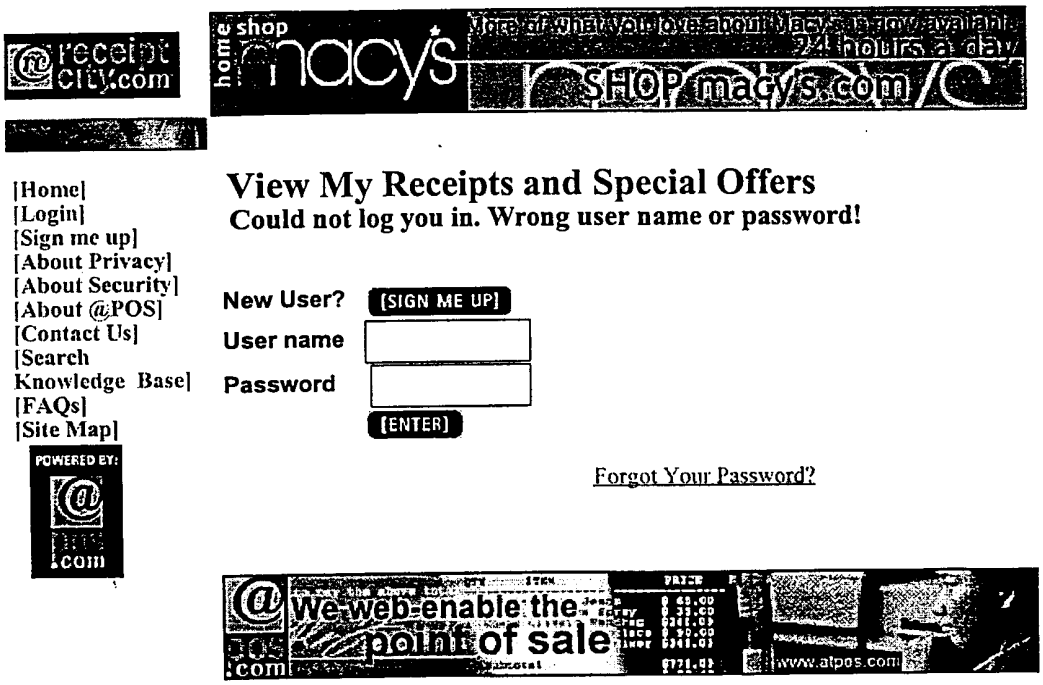

receipt city.com
home shop macy's
SHOP macys.com
[Home]
[Login]
[Sign me up]
[About Privacy]
[About Security]
[About @POS]
[Contact Us]
[Search Knowledge Base]
[FAQs]
[Site Map]
POWERED BY:
View My Receipts and Special Offers
Could not log you in. Wrong user name or password!
New User?
[SIGN ME UP]
User name
Password
[ENTER]
Forgot Your Password?
We web-enable the point of sale
www.atpos.com
Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP3



[Home]
[Login]
[Sign me up]
[About Privacy]
[About Security]
[About @POS]
[Contact Us]
[Search Knowledge Base]
[FAQs]
[Site Map]

POWERED BY: @POS.COM

Lost Password

User Name

[ENTER]

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP4



[My Receipts]
[Offers/Event]
[Profile]
[Personnel Reminders]
[Change Password]
[Contact Us]

POWERED BY: @POS.COM

Welcome: Chris

View New Receipts View This Month's Receipts Search Receipts

Events

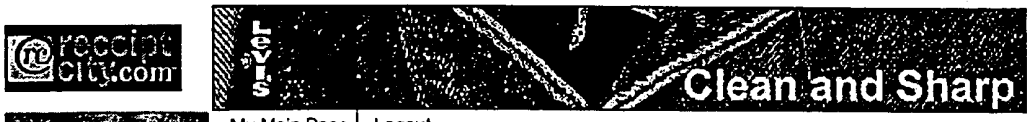
A large shipment of suits just arrived at Filene's Basement
Macy's White Sale

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP5


receipt city.com
LEVI'S
Clean and Sharp
My Main Page | Logout
[My Receipts]
[Offers/Event]
[Profile]
[Personnel Reminders]
[Change Password]
[Contact Us]
POWERED BY:
@pos.com
Receipt Search
View New Receipts
View This Month's Receipts
This page allows you to find receipts by entering search criteria. Select the receipts you wish to locate.
Hint: Enter no criteria to see all of your receipts (only the first 300 will be displayed).
Merchant
Card Number
About privacy
Card Type
Date Range
On/After Month:
Day:
Year:
On/Before Month:
Day:
Year:
Receipt total
Operator
Value1
Value2
Note: Value2 is only used for Between and Not Between operation
Find the receipts where any line item is filed under the following category:
Receipt Category
[FIND MY RECEIPTS]
Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP6



[My Receipts]
[Offers/Event]
[Profile]
[Personnel Reminders]
[Change Password]
[Contact Us]



Results

View Details	Date	Card Number	Total	Store Number	Description	Card
Receipt	1999/05/22	**********7003	$6.08	41806	Texaco	Visa
Receipt	1999/05/13	**********7003	$14.14	25825	Texaco	Visa
Receipt	1999/05/24	**********7003	$12.48	48272	Texaco	Visa
Receipt	1999/06/03	**********3670	$12.31	3233234	Texaco	Visa
Receipt	1999/06/24	**********7003	$137.44	4	Filenes Basement	Visa
Receipt	1999/06/04	**********7003	$49.97	7	Filenes Basement	Visa
Receipt	1999/05/20	**********0476	$32.06	10	Kroger	Discov
Receipt	1999/06/05	**********7003	$93.33	1	Home Repair	Visa
Receipt	1999/05/07	**********7003	$61.09	9	Home Repair	Visa
Receipt	1999/06/10	**********3670	$33.54	18	Home Repair	Visa
Receipt	1999/06/03	**********3670	$6.07	9	Home Repair	Visa
Receipt	1999/06/04	**********7003	$6.33	27	Home Repair	Visa
Receipt	1999/06/05	**********3670	$63.30	25	Home Repair	Visa
Receipt	1999/06/10	**********7003	$30.97	27	Home Repair	Visa
Receipt	1999/05/22	**********7003	$118.37	13	Home Repair	Visa
Receipt	1999/05/05	**********7003	$4.19	6	Home Repair	Visa
Receipt	1999/05/22	*******2000	$31.03	230	Macy*s East	Visa
Receipt	1999/05/31	*******2000	$40.11	6441	Macy*s East	Visa
Receipt	1999/05/27	*******2000	$69.11	203	Macy*s East	Visa
Receipt	1999/06/23	*******2000	$168.33	457	J.Miles	Visa
Receipt	1999/07/07	*******2000	$893.05	845	J.Miles	Visa
Receipt	1999/05/15	**********0476	$157.18	6	Kroger	Discov
Receipt	1999/06/06	**********0476	$7.59	10	Kroger	Discov

[RETURN TO SEARCH]

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP7



[My Receipts]
[Offers/Event]
[Profile]
[Personnel Reminders]
[Change Password]
[Contact Us]

POWERED BY: @POS.com

Receipt

Date 1999/06/24
Card Number **********7003
Card Title Visa

Amount $137.44

Filene's Basement
Winn & Cambridge St.
Burlington MA 02803
Tel # 781-229-2130

STR#	REG#	TRN#	EMP#
34	004	00001703	31079

06/24/99 11:10
SALE

DEPT	ITEM	PRICE	QTY			
863	364174	$12.99	1	N	$12.99	Gift ¤
SADDLES LINK BRAID/B						
863	8603881	$14.99	1	N	$14.99	Warranty ¤
JULIANCASU/ASTPK/NDS						
850	413395	$24.99	1	N	$24.99	Insurance ¤
ZYLOS HERRINGBONE SO						
851	057077	$9.50	1	N	$9.50	Gift ¤
3PK BRIEF A JULIAN/3						
858	8655772	$19.99	1	N	$19.99	Expense ¤
EURO VELCR/BLACK/NDS						
874	401637	$29.99	1	N	$29.99	-
ADDLFO CORD PLY/RY/H						
874	8635286	$24.99	1	N	$24.99	-
NISSUEMICR/BEIGE/NDS						
Sub Total					$137.44	

AMEX Credit Card $137.44
Acct# 372214255227003
Auth# 487884 H S 01/01

Total $137.44

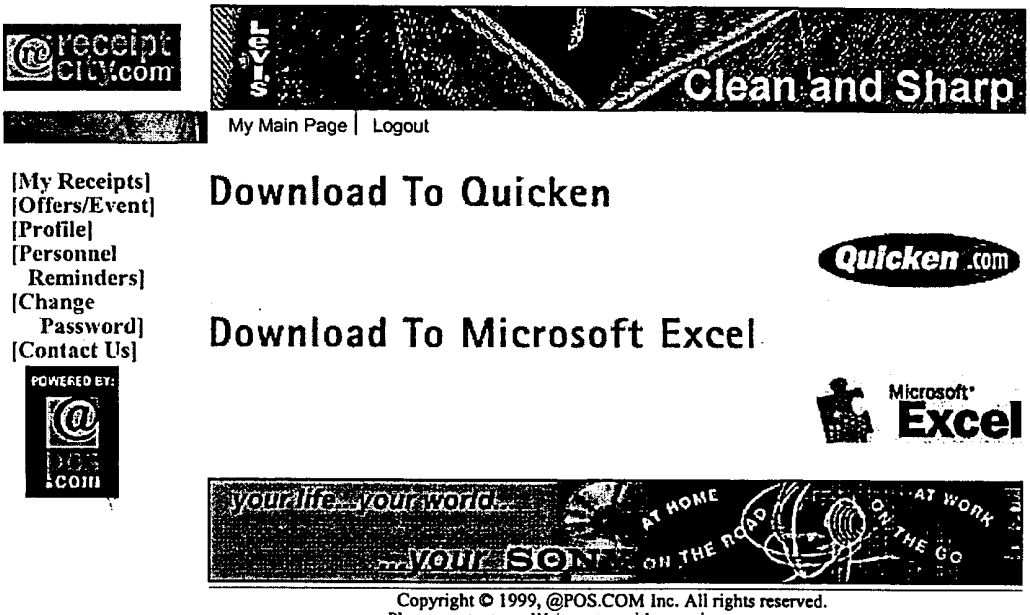
[VIEW SIGNATURE] [DOWNLOAD DATA] [FILE IT]

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP8

20/47

Download.asp at www.receiptcity.com (secure W... Page 1 of 1



Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP9



[My Receipts]
[Offers/Event]
[Profile]
[Personnel Reminders]
[Change Password]
[Contact Us]



Successfully Filed

Your receipt has been successfully filed under the specified category.
Click your browser's back button to go back to your receipt.



Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP10

FormSig Page 1 of 1



[My Receipts]
[Offers/Event]
[Profile]
[Personnel Reminders]
[Change Password]
[Contact Us]

POWERED BY:

View Signature

The transaction took place on:	1999/05/22
The total value of the transaction was:	6.08
Card used:	Visa
In the past you have viewed (signatures):	132 times

Please enter the reason in detail why you want to view the signature:

[VIEW SIGNATURE]

Figure WP11





Receipt

Date 1999/06/24 **Amount** $137.44
Card Number
Card Title Visa

Filene's Basement
Winn & Cambridge St.
Burlington MA 02803
Tel # 781-229-2130

****

STR#	REG#	TRN#	EMP#
34	004	00001703	31079

****

06/24/99 11:10
SALE

DEPT	ITEM	PRICE	QTY		
863	364174	$12.99	1	N	$12.99
SADDLES LINK BRAID/B					
863	8603881	$14.99	1	N	$14.99
JULIANCASU/ASTPK/NDS					
850	413395	$24.99	1	N	$24.99
ZYLOS HERRINGBONE SO					
851	057077	$9.50	1	N	$9.50
3PK BRIEF A JULIAN/3					
858	8655772	$19.99	1	N	$19.99
EURO VELCR/BLACK/NDS					
874	401637	$29.99	1	N	$29.99
ADDLFO CORD PLY/RY/H					
874	8635286	$24.99	1	N	$24.99
NISSUEMICR/BEIGE/NDS					
Sub Total				$137.44	
AMEX		Credit Card		$137.44	
Acct#	372214255227003				
Auth#	487884 H S	01/01			
Total					$137.44

I agree to pay the above total

Chris Smith

[DOWNLOAD DATA]

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP12

24/47



My Main Page | Logout

[My Receipts]
[Offers/Event]
[Profile]
[Personnel Reminders]
[Change Password]
[Contact Us]

POWERED BY: @POS.com

Offers

Click here to view our privacy policy

Here is where you tell us more about the type of products you are interested in purchasing. Please select the following item categories for merchant notices you can see when you visit ReceiptCity.

You can also enter the specific brands you are interested in - for multiple brands please separate these by comma, for example, "Nike, Adidas". I am interested in:

☒ Please also notify me of the following offers and events by e-mail.

☐ Formalwear (Tuxedos and Gowns)		☐ Suits and Business Atire	
☒ Activewear		☒ Shoes	
☒ Lingerie		☒ Accessories	
☐ Jewelry		☐ China and Crystal	
☐ Chocolate and Gift Baskets		☐ Cosmetics	
☐ Fragrances		☐ Bath & Body	
☐ Housewares		☐ Appliances	
☐ PC's, Cameras, Consumer Electronics		☐ Software	
☐ Music and Videos		☐ Books	
☐ Toys and Games		☐ Camping and Outdoor	
☐ Sporting Goods		☒ Food	

Events

Please tell us what special events you would like to be notified of when you visit..

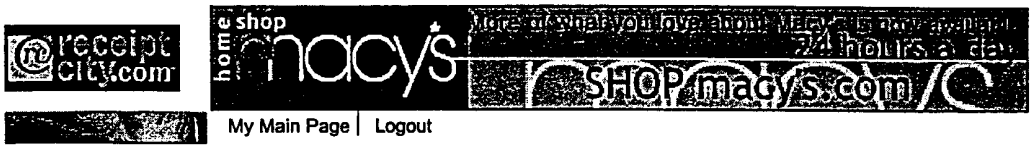
☐ Annual Sale	☒ Semi-annual Sale
☐ Seasonal Sale	☒ Other Sales Events

[SUBMIT] [RESET]

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP13

25/47



[My Receipts]
[Offers/Event]
[Profile]
[Personnel Reminders]
[Change Password]
[Contact Us]

POWERED BY: @ .com

Personal Reminders

Please fill in following information so that we remind you of the special events.

Event	Date (mm/dd/yyyy)		Name	Prior Weeks
	8 / 8 / 2001		Senthil Kumara	1
	12 / 25 / 2000		The Big Guy	1
Anniversary	1 / 1 / 2004		1234	1
Engagemen	1 / 1 / ALL			1
Retirement	1 / 1 / ALL			1
Going Away	1 / 1 / ALL			1
Graduation	1 / 1 / ALL			1

[UPDATE INFO] [RESET]

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP14

ChangePassword.asp at www.receiptcity.com (se... Page 1 of 1



[My Receipts]
[Offers/Event]
[Profile]
[Personnel Reminders]
[Change Password]
[Contact Us]

POWERED BY: @ .COM

Change Password

* Current Password:

* New Password:

* Re-Type New Password:

New Password Reminder:

[UPDATE INFO] [RESET]

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP15

Edit Profile

Figure WP16A



|My Receipts|
|Offers/Event|
|Profile|
|Personnel Reminders|
|Change Password|
|Contact Us|

Profile

Here is where you tell us more about yourself and how to identify your receipts with our participating merchants (what frequent shopper and credit cards you use when you shop).



* **First Name:**	Chris
Middle Initial:	A
* **Last Name:**	Smith
Birthdate :	Month: 6 Day: 26 Year: 1960
* **EMail Address:**	cSmith@mobinetix.com
Street Address 1:	1234 Main Street
Street Address 2:	-
* **City:**	Sunnyvale
* **State:**	CA-
Country:	USA
* **Zip Code:**	94086

* Required fields

☑ Please send me updates about new ReceiptCity services by e-mail

☑ When new merchants join ReceiptCity and make their receipts available, automatically add my past receipts with these merchants for me.
(Note: if you do not select this, only receipts for transactions that you approve during the purchase at the point of sale will be added.)

Cards

Please tell us what frequent shopper cards and credit cards ou typically shop with. We will ONLY use this to identify your receipts and securely store them here for you. This will not be used for purchases or shared with third parties.

Click here to view our privacy policy

Why this is safe and secure

28/47

Figure WP16B

Edit Profile

For successful registration, at least one account card must be specified.

Note: This is a secure page; the information you enter will be encrypted for transmission to our secure data center.

Account Number	Name On Card	Account Type	Merchant *
43752000006704	Chris Smith	Master Card	none
37221425522700	Chris Smith	AMEX	none
34576892000	C Smith	Frequent Shopper	Macys
54207277322136	Chris M Smith	Master Card	none
1234567890	Chris Smith	VISA	none

* Merchant applies to only frequent shopper cards.

Cash receipt identifier code: 0123456789

Please enter a unique numeric identifier up to 11 digits. For example, this may be your phone number, driver's license, or a combination of phone number and plus last four digits of your social security number. You will be prompted for this identifier at the point of sale if you want an electronic receipt for specific cash transaction.

[Continue] [Reset]

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.



[My Receipts]
[Offers/Event]
[Profile]
[Personnel Reminders]
[Change Password]
[Contact Us]

POWERED BY: @ POS.COM

Receipt

Date 1999/05/20 Amount $32.06
Card Number **********0476
Card Title Discover

KROGER

SUNGOLD DRNK		B	$1.19	-
SPRITE		B	$1.29	-
JELLO PDDNG		B	$2.29	-
CLR RCH N/E		T	$1.35	-
WRIGLEY GUM		B	$0.79	-
COKE		B	$1.29	-
**** TAX	.51	BAL	11.71	
1 @ 3/1.00				-
HERSHY CANDY		B	$0.34	
**** TAX	.52	BAL	12.06	
VF DEBIT			32.06	

****
KROGER DUNWOODY
2090 Dunwoody Club Drive
Atlanta Georgia 30350
DEBIT PAYMENT
**32.06 XXXXXXXXXXXX0476 0103
REF # 000000

5/20/99 22:02 0324 10 0121 121
****
CHANGE 20.00

GA 7% TAX A .30
GA 3% TAX C .22
TOTAL TAX .52

TOTAL NUMBER OF ITEMS SOLD = 7
5/20/99 10:02 0324 10 0121 121

Total $32.06

[VIEW SIGNATURE] [DOWNLOAD DATA] [FILE IT]

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP17
30/47



My Main Page | Logout

[My Receipts]
[Offers/Event]
[Profile]
[Personnel Reminders]
[Change Password]
[Contact Us]

POWERED BY: @POS.com

Personal Reminders

Please fill in following information so that we remind you of the special events.

Event	Date (mm/dd/yyyy)		Name	Prior Weeks
	8 / 2001	8	Senthil Kumara	1
	12 / 2000	25	The Big Guy	1
Anniversary	1 / 2004	1	1234	1
Engagemen	1 / ALL	1		1
Housewarm	1 / ALL	1		1
Wedding	1 / ALL	1		1
Other	1 / ALL	1		1

[UPDATE INFO] [RESET]

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP18

31/47

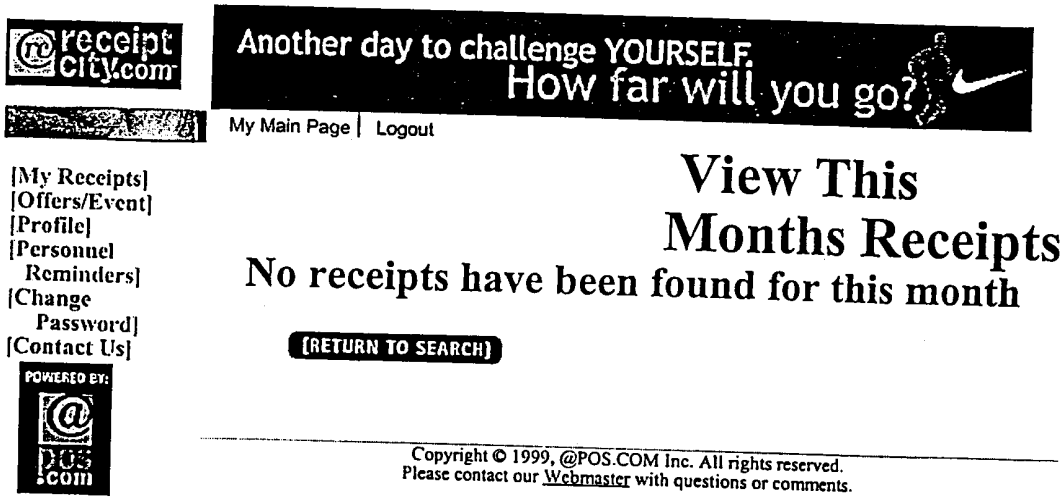


Figure WP19

32/47

Welcome to Filene's Basement! You Just Can't ...



Copyright ©1998 Filene's Basement
Terms and Conditions

Document:
Microsoft Word Format
Adobe Acrobat (PDF) Format

Figure WP20

33/47



[Home]
[Login]
[Sign me up]
[About Privacy]
[About Security]
[About @POS]
[Contact Us]
[Search Knowledge Base]
[FAQs]
[Site Map]

POWERED BY: @pos.com

Sign Me Up!!!

Click here to see our privacy policy

Join ReceiptCity now to start collecting your receipts and get special notices about valuable savings from participating merchants.

To sign up, you'll need to assign yourself a User Name and Password, then let us know a lit about who you are, what frequent shopper and credit cards you typical shop with and what kind of products you're interested in.

Your ReceiptCity Log-In

Please create a User Name and Password for yourself.

The User Name (example "John1") and Password will be used to let you back into ReceiptCity each time you return.

Important: Be sure to write down your User Name and Password and store it in a safe place.

Please Note: Your User Name must be between 1 and 50 characters long, contain no spaces, and will be checked for uniqueness. Also, your Password must be at least 8 characters long and can not be numeric only (must contain characters from the alphabet).

*=Required

* **User Name:**

* **Password:**

* **Confirm Password (Re-Type):**

Password Reminder:

(A Password Reminder is a word or few words that help remind you of your password)

[Continue] [Reset]

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP21

34/47



[Home]
[Login]
[Sign me up]
[About Privacy]
[About Security]
[About @POS]
[Contact Us]
[Search Knowledge Base]
[FAQs]
[Site Map]

TRUSTe Licensee

@pos.com is a licensee of the TRUSTe Privacy Program and adheres to TRUSTe privacy practices. This statement discloses ReceiptCity privacy practices.

TRUSTe is an independent, non-profit privacy initiative dedicated to building users' trust and confidence on the Internet and accelerating growth of the Internet industry. The @pos.com team values your privacy, and our privacy policy has been reviewed by TRUSTe to assure full compliance with its standards.

When you visit a Web site displaying the TRUSTe trustmark, you can expect to be notified of:

- what personally identifiable information of yours is collected
- what organization is collecting the information
- how the information is used
- with whom the information may be shared
- what choices are available to you regarding collection, use and distribution of the information
- what kind of security procedures are in place to protect the loss, misuse or alteration of information under the company's control, and
- how you can correct any inaccuracies in the information

Any questions regarding this statement should be directed via email to webmaster@ReceiptCity.com. If the website does not respond to your inquiry or your inquiry is not satisfactorily addressed, please contact TRUSTe at http://www.truste.org/users/users_watchdog.html.

Privacy Statement for ReceiptCity

@pos.com publishes this privacy statement to demonstrate our firm commitment to privacy. The information gathering and dissemination practices for the ReceiptCity website are disclosed in full as follows:

Purpose of the Site

ReceiptCity is a leading Internet site for gathering and storing consumers' purchase receipts. The site provides quick and easy access to personal receipts and makes available special offers and other conveniences from participating merchants.

Information to be Gathered

Our registration form collects basic contact information (your name, address, email address), cash receipt identifiers (a string of numbers you create to identify your cash receipts at the point of sale), financial information (your frequent shopper or credit card numbers to identify your receipts), and demographic information (your zip code and age). We do not collect phone numbers. Your zip code and portions of your street address are used to verify your identity with financial credit card processing networks or merchant databases when you register for the first time at ReceiptCity.

You can also request to be reminded of special dates and items that interest you. This type of information is not required, but if you provide it, you will receive reminders of

the dates you've selected and notices of promotions that match your interests. We share, at an aggregate level, ReceiptCity users' product interests and reminders with merchants to count the number of users interested in certain products or shopping events.

Your Internet Server Provider (ISP) address is requested to help us diagnose problems with our server and administer our Web site. ISP's, such as AOL and MindSpring, provide your connection to the Internet.

Your email address is used to send you notices of the arrival of new receipts, enhancements to ReceiptCity, and promotions that match your interests. Your e-mail address is also used, for security purposes, to confirm changes to your account profile. Whether you receive email messages is up to you. If you do not wish to receive email messages, you can indicate your preference when you register and or at anytime in the future (see the section on "Your Choices" below).

How the Site Works

At your request, participating merchants send your electronic receipts to the ReceiptCity website where they are stored with any personal data that you have already provided. The provision of your unique identifying information (user name and password) assures that you will be the only person able to view your receipts at ReceiptCity. After you register, access to your receipts is given only after supplying the correct password is provided.

Once you have registered at ReceiptCity, you can access your receipts to accomplish many useful tasks quickly. For example, while you can simply view your receipts, you can also use them to return or exchange merchandise, or make warranty claims, balance your checkbook, submit with expense reports, or download them into Intuit's Quicken. While you're visiting ReceiptCity, you will receive ads and promotions based on the purchases you've made in the past and the interests you've identified. If you request reminder service, we will send you reminders of special dates, or merchandise arrival, based on information you have provided to us.

Your use of the site is free. Site funding comes from participating merchants eager to foster customer loyalty by providing useful customer services.

Third-party Links

This website contains links to other websites. ReceiptCity has no responsibility for the privacy practices or content of other websites. We recommend that you read the privacy statements posted on these sites.

Advertising

We use an outside ad serving company to display ads on our website. These ads may contain "cookies" (see http://e-comm.webopedia.com/TERM/c/cookie.html for a definition of "cookie"). Cookies received with banner ads are collected by our ad-serving company, which records and reports aggregated information to advertisers. Examples of "aggregated" information would be the number of people who see an ad and the number of times people see the ad. The use of cookies also allows the ad-serving company to deliver ads that are more likely to interest you and to avoid showing you the same ad too many times.

Cookies cannot in themselves be used to identify any user of ReceiptCity. The ad serving company stores only information that you voluntarily provide and that cannot be identified as being associated with you. If, however, you prefer not to receive the benefits made possible by cookies, most browsers allow you to reject cookies or choose which cookies you want to accept and which ones you want to reject.

Security

Strong security measures protect this website against the loss, misuse, and alteration of the information stored at the website. Data encryption is the key to our security. For

Figure WP22C

communication between systems, ReceiptCity uses protocols called Secure Socket Layer (SSL 3.0) and VPN (Virtual Private Network), depending upon the merchant providing receipts, that allow transactions to be encrypted to a very high standard of security. Digital Certificates are used for authentication and secure communications between ReceiptCity and merchants.

Sensitive information such as account numbers remain encrypted while stored in the ReceiptCity database. Our database server is protected in many ways, including dual firewalls, intrusion detection, and comprehensive access logging.

Information from "Outsiders"

The information on this site is provided by the people who use the site and the merchants that sponsor the site. It contains no information from parties that are not participants in your purchase transactions. For example, no information on the site comes from credit bureaus.

Your Choices

This website gives you the opportunity to decline further communication from us at the point where we request information about you. To do so, simply remove the check from the appropriate check box at the point of registration. This site also lets you remove from our database the information that you have provided to us if you want no future communication with us and no longer want to receive our services. To do this, send email to remove@ReceiptCity.

Correcting & Updating Your Information

At any time, you can change or modify information that you have already provided. To make changes, visit www.ReceiptCity.com, log-in and enter your password. Then, select "Profile." After making the changes you want, select "Update Info." To change the list of products that interest you, select from the toolbar "Offers/Events." Change the dates and events you want to be reminded about by selecting "Personal Reminders."

Contacting the Web Site

For answers to questions about this privacy statement, the practices of this website, or your experience with this website, please contact:

ReceiptCity Webmaster
@pos.com
3051 N. First Street
San Jose, CA 95134
Webmaster@receiptcity.com

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

@pos.com Page 1 of 2



@pos.com is an internet company that web-enables the point-of-sale, allowing merchants to use web-based technology to streamline operations, reduce costs, and expand customer service capabilities.



[COMPANY INFO] [PRODUCTS/SERVICES] [INVESTORS] [CAREERS] [PARTNERS] [SITE MAP]

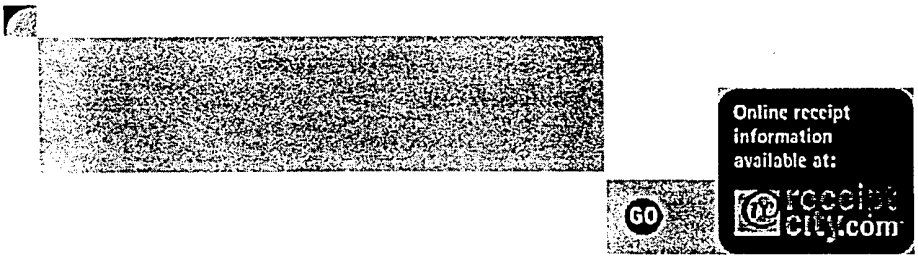


Figure WP23

38/47

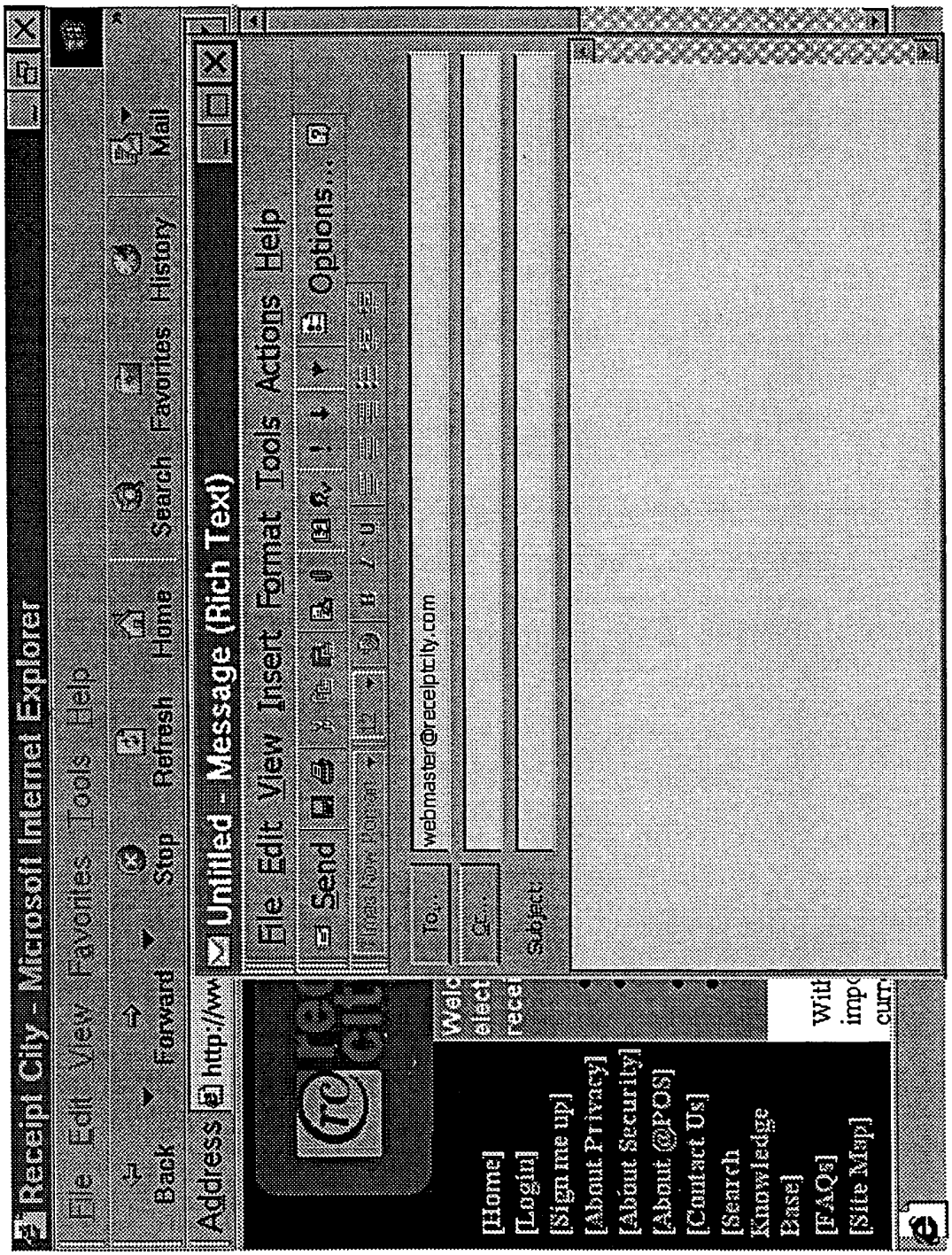

Receipt City - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail
Address http://ww
Untitled - Message (Rich Text)
File Edit View Insert Format Tools Actions Help
Send
Options...
webmaster@receiptcity.com
To...
Cc...
Subject
[Home]
[Login]
[Sign me up]
[About Privacy]
[About Security]
[About @POS]
[Contact Us]
[Search Knowledge Base]
[FAQs]
[Site Map]

Figure WP24



[Home]
[Login]
[Sign me up]
[About Privacy]
[About Security]
[About @POS]
[Contact Us]
[Search Knowledge Base]
[FAQs]
[Site Map]

POWERED BY: @POS.com

Search Knowledge Base

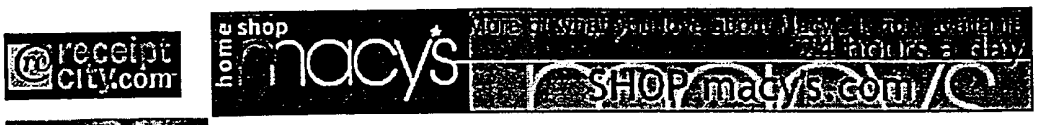
Keyword

[ENTER]

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP25

Figure WP26A



[Home]
[Login]
[Sign me up]
[About Privacy]
[About Security]
[About @POS]
[Contact Us]
[Search Knowledge Base]
[FAQs]
[Site Map]



Search Results

Qt. 1 - What is so special about ReceiptCity?

Ans. ReceiptCity is a secure Internet receipt vault for consumers. Here you can access your receipts for purchases you made with participating businesses. At ReceiptCity, you can download receipts into Quicken and Excel (for personal finance, tax reporting and expense reporting) and see exactly what was purchased (and for those who signed the receipt with electronic signature capture devices,) to answer credit card statement questions. With select merchants, you can also reorder a product, extend a warranty, order accessories, or ask for alternative items if you are dissatisfied and wish to return the item.

ReceiptCity can save you precious time and simplify your storage and searching for receipts.

Qt. 2 - Is receipt city free?

Ans. Yes, as a consumer there are no fees to access your receipts.

Qt. 3 - I do not find any receipts yet. When will merchant receipts exist in ReceiptCity for me?

Ans. We are currently populating the ReceiptCity site with transactions from a number of retailers in the San Francisco bay area. We are scheduling the arrival of receipts from several large retailer chains now and expect this to begin in the second half of 1999 and increase rapidly from there.

Meanwhile, if there are particular merchants you would like to see participate in this program, e-mail your request to webmaster@receiptcity.com and we'll let them know.

Qt. 4 - What do you do with the information you collect?

Ans. We only use the information to identify your receipts within the merchants' receipts and provide you with relevant promotions, reminders and other rewards. You can opt out from receiving these promotions at any time.

We take privacy very seriously. First, we do not own the receipt data, the merchant does, and second, we subscribe to accepted consumer privacy norms on the Internet. We are in the process of obtaining the TRUSTe seal with regards to privacy. TRUSTe is a not-for-profit company well known for promoting consumer-friendly privacy practices on the Internet. For more about our policies, click on our privacy statement.

Qt. 5 - When I make a purchase, how long does it take before a receipt is available at ReceiptCity?

Ans. This will depend upon the merchant and the merchant's connection to our data center. In general, receipts will be available by the following day or sooner.

Qt. 6 - Why do I have to "opt" for a receipt when I shop at a store with the interactive point of sale (iPOS) terminal and not automatically have receipts posted to ReceiptCity for me?

Ans. This is a policy that varies by merchant. Some merchants will automatically post these for registered ReceiptCity consumers while others will want you to choose.

Qt. 7 - How secure is ReceiptCity.com?

Ans. Modeled after many Internet banks, ReceiptCity's security uses multiple measures to protect against loss, misuse and alteration of the information under our control. Data "encryption" (a technique that makes information unreadable except to those with the unlocking "code") is the key. For communication between a merchant and ReceiptCity, we always use a

Figure WP26B

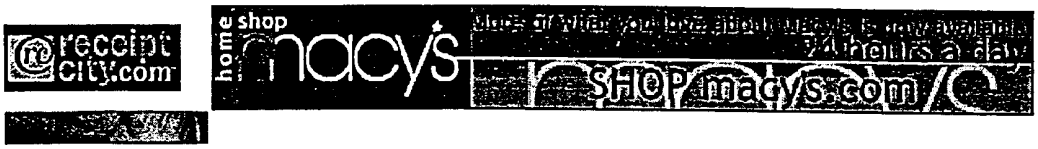
protocol called Secure Socket Layer (SSL 3.0) orVPN (Virtual Private Network), which encrypts transactions to a very high standard of security. Digital Certificates are used for authentication and secure communications between ReceiptCity.com and merchants or other suppliers of data. In addition, sensitive information, such as account numbers, are encrypted while stored at ReceiptCity.com.

Our Data Center is located in a physically secure location which is monitored on a full time (24 x 7) basis. It contains state of the art equipment and software to monitor and ensure that only authorized users have access to the stored data.

Qt. 8 - Who do I contact if I have any questions about ReceiptCity.com or this website?

Ans. Please send any questions you may have about ReceiptCity services or this website to webmaster@receiptcity.com. We welcome the opportunity to make the services and website more useful and enjoyable to our clients and visitors.

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.



[Home]
[Login]
[Sign me up]
[About Privacy]
[About Security]
[About @POS]
[Contact Us]
[Search Knowledge Base]
[FAQs]
[Site Map]



FAQs

Qt. 1 - What is so special about ReceiptCity?

Ans. ReceiptCity is a secure Internet receipt vault for consumers. Here you can access your receipts for purchases you made with participating businesses. At ReceiptCity, you can download receipts into Quicken and Excel (for personal finance, tax reporting and expense reporting) and see exactly what was purchased (and for those who signed the receipt with electronic signature capture devices,) to answer credit card statement questions. With select merchants, you can also reorder a product, extend a warranty, order accessories, or ask for alternative items if you are dissatisfied and wish to return the item.

ReceiptCity can save you precious time and simplify your storage and searching for receipts.

Qt. 2 - Is receipt city free?

Ans. Yes, as a consumer there are no fees to access your receipts.

Qt. 3 - I do not find any receipts yet. When will merchant receipts exist in ReceiptCity for me?

Ans. We are currently populating the ReceiptCity site with transactions from a number of retailers in the San Francisco bay area. We are scheduling the arrival of receipts from several large retailer chains now and expect this to begin in the second half of 1999 and increase rapidly from there.

Meanwhile, if there are particular merchants you would like to see participate in this program, e-mail your request to webmaster@receiptcity.com and we'll let them know.

Qt. 4 - What do you do with the information you collect?

Ans. We only use the information to identify your receipts within the merchants' receipts and provide you with relevant promotions, reminders and other rewards. You can opt out from receiving these promotions at any time.

We take privacy very seriously. First, we do not own the receipt data, the merchant does, and second, we subscribe to accepted consumer privacy norms on the Internet. We are in the process of obtaining the TRUSTe seal with regards to privacy. TRUSTe is a not-for-profit company well known for promoting consumer-friendly privacy practices on the Internet. For more about our policies, click on our privacy statement.

Qt. 5 - When I make a purchase, how long does it take before a receipt is available at ReceiptCity?

Ans. This will depend upon the merchant and the merchant's connection to our data center. In general, receipts will be available by the following day or sooner.

Qt. 6 - Why do I have to "opt" for a receipt when I shop at a store with the interactive point of sale (iPOS) terminal and not automatically have receipts posted to ReceiptCity for me?

Ans. This is a policy that varies by merchant. Some merchants will automatically post these for registered ReceiptCity consumers while others will want you to choose.

Qt. 7 - How secure is ReceiptCity.com?

Ans. Modeled after many Internet banks, ReceiptCity's security uses multiple measures to protect against loss, misuse and alteration of the information under our control. Data "encryption" (a technique that makes information unreadable except to those with the unlocking "code") is the key. For communication between a merchant and ReceiptCity, we always use a protocol called Secure Socket Layer (SSL 3.0) orVPN (Virtual Private

Figure WP27B

Network), which encrypts transactions to a very high standard of security. Digital Certificates are used for authentication and secure communications between ReceiptCity.com and merchants or other suppliers of data. In addition, sensitive information, such as account numbers, are encrypted while stored at ReceiptCity.com.

Our Data Center is located in a physically secure location which is monitored on a full time (24 x 7) basis. It contains state of the art equipment and software to monitor and ensure that only authorized users have access to the stored data.

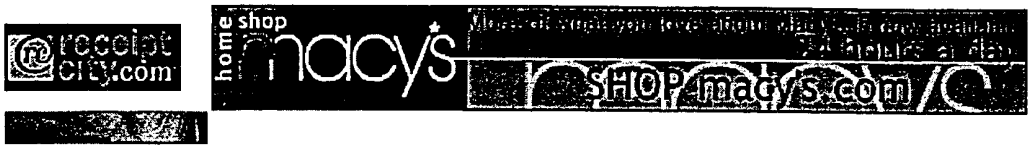
Qt. 8 - Who do I contact if I have any questions about ReceiptCity.com or this website?

Ans. Please send any questions you may have about ReceiptCity services or this website to webmaster@receiptcity.com. We welcome the opportunity to make the services and website more useful and enjoyable to our clients and visitors.

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

siteMap.asp at www.receiptcity.com

Figure WP28



[Home]
[Login]
[Sign me up]
[About Privacy]
[About Security]
[About @POS]
[Contact Us]
[Search Knowledge Base]
[FAQs]
[Site Map]



Site Map

Before Login

- Home - ReceiptCity home page
- Login (SSL) - Login page for registered users
- Sign Me Up (SSL) - First time registration process to enter profile and validate user
- About Privacy - Detailed statement of our privacy commitments
- About Security - Description of the security methods for this site
- About @POS.COM - Link to the site which owns this one
- E-mail Us - Link to e-mail setup with address of webmaster@receiptcity.com
- FAQs - Frequently asked questions with answers for your information
- Site Map - You are there now.
- Lost Password (SSL) - If you can not remember your password, go here
- Search Knowledge Base - Search FAQs and other info available

After Login

- My receipts (SSL) - build a customized search for the specific receipts you desire
  - View Receipts (SSL) - View new receipts created since the bookmarked
  - View This Month's Receipts (SSL) - View receipts from purchases this month
  - Receipt(SSL) - Line item details for a receipt
    - Download Data(SSL) - Download page for Quicken and Excel format
    - File It(SSL) - File this particular receipt
    - View Signature Form(SSL) - Ask user to fill in a form before displaying a signature
      - Signature Page(SSL) - Displaying receipt details with signature
        - Download Data(SSL)
- Offers/Events(SSL) - Add and edit offers and events
- Profile(SSL) - Update your personal profile
- Personal Reminders(SSL) - Add or change reminders to be sent on personal events
- Change Password(SSL) - Specify a new personal password for access to receipts



Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

details2.asp?FiIden=463292K2&RecIden=02330K1 ... Page 1 of 1



My Main Page | Logout

[My Receipts]
[Offers/Event]
[Profile]
[Personnel Reminders]
[Change Password]
[Contact Us]

POWERED BY: @POS.com

Receipt

Date 1999/06/04
Card Number **********7003
Card Title Visa

Amount $49.97

Filene's Basement
Winn & Cambridge St.
Burlington MA 01803
Tel # 781-229-2130

STR#	REG#	TRN#	EMP#
34	007	00001512	31232

06/04/99 9:10

SALE

DEPT	ITEM	PRICE	QTY	YOUR		
863	354174	$11.99	1	N	$11.99	Tax Deductible
SADDLES LINK BRAID/B						
863	7603981	$13.99	1	N	$13.99	-
JULIANCASU/ASTPK/RFD						
850	223395	$23.99	1	N	$23.99	-
ZYLOS HERRINGBONE ND						
Sub Total				$49.97		
Total				$49.97		

AMEX Credit Card $49.97
Acct# 372214255227003
Auth# 583434 H S 01/01

Total $49.97

[VIEW SIGNATURE] [DOWNLOAD DATA] [FILE IT]

Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP29

46/47

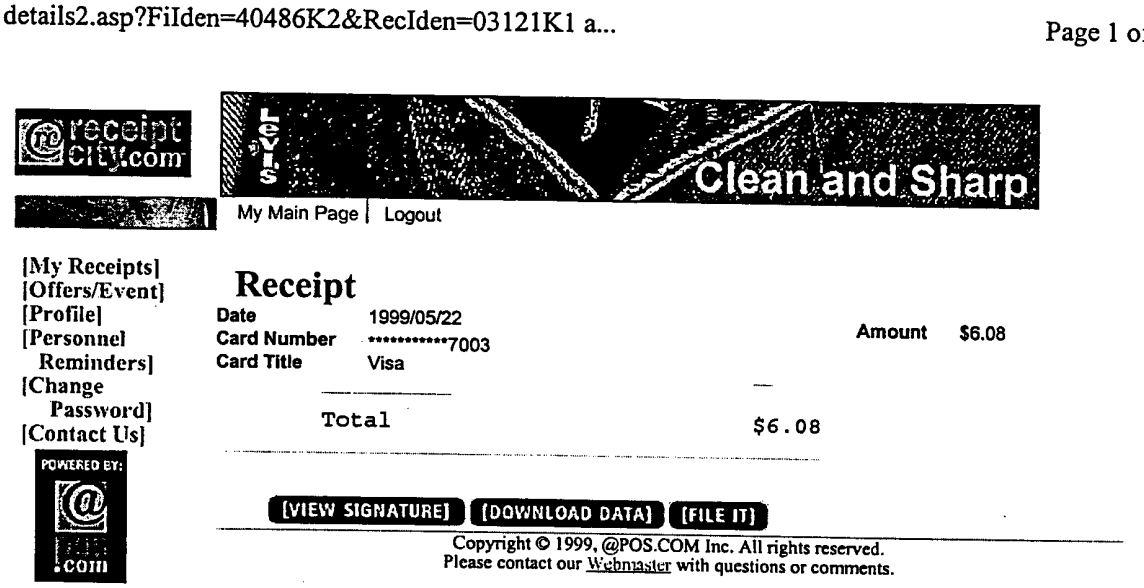

details2.asp?FiIden=40486K2&RecIden=03121K1 a...
Page 1 of 1
receipt city.com
Levi's
Clean and Sharp
My Main Page | Logout
[My Receipts]
[Offers/Event]
[Profile]
[Personnel Reminders]
[Change Password]
[Contact Us]
Receipt
Date 1999/05/22
Card Number **********7003
Card Title Visa
Amount $6.08
Total $6.08
[VIEW SIGNATURE] [DOWNLOAD DATA] [FILE IT]
Copyright © 1999, @POS.COM Inc. All rights reserved.
Please contact our Webmaster with questions or comments.

Figure WP30