



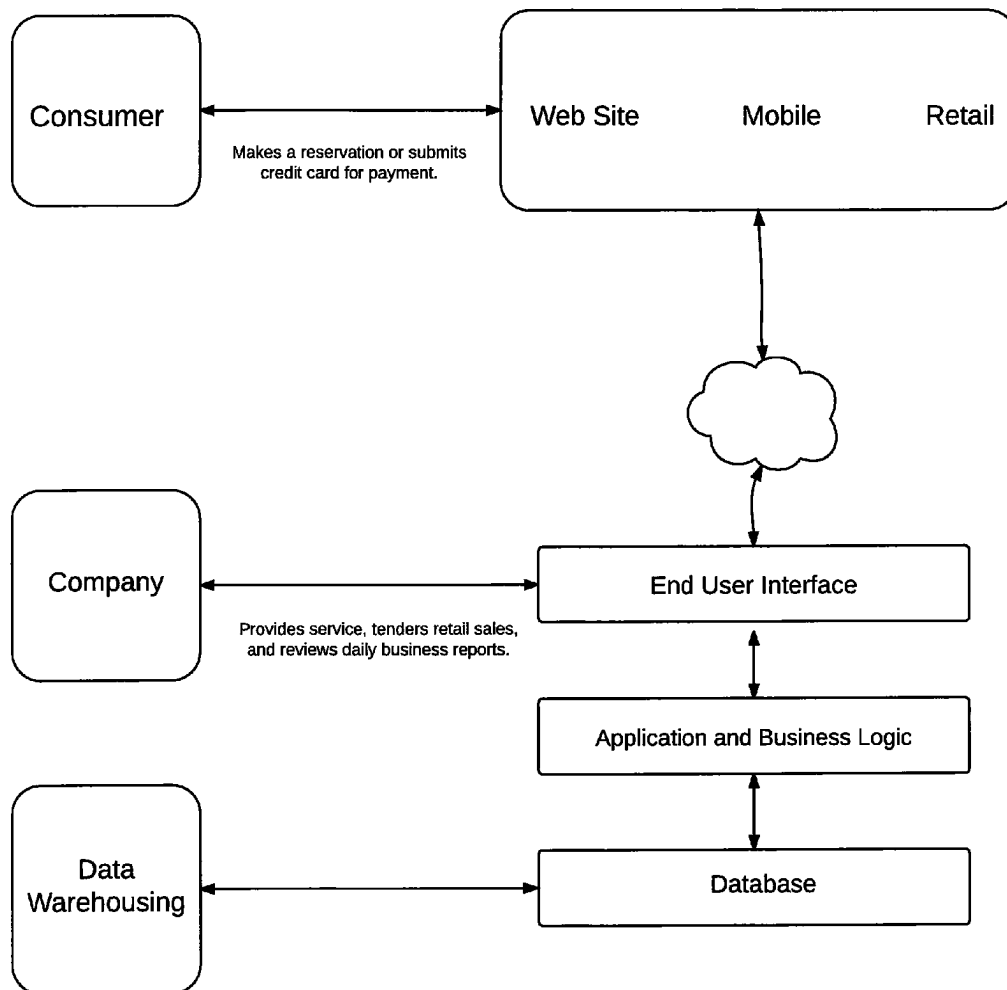
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(19) **United States**(12) **Patent Application Publication**
Harley(10) **Pub. No.: US 2016/0328663 A1**(43) **Pub. Date: Nov. 10, 2016**(54) **RESERVATION SYSTEM FOR DISTRIBUTED
MULTICHANNEL TRANSACTIONS**(52) **U.S. Cl.**CPC *G06Q 10/02* (2013.01); *G06Q 10/1093*
(2013.01)(71) Applicant: **Parking Reservations Software LLC,**
Tampa, FL (US)(72) Inventor: **Mayra Harley,** Oldsmar, FL (US)

(57)

ABSTRACT(21) Appl. No.: **15/148,120**(22) Filed: **May 6, 2016****Related U.S. Application Data**(63) Continuation of application No. 13/532,006, filed on
Jun. 25, 2012, now abandoned.(60) Provisional application No. 61/501,119, filed on Jun.
24, 2011.**Publication Classification**(51) **Int. Cl.***G06Q 10/02* (2006.01)*G06Q 10/10* (2006.01)

A reservation system for distributed multichannel transactions comprises hardware and software including one or more servers on which a database, such as a relational database, is stored and accessed. A reservation utility is integrated into a company's website seamlessly such that access to the reservation utility by a customer of the company using an input device over a network puts into use the reservation system. The utility automatically accesses the reservation system, accessing the database for availability and pricing information, reporting reservation information to the company and updating inventory information in the database. The utility provides a plurality of services, which may be unrelated services and may be tailored to the particular customer including access, availability and price of such services.



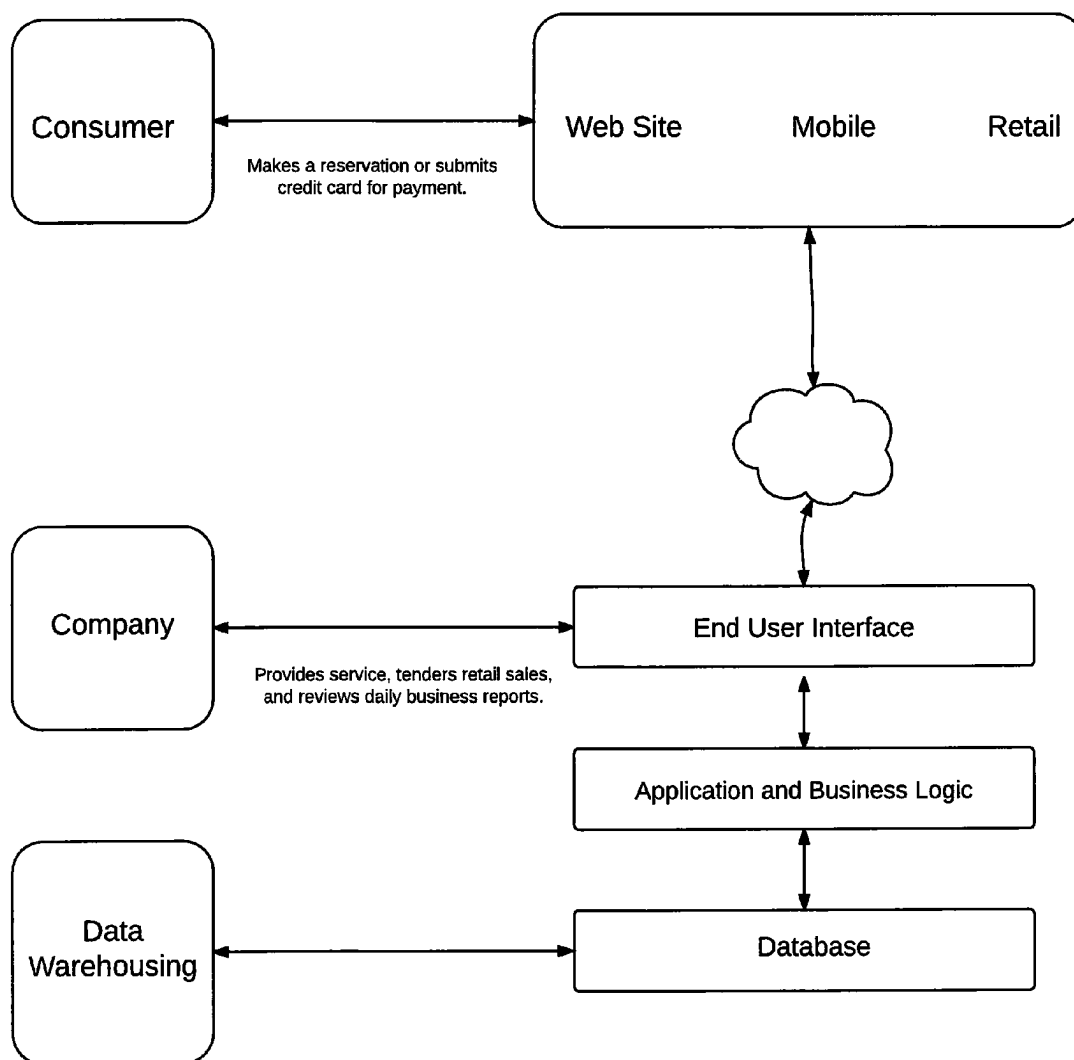


FIGURE 1

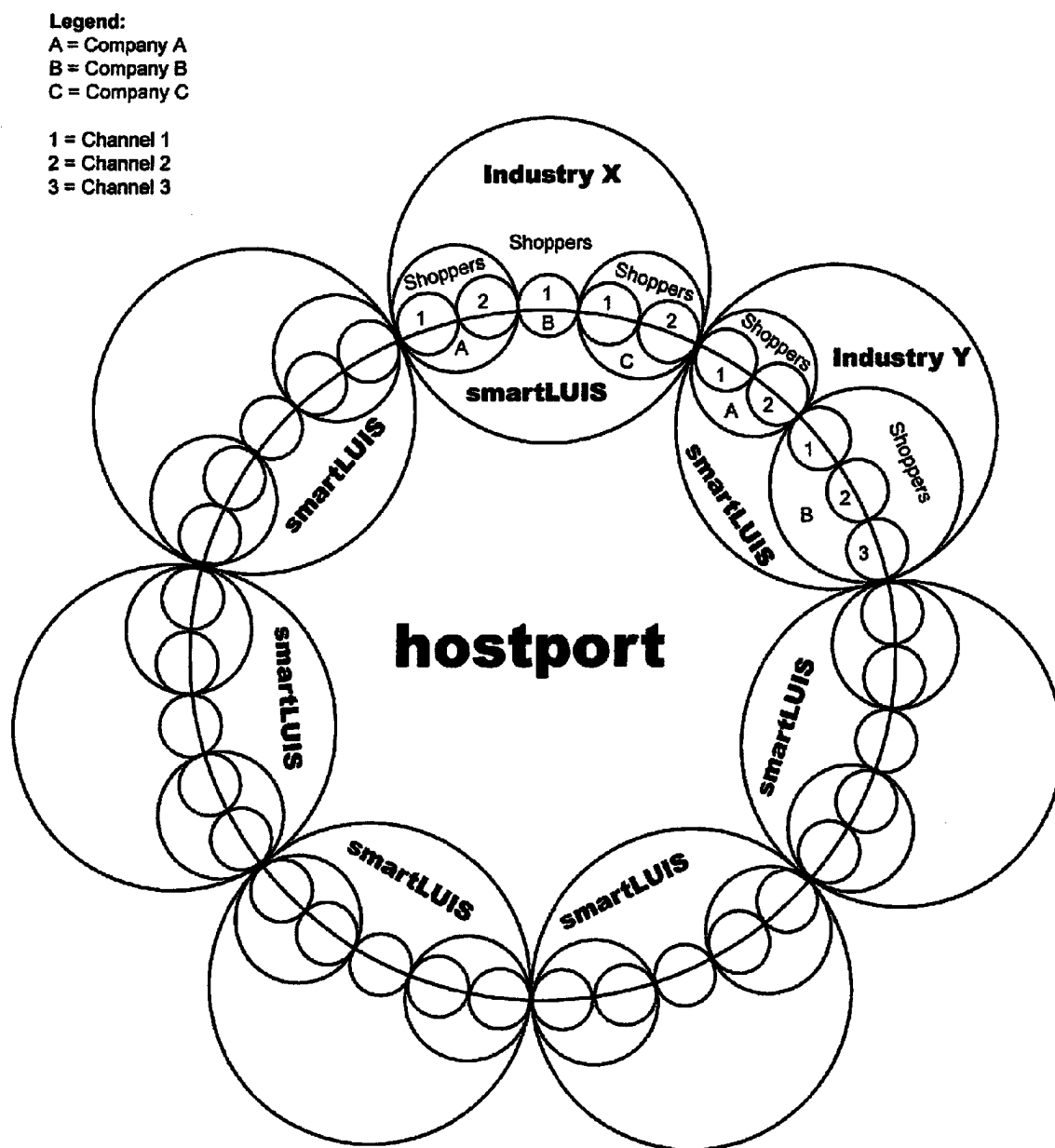


FIGURE 3

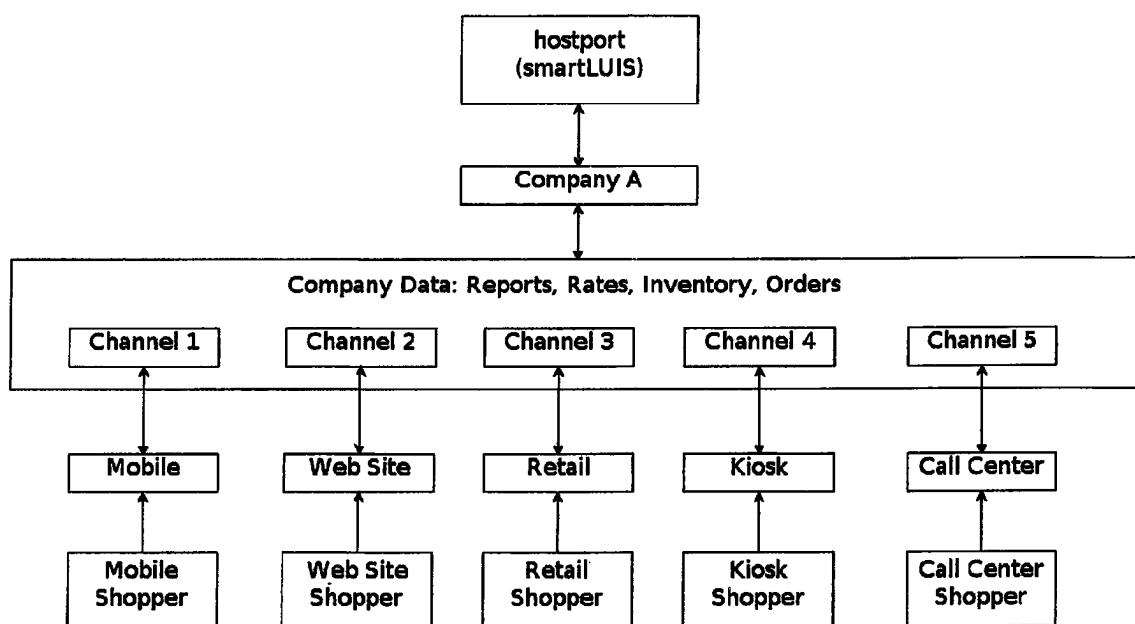


FIGURE 4

A-1 express
AIRPORT PARKING

Reservations Self & Valet Park Auto Detail Services Directions Discounts Rewards Program

COURTESY SHUTTLE
DETAIL SERVICES
SELF PARKING
VALET PARKING

OUR FACILITY

Make a **FREE** Online Reservation to Guarantee your Parking Space!
Rates start at \$7.00 per Day!

Departure Date:

Departure Time:

Return Date:

Return Time:

Parking Option:

[View / Edit / Cancel Reservation](#)

A1 Express - Tampa Airport Parking
Convenient, Safe and Affordable

Since 1984, A1 Express has been providing Tampa International Airport (TPA) parking services at affordable prices. We have room for over 1,200 vehicles, we have the best prices, and we have courteous, friendly and long-time employees who treat you like the valued customer that you are. Why pay more to park at Tampa airport? Park your car with us for less, and have other services performed while it is parked, if you so desire. We offer car wash, auto detailing and oil change, all done while you are away. A1 Express is synonymous with "Tampa Airport Parking"!!

Be sure to get our Tampa Airport Parking coupon and make a reservation to reserve your space. We thank you in advance for your business.

News Updates

A-1 Express now offers Cruise Port Parking!
December 29, 2010

A-1 Express Services is relocating to Avon Park
May 3, 2010

When you arrive...

We require 15 minutes to check you in and shuttle you the airport. So, we strive to make our airport parking service simple and easy for you.

- ✓ Check-in at the counter
- ✓ Obtain your claim ticket
- ✓ Allow driver to load your bags

Join Our Email List

Get in touch with us

A-1 Express Airport Parking on Facebook

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FIGURE 5

A-1

express

AIRPORT PARKING

[Reservations](#)
[Self & Valet Park](#)
[Auto Detail Services](#)
[Directions](#)
[Discounts](#)
[Rewards Program](#)

Online Reservations: Click. Park. Save!

RESERVE YOUR PARKING SPOT

The following is the availability based on the information you provided. Please "Choose" the service you wish to reserve prior to your arrival at the facility.

A1 Express Airport Parking

A1 Express Parking - Tampa (TPA)

5317 Avlon Park Drive

Tampa, FLORIDA 33607

VIEW POLICIES

MODIFY DATE & TIME

Departure Date: 4/24/2011

Departure Time: 01:00 pm

Return Date: 4/25/2011

Return Time: 01:00 pm

Preference: All Available

*Total Price quote includes local sales tax. If more than one option is selected, taxes will be prorated accordingly. To view breakdown of amount displayed, please select [Total Amount](#).

Showing Results for

Sort Results by: Price | Alpha

Service:	Description:	Rate:	Total Price:	Curr:	Choose:
Valet Parking	Park vehicle out front, sign in at our office, then board our FREE shuttle bus.	7.00	7.42	USD	<input checked="" type="checkbox"/>
Self Park:	Park your car in the parking garage on level 3 or higher. Take the VM elevator to our first floor office, enter and sign in (KEEP YOUR KEYS). Then take our FREE shuttle bus.	8.00	8.56	USD	<input checked="" type="checkbox"/>
Valet Park, Covered	Attendant will sign you in, take your car keys and park your car in a covered area.	9.95	10.45	USD	<input checked="" type="checkbox"/>
Cruise Parking	Valet Parking & transportation to and from Port of Tampa. Transportation for up to 6 people per parked vehicle, enter or exit facility prior to your last departure for the port. Must reserve parking 48 hours in advance!	10.00	10.70	USD	<input checked="" type="checkbox"/>
Oversized Vehicle Parking	8' high or higher, 20' long maximum, Maximum of 40' long	14.00	14.98	USD	<input checked="" type="checkbox"/>

START OVER

RESERVE

FIGURE 6

**RESERVE YOUR PARKING SPOT**

The following is the availability based on the information you provided. Please "Choose" the service you wish to reserve prior to your arrival at the facility.

A1 Express Airport Parking
A1 Express Parking - Tampa (TPA)
5317 Avion Park Drive
Tampa, FL 33607

[VIEW POLICIES](#)**DATE & TIME**

Departure Date: FRIDAY, 6/24/2011

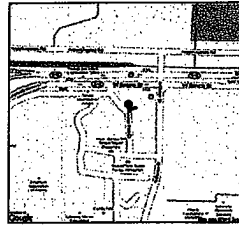
Departure Time: 01:00 PM

Return Date: SATURDAY, 6/25/2011

Return Time: 01:00 PM

Preference: Valet Parking

Total Amount: 22.22

**ITEMIZED CHARGES**

Rate	Service Type	Rate Type	Rate	Qty	Extended Amount
\$7.00	Valet Parking	Daily	\$7.00	1	\$7.00
					USD \$7.00
					\$18.95

**Car Wash (Car)**

A deluxe hand wash with interior vacuuming, body conditioning, and fire dr

Taxable Sub-Total \$25.95

7% State Sales Tax \$1.82

Non-Taxable Sub-Total \$0.00

Total Amount \$27.77

* Denotes a "Taxable" line item.

Shuttle Information:

Our 24-hour, complimentary Shuttle Service promptly picks you up at your car door, helps you with your luggage, and whisks you to your terminal at LAX. Upon your return, our shuttle service will pick you up at your arriving terminal and drop you back off at your car without delay - our shuttles frequent LAX about every 5-7 minutes. When you return from your trip please wait for our shuttle at the "Hotel & Courtesy shuttle" stop under the red sign. For self park please keep the boarding card that the driver will give you when you check in to help you find your parking space.

Driving Directions:

Please note we have moved to our new location at the corner of Spruce St and O'Brien St in Avion Park. We are now located at: 5317 Avion Park Dr, Tampa, FL 33607. Phone: (813) 282-1400

Customer Information:

First Name: SMC
Last Name: Test
Address: 120 State Street E, Suite 104
City: Oldsmar
State: FLORIDA
Country: UNITED STATES OF AMERICA
Zip: 34677
Email: support@smcsoftware.com
Phone Number: 813-381-5144
Mobile Number:

A copy of your reservation has been sent to: support@smcsoftware.com

FIGURE 7

From: reservations@smartreservationservices.com

To: support@smcsoftware.com

Subject: PARKING DEMO Reservation Confirmation (#940954)

Previous Next

Date: Thu 6/23/2011 2:34 PM

View: HTML | Text | Header | Raw Content

Thank you for using PARKING DEMO online reservation system. We look forward to serving you at our Demo, FLORIDA location.

Reservation Number: 940954
 ABC Airport
 ABC Airport Dr.
 Demo, FLORIDA 34677
[Click here for driving directions](#)

Departure Date: 6/24/2011 1:00:00 PM
 Return Date: 6/25/2011 1:00:00 PM
 Preference: Valet Parking
 Total Amount: 27.77

Itemized Charges

Rate	Service Type	Rate Type	Rate	Qty	Extended Amount
*S	Valet Parking	Daily	\$7.00	1	\$7.00
			USD		\$7.00
					\$18.95

Car Wash (Car)
 A deluxe hand wash with interior vacuuming, body conditioning, and tire dr

Taxable Sub-Total	\$25.95
7% State Sales Tax	\$1.82
Non-Taxable Sub-Total	\$0.00
Total Amount	\$27.77

* Denotes a "taxable" line item.

Shuttle Information:
 Our 24-hour, complimentary Shuttle Service promptly picks you up at your car door, helps you with your luggage, and whisks you to your terminal at LAX. Upon your return, our shuttle service will pick you up at your arriving terminal and drop you back off at your car without delay - our shuttles frequent LAX about every 5-7 minutes. When you return from your trip please wait for our shuttle at the "Hotel & Courtesy shuttle" stop under the red sign. For self park please keep the boarding card that the driver will give you when you check in to help you find your parking space.

Driving Directions:
 Please note we have moved to our new location at the corner of Spruce St and O'Brien St in Avion Park. We are now located at: 5317 Avion Park Dr, Tampa, FL 33607. Phone: (813) 282-1480

Customer Information
 First Name: SMC
 Last Name: Test
 Address: 120 State Street E, Suite 104
 City: Oldsmar
 State: FLORIDA
 Country: UNITED STATES OF AMERICA
 Zip: 34677
 Email: support@smcsoftware.com
 Phone: 813-381-5144
 Mobile Phone:

PLEASE DO NOT REPLY TO THIS EMAIL.
 This e-mail serves as your receipt. The originating e-mail account is not monitored. This address is automated, unattended, and cannot help with questions or requests.

Thank you.

FIGURE 8

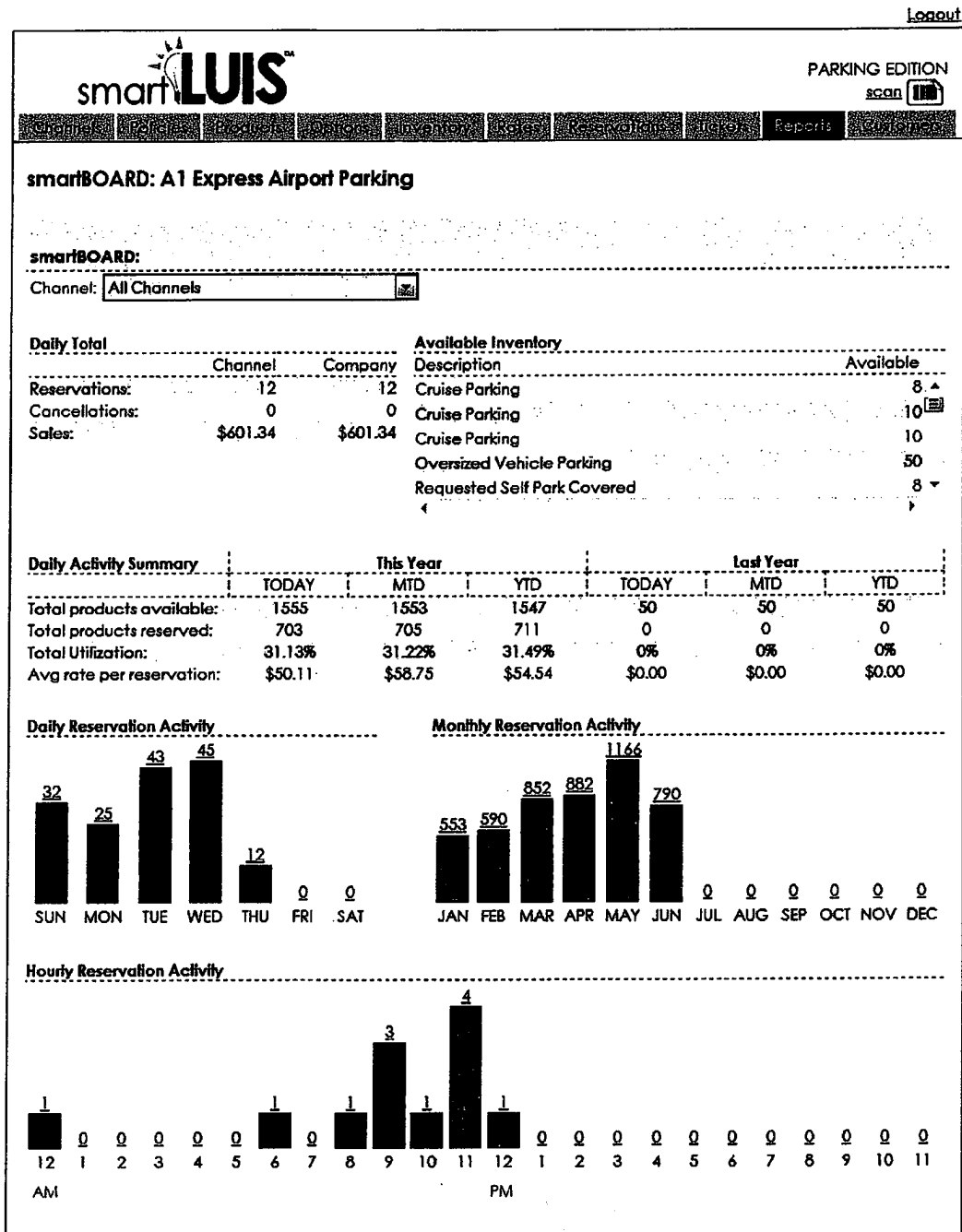


FIGURE 9

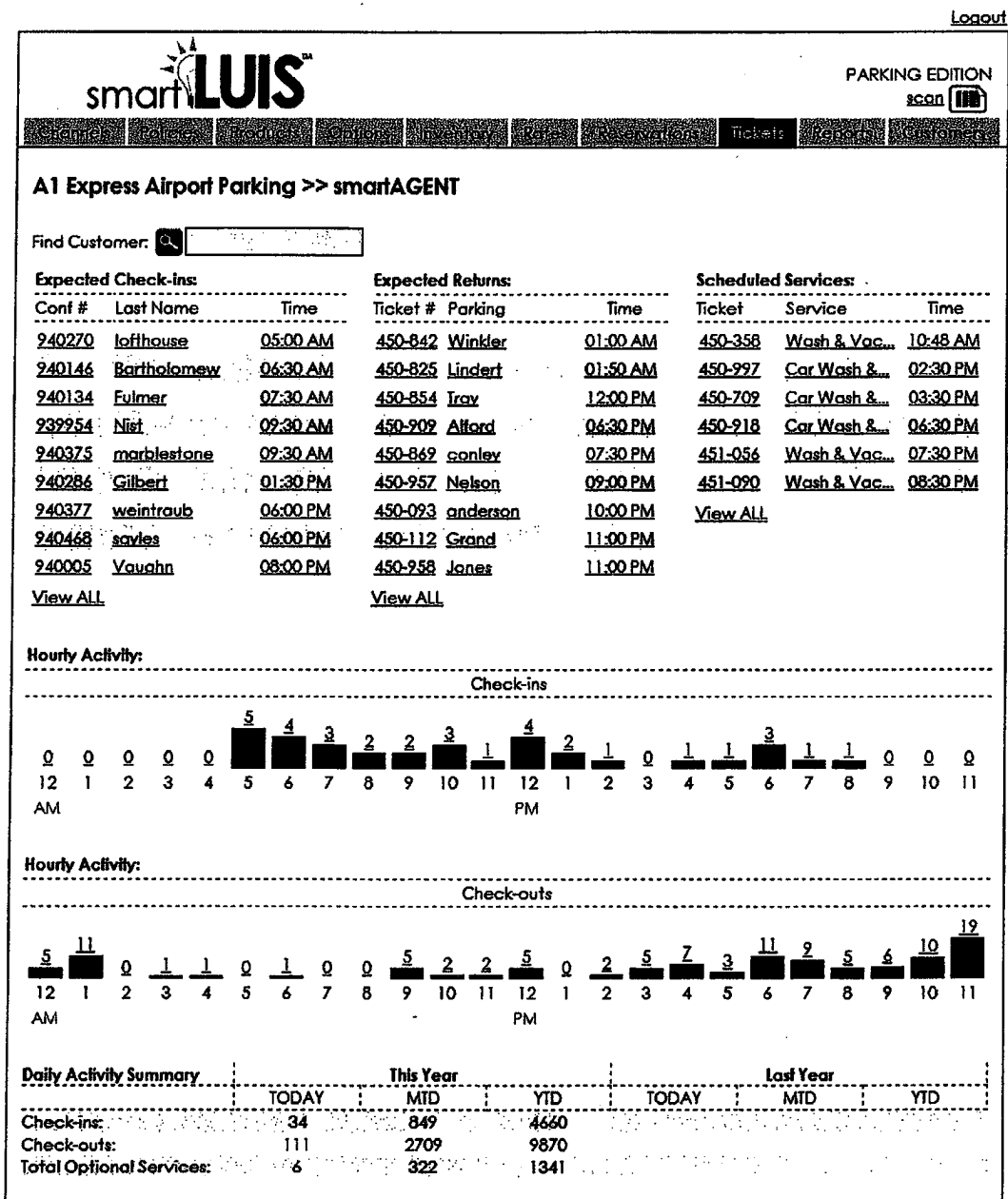


FIGURE 10

PARKING EDITION

\$CON

Channel	Date	Time	Filter	Location	Unit	Report	Print
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Daily Sales Report

Daily Sales Report:

From Date: Through Date:

Channel Name:

Channel Name: All Channels

Net Sub-total	Net Tax	Net Total Sales	Net Cash	Net Credit	Gross Cash	Gross Credit
\$1,004.35	\$70.32	\$1,074.67	\$114.92	\$959.75	\$114.92	\$1,064.61

Payment Summary

Tender Type	Sub Total	Tax	Total Amt.
CASH	\$107.40	\$7.52	\$114.92
CREDIT	\$994.95	\$69.66	\$1,064.61
REFUND(CREDIT)	(\$98.00)	(\$6.86)	(\$104.86)
TOTAL	\$1,004.35	\$70.32	\$1,074.67

Ticket Sales Summary

Rate Type Description	# Tickets	Sub Total	Tax	Total Amt.
Airline Crew	3	\$84.00	\$5.89	\$89.89
Standard	21	\$853.85	\$59.77	\$913.62
Travel Agent	2	\$66.50	\$4.66	\$71.16
TOTAL	26	\$1,004.35	\$70.32	\$1,074.67

Services Sales Summary

Option Description	# Sold	Sub Total	Tax	Total Amt.
Wash & Vacuum (Truck/Van/SUV)	1	\$14.95	\$1.05	\$16.00
TOTAL	1	\$14.95	\$1.05	\$16.00

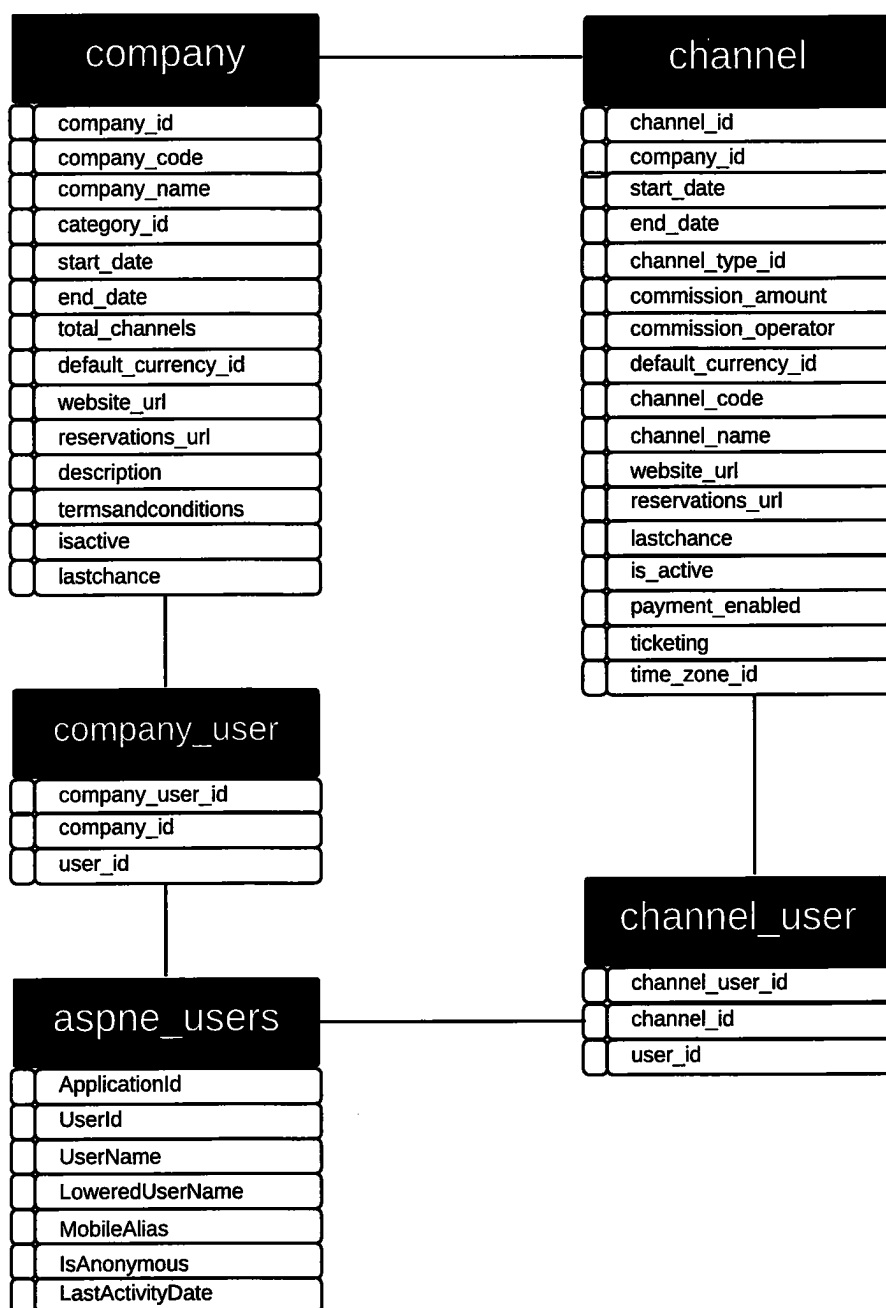


FIG. 11

RESERVATION SYSTEM FOR DISTRIBUTED MULTICHANNEL TRANSACTIONS

CROSS RELATED APPLICATIONS

[0001] This application is a continuation of U.S. Non-Provisional application Ser. No. 13/532,006, filed Jun. 25, 2012 Minch claims the benefit of U.S. Provisional Appl. No. 61/501,119, filed Jun. 24, 2011, the entire disclosure and drawings of which is hereby incorporated by reference herein in its entirety.

FIELD OF THE INVENTION

[0002] The field relates to multi-channel marketing and computer implementations applicable to multi-channel marketing.

BACKGROUND

[0003] Multi-channel retailing is known that integrates online and brick and mortar retailing operations. Software for tracking multi-channel retailing is typically an in-house client-server relationship, where separate clients within a retail establishment access a server in order to avoid separate information technology channels for disparate retail channels. U.S. Publ. No. 2003/0004822 published Jan. 2, 2003 and framed the high overhead, reliable network environment and problems inherent in client-server IT solutions for multi-channel retailing. Instead, this publication suggested a peer network, sending data messages to each peer network and locally storing data on each network, which the reference teaches has advantages for speed of retrieval and highly reliable access to data compared to a client-server solution. U.S. Pat No. 4,567,609, issued Jan. 28, 1986, and U.S. Pat. No. 6,754,369, issued Jun. 22, 2004, describe optical character recognition of vehicle license plates, and the written description and drawings of these issued patents are both incorporated herein by reference in their entirety for the purpose of introducing methods and devices for recognizing vehicle license plates.

[0004] Additional channels, such as call centers and the like, increase the complexity of multi-channel retailing IT solutions, and there is no multi-channel marketing solution suitable for a wide variety of businesses and their customers, particularly when real-time reservation systems are involved. Airline systems that aggregate fares are known, but these systems are notoriously poor at providing actual final price and availability information, until very near the end of a customer's booking of a flight. Only at this point are the prices and availability known. Even with advances in technology, airline reservation systems do not operate seamlessly on a businesses website as a utility that allows easy access to a plurality of services. To the extent that hotel and car reservations are combined, the effort at combination is inadequate and requires booking with one of a large number of hotels and separate car rental companies. Furthermore, the database for the car rental company reservation, the airline reservation and the hotel reservation are all maintained in separate, proprietary databases maintained by the airline, car rental agency and/or hotel or hotel system. Therefore, known systems do not provide seamless operation of distributed multichannel transactions and do not provide for reservations for a plurality of different services on a business website as a utility.

SUMMARY

[0005] For example, a multi-channel system for marketing, including retail marketing or business to business marketing, provides a seamless integration with a company's website, such that access to a utility on the website updates a database coupled to the server or computer system hosting the website over a network, such as the Internet. As a result one or more servers may be used for accessing and storing information to the database, such as a relational database. In one example, the system is a reservation system comprising a network, one or more servers coupled to the network, the servers operating software for managing a reservation system distributed across the one or more services, electronically over the network, for the reservation of a plurality of different services. The plurality of services may be reserved for specific dates or times using a single reservation utility for a plurality of unrelated or related services. For example, the reservation system provides a reservation utility. A business computer system may be coupled to the network, such as the Internet. The business computer may be hosting a website accessible over the network. The reservation utility of the reservation system may be hosted on one or more servers, other than the business computer, for example. In one example, the reservation is a utility, such as a Java applet, html code or the like. The reservation utility is integrated on the website hosted by the business computer, such that data entered on the website by a data entry device, which may be connected to the computer hosting the website by the network, may be captured by the servers. The database on the servers then reserves one or more of the plurality of different services for the specific dates or times booked by the data entered over the network via the website.

[0006] In this example, the system is neither a client-server architecture nor a peer network. Instead, the utility accessible through the website appears to the user to be a part of the website hosted by the business computer. Instead, a customer, a customer service representative or an agent at a retail location may enter data into the utility using any data entry device capable of entering data in the utility, and the utility automatically updates data entries in the database hosted on one or more servers. Likewise, the information on availability and price displayed in the utility may be updated and accurate, because the data displayed in the utility is data obtained from the database. In one example, the data presented depends on the identity of the customer. Therefore, each customer or a group of customers may have different rates presented based on information stored in the database. Each of a plurality of servers may be separate from the business computer system. The reservation utility of the reservation system may be integrated within the website hosted by the business computer system, for example.

[0007] When the reservation utility of the reservation system is accessed by a customer of a business operating the business computer system for reserving one or more of the plurality of different services for specific dates or times, the reservation system automatically schedules the one or more of the plurality of different services for specific dates or times and automatically updates the availability of the one or more of the plurality of different services within the database, for example. When the customer puts the system into use, the customer may be unaware that the reservation utility is interacting with any servers. Instead, the customer experiences a seamless interaction with a website without any need to understand or appreciate that the utility functions

over the network with a database stored on one or more servers, which may be distributed on the network.

[0008] In another example, the business may access the reservation system for management of a plurality of different services offered by the business. For example, the business may access the management system over the network by accessing a particular web portal. Alternatively, the business may access a utility on its own website seamlessly integrating the website with the database stored on one or more remote, distributed servers. In one example, a business accesses the reservation system for management of die plurality of different services using a reservation management utility provided on a reservation management website for the business.

[0009] For example, a plurality of different services may include parking services, detailing services and transportation services, and a reservation utility may present options for scheduling of the detailing services and transportation services in conjunction with the parking services within the same reservation utility.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 illustrates a flow diagram of one example.

[0011] FIG. 2 illustrates a relational diagram showing industries and companies providing one or more channels for customers.

[0012] FIG. 3 illustrates a hierarchical diagram of one example of an omni-channel reservation and retail system.

[0013] FIG. 4 illustrates a utility integrated on a company website.

[0014] FIG. 5 illustrates one example of a multi-channel reservation system for a plurality of services offered seamlessly with a website coupled with a database stored on one or more services over a network.

[0015] FIG. 6 illustrates an email receipt, which may be automatically generated by the reservation system or may be requested by an end user, at any time by seamlessly accessing the company website.

[0016] FIG. 7 illustrates an example of an email receipt.

[0017] FIGS. 8-10 illustrate examples of reports.

[0018] FIG. 11 illustrates an example of data fields/classes.

DETAILED DESCRIPTION

[0019] A computer system may be connected to a network and may include programming and data stored on a storage device, implementing a system for reservation management, comprising a multichannel network connection capable of connecting to a plurality of distributed clients for arranging reservations using the computer system, programming, and data stored on a storage device, the programming providing the following technical solutions when implemented by execution using computer processor.

[0020] A system for distributed, multichannel distribution may be implemented on a computer, such as a server, using software, when coupled with a database stored on an accessible storage medium. The system provides the following technical solutions. Consumers may use more than one “channel” (web, catalog, mobile, store) to make a purchase or reservation on a website that utilizes a utility operatively interfaced over a network with one or more servers, wherein the customer need not be aware that a plurality of services are being provided using more than one channel.

[0021] One example has the ability to allocate inventory at a more granular level to better respond to consumer demands across all selling channels. It also has the ability to assign great importance to inventory visibility across all channels. Consumers may use the digital “channels” to make a transactional decision even if it is ultimately completed in a retail establishment. One example includes web-based software that is an interchangeable, unit-based inventory management system featuring sophisticated pricing, multi-channel management. For example, forecasting capabilities may be built around a store-centric demand model.

[0022] Examples of industries capable of benefitting are described as follows:

Conference and Meeting Facilities

[0023] Meeting/Banquet

[0024] Convention Bureaus

[0025] Chamber of Commerce

Equipment Rental

[0026] Audio/visual Equipment

[0027] Construction Equipment

[0028] Electronics

[0029] Event Equipment

Health

[0030] Gym & Personal Trainers

[0031] Massage Therapy

[0032] Spa

[0033] Yoga Studios

Home Services

[0034] Cleaning Services

[0035] Nanny Services

[0036] Boarding/Kennels

Lodging

[0037] Bed & Breakfast Inns

[0038] Campgrounds

[0039] Log Cabins

[0040] Resorts

[0041] Vacation Rentals

Recreation & Sports

[0042] Bicycle Rentals

[0043] Boat Rentals

[0044] Golf

[0045] Horseback Riding

[0046] Rafting

[0047] Scuba Diving

[0048] Skydiving

[0049] Sports Fishing

[0050] Wind Surfing/Kite Surfing/Surfing

[0051] Yacht Charters

Travel & Tours

[0052] City Tours

[0053] Guided Tours

[0054] Nature Tours

[0055] Off-Road Adventures

- [0056] Segway Tours
- [0057] Vacation Seminar

Transportation

- [0058] ATV Rentals
- [0059] Air Charters
- [0060] Aircraft Rental
- [0061] Car/Truck Rentals
- [0062] Limousine Services
- [0063] Motorcycles
- [0064] Parking
- [0065] Scooter and Wheelchair
- [0066] Shuttle Services

Warehousing

- [0067] Self Storage
- [0068] A method for improving performance of a distribution order system may be used for multi-channel management. Consumers orders generated from the web, mobile, and retail channels are provided enterprise-wide visibility into the company's inventory. For example systems may comprise third-party systems integration (point of sale, internet distribution systems, property management system, etc), highly configurable system to accommodate any business operation (simple or complex rate structures, multiple languages, etc), white label ("branded") online booking engine for both company and facility level, multi-channel management tools and a dynamic packaging component to sell additional services and products over multiple channels.
- [0069] For example, companies may think holistically about their business integrating store-level fulfillment with omni-channel selling capabilities and omni-channel customer order generation capabilities. Unlike shopping aggregators and price comparison sites, an omni-channel management offers price transparency within the companies' own "walls". The invention enables the company to be a part of the omni-channel model enabling a "buy anywhere, get anywhere" strategy. In one example, a system uses a relational database architecture and object oriented design for data abstraction, messaging, modularity, and polymorphism. Logical data modeling may define the business entities and their relationships in order to provide a holistic view of the data for processing and reporting, such as illustrated in the process flow diagram in FIG. 1. For example, retailers with cross-channel activities may offer consumers a "buy anywhere" model and fulfill through a "best inventory" source, using "distributed order management."
- [0070] As an example of an Interchangeable Transaction Engine and an Omni-channel Management system, one example operates as follows. The system comprises a database comprised of multiple companies' information on their products and services organized as a single database on a server or servers connected by a network. The system stores data to identify unlimited unit types (i.e., products and services) inventory and rates for each company. The system stores data to identify all distribution channels (i.e., in-store, on-line, mobile) for each company. The system stores inventory and rate data for unlimited products and services as well as business rules for qualifying availability. The system is coupled with a user interface for advance reservations and order placement in addition reports. The system is coupled with a user interface for data retrieval and reports. The system is coupled with a user interface for point of sale and

reports. A reservation system receives requests for reservations/inventory and rate data for unlimited products and services from multiple distribution channels identified within the system database. A point-of-sale system receives requests for inventory and rate data for unlimited products and services from multiple distribution channels identified in the system and receives the reservation and order requests and stores the reservation and order data in the database. A user interface receives reservation and order data and provides access to the reservation and order request to the user. The system updates the inventory and rates data and updates the database with the reservation and order details in response to the reservation and order request. The inventory and rate data update is generated in real time as each reservation and order is completed to reflect current inventory regardless of the source of the inventory and rate data update and presents updated inventory and rate data to the reservation system interface and point of sale interface. For example, a customer may have a utility installed for reserving a plurality of services on the customer's website, and use of the utility automatically updates the database accessed by the businesses providing the plurality of services. The system monitors and stores each set of inventory and rate update and sequence number data associated with reservations and orders and updates a central database to decrease the number of available units for the channel. The inventory data may include unit-based availability data for each of the available units at each channel managed, and where the inventory update data includes reservation and order for a respective unit at one of the channels that reflects units that were previously indicated as being available at that channel and which have since become unavailable. A system includes a company-wide system receiving company modification data and updating the database with the company modified data. The system is comprised of a point-of-sale system receiving retail modification data and updating the database with the retail modified data. The system includes a price tracking and management system which receives rate plan modification data and updates the database with the rate plan modification data. In one example, different customers may receive different rates for booking the same service, at the same time, depending on the rate schedule set, or a differential set, for the particular customer. The system may have a distribution channel management system receiving distribution channel modification data and updating the database with the distribution channel modified data. The system stores reservation data reflecting the current status of available inventory from each distribution channel in the relational database, for example, and may receive status update data at a local point-of-sale system when a unit has been consumed and transmits the status update data to a central database to change the inventory for each of the channels where that unit is available.

[0071] In one example, a system stores reservation data reflecting the current status of rate plan data from each distribution channel in a database, receives status update data at a local point-of-sale system when a rate plan at the property has been changed and transmits the status update data to a central database to change the rate plan for each of the channels where that unit is available. The system stores reservation data reflecting the current status of company data from each company in a database, receives status update data at a local point-of-sale system when distribution channel data for a company has been changed; transmits the

status update data to a central database to change the distribution channel data for each distribution channel.

[0072] The system's capabilities and technology may be used to increase service levels to consumers and position the right inventory in the right place at the right time, for example. The system may have has the ability to manage more complex assortments and perpetual inventory at the enterprise level. One view of demand and one view of inventory enable the ability to allocate inventory at a more granular level across all the selling channels. It is clear that there is no "silver bullet" for managing extremely fast or slow moving items; however, better visibility and accuracy is key. The invention may provide the ability to see digital assets such as a customer's history and purchase activity, as well as physical assets like inventory across all the available channels whether they are store, web, customer call center, mobile, or a shopping web site.

[0073] In one example, a consumer has misplaced their computer's power cord and goes to a big box store to buy a replacement. This particular retail company offers receipt via email as their commitment to be a "green" organization. The clerk assures the consumer that they can return the product without any problem if the missing cord is recovered, so long as they have their receipt. When the missing cord is found, the consumer finds that there is no email receipt, and the customer calls an 800-number for customer service. Access to the store receipt files is provided by the system, and the representative re-sends the email to the address on file. The customer service associate asks the customer to check and confirm safe receipt. The relational database accessed has all of the information about the customer and the sales in whatever channels applicable. Alternatively, using the same system, a customer may have created a profile using a utility on the company's website, and the profile would enable the customer to retrieve and reprint a lost receipt via the company's website, using the utility, because the utility on the website seamlessly communicates with the database on one or more of services connected by a network to the server hosting the company's website, even if neither of the servers are owned by the company.

[0074] In the flow chart of FIG. 1, a consumer makes a reservation such as by submitting a credit card for payment or entering a user id and password or the like. In making the reservation, the customer uses an input device, such as a mouse, keyboard and computer display or voice commands or by accessing a call center or using any other channel. In the example of accessing a website or a mobile application, the customer may be unaware that the customer may be accessing a third party database stored on one or more servers, such as on the cloud. The transaction is transparent to the customer. The system accesses a database, which may be stored anywhere on an accessible network. The end user interface provides the same access to the system regardless of the channel used to access the end user interface, for example. The company may access an end user interface,

also, which may allow the company to provide services, make sales and review and generate reports. Software application and business logic provides middleware between the seamless user interface and a database, such as a relational database, for example. The database may be stored on (one or more servers, which may be coupled together by a network, for example.

[0075] The example illustrated in FIG. 2 represents a diagram showing a plurality of companies in a variety of industries cooperatively providing a plurality of services over a common system with seamlessly integrated and uniquely tailored products and services delivered to their customers on their own individual websites, for example. In one example, a plurality of companies may provide services to customers in a particular industry. Alternatively, one company may target one set of customers and a different company may target a different set of customers, even within the same industry. Regardless, a multi-channel access may be provided by the system, seamlessly.

[0076] FIG. 3 illustrates a hierarchical view of the hostport referred to as smartLUIS that supports, in this example, Company A, utilizing five channels, e.g. mobile, website, retail, kiosk and call center channels. In this case, the same interface may be provided seamlessly for each such channel.

[0077] FIG. 4 illustrates one example of an online reservation system utility seamlessly integrated on the website of A-1 express, a company that provides courtesy shuttle, detailing, self parking and valet parking services to customers in multiple channels. In one example, an automated character recognition system determines the characters on a license plate as a vehicle approaches, and the reservation system automatically matches the license plate with a reservation for the same vehicle license plate. For example, check in at the facility may be expedited or automated. In one example, the reservation system may notify the company if the customer is running late and may expedite transportation to the customer's next destination.

[0078] FIG. 5 illustrates a reservation in process using the utility, which directly accesses data in the database to show the services available, the availability of dates and times and the rates available to this customer. FIG. 6 illustrates a completed reservation and a report provided to the customer, which completion generates an email based on end user preferences, also. An example of an email receipt is shown in FIG. 7. FIG. 8 illustrates a report generated for the company, A1 Express Airport Parking, for example. FIG. 9 illustrates the tickets generated for this company. FIG. 10 illustrates a daily sales report, for example.

[0079] In the example of FIG. 11, some fields in a relational database are illustrated. Combining the database structure example with example source code in Appendix A, for example, a utility for a reservation system may be integrated on any website for reserving services, such as parking or self-parking, detailing and transporting customers.

APPENDIX A

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Example Source Code Excerpts Listing:

User Assembly (Company and Channel ACLs added to UserContext Object):

```
public static UserContext BuildUserContext(System.Security.Principal.IPrincipal usr, Guid
useridentifier)
```


APPENDIX A-continued

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```

{
    string usertype = GetWebUserType(useridentifier);
    MembershipUser user=Membership.GetUser(useridentifier);
    if (user != null)
    {
        if (usertype == "HOSTPORT" || usertype = "LUIS")
        {
            HttpCookie authcookie = FormsAuthentication.GetAuthCookie(user.UserName, false);
            if (authcookie != null)
            {
                FormsAuthenticationTicket newTicket =
FormsAuthentication.Decrypt(authcookie.Value);
                if (newTicket.Name != usr.Identity.Name)
                {
                    FormsAuthentication.SignOut( );
                    HttpContext.Current.Server.Transfer("~/Authentication/Login.aspx");
                }
            }
            else
            {
                FormsAuthentication.SignOut( );
                HttpContext.Current.Server.Transfer("~/Authentication/Login.aspx");
            }
        }
        else
        {
            FormsAuthentication.SignOut( );
            HttpContext.Current.Server.Transfer("~/Authentication/Login.aspx");
        }
    }
    UserContext context=new UserContext(user.UserName, (Guid)user.ProviderUserKey);
    ConfigurationObjectsCollection config = new ConfigurationObjectsCollection( );
    FormsAuthenticationTicket AuthTicket = new FormsAuthenticationTicket(user.UserName,
true, Convert.ToInt32(ConfigurationManager.AppSettings["FormsAuthCookieTimeOut"]));
//should be same as cookie expiration
    FormsIdentity NewFormsIdentity = new FormsIdentity(new
FormsAuthenticationTicket(AuthTicket.Version, user.UserName, AuthTicket.IssueDate,
AuthTicket.Expiration, AuthTicket.IsPersistent, AuthTicket.UserData));
    string[ ] Roles=AuthTicket.UserData.Split("|").ToCharArray( );
    System.Security.Principal.GenericPrincipal NewGenericPrincipal = new
System.Security.Principal.GenericPrincipal(NewFormsIdentity, Roles);
    context.HostPortAdmin=IsHostPortRole(NewGenericPrincipal.Identity);
    context.Ticketing = IsTicketingRole(NewGenericPrincipal.Identity);
    context.Roles = System.Web.Security.Roles.GetRolesForUser(user.UserName);
    if (!context.HostPortAdmin)
    {
        Context.DefaultCompanyId=ApplicationLibrary.GetCompanyId(context,
GetConnectionString( ));
    }
    ArrayList companyids = ApplicationLibrary.GetUserCompanyIds(context,
GetConnectionString( ));
    ArrayList channelids=ApplicationLibrary.GetUserChannelIds(context,
GetConnectionString( ));
    context.Companies = new CompanyObjectsCollection( );
    context.Channels = new ChannelObjectsCollection( );
    foreach (object companyid in companyids)
    {
        if (!context.Companies.Contains(Convert.ToInt64(companyid)))
            context.Companies.Add(ApplicationLibrary.GetCompany(context,
Convert.ToInt64(companyid), GetConnectionString( ));
    }
    if (channelids.Count > 0)
    {
        foreach (object channelid in channelids)
        {
            if (!context.Channels.Contains(Convert.ToInt64(channelid)))
                context.Channels.Add(ApplicationLibrary.GetChannel(Convert.ToInt64(channelid),
GetConnectionString( ));
        }
    }
    foreach(PropertyInfo pi in user.GetType( ).GetProperties( ))
    {
        config.Add(new ConfigurationObject(pi.Name, pi.GetValue(user, null)));
    }
    config.Add(new ConfigurationObject("ConnectionString", GetConnectionString( ));

```

APPENDIX A-continued

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```

        context.Configuration = config;
        context = PopulateThemeInfo(context);
        string encryptedTicket = FormsAuthentication.Encrypt(AuthTicket);
        HttpCookie authCookie=new
        HttpCookie(FormsAuthentication.FormsCookieName+"_WEBUSER", encryptedTicket);
        authCookie.Expires =
        DateTime.Now.AddMinutes(Convert.ToDouble(ConfigurationManager.AppSettings["FormsAuthCookieTimeout"])); //make sure its same as the formsauthentication ticket expiry value
        HttpContext.Current.Response.Cookies.Add(authCookie);
        return context;
    }
    public static UserContext BuildUserContext(System.Security.Principal.IPrincipal usr,
    System.Web.UI.Page page)
    {
        if (string.IsNullOrEmpty(usr.Identity.Name))
        {
            FormsAuthentication.SignOut( );
            page.Server.Transfer("~/Authentication/Login.aspx");
        }
        else
        {
            MembershipUser user = Membership.GetUser(usr.Identity.Name);
            UserContext context = new UserContext(user.UserName, (Guid)user.ProviderUserKey);
            ConfigurationObjectsCollection config = new ConfigurationObjectsCollection( );
            context.HostPortAdmin = IsHostPortRole(usr.Identity);
            context.Ticketing = IsTicketingRole(usr.Identity);
            context.Roles = System.Web.Security.Roles.GetRolesForUser(user.UserName);
            if (!context.HostPortAdmin)
            {
                context.DefaultCompanyId = ApplicationLibrary.GetCompanyId(context,
                GetConnectionString( ));
            }
            ArrayList companyids = ApplicationLibrary.GetUserCompanyIds(context,
            GetConnectionString( ));
            ArrayList channelids = ApplicationLibrary.GetUserChannelIds(context,
            GetConnectionString( ));
            context.Companies = new CompanyObjectsCollection( );
            context.Channels = new ChannelObjectsCollection( );
            foreach (object companyId in companyids)
            {
                if (!context.Companies.Contains(Convert.ToInt64(companyId)))
                {
                    context.Companies.Add(ApplicationLibrary.GetCompany(context,
                    Convert.ToInt64(companyId), GetConnectionString( )));
                }
            }
            if (channelids.Count > 0)
            {
                foreach (object channelId in channelids)
                {
                    if (!context.Channels.Contains(Convert.ToInt64(channelId)))
                    {
                        context.Channels.Add(ApplicationLibrary.GetChannel(Convert.ToInt64(channelId),
                        GetConnectionString( )));
                    }
                }
            }
            foreach (PropertyInfo pi in user.GetType( ).GetProperties( ))
            {
                config.Add(new ConfigurationObject(pi.Name, pi.GetValue(user, null)));
            }
            config.Add(new ConfigurationObject("ConnectionString", GetConnectionString( )));
            context.Configuration = config;
            context = PopulateThemeInfo(context);
            return context;
        }
    }
    return new UserContext( );
}
Control Binding:
-----
Presentation Layer:
-----
private void setControls( )
{
    channels = ApplicationLibrary.GetAllChannels(context, companyId,
    Helpers.GetConnectionString( ));
    this.DropDownListChannels.DataSource = channels;
    this.DropDownListChannels.DataTextField = "channel_name";
    this.DropDownListChannels.DataValueField = "channel_id";
}

```

APPENDIX A-continued

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```

        this.DropDownListChannels.DataBind( );
    }
    Application Layer:
    -----
    public static DataSet GetAllChannels(UserContext context, long companyid, string
connectionstring)
    {
        return ChannelData.GetAllChannels(context, companyid, connectionstring);
    }
    Data Layer:
    -----
    private const string GET_CHANNELS_SP = "LUIS_GetChannelsForUser";
    public static DataSet GetAllChannels(UserContext context, long companyid, string
connectionstring)
    {
        SqlConnection conn = SqlHelpers.GetConnection(connectionstring);
        SqlCommand command = new SqlCommand(GET_CHANNELS_SP, conn);
        command.CommandType = CommandType.StoredProcedure;
        command.Parameters.Add("@user_id", SqlDbType.UniqueIdentifier).Value= context.Id;
        command.Parameters.Add("@company_id", SqlDbType.BigInt).Value= companyid;
        conn.Open( );
        DataSet ds = new DataSet( );
        try
        {
            SqlDataAdapter adapter = new SqlDataAdapter(command);
            adapter.Fill(ds, "Channels");
            adapter.Dispose( );
        }
        catch (Exception ex)
        {
            throw ex;
        }
        finally
        {
            conn.Close( );
        }
        return ds;
    }
    TSQL (Stored Procedure)
    -----
    ALTER PROCEDURE [dbo].[LUIS_GetChannelsForUser]
        @user_id uniqueidentifier,
        @company_id bigint
    AS
    BEGIN
        SET NOCOUNT ON;
        DECLARE @UserChannelIds TABLE (channel_id bigint)
        INSERT INTO @UserChannelIds (channel_id) EXEC LUIS_GetUserChannelIds
        @user_id
        SELECT co.company_id, ch.channel_id, ch.[start_date], ch.end_date,
ch.channel_type_id, ct.channel_type_code, ct.channel_type_description,
ch.commission_amount, ch.commission_operator, ch.default_currency_id, ch.channel_code,
ch.channel_name, cu.currency_code, cu.currency_description, ch.website_url,
ch.reservations_url, ch.lastchange, ch.is_active, ch.payment_enabled, ch.time_zone_id
        FROM channel ch WITH(NOLOCK)
            INNER JOIN company co on ch.company_id = co.company_id
            INNER JOIN company_user cou on ch.company_id = cou.company_id
            INNER JOIN channel_type ct on ch.channel_type_id = ct.channel_type_id
            INNER JOIN currency cu on ch.default_currency_id = cu.currency_id
        WHERE co.company_id = @company_id
        AND cou.user_id = @user_id
        AND ch.channel_id IN (SELECT channel_id FROM @UserChannelIds)
    END

```

1. A reservation process implemented using a network, the process comprising:

coupling one or more servers to the network, the one or more servers operating software for managing a reservation system distributed, electronically, over the network, for the reservation of one or more of a plurality

of different services, wherein the reservation system is implemented using neither a client-server architecture nor a peer network;

reserving one or more of the plurality of different services for specific dates and times using a single reservation utility;

coupling the single reservation utility with a business computer hosting a website accessible over the network, wherein the reservation utility of the reservation system is hosted on the one or more servers, other than the business computer;

embedding the single reservation utility hosted on the one or more servers, other than the business computer, on a display device coupled to the business computer, such that data entered using a data entry device is displayed within the single reservation utility on the display device hosted by the business computer, such that, to a person logged in and observing the display device, the single reservation utility hosted on the one or more servers is accessible, appearing to the person observing the display device to be integrated on the display, while the single reservation utility remains hosted on the one or more servers separate from the business computer;

entering within the single reservation utility a date or time for reserving at least one service of the plurality of different services, using the data entry device coupled to the business computer, and capturing on the one or more servers hosting the single reservation utility the data entered using the data entry device coupled to the business computer within a relational database accessible by the one or more servers hosting the single reservation utility;

using the data entered into the relational database in the step of entering, such that the single reservation utility books one or more of the plurality of different services for specific dates and times and the display device coupled to the business computer is updated by the single reservation utility such that the single reservation utility hosted on the one or more servers appears to the person observing the display device to be integrated as part of the business computer;

updating, automatically, the display device with specific dates and times for availability of the plurality of different services based on data maintained in the relational database of the reservation system, such that data displayed on the display device is updated and accurate in real time, providing a holistic view of data for processing and reporting; and

implementing the reservation system using an object oriented design for data abstraction, messaging, modularity and polymorphism, wherein logical data modeling defines business entities and relationships in order to provide a holistic view of the data for processing and reporting by the single reservation utility, whether the data in the relational database is updated by the single reservation utility embedded on the website hosted by the business computer or by any other distribution channels, wherein each of the any other distribution channels is identified within the relational database accessible by the single reservation utility.

2. The process of claim 1, wherein the display of the display device presents different rates based on information stored in the relational database of the reservation system based on the person logged in and observing the website.

3. The process of claim 1, wherein the single reservation utility comprises a Java applet, html code or both a Java applet and html code.

4. The process of claim 1, wherein the one or more servers operating software for managing a reservation system comprises a plurality of servers and each of the plurality of servers are separate from the business computer.

5. The process of claim 4, wherein the single reservation utility is accessed by a customer of a business operating the business computer system, and the customer is unaware that the single reservation utility is interacting with any servers and experiences a seamless interaction with the website.

6. The process of claim 5, wherein the database is distributed over the plurality of servers.

7. The process of claim 1, further comprising:

accessing the reservation system, by management of a business managing the business computer, for management of the one or more of a plurality of different services.

8. The process of claim 7, wherein the step of accessing utilizes a particular web portal.

9. The process of claim 7, wherein the step of accessing utilizes a management utility displayed on a website seamlessly integrated on the business computer.

10. The process of claim 9, wherein the step of accessing utilizes a reservation management utility provided on a reservation management website.

11. The process of claim 1, wherein the single reservation utility includes parking services, detailing services and transportation services.

12. The process of claim 11, wherein the single reservation utility presents options for scheduling of the detailing services and transportation services in conjunction with scheduling of the parking services, within the single reservation utility.

13. The process of claim 1, wherein the any other distribution channels includes in-store and mobile distribution channels.

14. The process of claim 1, further comprising: providing a user interface for data retrieval and reports.

15. The process of claim 14, wherein the step of providing a user interface includes accessing the relational database and receiving reservation and order information.

16. The process of claim 1, wherein the relational database stores reservation data reflecting the current status from each of the any other distribution channels.

17. The process of claim 16, further comprising: receiving status update data from a local point-of-sale system and updating the relational database.

* * * * *