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CHECKOUT POS Enterprise

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CHECKOUT Enterprise POS

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1.- Background Company.
The Company

Checkout -IT *Information Technology* is a service provider and systems company established in Mar del Plata in 1995 , specialized in providing point of sale solutions for retail sector and gastronomy. Because of the technology used, these solutions are primarily aimed at companies that have high volumes of data and require a high level of reliability in the capture, processing and auditing of transactions.

We have a group of systems professionals with advanced technical knowledge and solid experience in the retail market, as well as 10 specialized technicians in diagnostics and troubleshooting, own vehicles and a network of distributors in the country and abroad technicians aimed at providing support to our customers. We provide support through telephone, remote control and onsite monitoring , event or contract , including service 7x24 365 days a year. Our professionals are trained on an ongoing basis, having taken courses on various aspects (MCP, ECR (Efficent Consumer Response) - Total Quality and ISO 9000 (KPMG) Administration of Sybase SQL Server, CCNA (Cisco Networking Academy Program), OCA (Oracle Certified Assistant), etc.)

At our headquarters in the city of Mar del Plata, a branch is added in the Autonomous City of Buenos Aires and distributors in various parts of the country, Santiago de Chile, Uruguay and Mexico.

Our Products

Our main products as well as solutions for billing, administration, logistics and management control are ***Checkout POS and Checkout Restaurant***, both the first pure client / server solution via Windows that integrates POS and management in a single database replicated.

For the technology used, these solutions are primarily aimed at Companies holding large volumes of data and require high reliability level in the capture, processing and auditing of transactions.

Our solutions allow you to operate as single points of sale to complex single-user installations spread across different geographic locations and interconnected by various mechanisms - magnetic media, email, direct links (leased line, VPN over Internet, etc. .) - . This feature can operate in isolation or centralizing information of all outlets in a central server or intermediate servers, the synchronization can be configured to be done manually - by an operator - or automatically - without human intervention - being in the latter case possible to set the time interval between them, which can range from 1 time per day , every 1 hour , 1 minute or even on-line .

A complementary product is ***Checkout ON- LINE*** allowing credit card authorization ON LINE using the ISO 8583 international standard on X.25 connections. ***Checkout ON- LINE*** interacts with ***Checkout POS*** and ***Checkout Restaurant*** allowing these programs to authorize credit/debit card transactions straight from the box in less than 3 seconds. This system was approved by Visa and Posnet in Argentina.

Summary of Experiences

Since the first installation in 1998 we pioneered the integration of information outlets to speak with the central administration. Solutions for companies in the retail sale of processing large volumes of information, replication distributed databases using point to point links and satellite links between branches were implemented. Implementation of systems for goods distribution centers to stores, with automatic product replenishment . We implement the centralized purchasing , maintaining price controls but distributing the goods receipt control , allowing lower prices for volume purchases, with the improvement of the quality of delivery by the supplier. Implementation of loyalty plans (frequent customer) using chip cards and magnetic stripe .

We developed interfaces with various ERP systems (SAP , BAS Client / Server, Alamo2000 , Stradivarius , etc.) to insert information generated at the point of sale, either by generating ASCII files, direct access to the database, or by api 's provided by the manufacturers .

We have extensive experience in POS solutions requiring the management of OPOS devices.

Strategic Alliances

Partner of Sybase (Sybase Argentina SA)

TEC Electrónica, Inc. SA of C.V. (representative of TOSHIBA TEC CORPORATION Mexico)

Mellafe and Salas (representative in Chile)

2.- Overview and conceptual map of the proposed solution.

The proposed solution consists of two main systems : **Checkout POS and Checkout Backoffice .**

The first one is the application used in the boxes, in charge of the sales process , collections and surrenders, the second one is the application used to manage, control and report, both for the store and the central administration .

Checkout POS, despite being a software that runs in the Windows environment, has a duty cycle very well defined and which the operator can not depart. It was designed on the premise of achieving a system that is very easy and quick to operate, which was modeled by emulating the behavior of a cash register. The job of a point of sale operator is to process transactions fast, efficiently and safely; he should focus its work on each step of a transaction, trying to minimize the effort required to select an item or choose a payment method. For this reason, and although Checkout POS is a graphical program interface and based on the event model, it does not follow the traditional convention of the GUI , for example, no importance is given to the mouse (if it supports touch screen) , and cycle operation is guided by the system, based on a state transition model: Document Status, Customer Data Status, Article or Services Status, Means of Payment Status, Total Status. The operator uses pre -programmed keys on the keyboard to perform most of the menu selections , and the products are entered by bar code readers, etc. direct reading scales.

Checkout Backoffice is a traditional Windows application, this is with the use of mouse, MDI windows, etc.

It will be used in stores and on the central administration for administration, audit and consultation and issue lists.

The Checkout system provides a circuit for fixing selling prices of products and services that are billed. The selling price can be set freely or from the cost of the product that applies a profit margin. The cost of the item may be the product of the accumulated costs of a composition formula, fixed directly and admitted to the system when entering a purchase invoice or placing an order to the supplier. In turn, the sale prices can take effect immediately at the point of sale or defer to activate a full batch of news together through the process of prices. This process generates control information, listings, update files for display scales and labels of the products affected by the change. If you have a centralized scheme, these updates are transmitted to all branches.

The Prices Process, allows separating the cost burden of the enactment of the selling prices and thus facilitate the work of updating balances/scales, label display, price verifiers and other devices that must be synchronized with outlets. The system is designed to make this process run at night, after the close of customer service and after receiving the update data from the central administration.

Circuit Supply and Inventory:

Among the properties of the products, it is possible to define the type of supply for each one (Centralized, Distributed, Open, Auto). It is also possible to specify the policy for each product on the treatment that will give the system to differences between the quantities ordered and received. In addition, it can handle pending orders, full or partial rejection of request or receive an additional percentage of unordered merchandise (eg fresh with variations in weight).

For the supply, the solution has an internal management system of orders (eg company's distribution centers, transfers between branches, etc.). And one for external purchase orders to suppliers, both forms may coexist, depending on the supply method defined for each product.

The Inventory Circuit allows you to keep control of the stock of the company, register the extraordinary movements that do not correspond to sales or purchases and compare the actual stock against to the one that the system claims, making the necessary adjustments (manually or automatically) .

Procurement Circuit:

The shopping circuit begins with the preparation of a Purchase Order (this could be manually or automatically), continuing the reception and control of such order to finally post the documents available on the current account of the supplier and the emission of payment. This process is closely related to the previous supply process.

3.-Technical caracteristics of the solution

1.-   Software

	STORES		CENTRAL OFFICES
Requirements	POS System Comments	BackOffice System Comments	Merchandise System Comments
How is the capture of information handled in the system, for example if they are considering real-time integrity validations against catalogs, etc?	Real time with access to the data base	Real time with access to the data base	Real time with access to the data base
Does it have a help line for users available in the system(s)?	Available	Available	Available
Explain how is the communication between the different systems of the proposed solution, to explain each step of the process if: there is human intervention or automatic and whether is through interfaces or database replication etc.	Native access to server database of the store server. Local backup of the database. Automatic.	Native access to the database. Replica from and towards Central server using the replication agent itself, independent of the databases. It can be Manual or Automatic depending on the communications infrastructure available. See Reference 2.1	Native access to the database. It receives all the store's transactions using the replication agent itself, independent of the databases. It can be Manual or Automatic depending on the communications infrastructure available. See Reference 2.1
What are the controls available to ensure the accuracy and integrity of data between systems?	The systems use relational database, which guarantees the integrity of existing data and the communication of the own replication agent with control of the transmission/replication of data to ensure updates.	Idem POS	Idem POS

The system(s) have an activity log (log) related to the modification of data, eg display the user, the date and time when you create, modify, or delete data within the system. (Trail Intervention)	Available Home Log in plaintext-configurable operation and point of sale, with detailed record of each operator's action and manipulated information. Idem on the local or remote database.	Available Home Log in plaintext-configurable operation and point of sale, with detailed record of each operator's action and manipulated information. Idem on the local or remote database.	Available Home Log in plaintext-configurable operation and point of sale, with detailed record of each operator's action and manipulated information. Idem on the local or remote database.
Is there a development deparment for the offered application's support?	Available	Available	Available
How many developers does the company have to respond to request for help and requirements? Indicate number of developers by area.	12 people for development and care of corporate clients in permanent staff.	12 people for development and care of corporate clients in permanent staff.	12 people for development and care of corporate clients in permanent staff.
Indicate where the staff development of the systems is located	Argentina	Argentina	Argentina
Indicate the schemes supporting applications, through which means and schedules	Available alternatives: Phone, mail, chat, face. Schedules to 7x24 365 days a year. The application is specially designed to make remote control support.	Available alternatives: Phone, mail, chat, face. Schedules to 7x24 365 days a year. The application is specially designed to make remote control support.	Available alternatives: Phone, mail, chat, face. Schedules to 7x24 365 days a year. The application is specially designed to make remote control support.
Specify programming languages used in developing the system.	PowerBuilder and COM components in Visual Studio.	PowerBuilder and COM components in Visual Studio.	PowerBuilder and COM components in Visual Studio.

2.-   System's architecture

Requirements	STORES		CENTRAL OFFICES
	POS System Comments	BackOffice System Comments	Merchandise System Comments
What software is required on workstations (PC-Pos) to access the system (Operating System)?	Windows NT Workstation or Server/ Windows 2000 Professional or Server Windows XP Professional	Windows NT Workstation or Server/ Windows 2000 Professional or Server Windows XP Professional	Windows NT Workstation or Server/ Windows 2000 Professional or Server Windows XP Professional
With what architecture does the proponed solution work? (client server, web, etc)	Client/Server three tier	Client/Server three tier	Client/Server three tier
Which is the communications infrastructure required for each of the proposed systems (LAN, modems, dedicated line, link via internet, etc.)? specifying in each case the bandwidth requirements.	Multiple possibilities Annex A Reference 2.1	Multiple possibilities Annex A Reference 2.1	Multiple possibilities Annex A Reference 2.1
Which are the Databases supported by the system(s)?	Sybase Adaptive Server Anyware, Microsoft SQL Server (Enterprise and Desktop Engine) as local Database	Sybase Adaptive Server Enterprise, Sybase Adaptive Server Anyware, Microsoft SQL Server (Enterprise and Desktop Engine) as the company's Database	Sybase Adaptive Server Enterprise, Sybase Adaptive Server Anyware, Microsoft SQL Server (Enterprise and Desktop Engine) as the company's Database
Specify the Network protocol required by the system(s)	TCP/IP	TCP/IP	TCP/IP
Which architecture for the system(s) is required or recommended for redundancy and fault recovery?			There are various ways to achieve high availability solutions. These can be achieved through the Operating System, database engines, existence of redundant components (servers, memory, disk array, etc.). The selection of the best solution to achieve this is closely related to the cost of implementation and configuration complexity it represents. The implementation of systems with distributed

			relational data base surpasses other solutions because it has improved security in the management, integrity and consistency of the stored data. Hardware failures can be minimized by redundant components or backup equipment.
What mechanisms are used to distribute and secure version changes remotely on different applications?	Distribution Agent Versions Proper development See Reference 2.2	Distribution Agent Versions Proper development See Reference 2.2	Distribution Agent Versions Proper development See Reference 2.2

3.-   Security in the system(s)

	STORES		CENTRAL OFFICES
Requirements	POS System Comments	BackOffice System Comments	Merchandise System Comments
Does the system require the identification of usernames and passwords to access the system?	Available	Available	Available
What security levels (system, User Roles, Information, etc.) are handled in the system(s)? Please explain each of the levels	Available See Reference 3.1	Available See Reference 3.1	Available See Reference 3.1
Passwords have an expiration period? Can this be configured?	Available See Reference 3.2	Available See Reference 3.2	Available See Reference 3.2
Is there a function on the system for the administrator to control passwords (add and delete users)? If so explain where the activity is done in each shop or centrally	Available See Reference 3.3	Available See Reference 3.3	Available See Reference 3.3

4.-   Operation resilency & Backup/Recover methods

	STORES	CENTRAL OFFICES

Requirements	POS System Comments	BackOffice System Comments	Merchandise System Comments
The system allows you to continue working despite the fall of connectivity / communication with other modules of the proposal, for example (POS -> BackOffice, POS -> Cash Master, Back Office -> Central Office)	Available See Reference 4.1	Available See Reference 4.1	Available See Reference 4.1
Does the system detect automatically if the connectivity between modules are reset? Specify Mechanisms	Automatic See Reference 4.1	Automatic See Reference 4.1	Automatic See Reference 4.1
Once the connectivity between modules is restored, does the synchronization and/or communication of information (sales, price changes, etc) run automatically? Specify mechanisms.	Automatic See Reference 4.1	Automatic See Reference 4.1	Automatic See Reference 4.1
Show the methods, mechanisms and tools for the system's data backup.	Available See Reference 4.2	Available See Reference 4.2	Available See Reference 4.2
What controls prevent data corruption during a crash or computer reset?	Available See Reference 4.3	Available See Reference 4.3	Available See Reference 4.3
Describe the features and/or steps proposed for software recovery, for example if a workstation (PC-Pos) experienced an unrecoverable error in the operating system to use each proposed modules	Available See Reference 4.4	Available See Reference 4.4	Available See Reference 4.4
What tools exist to facilitate administration support remotely?	Available See Reference 4.5	Available See Reference 4.5	Available See Reference 4.5

Please include a full description of the methods of backup and recovery to cover any failure of hardware, operating system, communications, and applications.	Available See Reference 4.6	Available See Reference 4.6	Available See Reference 4.6

4. -Documentation System

Manuals Available:

Printed Installation Manual .

Printed Manual from the POS .

Printed Manual from the Backoffice .

Printed Quick Reference Manual System .

Contextual Online Help: The system has contextual help with the F1 key.

Tutorials: The system offers flash tutorials with animation and sound that explains how to perform various tasks and helps to understand the different circuits.

. *5 - Checkout's solution description*

The implementation of a modern policy of reducing costs to compete on the market, increasing profitability and improving customer service solutions requires new systems.

Business rules are currently based on a model that allows a centralization of control and decision making , with a high degree of adaptability to market changes and an ongoing study of customer needs . The Checkout POS billing system is based on client/server model that allows the flow of information across the enterprise in real time. The use of distributed relational database optimizes communication links so that you can manage and audit all branches from the main house and in turn receive information from transactions that occur instantly.

We are convinced that we can go far beyond adapting to current operating model, and in conjunction with the different areas of your business, design a new control model that could exploit the capabilities provided by our software.

In our experience, the key point is that the information should be generated by an integrated system that has consolidated and cross-checked the information , so that the reports are automatic, in addition to reducing operating costs and support, this prevents tampering or reporting errors.

Moreover, there are certain operations that make up the administrative system of an organization, allowing considerably lower operating costs if they are centralized (shopping, personal control, vendor payments, etc.). **Checkout** provides support for implementing policies of centralized or distributed purchases at product's level, according to the convenience of supply, cost and customer service that each case demands. It is possible to assign to each product, if it is bought centralized, by region, or in each store keeping prices management centralized or if all operative retail outlet is delegated . The centralization of purchasing, maintaining price controls but distributing the control of receiving merchandise, is a very powerful negotiating tool, allowing lower prices for volume purchases, improve the quality of delivery, and establish partnerships with major suppliers.

All critical operations in the system – that constitute control points - leave audit trails in it, which, together with the transactions are consolidated in the central administration. **Checkout** allows analyzing these data in order to detect irregularities, define operational standards and conduct audits. An example might be to follow individual operations such as query surrender (cash count) to determine schedules or unusual frequencies. The system has a remote monitoring tool, which allows you to see in real time what is happening in a point of sale, and further compare the images with which an operator is logging into the system at every instant, which is possible to do using highly efficient technologies like Internet and webcams. You can configure events to capture images and archived in certain circumstances, for example to authorize a particular transaction.

The billing system for points of sale **Checkout POS** is a software tool designed to integrate the process of retail/wholesale with the database of the company. This is intended for use in autonomous Points of Sale or interconnected networks of local or wide area (Standalone/LAN/WAN). For its high flexibility it allows the integration of multiple businesses with the same software: in supermarkets or retail stores,

supermarkets and hypermarkets, wholesale, pharmacies, opticians, photo processing labs, food courts or game rooms, etc.

Currently, the increased competition in all markets, requires greater integration of systems from the companies, allowing them to more agile responses to changes in the environment. **Checkout POS** is based on a philosophy of distributed database at the enterprise level. This means that item's trade data (prices, costs, purchasing conditions, etc.), logistics and supply data, operational information, customer information, transactions in boxes, sales statistics, meaning all data involved in the trading process, are managed in a central database, which feeds copies distributed in each branch. The prices of items can be administered centrally and allow no modifications or branches. The outlets access, in real time, to a copy of the company's database, taking all the information from the same source where it is generated. This database can become the center for the rest of the support systems for sale, so all the prices which are presented on a branch (scales, boxes, labels, posters, workstations, etc.) are obtained from the same place, thus avoiding differences.

The base platform of the **Checkout POS** system is Windows, but can run on any operating system with support for Win32, we recommend as a platform for their safety and reliability, Windows NT/2000/XP. Our solution is fully integrated with the network security Windows NT/2000/XP. Is it possible to realize an operator login integrated with Windows NT/2000 or independently with the possibility of chip / magnetic/barcode card validation. Integration with the Windows user interface. **Checkout POS** can run as a standalone application or as a Shell of the system, integrating the login/logout of the OS with the application's one.

6.- Additional Information

Checkout has also a number of modules not included in the current request, which could be useful for the company. Those will be mentioned briefly, with a quick overview of the features and functions thereof.

Personnel Access Control: *Checkout InTime*

On the billing system an option to control the time of entry and exit of personnel of the company can be added. Credentials via bar code or magnetic strip, fingerprint readers and you can record the time of entry or exit of an employee from a sale.

The system enables multiple shifts for each day of the week (daily or covering more than a working day). Additionally you can create in the head office or branch special hours for a particular day in order to reflect changes in casual schedule.

The recorded information is sent to the central administration, reporting punctuality and presence of each employee. The system computes the number of minutes worked each day as well as the amount of tardiness, early departures or absences .
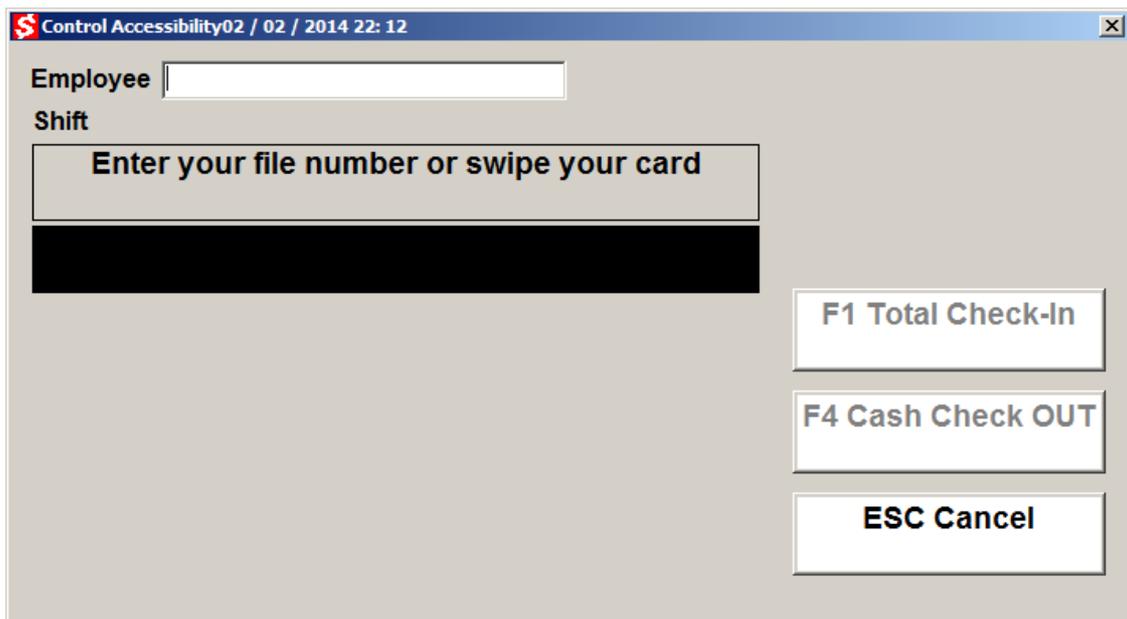
Audit Monitor:

It is a module for remote monitoring, which allows you to see in real time what is happening in a point of sale, and further compare the images with which an operator is logging into the system at every instant, which is possible to do by using extremely economical technologies as Internet and web cameras. The system is highly configurable, allowing you to capture images of interest under certain circumstances, for example when registering to authorize a transaction it takes a picture at that moment, these images are stored next to the event log and audit is possible thereafter.
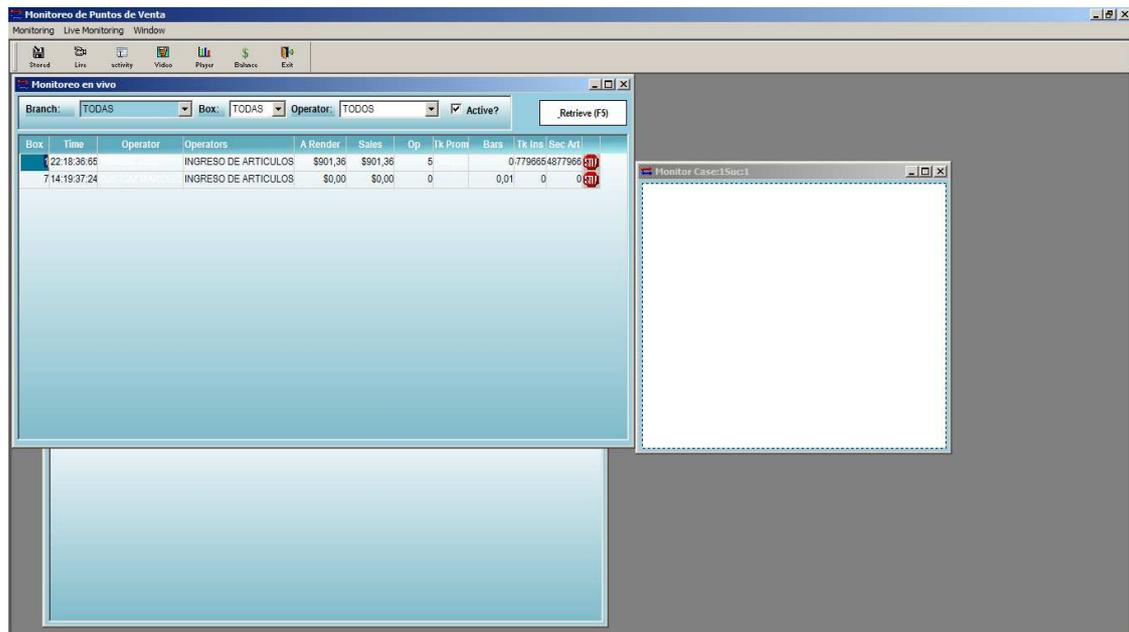
Checkout Restaurant:

It is a client/server system based on Windows. It is oriented to restaurants, bars and food courts. Allowed to operate in the mode of Food Court (Fast Food) with rapid issuance of receipts or in the traditional mode of Restaurants (Fine Dinner), with opening tables, addition and closing (by issuing the voucher deferred).

Checkout Restaurant was designed to be operated in multiple ways: with touchscreens, with mouse using common keyboards or programmable keyboards of matrix type. It is designed to work flawlessly 24 hours seven days a week being networked or not.

Checkout Restaurant allows you to work with an unlimited number of order printers or monitors for kitchens, in order to show customer preferences for each plate requested. It has an optional module that allows you to work with wireless radio frequency terminals, giving waiters and/or bartenders the opportunity to collect and ship the order from the same table and when you take it.

With **Checkout Restaurant** you have the freedom to define recipes unbounded nesting (meaning that a component of a recipe can have their own recipe, unlimited components and recipes). Stock calculations are carried to the last level components. You can also associate items to a set menu, such as executive menu , combos, etc. and define the layout of all menus and products on display, with photos of each of them.

This solution is integrated into the Backoffice of **Checkout POS**, being possible its joint administration and integrated to the same network (eg a shop that also holds a FastFood).

SAP interface:

It is a further module using the API's provided by SAP, generates the Sales seats, Means of Payment , Costs and inserts them into the database of the ERP .

ANNEX A - EXPLANATORY REFERENCES

Reference 1.1 : Combined / Promotions Products

The **Checkout POS** system has a promotion engine which is configured centrally in the Backoffice administration and is then replicated to each outlet and point of sale. The Mix & Match or NxM type as it is called in the Checkout POS is one of the promotions that can be activated by first selecting the effective dates of the promotion, the outlets where it will be activated, if necessary enclosed weekdays or range of hours that will be active or group of customers who will use it.

You can assign an unlimited number of combinations of the same product or different products with varying percentages of discounts. This means that you can define a simple 2x1, meaning you can take 2 products for the price of 1 or you can define that if you purchase 3 A products you receive a 50% discount on a B product.
Products are entered by the operator in any order and the system takes care of the discount when you meet the conditions of the promotion.

Combination products can be of two types: a product that is made for a certain amount of two other items, for example a soda and chips sold as a unit and have their own code. In this case the system can create a new product that is related to a composition formula where the components and amounts included are detailed. It may be the case that one of these products is also integrated with other products, such a promotion is a drink and a cake, the cake will then have its own formula of composition where the cold cuts, bread and dressings are the components.

At the time of performing any inventory operation with the product that has a formula the system updates the inventory of all components and if these have at the same time, a continuous formula recursively with unlimited levels . Likewise if you change the cost of a component, the system uses the formula to update the aggregate cost of the combo product.

Another more complex possibility is that combination products are composed of mutually exclusive options so that you can not build a direct formula since the customer can choose from several options to make the purchase, for example promoting burger combo with fries and soda. The customer can choose various flavors of soda or bottled water but the price of the individual products is greater than the cost of the combination product. In this case the system allows you to define relationships between products so that you can create groups of links, in this case would be drinks, burgers and accompaniments, each group can relate various product options that are mutually exclusive.

Once armed the relationship, the combined product is billed and then the chosen components are indicated, if the system is within the definition the invoice price is 0. This way you can specify the products for inventory without affecting the cost of the sale, the operator does not decides the price because the system determines whether

or not it is included. A further variant is the ability to put a differential cost on any item, as in this example, the beer with which a value is charged to increase the package and not the list price of the product.

1.2 Reference: ASCII file Interfaces

The **Checkout POS** system is integrated with the **Checkout Backoffice** so as to form a single complete solution for all commercial and administrative circuit of a Retail company. From the sale on the premises, inventory control, supply management to accounting seats generation are integrated in a single solution without interfaces thus maintaining the consistency of information, increase system reliability and make faster implementation of changes that affect the entire organization.

This integration is achieved through the use of a single database that is distributed across the enterprise using replication methods. In the event that the company has permanent links (ADSL , VPN , Frame Relay, etc.) for local and regional governments and the central government information flows in near real time. Meaning, a regional sales manager can know the average ticket, stocks, to the detail of all local transactions from a centralized location and make decisions in real time.

If the company does not have links in real time, as an alternative, **Checkout** provides an asynchronous replication solution using email, which allows you to keep updated through periodic data transmissions using normal pop email accounts. In the latter case the system exports the data to ASCII or DBF files (which is up to the user's choice) and then compress them and send them. The receiver module processes the files and imports them automatically to the database.

These files are our ASCII interface. The system generates local TAB -separated ASCII files or DBF files with transactions occurring since the last batch packing them with transmission control sequence. The central processing exports in the same way the master tables (products, promotions, customers, operators, etc.) that have been modified since the last transfer. This process involves in one way or another all the system tables and are documented in the data dictionary itself, which serves as a common reference to this process. This dictionary can be configured to limit the volume and select the order of the data to be exported, meaning that you can limit tables to replicate and the fields in these tables, as well to select the order of these fields so that you can generate tables in a specific format .

A peculiarity of this process is that it allows the transmission chain so as to generate a hierarchical tree (Enterprise, Division, Region, Local) to be relaying information so that there are regional centers of distributed administration.

Data transmission can be triggered by the user, or automated to fixed schedules at regular intervals.

The system also has an integrated control mechanism that takes ACK transmissions for each transmission, consolidating the errors that may occur when inserting data and premises that have not been updated. It is very important to note that this system - both replication and asynchronous online (email) - is based on the principle that each local sends and receives, so that there is not a single central process that manages transmissions, this allows the escalation without limits on the number of local sync. At the central government a control process monitors the outlets and

reports the ones that are delayed in shipping or the ones that have not conducted an ACK of the sent news.

2.1 Reference: Communications Infrastructure

There are multiple possibilities for communication between Checkout systems. Due to its Client/Server architecture, the requirements for communications are minimal.

Stores: POS and Backoffice are connected by local area networks, accessing a database store. 10baseT Ethernet is required.

Central: IT has a central database of the company, in which transactions are received from all branches. In Central, systems communicate via a local area network, all accessing the central database of the company. 10baseT Ethernet is required.

Shops communicate with the Central through various alternatives, as shown in the Figure communications scheme .

Alternative 1: Direct Connection

By point to point links through Internet by ADSL, VPN, etc.

Each store server connects directly to the database of the central administration . For these cases, there is a home agent that handles data replication between the two extremes, this agent is a development of Checkout, which allows large configurations and is independent of the databases involved (you may for example have a Store engine Sybase Adaptive Server Anywhere and Central engine Microsoft SQL Server 2000). Bandwidths for these cases are minimal and depend on the required settings (ranging from 32 K to 512 Kb). If ADSL links it is not necessary to have a fixed IP.

Alternative 2: Asynchronous Connection by Email

The branch and central exchange emails automatically generated by the system. For these cases POP mail accounts for each of the branches involved and the plant are required, with at least dial -up access. The process is absolutely transparent to the user. The system handles the call internet connection, download and send emails and process messages with transmission system. For this alternative V.90 MODEM is required.

Alternative 3: Connecting by Magnetic Media

News and magnetic media transactions between local and central administration are carried. For this alternative communication links are needed, but because of the wide geographical distribution of the company is not recommended for implementation.

Reference 2.2: Distribution of versions

There are 2 ways to make the upgrade versions:
Manually, by decompressing self-extracting archives in each computer or the use of agent distribution versions.

For this second case, the updated version of the application is done using Checkout own applications. Due to the extensive configuration options available to Checkout POS, the developed applications for version upgrades consist of a *Server* application and a *Client* application. The first one, *Server*, is the one that requires operator intervention to start with the **Checkout POS** update. The *Client* application will be executed automatically without intervention, once implemented the appropriate steps on the *Server* application. Updates are delivered compressed and the *server* application is responsible for generating and uncompress the files needed to complete the automatic update.

Checkout, to start applications, checks for new updates to install, in which case, automatically starts the process responsible for that *client* update task.

If an error occurs during the update, the System Update Versions, returns all applications to the previous state automatically, ie before applying the patch to the new version. In this case you should contact the ones who provide support to solve the problem.

Reference 3.1: Security Levels

In **Checkout's** systems the users are grouped into Types or Groups of Users. There are preconfigured user groups in the system, taking the user to modify existing or create new groups and configure them according to their own operational needs. Roughly we could mention some groups already preconfigured:

Administrators: Checkout's systems administrators (superuser).
Supervisors: responsible for authorizing operations in the cash register requiring authorization (Cancellations, surrenders, etc. Depending on the configuration)
Operators: Users who play the role of cashiers.
Ordering operators: staff involved in the making and receiving of goods.
Managers: The ones in charge of a shop/branch.
Queries: Users for queries of general reports.
Staff: Office members responsible for managing employees, working hours, etc.
Purchasing Manager: Staff in charge of preparing purchase orders for goods.
Auditing: The ones responsible for the audit processes, control and definition of parameters of general security.

It is also possible to restrict users per branch and even for Point of Sale or workstation (Backoffice); you can also block access by application (POS or Backoffice) per user, so that an administrative employee may not enter a POS, or a cashier can not enter to the Backoffice for example.

Through a powerful Editor of User Security, you can configure both Group and individual user level, the access to systems and modules that compose them, further indicating the operations allowed to them. The configuration of the individual user takes precedence over the group. This allows to grant/remove privileges to a user regardless of the group to which it belongs.

3.2 Reference: Managing Password Security

In Checkout's systems it is possible to define various aspects of the security of user passwords, such as: minimum length, expiration date, reusable keys, upper/lower case, lock the account depending on the number of failed retries, etc. They are all user configurable.

Reference 3.3: System Administrator

As explained above in the point about groups of users, there are groups already preconfigured for the user control, and you can also create a specific function if you

want to carry it out. It is significant to notice that when the one in charge of managing user accounts adds a new one, you are not allowed to assign password for that user, but the same new user must set the password on his first login system. It is possible for the users who manage accounts to set up various parameters such as: the User must change password at next login, lock/unlock an account, block access to the various systems (POS or Backoffice).

According to the outline provided in the **Checkout's** systems, these operations should be carried out centrally, but may in special situations, define them in a store (if you are there with user privileges granted to do it).

4.1 Reference: Connection and connection loss

The solution used in **Checkout POS** is to allow dual configuration where the point of sale uses - whenever it's available - the main database engine, but with a drop of this, a failure of consistency, performance problem, the system switches - automatically and transparently to the user - to a local database. This contains a copy of the base of the main information (items, customers, terms, payment, credit card newsletters, etc.) And is constantly updated by a process running as a service on the client.

This same service is responsible for sending the transactions that are generated in the local database to the primary server, once communication is restored.

In all cases, these changes are made without operator intervention, who is simply informed of the status through informative icons. The transactions made while in off-line mode are stored on the local server; credit cards if they can not be resolved at the authorization server within credit limits configured.

The system retries the connection to the primary server automatically when a configurable number of seconds has elapsed without activity, if it does, it is again in line with the main database. The transactions registered in the local database - ie while operating in offline mode - are handled by a background process, which sends them to the primary server when communication is restored.

If Checkout Backoffice has lost the connection to the database to which it connects it will not be possible to use.

Reference 4.2: Backing Up Data

The system has a backup process of the database, which can be copied using the same process to removable media for physical backup, the backup can be done even during the operation of the stores. This process is integrated into the Backoffice, meaning it does not require additional tools to be made and is transparent to the database used as it is own development, the same process is responsible for compressing the information to copy it to removable media (diskettes, zip) requesting a new one when the previous one is complete.

Additionally, the system takes a backup of the database automatically once a day, if there is space available on the server, redundant to the manual backup generated.

Reference 4.3: Data Consistency and Corruption

The data consistency is guaranteed by the use of relational databases, these assure that either all the details of a transaction are stored, or none of them are, avoiding to keep incomplete information.

The current transaction at a point of sale is not stored until it is totaled, a power outage or a hardware failure could cause a loss of information for an operation before being closed. Therefore, **Checkout POS** carries a log of the data entered by the operator, allowing them to be automatically retrieved at login if the previous transaction has not finished correctly, this prevents the operator to enter the data he had recorded at the time of the failure again.

The system also supports the use of high availability configurations that provide database engines, allowing to handle multiple alternative connections of the primary server.

Reference 4.4: Fault Recovery

During system installation, a series of steps are performed to enable a quick recovery in case of failures in the OS (installed on separate partitions of the OS, application software, backup FAT partition is made, etc.) Guards of the registry are made, emergency floppy disk is created and a physical disk image is copied to another partition.
In case of failure , you must boot the computer with the emergency disk and run by BAT file, the damaged files are copied again or even download the installation image files again.

Reference 4.5: Remote Support

Third-party tools are used to perform remote support (Dameware, Remote Administrator, PCAnywhere, etc.).
To facilitate remote management, the system has a module to facilitate support request, in which various data are indicated as being public IP address, type of connection, internal network IP, etc. Additionally a button to perform Internet connection (for the case of dial -up connections).
The system has a log of events in text files that allows to display quickly and easily all sequences placed in the system.

Reference 4.6: Backup and Recovery Procedures for faults

Backup procedures can be divided according to the nature of the problem:

- In case of a serious hardware failure that does not allow to operate the equipment, a physical image of the disk is copied - this is on the server and is generated during installation of the system - on another computer with the same characteristics as the affected one.
- In case of a failure in the Windows system files, the computer restarts with the emergency disk and the files that were sheltered during installation on the same computer hard disk copy again .
- If the failure was more severe and does not allow recovery described in the previous step, an image copy of the same disc, which is in a partition created during installation and generated by a ghost.