FORMULATION OF AN ERP MODULE FOR AN ORGANIZATION SUCH AS ITDC

A DISSERTATION

Submitted in partial fulfilment of the requirements for the award of the degree of

MASTER OF TECHNOLOGY

in

INFORMATION TECHNOLOGY

By

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CANDIDATE'S DECLARATION

I hereby declare that the work presented in this dissertation, entitled **"FORMULATION OF AN ERP MODULE FOR AN ORGANIZATION SUCH AS ITDC"**, in partial fulfillment of the requirements for the award of the degree of **Master of Technology** in **Information Technology,** submitted in **IIT, Roorkee – ER&DCI Campus, Noida,** is an authentic record of my own work carried out during the period from August 2002 to February, 2003 under the guidance of **Mr. V.N. Shukla**, Director (Special Applications), Electronics Research and Development Centre of India, Noida.

The matter embodied in this dissertation has not been submitted by me for award of any other degree of diploma

Date: 24-02-2003
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CERTIFICATE

This is to certify that the above statement made by the candidate is correct to the best of my knowledge and belief.

Date: 24-02-2003
Place: Noida

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CONTENTS

ABSTRACT

ERP (Enterprise Resource Planning) software encompasses applications and transactions, which governs the detailed interaction between the customer and the corporation. It covers the functions like Sales, Inventory management, and financial management. If all the modules are not computerized linked then sales transactions will not affect Inventory and Finance Module. This gives rise to an Inventory, which is not updated. And a non-updated inventory will result in failure of the system. As Purchase department will not be aware of when to purchase the material, which leads to shortage of material.[1]

So to overcome all the difficulties an integrated ERP Package is required. ERP package for an organization, such as ITDC, is the integration of sales, inventory and purchase modules. It consolidates all the software integrated into a simple system. The system envisages for computerization of sales of finished goods, purchase of material and keeping inventory updated.

This thesis aims to study the benefits gained by using ERP package and its implementation for an organization such as India Tourism Development Corporation (ITDC). ITDC is a government-controlled organization having shops and warehouses at 13 cities in India. Most of the shops are located at International Airports where imported and local items are sold through these shops. ERP for ITDC is an integrated package to computerize Sales, Purchase and material management. For instance, if a cash memo is generated in sales module, the inventory of the item gets automatically updated. End User of this product is the person at ITDC who operates or interact directly with this ERP package. In future, data mining can be done on this package that will be useful to higher management for taking policy decisions.[2]

Chapter 1

INTRODUCTION

1.1 Objective

We have to design, develop and implement the ERP package for an organization such as ITDC, which will achieve higher accuracy in day-to-day work. This software will generate error free reports, which happens to be very time consuming if processed manually. Further to this, the integration between sales, inventory and purchase will be achieved through the information technology with more accuracy and speed. For instance, if a cash memo is generated in sales module, the inventory of the item is updated. The system can give the data relating to sales and status of inventory by accessing the database instantaneously. This will be useful to higher management for taking policy decisions. Apart from these, the software will take care of all the related information that is used by the officials for their routine work. Information like customer detail, item listing, forecasting, status of most critical and critical items, bond details etc will easily be available through the system.

1.2 Scope

ERP for the organization, ITDC is an integrated package to computerize Sales, Purchase and Material Management. ITDC owns different types of shops like Duty Free, Tax Free, Tax Paid etc at all over India. Most of the shops are located at International Airports. There are some Warehouses located in major cities to store imported and local items, which are sold through these shops. Sales data would be captured from these shops and data would be replicated at head office periodically. Moreover the front-end screens to be designed to make the system not only aesthetical but also user friendly. The proposed package consists of design, development, packaging and implementation of complete package satisfying the requisite considerations at all locations. A comprehensive MIS would be developed and installed at Head Office for ITDC executives to increase efficiency and productivity.

1.3 Statement of the work done

ERP applications contain several modules such as production, finance and accounting, sales and distribution modules, etc. These modules are totally integrated and need only one database (to ensure no duplicate data). ERP software should only require some customization to fit the requirements of the business process. We have to design, develop and implemented the ERP package for the ITDC. According to ITDC requirements, their ERP package should contain four modules namely, Sales, Inventory, Purchase, and Administration. Other modules of ERP package like Finance and accounting, Material management and Personnel management are incorporated in the respective modules.

ER&DCI is a registered scientific society (under Societies Registration Act 1860) under Ministry of Information Technology, situated at Noida who got the project from ITDC (India Tourism Development Corporation). My guide assigned me to design and develop the Sales Module of this project.

1.4 Organization of the Dissertation

This dissertation is organized into the following chapters.

- Chapter 2 describes the literature Survey for ERP.
- Chapter 3 describes the formulation of the ERP modules for an organization such as ITDC. This chapter discusses the work flow of all the departments of the organization and the design and the implementation of the ERP modules, Sales, Inventory, Purchase, and System Administration.
- Chapter 4 discusses the various results obtained after the implementation of the ERP system. In this chapter scope for the future work in this ERP system is also suggested.
- Chapter 5 concludes the thesis.

Chapter 2

Literature Survey of ERP

2.1 ERP

Enterprise Resource Planning or ERP is an industry term for integrated, multi-module application software packages that are designed to serve and support multiple business functions. ERP is a collection of applications that can be used to manage a whole business enterprise connecting various disparate functions into a common database of information. ERP integrates various systems like sales, manufacturing, human resources, customer relationship management, accounting, and other functional areas of an organization's enterprise. It attempts to integrate all departments and functions across a company into a single computer system that can serve all those different departments' particular needs. In [3], functions of ERP and how to integrate them are explored. ERP covers the following functions.

- Human resources
- Sales management
- Inventory management
- Financial management
- Supply chain management
- Logistics
- Manufacturing
- Distribution
- Customer service

The ERP system creates a common database of information that is linked to these functional areas allowing for shared information linking to the enterprise goals and objectives.

2.2 Brief History of ERP

The focus of manufacturing systems in the 1960's was on Inventory control. Most of the software packages then (usually customized) were designed to handle inventory based on traditional inventory concepts. In the 1970's the focus shifted to MRP (Material Requirement Planning) systems that translated the Master Schedule built for the end items into time-phased net requirements for the sub-assemblies, components and raw materials planning and procurement.

In the 1980's the concept of MRP-II (Manufacturing Resources Planning) evolved which was an extension of MRP to shop floor and Distribution management activities. In the early 1990's, MRP-II was further extended to cover areas like Engineering, Finance, Human Resources, Projects Management etc i.e. the complete gamut of activities within any business enterprise. Hence, the term ERP (Enterprise Resource Planning) was coined. [4]

2.3 Necessity of ERP

By becoming the integrated information solution across the entire organization, ERP systems allow companies to better understand their business. With ERP software, companies can standardize business processes and more easily enact best practices. By creating more efficient processes, companies can concentrate their efforts on serving their customers and maximizing profit.

2.4 Advantages of ERP

As given in [5], there are many ways that an ERP system can help an organization. First, an organization's operating costs can be reduced. An ERP system integrates all parts of an organization so that it has more control of its operation. Also, an ERP system increases the organization's time efficiency. Since all the parts are now

connected and integrated with each other within an ERP system, people use less time to perform tasks. Moreover, people now have more and faster access to their information, which improves the time and resources for decision-making. For now, having an ERP system means increased information availability for the organization that means that the organization can access information quickly and easily. Furthermore, organizations often have different types of software integrated within them. An ERP system consolidates all the software into a simple system. Software consolidation is another main advantage of an ERP system.

Not only does an ERP help organizations to manage their tasks more efficiently, but they provide advantages to some of the specific industries. For the manufacturing industry, an ERP system provides better delivery service for the organization. Also, an ERP system shortens the total throughput time for the organization to do tasks in process of operation. For distribution industry, workers can now keep track of inventory and online tracking system is used to take care of all those routine work that organization used to do. For the transportation industry, an ERP system allows them to do online dispatch system. Also, managers can keep track of their truck drivers and know whether or not their employees are doing their jobs. They have something called a GPS- Global Positioning System to point out all the positions of the employees in transportation industries. Also, one more industry, which gains specific advantages from using ERP systems, is the project services industry. An ERP system helps these companies to automate many services and reduce the time to make reports since more information is quickly available through the ERP system.

2.5 Market Leaders

The leader in ERP market share, and the one that invented the market to an extent, is the German company SAP AG with its R/3 software .The top five ERP vendors are SAP, Oracle Corporation, Peoplesoft, Inc., JD Edwards & Company, and Baan International. They account for 64 percent of total ERP market revenue. These vendors continue to play a major role in shaping the landscape of new target markets, with expanded product functionality, and higher penetration rates. [6]

2.6 The Future of ERP

Industry analysts expect that every major manufacturing company will buy the software, which ranges in cost -- with maintenance and training -- from hundreds of thousands of dollars for a small company to millions for a large company. AMR Research of Boston says consolidation among the major players will continue and intensify. ERP vendors are expected to put more effort into e-commerce, CRM and SCM initiatives, with leaders redirecting between 50% and 75% of their R&D budget to these projects. **[6]**

According to Gartner research group, the rapid evolution of ERP has already lead to a new corporate must-have, ERP II, which is supposed to help businesses gain more competitive edge in the future. The major difference is that ERP II involves collaborative commerce, which enables business partners from multiple companies to exchange information posted on eCommerce exchanges. **[5]**

Chapter 3

FORMULATION OF AN ERP MODULE FOR AN ORGANIZATION SUCH AS ITDC

ERP is a collection of applications that can be used to manage a whole business enterprise connecting various disparate functions into a common database of information. It is an integrated package to computerize Sales, Purchase and material management to achieve higher accuracy in day-to-day work. The system can give the data relating to sales and status of inventory by accessing the database instantaneously.

3.1 Features

Main features of the ERP package, **ISMS** (Inventory And Sales Management System) for an organization such as ITDC, are as follows:

- Integrated Sales, Inventory, Purchase and System Administration.
- Stock transfer among different units, like Warehouses, Shops and annexes, of an organization.
- Sales Projections and ordering process.
- Online Costing, Product Classification and Profitability Analysis.
- Consolidation of Data from different locations at HO.
- Periodic Stock Verification.
- Periodic Data back-up at all locations for preventing data-loss or data corruption.
- MIS and Exception Reports for decision support system.
- Security.

3.2 Software And Hardware Interface

The proposed system when ready for installation would require certain hardware and Software for proper functioning. The development environment for the system is Oracle8i, developer 2000 forms 5, and reports 3.0.

In the database, the data is entered using data-entry forms. These forms are designed with the help of Oracle Forms Builder. After validated data is stored in Oracle tables, it is necessary to extract this data for business decision-making purposes. The process of data extraction and its display is called Report creation. Reports are developed with the help Oracle Report Builder. **[7]**

At the time of installation it will be required that Oracle 9i be loaded on the Server as well as at least one client so that proper implementation and testing can be done. The Oracle database needs time to time tuning and maintenance. It is advisable to have at least one person trained so that he is proficient in Oracle Database Administration.

Following Soft wares are required for Communication

Platform	:	Windows (2000) (For Server)
		Windows (98/XP) (For Client)
Front End	:	Developer 2000
Back End	:	Oracle 9i
Forms	:	5.0
Reports	:	3i

The development tools will be Developer 2000, Forms5.0 and Reports3.0. The application can run on varied platform like Window 95/98/XP.

Oracle 9i is used as the database and is accessed from D2K using the PL/SQL. All the database queries are based on the PL/SQL (Structured Query Language). **[8]**

3.3 Architecture

In [9], the architecture of ERP is explored. This architecture is a multi-tier, client/server application that supports and simplifies business applications in the areas of sales, inventory, purchase and administration. ERP 3-tier is implemented according to a software-oriented multi-tier, client/server principle for centralized systems, with application servers communicating with database servers across the network.

The ERP 3-tier presentation, application and database server architecture enables an uncoupling of the application logic from the presentation level and the database. While the most likely installation of ISMS resembles that in Figure 3.1, it also is possible to find single-system configurations where the interface, application and database servers execute under the same Windows system.

The fundamental layers of the R/3 system are presentation, application, and database. With the 3-tier client/server architecture, these three layers can be distributed over one or multiple computers, based on the capacity planning. For example, when there are many users, additional application servers can be added to a configuration to improve performance and response time.

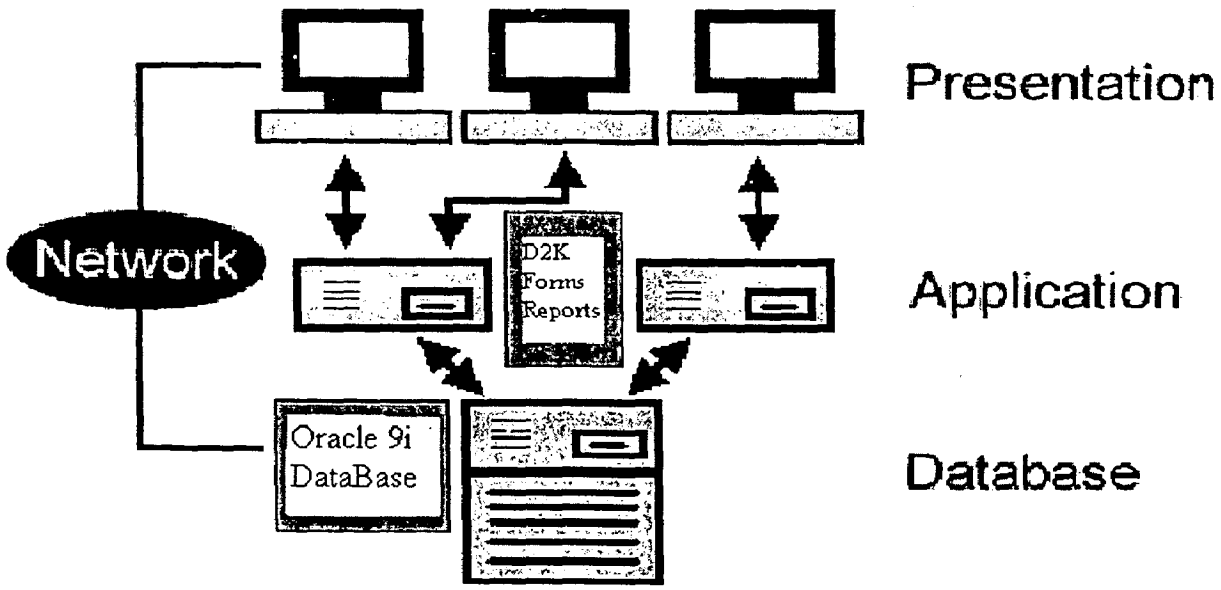

Figure 3.1 : The 3-tier ERP client/server Architecture

This architecture is comprised of application and database servers. The application servers house the software and the database servers handle document updates and master file databases.

The Database layer : Management of Working Data

The database layer is used for the management and administration of the working data, which includes the master data, transaction data, and the metadata maintained in the repository that describes the database structure. The industry-standard SQL (Structured Query Language) defines and manipulates all data and runs on industry-standard relational database management systems (RDBMSs).

The Application Layer: Where Business Logic Resides

The entire business logic runs on the application layer; the application layer in the middle builds on the underlying database layer. The applications access, retrieves, and inserts data into the database. Application server receives requests from the connected presentation servers and routes these requests to the database server

The Presentation Layer:

The top layer, which is closest to the users, is the presentation layer. It manages the interface that users operate to access data, run applications, and view results. Users work with applications through the graphical user interface, which provides a common look-and-feel across all platforms.

3.4 Needs of an Organization

An ERP package is developed to fulfill the needs of an organization. ERP software should only require some customization to fit the requirements of the business process. To know the needs of the organization such as ITDC, we should know about the work flow process of all the departments. ITDC is a government-controlled organization

having shops and warehouses at 13 cities in India. Most of the shops are located at International Airports where imported and local items are sold through these shops.

3.4.1 Different Departments of the Organization ITDC

We will be dealing with the following departments for the project

- Head Office
- Warehouse
- Annexes
- Shops

HO is situated in Delhi and to be connected to all 11 locations, each location has Shop(s) that can further be classified as

- DFS (Duty Free Shop)
- TFS (Tax Free Shop)
- DPS (Duty Paid Shop)

The names of all 11 locations, which are to be connected to the Head Office, are as follows -

- Delhi
- Mumbai
- Kolkotta
- Chennai
- Ahmedabad
- Bangalore
- Trivendrum
- Callicut
- Hyderabad
- Goa
- Varanasi

3.4.1.1 Head Office

Main objective

The main objective of the HO is to have a Decision Support System, which helps ITDC Executives to take quick and proactive action for better functioning. It keeps track of the stock as well as the sales by making enquiry and doing comparative studies. Exception Reports will help them to take quick decisions and will save lot of time and money. Work Flow of HO is shown in the following figure 3.2.

HO checks the stock status of an item at different locations. It also does Sales Forecasting. It identifies and takes appropriate action on Slow Moving Items. Items will move to slow moving category, three months before the expiry date. Item will also move to Slow Moving Category after six month if the sale is 20% less than the forecasted sale. It will become Dead Stock if not sold in 2 years.

The Merchandiser / Shop Manager raises an indent. After an indent is raised the procurement process starts at HO. The requisition (indent) goes to the Purchase department at HO and a Purchase Requisition is generated.

The Merchandisers at HO decide the new items, which are to be introduced at Shops. HO also decides to put certain items as Promotional Items, depending on the previous sales, price calculations and the bond validity date and expiry date of an item. These items may be sold on a certain discount or may be given free with some items. Custom provides a Bond No and Bond Date (validity date), which is associated with each consignment. This is the basis for selling of goods within this bond period but the HO can request for its extension.

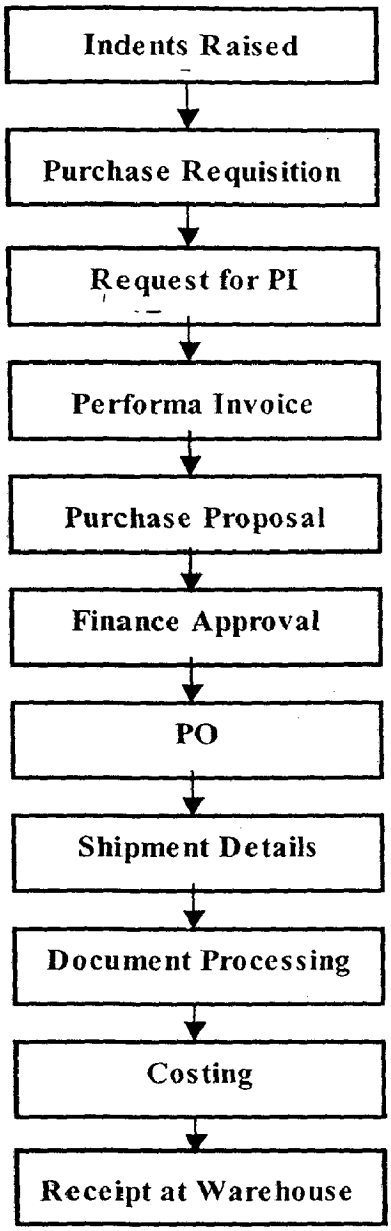

Figure 3.2 : Work Flow at Head Office

3.4.1.2 Warehouse

Main objective

Inventory helps an organization in managing the material in its stores and in tracking all transactions related to it. It also helps in optimizing the re-indent, maximum and minimum levels of materials in the inventory. Warehouse can be considered as the main receiving end for goods coming from a supplier after completing all the formalities

done at port. Once the shipment and all the formalities at that position are finalized, goods are received at the Warehouse with another controlled document BILL OF ENTRY (Some items like chocolates are directly received at shops with special permissions). Yellow Bill Book Entry is generated and in case of shortage or wastage or breakage a Green Bill Book Entry is also generated. Then, the items are transferred to the annexes / DPS / TFS through a GB Note.

3.4.3 Annexes And Shop

An annexe is another receiving-end of goods from the warehouse. Goods are received from the warehouse through GB NOTE. Further the goods are transferred to the shops from the annexes. The inventory is also maintained at shop level.

Shops are the basis for sale of goods through the cash memo. Cash memo contains all the details pertaining to goods and customers.

Shops are classified as

- DFS (Duty Free Shop)
- TFS (Tax Free Shop)
- DPS (Duty Paid Shop)

Functional flows of these shops are similar to each other.

DFS are involved in direct sale of items to the customer visiting the shop.

TFS are involved in Institutional/Corporate Sale. The main category of Items in TFS is Liquor and Cigarette. The Major Functions of TFS are

- Bill of Entry
- Preparation of Performa Invoice for the client
- Bill preparation
- Delivery Challan

Work Flow of TFS is shown in the following figure 3.2

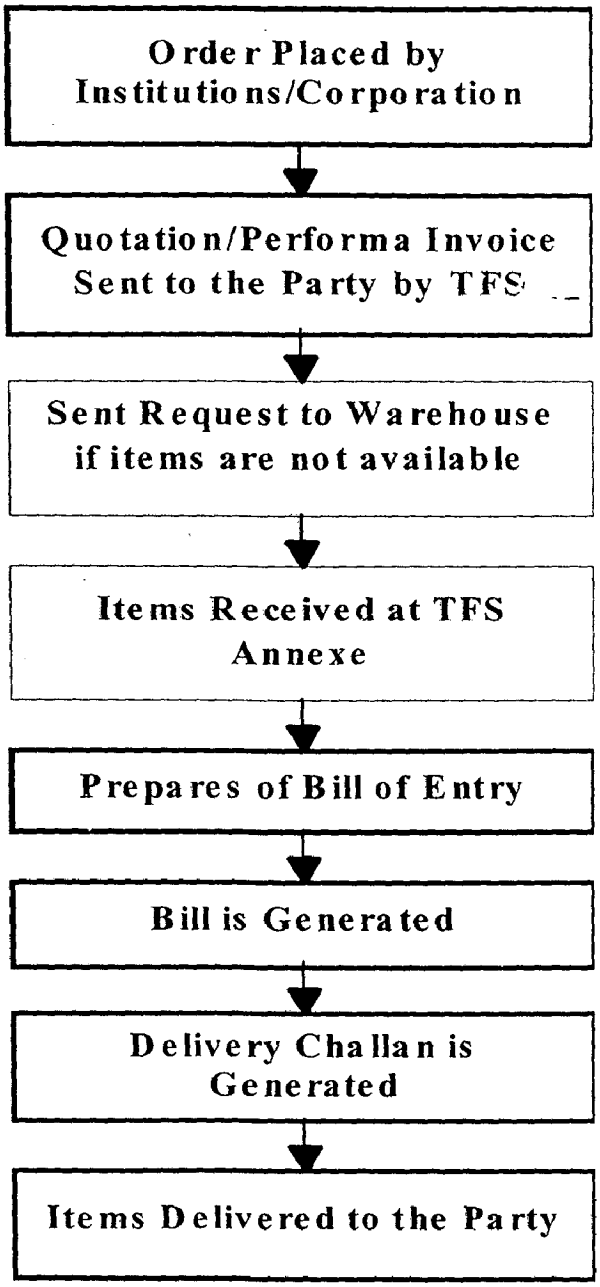

Figure 3.2 : Work Flow of TFS

TFS warehouses the items for a period granted by Custom Dept. If the items are not sold within granted period then it sought for extension. Extension received with the interest @ 24% PA on custom duty.

Other than Corporate Sale, TFS supplies items to Embassies and foreign diplomats. For such clients duty is not charged. The Ministry of External Affairs decides the quota of Liquor for Embassies.

Once the requirement from the client is received, TFS sends a Performa Invoice (PI) to the client informing the rate and cost. In the PI, TFS requests for two different cheques / drafts, one for ITDC and other for Custom Dept. When the customer takes the order detailed bill is raised to the client. Sales tax as applicable is charged. Two categories of sales tax are applicable e.g.

To outstation hotels CST (central sales tax) will be charged and to others LST (local sales tax) will be charged. No tax is charged against form ST1.

Functioning of DPS is similar to DFS as DPS also deals in counter sale. In DPS duty is paid so there is no bonding period. Items are classified based upon the tax provision i.e. items supplied by a supplier are sale tax

3.4.2 System Flow

The interconnection between various departments of ITDC is shown in the figure 3.3.

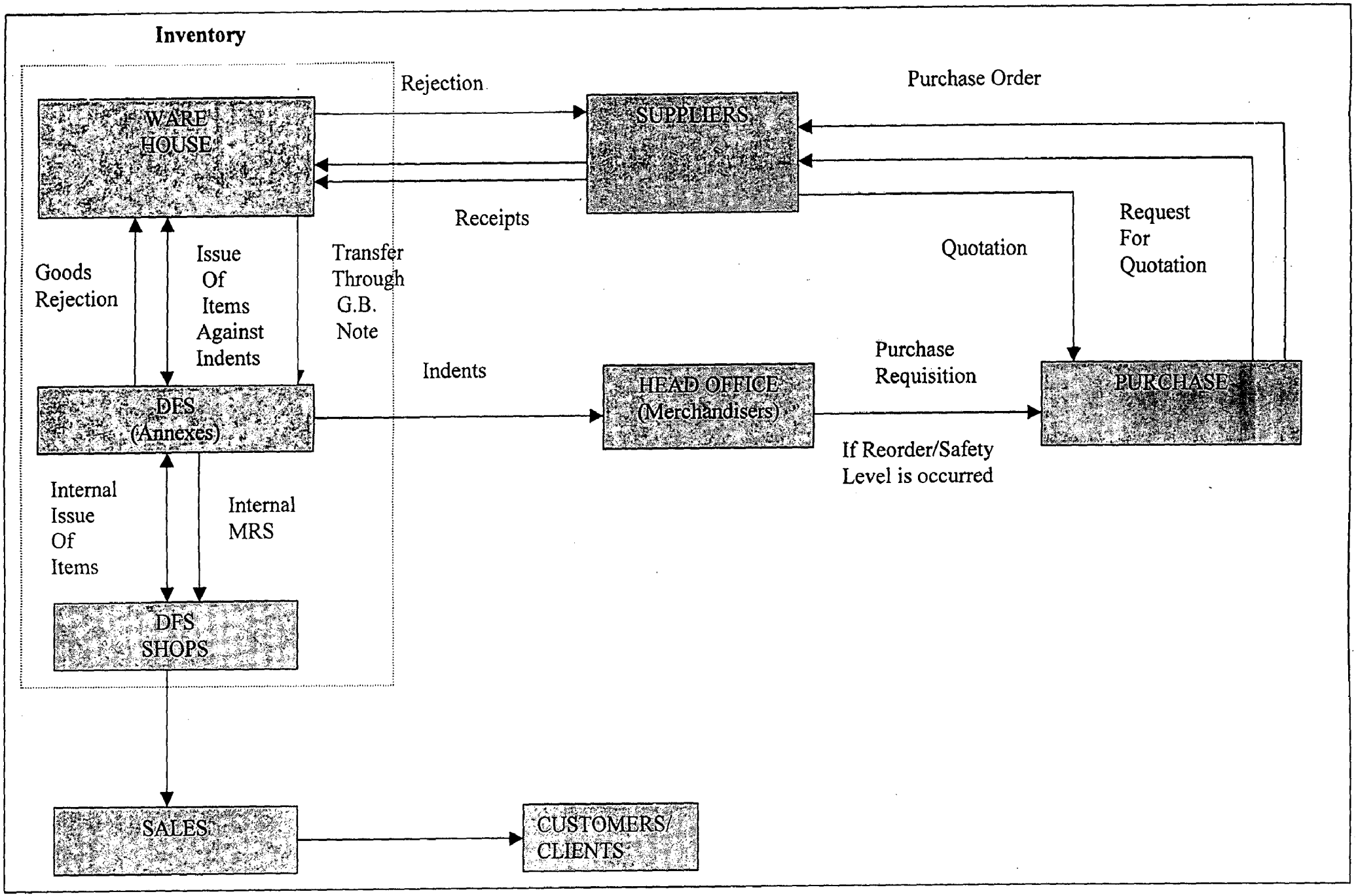

Figure 3.3 : System Flow

3.5 Design And Implementation of the ERP Modules: The ERP package, ISMS consists of the following four modules:

1. Sales
2. Inventory
3. Purchase
4. System Administration

ISMS modules will have the following menu options:

- Masters
- Transaction
- Reports
- MIS / Exception Reports
- Exit

To start using the ISMS the user will have to logon to the System. This would require the user to enter a User Name, Password, and choose the name of the location from the list of values. Depending upon the user name and password the user is given access and rights to the system. This login screen is designed as shown below in figure 3.4.

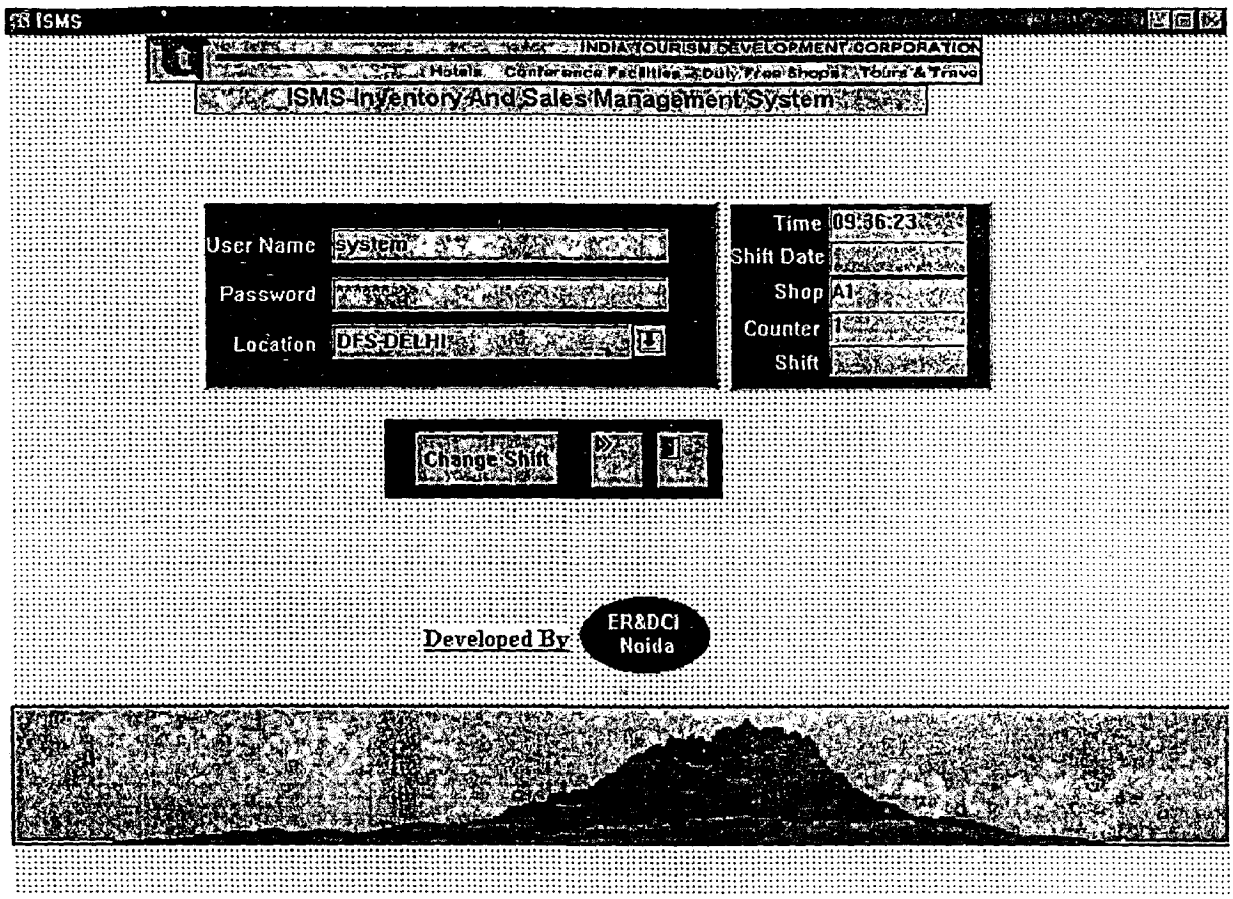

Figure 3.4 : Login Screen

After this login screen a module option screen will appear showing ISMS options. This is shown in the following figure 3.5.

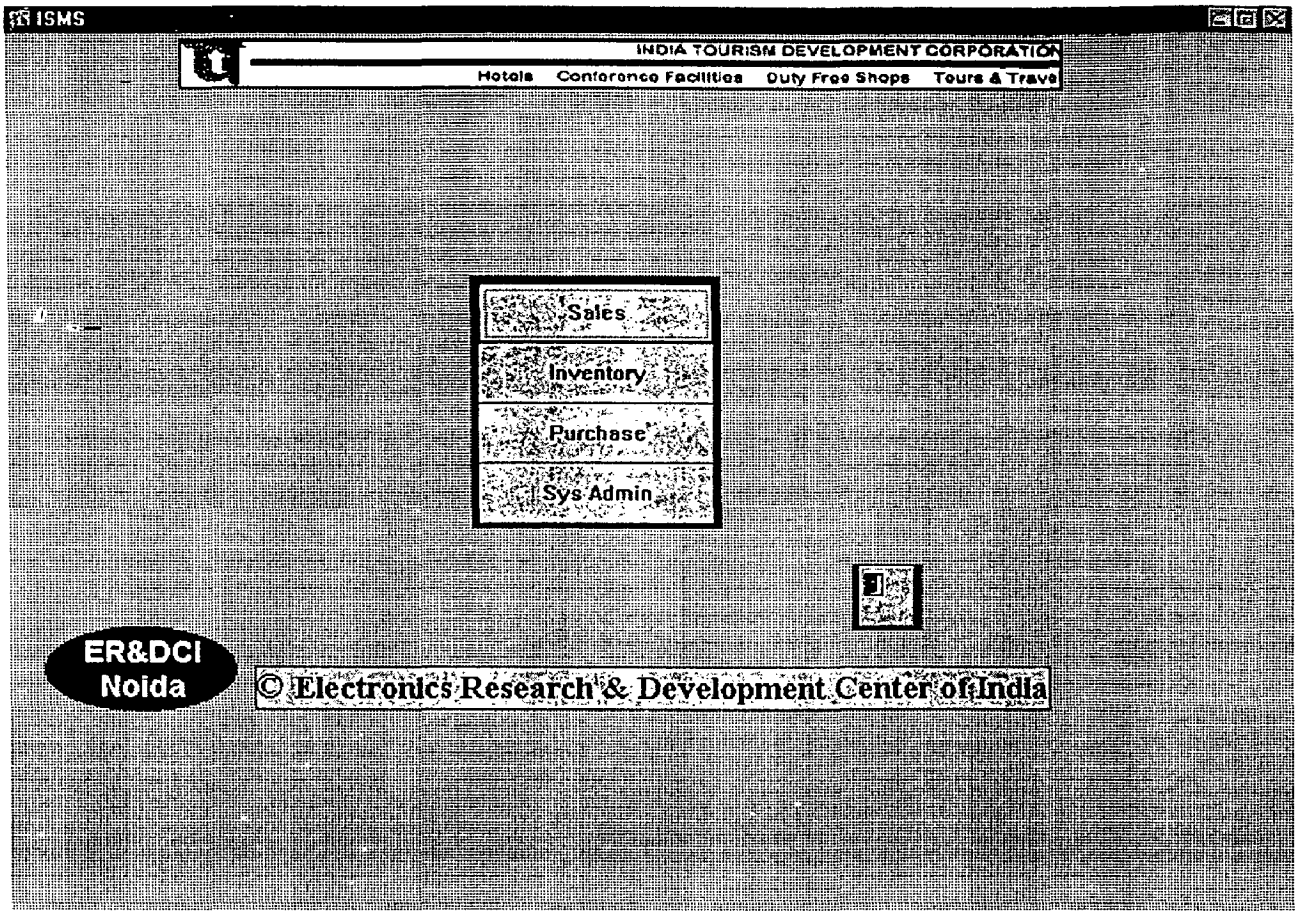

Figure 3.5 : ISMS Options

3.5.1 Sales Module

Sales module will deal with all the sales transactions. It covers the following areas of operations.

- Direct sale i.e. generation of cash memo for normal and discounted goods
- Item Master containing information of each item for sale as well as stock
- Details of counters at each location
- Daily Reports
- MIS / Exception Reports

The functions of the sales module are:

- Sales Transactions
- Customer purchases an item.

- Cash memo is generated.
- Customer can pay through Cash, Credit Card, Traveler's Checks or any combination of these.
- Items delivered from shop counters.

- Cash Memo Generation
- Sales Reports
- MIS / Exception Reports

Work flow of Sales module is shown in the following figure 3.6.

Note:

- Certain items are decided as promotional items
- Base currency is USD
- A customer may pay in any currency and the amount is converted into USD before entry into the database

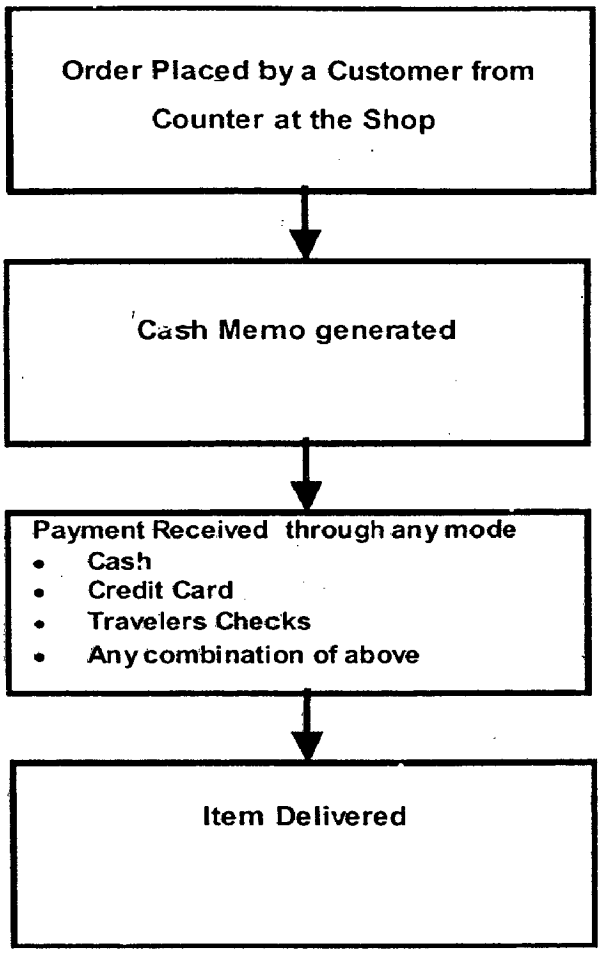

Figure 3.6 : Work Flow of Sales Module

Sales module will deal with all the sales transactions. To start with sales module, the user will have to login to the system and then go to the sales option. The user will then be presented with six sub-menu options. Masters option is for the master forms. Transactions option will activate the transaction forms. There are four report options to choose from- reports (standard), queries, additional DFS reports and MIS reports.
Screen shots of Sales forms are given in he appendix A.

Masters option.
The Masters sub menu will have the following options

- Item Master
- Parameters

- Shop Masters
- Rate Master
- Shift Master
- User Master
- Country Master
- Promotion Master

1. Item Promotion
2. Bill Promotion

- Currency Master

1. Base
2. Detail
3. Conversion

Transaction option takes care of all activities related to sales, e.g.,

- Cash Memo
- Cash Memo Cancellation
- Bank Deposit

Reports option enables the user to generate several reports that help in tracking the functioning of the Sales department. As discussed before, it contains standard reports, queries, additional DFS reports and MIS reports.

The sub-headings are:

a) **Reports**

- Daily cash statement
  1) Currency wise summary
  2) Details of traveler's cheque received
  3) Details of Credit Card payment
- Sales Statement
- Stock transaction statements
  1) Shop wise
  2) Location wise

- Daily sales shop wise
- Daily sales cumulative
- Items not sold
- Exchange rates
- Comparative sales statements
- Revenue Variance with price reduction
- Currency wise breakup
- Credit cards summary statement
- Consolidated summary
    - Consolidated Cash Summary (Shop)
    - Consolidated Credit Summary (Shop)
    - Consolidated Cash Summary INR (All Shops)
    - Consolidated Credit Summary INR (All Shops)
    - Consolidated Cash Summary US$ (All Shops)
    - Consolidated Credit Summary US$ (All Shops)
    - Consolidated Sales Summary INR (Cash +Credit) All Shop)
    - Consolidated Sales Summary US$ (Cash + Credit) All Shops)
    - Consolidated Statement Currency Wise (All Shops)
- Nationality wise passengers visited and revenue generated
- Excess charge statement
- Less charge statement
- Sale of promotional items
- Balance position of items & Expiry Thereof
- Sales analysis statement (month wise)
- Per passenger sales
- Shop wise bank deposit statement
    1) Shop wise bank deposit statement (INR)
    2) Shop wise bank deposit statement (FC)
    3) Shop wise- EEFC Statement (US$)
    4) Shop wise - EEFC Statement (INR)

- Date wise bank deposit statement
    1) Date-wise bank deposit statement (INR)
    2) Date-wise bank deposit statement (FC-Cash)
    3) Date-wise bank deposit statement (FC-TC)
    4) Date-wise bank deposit statement (FC-Cash/TC)
    5) Date wise Bank Deposit Statement for (Cash INR Against FCs)
    6) Date wise Bank Deposit Statement for (TC INR Against FCs)
    7) Date wise Bank Deposit Statement for (Cash+TC INR Against FCs)
- Monthly sales statement for a brand or brands
- Cash memos issued nationality wise (for a period 3 months/6 months or Year(s))
- Item Listing
- Customer Listing

b) Queries

- Cash memo enquiry
- Cash summary for a shift or a Period
- Cash sale shift-wise and location-wise
- Stock Enquiry
- Stock Enquiry Location-wise
- Sale of an Item at one location or more
- Item(s) not being sold
- Fast Selling items
- Currency rates
- Prices
- Promotional Sales for an Item
- Items available for a particular make code
- Make Code available
- Categories available for an Item
- Items available bond-wise

- Items available item-wise
- Bond expiring within 30 days
- Items transferred out except DFS Delhi
- Items which are not having prices
- Bonds not having bond validity
- Sales of Indian items code-wise in rupees
- Sale of imported items item-wise in rupees
- Total Sales Head-wise
- Periodic stock-out for an item
- Expected date of stock-out for items
- Expected date of stock-out for items in shops
- Stock-out for a particular item
- Sale comparison of promotional items

c) Additional DFS Reports

- Daily MIS
- Daily Cash/Credit Summary
- Number of cash memos issued to passengers
- Comparative monthly sale of items in (Previous/Current) Year
- Items sold in Arrival and Departure shops in a financial year (head-wise)
- Annual Sale of Indian Items (supplier-wise)
- Monthly sale of Arrival/Departure shops in a year
- Shop-wise passenger visited and sale in USD/INR
- Sale and balance stock position for a particular BBE

d) MIS Reports

1. Head Office
    - Review of selling price at different currency
    - Revenue maximizing items

- Sale below monthly average
- Stock out Revenue Loss (Station wise item wise)
- Bond Validity
- Highest returns in terms of Margin
- Promotion generated maximum revenue/sales in units
- Monthly sales figures
- Slow moving items with price reduction
- List of slow moving items
- Payment Details Statement
- Daily Sales (Category Wise)
- Daily Avg. and monthly total sales in different location

2. Exception Reports

- Exception in sales trends
- Revenue Earned
- Effect of promotion on slow moving/non moving
- Exception of exchange Rate

3. Manager's Meet

- Financial Performance
- Passengers at arrival and departure
- Passenger profile (Nationality)
- Revenue Per passenger
- Details of fast selling item
- Product promotions
    I. Year wise
    II. Previous month
    III. Following month
- Details of non moving items

3.5.2 Inventory Module

Inventory helps an organization in managing the material in its stores and in tracking all transactions related to it. It also helps in optimizing the reindent, maximum and minimum levels of materials in the inventory. This results in direct savings of inventory costs for the organization.

The main functions of Inventory module are:

- Receiving inventory requisitions (Indents) from various requirement areas (Shops and Annexes).
- Receiving material from suppliers on the basis of Purchase Orders through Yellow Bill of Entry (YBE), White Bill Of Entry (For custom duty) and Green Bill Entry (GBE).
- Carrying out quality check on the materials received.
- Issue of material to requirement areas (Shops and Annexes through a GB Note).
- Stock Updation.

ISMS Inventory stores information of all items, their respective classification, group details and sub-groups (Make code). When items are transferred from the Warehouses to the Annexes with the help of a GB Note the inventory at the annexes is updated and likewise when items are transferred from the annexes to the shops the shop inventory is updated. Transfer of goods between shops is also there. Work flow of the inventory module is shown in the following figure 3.7.

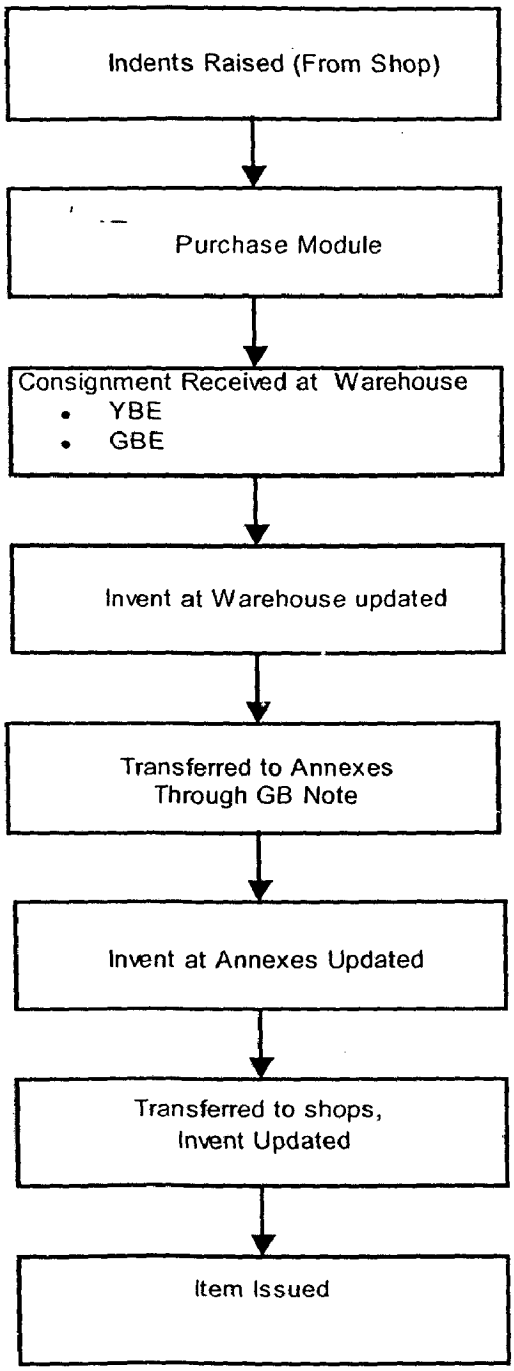

Figure 3.7 : Work Flow of Inventory Module

In the **Masters** option the Master data is maintained. The user can add, modify, delete or view the details of

- Item Master

- Alternate Item Master
- Link Master
- Parameters
- Group
- Sub-Group
- Make Code
- Other Locations
- Bond Master
- Bond Account Master
- Stock Master
- Shop Stock Master
- Unit Conversion
- Shop and Annexes
- Slow Moving Items

Transaction option will take care of all activities related to Inventory, e.g., Indents, Return, Receipts and Issues.

Transaction has the following options

- DFS Options
    1) Indent for Indian goods
    2) Indent for imported goods
    3) Annexes Receipt (from supplier)
    4) GB Note (Receipt from warehouse)
    5) Annexes to other location
    6) Annexes to shop transfer
    7) Shop to shop transfer
    8) Month end processing
    9) Adjustment

- Warehouse Options

1) Invoice (from supplier)
2) Yellow bill of entry
3) Receipt at level A
4) Receipt at level B (Green bill of entry)
5) Receipt at Level C
6) Warehouse transfer
   I. G.B. Note
   II. Other Location
7) Insurance Claim

Reports option will enable the user to generate several reports that help in tracking the functioning of the Inventory department.

4.5.3 Purchase Module

The main functions of purchase module are

- Generating Purchase Requisition.
- Requesting for Performa Invoice.
- Recording Performa Invoice.
- Creating Purchase Proposal.
- Creating Purchase order.
- Recording Shipment Details
- Checking Receipt of Documents.
- Letter of Credits.
- Making changes to Purchase Orders.

The working of the Purchase Department can be explained with the following figure 3.8

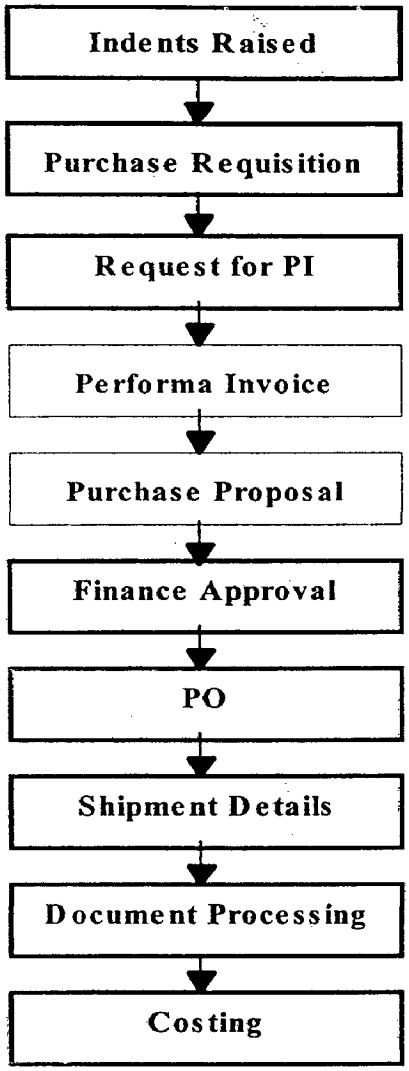

Figure 3.8 : Work Flow of Purchase Module

In the **Masters** option all the Master data used in ISMS Purchase is maintained. The user can add, modify or view the details of

- Supplier
- Supplier Items
- Parameters

Transaction has the following options

- Indents
- Purchase Requisition
- Request for Performa Invoice
- Supplier Performa Invoice
- Master Purchase Contract
- Purchase Order
- Shipment Detail
- Document Received
- Costing
- Yearly Sale
- Projection
- Ad-hoc Purchase Order

Reports option will enable the user to generate several reports that help in tracking the functioning of the Purchase department.

3.5.4 System Administration

ISMS System Administration provides facilities for carrying out all system administration related tasks such as defining user access to modules and menus, changing user passwords etc.

ISMS System Administration enables you to add a new location name, its parent location, type of the location and initials. Initials will appear in the heading of all the reports. Location status can be specified as active or inactive. Locations for which transactions can be done are active locations. Names of only active locations are listed in the login screen of ISMS.

This part will cover the following areas pertaining to the System Administration

- User Creation
- Role Creation
- Assign role(s) to user(s)
- Change Password

3.6 Data transfer

Data will be transferred from different locations to the head office through a transaction file. Each location will have its unique code. Data will be taken in the form of a text file also. The system administrator from HO will connect to the specified location through dial-up. However facility would be there to transfer data from location to HO also. Application will have a data transfer folder to store the transfer file and after successfully updating the database at HO the system will delete this file from the server within the specified period. For each location's database two flags (for each table) will control the transfer of data between the locations. If for some reason data transfer is interrupted these flags will keep track of the updated files so that corrections can be made at each location.

Data Transfer from Warehouse to shop will also be done through dial up. System Administrator at Shops will dial up and will pickup data from warehouse. A separate folder would be allocated at warehouse for the data transfer for shop.

The flow of data transfer is shown below in the figure 3.9 :

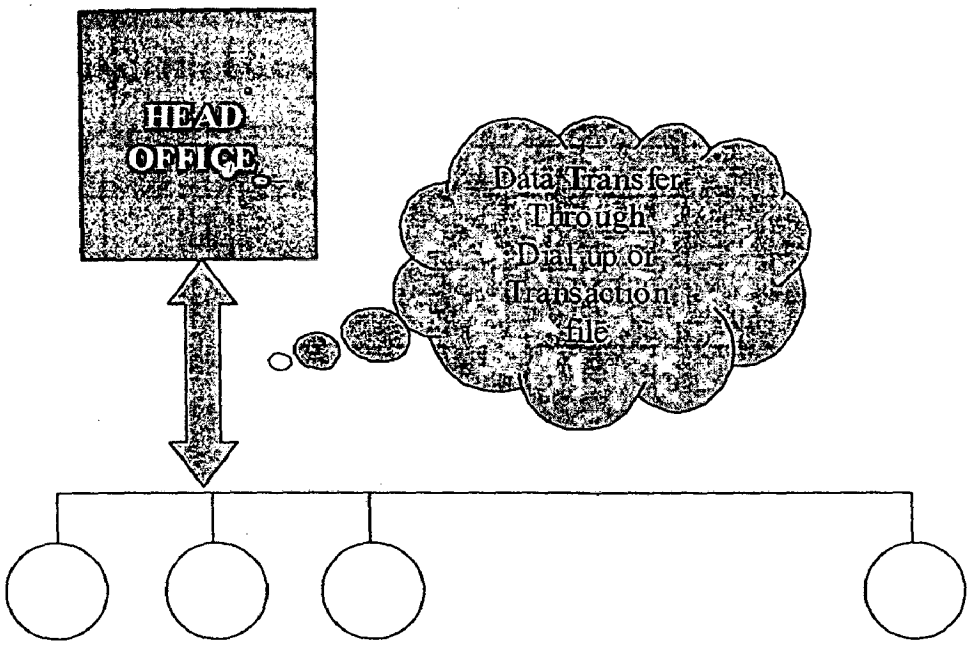

Figure 3.9 : Data Transfer

3.7 Data back-up

An option to take the regular back up will be provided under the system administration module at all locations. This option will provide the system administrator to take regular back up of the database. This option deals with the Backup and Restoration of the Database in the Inventory & Sales Management System (ISMS). The above can be achieved by taking Daily Backup of the Database System, Taking backup of the Entire Database in dump file, Restoring Daily backups and Dump files.

The System Administrator should take daily backup of the system for efficient and better restoration of the database in case of data loss, data corruption, database failure or Server Failure. The System Administrator should also take periodic backup of Entire Database.

Chapter 4

RESULTS AND DISCUSSION

ISMS is designed and developed in four modules after the analysis of ERP package for ITDC. After the testing of each form and report, all the four modules, viz. Sales, Inventory, Purchase, and System Administration are developed and integrated into a single system. This system is to be implemented in all the eleven locations. Head office of ITDC is situated at Delhi. The process of implementation of the project has been started from the Head Office.

Employees of the ITDC were working in DBase before the process of the implementation of this ERP package. They stored the data in the database manually and they didn't have any user-friendly screen through which they could enter the data. To retrieve this data, user had to write ad-hoc queries every time.

On the other hand, in the Developer 2000, the data is entered using user-friendly data-entry forms. These forms are designed with the help of Oracle Forms Builder. When validated data is stored in Oracle tables, data is extracted for business decision-making purposes. To display only relevant data from huge database reports are created. Reports are developed with the help Oracle Report Builder.

Previously, to transfer the data from one location to another, employees of ITDC first take out the printout and then deliver these files to the destined location manually. But now they can transfer the data through dial up connection. Thus, after the implementation of the ERP package, efficiency of the business process increases. Since all the parts are now connected and integrated with each other within an ERP system, people use less time to perform tasks.

This ERP package generates error free reports, which happens to be very time consuming if processed manually. Further to this, the integration between sales, inventory and purchase is achieved through the information technology with more accuracy and speed. For instance, if a cash memo is generated in sales module, the inventory of the item is updated. The system can give the data relating to sales and status of inventory by

accessing the database instantaneously. This will be useful to higher management for taking policy decisions. Apart from these, this software take care of all the related information that is used by ITDC officials for their routine work. Information like customer detail, item listing, forecasting, status of most critical and critical items, bond details etc. are easily available through the system.

Before the implementation of this ERP package, the entire process of purchase, inventory management and sale process was done on a manual scale and it was a highly tedious process lacking in dynamism and prone to errors at every step.

If the system would not have been an integrated system then the following problems would occur:

As all the modules are not linked then sales transactions will not affect Inventory and Finance Module. This gives rise to an Inventory, which is not updated. And a non-updated inventory will result in failure of the system. As Purchase department will not be aware of when to purchase the material, which leads to shortage of material.

As Finance is not linked with sales then sales vouchers cannot be generated. This is because for sales vouchers accounts number are required and these account numbers are stored in the Finance module when the details of customers are stored in the database in the masters entry of the Customers in the sales module.

If the modules are not linked then there will be :

- Data redundancy problem
- Availability of inconsistent data
- A non-updated inventory
- No updation of other modules like PURCHASE and INVENTORY. This whole leads to the failure of the system.

So to overcome all the difficulties an integrated ERP Package was developed. An ERP Package for an organization such as ITDC (India Tourism Development Corporation) consolidates all the software integrated into a simple system. The system envisages for

computerization of sales of finished goods, purchase of material, and keeping inventory updated.

4.1 Results

After the implementation of the ERP system for ITDC following results are achieved :

1. **Organization's operating cost is reduced** – An ERP system integrates all parts of an organization so that it has more control of its operation.
2. **It increases the organization's time efficiency** – Since all the parts are now connected and integrated with each other within an ERP system, people use less time to perform tasks.
3. **Faster access to the information** – It improves the time and resources for decision-making. For now, having an ERP system means increased information availability for the organization that means that the organization can access information quickly and easily.
4. **Software consolidation** – Organizations often have different types of software integrated within them. An ERP system consolidates all the software into a simple system.
5. **Reduce paper documents** by providing on-line formats for quickly entering and retrieving information.
6. **Improves timeliness of information** by permitting, posting daily instead of monthly.
7. **Greater accuracy of information** with detailed content, better presentation, fully satisfactory for the Auditors.
8. **Faster response and follow up on customers**.
9. **Better monitoring and quicker resolution of queries**.
10. **Improves supply-demand linkage** with remote locations and branches in different cities.
11. **Improves International operations** by supporting a variety of tax structures, invoicing schemes, multiple currencies, multiple bonding period.

12. **Enhanced management control** – give the executive team and managers direct access to timely decision-support information analyses plus all the underlying details.
13. **Improved global communication** – all ITDC shops, warehouses and Head Office can transfer the data to each other through dial up connection.
14. **Increased efficiency of the business process** – do more with less and control internal costs by eliminating repetitive steps and balancing the allocation of resources according to the needs of the business and its customers.

4.2 Suggestions For future Work

Although, Oracle Report Builder gives the information about items additional data analysis tools are required for in depth analysis, such as data classification, clustering and the characteristics of data that changes over time. The fast growing, tremendous amount of data, collected and stored in large numerous data bases, has far exceeded our human ability for comprehension without powerful tools. As a result, data collected in large databases become "data tombs". Consequently, important decisions are often made based not on the information- rich data stored in databases but rather on a decision maker's intuition, simply because the decision maker does not have the tools to extract the valuable knowledge embedded in the vast amounts of data. During transactions in this ERP package the size of the database goes on increases day by day. In this ERP system, domain experts manually interpret the reports for decision-making purposes. Unfortunately, this procedure is prone to biases and errors, and is extremely time consuming and costly. Data mining tools perform data analysis and may uncover important data patterns, contributing greatly to business strategies. The widening gap between data and information calls for a systematic development of data mining tools that will turn data tombs into "golden nuggets" of knowledge.

In **[2]**, concepts of Data mining and its implementation techniques are explored. Data Mining is the process of discovering interesting knowledge from large amounts of data stored either in databases, data warehouses, or other information

repositories. With the help of Background knowledge, data mining allows the discovery of knowledge at multiple levels of abstraction and makes the discovered patterns easier to understand Data mining tools may use interestingness thresholds to filter out these discovered patterns.

Data mining systems are able to display the discovered patterns in multiple forms, such as rules, tables, cross tabs, pie or bar charts, decision trees, cubes, or other visual representations.

Suppose manager of a big organization would like to dig deeper into the data by asking, "which items are sold well together?" This kind of market basket analysis would enable him to bundle group of items together as a strategy for maximizing sales. For example, given the knowledge that printers are commonly purchased together with computers, he could offer an expensive model of printers at a discount to customers buying selected computers, in the hopes of selling more of the expensive printers. A regular data retrieval system is not able to answer queries like the one above. However, data mining systems for transactional data can do so by identifying sets of items that are frequently sold together. Items that are frequently purchase together can be placed in close proximity in order to further encourage the sale of such items together.

In outlier analysis, data mining analyzes the patterns that deviate from an expected norm. It may uncover fraudulent usage of credit cards. Data mining techniques can be used to find the characteristics of object evolution, or the trend of changes for objects in the database.

By performing data mining, interesting knowledge, regularities, or high-level information can be extracted from databases and viewed or browsed from different angles. The discovered knowledge can be applied to decision-making, process control, information management, and query processing. Therefore, data mining is considered one of the most important frontiers in database systems and one of the most promising interdisciplinary developments in the information industry.

Chapter 5

CONCLUSION

In this thesis, the benefits of ERP package is studied and the ERP package is designed, developed and implemented for ITDC. This ERP package consists of four modules, viz. sales, inventory, purchase and system administration. These modules are totally integrated and need only one database (to ensure no duplicate data). This gives the company a single information system to support the management of the complete organization. The system envisages for computerization of sales of finished goods, purchase of material and keeps inventory updated.

The information like customer details, item listing, forecasting, status of most critical and critical items, bond details etc are easily available through the system. The system gives the data related to sales and status of inventory by accessing the database instantaneously. This information can be useful to higher management for taking policy decisions. Thus, after the implementation of ERP package the organization has now enhanced management control.

Moreover, the organization has also improved global communication. Now all employees of ITDC are interconnected via network. All ITDC shops, warehouses from their eleven locations can transfer the data to Head Office and vice-versa through dial up connection.

After the implementation of the ERP package, efficiency of the business process increases. Since all the parts are now connected and integrated with each other within an ERP system, people use less time to perform tasks. Moreover, people now have more and faster access to their information, which improves the time and resources for decision-making. For now, having an ERP system means increased information availability for the organization that means that the organization can access information quickly and easily.

Although there are many advantages of an ERP system, there are still some disadvantages among these systems. For example, cost is a very important issue for an organization to consider when implementing an ERP system. The high costs of setting up an ERP system are so high that it would be out of reach for many small businesses. In [10], the cost of implementing an ERP system is assessed.

Moreover, for a business, time is also a valuable resource. Since an ERP system does not take a short time to implement in an organization, it may slow down the routine operating works within organizations. Now, there may be a problem for those who have not been trained to have the skills to do certain tasks with the ERP system. This is a problem that affects an organization as a whole and thus these organizations need to work on some employee retraining programs.

Nevertheless, implementing an ERP system does take a lot of effort and resources in order to achieve success. In fact, the advantages sure do overcome its disadvantages. In the future, more and more business will be using ERP system to help them manage important parts of their business.

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Appendix A

SCREEN SHOTS OF DFS SALES FORMS

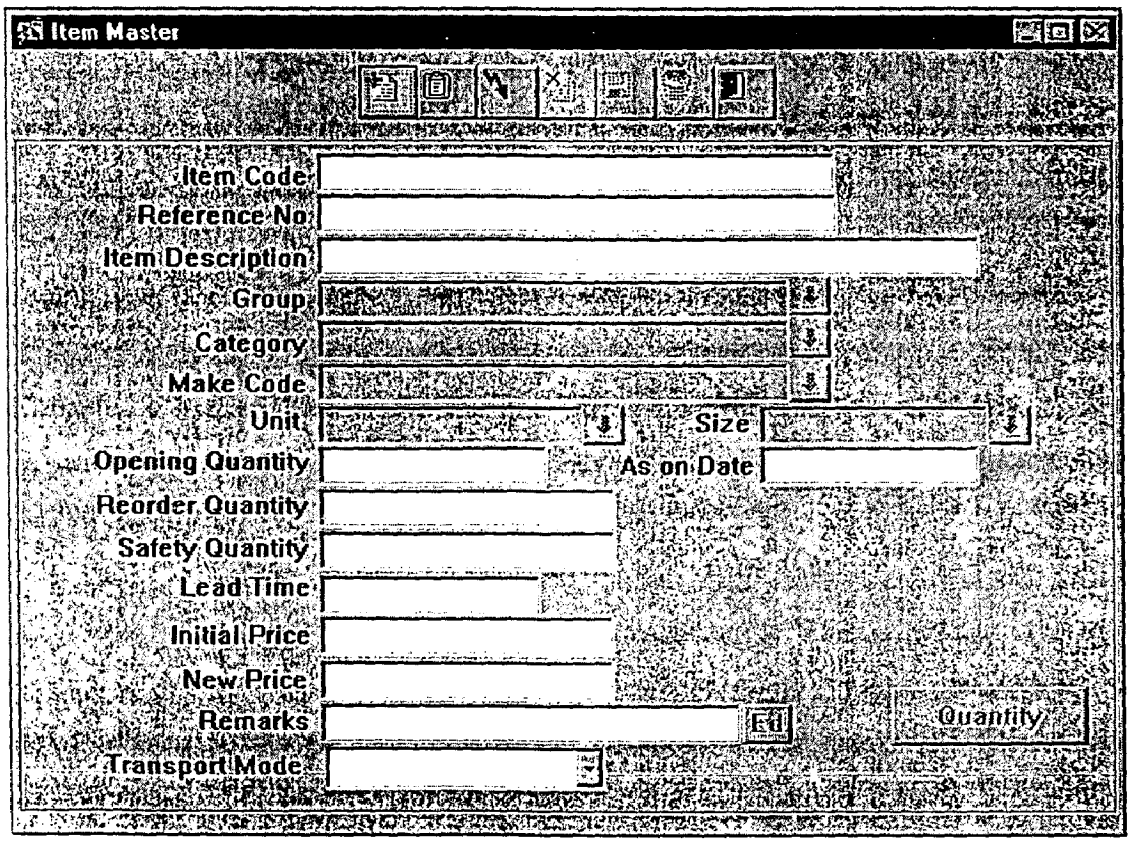
A.1 MASTERS

A.1.1 Item Master

Purpose:

This option allows the user to enter details about new items whenever a new item is introduced in the range of products. Details include item code, item reference number, description, group, and category, make code, its unit and size of unit. There are other optional information fields like opening quantity, reorder quantity, safety quantity, initial price, new price, remarks, transport mode, quantity etc.

Sample Item Master Screen



Procedure:

To Add A New Item

Click  on the toolbar. Type the item code (which is a concatenation of the product type along with its make code and unit size). Then enter other details such as its reference number (which is optional), description, the group and category to which it belongs, its make code (brand code), unit and size. If additional information such as its opening quantity, reorder quantity, safety quantity, price (initial and new), transport mode and quantity procured are available then user can add them too. There is a field for entering any kind of miscellaneous remark about that item if so desired. Fields such as group, category, unit, size, etc. can be selected from LOVs (list of values). Finally click  on the toolbar to save the record.

To View an Existing Item Detail

Click  on the toolbar. From the displayed LOV select the required item code. Details of the item can be only viewed but not modified. Thus, Add and Delete buttons get disabled.

To Edit Existing Party Record

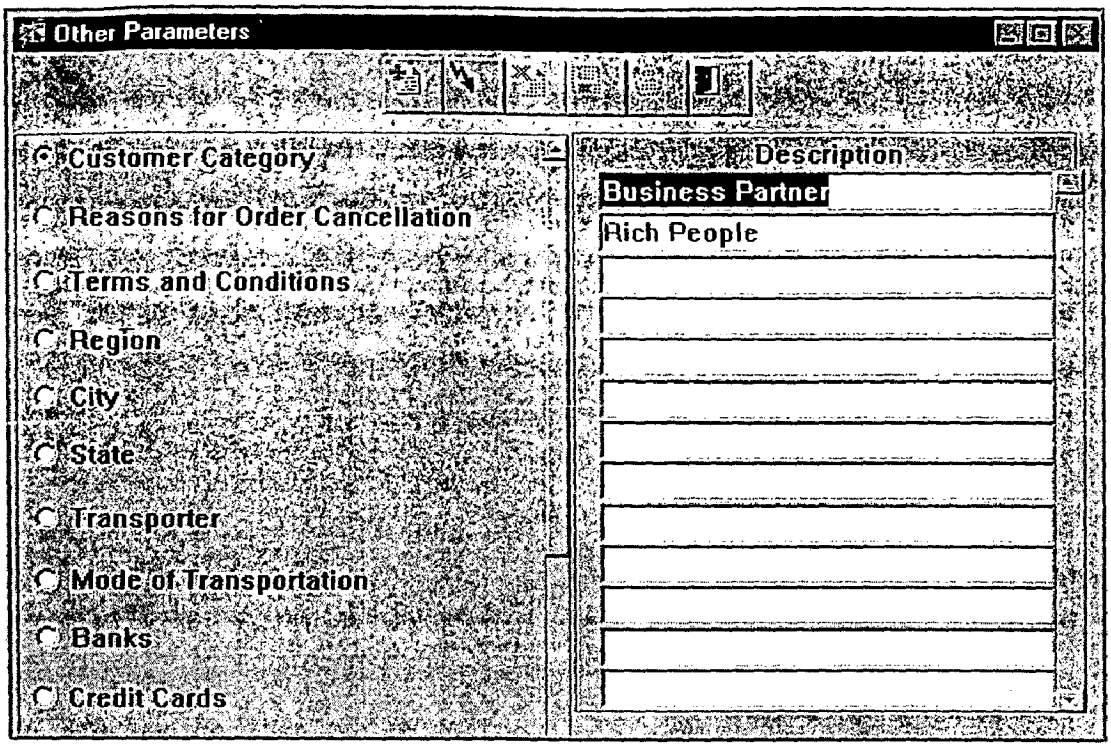
Click  on the toolbar. From the displayed LOV select the required item code. User can then change data in the permissible fields (the fields which are editable). Make the required changes and save the record.

A.1.2 Parameters

Purpose:

The purpose of this form is to generate, view or modify business parameters, which are applicable to the sales module. Parameters include customer category, terms and conditions, regions, banks, credit cards, etc. Once a user has selected a parameter, he/she can view or insert values for that particular parameter. For example, in the parameter values for credit cards, different accepted credit card names could be entered.

Sample Parameter Screen



Procedure:

To Add New Parameters

Click on the toolbar. Then select the parameter type for which values are to be viewed or inserted. Enter the values of that parameter. Finally click on the toolbar to save the record.

To Edit Existing Party Order Record

Click on the toolbar. Then select the specific parameter for which values are to be edited. You can add or delete values of the parameter selected. Make the required changes and save the record.

To view existing Party Order Record

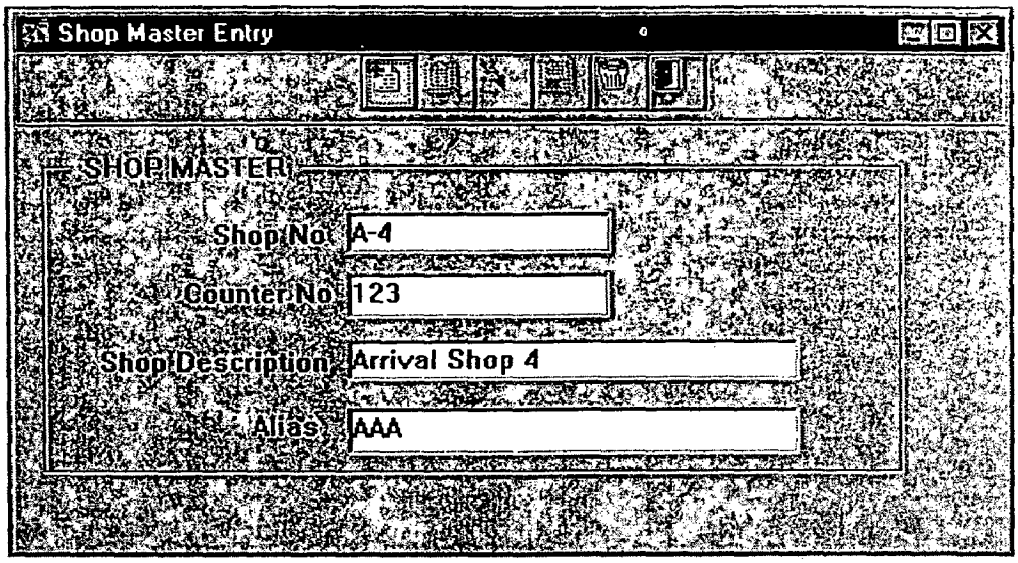
Click on the toolbar. Select the desired parameter type. Values of the parameter can be only viewed but not modified. Thus, Add and Delete buttons get disabled.

A.1.3 Shop Master

Purpose:

This is a master form for defining shops. Shop codes with their number of counters, shop description and shop alias, etc are specified through this form.

Sample Shop Master Screen



Procedure:

To Define a New Shop

Click on the toolbar. Then enter required details of the shop such as shop code, number of counters, shop name and its alias. Click on the toolbar to save the record.

To View an existing Shop Details

Click on the toolbar. From the displayed LOV select the required shop name or code. All the details of the shop are then displayed. . The information can be only viewed but not modified. Thus, Add and Delete buttons get disabled.

To Edit an existing Shop Details

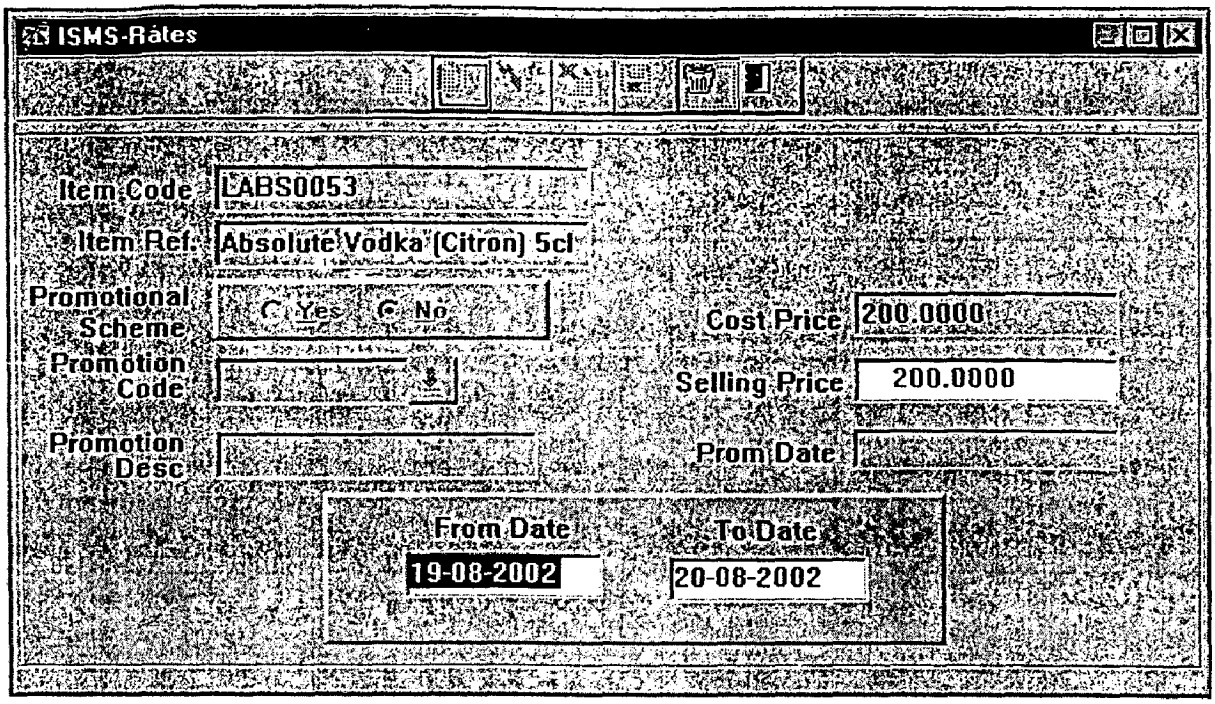
Click on the toolbar. Then select the specific shop from the LOV for which values are to be edited. You can modify values of the shop selected. Make the required changes and save the record.

A.1.4 Rate Master

Purpose

This form is used to define rates (selling price and its components) for new items introduced in the range of the organization's products. Price changes in existing products are also stored via this form.

Sample Rate Master Screen



Procedure:

To Add new Rates

Click on the toolbar. Then select the item for which current rate is to be defined. If the item is undergoing a promotional scheme then its promotion code is selected from the LOV. The selling price is then specified and the closing date (if pre-decided) for that price is then stored as well. The new rate defined becomes valid in the organization from the day on which entry is made through this form. Click on the toolbar to save the record.

To View existing rates

Click on the toolbar. From the displayed LOV select the required item. All the details of the rates are displayed. The information can be only viewed but not modified. Thus, Add and Delete buttons get disabled.

To Edit an existing Rate

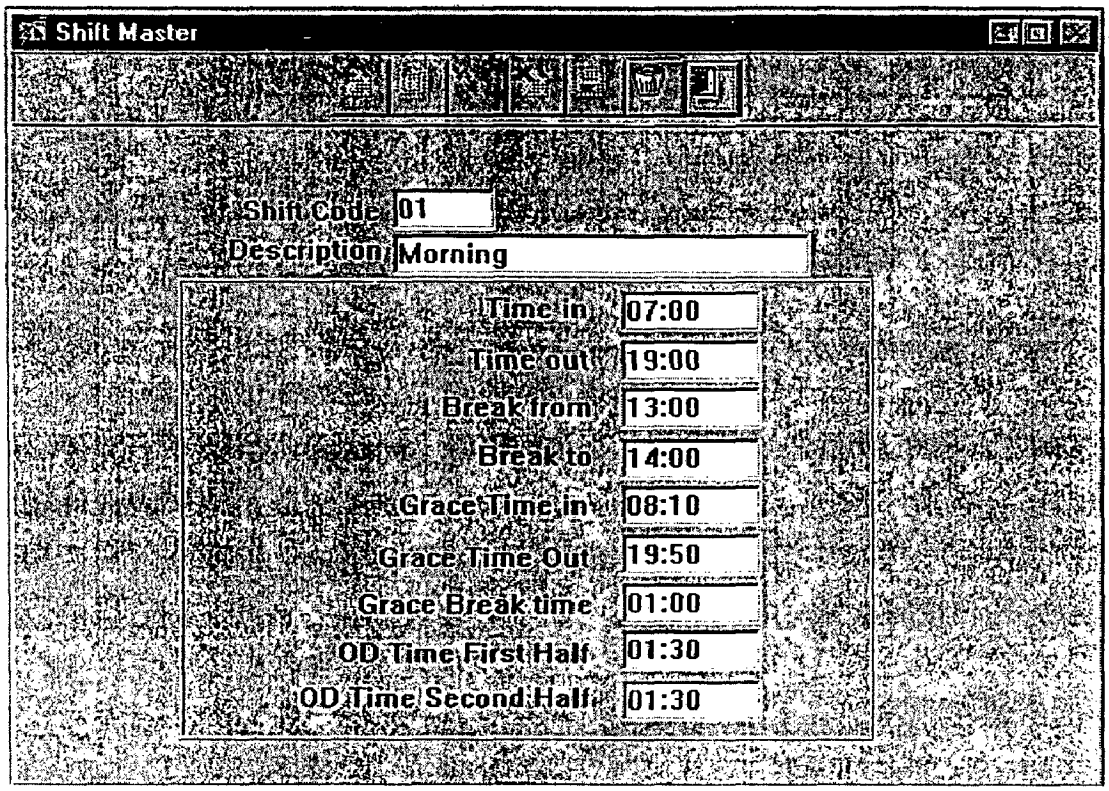
Click on the toolbar. Then select the specific item from the LOV for which rate is to be edited. Make the required changes and save the record.

A.1.5 Shift Master

Purpose:

This form is used to define shifts in the shops, which function 24 hours a day. Thus all shops operate in two shifts of 12 hours each. This form stores the shift codes along with their description and other details such as grace times, brake times, etc. Break from and break to indicate the period during which recess can be taken. In addition grace break time is the extra recess time that can be taken. There is a limit on overtime too.

Sample Shift Master Screen



Procedure:

To Define a New Shift.

Click on the toolbar. Insert the new shift code and shift description. Type in the other relevant information for grace time, break time, etc. Click on the toolbar to save the record.

To View existing Record

Click on the toolbar. Select the shift code from the LOV displayed. All the details of the shift are displayed. The information can be only viewed but not modified. Thus, Add and Delete buttons get disabled.

To Edit an existing Shift

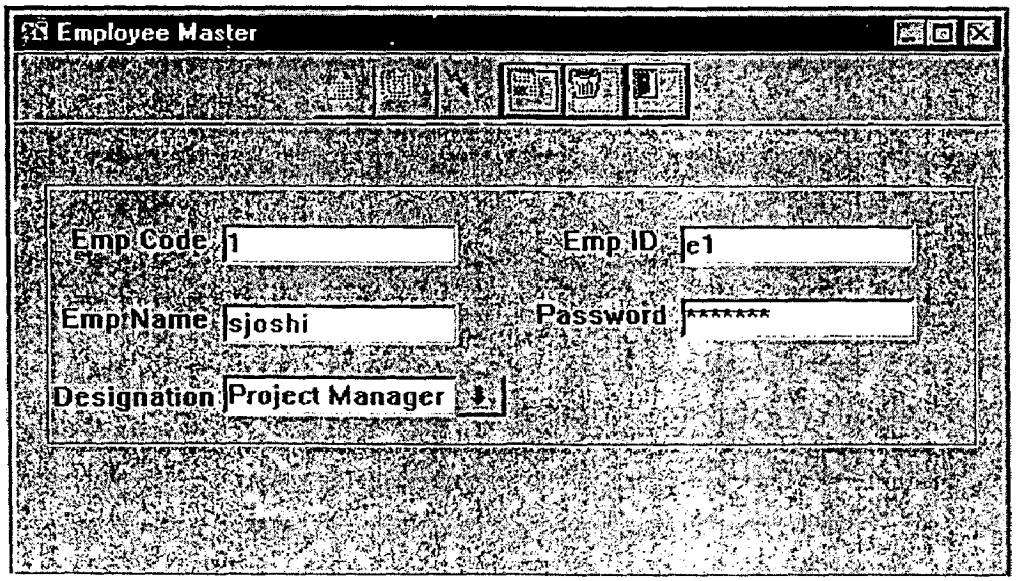
Click on the toolbar. Then select the specific shift from the LOV for which information is to be edited. Make the required changes and save the record.

A.1.6 User Master

Purpose

This form creates new users and assigns them identification numbers. The users create their passwords through this form and the name and designation is also stored via this interface.

Sample User Master Screen



Procedure:

To Create a New User

Click on the toolbar. The new user code will be automatically generated by the system. Enter the user-ID, username, new password and designation. Click on the toolbar to save the record.

To View an existing User data

Click  on the toolbar. From the displayed LOV select the specific user-ID or username. All the relevant information will be then displayed. The information can be only viewed but not modified. Thus, Add and Delete buttons get disabled.

To Edit an existing User

Click  on the toolbar. Then from the displayed LOV select the specific user-ID or username for which information is to be edited. The password however cannot be edited through this form. Make the required changes and save the record.

A.1.7 Promotion

Promotion can be of 2 types-item based promotion and bill based promotion. They are as follows:

A.1.7.1 Item Promotion

Purpose

This form is for generating promotional schemes that are based on individual items. There are basically four categories of Promotion Types:

- Date Based- This puts an item under promotion till the arrival of the appointed date.
- Quantity Based- This puts a certain specified quantity of an item under promotion.
- Date & Quantity Based-Under this category an item is put under promotion until a particular appointed tenure has expired or a specific quantity is exhausted, whichever is earlier.
- Till Stocks Last- This puts an item under promotion until its stock is exhausted (clearance scheme).

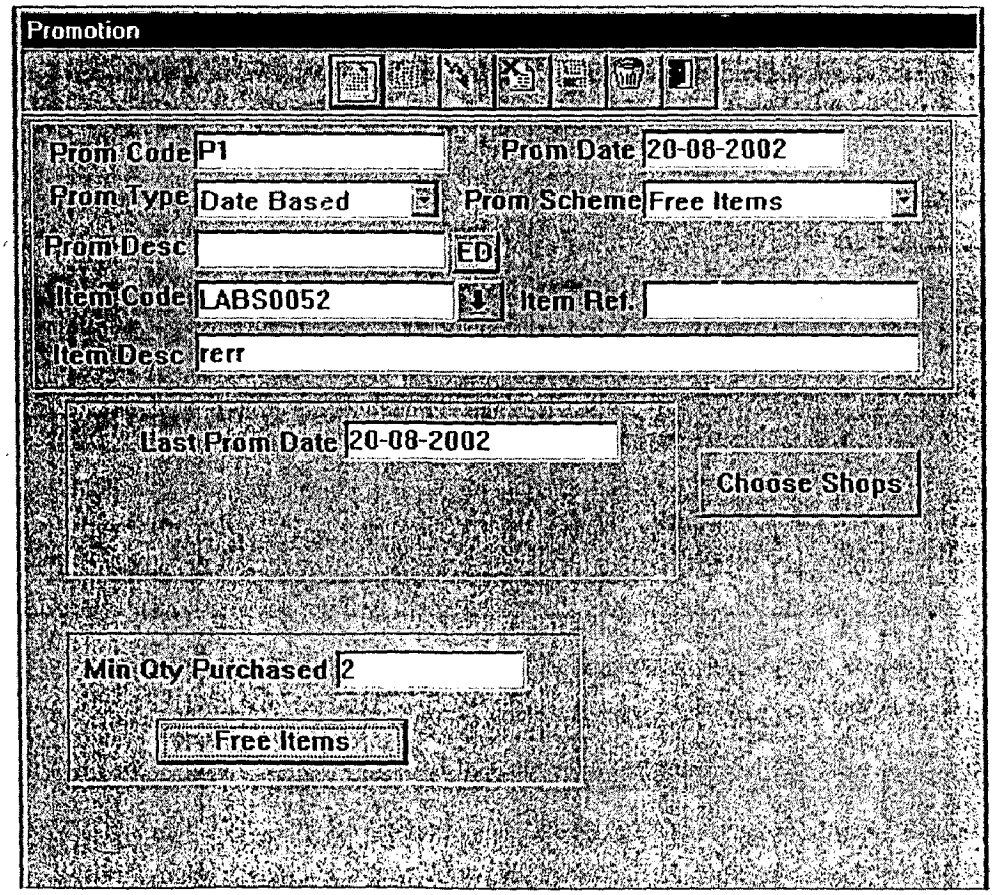
Similarly there are four categories of Promotional Schemes:

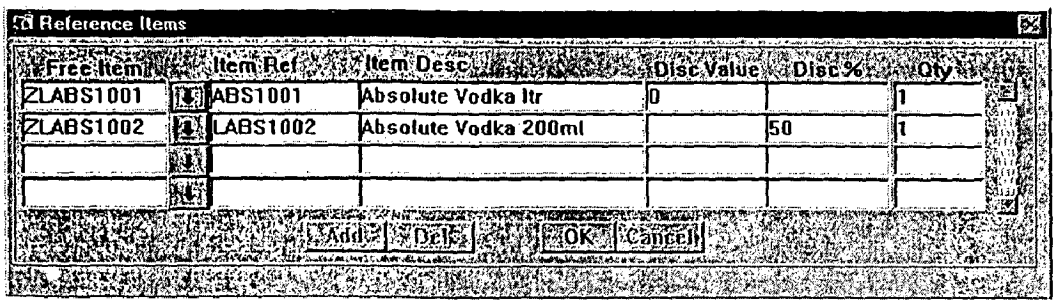
- Free Items-In this scheme certain other items can be availed free of cost or at a discount on purchase of a certain quantity of the promotional item.
- Discount in Sets-Under this scheme discount can be availed on the bill amount in varying amounts corresponding to the purchase quantity of the item under promotion.

- Scratch Card-This is a scheme where on purchase of the promotional item the user receives a scratch card which reveals gifts to be won.
- Combination Scheme-This scheme allows user to avail discount on certain items or even avail them for free if certain quantity of the principal item in promotion is purchased along with certain other items in a combination.

The user can generate promotion schemes for items after selecting promotion types and specifying the item to be promoted.

Sample Item Promotion Screen





Procedure:

To Create a Scheme

Click  on the toolbar. The new promotion code will be automatically generated by the system. Select the promotion type and promotion scheme from the available lists. Corresponding to the choices made additional fields will appear for entering data particular to that promotional type or promotional scheme. Choose the item to be put under promotion by selecting it from the LOV. IN addition free items or items that are to be purchased along with the principal item have to be specified in their relevant fields along with their quantities and whatever discount is availed on them. Finally shops are selected out of the list of shops where the particular item is available. The promotional scheme will now operate in these shops. The promotion date is generated based on the server date. After making all the necessary data entries click  on the toolbar to save the record.

To View an existing Promotional Scheme

Click  on the toolbar. From the displayed LOV select the specific promotional-ID or item or promotional-date. All the relevant information will be then displayed. The information can be only viewed but not modified. Thus, Add and Delete buttons get disabled.

To Edit an existing Scheme

Click  on the toolbar. Then from the displayed LOV select the specific promotional-ID or item or promotional-date for which information is to be edited. Make the required changes and save the record.

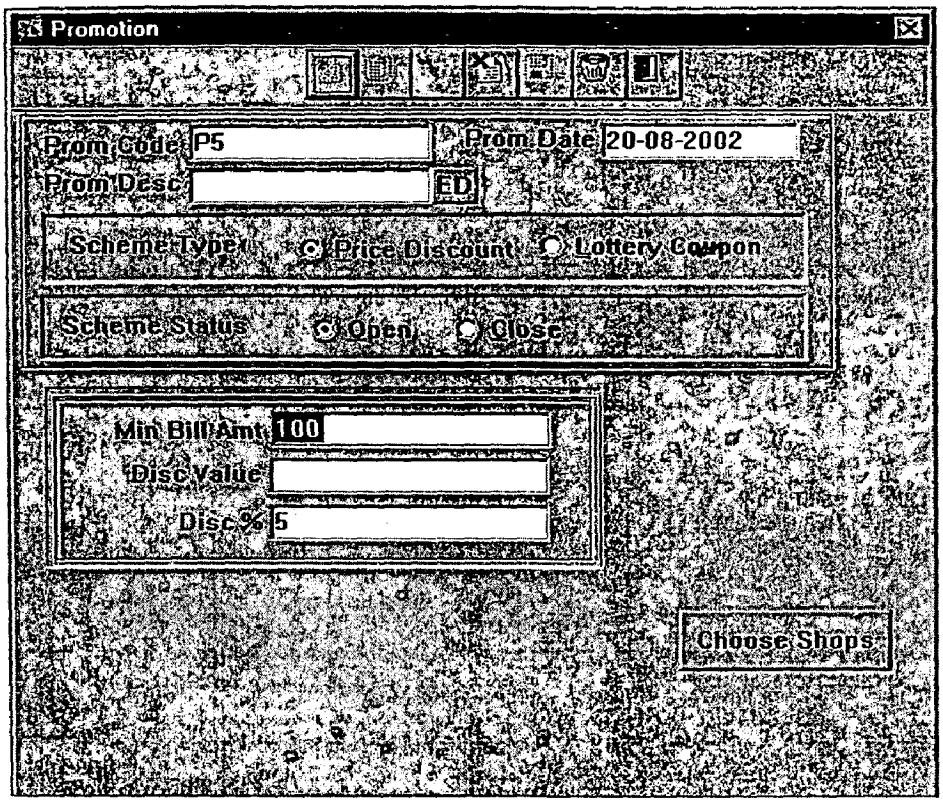
A.1.7.2 Bill Promotion Master

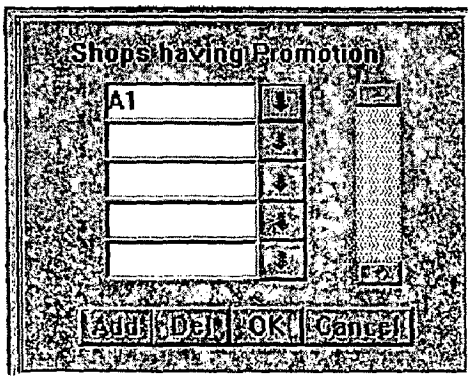
Purpose

This form is for generating promotional schemes based on a specified bill amount. These schemes are independent of the items purchased. Either discount schemes or lottery coupons are generated in bill based promotional schemes. On reaching a certain bill amount a certain discount can be availed on the overall bill charge. This discount can be a fixed amount or a fixed percentage. If there is a lottery coupon scheme then coupons are allocated to the customer after incurring the target bill

amount against which a lucky draw is held. Once again shops are chosen in which the promotion scheme is to be run.

Sample Bill Promotion Screen





Procedure:

To Generate A New Promotion

Click  on the toolbar. The promotion scheme and date will be automatically displayed. The promotion date will be based on the server date. Certain comments can be entered in the field for promotion description. Then choose whether the intended promotional scheme is to be discounted based or lottery coupon based. The scheme

status will be Open by default for a new scheme that can be later closed in the edit mode. Select the target bill amount to avail the scheme. Finally select the shop where the scheme is to be run. Click on the toolbar to save the record.

To View existing Promotion

Click on the toolbar. From the displayed LOV select the specific promotion code or promotion-date. All the details of the promotion are then displayed. . The information can be only viewed but not modified. Thus, Add and Delete buttons get disabled.

To Edit an existing Scheme

Click on the toolbar. Then from the displayed LOV select the specific promotional-ID or promotion-date for which information is to be edited. Make the required changes and save the record.

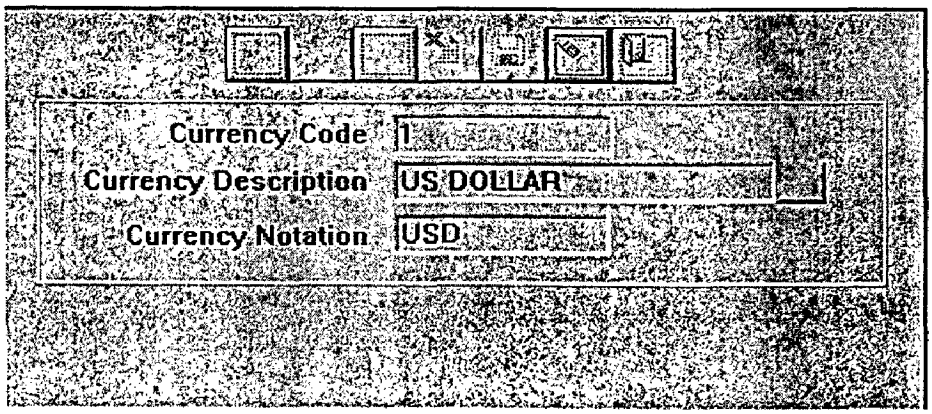
A.1.8 Currency Master

A.1.8.1 Base Currency

Purpose

This will help the user to define the base currency with all relevant details. Only Head office is allowed to define the base currency

Sample User Master Screen



Procedure:

To Define a Base Currency

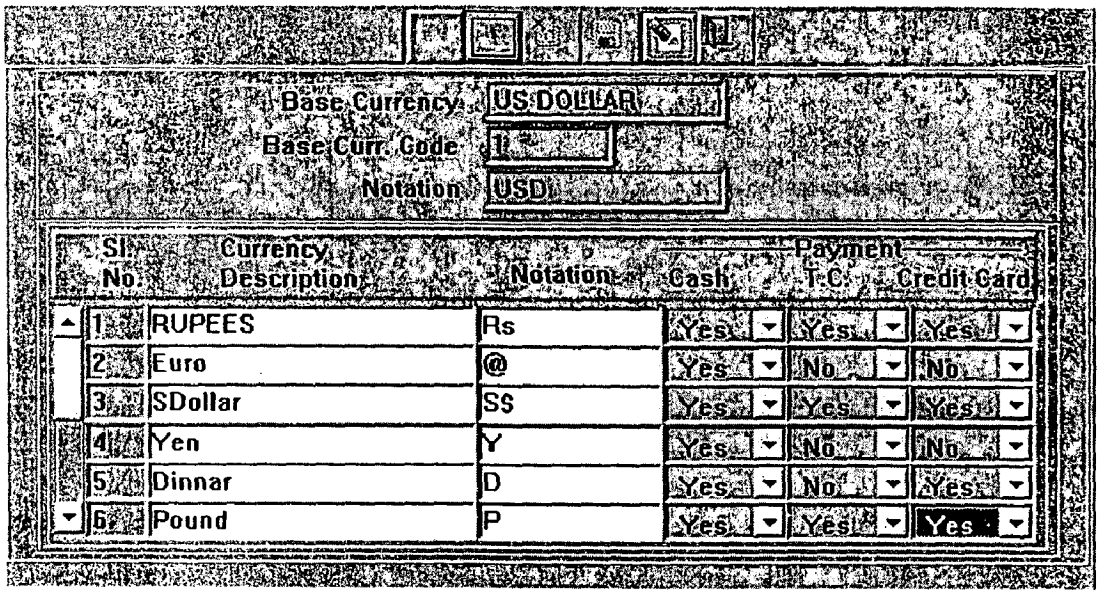
Click on the toolbar. Click on the currency description LOV button. Select the desired currency to make it a base currency. Click on the toolbar to save the record.

A.1.8.2 Detail

Purpose

This form will help to define information about the different currencies dealt in and their notations. This form is also used to define the payment options for the specific currency

Sample User Master Screen



Procedure:

To Add a New Currency

Click on the toolbar. Enter the details of the new currency to be added. Enter its description, notation and payment options as yes or no. Click on the toolbar to save the record.

To View an existing Currency

Click on the toolbar. All available currencies will be displayed in the table form with their payment options. The information can be only viewed but not modified. Thus, Add and Delete buttons get disabled.

To Edit an existing Currency

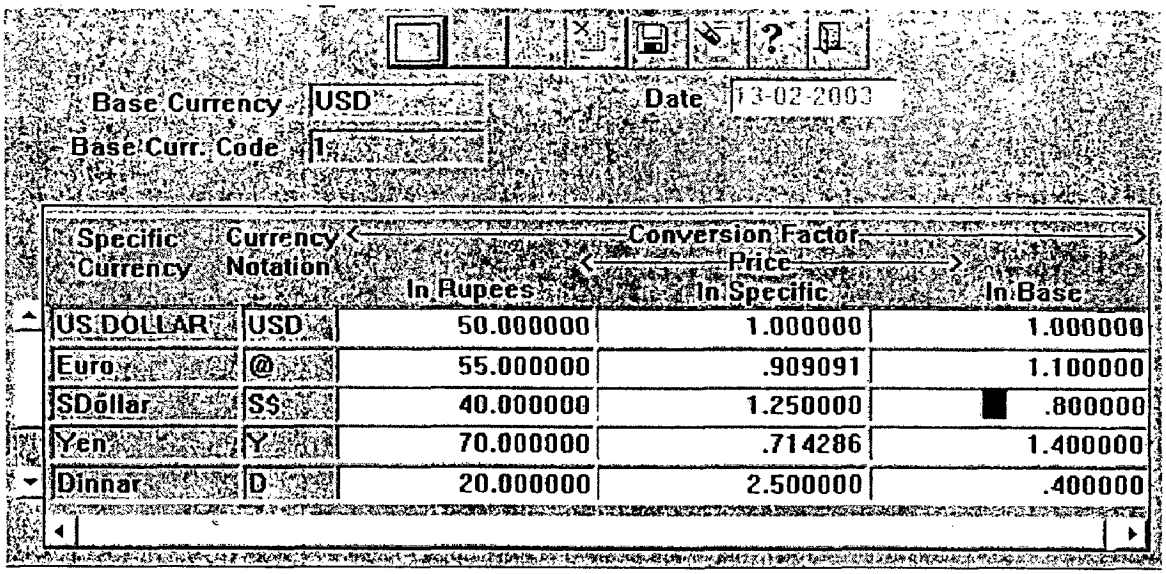
Click on the toolbar. All available currencies will be displayed in the table form with their payment options. Make the required changes and save the record.

A.1.8.3 Currency Conversion

Purpose

This form will help the user to enter the latest conversion rates for all currencies in both specific and base currency.

Sample User Master Screen



Procedure:

To Define New Currency Exchange Rates

Click on the toolbar. Enter the exchange rate of the currency in rupees. Click in the "in specific" field. Details of the conversion factor of the corresponding currency will be displayed in the respective fields. Click on the toolbar to save the record.

To View an existing Currency Conversion Factors

Click on the toolbar. All available currencies will be displayed in the table form with their conversion factors. The information can be only viewed but not modified. Thus, Add and Delete buttons get disabled.

To Edit an existing Currency

Click on the toolbar. All available currencies will be displayed in the table form with their conversion factors. Make the required changes and save the record.

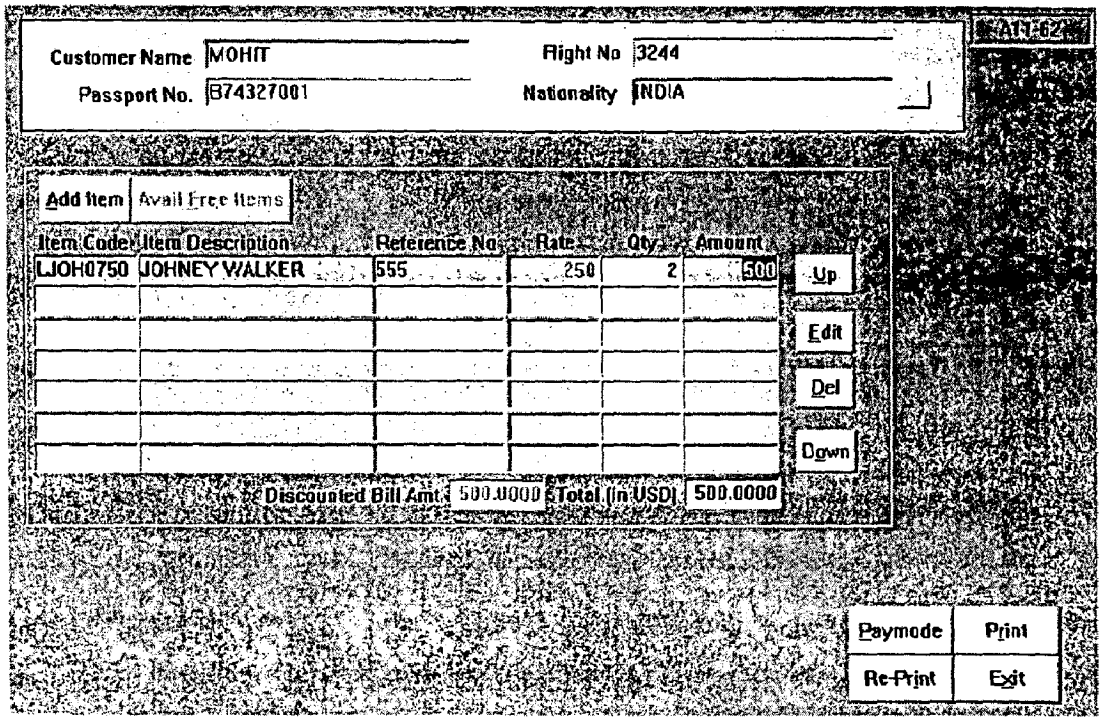
A.2 TRANSACTION

A.2.1 Cash Memo

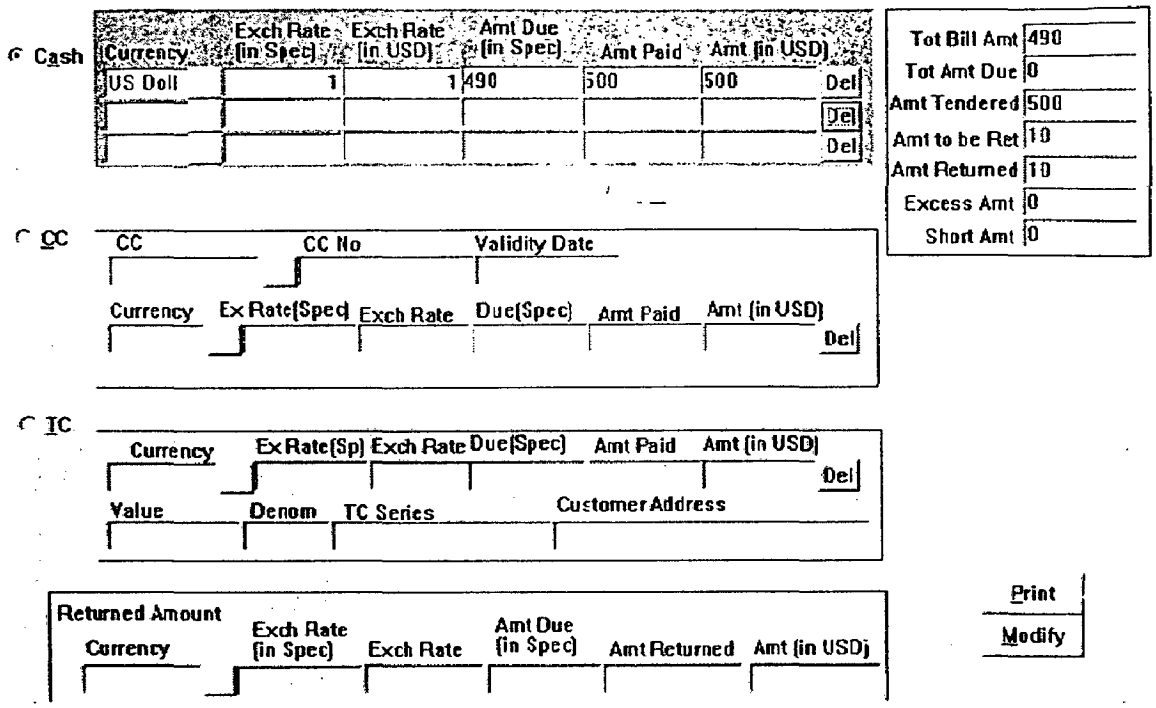
Purpose

This form generates a cash memo when a customer purchases item(s) from the ITDC shop. Entries about the customer and the purchased items are made in this form. The customer can give the payment of the items in three modes. He can give it in cash, credit cards, or in the form of traveler's cheque.

Sample Cash Memo Screen



Sample Payment Mode Screen



Procedure:

To Generate a Cash Memo

Click on the cash Memo option under Transaction menu. The new cash memo no. will be automatically generated by the system. Enter the customer name and its details in the respective fields. Click on the payment mode button for the collection of the payment.

To Receive the Payment in either of the Three Modes

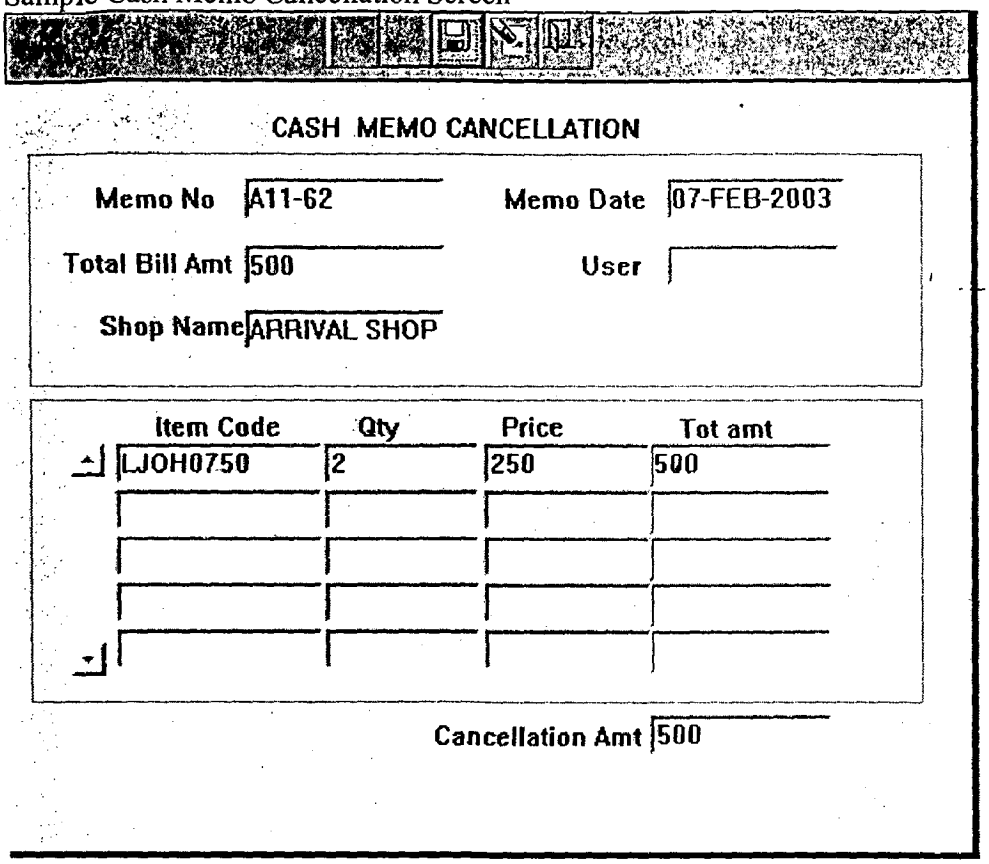
Click on any one of the three radio buttons for receiving the payment in either cash, credit card or in traveler's cheque form. Enter the required details for the corresponding payment mode.

A.2.2 Cash Memo Cancellation

Purpose

This form is used to cancel the cash memo. Cash memo no. is entered in the Memo no. field for the cancellation.

Sample Cash Memo Cancellation Screen



Procedure:

To Cancel A Cash Memo

Click on the toolbar. Select the desired cash memo no from the displayed LOV to cancel the cash memo. All the details of that cash memo are automatically displayed. Click on the toolbar to save the record.

To View existing Cash Memo

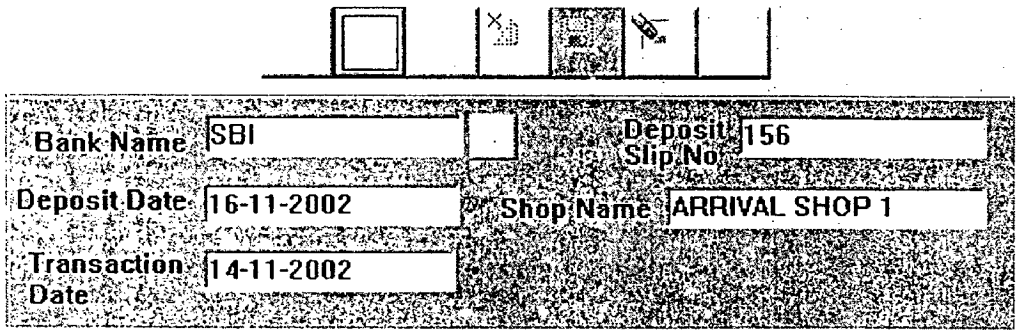
Click on the toolbar. From the displayed LOV select the specific cash memo no. All the details of the cash memo are then displayed. . The information can be only viewed but not modified. Thus, Add and Delete buttons get disabled.

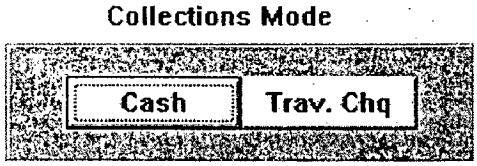
A.2.3 Bank Deposit

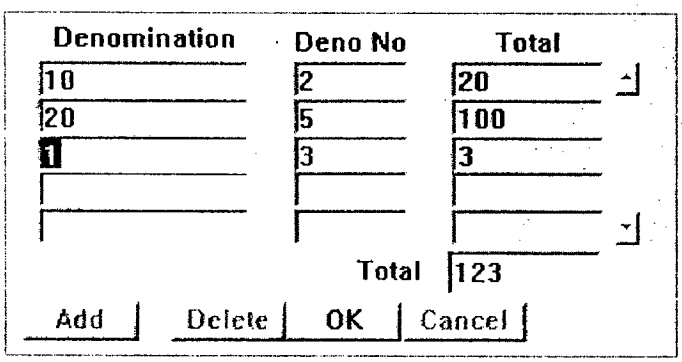
Purpose

This form is used to deposit the payment in the bank. Payment may be collected either in cash or in the traveler's cheque form.

Sample Cash Memo Screen







Procedure:

To Deposit the Payment

Click on the toolbar. Click on Bank Name LOV button. Select the name of the bank in which payment is to be deposit. Enter the required details like deposit date, shop name etc. Click on the collection mode button. For the cash mode, enter the details in the denomination form. Then click on the "ok" button. Finally click on the toolbar to save the record.