

CRISTAL

**CUSTOMER SERVICE
MANAGEMENT
SYSTEM**

**Ease of use
Easy to Maintain
Optimise Productivity
Affordable**

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CRISTAL CUSTOMER SERVICE MANAGEMENT SYSTEM

Service calls and appliance warranty support are major cost areas in the appliances business. Keeping the cost down and within manageable budget requires timely information on service and repair calls.

Data of what repairs are often required, which model accounts for most of the service repairs, etc... can provide Product Managers with valuable information of which model should be phased out, which model need to be recalled before damages to company reputation occurs, etc.

Such decisions request accurate and timely feedback from the Service Department.

CRISTAL Customer Service Management system is designed specifically to support manufacturers and distributors of appliances and equipments that required to be supported by warranty coverage.

CSM incorporates the capability to monitor customer complaints and the warranty servicing that have to be performed on any piece of appliance or equipment and the cost of supporting the warranty extended.

It also monitors delinquent customers through its comprehensive archive of servicing history and identify potential defects, thereby enabling the manufacturers and distributors to take preventive and corrective action.



The Customer Service Management System comprises of the followings modules:

1. Warranty Management
2. Customer Database
 - a. Membership Register
 - b. Marketing Promotion and Advertising
3. Complaint and Service Management
 - a. Technician Resource Management
 - b. Technician Incentives Management
 - c. Billing and Collection
4. Parts Inventory Management
 - a. Counter Sales
 - b. Parts Receipt
 - c. Inventory Planning
 - d. Job Costing
5. Service Call Follow-up Survey

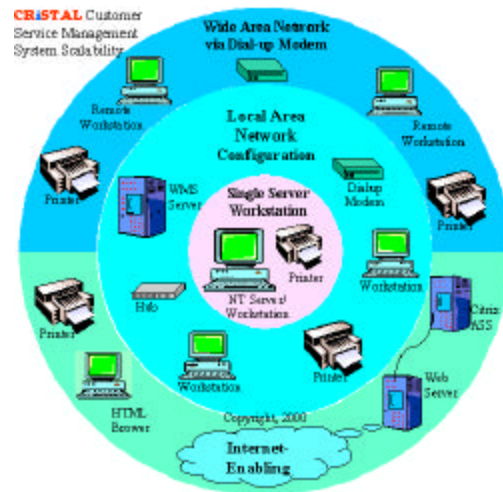
SCALABLE AND INTERNET-DEPLOYABLE

CRISTAL Customer Service Management System is built based on Thin Client Software Architectural concept.

This enables the system to be highly scalable, allowing it to run as a single workstation/server to Local Area Network, Internet-based Wide Area Network and VPN

Such scalability enables client to invest and deploy the system in accordance to actual business requirement. Thereby lower the initial investment requirement.

Client can start off with single workstation-server and gradually grow the system in accordance to business demand – manage and operates multi-service centres, coordinate the resources via the Internet backbone, allowing their customers to access and obtain information on a real-time basis, regardless of his physical location, either via dial-up modem or the Internet communication backbone.



Warranty Management

The Warranty Management database records and maintain customer information, their purchases and the warranty that are extended to them.

The objectives of the CRISTAL CSM are:

1. To provide User with the capability to identify which of the customer and appliance warranties are lapsed which will help ensure that the service personal bill for any repair that is performed.
2. It will also prompt the Customer Service Officer to advise client of warranty status when receiving calls on repair requirement, thereby minimise, if not, eliminate any misunderstanding.



The system is designed to be capable of further future enhancement that may arise, such as Web-based capability that will enable customers to register their warranty via the Internet.

The data to be maintained in the following tables:

1. **Customer Data**
 - a. **Demographic Information**
 - b. **Other Appliances Owned**
2. **Appliance Data**

The demographic information and other appliances owned together with a membership program provide Clients with a powerful marketing cum customer relation management tools.

Validation Tables

To ensure consistency of the data input of the customer and warranty data, so as to be able to perform intelligent analysis, a number of validation tables are incorporated, maintainable by the Users, to support validation required.

1. Made/Brand
2. Models
3. Product Classification
4. Distributors
5. Installer/Contractors
6. Warranty Certificate Forms

Printing of Warranty Certificate

On completion of entry of warranty form, the Warranty Certificate is to be printed.

Multiple warranty terms and certificates capability is incorporated for Client that provide different for different appliances and equipment.

Customer Database

Incorporated within the Warranty Management, the Customer Database includes a Loyalty Membership Program (LMP) that enable Clients to capture demographic data that allows Marketing to fine-tuning its Advertising and Promotion effort.

The LMP also facilitates Clients fostering and building and enhancing its customer relationship such as Newsletter and Birthday wishes.

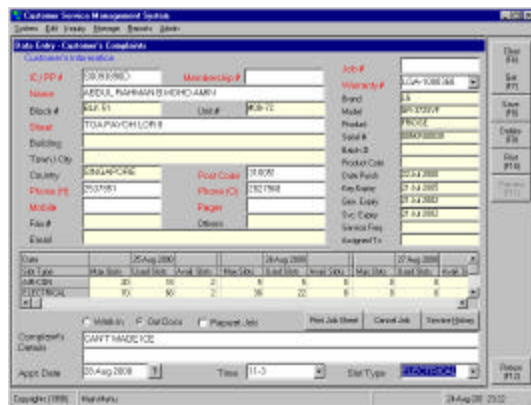
The maintenance of a database of the customer existing equipments and their age would enable Clients to select target customers for “replacement” sales campaigns.

Complaint and Servicing Management

This is a vital module as it provides Clients with the capability to register real-time any complaint or request services, enabling Customer Service Officers (CSO) to make commitment on servicing appointment, new or amendment. Thereby enable to schedule servicing accordance.

The incorporation of appointment slot management capability ensures that no over commitment of available resources is made.

This module consists of following tables:



Complaint/Servicing Table

The objectives of the Complaints and Servicing Management module are:

1. Provide Users the functionality to update and maintain on a real-time basis of any servicing requests.
2. Schedule servicing jobs
3. Maintain history of servicing performed for any customer and appliance.
4. Enable Clients to identify complaint and servicing patterns of various models and appliance.
5. Capability to allow users to define and identify specific complaint and servicing for identification of potential failure of appliances
6. Manage and assign service requirement to appropriate service technician
7. Future enhancement is planned to enable Palm Top devices to be used by Service Technicians to record and bill for parts and services

Technician Records

This would require the maintenance of the technicians available and the number of jobs each of them is capable of completing per day. This call for function to:

- Record technician's leave schedule
- Provide alternative technician
- Maintenance of Territorial Responsibility

Appointment Slot Control

The numbers of appointment or servicing that can be handled per day is controlled and vary in accordance to the number of technician available.

The Appointment Slot Control manages by the total number of servicing appointment that can be accepted each day. The Customer Service Supervisor maintains the figure, making adjustment for certain days in which some technicians have being scheduled to be on vacation.

Job Type / Availability	25 Aug 2002	27 Aug 2002	28 Aug 2002	29 Aug 2002
APPOINTMENT	0	0	20	20
REPAIR	0	0	14	0
APPOINTMENT	0	0	0	20
REPAIR	0	0	0	0
APPOINTMENT	0	0	0	0
REPAIR	0	0	0	0
APPOINTMENT	0	0	0	0
REPAIR	0	0	0	0
APPOINTMENT	0	0	0	0
REPAIR	0	0	0	0

Job #	Job Type	Repair Date	Customer Name	Address	Job Type
00000001	000	27-Aug-2002	WILSON, MICHAEL	206 BILLY BOYD BLVD	0
00000002	000	27-Aug-2002	WILSON, MICHAEL	206 BILLY BOYD BLVD	0
00000003	000	27-Aug-2002	WILSON, MICHAEL	206 BILLY BOYD BLVD	0
00000004	000	27-Aug-2002	WILSON, MICHAEL	206 BILLY BOYD BLVD	0
00000005	000	27-Aug-2002	WILSON, MICHAEL	206 BILLY BOYD BLVD	0
00000006	000	27-Aug-2002	WILSON, MICHAEL	206 BILLY BOYD BLVD	0
00000007	000	27-Aug-2002	WILSON, MICHAEL	206 BILLY BOYD BLVD	0
00000008	000	27-Aug-2002	WILSON, MICHAEL	206 BILLY BOYD BLVD	0
00000009	000	27-Aug-2002	WILSON, MICHAEL	206 BILLY BOYD BLVD	0
00000010	000	27-Aug-2002	WILSON, MICHAEL	206 BILLY BOYD BLVD	0

Jobs Assignment

Each evening or at an appropriate time, the Customer Service Supervisor (CSS) will assign the jobs that is to be done the next day to the appropriate Service Technician. The

allocation will be based on matching the territorial responsibility and Product Specialisation.

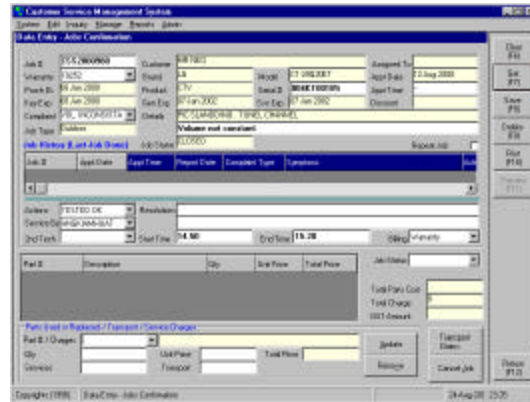
The system will limit the number of jobs that can be assigned to a technician in accordance to the Max Jobs/Day that is defined by the management.

Servicing Completion Confirmation

On completion of the jobs, the job sheets are confirmed to the system ensuring that what need to be carried out is done.

If the flag “To be billed” is specified during Service Confirmation, an invoice will be printed on completion of each confirmation.

The Start Time and End Time are catered for future enhancement to provide Service Technician with Palm Top to receive their job schedule.



Job Billing and Parts Inventory Management

An integrated Job Billing cum Parts Inventory module expands the functionality of the Customer Service Management to enable Client to bill their customer as required and manage its counter sales requirement and spare parts inventory support requirement.

Incorporated with multi stock point management, it enables the management to monitor parts that are assigned to outdoor service technicians to facilitate their works and recall or transfer parts from one to another when urgent requirement arise.

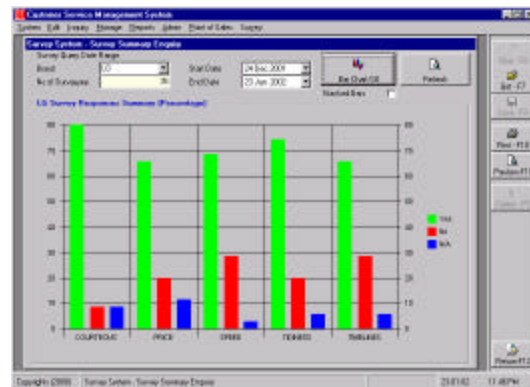
Enquiry

CSM incorporate a high flexible user access security control that enable the Administrator to grant access to enquiry screens to users, that is not directly involve in the CSM but requires to obtain information for their works.

Service Call Follow-up Survey

The latest release incorporate a highly versatile Questionnaire Survey module that enable follow-up be carried out to gauge the perception of the customers on the service provided. It also helps to identify training requirement for the service technicians.

Results of survey are presented graphically in bar charts.



Reports

CSM incorporates more than 80 different reports.

All the reports are formatted with Seagate Crystal Reports. This allows Users to modify and create any report to suit their own requirement and call the report directly from the system.

CRISTAL Solutions will assist in formatting more complex reports if the need arise



HARDWARE AND SYSTEM REQUIREMENT

Server Configuration (minimum)

Pentium 500 MHz or better completed with:

- 128 MB RAM
- 4 GB hard disk storage
- Partitioned into at least 2 Drives – C: & D:
 - With a minimum of 2GB for Drive D:
- WINDOWS NT / 2000
- Microsoft SQL Server RDBMS

Higher end Server is recommended for better performance and/or when the set up is for more than 5 users and/or Database size of above 1 Gigabytes.

Client Configuration

Pentium 200 MHz or better completed with:

- 32 MB RAM (Windows 98 / ME), 64 MB (Windows NT/2000 OS)
- Minimum 15 MB free hard disk space.
- WIN NT / 2000 OR Windows 95 / 98
- Display driver configured to support 800 x 600

Others

The system can be installed as a standalone on a Windows 98 workstation.



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