

## **ERP FOR ENGINEERING INDUSTRY**

### **BASE MODULES**

1. Material Management Module
2. Sales and Distribution Module
3. Budget & Costing Module
4. Finance Module
5. Fixed Asset Module
6. Personnel Management module including PF, Pension and ESI
7. Production Module
8. Plant Maintenance Module
9. Transport Module
10. Excise Module
11. System Security Module

### **MATERIALS MANAGEMENT MODULE**

#### **Take control of your inventory**

Hash Materials Management manages some critical functions of an organization, which include materials procurement or purchase order processing, inventory control, materials valuation and sub-contracting.

#### **Integrated for smooth workflow**

Materials Management is integrated with the following Hash modules:

- Sales and Distribution
- Production
- Plant & Equipment Maintenance
- Financial
- Fixed Assets
- Excise

#### **Objectives and advantages**

- Capturing materials requirement
- Determining source of supply by selecting vendors
- Creating and processing purchase orders
- Monitoring purchase orders
- Receiving goods in the warehouse

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- Verifying accuracy and validity of purchase invoices against order and goods received.
- Post-invoice processing of sales tax forms and waybills

## Features and highlights

- It is geared to handle all the inventory needs and materials control requirements of a factory, including vendor evaluation (on basis of price, quality, delivery and service) and quality inspection.
- It allows inventory to be measured in a number of units, with immediate conversion between units. Besides this, trace each raw materials can be kept in multiple units of stocking.
- It allows inventory to be kept at several location within the organization. This enable multi-warehouse stock handling.
- Activity-based costing by defining cost centers, monitoring their issues and consumption of materials, and comparing cost of planned consumption.
- Occurrence of extra charges like freight inwards and assigning them against purchase.
- Excise and Cenvat claims are tracked.
- Enables detailed materials procurement analysis through a host of MIS reports, such as item rate analysis, lead-time analysis, Item supply performance and Supplier analysis.
- Just in Time can be implemented through co-ordinate functioning between Materials Procurement and Materials Issue.
- Efficient Management of materials helps by reducing the carrying cost of raw material stock. It can also generate stock analysis reports like ABC analysis for consumption valuation. Fast Slow Non-Moving Analysis for age of stock, consumption forecast with the aid of Re Order Level, Minimum Level, and Maximum Level, etc.
- Supply Chain Management (SCM) can be integrated through the internet by posting the purchase requirements on the web and importing the offers received directly into the internal computer network without having to separately enter the data.
- Physical stock verification and adjustment of differences Reserving materials received against specific production orders.
- Batch-wise inventory for products require during Production runs

## A CLOSER LOOK

- Materials Procurement
- Indents
- Indents Analysis (item-wise / delivery due date schedule)
- Enquiries
- To vendors on basis on lowest rate analysis and supplier performances
- Quotations
- Offers received

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- Purchase Orders
- Purchase orders with multiple delivery schedules
- Pending purchase orders – item / supplier / date-wise
- Purchase order amendments
- Materials Inward
- Materials inward register – vehicle /date-wise
- Quality Inspection
- Material rejection registration
- Goods Rec. Note
- GRN Register – item/date/supplier-wise
- Excise
- RG23A Part I for Cendvat claim
- Purchase Invoice
- Bill/date/item/vendor-wise
- Monthly aggregate purchases
- Accounts posting summary
- Debit/credit note registers

## **Materials Issues**

Materials Issue deals with issues of materials, issue of materials on bill of materials basis, and consumption of materials. It can be divided into two categories: Raw Materials and Consumables.

## **Sub-Contracting**

- Work order against production order
- Issues of materials from own stock
- Consumption on BOM basis
- Materials stocked with contractor
- Materials received from contractor
- Valuation of materials received
- Work Done status
- Pending work status

## **Post-Invoice Processes**

- Sales Tax and Waybills
- Sales Tax forms in stock (value-wise)
- Requirement of Sales Tax forms (value-wise)
- Issue of forms to vendors
- Forms to be issued to vendors
- Waybill stock ledger

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## **SALES & DISTRIBUTION MODULE**

### **Optimize your sales and distribution network**

Sales and Distribution handles sales order processing warehouse management, invoicing & dispatch, and transportation management. It is a boon to organization that needs to get a well-coordinated sales and distributions network.

### **Integrated for smooth workflow**

Sales and Distribution Module is integrated with the following Hash modules

- Production
- Material Management
- Financial
- Excise

### **Objectives and Advantages**

- Automate sales order processing and keep track of the status of orders
- Maintain records of goods in various warehouses and process movement within the warehouses
- Invoice in line with the various rate and credit policies for customers
- Track product dispatch mode to customers and delivery schedules
- Credit sales forecast

### **Features and highlights**

- Sales orders processing system handles the diverse and complex requirements. Orders can be split into date-wise delivery schedules. Pricelists/rates can be maintained on various parameters like distributors, customers, areas, salesmen, items, delivery dates, etc. Status of pending orders also maintained.
- Dispatch plan on the basis of pending orders and available stock.
- Logistics planning for timely delivery of products to various locations and arranging transportation as per the dispatch plan.
- Maintaining package and storage location information of item produced through the warehousing module. Consequently packing list is easily generated for dispatch purpose
- Maintaining sales targets for salesman, brokers and commission agents, including the sales performance with details of area, outstanding, etc.
- Maintaining Sales Tax Forms received. Also generates reminder letters and reports relating to different pending forms, besides tracking waybills.
- Closely integrated with the Production and Production Planning module.

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- The Sales order amendment function allows modifications in orders awaiting dispatch. In a factory, the Branch indent serves the function of the Sales Order.
- Allows the user to track sales returns, discounts and free items. Product-wise sales targets can be set up for various categories, like salesmen, areas and more. Variances with various sales targets can be calculated.
- Extensive sales analysis for products or even groups of products. Monthly comparisons with previous and current years sales can be analyzed.

## **The key functions: Extensive and intuitive**

- Enquiry
- Quotation
- Sales Order
- Sales Order Amendment
- Delivery Order
- Challan / Despatch document
- Sales Invoice
- Excise Invoice
- Credit Notes
- Debit Notes
- RG23A Part II and PLA

## **COSTING MODULE**

### **The easy way to allocate costs**

Costing enables companies to allocate costs to items produced. It allows an organization to closely monitor costs in order to fix price and economize operations

Costs may be incurred in two ways, viz. *Direct Costs*, calculated by defining a bill of material for every product being manufactured, and *Indirect Costs*, calculated by allocating the overheads to the product range

### **Integrated for smooth workflow**

Costing integrated with the following modules:

- Financial
- Materials Management
- Production Planning and Control

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## **The Costing Process**

Since Costing is closely integrated with other modules in the Application Software it can generate accurate costing by drawing upon the resources of the other modules.

The cost centers in Financial module are linked to products or groups of products created through Materials Management. As a result, actual expenses incurred could be allocated to the product. This results in a cost sheet being prepared for every product as the expenses being incurred are allocated. This requires proper creation of cost centers and accounting documentation. Indirect costs could be allocated by giving the cost in terms of percentages among the company's various products.

## **FINANCE MODULE**

### **Manage your finances the smoother way**

Financial handles organization's General Accounting, Accounts Receivables and Accounts Payables. Bridging together the diverse and complex world of organizational finance, make this module essential to any company.

### **Integrated for smooth workflow**

Financials is integrated with Sales and Distribution, Materials Management, Fixed Assets and Excise

### **Objectives and advantages**

- Financial accounting according to the statutory requirements.
- Management accounting through efficient financial budgeting.
- Enterprise controlling to deal with consolidation of group accounts.
- Treasury Management through investments and Loans.

### **Features and highlights**

- Parallel accounting through cost centers allows you to allocate income and expenses and monitor profitability.
- Long term cost controls through flexible budgetary and financial controls. Budgets can be defined month-wise and year-wise for account heads, Sub-account heads, cost centers and divisions. Budgets can be optionally validated at the time of voucher entry.
- Multiple Division Analysis of data, with options to filter them at multiple levels to generate exceptions reporting.

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- Cheques deposited and cleared statement along with the calculation of Overdraft interest allows you to effectively monitor bank transaction. Query-based report for any bank (even at a back date) is easily available.
- Tax deducted at source is efficiently monitored through integrated inputs for purchases and/or payments. Various certificates and annual returns are automatically generated.
- Consolidation of Accounts for branch offices and factories. Consolidated Receivables, Payables Profit & Loss Statement, Balance Sheet. Trial Balance, etc. can be viewed at a glance.
- The Chart of Accounts is defined with multiple level of grouping for Balance Sheet and Profit & Loss Account purpose.
- Flexible voucher numbering through separate series of numbering for bank debit, bank credit, cash debit, cash credit, and so on.
- Printing of vouchers, money receipts.

## **Financial: A closer look**

### **Statutory reports**

- Cash & Bank Day books
- Ledgers – General & Subsidiary
- Trial Balance for General & Subsidiary Ledgers
- Profit & Loss Statement
- Balance Sheet
- Schedules to Balance Sheet

### **Receivables & Payables**

Sales invoice, purchase invoice debit notes and credit notes are entered into the system from respective modules. Flexible payment systems allow the company to have complex analysis available for receivables and Payable. Some of these are...

- Bill wise adjustment of payment received from customers and payments made to vendors could be done online.
- On Account payments
- Outstanding analysis for flexible periods
- Over-due bills with detailed and summary options
- Customer exceeding Credit limit or Credit period
- Interest on bills with over-due outstanding
- Analysis of bills paid after the due date to decide credit rating
- Statements of book debts to provide to banks

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The Accounts Receivable reports can be grouped by :

- Area
- Salesman or Agent
- Type of customer (distributor, dealer, end-customer, etc.)

The Accounts Payable system allows you to analysis the Supplier liabilities. The company can plan the cash out-flow on the basis of the ageing analysis for payments due to suppliers based on their credit period.

## **FIXED ASSETS MODULE**

### **The effortless way to manage fixed assets**

Fixed Assets takes care of an organization's assets logistics, location-wise according to the Company Act and Income Tax Act requirements.

### **Integrated for smooth workflow**

Fixed Assets is linked with the Inventory and Finance module

### **Features and highlights**

- Multiple groups could be defined in the Fixed Assets module. Depreciation could be calculated separately, as per Income Tax and Companies Act
- The rate of depreciation can be given separately for each group and for each financial year, separately for both Income Tax and Companies Act.
- Details of fixed assets are recorded at the time of creating individuals assets. These include details like quantity of fixed assets, original cost of asset, expenses incurred for capitalization, supplier information, etc.

### **The System functions: Precise and exhaustive**

- Creation of a grouping system for various kinds of assets, for both IT and Companies Act.
- Creation of depreciation rate chart for both IT Act and Companies Act for individual financial years.
- Creating the opening stock of fixed assets from existing fixed register giving the initial gross block and the subsequent written down value.
- Recording the creation of assets with all details regarding the purchase of assets, vendor details, etc. Recording the sale of assets, including the calculation of profit or loss on sale of fixed assets.
- Fixed assets register can be automatically generated in prescribed format for a financial year



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## **PERSONNEL MANAGEMENT MODULE**

### **Have employee details at your fingertips**

The Personnel Management System allows you to manage your human resources smoothly and effortlessly.

### **Objective and advantages**

The system consists broadly of five major functions

- Payroll
- Daily attendance recording system
- Employee requirements and recruitment
- Maintenance of personnel records
- Income Tax calculation and preparation of income tax records.
- Overtime
- Bonus / Ex-Gratia
- PF, Pension and ESI accounting.

## **FEATURES AND HIGHLIGHTS**

- Generates pay-slip and Salary register, taking into account the various earnings, deductions and attendance record of the employee. There is no limitation on the number of earnings and deduction heads
- Department earnings and deductions on the basis of complex formulae can be specified to suit virtually every business condition.
- Generation of various statutory records of the company like Provident Fund, Pension, ESI, Employees State Insurance, Professional Tax, etc.
- The parametric system architecture allows easy updation of rates of various statutory accounts as well as provision for implementing template rates.
- Provision for updating arrear salary.
- Provision for entering loan information including calculation of monthly EMI and separately posting principal and interest figure in the salary.
- Full-Fledge Provident Fund, Pension and ESI Accounting

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## **Payroll System Function**

- Creation of setup in which earnings and deductions are defined
- Creation of departments, designations, grades, scales of pay, etc.
- Creation of the employee, specifying his earnings and deduction parameters.
- Logging attendance information of employees daily/monthly
- Logging overtime information of employees daily/monthly
- Updating the month specific deductions like advances
- Printing pay slips for the employees
- Printing advance and loan records of the employees
- Updating monthly accounts with salary payable figures

## **Employee Requirements and Recruitment: Highlights**

Personnel budget for various departments and sections is recorded. A chart regarding shortfall in work force can be generated for various skill-sets. Similarly match/ mismatch chart could be prepared for redeployment of resources

At the recruitment stage, bio-data of employees suitable for various positions and functions can be recorded. This then generates the database of potential employees who could be available at the future date when the need arises. This database maintains the records of only those employees who have deemed suitable after the personal screening, thus ensuring that unnecessary resumes are not added

After the interview, an advice is generated from the system. The offer letter can also be generated. This enables an organization to track the process of interview handling and management.

## **Maintenance of Personnel Records: Highlights**

This module takes care of the transfer of an employee from one department to another or from one category (like temporary or probation) to another (for instance, permanent). This module also tracks the increments given to an employee from time to time. Popular appraisal models could be also integrated into the system.

It is also possible to track an employee's records regarding his PF, Pension and ESI entitlement, as well as maintain his advance, leave and loan records.

Leave records especially like casual leave, Sick leave, etc. are parameterized and information on their status can be retrieved online. This enables organization to view leave encashment, leave balance, leave getting lapsed and leave to be carried forward.

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The system also archives appraisal and performance indicators, which are required at times such as probation, yearly increments as well as other times when specific employee information is necessary.

## **Income Tax Records: Highlights**

The module covers filling of employees' investment plan into various government securities. It also provides input of statutory tax slabs thereby making it possible to generate an employee's Form 16.

All earnings of the employees are taken into account as per the prescribed system and various deductions under the various sections are calculated. These earnings and deductions also take into account together with the declared earnings and deductions from the employee's previous employer and any Income Tax deducted by them.

## **PRODUCTION MODULE**

### **Production Planning & Control**

#### **Plan and manage your manufacturing process**

The strategy of this module is to provide special vertical market solutions for industries.

Production Planning and Control is geared to handle

- Continues process (batch process)
- Repetitive manufacture
- Assembled to order
- Engineered to order

#### **Integrated for smooth workflow**

Production Planning and Control is integrated with the following modules...

- Materials Management
- Sales and Distribution
- Costing

#### **Objectives and advantages**

- Accuracy in production planning while considering capacity utilization
- Comprehensive material requirement planning
- Calculation of production efficiency and wastage
- Demand planning through sales forecast model

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## Features and highlights

- Define processes for different stages of manufacturing and execution of work against Production of works order and offers detailed information of WIP
- Creates Bill of material recipe for various processes. It is possible to define the Bill of material up-to any level. Define process-wise / line-wise production capacity, keeping in mind the organizational constraints such as labour, working hours and number of shifts. Details of man-hours worked, machine down-time and production efficiency are recorded
- Prepares Master Production Schedules. Where applicable, the MPS can be segregated into frozen (for current month), firm (for subsequent month), and Open (for the third month)
- Generates detailed weekly production plans, prepares production orders for shop floor control, and tracks productions, issue of material on the basis of predefined recipe and quality inspection. Provides details of yield after rejection, and by-products and scrap generated. Details are available date-wise, batch wise, and order-wise, which in turn, enables historical production analysis. Production record forms the basis of maintenance of the excise records and updates the inventory module with stock

## Specific Case of implementation at Westing House Saxby Farmer Ltd (WSF)

The following departments of WSF uses the **Production Control & Reporting System (PCRS)** software modules -

- Production Planning Department
- Air Break Assembly
- Foundry
- Fabrication shop
- Machine Shop
- Coupler

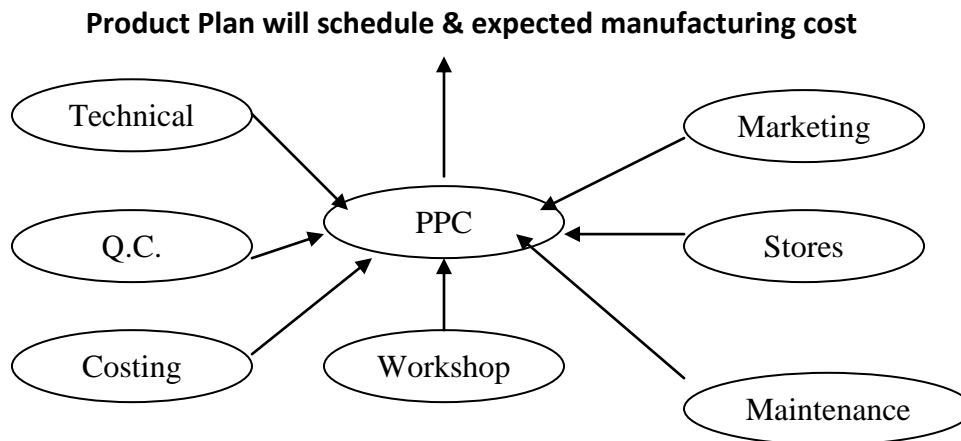
## **Production Planning & Control department (PPC)**

PPC has detailed database on technical parameters of all products. To manufacture a product, the system needs detail database on parts required, its source, cost, vendors, etc. and the system integrates the drawing associated with each product.

Once PPC does planning for manufacturing a product the proposed system will track the job in progress vis-à-vis the planned or standard manufacturing work process & time.

The production planner will able to view the manufacturing trend of similar product in the past, the resources available & the status of resources.

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PPC will plan the manufacturing schedule into the system. The PCRS software informs the concerned department to carry out the jobs. Each production department plans their job load assigned to the next supervisor level.

Each production department will have their own software interfaces to enter the logbook & the latest status of each job.

Each of these 5 production department have their own software modules, e.g., the software for Air Brake assembly will be different from that of Foundry or Fabrication.

## Equipment and Plant Maintenance

To make the product perfect in respect of quality and time the machine uses are to be in good health. The equipment in machine shop, fabrication and foundry are very important. The maintenance department is responsible for maintaining entire workshop including civil job. The input of maintenance department will be use by the Technical and Design department for determining product planning and machine availability. The machine maintenance like Preventive and Opportunity maintenance is in-built in maintenance package. Third party maintenance schedule and log book will also be recorded through the maintenance module.

## Technical & Design

There are 2 sub-modules for this:

- ❖ Against Tender / Order.
- ❖ In house R&D activity.

This department prepares & maintains the manufacturing item list, nomenclature code & drawing, prepares the relation database between manufacturing item & parts,

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components, consumable required. This department develops the process of manufacturing an item along with duration.

## **QC and Inspection**

This module has product wise quality assurance guide lines. The PPC module triggers the completion of job at every stage. As per job workflow if a job is to be taken care by the Quality Control Department (QCD) it will appear in the terminal and the time delay at quality department will be recorded. The QCD then carries out its job internally and with external agencies. For informing the agencies facility of in-built document exists.

While quoting against tender the Sales and Marketing department sends a request to QCD for finalizing the process of Quality Control with time duration. The time for carrying out quality control is crucial for timely dispatch of material. Before carrying out quality control exercise the QCD gets the total history of manufacturing a product.

Further, the department maintains records in the system of number of items passing through QCD and rejection thereof. The rejection report automatically goes to PPC and Technical and Design Departments.

## **Management Information System**

The Management Information System (MIS) is overall performance monitoring and control system. This module has three parts. MIS at working level, (For Works Manager), MIS at department Integration and data sharing level, (For Ex Director) and MIS from Management and Finance view point (For MD and DF). The business workflow is fixed and preplanned at lowest working level. At each level of workflow - Man, Machine and other resources will be tracked by the system, against the set plan. All deviations are automatically reported to the appropriate MIS box. The Management then has the option to take appropriate action, which is also a part of the system.

The system indicates the financial status, the load balance across the department and the money inflow and outflow, money realization status, etc.

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## **PLANT MAINTENANCE MODULE**

Plant Maintenance module Enables Company to manage the maintenance activity of various equipments. The factory may have multiple locations, each having conglomerate of equipments. The part numbers required for each machine-equipment are predefined. Maintenance work is divided into several activities like cleaning, electrical, etc. depending on the nature of work applicable

### **Objectives and advantages**

- Creation of Daily / Monthly maintenance activity
- Breakdown maintenance work
- Unplanned maintenance work
- Generation of requisition for various items

### **Define your parameters**

The frequency of the maintenance work and the periodicity within which various part numbers must be changed is defined, so are the Maintenance agencies. The agency could be internal, external, contractual, etc.

Daily schedules may be generated for the maintenance work to be done on a particular day or month. It also prepares a plan regarding the requirement of people for various kinds of maintenance activity. Work can also be related to breakdown. In such cases, breakdown hours, the reason for breakdown and the employee whose time has been utilized for breakdown work is recorded. Plant maintenance also requires certain unplanned work, reclusive of breakdown, which too, is recorded

Besides this, it automatically generates requisition for various items/spares required for maintenance. Reports on pending maintenance work can be easily generated

### **Analyze information**

- Maintenance work done for a period.
- Machine-wise maintenance work done, with break-up of planned, unplanned and breakdown cases.
- Employee-wise maintenance work done, with break-up of planned, unplanned and breakdown cases.
- Maintenance cost for various machines with break-up of planned, unplanned and breakdown cases.