

# Conceptual Model of an Enterprise Resource Planning for Dairy Cooperative: Materials Management Module

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**Abstract** - The Dairy cooperative is one of the main cooperative in western Maharashtra. It helps to uplift the landless farmers. There are various challenges before dairy cooperative. To overcome these challenges Enterprise Resource Planning (ERP) Implementation is must. For any organization Man, Machine, Money and Material are important resources. It is necessary to manage these resources effectively. The ERP is important tool to manage these resources. The ERP will integrate information, track orders, analyze data, monitor process flow, ensure transparency, reduce personnel and increase productivity/profit. This paper explains conceptual model of Enterprise Resource Planning for dairy cooperative. The Materials Management module is considered in this paper. The objective of study is to design conceptual model for Enterprise Resource Planning implementation. The study will consider only cooperative dairies in western Maharashtra i.e. Sangali, Kolhapur, Solapur, Satara and Pune districts as main dairy cooperatives spread in this area. Using this model it will help to develop and implement Enterprise Resource Planning system in dairy cooperative successfully. The study will consider only cooperative unions.

**Key words:** *Enterprise Resource Planning, Conceptual, Model, Information Communication Technology, Materials Management, Purchase.*

## I. INTRODUCTION

The cooperative played important role in development of Maharashtra. Especially in western Maharashtra i.e. Kolhapur, Santali, Samara, Pane and Sholapur districts cooperative is well developed. These cooperatives changed life style of rural peoples. Warana, Akluj are some examples of ideal cooperative movement. Dairy cooperative is one of the sector in which millions of farmers are involved in this business. It is becoming main source of income for the farmers. It helps to poor families to fulfill their basic needs and routine expenses. Now day's cooperative facing many challenges. They have to compete with private and multinationals. Development of rural farmers depends upon progress of dairy cooperative. It is necessary to minimize bacterial count and time taken for milking to milk received at primary plant. Customer demands for more self life of milk and milk products.

Slowly technology has been used by dairies to provide value based services to their distributors and Milk suppliers.

With the emergence of internet technology dairy can further consolidate and effectively manage their diversification portfolio of distribution service offering on the World Wide Web. The main goal of any organization is to maximize profits for its owners a Cooperative milk union is not any exception. Online integrated system offers a perfect opportunity for maximizing profit. The organization's profitability and productivity is mostly depending upon planning of resources of organization as resources are limited. Worldwide best practices should be implemented. In some cases it needs Business Process Re engineering must be adopted. It is very important to manage these resources effectively. ERP – Enterprise Resources Planning is important tool to manage these resources. For any organization with multi location and multiproduct nature well placed ERP is very essential. ERP helps to integrate the data in organization under one common platform. ERP can cut down costs; improve the quality of working time and by and large. In organization Man, Machine, Money, Material and Management are important resources. It is observed that most of milk cooperatives failed to implement ERP. Hence researcher studies all aspects of ERP and provides better solution for implementing ERP in milk cooperatives. National dairy development board provides technical guidance to milk unions to implement ERP.

## II. MAIN MODULES OF ERP FOR DAIRY COOPERATIVE

ERP is Enterprise Resource Planning is management tool for decision making, provides cross functional integration, employs proven business processes leads to better customer service, productivity and lowering of costs links customers and suppliers lays foundation for e-commerce. Total ERP is divided into 11 modules. The modules are designed based on functions and inter departments of dairy cooperative. The main modules of ERP are as follows –

1. Procurement
2. Procurement Services
3. Finance
4. Sales and Distribution
5. Materials Management and Purchase
6. Production

7. Production Services
8. Quality Control
9. Human Resource Management
10. Management & Administration
11. Systems

### **III. SUB MODULES AND TASKS**

Each module of ERP is further divided into sub modules. Each module consists of tasks. In this paper modules related to materials management are considered. The details of sub modules and tasks as follows –

**1. Material Management** – Material Management is important module in dairy cooperative. As the profitability of dairy cooperative depends upon Inventory control. This module consists of Sub modules and tasks as follows -

#### **Stock Transactions**

- Material Receipts
- Material Issues
- Material Returns
- Material Transfers
- Material Inspections
- Production Accounting

#### **Inventory Control**

- Stock Level Monitoring
- Stock Status Monitoring
- Service Level Monitoring
- Delivery Scheduling

#### **Stock Management**

- Physical Verification of Stocks
- Stock in Process Accounting
- Stock Valuation
- Materials Stocking/Location
- Plant Floor Stock Maintenance

#### **Scrap Management**

- Material Scraping
- Packing Imports/ Purchase
- Scrap Monitoring
- Scrap Disposal
- Capital Equipment Scrapped
- Scrap Valuation
- Scrapping Policies
- Reconditioning/ Salvaging

#### **Other Stocks Maintenance**

- Spares and Assemblies
- Consumables
- Tools and Dies
- Capital Equipments
- Trading Stocks

#### **Purchase Indenting/Requisition**

- Purchase Identining/Requisition

#### **Materials Requisitioning**

- Purchase Idents
- Material Transfers
- Third Party Stocks

- Loan Basis stocks
- Job Work Stocks

#### **Materials Transport Logistics**

- Transport Contracting
- Materials Transfer Deliveries
- Material In-Transit Monitoring

#### **Stock Records**

- Excise Records Maintenance
- Gate Pass Issues

#### **Control of Third Party Stock With Us**

- Third Party Stocks
- Loaned Stocks
- Job Work Stocks

#### **Control of Our Stock With Third Party**

- Third Party Stocks
- Stock of Material Given On Loan
- Job Work Stocks

#### **Stores Management**

- Materials Handling
- Insurance and Claims
- Safety Measures
- Material Stacking
- Stock Item Labeling

#### **Stock Masters Maintenance**

- Stock Level Reviews
- Stock criterias Review
- Stock Item Master Add/Editing

#### **Stores Facilities Maintenance**

- Materials Handling Equipment
- Materials Stacking Units
- Safety Equipment
- Godown Management

#### **Stores Department Administration**

- Stores Department Budgeting
- Staff Allocation
- Office Administration

**2. PURCHASE** – Purchase of all the raw materials except raw milk and all consumables required for dairy Operations and production are considered in this module. The sub modules and tasks as follows -

#### **Purchase Requisition**

- Materials Purchase Requisition
- Service Requisition
- Spares/Capital Purchase Requisition
- Requisitions Follow-up

#### **Purchase Enquiry**

- Enquiry Generation
- Tender Notice
- Comparative Analysis
- Negotiation

#### **Purchase Order**

- Materials Purchase Order
- Spares/Capital Purchase Order

- Service Purchase Order
- Delivery Schedule
- Purchase Order Follow-up
- Auction Purchase

**Rate Contracts**

- Materials Rate Contracts
- Service Rate Contracts
- Product Job Work Contracts
- Outsourcing Rate Contract

**Job/Supply Contract Orders**

- Civil Works Contract
- Plant Erection
- Product Job Work Contract
- Maintenance Contract

**Imports**

- Import Enquiry and Order
- Import Purchase order
- Shipping Arrangement
- Foreign Letter of Credit
- Import Clearance

**Purchase Bill Approval**

- Purchase Bill Approval
- Materials Rejection Advising
- Excess/Short Materials Acceptance
- Purchase Provisioning

**Purchase Policy Review**

- Purchase Planning
- Purchase Management Analysis
- Purchase Policies

**Vendor Development**

- Vendor Promotion
- Vendor Rating Review
- Purchase Rating Review
- Purchase Database Maintenance
- Production Loss-salvage reports

**Purchase Department Administration**

- Purchase Department Budgeting
- Purchase Department Staff Management
- Purchase Department Office Administration

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**IV. CONCLUSIONS**

There are other administrative modules not in the scope of this paper. Further each task is expanded with its subtask. This information will help to design and develop ERP for dairy cooperative. Further actions and input forms and output reports can be design using this information. This is conceptual model of ERP for dairy cooperative.

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