

ERP Solution for Beverage Industry

The functional depth and breadth of Ramco ERP Suite, combined with a high degree of flexibility, makes it a powerful offering for Beverage Manufacturers.



Overview

The Beverage Industry has been beset by intense competition in recent times. This has led to substantial cost pressures on manufacturers, forcing companies to produce and market their goods more efficiently, and offer high quality products at competitive prices. To maintain high levels of operational efficiency while providing the required competitive edge, Beverage Manufacturers have been turning to Integrated IT Solutions.

Process Manufacturing, the broad segment that Beverage Manufacturers are a part of, poses several challenges and unique requirements, which need to be readily addressed. In addition to these generic requirements to the Process Industry, Beverage Manufacturers require additional capabilities in several specific areas. The right solution must address all these requirements in a native manner.

This white paper probes the requirements of the Process Industry in general, as well as issues that are specific to the Beverage Industry. It outlines the key challenges that need to be addressed by ERP solutions.

Process Industry Requirements

- Formula Management
- Multiple Units of Measure
- Multiple Pack Sizes
- Yield & Variance Analysis
- Quality Control / Certificate of Analysis
- Lot Tracking
- Shelf Life Management
- Product Costing
- FDA & BATF Regulatory Compliance

Beverage Industry Requirements

- Demand Forecasting
- Co Products & By Products
- Quality of Inbound & Outbound Material
- Reformulation
- Management of Reusable Containers
- Bill and Hold
- Weighbridge Integration

Ramco ERP Suite provides strategic and operational expertise to customers through its solution that has been designed to address the requirements of the Beverage Industry. The functional depth and breadth of Ramco ERP Suite, combined with a high degree of flexibility, makes it a powerful offering for Beverage Manufacturers.

Generic Requirements of the Process Industry

In this section, we look at the unique challenges that are inherent to the Process Industry. The suitability of a solution is determined by its ability to address these requirements in a comprehensive manner.



Formulation

The competitive advantage for companies in the Process Industry stems from the uniqueness of the products manufactured. This is a direct result of the formulations developed (and possibly patented) by the company. Several important requirements arise in this context, in order to maintain and enhance its standing in the industry. These include::

Formula Security

Information on formulations needs to be under strict control, with access to formulas being a security privilege. The ability to grant rights to people at the level of each formula is extremely important.

Formula Management

The composition of the formulas may need to change from time to time, due to market demands, cost considerations, etc. The ability to revise the formula without losing history information, and switch production from one revision to the next (based on several considerations) is critical.

New Product Development

New products are developed, either to enhance existing formulations or to research and develop new products that will sell in the market. The ability to track the time, costs, trials and revisions, test results and comments on such projects is critical to building a powerful knowledge base of formula development history.

Ramco ERP Suite offers powerful functionality to manage the entire lifecycle of formulations. Data level security is provided to control access to formulations – access can be granted or denied at the level of each and every formula. The system supports multiple revisions for the same formula, with automatic switchover of production to the new revision, based on business rules. All aspects of New Product Development are tracked by the system. Projects are given a unique identification, employees associated to projects and costs are tracked against the project, and complete history including revisions, comments, tests, and results, etc. are recorded.

Ramco ERP Suite features versatile formula development, costing, and laboratory analysis tools in the form of Formulation and Cost Estimates. Using these tools, new formulations can be rapidly developed by modifying and mixing existing formulas in various proportions. You can also dynamically scale batch quantities, perform cost calculations and arrive at the desired result in a quick and effective fashion.

Lot Tracking

Complete traceability from receipt of raw materials through manufacturing and to shipments of finished products is a critical requirement. Complete transparency and analysis of lots, bi-directional lot tracking and the ability to record, store and retrieve the Certificate of Analysis (CoA) of raw materials, Intermediates and finished products is a fundamental requirement. These need to be addressed by the solution in a simple manner.

Ramco ERP Suite provides the functionality for proactive, forward and backward traceability. The information that can be readily accessed includes:

- Customers to whom a given finished product lot has been shipped
- Access to Certificate of Analysis (CoA) for raw materials and finished products alike
- Finished product lots that have used a given raw material lot
- Machines, labor and accessories used in the manufacture of a finished product lot
- Raw materials and vendor lot numbers that are used to manufacture a finished product lot

Shelf Life

Given the perishable nature of the products, tracking shelf life of products and allocating stocks based on expiration date is necessary for efficient operations.

Ramco ERP Suite is designed to track shelf life on all lot controlled items and automatically suggest a retest. The system automatically 'holds' the stock that has gone past the expiration date, so that such lots are not inadvertently consumed or shipped. The application also supports multiple allocation methods for material issue transactions, including 'Expiration date based' and 'FIFO'.

Product Costing

Accurate determination of the cost of finished products considering materials, labor, activities and overheads is essential to determine the correct profitability levels of various products. The cost of products needs to be re-established on a periodic basis to keep it consistent with current market conditions.

Ramco ERP Suite supports ABC Costing techniques to accurately roll-up the cost of the product from the cost of raw material, labor and activities. The entire process of cost roll-up simulation and inventory revaluation at the new standard cost is supported.

Multiple Pack Sizes



Manufactured Products are typically packaged in multiple package sizes and containers. Efficiency in Production Planning is achieved through consolidating the demand for the same product across package sizes, and manufacturing them in large batch quantities. Subsequently, the product is processed in separate packaging lines and the same product can be Packaged, Labeled or Private Labeled before selling.

The Process Manufacturing solution from Ramco Systems is designed to package the same manufactured product in multiple packs and labels. This is made possible by modeling a common formula for the intermediate and separate formulas for packaging operations. This design enables the MRP process to automatically aggregate demand, irrespective of the pack size, and generate production orders for optimal batch sizes.

Quality Control

One of the most critical requirements of the Process Industry is to track multiple attributes of each product, and to ensure that it strictly conforms to the specifications. Process Manufacturing is inherently not a perfect science, due to differences in quality of raw material, processing, wastage, etc. with the result that every batch is slightly different. It is extremely important to be able to analyze Raw Materials, Finished Products and Co-products and ensure that they conform to specifications, both internal and those specified by the customer.

Ramco ERP Suite allows for unlimited attributes, such as pH, Brix Ratio, Percentage Solid, Color, etc. to be associated to materials, whether it is raw materials, intermediates or finished products. A Quality Control module enables you to analyze samples, measure and record the values of attributes, confirm the clearance of each batch, and generate Certificate of Analysis.

Variance Analysis

The formula defines the standard consumption of ingredients for a given yield of a batch. The actual yield could vary from batch to batch. An analysis of this variance is necessary to identify inefficiencies in the production process, make refinements to the formula and cost the product with accuracy.

Ramco ERP Suite allows specifications of standard yields as part of the formula definition, helps report the actual yield, and enables analysis of variance by product lines, cost centers, etc.

Regulatory Compliance

Regulatory compliance to FDA and BATF guidelines are critical requirements of the Food and Beverage Industry. For companies that come under the purview of these regulatory guidelines, compliance is of utmost importance. It is necessary to ensure that the Business Solution conforms to these standards and enable you to comply with guidelines.

Ramco ERP Suite meets the standards of FDA and BATF, helps you conform to these standards and generate regulatory reports.

Cloud Offering

Ramco ERP Suite is completely web-architected and can be offered On-Cloud (private or public cloud) and On-Premise models. Companies looking to focus on their core competency and not looking to invest highly on IT infrastructure can utilize the On-Cloud setup, and realize huge savings in costs.

The application has features such as supplier and customer portals that help to reach out to customers, suppliers, employees and other stakeholders. They empower the organization's stakeholders - located anywhere on the globe - with real-time information and online transactional capability. While information is provided over the Internet, care should be taken in limiting access only to the information specific to them.

Customer Portal

Customers need to manage and track the entire order life cycle from product inquiry to billing information. Ramco Customer Portal facilitates instant access of accurate, real-time information to customers, order tracking and shipment status, ability to instantly order requirements. This reduces order lead times and customer support cost. Ultimate result is enhanced customer satisfaction owing to improved quality of service.

Supplier Portal

Two-way information flow between the enterprise and suppliers involves expensive human intervention. So, enabling enterprise supply chain collaboration over the Internet is significant.

Ramco Supplier Portal empowers closer supplier relationships, by enhancing their visibility in your enterprise. Leaner purchase organizations, instant access to information on goods shipment and better management of inventory, leads to savings in material costs and reduction of purchase overheads.

Requirements Unique to Beverage Manufacturers

Demand Forecasting & Planning

The Forecasting and Planning process of the Beverage Industry is driven by multiple factors. These are

- Finished Goods demand
- Lack of control over the Grade of Fruits received
- Planning for fruit concentrates, given both of the above

Once the forecast of finished goods is estimated, plans need to be established to meet the estimated demand through production from raw materials or re-formulations of existing concentrates.

Ramco ERP Suite provides Forecasting and Planning Engine, using which, the demand and supply plan can be created. The software features several planning methods, including ones to estimate seasonal demands. The system comes with a robust and comprehensive Planning Engine that covers the Production Planning, Material Requirements Planning and Distribution Planning requirements of the enterprise.

Co Products & By Products

One of the key requirements is the ability to track multiple outputs from a single input. For example, a Fruit Juice Manufacturer can process fruits, and manufacture juice as the primary product, oil being an important co-product that needs to be tracked and further processed, with the need to track other by-products such as Peel & Seeds.

Formula Definitions in Ramco ERP Suite allow a manufacturing process to take in inputs to make Primary Products, Co-Products and By-Products. Co-Products can be planned in addition to planning Primary Products. All outputs can be further processed, packaged, etc. before it is sold.

Quality Assurance – Inbound Material



The Beverage Industry is highly dependent on the quality of Inbound Raw Material. In particular, Fruit Juice Manufacturers are subject to the vagaries of nature, such as monsoon, harvest, etc. In addition, the quality of fruits can vary widely resulting in variations in the quality of batches. The ability to track the characteristics of Inbound Material, and classify them according to grades is extremely critical.

All Inbound Material can be subjected to QC analysis and attributes of each lot is determined and classified according to grades. This information is used to pick and choose the right lots for formulating a batch, through allocation of lots, based on attribute values.

Quality Assurance – Beverages

Each manufactured batch strictly needs to conform to the specifications defined for that product. Quality Clearance needs to be done on each batch to ensure the conformance to specifications before it is released for packaging.

The attribute values for the batch are captured in the system, analyzed for conformance to specifications, before it is cleared for packaging. Ramco archives all information on the attribute values for the batch (such as Brix Ratio, pH, Percentage Solids, etc.) for access at a later time, and generates Certificates of Analysis along with shipping documents

Weigh Bridge Integration

As the fruits are received in bulk, the ERP application needs to integrate with Weigh Bridges so as to automatically compute the quantity of receipt.

Ramco ERP Suite seamlessly integrates with Weigh Bridges to simplify the receiving process.

Reformulation

The quality and grades of raw materials used determine the characteristics of each batch of concentrate. For example, if we consider two batches of the same concentrate, one could have a Brix Ratio of 9.3% while the other could have a Brix ratio of 10.1%. The demand from the market could be for the same concentrate of 9.85%. Given this situation, beverage manufacturers often mix multiple batches of the same concentrate to achieve the desired characteristics.

In Ramco ERP Suite, the characteristics of each batch are captured, and the ability to dynamically choose specific lots to use as inputs to get the desired characteristics is facilitated. Attribute based allocation of material to the production order supports this process of reformulation further.

Bill and Hold

Though distributors might have ordered goods, many of them might be small and may not have the facilities to stock the finished goods. In such cases, the manufacturing company might need to store the goods on the distributor's behalf even after the goods have been billed. This process is generally known as Bill and Hold. Usually, a warehousing fee is charged for the service provided, with the goods being shipped to the distributor on request.

Ramco ERP Suite features 'Bill and Hold' functionality, tracks invoiced material at zero cost in your warehouses, and provides for charging the customer a warehousing fee based on the duration of storage.

Management of Reusable Containers

The concentrates that are manufactured in the Beverage Industry may be processed immediately or may be stored in containers before it is processed further. The WIP tracking process also needs to account for the inventory of these reusable containers, monitor their levels and proactively generate new purchase requisitions for them.

The use and release of reusable containers is captured as part of the formula definitions in Ramco ERP Suite. This facilitates easy tracking and usage of reusable containers and being able to consume it or release it back into inventory, through production reporting. Automatic reordering based on inventory levels in inventory takes care of replenishment.

Benefit Summary

Ramco ERP Suite is a one-stop solution that is ideally suited for Beverage Manufacturers. This ERP solution comprehensively addresses all business processes specific to the Beverage Industry such as Formulation, FDA Compliance, Quality Control, and Lot Traceability. In summary, it is a proven, single-point solution that manages all the aspects of Beverage operations.

About Ramco Systems

Ramco Systems, a part of the USD 1 Billion Ramco Group, is a leading software company focused on consulting, products, and managed services business. Started as an R & D division of Ramco Industries Limited in 1992, Ramco Systems was later established as an independent company in 1999. Headquartered in Chennai, the company has 17 offices spread across India, APAC, US, Canada, Europe, Middle East and Africa. The company focuses on providing innovative business solutions that can be delivered quickly and cost-effectively in complex environments.

Ramco has over 150,000 users from 1000+ customer organizations, globally since its inception. The company provides solutions to multiple verticals including banking, insurance, manufacturing, supply chain, aviation, transportation and logistics, healthcare, governance, retail and more.

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