



OVERVIEW

MANAGEMENT CONCEPT

Asset Requirements Planning (ARP):

An Asset Requirements Planning system is a valuable addition to an existing ERP system within organizations dealing with wet stock inventory. ARP optimizes a company's value chain from the asset (tank) level all the way to the execution engine.

Asset Requirements Planning: Extending ERP's Reach to the Edge of the Supply Chain

WHAT ERP IS MISSING

While an existing ERP system may have the capability to forecast supply requirements for dry stock inventories by applying statistical techniques, critical data needed to accurately forecast wet stock inventory requirements is not available to these systems. ERP systems focus on planning at the overall product and customer level, while an ARP system focuses on planning at the asset level and its unique constraints. For example, in a wet-stock inventory situation, ARP focuses on asset constraints of each individual on-site storage tank, such as tank capacity, average daily usage rates, tank ullage, geometry, heel, overflow and optimal levels, necessary bottom safety stock, and delivery detection. These constraints are not only crucially important to optimal management; they can also change daily depending on pump rates and usage.

The data necessary to optimize an ERP system's outputs for wet stock inventory management is made available through the implementation of an Asset Requirements Planning system. This provides the necessary decision support for a cost-saving, efficient wet-stock inventory control process that extends to the asset level.

WET STOCK INVENTORY MANAGEMENT

Optimal management of wet-stock inventory requires four integral parts:

- 1) **Automated data collection** – Data collection is the gathering of information about current inventory levels. For many companies, this is still a manual process. That means an appointed employee travels throughout a site, taking measurements or reading gauges on storage tanks to collect the inventory data. Some companies have implemented automatic monitoring equipment to achieve this goal more efficiently and with less human error.
- 2) **Automated data aggregation** – Data aggregation involves centralizing all of the information gathered and making it accessible for analysis. Many companies utilize spreadsheets to accomplish this task, while a few have aggregation software in place to make the data centralized and visible.
- 3) **Automated data analysis** - Data analysis, a key compo-

nent of wet stock inventory management, particularly in VMI situations, can be performed in different ways. In many companies, analysts manually study aggregated inventory data and decide what ordering decisions to make based on the information available as well as personal experience. Companies can improve this process by implementing an automatic decision support tool. This type of software automatically analyzes the aggregated inventory data and creates suggestions for supply chain decisions based on forecasted upcoming usage. These forecasts, based on historical and empirical data, are designed to keep enough inventory on-hand for the anticipated demand, without keeping any unnecessary inventory on-site.

- 4) **Integration to an execution engine / back office / ERP system** - The execution of the supply chain decision is managed through the vendor's back office system, often an ERP application. The necessary products are ordered, delivered and invoiced. This is another process that might be manual or might have some portions that have been enhanced by technology, but full automation would be optimal. With the right decision support tool, this would simply mean accepting the software's suggested orders.

ASSET REQUIREMENTS PLANNING (ARP)

An Asset Requirements Planning (ARP) system encompasses all four necessary components of optimal wet-stock inventory management. Because it performs all of these required processes effectively and automatically, it decreases operating costs, especially those associated with providing VMI services to customers, while increasing the value of an existing ERP system.

BENEFITS OF ARP

- Increased value of existing ERP systems
- Lowered operational expenses
- Lower cost involved with offering VMI services
- Decreased inventory carry costs
- Optimized logistics / distribution

