

Balance Supply and Demand and Optimize Inventory with Strategic Plans and Forecasts

IMPLEMENT JUST-IN-TIME PURCHASING AND PRODUCTION STRATEGIES FOR IMPROVED PROFITS

Supply chain disruptions and inventory planning issues can mean the difference between large profits or significant losses. We are all familiar with the shortage of face masks and hand sanitizers during the global pandemic. Years later, many companies still have warehouses full of these items that no one wants or needs. This is just one of many historic examples of supply shortages and overstock. Recent supply chain shortages span industries such as automotive products, baby formula, varied pharmaceuticals, and high-demand consumer electronics. Conversely, several major retailers recently announced serious overstock issues due to poor demand planning or unmonitored automated purchasing.

To compound matters, consumers and business buyers have more options today than ever before. Customers expect the Amazon experience – fast shipments, accurate order fulfillment, and always-on-hand stock. A historic Harvard Business Review article noted that “depending on the product category, 7% to 25% of consumers faced with a stock-out will continue shopping but won’t buy a substitute for their desired item at the store; 21% to 43% will actually go to another store to purchase the item.”¹ A recent Zendesk survey indicates that more than half of customers will switch to a competitor if they have a single negative experience.²

This Solution Brief describes how growing supply chain organizations leverage Acumatica’s inventory replenishment, distribution requirements planning (DRP), and material requirements planning (MRP) applications to harmonize supply with actual and forecasted demand for just-in-time purchasing and production strategies. Discover how to improve order fill rates while minimizing carrying costs and increasing inventory turns for higher profits and happy customers.

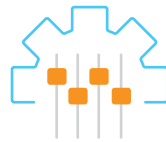
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1. Source: [Harvard Business Review: Stock-Outs Cause Walkouts](#)
2. Source: [Zendesk: 35 customer experience statistics to know for 2024](#)



Demand Planning Overview

Every business is different. Companies that make or sell consumer products often rely on historical demand and statistical forecasts to predict future product demand and drive inventory and production decisions. Conversely, companies that sell custom or low-volume products rely on collaborative customer forecasts or manual forecasts from sales representatives or weighted CRM opportunities to drive demand plans. Further, most companies benefit from implementing multiple inventory planning strategies for specific items. Modern applications like Acumatica provide flexibility, with options to define inventory planning strategies at the item and warehouse levels. Use replenishment for some items and DRP or MRP for other items. The choice is yours.

“The largest thing for us was definitely [Acumatica] inventory . . . replenishment has been a huge factor for us. That’s really cut down . . . having to look through all of our different reports . . . and figuring out what inventory we need and when we need it.”

– MICHAEL ALANIZ, SOFTWARE ENGINEER,
XTREME POLISHING SYSTEMS

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INVENTORY DEMAND

There are two types of demand: actual and forecasted. Actual product demand is directly related to customer sales orders for stocked items as well as components required for kits or manufactured finished goods. Forecasted demand is derived from statistics based on historical demand analysis or manually-entered forecasts. Forecasting has tremendous benefits for every organization .

A modern ERP platform like Acumatica provides flexible demand management capabilities, including the ability reconcile customer orders against forecasts to prevent overstock . Below is a summary of varied inventory demands. Both actual and forecasted demand play crucial roles in optimizing inventory levels, improving customer satisfaction, and enhancing operational efficiency.

SALES OR CUSTOMER SERVICE REPS ENTER SALES ORDERS. Orders from retail point of sale, counter sales, or connected commerce storefront applications may also come into the system.

BLANKET SALES ORDERS help businesses understand future demand by defining contracted order agreements over time.

OUTBOUND WAREHOUSE TRANSFERS may be set up to replenish other locations when their safety stock levels fall below defined targets. This strategy is common in wholesale distribution and hub-and-spoke distribution center models.

PRODUCT EXCHANGES place a demand on supply for approved return merchandise authorizations (RMAs) and other customer exchanges. Production Orders for finished goods create dependent demand for manufactured components and raw materials.

PROJECT MATERIALS on sales orders that are required for construction or professional service engagements create inventory demand .

DEMAND FORECASTS, based on historical demand statistics or manual forecasts, help companies plan supply, especially for stock with long lead times.

Calculating the ROI of Effective Inventory Management

Accurate demand planning has quantifiable benefits. To calculate these, start by analyzing the average daily sales for an item. Next, identify the number of days that the item was out of stock in the period. Use the price or average profit per unit to determine lost sales. For example, if an item is out of stock for 10 days and has average daily sales of 100 units and a profit of \$10 per unit, you've lost \$10,000 in profit (10 days \times 100 units \times \$10). Run this calculation for every item that had a stock-out in the period to identify lost sales opportunities.



INVENTORY SUPPLY

Inventory supply can come from many sources. Companies often create purchase orders to replenish inventory or build up stock in anticipation of future sales. Manufacturers create production orders to fulfill customer sales orders or forecasts for anticipated future orders. Other supply sources include inbound warehouse transfers from different locations and customer returns.

Companies may create blanket purchase orders, use purchase order requisitions, or drop-ship products from vendors. Other businesses may use lean strategies such as Kanban to trigger supply orders. Below is an overview of common supply strategies.

PURCHASE ORDERS may be created manually or automated with inventory replenishment or distribution requirements planning apps.

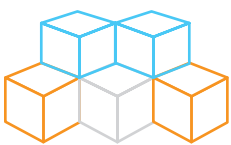
INBOUND WAREHOUSE TRANSFERS replenish stock from manual or automated stock transfers between locations when levels fall below safety stock levels.

PRODUCT RETURNS or receipts from return merchandise authorization (RMA) may result in supply if the returned products are appropriate for repackaging or resale.

PRODUCTION ORDERS replenish finished goods and manufactured component inventory to fulfill customer orders for manufactured products.

PURCHASE ORDER REQUISITIONS do not immediately result in supply. However, they help solicit bids from new vendors or for new products with automation to convert requisitions to purchase orders.

VENDOR DROP SHIPMENTS are not physically received in your warehouse, but the vendor fulfillment satisfies customer order demand.



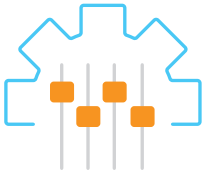
Inventory Replenishment

Wholesale distributors were early adopters of inventory management software. ERP systems were often based on strategies developed by industry pioneers like Gordon Graham, Jon Schreiberfeder, and other inventory management strategists.

Inventory replenishment strategies rely heavily on statistical analysis of demand history for inventory planning. These strategies include dynamic safety stock levels to adjust for seasonality and automated purchase orders to fulfill actual and planned demand. Many companies today successfully use these strategies, especially in wholesale distribution scenarios, where historical demand is indicative of future demand and companies manage extensive product portfolios.

However, traditional replenishment systems do not have time-phased purchase orders or transfer orders based on vendor lead times. Instead, they recommend creating a purchase order if there is any demand in the system that reduces stock below safety stock levels, even if the demand is months out and the lead time is only a few days.

Modern ERP systems like Acumatica support traditional inventory replenishment for high-volume wholesale distributors with replenishment parameters based on reorder points, minimum or maximum order quantities, economic order quantities (EOQ), and other settings.



Distribution Requirements Planning (DRP)

Distribution requirements planning is an advanced inventory management strategy that groups supply and demand in time buckets (such as weeks or months) and suggests orders to meet supply shortages in those periods. Demand and supply planning with lead time offset for purchase and transfer orders has considerable value for distributors as it minimizes carrying costs and reduces dead stock risk.

Further, DRP systems like Acumatica provide exception messages to help inventory planners understand when demand changes. For example, a customer may order 100 units of an item to be delivered in May. If there is inadequate stock, both inventory replenishment and DRP systems will suggest a purchase order to cover the demand.

But what happens when the customer calls back, reduces the quantity to 20 units, and requests delivery in October instead of May? Traditional replenishment systems do not alert inventory planners that demand has changed, and purchase or transfer orders need to be canceled or adjusted. The inventory will be ordered for the wrong quantity and will sit on the shelf until October. DRP systems provide visibility for demand changes with exception messages to cancel orders, move-in or move-out dates, and other suggestions to optimize inventory.

Lastly, DRP supports planned purchases and transfers for kit components, a limitation of most replenishment applications.

“With the MRP in Acumatica, we plug our forecast into [the system] . . . Acumatica is what triggers our purchasing department, our manufacturing, our scheduling.”

– DAKOTA POINDEXTER, PRODUCTION MANAGER, PORTACOOOL

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Material Requirements Planning (MRP)

MRP provides similar features for purchased and transferred items as DRP with additional functionality to plan time-phased production orders for manufactured finished goods and components based on the product’s bill of material. MRP looks at stocking levels, supply, and demand for the finished goods all the way down to raw materials.

MRP also includes demand forecasts. Forecasts may be created manually or imported from files generated from statistical demand planning applications or demand forecasts based on CRM sales projections.

Further, systems like Acumatica provide time-phased material supply suggestions based on manufacturing lead times. For example, a complex industrial machine assembly may take several weeks. MRP will suggest purchase orders, transfer orders, and component production orders as they are needed within the process. This just-in-time strategy results in lower inventory carrying costs.

MRP uses safety stock and reorder point levels to determine quantities for manufacturing planned orders. Further, users can set minimum and maximum order quantities for suggested orders to match production batch sizes or preferred supplier order quantities. Lot sizes are used to smooth demand quantities by defined multiples. For example, a lot size of 5 and demand for 37 units would result in a planned order for 40 (rounded up from 37 in a multiple of 5).

Calculate Replenishment Parameters

| Warehouse | Inventory ID | Override Preferred Vendor | Preferred Vendor | Preferred Location | Replenishment Class | Override Replenish Settings | Seasonality | Replenishment Method | Replenishment Warehouse | Daily Demand Forecast | Daily Demand Forecast Error(STDEV) | Lead Time Average | Lead Time STDEV | Safety Stock | Safety Stock Suggested | Reorder Point | Reorder Point Suggested | Max Qty | Max Qty Suggested | Last Forecast Date |
|-----------|--------------|---------------------------|------------------|--------------------|---------------------|-----------------------------|-------------|----------------------|-------------------------|-----------------------|------------------------------------|-------------------|-----------------|--------------|------------------------|---------------|-------------------------|---------|-------------------|--------------------|
| WHOLESALE | AACOMPUT01 | <input type="checkbox"/> | ELEEASTCOM | MAIN | PURCHASE | <input type="checkbox"/> | NONE | Min./Max | | 25.940796 | 11.743426 | 0.589922 | 7.218407 | 201.94 | 201.94 | 375.46 | 375.46 | 375.46 | 375.46 | 6/20/2022 |
| WHOLESALE | WIDGET02 | <input type="checkbox"/> | WIDSUPPLY | MAIN | PURCHASE | <input type="checkbox"/> | NONE | Min./Max | | 2.006436 | 0.063079 | 7.065517 | 0.800506 | 15.99 | 15.99 | 32.46 | 32.46 | 32.46 | 32.46 | 6/20/2022 |
| WHOLESALE | WIDGET03 | <input type="checkbox"/> | WIDSUPPLY | MAIN | PURCHASE | <input type="checkbox"/> | NONE | Min./Max | | 79.860153 | 30.789253 | 5.083333 | 5.858316 | 508.65 | 508.65 | 912.61 | 912.61 | 912.61 | 912.61 | 6/20/2022 |

Inventory Planning Display

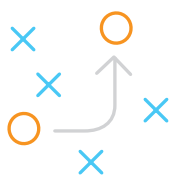
| Inventory ID | Description | Source | Warehouse | Base Qty | Promise Date | Action Date | Type | Related Document | Related Parent Document | Related Product Document | Item Class | Transfer Warehouse |
|--------------|-----------------------------|---------------|-----------|----------|--------------|-------------|--------------------------------|------------------|-------------------------|--------------------------|---------------|--------------------|
| AM00000001 | Double Hung Configured Door | Manufacturing | WHOLESALE | 4.00 | 1/12/2021 | 1/12/2021 | Sales Order | SO_00000019 | SO_00000019 | SO_00000019 | MFGPG -- | |
| AM00000002 | Man-Installed Item | Manufacturing | WHOLESALE | 25.00 | 1/12/2023 | 6/28/2023 | Sales Order | SO_00000748 | SO_00000748 | SO_00000748 | MFGPG -- | |
| AM00000003 | CTD Wood Mopie | Purchase | AM000000 | 2,000.00 | 3/7/2024 | 3/10/2024 | Inventory Planning Requirement | PL_AM00000003 | PL_T01 | PL_T01 | MFGPUR -- | |
| AM00000004 | Sheet Metal 10 Gauge | Purchase | AM000000 | 1.00 | 3/7/2024 | 3/10/2024 | Inventory Planning Requirement | PL_AM00000004 | PL_T01 | PL_T01 | MFGPUR -- | |
| AM00000005 | Cabinet | Manufacturing | AM000000 | 10.00 | 3/10/2024 | 3/10/2024 | Planned Transfer Demand | PL_T01 | PL_T01 | PL_T01 | MFGPG -- | |
| AM00000006 | Hinge | Manufacturing | AM000000 | 10.00 | 3/10/2024 | 3/10/2024 | Inventory Planning Requirement | PL_AM00000006 | PL_T01 | PL_T01 | MFGSUBASEV -- | SM000000 |
| AM00000007 | Cabinet | Transfer | WHOLESALE | 10.00 | 3/10/2024 | 3/10/2024 | Safety Stock | | | | MFGPG -- | SM000000 |

Acumatica supports inventory replenishment, distribution requirements planning, and material requirements planning, providing wholesalers, merchants, and manufacturers with the flexibility to use the most effective inventory management strategy based on their unique needs. Multiple strategies may be used concurrently for varied items across warehouse locations.

“Acumatica is also very good for maintaining replenishment levels. New reorder levels are uploaded automatically, and we are reviewing them more frequently than ever before. There’s much less devaluation of stock because we’re adjusting buying profiles in real-time, so we don’t get stuck with items leftover, eliminating waste.”

– JO YOUNG, MANAGING DIRECTOR, ADDITIVE-X

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Advanced Demand Planning and Forecasting

In addition to inventory replenishment and MRP/DRP, there are other Acumatica features that support demand planning and forecasting strategies. These include inventory classification codes and turnover analysis to identify fast or slow-moving items for improved visibility. Companies may also define substitute items or create vendor drop-shipments to fulfill demand when an item is out of stock.

Connected applications such as [Netstock](#), [Eazystock](#), and [other inventory management solutions](#) are available on the extensive Acumatica Marketplace for additional demand forecasting and planning capabilities.



Industry Peer Success

American Foam & Fabric, now AFF|group, is an industry leader in aftermarket textiles for the automotive, marine, retail, and hospitality industries. Prior to being purchased from its founder, the 29-year-old company was running an outdated and limited version of Sage, and the company lacked formal systems and processes.

Needing access to information and to implement barcoding, AFF|group implemented cloud-based Acumatica, improving inventory management, connecting disparate data silos, and gaining insight to make better decisions.



New management, led by Ben Leinster, CEO, and Mark Smith, CFO, saw tremendous potential in the established business. Having previously run several companies the size of AFF|group, the new team knew that implementing new systems, creating formal procedures, and changing the company culture could allow them to double revenues without significantly adding headcount.

First, the company needed to find a better financial system. The company used an outdated version of Sage for accounting, customer service, billing, and order entry. “There was no inventory module, no manufacturing MRP or creation of jobs in the system,” Smith says. “All products were expensed at the time of purchase. Inventory was estimated at year-end, and the company used spreadsheets to try to keep track of high-turnover items.”

“We’ve increased our production capabilities by 30%, just by knowing when to manufacturer what...before we used to outwork a problem, but now with Acumatica, we outthink the problems.”

–Ben Leinster, CEO
AFF|group

As a result, all financials were inaccurate, inventory control was non-existent, and production was a build-to-order system where someone chased down materials to get a product made, and then it shipped out the door. “There was an awful lot of what I call scrambling,” Smith says. “Just grabbing things off the shelf and keep going.”

With Acumatica, everyone can access accurate information, helping them make informed decisions and be more efficient. The company also gained a platform for growth. “New processes are in place; we have greatly reduced the amount of paper used and the hours needed to process it. We had reams of paper and people processing paper,” says Anita Easler, Customer Fulfillment Manager. “We want our business to be as paperless as possible, and we couldn’t do that with Sage or the processes we had. Now that we are in the cloud, we can use a phone or iPad to access information.”

Additionally, implementing MRP “has been a game changer,” says Cory Childers, Production Manager. “We never had that. We didn’t know what was on order or what to make until we reviewed the order. Now the computer tells us what to make and when to make it.”

AFF|group has two primary manufacturing areas. One manufacturing area has gone from being late with everything to being on time with almost all orders, which means trucks are getting out on time. “People previously had to wait to get product and wait to load trucks,” Smith says. “Now we don’t have that problem. Everything is made to stock and everything is ready. We typically had to wait for production to cut hundreds of pieces of foam to fill our Florida truck on Monday morning, and this week, we only had to wait for them to cut two.”

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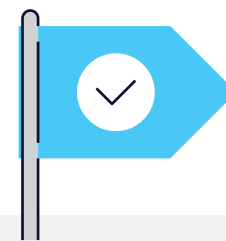
Boost profits and automate your supply chain with Acumatica Cloud ERP

Demand planning is essential for wholesalers, merchants, and manufacturers. Companies that lack modern tools to forecast and automate supply and demand transactions struggle to maintain the right balance for inventory items to reduce carrying costs while limiting stock-out scenarios.

Acumatica supports multiple inventory management strategies, providing users with the flexibility to replenish inventory using the most appropriate method for each item they sell. Traditional inventory replenishment strategies using minimum and maximum order quantities, reorder points, and economic order quantities are supported for items where past sales and usage are consistent with future demand forecasts. DRP and MRP offer compelling benefits to time-phased supply orders, with optional demand forecasts and exception messages to react in real-time to unexpected supply and demand changes.

As a holistic system, Acumatica provides inventory-centric businesses with tools to manage demand from internal sales representatives or customer service orders, orders received directly from customers via EDI or online storefronts, and retail point-of-sale or counter sales transactions. Automate supply orders and leverage extended supply chain features with an adaptable, scalable, and intuitive business application designed exclusively for small and mid-sized businesses.

With Acumatica, inventory-centric businesses can reduce carrying costs, optimize warehouse space, minimize dead stock and inventory write-offs, and collaborate with customers and suppliers to automate supply chain activities.



“Before we had Acumatica and a good MRP system, we were stuck . . . Right now when we do have Acumatica and we do have a good MRP system in place, the manager has to put in not more than one hour a week.”

– MOISHE UNGER, DIRECTOR OF MANUFACTURING, FABUWOOD



Acumatica Cloud ERP is a comprehensive business management solution that was born in the cloud and built for more connected, collaborative ways of working. Designed explicitly to enable small and mid-market companies to thrive in today's digital economy, Acumatica's flexible solution, customer-friendly business practices, and industry-specific functionality help growing businesses adapt to fast-moving markets and take control of their future.



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