E-Book

Intelligent inventory

How to solve the classic manufacturer dilemma.

Sage

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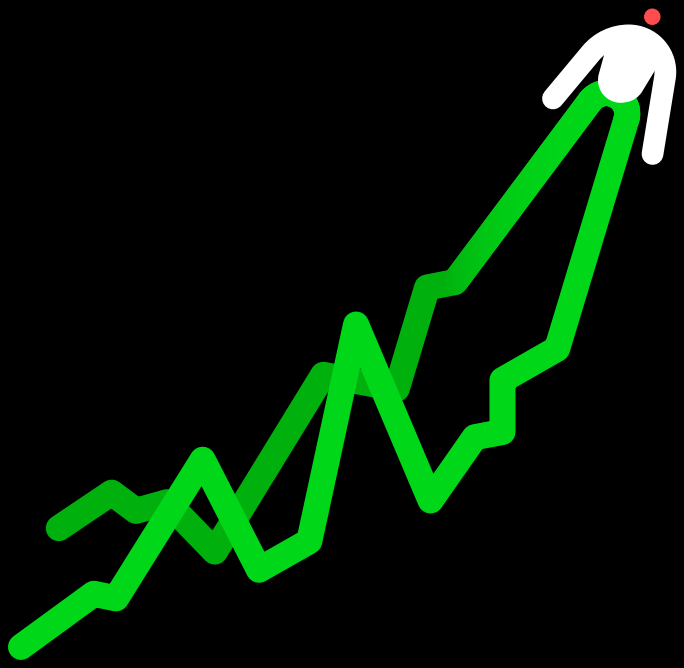

Introduction

Inventory and the way it's handled is crucial for the smooth functioning of any manufacturer and central to streamlining how it operates. Many are still struggling when it comes to planning and effectively managing inventory levels.

Whether we're talking about raw materials, work-in-progress stock, or finished goods, the fact is that every piece of inventory a business holds will have a physical cost associated with it, absorbing money which could be used for other parts of the business. And there are other obvious costs to consider, from the transport and movement, to the space and containers used to store the inventory, or even insurance.

In manufacturing there is the classic dilemma—not having enough inventory leads to back orders and unhappy customers, while stocking too much inventory in advance to avoid that could raise costs significantly. For many manufacturers the choice is between two extremes—'just-in-time' or 'just-in-case' inventory management.

In addition, manufacturers are increasingly being asked to support omni-channel and direct-to-customer shipments, where it's not simply about having enough inventory, but around where and how it's being provided.

To solve these problems and to make sure they're handling inventory in the right way, profitable manufacturers have visibility of inventory across the whole supply chain.

What are the inventory challenges facing manufacturers?

Every manufacturer is different, and may have different pain points when it comes to the way they handle inventory. These include:

The cost of warehouse space
Owning or renting warehouse space can be particularly expensive, especially if a manufacturer is storing inventory across multiple locations.

The cost of transport
In addition to storage costs, manufacturers need to consider the cost of transporting inventory. These costs can add up—consider the price of drivers, vehicles and insurance.

Seasonal demand
Many manufacturers have peaks and troughs—think of food and beverage businesses that produce goods that are specifically in demand during the summer—such as ice cream—they have sales patterns which show increases in demand during certain months. To meet these, manufacturers will need to spend more money by carry more stock than they usually do.

Tracking inventory
Without the right inventory management software, a manufacturer would need to fall back on old-fashioned counting and stock takes, which is open to significant error, time consuming, and only accurate at the point in which the counting happened.

Overstocking
If manufacturers can't forecast demand accurately, it's very likely they'll stock too much inventory, which may cause problems—products may become obsolete or out of date, which means discounting or liquidation may become a necessity.

Supply chain issues
The supply chain can be fraught with issues—if working across borders, they need to adapt to different systems and regulations, while market demand can change at dazzling speeds.

How can manufacturers improve their inventory management?

There is pressure for all manufacturers to increase service levels while maintaining or improving gross margins, which can be a particular challenge if margins are already razor-thin (like in the food and beverage industry).

Top performers are focusing on three areas.

- Maintaining or increasing gross profit margins through reducing the cost of inventory.
- Improving service levels.
- Reducing order-to-delivery times.

In essence, manufacturers must look at ways they can keep track of what they have in stock efficiently and keep associated costs as low as possible.

Inventory optimisation is a way that businesses can balance the amount of capital tied up with inventory with service goals that have been sent. It's difficult to do this manually, so instead manufacturers should be looking at technology which can help them:

Segment and differentiate inventory based on filters
Segmentation allows manufacturers to better align their inventory based on demand and fulfilment flows, as opposed to keeping undifferentiated stock keeping units. Being able to separate inventory by customer, location, or industry for example, can allow businesses to stock inventory in a way that improves service levels.

Determine suitable stock targets for inventory at critical nodes in the supply chain
Manufacturers can optimise inventory levels by determining safety stock at critical nodes in the supply chain—what the industry calls multi-echelon planning. Stocking at critical nodes can provide tremendous benefits when tied to "postponement strategies"—where businesses delay committing inventory until the last possible moment.

Measure customer service levels during the execution phase
Manufacturers that understand service level impact during inventory management planning can get ahead of the game in their awareness of how their decisions will impact execution.

Determine suitable stock targets for inventory at critical Replenish inventory into distribution buffers based on customer demand
Manufacturers should look at technology that supports a close customer relationship, and look at implementing pull system capability. This would make sure orders are made and shipped to a plan, rather than through using buffer stock that would be necessary to insure availability in the absence of a plan. Direct replenishment eliminates the need for buffer stock, which is seen as a safeguard against unforeseen shortages or demand.

Access end-to-end inventory data to predict, manage and assess demand
Manufacturers can use historic data to predict future performance, allowing them to manage and assess the level of demand so inventory can be managed accordingly.

Visibility across the supply chain

Successful inventory management requires a high level of supply chain visibility, as manufacturers need to track parts, components and products across the supply chain and to their final destination.

The key is data—if all stakeholders (including customers, partners and suppliers) have readily available supply chain information and visibility, they can take the required action when it comes to supply and demand.

Industry 4.0, connectivity and the ability to use data in new ways has ushered in a new era of supply chain visibility. The digital world has brought manufacturers the ability to dynamically connect with their suppliers, partners, and customers.

With intelligent inventory management manufacturers can now connect with suppliers and multi-warehouses about who's holding stock. With in-transit visibility, manufacturers can track shipments as they move, with any delay triggering an immediate alert.

Manufacturers can also use predictive analytics to see historic sale patterns so they can understand when they need to build up inventory or scale down and run on less inventory, depending on demand patterns and the nature of the business. It allows businesses to make commitments or allocations based on supply as they know where and when inventory will be available.

Instead of inventory management being siloed and separated from other operational workflows, Industry 4.0 allows manufacturers to work across digital planning environments that give them insight across digitised supply chains. This can create synergy for example, between the way manufacturers stock their warehouses with the methods being used for transporting goods.

The Internet of Things

The Internet of Things (IoT) allows hardware devices, often through sensors, to connect, send and receive data. Many manufacturers are already using networked devices on the factory floor that can collect data to drive predictive analytics.

With inventory management, business management solutions can track items in real time, usually through RFID tags or barcodes that can be scanned or identified. This provides visibility into information like inventory levels, expiration dates, and location, which can support demand planning and forecast management.

With advances in IoT, information such as inventory temperature, weather, and GPS location which could make inventory management more effective—answering more detailed questions such as where exactly a product or material is located, which areas are causing delays in the supply chain, and whether certain processes are working better than others, IoT has the ability to view, track and monitor inventory improving significantly. It could also potentially support the automation of inventory tracking and reporting.

Artificial Intelligence

With inventory and supply chain management, Artificial Intelligence (AI) has the potential to increase visibility and speed up connectivity.

For example, if companies are receiving electronic data interchange (EDI) transactions, across thousands of orders and shipments, there will be a delay in providing the intelligence based due to the sheer volume of data.

AI can help by tying the raw information more quickly to the requirements to highlight exceptions more quickly. AI could dramatically improve visibility by tying the information together much faster than traditional workflows.

Why Sage X3?

Sage X3 provides a faster, more intuitive and tailorable business management solution for your growing enterprise, delivering favorable ROI and a more personalised experience for businesses than traditional ERP systems.

Sage X3 delivers value across multiple industries for large thriving customers in over 100 countries around the world, supported by over 480 business partners and more than 1300 certified consultants.

Embrace Change at Speed: faster, more intuitive, and better tailored solutions than conventional ERP for organisations looking to retain their competitive advantage by increasing their agility and embracing change.

Sage X3 delivers comprehensive business management capabilities from supply chain management to manufacturing through to human resource and payroll management capabilities. This is further complemented by over 50 add-on solutions providing additional industry-specific functionality.

Along with comprehensive multinational business management, Sage X3 offers support for 18 different industry verticals ranging from food & beverage manufacturing through to industrial machinery manufacturing and FMCG distribution.

This ability to support multiple adjacent verticals allows Sage X3 to support the entire value chain from seed to sale or farm to fork.

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The implementation of ERP systems bring many benefits, such as increased income, higher productivity, and better communication. X3 Consulting are a trusted Sage partner specialising in Sage Intacct and Sage X3 manufacturing implementation.

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