Inventory Management whitepaper

# Profitability through Inventory Management

## A new approach


Over the last few decades, technology has driven significant change in consumer behaviour, and manufacturing processes have moved from lean efficiency to agility. With inventory management increasingly linked to competitive advantage and profitability, inventory processes have had to adapt.

The pandemic changed everything, bringing with it supply shortages, increased shipping costs and greater uncertainty. Corporations have reacted by holding higher levels of safety stock, which comes at a cost. Today, balancing the competing priorities of holding just enough inventory to avoid production outages while reducing inefficient capital and storage costs is the central issue in inventory management.

SAP Taulia's Inventory Management ecosystem takes a fresh, technology-led approach to tackling this issue.

SAP Taulia

# Scalable and adaptable Inventory Management is more critical than ever

US inventories as a proportion of sales hit a two decade high in April 2020, according to the US Census Bureau, just as the global pandemic took a serious hold. This ramp-up in inventory was seen most clearly in manufacturing, with a peak inventory-to-sales ratio of 1.70, up more than 20% year on year.[1] This reflects the challenge manufacturers across the globe have faced, having to adapt rapidly to supply chain shocks and changing customer demands.

Uncertainty in managing inventory had been growing even before the pandemic, as geopolitical tensions affected trade between the US and China. The US has also faced trucking strikes, while 'Brexit' and its lead-up have caused transportation shortages and increased costs for UK and European firms. The recent Suez Canal blockage created yet another supply shock, delaying around $9 billion worth of goods daily[2] and reminding the worrld of the fragility of global supply chains.

In this context it is not surprising that the vast majority of companies have increased their focus on supply chain and inventory management. While the US Census data shows a rundown of inventories over 2020, this is only partly a result of conscious effort. Many firms are once again reporting supply shortages and depleted supply chains in early 2021, according to the Institute for Supply Management.[3]

These multiple challenges for inventory management can no longer be described simply as a 'shock'. What is emerging is a longer-term need to adapt to higher levels of uncertainty in shipping and international trade. In early 2021, we already have reports of backlogs at California's two ports, while UK firms are seeing another spike in shipping costs and significant delays.[4][5] The expectation of higher levels of inflation in the near future simply adds another dimension of complexity for procurement, inventory and working capital managers.

Inventory process and operations management have been a critical performance measure for manufacturers for many decades, particularly in the automotive industry. Yet this heightened level of uncertainty impacts every part of the inventory management process in many industries.

Uncertainty and longer lead times have a direct effect on minimum order quantities (MIQ) and often lead to higher levels of safety stock, increasing stock costs and tying up more capital. In this context, inventory visibility and data as well as the communication between procurement, inventory or supply chain managers and finance is becoming ever more important as they balance competing priorities.

# Just in time vs. just in case

It is important to see these more recent challenges against the background of longer-term trends in inventory management. Within the strategic priorities of a manufacturing business, inventory management has always been unique in its clear trade-off between the competing priorities of cost, flexibility and quality. This has led to the concepts of efficiency-focused lean manufacturing, responsive agile manufacturing and the increasing combination of these.

Practically, these competing priorities are seen most clearly in a procurement manager's objective of purchasing stock at the best possible price, which is often improved through larger MOQs. On the other hand, operations and inventory managers aim to reduce MOQs and hold just enough safety and buffer stocks to meet production and avoid outages, balancing the economics of shipping times and costs. In turn, finance managers are also focused on reducing the working capital tied up in unproductive inventory.

Just in Time (JIT) supply, which was pioneered by Toyota in the 1970s and widely implemented over the last four decades, is fundamental to lean manufacturing. It focuses on reducing waste in the form of inventory and lead times. In order to achieve this, supply chains were dematerialised and outsourced, with strong supplier relationships and integrated IT systems enabling delivery as needed with low MOQs. This form of supply management and production is best suited to businesses with stable demand.[6]

Supply chain efficiency has its limits however, and as innovation and consumer behaviour have changed, agile production or 'leagile' production (a combination of lean and agile) have become more common.[7] The agile approach requires a more responsive supply chain but supports the more unpredictable demand or varied product ranges that are now more common. Once again, the automotive industry is an example of this change in approach to supply as the business models shift from traditional push to client-driven pull sales models.

The upshot of these trends is that a change in approach to safety and buffer stock was already under way. Rather than a fixed historically-based safety stock calculation, statistical calculations often include not only demand side variables but supply side data which does not follow a normal distribution. As supply chains become more fragile and uncertain, this now means higher levels of 'Just in Case' inventory to support changing production models.

In many instances, this inventory and storage cost will find its way down the supply chain, with buyers requiring guaranteed supply. Suppliers now often have to deal with complex vendor-managed inventory or consignment programs that increase working capital but add operational complexity. This build-up of inventory is a drag on company performance, tying up capital that could be put to better use elsewhere in the organisation.

# Inventory Management directly impacts profitability and return

As manufacturers deal with increasing safety stock and a shift in the balance of inventory management's competing demands, executive buy-in and clear communicating of the financial drivers is crucial.

While there is a large body of academic and consultancy research linking inventory management to profitability, capital efficiency and economic return, the real challenge, as with all working capital improvements, is aligning the competing balance sheet and financial KPIs across different business functions.

One issue that is clearly driving change, and which the pandemic has further highlighted, is that, while there are many common financial measures of inventory cost and efficiency, there are fewer measures for lost sales due to stock outages. The costs, however, can be high and long-lasting. One PWC study showed that supply disruptions cause stock volatility as well as lower return on revenue and return on assets, lasting up to two years.[8]

This risk has to be offset with the direct costs of holding inventory. Here one of the most important costs for an operations or inventory manager will be the cost of carry. The cost of warehousing and transport of inventory can be anywhere between 20% to 50% of the cost of the item, directly impacting EBITDA, profitability and returns. In the current climate of increasing warehousing costs and safety stocks, reducing this cost is a significant priority. This is particularly a challenge for the 'last mile' of inventory - the warehousing and transport just before customer delivery - which is notoriously costly and increasingly impacted by contractually guaranteed supply requirements.

While there is a top line benefit in reducing inventory levels, the bottom line improvement in working capital is often more impactful in the long term. The DuPont formula - a widely used tool to link management actions and process improvements to return on equity or capital - shows that compressing the balance sheet by reducing the working capital tied up in inventory, while maintaining the same level of sales, drives higher return on capital. The cash released creates capacity for growth and can then be put to more efficient use for further investment. Both the improved cash flow and the improved return on capital then also result in higher company valuations.

While these concepts are reasonably simple, the reality is that companies focused on sales growth may also only focus on topline costs, overlooking the long-term financial and efficiency benefits of working capital process improvements.

# SAP Taulia's approach to Inventory Management

Clearly, given the competing operational and financial priorities of inventory management, there is no single 'correct' approach and the supply system must fit the product. The strategic point that needs to be addressed is how to achieve the balance between reducing working capital and facilitating the right levels of safety stock and MOQs.

Historically, very few solutions exist to enable the postponement of inventory for manufacturers. Financial solutions are particularly limited to large items or liquid commodity shipments, while tracking and reporting are notoriously difficult. To address this, SAP Taulia has taken its proven supply chain technology experience and applied it to inventory.  SAP Taulia's Inventory Management ecosystem acts like a last mile distributor, with the integrated logistics management needed to ensure full ownership transfer of goods. This means it can be applied to more complex supply chains to support inventory across industries.

SAP Taulia's technology ecosystem allows inventory to be housed in either approved third-party or existing warehouses; existing lead times and manufacturing processes are unaffected. The buyer sends a purchase order, while SAP Taulia's ecosystem accepts deliveries, holds inventory for a defined period, ships and then invoices.

SAP Taulia's Inventory Management is data-led and actively manages the warehousing and logistic process to optimize the inventory cycle. This addresses many of the issues facing inventory and procurement managers right now, benefiting all the competing priorities. Higher MOQs are possible to support agile manufacturing and reduce procurement costs, while at the same time reducing days inventory outstanding. Crucially, the nearby warehouse also allows inventory to be pulled on a JIT basis.

# FinTech is the solution

While the geopolitical climate and the global pandemic are creating new challenges for inventory management, technology provides the greatest opportunity for competitive advantage. For international supply chains, integrated systems that provide data transparency, automation and advanced analytics and insights are quickly becoming a basic requirement to adapt to our rapidly changing environments.

SAP Taulia has already brought a step change to data visibility and insights in the supply chain, applying AI and machine learning through its supply chain finance solution. Now, by applying this same supplier-centric approach to inventory management, SAP Taulia is able to vastly improve data transparency in inventory management while supporting the procurement, operations and financial objectives of modern manufacturing processes to free up time, resources and capital to grow.

Get in touch with us now to learn how SAP Taulia's Inventory Management can support your growth.

Christopher Cauley
Head of Inventory Management Sales | SAP Taulia LLC
christopher.cauley@SAP Taulia.com

1. Source: U.S. Census Bureau, Manufacturing and Trade Inventories and Sales, March 16, 2021.
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