

Conquering Backorder Challenges: Insights from a Scheduler's Viewpoint

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Abstract—This article delves into the various challenges associated with backorder processing, particularly highlighting the critical issue of inventory constraints that businesses face in today's competitive marketplace. For companies striving for success, prioritizing customer satisfaction is essential, and effectively managing back orders is a key component of that process.

We will explore strategies to minimize the occurrence of back orders while ensuring that customer commitments remain reliable and stable. In an ever-evolving landscape of supply and demand, it is crucial to keep customer order commitments updated. Should any significant deviations arise, timely and clear communication with customers is paramount to maintaining their trust and satisfaction.

The overarching goal of daily backorder processing is to deliver on the promises made to customers as accurately and realistically as possible. Therefore, we will outline how the incorporation of Enterprise Resource Planning (ERP) capabilities, along with other advanced technologies, can enhance backorder processing. Specifically, we will discuss how Advanced Available-to-Promise (ATP) functionality allows schedulers to meet customer requirements more effectively. By leveraging these technological advancements, businesses can not only fulfill customer orders on time but also solidify their reliability and strengthen trust between the company and its customers.

Keywords—*Backorder Processing, SAP Advanced ATP, Demand/Supply dynamics, inventory stock outs,*

Order Commitment, BOP, order tracking, Order fulfillment, SAP BOP Confirmation strategies

INTRODUCTION

What is a backorder?

A backorder situation arises when a customer places an order for a product that cannot be fulfilled immediately due to insufficient inventory. This lack of stock can stem from various factors, including a company's procurement strategies, production delays, or the manufacturing process itself. Essentially, a backorder represents a queue of pending orders that cannot be satisfied at the present time.

When many products are backordered, it signals that customer demand significantly surpasses the available supply. This situation can lead to extended delays in delivering the items to the customer, and a product with numerous backorders often indicates its high popularity and desirability among consumers.

It's crucial to understand the distinctions between backorders and stockouts, as this knowledge forms the foundation of an effective inventory management strategy. From a sales and customer service perspective, a backorder allows customers to order items that are temporarily unavailable, while a stockout indicates that the product cannot be ordered at all. However, for logistics professionals, this difference can be less straightforward. Often, backordered items are displayed alongside stockout products on store shelves. When a company processes incomplete orders, warehouse staff may handle them in the same way as they would

complete orders. This seamless front-end operation can mask significant backend issues.

The implications of backorders versus stockouts are most significant in inventory management and fulfillment. Companies that allow backorders, particularly during peak or unpredictable demand periods, should employ sophisticated software systems capable of distinguishing between backorders and stockouts. This capability is essential to effectively monitor each instance and manage customer expectations.

Automation plays a critical role in this context, as it streamlines order tracking and fulfillment processes, ensuring that backorders are addressed as swiftly as possible, which helps enhance customer satisfaction. Conversely, managing back orders through manual methods—such as emails and spreadsheets—can lead to confusion. It complicates tracking which customers are still awaiting their orders and can result in inefficiencies, particularly when handling refunds separately and dealing with canceled orders.

Utilizing order management tools can significantly improve the fulfillment process. These tools allow companies to prioritize orders based on the items they receive first, thereby reducing delays. Warehouse teams can begin processing and shipping the available items, while the order management system seamlessly completes backorders once the required products are back in stock. This efficient balancing of order processing helps maintain a smooth and reliable fulfillment operation, ultimately benefiting both the company and its customers.

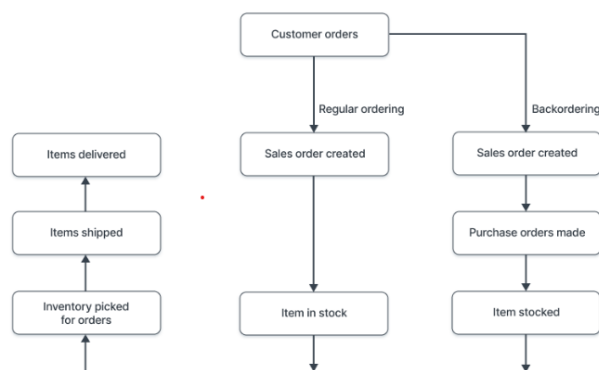


Fig. 1. Process flow of typical Backorder

1) Challenges in Backorder Processing:

Understanding Carrying Costs and Lot Size

Lot size refers to the specific quantity of items that a company decides to procure or manufacture at any given time to fulfill customer orders. When utilizing backordering as a strategy, it is essential to understand that larger lot sizes can significantly increase carrying costs. This is particularly relevant in manufacturing scenarios where the costs associated with holding inventory can accumulate quickly. Producing smaller lot sizes may not always be economically viable, depending on a company's production setup, which leads to a dilemma between managing back orders effectively and incurring excessive carrying costs. These challenges often require the skilled insights of experienced managers familiar with the intricacies of their particular manufacturing processes.

Defining Lead Time

Lead time is the interval that elapses between placing an order with a supplier and the moment the requested items arrive at your facility. In cases where items necessary to address back orders have extended lead times, businesses may face the dual challenges of accumulating back orders and potentially disappointing customers due to unmet expectations. To mitigate this risk, companies may consider investing in higher inventory levels for items with long lead times, thereby increasing carrying costs. Alternatively, they might explore partnerships with local suppliers or opt to pay a premium for expedited shipping to enhance fulfillment speed.

The Necessity of Strong Inventory Management

To adapt to the challenges presented by backordering, having a robust inventory management system is critical. As businesses often procure stock only after customer orders are accepted, the risk of losing track of multiple orders and corresponding inventory levels increases. Therefore, implementing a tight inventory management system is crucial to ensure swift turnaround times and meet customer needs without significant delays.

The Impact of Order Cancellations

When a business accumulates numerous backorders without an effective order fulfillment system in place, delays can become frequent. These prolonged delays not

only frustrate customers but can also lead to a significant number of order cancellations. Failing to address these cancellations can further exacerbate operational inefficiencies and diminish overall customer satisfaction.

The Risk of Losing Customers

While many customers are typically willing to endure longer wait times for complex or bespoke products—such as industrial machinery or designer furniture—constant delays can compel them to seek alternatives from competitors. This shift often occurs when customers feel that their expectations for timely delivery are not met, driving them to find similar products elsewhere.

The Consequences of Losing Market Share

The repercussions of operational inefficiencies can trigger a downward spiral: delays lead to order cancellations, which in turn prompt customers to leave, ultimately resulting in a loss of market share. Though implementing a backordering system can have its advantages, it also carries inherent risks that must be carefully managed to maintain a competitive edge.

Strategies for Keeping Customers Satisfied

Delays in order fulfillment are a common challenge for organizations that rely on back orders. Committing to a delivery date and then failing to meet it reflects poorly on customer service. However, unexpected issues will arise, leading to inevitable delays. In these instances, proactive communication with customers is paramount. Keeping them informed with transparent updates and sincere apologies can help maintain goodwill. Most customers appreciate being kept in the loop and are typically more understanding if they receive clear explanations about the reasons for the delays in their orders.

Effectively managing sales order processing is crucial for the optimal handling of tariffs, which can have significant financial implications if not handled correctly. Understanding the intricacies of our product offerings, the production methods, and the origins of each component used in manufacturing is vital. If we lack knowledge about the country of origin for either the final product or the individual components, we risk facing substantial tariff-related challenges and potential penalties.

2) *Using ERP to tackle Backorder Processing*

Managing one or two back-ordered items can often be accomplished through simple spreadsheets. However, once the number of items increases to the tens or hundreds, it becomes essential to implement specialized software designed to effectively track and manage orders. This technology not only facilitates timely procurement but also enhances overall efficiency in the inventory management process.

At its core, the practice of reinvesting profits into inventory reflects a small business's commitment to prioritizing customer satisfaction. By consistently replenishing stock levels and refining the order fulfillment process, these enterprises demonstrate their dedication to providing exceptional service. This ensures that every customer receives their desired products promptly, fostering trust and loyalty.

Small businesses are acutely aware that customer satisfaction is the cornerstone of a thriving enterprise. By adopting a customer-centric approach to inventory management, they differentiate themselves in a competitive marketplace. This strategic emphasis not only sets the stage for immediate customer gratification but also lays a strong foundation for sustainable growth and long-term success.

Therefore, whether you are a small business owner eager to enhance your operations or a valued customer seeking reliable service, recognizing and supporting businesses that prioritize customer satisfaction is crucial. This shared understanding not only encourages better practices but also contributes to a more rewarding shopping experience for everyone involved.

3) *SAP Backorder Processing in Advanced ATP*

In SAP S/4HANA's advanced Available-to-Promise (AATP) functionality, Backorder Processing (BOP) plays a critical role in assessing material availability, particularly when there are fluctuations in demand or supply within the order fulfillment cycle. This feature

allows businesses to re-evaluate whether previously established confirmations for various requirements in business documents remain valid under changing circumstances.

For instance, consider the scenario where a sales order is canceled; this action can release stock quantities that were previously allocated, creating an opportunity to fulfill other orders. Additionally, if a key customer unexpectedly increases their order quantity for a specific material, the system can identify available stock that is currently confirmed for other sales orders, enabling the business to prioritize this important demand.

Moreover, delays in production orders that are meant to generate planned supply can significantly disrupt the supply chain. Such situations necessitate a thorough re-examination of material availability. Failing to respond appropriately to these shifting availability scenarios might lead to a situation where the confirmed quantities of materials exceed what is actually available in stock. This misalignment can ultimately cause availability checks for over-confirmed materials to fail, resulting in an inability to release materials for the creation of deliveries, which can have cascading negative effects on operational efficiency and customer satisfaction.

Below are different Fiori Apps used in Backorder Processing

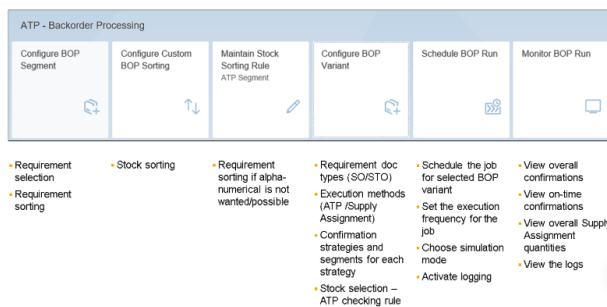


Fig. 2. Fiori Apps In Backorder Processing

a) BOP Confirmation strategies

Various conformation strategies are accessible within the SAP advanced ATP (Available-to-Promise) framework, designed to ensure reliable and stable order commitments. These confirmation strategies play a

crucial role in back-order processing by establishing guidelines on how to manage individual requirements when product availability is limited. The strategies can influence confirmation outcomes, allowing for requirement quantities to be confirmed at different times—earlier, later, partially, or, in some cases, not at all.

Within the Configure BOP (Backorder Processing) Variant application, users have the capability to:

Assign Confirmation Strategies to Segments: This allows for tailored handling of requirements based on specific characteristics of each segment, ensuring that priorities align with business objectives.

Assign Multiple Segments to a Single Confirmation Strategy in a Variant: This flexibility enables organizations to streamline their processes by grouping segments under a unified strategy, which can enhance processing efficiency and accuracy.

Define Fallback Variants for Exception Handling: This feature is essential for managing exceptions effectively by creating alternative strategies that can be deployed when standard processes encounter issues or unexpected situations.

Overall, these functionalities contribute to more effective backorder processing, leading to improved customer satisfaction and operational efficacy.

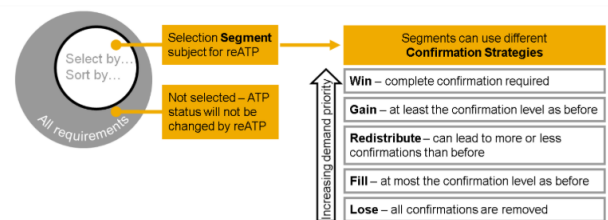


Fig. 3. Backorder Processing Strategies with Segments

b) SAP Backorder Processing Segments

Classical rescheduling processes typically select all requirements associated with a specific material and plant combination in a streamlined manner. In contrast, the Backorder Processing (BOP) system offers a more nuanced approach that allows for the selection of individual requirements based on various detailed selection criteria. This enhancement enables users to

tailor their selection and sorting of requirements much more precisely.

Within the BOP framework, these selection and sorting criteria are organized into what are referred to as "segments." Each segment can be linked to one or multiple BOP variants, and when executed, the segments operate in unison to manage the backorder effectively. Each segment associated with a variant is empowered to utilize up to five distinct confirmation strategies. These strategies play a crucial role in determining the extent to which the requirements will be confirmed, thereby influencing the fulfillment process.

When multiple segments with varying confirmation strategies are part of the same variant, the system prioritizes confirmation quantities based on the rank of each strategy. Higher-ranking strategies will yield larger confirmation quantities that align more closely with the requested delivery dates, enhancing overall fulfillment efficiency.

During a back-order processing run, each requirement processed is assigned to corresponding confirmation strategies that dictate how those requirements are prioritized and managed. To facilitate this, filters are employed to categorize and assign requirements to specific confirmation strategies and can also be utilized to define subsets of requirements. An important feature of this setup is that multiple filters can be applied in a single run, which may lead to overlapping criteria. If a requirement is selected by two different segments linked to the same variant, the system automatically allocates the requirement to the segment governed by the confirmation strategy that has the highest priority. This ensures that the most critical requirements are addressed promptly, optimizing the overall handling of back orders.

c) SAP Backorder Processing Variants

The selection of appropriate document types during the execution of the BOP is crucial for ensuring smooth operations. A clear understanding of the execution methods and the specific checking rules is essential to determine whether the requirements are being processed for a sales order or a stock transport requisition. This

distinction helps streamline the workflow and prevents potential errors in processing.

Additionally, the assignment of sorting rules plays a vital role in enhancing efficiency. Implementing effective confirmation strategies is equally important, as it ensures that commitments to the customer are met accurately and promptly. By prioritizing these elements, organizations can significantly improve their responsiveness and reliability in fulfilling customer needs, ultimately leading to increased satisfaction and trust.

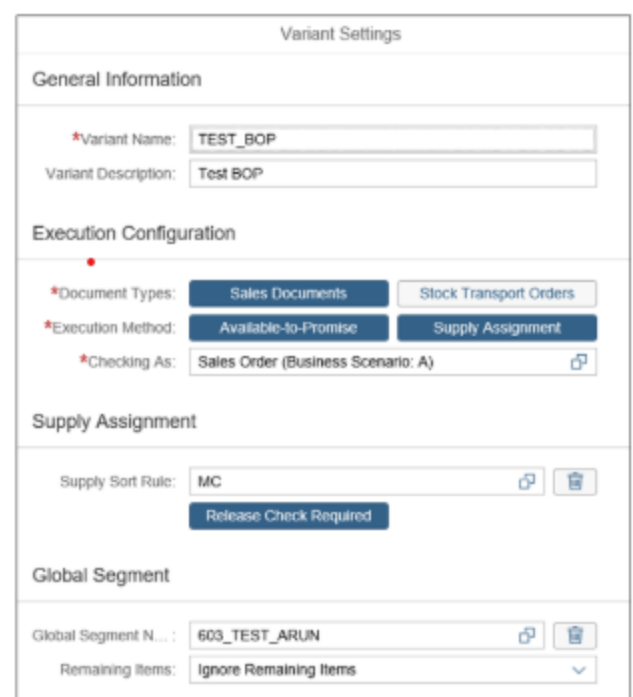


Fig. 4. Backorder Processing variant settings

d) SAP Backorder Processing ACL filters and consumption logs

This document introduces a newly added feature aimed at enhancing Backorder Processing (BOP) based on variations in demand and supply data. Specifically, there are scenarios where we prefer to execute backorder processing exclusively when we have confirmed good receipts, allowing for a more targeted and efficient BOP execution.

Availability Change Log in Backorder Processing

The Availability Change Log framework meticulously tracks and records the date and time information for all material-plant-MRP area combinations whenever there is a modification in the availability of stock. This data is

invaluable for BOP, as it enables a filtration of requirements to focus specifically on those instances where availability conditions have changed. This approach ensures that only relevant and actionable requirements are considered during the back-order processing.

Leveraging the Availability Change Log (ACL) in BOP Variants

Classification of Availability Change Log Records:

ACL records are systematically categorized based on the Availability Change Log Filter, which offers several options in a drop-down menu:

Supply- This category encompasses all combinations of materials and plants where there has been an alteration in stock levels or future receipts. Examples include stock movements resulting from goods receipts or purchase orders.

Demand: This includes all material-plant combinations that have experienced changes due to varying requirements, such as sales orders, outbound deliveries, and stock transport orders.

Master Data: This section captures all material-plant combinations that have seen changes in the foundational data regarding the materials, including adjustments related to product allocations and supply protection measures.

Configuring the BOP Variant:

The ‘Configure BOP Variant’ application outlines the runtime properties of the BOP execution. Within this application, users can select the Availability Change Log Filters that should be applied during the BOP run, which are found in the header section.

Impact of Selected Filters on BOP Execution

When filters are selected for a specific variant, the BOP execution process will only consider requirements that have at least one recorded change in the ACL framework since the last successful execution of that variant. If no ACL logs exist for the given material-plant-MRP area combination, no documents will be processed during that specific BOP run, ensuring that only relevant requirements are acted upon and enhancing the overall efficiency of the back-order processing.

e) SAP Backorder Processing Simulation capabilities

The Backorder Processing (BOP) simulation tool enables users to assess all requirements and changes in commitments related to order fulfillment thoroughly. This functionality empowers schedulers to proactively review these commitments before the actual commit dates are updated in the orders, allowing for early identification of potential issues. By analyzing this information, schedulers can effectively mitigate risks associated with delayed commitments or even exclude certain orders from the execution of the actual run if the proposed commit dates are deemed unacceptable or show significant delays.

Once the simulation results are available, schedulers have the opportunity to collaborate with demand and supply planners to discuss the findings. This collaboration may result in rescheduling orders as necessary to ensure that commitments align with capabilities. The BOP tool ultimately facilitates the revision of commitments to better suit operational realities.

This transformative tool greatly enhances the day-to-day operations of schedulers by providing them with reliable commitments to relay to customers, thereby boosting customer satisfaction levels. The process of scheduling a BOP simulation run is analogous to scheduling a live run, offering a seamless transition between planning and execution. With these detailed insights, organizations can refine their order fulfillment strategies and strengthen customer relationships through improved service reliability.

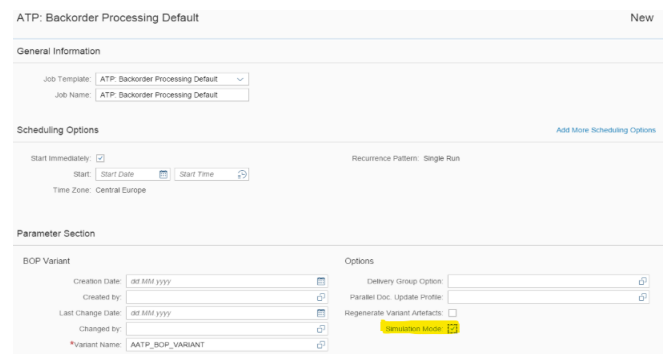


Fig. 5. Backorder Processing Simulation Mode illustration

BENEFITS

1) **Anticipating Demand and Preventing Stockouts:** Data analytics provides small businesses with powerful tools to forecast product demand accurately, enabling them to tailor their inventory levels to match customer needs effectively. By examining historical sales data, tracking purchasing patterns, and understanding seasonal fluctuations, businesses can respond swiftly to shifts in market trends. The insights derived from data analytics also help to mitigate issues related to overstocking or understocking. By systematically analyzing sales figures, businesses can pinpoint items that are slow to sell or demonstrate low consumer interest. With this data in hand, they can make informed decisions to either reduce inventory levels of these products or eliminate them altogether from their offerings, streamlining their stock and optimizing their cash flow.

2) **Enhancing Supply Chain Management:** In addition to managing inventory, data analytics significantly enhances supply chain management for small businesses. By meticulously analyzing factors such as supplier performance, lead times, and fulfillment rates, businesses can make informed decisions regarding supplier partnerships and negotiate more favorable terms. This analysis leads to timely shipments and a more reliable supply chain, which is crucial for maintaining high levels of customer satisfaction.

3) **Embracing Technology for Optimal Inventory Management:** The integration of modern technology, automation, and data analytics equips small businesses with the tools needed to refine their inventory management processes and adopt a customer-centric approach. By implementing advanced inventory management software solutions, businesses can streamline their operations and improve order processing and inventory tracking. These technological advancements allow small businesses to swiftly adapt to fluctuating customer demands. With real-time data at their fingertips, they can make educated decisions regarding inventory adjustments, ensuring they meet customer expectations effectively. Embracing such technology not only enhances operational efficiency but

also positions small businesses to thrive in a competitive marketplace.

CONCLUSION

This article aims to provide a detailed guide for understanding the challenges businesses face regarding backorders and inventory constraints. These issues can often hinder operations and customer satisfaction; however, they can be effectively addressed with the right strategies and a commitment to enhancing inventory management practices.

To start, adopting a customer-centric mindset is vital. Small businesses should prioritize customer satisfaction by ensuring that orders are fulfilled accurately and on time. By understanding customer needs and expectations, companies can proactively prevent the occurrence of late or incomplete shipments. This not only boosts customer satisfaction but can also enhance the overall shopping experience, leading to repeat business.

Moreover, reinvesting in inventory is an essential strategy for overcoming these constraints. By allocating a portion of their profits to expanding their inventory, small businesses can significantly reduce the incidence of back orders. With a more robust inventory on hand, companies can streamline their order processing operations, enabling them to deliver products to customers more promptly and efficiently. This proactive approach can help maintain customer trust and loyalty.

In addition, implementing advanced inventory management software solutions and utilizing data analytics plays a crucial role in optimizing inventory levels. These technological tools not only enhance operational efficiency, but they also automate many tedious processes. They provide real-time visibility into stock levels and order processing, allowing businesses to respond quickly to changes in demand. By carefully analyzing this data, small businesses can make informed decisions that help prevent the pitfalls of overstocking or understocking, both of which can tie up valuable resources or lead to stockouts.

It is indeed encouraging to see that small businesses could harness these strategies to navigate inventory constraints successfully. By embracing technology, cultivating a customer-focused approach, and investing strategically in inventory management, small businesses can differentiate themselves from their competitors. These efforts not only equip them to handle current challenges but also foster the development of strong, lasting relationships with customers.

Ultimately, the implementation of these strategies not only enhances customer loyalty but also promotes positive word-of-mouth recommendations. These values are vital components contributing to long-term business success and sustainability in a competitive market landscape.

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