



How Distributors Can Combine Human and Artificial Intelligence to Drive Superior Inventory Performance

A Great S&OP Process Drives Customer Satisfaction, Inventory Turns and Sales. But "SMOP" armed with AI is Even Better.

By Ian Heller

Table of Contents

Introduction

The Progression from Manufacturing S&OP to Distribution SMOP

Technology Utilization in Inventory Management

Combining Human Expertise with AI for Optimal Inventory Performance

Implementing a Successful SMOP Process

Conclusion

Introduction

We've seen enormous changes in the landscape of inventory management in wholesale distribution over the past few decades. Many changes were driven by rapid advancements in technology, but the recent unprecedented challenges have contributed to making this the most difficult period in memory in terms of forecasting inventory correctly:

- **COVID:** No one likes to talk about the pandemic anymore, but the crazy and uneven impacts on supply chains were dizzying.
- **Relentless supply chain disruptions:** It's been one crisis after another: a container shortage, followed by intense congestion at major ports, then the Panama Canal ran out of water and terrorists attacked ships in the Suez Canal and the Red Sea.
- **Inflation, inflation, inflation ... and maybe deflation?** It's difficult to forecast demand and set pricing in the best of circumstances; it's a lot harder during spiraling inflation.
- **Interest rate hikes.** Holding inventory is inarguably one of the primary value-added functions of a distributor. When interest rates are high, it's also one of the most expensive.

All this uncertainty has created the conditions for unusual levels of demand volatility. Smart distributors are countering these challenges by instituting or improving their “Sales & Operations Planning,” or its upgraded successor, “Sales, Marketing & Operations Planning” (AKA SMOP). To get even better results, some distributors are enhancing their SMOP processes with artificial intelligence, which can analyze vast amounts of data, identify patterns, and make predictions with a level of accuracy and speed unattainable by human operators alone.



The Progression from Manufacturing S&OP to Distribution SMOP

Sales and Operations Planning (S&OP) and Manufacturing

The history and development of S&OP can be traced back to the 1980s, when manufacturers sought to improve internal coordination to reduce stockouts and excess inventory. The advent of ERPs further advanced S&OP processes because these systems allowed for real-time data analysis, more accurate forecasting, and better integration of various business functions. The focus of S&OP expanded to include collaboration across all departments. Some people call very comprehensive forms of S&OP “Integrated Business Planning” or IBP.

SMOP in Distribution

While S&OP laid the groundwork for cross-functional collaboration primarily in manufacturing, the development of SMOP reflects the unique challenges and opportunities in distribution companies. Distribution companies deal with different challenges, including broader product ranges, more complex supply chain relationships, and direct customer interactions, necessitating a more nuanced approach to planning.

The inclusion of marketing in the planning process acknowledges the critical role it plays in driving demand for some distributors. Unlike manufacturing, where demand might be more stable or tied to fewer variables, distribution is often subject to rapid shifts in customer needs, promotional activities, and seasonal fluctuations. SMOP for distributors extends beyond the internal focus of traditional S&OP by integrating external market insights, customer preferences, and promotional impacts into the planning process.

Distributors that incorporate SMOP enjoy several important benefits; some possible only via the inclusion of marketing.

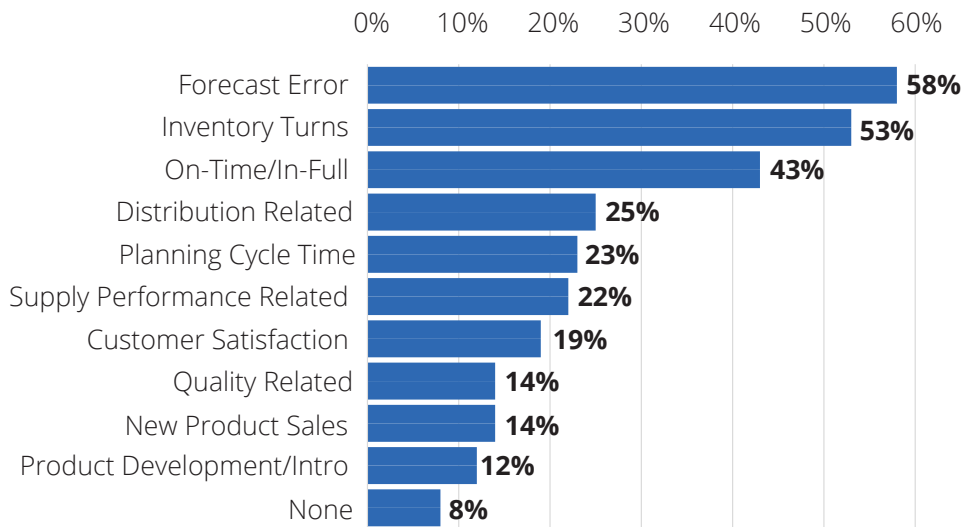
- 1. Demand Alignment:** Synchronizing inventory and supply chain operations with fluctuating market demands, driven by promotional campaigns, seasonal peaks, and changes in customer requirements. This alignment ensures that the right products are available at the right time and the right place, minimizing stockouts and overstock situations.

- 2. Operational Efficiency:** Optimizing supply chain operations and inventory management, while reducing carrying costs and enhancing the ability to respond swiftly to changes in demand or supply conditions. This includes improving procurement, logistics, and distribution strategies to support efficient order fulfillment.
- 3. Cross-Functional Collaboration:** Fostering a culture of collaboration and communication among sales, marketing, and operations teams, ensuring that all departments are aligned on strategic goals and operational plans. This collaborative environment helps break down silos, facilitating a more agile and responsive organization.
- 4. Market Responsiveness:** Enhancing the ability of the distributor to quickly adapt to market changes and customer behaviors by closely integrating marketing insights into the planning process. This responsiveness allows for more effective promotional activities and product positioning, driving sales and customer satisfaction.
- 5. Strategic Decision-Making:** Leveraging comprehensive data analysis and forecasting tools, incorporating insights from sales, marketing, and operations to inform strategic decisions. This includes choosing which products to stock, determining optimal inventory levels, and planning for new product introductions.
- 6. Customer Satisfaction:** Ensuring that the distributor effectively meets customer needs and expectations, leading to higher service levels, customer loyalty, and repeat business. This involves aligning inventory and logistical capabilities to deliver exceptional service, even during peak demand periods or promotional events.
- 7. Financial Performance:** Yielding improved working capital performance by balancing inventory investment with service level objectives, thereby enhancing profitability and cash flow. This involves making informed decisions about inventory levels, product mix, and resource allocation based on a comprehensive understanding of market demands and operational capabilities.

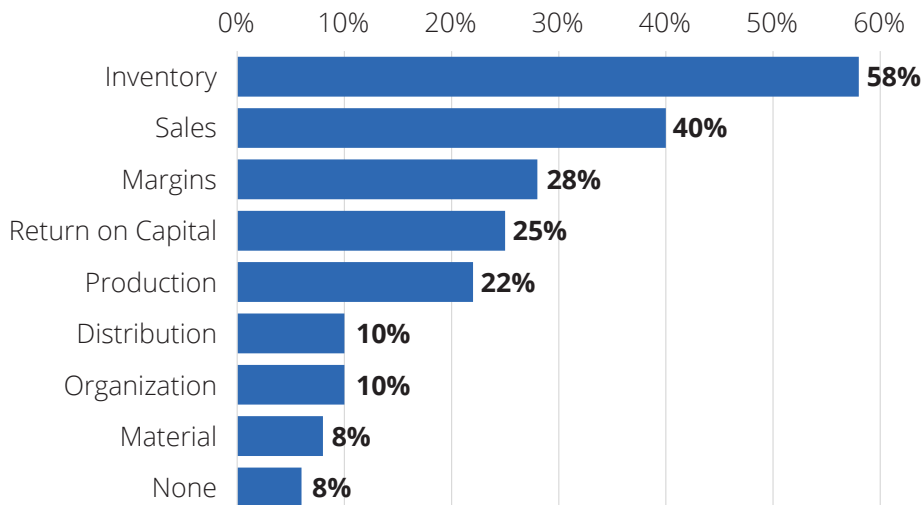
SMOP for distributors is about creating a seamless and dynamic planning environment where sales, marketing, and operations are linked, driving the distributor toward greater efficiency, market adaptiveness, and customer satisfaction. This integrated approach helps distributors navigate the complexities of a challenging market by leveraging their inventory and operational strengths to achieve competitive advantage and sustainable growth.

Nexview Consulting published the results of their Key Topics in S&OP Survey. Companies with S&OP processes reported a variety of operational and financial gains:

Operational Metrics Improved



Financial Metrics Improved



Fifty-eight percent of respondents reported their average improvement was more than 10%, which indicates the potential of S&OP to improve results. We believe that by implementing SMOP – a more comprehensive process than S&OP – distributors can enjoy even more gains.

Technology Utilization in Inventory Management

The role of technology in modern inventory management has become increasingly pivotal. Distributors adopt a range of technologies to aid in inventory management, which, when utilized effectively within the SMOP framework, can drive superior inventory performance:

- 1. ERP Systems:** Enterprise Resource Planning (ERP) systems form the backbone of most distributors' core processes, including inventory management, offering robust modules for forecasting, procurement, order management, and financial tracking. During the SMOP process, ERP systems provide a single source of truth for inventory levels, sales data, and financial metrics, facilitating cross-functional collaboration and decision-making.
- 2. Advanced Forecasting Tools:** These tools use historical sales data, market trends, and statistical algorithms to predict demand. Integrated within the SMOP process, they enable more accurate inventory forecasting, taking into account marketing campaigns, seasonal fluctuations, and promotional activities.
- 3. Warehouse Management Systems (WMS):** WMS technologies optimize warehouse operations, from receiving and storage to picking and shipping. In the context of SMOP, they ensure that marketing and sales initiatives are supported by efficient order fulfillment and inventory accuracy.
- 4. Artificial Intelligence:** AI systems offer advanced capabilities in predicting demand, identifying patterns, and optimizing stock levels. Within SMOP, AI can analyze vast datasets, including market trends, customer behavior, and promotional impacts, to provide nuanced forecasts and actionable insights.

Distributors with state-of-the-art ERPs are in the best position to utilize Artificial Intelligence to optimize forecasting, demand planning, and inventory performance.

Common Mistakes in Technology Integration

Despite the advantages these technologies offer, distributors often encounter pitfalls when integrating new systems:

- 1. Underutilization of Existing Systems:** Before adopting new technology, it's crucial for distributors to fully leverage their existing ERP and WMS capabilities. Many systems come with advanced features that are underused due to a lack of training or awareness.
- 2. Siloed Implementation:** Integrating technology without aligning it with cross-functional processes like SMOP can lead to siloed operations, where the potential for collaborative planning and optimization is lost.
- 3. Over-Reliance on Technology:** While technology can provide valuable insights, distributors must balance this with human expertise. Over-relying on automated forecasts without contextual input from sales, marketing, and operations can lead to misaligned inventory strategies.

Balancing Technology and Process

For distributors, the key to leveraging technology for enhanced inventory management lies in finding the right balance between adopting new tools and optimizing existing systems. This involves:

- Conducting thorough assessments of current technology and processes to identify gaps and opportunities for improvement.
- Ensuring that new technology investments are aligned with strategic business objectives and complement the SMOP process.
- Focusing on employees' training and change management to maximize the adoption and effective use of technological tools.
- Maintaining a holistic view that integrates technology with human expertise, leveraging data and analytics to inform decision-making while recognizing the value of human judgment and experience.

Technology plays a crucial role in modernizing inventory management for distributors, but it's essential to avoid the pitfalls of over-reliance on new software without fully leveraging existing tools and processes. A balanced approach that combines technological advancements with strong SMOP processes and human expertise can drive superior inventory performance and operational efficiency.

Combining Human Expertise with AI for Optimal Inventory Performance

In Sales, Marketing, and Operations Planning (SMOP) for distributors, human intelligence plays an irreplaceable role in interpreting data, making informed decisions, and steering the entire process. While AI and other technologies offer powerful tools for data analysis and automation, the nuanced understanding, experience, and strategic insight of human professionals are critical for contextualizing data, understanding market dynamics, and making decisions that technology alone cannot.

Role of Human Intelligence in SMOP

- 1. Interpreting Data:** Human expertise is essential in interpreting the vast amounts of data generated by AI and other systems. Professionals can identify patterns, anomalies or trends that AI might overlook, especially those influenced by market dynamics, customer behaviors, or external economic factors.
- 2. Making Informed Decisions:** While AI can suggest decisions based on data, humans assess these recommendations within a broader context, considering factors like market conditions, strategic goals, and customer relationships. This holistic view ensures that decisions support long-term objectives, as well as immediate needs.
- 3. Driving the SMOP Process:** Human leadership is crucial in the SMOP process, guiding cross-functional collaboration and ensuring that sales, marketing, and operations are aligned. This requires soft skills such as communication, negotiation, and leadership that AI cannot replicate.

Strategies for Blending Human Expertise with AI

To effectively combine human intelligence with AI capabilities for improved inventory accuracy, cost reduction, and enhanced service levels, distributors can adopt the following strategies:

- 1. Augmented Decision-Making:** Use AI as a tool to augment human decision-making, not replace it. AI can process and analyze data at an unprecedented scale, providing insights and recommendations that humans can review, contextualize, and act upon.

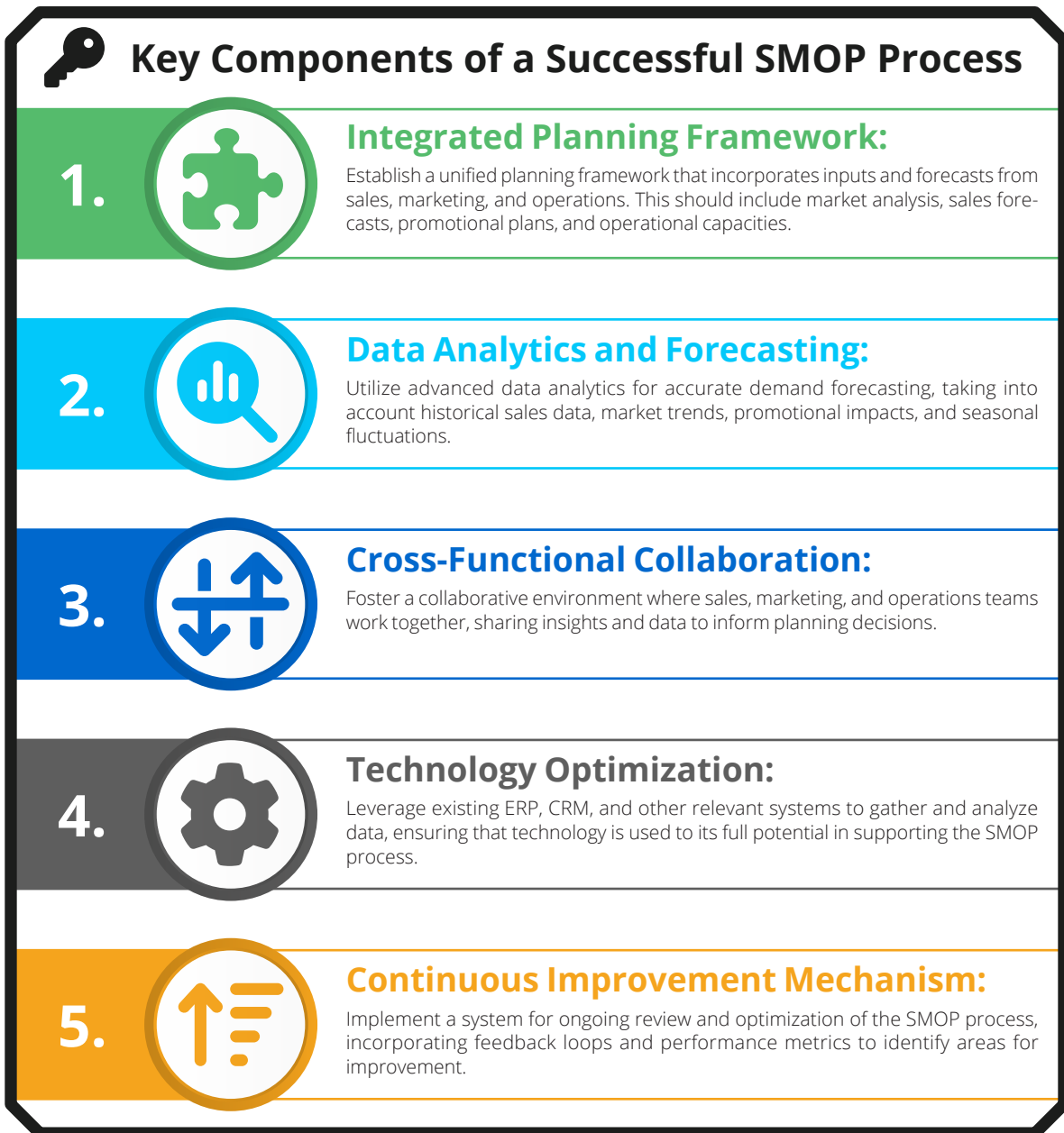
- 2. Cross-Functional Teams:** Establish cross-functional teams that include members from sales, marketing, operations, and IT to ensure a holistic approach to inventory management. This encourages the sharing of insights and the integration of AI tools in a way that aligns with company-wide objectives.
- 3. Training and Development:** Invest in ongoing training for employees to stay abreast of the latest AI tools and technologies. Equipping your team with the knowledge to leverage these tools effectively ensures they remain an asset alongside advancing technology.
- 4. Human-Centered AI Design:** Develop AI systems with a focus on user-friendliness and interpretability, ensuring that non-technical employees can understand and use AI outputs to make informed decisions.

The synergy between human intelligence and AI capabilities is pivotal for the success of SMOP in distribution. While AI offers powerful tools for data analysis and automation, human expertise is essential for interpreting data, making strategic decisions, and driving the process forward. By effectively blending these elements, distributors can achieve superior service levels and inventory performance – simultaneously!



Implementing a Successful SMOP Process

Implementing a successful Sales, Marketing and Operations Planning (SMOP) process involves a strategic approach that integrates the capabilities of sales, marketing, and operations teams, supported by the intelligent use of technology. The goal is to ensure that inventory management is not only responsive to current market demands but also aligned with broader business objectives.



Best Practices for Leading and Executing SMOP

- **Leadership Commitment:** Secure buy-in from senior leadership to ensure that the SMOP process is supported at the highest level, emphasizing its strategic importance to the organization.
- **Change Management:** Develop a thorough change management plan to address concerns and resistance from the team members.
- **Address Data Challenges:** Bad data drives bad decisions. Also, team members will question the validity of the process and recommendations if there is too much error in the data.
- **Cross-Functional Teams:** Establish cross-functional teams that include representatives from sales, marketing, operations, and IT. Be sure to include employees who interact with customers every day. This is also a great opportunity to give rising stars more exposure and experience.
- **Clear Communication:** Maintain open and transparent communication channels across all departments involved in the SMOP process. Regular meetings, shared dashboards, and collaborative platforms can facilitate this communication.
- **Defined Roles and Responsibilities:** Clearly define the roles and responsibilities of each team and team member involved in the SMOP process. This clarity helps to ensure accountability and streamline the execution of tasks.
- **Training and Development:** Provide ongoing training and development opportunities for team members to enhance their skills in data analysis, forecasting, and the use of technological tools.
- **Defined Goals and Measurements:** The SMOP team needs quantitative objectives and clear measurement data that is continually tracked and communicated.

Implementing a successful SMOP process requires a strategic blend of cross-functional collaboration, advanced data analytics, clear communication, and the effective use of technology. By following these best practices and focusing on continuous improvement, distributors can enhance their inventory management, reduce costs, and improve service levels, driving overall business success.

Case study examples demonstrating the impact of a well-coordinated marketing department on inventory planning

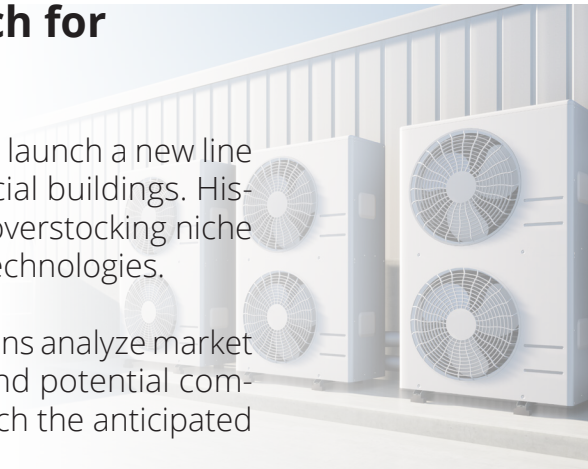
Here are some hypothetical examples based on industry best practices and the principles discussed earlier regarding the integration of marketing into Sales, Marketing, and Operations Planning (SMOP). These examples illustrate how a well-coordinated marketing department can significantly impact inventory planning, operational efficiencies and customer satisfaction.



Case Study 1: HVAC System Launch for Commercial Buildings

Background: An HVAC distributor is preparing to launch a new line of energy-efficient systems tailored for commercial buildings. Historically, the company has faced challenges with overstocking niche products and underestimating demand for new technologies.

SMOP Integration: Sales, marketing and operations analyze market trends, regulatory changes, weather forecasts and potential commercial needs, ensuring that inventory levels match the anticipated demand from business customers.



Strategy:

- **Target Market Analysis:** Marketing conducts in-depth research on commercial building trends, energy efficiency standards, and potential retrofit markets.
- **Coordinated Launch Plan:** The team aligns the product launch with targeted B2B marketing campaigns, trade shows, and direct outreach to facility managers and commercial contractors, synchronizing with inventory procurement.
- **Feedback and Adaptation:** Post-launch, the distributor analyzes sales data and customer feedback to adjust inventory levels and refine the product offering based on real-world application and performance.

Impact:

- **Optimized Inventory Levels:** The distributor avoids overstocking specialized units by aligning inventory with verified commercial interest and pre-launch orders.
- **Increased Market Share:** Effective targeting and timing of the launch to coincide with industry needs lead to a strong market entry and increased sales.
- **Customer-Centric Solutions:** Feedback loops allow for rapid adjustment to product offerings, enhancing long-term relationships with commercial clients.



Case Study 2: Electrical Supply Chain for Infrastructure Projects

Background: An electrical distributor serves large infrastructure projects, which require precise coordination of materials for timely project execution. Variability in project timelines and specifications often leads to inventory mismatches.

SMOP Integration: The sales department works closely with project managers, contractors, and the operations team to forecast demand based on upcoming projects, integrating data into inventory planning.

Strategy:

- **Project Pipeline Analysis:** Marketing and sales collaborate to maintain a pipeline of upcoming projects, analyzing the scale and requirements of each to forecast demand.
- **Dynamic Inventory Management:** The distributor uses this data to adjust inventory levels dynamically, ensuring availability of critical components like transformers, conduits, and wiring systems.
- **Partner Collaboration:** By working closely with suppliers and contractors, the distributor enhances its ability to respond to changes in project scopes and schedules, minimizing excess inventory and ensuring project success.

Impact:

- **Project Efficiency:** Aligning inventory with confirmed and potential projects reduces delays caused by material shortages.
- **Strategic Stocking:** The distributor can strategically stock high-demand and specialized items, reducing lead times and enhancing service levels for project clients.
- **Supply Chain Resilience:** Close collaboration with the supply chain enhances the distributor's ability to adapt to project changes, improving overall resilience and reliability.



Case Study 3: MRO Supply Optimization for Manufacturing Facilities

Background: A distributor specializing in MRO supplies for manufacturing facilities struggles with predicting the fluctuating demand for various maintenance, repair, and operations supplies, leading to overstocking and stockouts.

SMOP Integration: Operations, sales and marketing leverage data about industry trends, plus direct feedback from manufacturing clients to improve inventory forecasting and management.

Strategy:

- **Industry Trend Analysis:** Marketing analyzes manufacturing industry trends, including seasonal maintenance cycles and technological advancements, to predict demand.
- **Client Engagement Programs:** Through workshops, webinars, and direct consultations, the distributor gathers insights on client-specific needs and maintenance schedules.
- **Adaptive Inventory Strategy:** Based on aggregated data and client feedback, the distributor adjusts its inventory strategy, focusing on high-demand and critical MRO items for the manufacturing sector.

Impact:

- **Reduced Inventory Costs:** Tailored inventory to the specific needs and schedules of manufacturing clients reduces overstock and minimizes stockouts.
- **Enhanced Customer Service:** By aligning supply with actual demand, the distributor ensures high availability of essential MRO supplies, enhancing client operations and satisfaction.
- **Proactive Solution Provisioning:** The distributor can proactively offer solutions for anticipated industry changes or maintenance needs, positioning itself as a strategic partner to manufacturing clients.



These hypothetical case studies illustrate how B2B distributors in sectors like HVAC, electrical supplies, and MRO can significantly benefit from integrating marketing insights into their inventory planning processes, leading to more efficient operations, better customer service, and enhanced strategic positioning in their respective markets.

Conclusion

Combining human expertise with AI in Sales, Marketing, and Operations Planning (SMOP) is the key to achieving superior inventory performance in today's volatile market.

Keep these takeaways in mind:

- **Embrace SMOP:** Implement a robust SMOP process that integrates sales, marketing, and operations for holistic planning and decision-making.
- **Leverage technology:** Utilize advanced tools like ERP, forecasting software, and WMS to optimize inventory management and gain data-driven insights.
- **Don't over-rely on technology:** Remember, human expertise remains crucial for interpreting data, making informed decisions, and driving the SMOP process.
- **Invest in AI, but strategically:** Focus on using AI to augment human decision-making, not replace it. Ensure user-friendly and interpretable AI systems.
- **Foster collaboration:** Establish cross-functional teams with representatives from sales, marketing, operations, and IT to ensure a holistic approach.
- **Continuously improve:** Regularly review and optimize your SMOP process, incorporating feedback loops and performance metrics to identify areas for improvement.



Recommended Next Steps

3. Develop a technology roadmap:

Identify and implement the right technology solutions to support your SMOP process.

1. Conduct a SMOP assessment:

Evaluate your current planning process and identify areas for improvement.

2. Invest in training:

Equip your team with the skills and knowledge to leverage SMOP and AI effectively.

4. Establish clear roles and responsibilities:

Define ownership and accountability within your SMOP teams.

5. Promote open communication:

Foster a culture of collaboration and information sharing across departments.

By following these recommendations, distributors can harness the power of SMOP and AI to achieve **superior inventory performance, enhanced customer satisfaction, and increased profitability** in the ever-changing market landscape.

About the Author



Ian Heller has more than 30 years of experience executing marketing and e-business strategy in the wholesale distribution industry. He has written and spoken extensively on the impact of digital disruption on distributors.

Ian entered the distribution industry as a truck unloader at a Grainger branch while in college. He eventually became Vice President of Marketing there and has since held senior executive roles at GE Capital, Corporate Express, Newark Electronics and HD Supply. Ian most recently served as President and COO for Modern Distribution Management, a specialized information and analytics firm serving the wholesale distribution industry.

Ian earned a BA in History from Roosevelt University and an MBA from the Kellogg School of Management at Northwestern University, where he was elected commencement speaker by his classmates and won the Dean's Distinguished Service Award.

DISTRIBUTION STRATEGY **GROUP**