

Navigating the AI Landscape in Supply Chain Planning: Insights from StockIQ



Introduction

Artificial Intelligence (AI) is no longer a futuristic concept for supply chain teams. It's here now, reshaping how businesses forecast, plan, and respond. A recent industry index found that AI in the supply chain has become standard for competitive distributors. Surveys show broad enthusiasm: over half of operations and supply chain leaders are already using AI tools to mitigate disruptions. Yet amid the excitement, many mid-sized distributors and light manufacturers still struggle to capture tangible value. In fact, 74% of companies have yet to see real ROI from their AI initiatives. There is a clear gap between the hype and the reality of AI in supply chain planning.

This white paper offers a pragmatic guide to bridge that gap. We draw on StockIQ's internal supply chain know-how and data science expertise, as well as broader industry research to help mid-market distributors and light manufacturers navigate the AI landscape. The goal is to cut through buzzwords and focus on practical, actionable takeaways. How can AI actually improve forecast accuracy, inventory efficiency, or service levels? What's realistic today versus pure hype? How should you implement AI in your operations, and how do you evaluate the myriad solutions on the market? We address these questions in the following chapters:

Chapter 1:

Understanding AI in Supply Chain Planning – Key concepts and why AI matters for supply chain planners.

Chapter 2:

Separating Hype from Reality – Common myths vs. the real-world state of AI in supply chain.

Chapter 3:

The Role of AI in Enhancing Supply Chain Efficiency – Concrete benefits and use cases delivering ROI.

Chapter 4:

Implementing AI in Your Supply Chain – Strategies for successful adoption, from data to people.

Chapter 5:

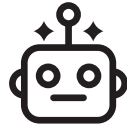
Evaluating AI Solutions for Your Business – How to choose the right AI tools and partners.



Chapter 1

Understanding AI in Supply Chain Planning





Chapter 1: Understanding AI in Supply Chain Planning

Why has AI become such a hot topic in supply chain planning?

In short, because traditional planning methods are straining under modern complexities. Supply chains in 2025 are marked by rapid globalization, shorter product life cycles, and frequent disruptions. Planners face global volatility (pandemics, geopolitical shocks, climate events), an explosion of product SKUs (the average company manages over 10,000 SKUs), and relentless cost and service pressures. In this landscape, a more robust and scalable planning & forecasting tool is quickly becoming a necessary capability to keep up. Legacy tools like basic spreadsheets or rule-of-thumb forecasting simply can't dynamically adjust to such complexity.

One core challenge is demand forecasting. Demand patterns vary widely across products and markets: some products have stable, predictable sales, others are highly volatile or seasonal, and new product launches have no historical data at all. Traditional forecasting struggles to handle these different scenarios simultaneously. One large order or an unanticipated trend can throw off forecasts, leading to stockouts or excess inventory. Simple rolling averages or forecasting in Excel leads to wide margins of error. AI offers a path to better manage this complexity. By analyzing vast datasets (historical sales, seasonality, promotions, even external signals like market indicators or weather) and continually learning, AI-driven forecasting models can discern patterns and relationships that humans might miss. This means predicting demand spikes or lulls with greater accuracy, adjusting forecasts when abnormal events occur, and improving responsiveness to change.

Crucially, when you think about AI in supply chain planning, it is not about single technology but a spectrum of capabilities. It includes machine learning algorithms that find patterns in data, optimization techniques that prescribe decisions, and even newer generative AI and

“agentic AI” that can autonomously suggest or take actions.

Table 1 summarizes key AI/ML application areas in supply chain planning and what they do:

These applications illustrate how AI transforms supply chain planning from a reactive process to a proactive, predictive one. Instead of constantly firefighting (expediting orders, scrambling to fulfill unforecasted demand), companies can leverage AI to anticipate problems and optimize decisions before issues arise. AI systems can identify subtle early warning signals – a slight uptick in demand in one region, a weather event threatening a supply route – and recommend actions in advance. Planners armed with these insights can act before costs mount or service suffers.

It's important to demystify AI: despite the buzz, most AI used in supply chain planning today is a form of “narrow AI.” Narrow AI refers to systems designed for specific tasks (like forecasting or route planning) using defined data sets, as opposed to a human-like general intelligence. These tools excel at deep analysis and pattern recognition in their domain, but they don't “think” broadly or autonomously run your supply chain in full (despite what some vendors may imply). For example, a forecasting AI might be extremely good at predicting sales for a product family, but it won't automatically decide marketing strategies or business priorities. Most decisions still require human business context.

Human judgment remains a vital part of the equation. The most effective approach is pairing AI with human intelligence – “AI + IQ.” StockIQ emphasizes this philosophy: let AI do what it does best (crunching data, detecting patterns, making fast calculations) and let humans do what they do best (strategic thinking, context-based decision making, handling exceptions). In a supply chain planning context, AI can generate a statistically optimal demand plan, but human planners review it against real-world factors (a customer's relationship history, an upcoming promotion only they know about, etc.) and make the final call. The planner's expertise and the AI's analysis together yield better results than either alone. We'll delve more into this human-machine partnership in the next chapters, especially as we separate inflated expectations from practical reality.

Table 1: Key AI/ML application areas in supply chain planning and what they do:

Demand Forecasting:	AI can churn through historical sales, market indicators, social media trends, and more to forecast demand with unprecedented accuracy. It continuously learns from new data and can provide not just a single number but probabilistic forecasts (e.g. 80% confidence ranges). This helps planners anticipate demand shifts earlier and with more confidence. For example, AI-based forecasting models can alert you to likely demand surges for certain SKUs weeks in advance, so you can adjust production or ordering proactively.
Inventory Optimization	AI helps maintain the right stock levels at the right locations. By analyzing real-time sales and inventory data, algorithms can compute optimal safety stock levels and replenishment frequencies for each item and warehouse. It accounts for variations in lead times, demand variability, and service level targets better than static rules. The result is lower carrying costs (reduced excess stock) while avoiding stockouts, freeing up working capital without sacrificing customer service.
Data Analysis and Alerts Management	Gen AI can rapidly synthesize information across key planning reports, dashboards, and data sources. Instead of requiring planners to manually dig through multiple systems, AI summarizes trends, highlights anomalies, and explains the underlying drivers so teams can get to the “why” faster. It can also trigger contextual alerts when critical thresholds are crossed or when patterns indicate emerging risks or opportunities. The result is faster insight generation, reduced manual analysis time, and more effective and accurate decision making.
Supplier Risk Management	AI can continuously monitor supplier performance and risk signals (financial health, delivery performance, news reports). This enables proactive identification of supplier issues. For instance, a machine learning model might flag that a supplier is increasingly late on deliveries or that there’s political unrest in a supplier’s region, prompting you to source alternate options. In essence, AI helps procurement teams get ahead of supplier disruptions and choose partners more wisely.
Automating Repetitive Tasks	Planners and supply chain managers spend significant time on manual, repetitive tasks – generating purchase orders, updating spreadsheets, adjusting parameters. AI and robotic process automation (RPA) can handle many of these routine chores. For example, an AI-driven system might auto-generate purchase orders when inventory hits a reorder point or auto-approve orders that meet certain criteria. This automation frees up human planners to focus on more strategic activities like collaborating with sales or negotiating with suppliers.

Chapter 2

Separating Hype from Reality





Chapter 2: Separating Hype from Reality

AI + IQ – the Human Factor: In StockIQ’s framework, humans and AI play complementary roles. Humans provide strategic judgment, business context, risk tolerance, relationship management, and final decisions. AI provides pattern recognition, processing speed, consistent analysis, precise predictions, and scalability. Rather than replacing planners, effective AI acts as a decision-support partner. Successful supply chain AI initiatives recognize that technology is an enabler for human experts, not a substitute.

Amid the AI buzz, it’s easy to develop unrealistic expectations. This section takes a hard look at common myths versus the reality of AI in supply chain planning. By dispelling these misconceptions, you can approach AI with a clear-eyed understanding of what it can and cannot do for your business today.



Myth 1:

“Everyone else is getting huge AI benefits, we’re falling behind.”

The fear of missing out is powerful, fueled by breathless headlines of AI revolutions. Reality is more sobering: while AI adoption is widespread, most companies struggle to achieve significant value. According to Boston Consulting Group, only about 26% of companies have moved beyond pilots to generate tangible AI benefits, while the other 74% are stuck with little to show for their efforts. Many firms have dabbled in AI but haven’t scaled it effectively in their operations. In distribution and manufacturing, plenty of mid-sized companies are still experimenting. The takeaway: you’re not as “behind” as hype might make you think, and rushing in without a solid plan (just because “everyone is doing it”) often leads to disappointment. It’s better to learn from others’ early mistakes and proceed strategically (we’ll discuss how in later chapters).



Myth 2:

“AI will replace supply chain planners.”

This narrative has been floating around – that fully autonomous, self-driving supply chains are imminent and human planners will become obsolete. In reality, current AI technology is nowhere near replacing human judgment in supply chain planning. Even the most advanced systems require humans to set policies, handle exceptions, and make value-laden decisions. As one Gartner study noted, by 2028 intelligent robots may outnumber workers in some settings, but they will complement rather than replace humans in roles like manufacturing and logistics. The human element – creativity, understanding of nuance, relationships with customers and suppliers – remains irreplaceable. Leading adopters actually invest heavily in upskilling their workforce to work alongside AI, not in cutting headcount. StockIQ’s approach (AI + IQ) explicitly keeps humans in the loop: AI automates the grunt work and provides recommendations, but planners and managers still set the guardrails and approve critical decisions. Far from making planners irrelevant, AI can elevate their role to be more strategic (focusing on exceptions, improvement, and cross-functional coordination).



Myth 3:

“A big general AI (like ChatGPT) can solve our supply chain planning out of the box.”

With the rise of generative AI, some assume these models can be dropped into supply chain use cases and perform miracles. The truth: “frontier” generative models are powerful for some tasks (like language or code generation) but often poor at specialized supply chain tasks like demand forecasting or inventory optimization. ChatGPT, for instance, is trained on internet text – it has no inherent understanding of your company’s sales history or SKU behaviors. One StockIQ webinar put it bluntly: frontier models fail at specialized tasks without context-specific data. We can’t simply ask a generic AI to manage inventory and expect good results, because effective planning requires granular, company-specific data and models. The AI that forecasts your demand needs to be trained on your sales patterns, seasonality, lead times, etc. – a generic model has none of that context.

This is why narrow AI models purpose-built for supply chain outperform “one-size-fits-all” AI solutions in this domain. Many vendors tout AI features, but if those models aren’t trained on relevant data (or are “black boxes” you can’t tune), they often underdeliver. Successful case studies almost always involve tailoring AI to the business’s own data and processes.



Myth 4:

“We can plug in an AI system and immediately get ROI.”

Some sales pitches make AI sound like a magic box – install this software and watch your metrics improve overnight. In reality, capturing value from AI takes careful implementation and change management. A striking statistic from [PwC’s 2025 Digital Operations](#) survey: 92% of companies said their tech investments (like AI) hadn’t met expectations. The reasons often weren’t the algorithms themselves, but rather data issues, integration challenges, and organizational resistance. If your data is siloed or dirty, your AI predictions will be unreliable (“garbage in, garbage out”). If your team doesn’t trust or understand the AI tool, they simply won’t use it consistently – a common issue when AI outputs are opaque. Indeed, one major hurdle is trust: planners may be skeptical of an AI’s recommendations if they don’t know how it arrived at them. Companies that succeed typically start small, prove the AI’s value in one use case, and involve end-users early to build confidence. They also align AI projects with business goals (not doing AI for AI’s sake). The message: AI is not a silver bullet – it requires the right data foundation, user buy-in, and often some process adjustments to truly pay off. We will discuss these requirements in Chapter 4 on implementation.



Myth 5:

“Our organization isn’t ready for AI.”

On the flip side, some mid-sized firms feel AI is only for tech giants or those with big budgets and data science teams. While it’s true that AI was historically complex and expensive, today’s landscape has lowered the barriers significantly. There are cloud-based AI solutions and user-

friendly platforms (StockIQ’s among them) designed for mid-market companies. You don’t need a PhD in machine learning on staff to start leveraging AI. Many AI tools come embedded in software or as software-as-a-service (SaaS) offerings. Additionally, external consultants and vendors can fill the talent gap – in the PwC survey, 32% of companies were using external experts to help deploy AI, and nearly half of those found it very effective. The real readiness factors are less about company size and more about having executive support, willingness to invest in data quality, and an openness to

change. In [Epicor’s global study](#) of 1,000 supply chain professionals, over 56% reported high AI readiness and were scaling AI across operations. These “ready” organizations weren’t necessarily the largest, but they shared a commitment to digital transformation and workforce training. The bottom line: AI is accessible to mid-sized distributors and manufacturers – you may actually risk falling behind if you ignore it – but you should approach it as a business improvement project, not just an IT project or trend to tick off.

To sum up, separating hype from reality means being optimistic but grounded. Yes, AI can significantly improve supply chain performance (as the next chapter will show with real examples). But success comes from strategic implementation: focusing on use cases that matter, ensuring data and people are prepared, and choosing the right tools for the job. Companies that navigate this thoughtfully are starting to pull ahead. As [Knut Alicke](#), author and leader of McKinsey’s Supply Chain Executive Academy quipped, people tend to overestimate the impact of new tech in the short term and underestimate it in the long term. AI in supply chain planning is likely on that trajectory – the initial hype is giving way to a more realistic appraisal, but over the longer term, the impact will be transformative. The key is to not get lost in the AI madness (the buzzwords, the grandiose claims) and instead keep focus on real business outcomes. In the next chapter, we shift from pitfalls to possibilities: what is AI doing today to enhance efficiency and ROI in supply chain planning?

Chapter 3

The Role of AI in Enhancing Supply Chain Efficiency





Chapter 3: The Role of AI in Enhancing Supply Chain Efficiency

After tempering expectations, it's time to look at the very real benefits AI can deliver when applied correctly in supply chain planning. For mid-sized distributors and manufacturers, these benefits aren't theoretical – they translate to dollars saved, revenue gained, and hours of manual work eliminated. This chapter highlights several key areas where AI is enhancing efficiency and provides examples and data points from actual deployments.

First and foremost, improving forecast accuracy is one of the clearest paths to ROI in supply chain planning. Better demand predictions cascade into multiple gains: you carry less excess inventory, experience fewer stockouts (lost sales), and can optimize production and purchasing schedules. StockIQ's experience has shown that applying AI to demand forecasting yields tangible improvements. For example, an AI module for automated anomaly detection can identify and adjust for outliers in sales data – those one-time large orders or promotion spikes that would otherwise distort your forecast. This has been shown to improve forecast accuracy by 15–30% on volatile SKUs by filtering out noise. One StockIQ client in the wine & spirits distribution sector saw substantial results from such AI-driven analysis. They discovered over \$8 million in excess inventory sitting in their network (tying up capital) and about \$3 million in potential stockout-driven lost sales. By using AI tools to right-size inventory and address the imbalances, they achieved an estimated \$2.7M annual EBITDA impact from reducing carrying costs and avoiding lost sales. These kinds of outcomes illustrate why forecasting and inventory optimization are high-impact targets for AI – relatively small percentage improvements in accuracy can translate to millions of dollars in cost savings and revenue protection for mid-sized firms.

External research reinforces these gains. [McKinsey](#), for instance, found that next-generation AI forecasting systems materially improve forecast accuracy and reduce inventory costs when deployed as part of a broader transformation. Companies can often lower their inventory

levels significantly while improving service levels by using AI for demand sensing and inventory optimization. In other words, you don't have to overstock “just in case” when your predictions are better; you can trust the AI to tell you where you can safely cut inventory buffers versus where you need to position extra stock for critical items. This balance of higher service with less inventory is the efficiency holy grail in supply chain, and AI is helping achieve it.

AI is also transforming daily planning activities by automating routine MRP and order-management tasks that traditionally consume large amounts of planner time. Modern AI-enabled planning systems can automatically generate purchase orders, adjust MRP parameters, and reconcile supply imbalances without manual intervention. This reduces administrative workload while improving responsiveness to real-time demand shifts. [A Capgemini study](#) on AI in supply chains found that companies using AI to automate replenishment and procurement workflows reduced procurement operating costs by up to 15% and cut supply-planning cycle times by up to 25%. One SAP-enabled deployment cited in the report showed that automated MRP exception handling reduced manual touches by 50%, freeing planners to focus on strategic exceptions and supplier negotiations. These results demonstrate that the ROI from AI often comes not only from improved forecasts but also from removing thousands of recurring tasks from planners' daily workload.

Even administrative processes see a boost. Generative AI and automation can handle paperwork and documentation much faster than humans. [One study](#) noted that AI can cut the lead time for producing shipping and customs documents by up to 60%, while also reducing human errors. Think about your own operations: how much time do employees spend compiling reports, filling forms, or copying data between systems? AI can shoulder much of that burden. By automating repetitive tasks (as mentioned in Chapter 1), companies not only save labor hours but also speed up cycle times and improve consistency.

Perhaps one of the more unappreciated benefits of AI is how it can enhance customer service and sales indirectly through better supply chain performance. If AI helps you stay in stock on key products (through better forecasting), your fill rates go up and customers experience fewer backorders. StockIQ's clients have seen higher service levels and even improved customer satisfaction as a byproduct of AI-driven planning improvements. Some

AI applications directly focus on revenue and service – for example, “due-to-buy” alerts use AI to predict when a major customer is likely to reorder and can prompt your sales team to reach out proactively. This increases retention and capture rate by ensuring you don’t miss a reorder window. In essence, AI can help you be more proactive with customers (anticipating their needs) rather than reactive. That kind of responsiveness is a competitive differentiator in distribution.

It’s worth summarizing a few key performance improvements that mid-sized companies are achieving with AI:

Forecast Accuracy Gains: 15–30% improvement on volatile demand patterns (through anomaly detection, models and algorithms that can better predict first sale and SKU end-of-life, demand sensing to incorporate third-party data sources as leading indicators). This leads to better alignment of inventory with actual demand.

Inventory Reduction: 10–20% reductions in inventory investment are common, while maintaining or improving services. Excess stock is systematically identified and eliminated, freeing up working capital.

Service Level Improvement: Fill rates and on-time delivery improve as stockouts are reduced. For example, a predictive model that prevents stockouts on high-volume SKUs can raise fill rates by several percentage points, translating to higher sales and happier customers. AI can also shorten lead times (e.g. via faster document processing or optimized routes), improving overall responsiveness.

Cost Savings and ROI: Many AI initiatives in supply chain boast strong ROI. Cases of 5:1 to 15:1 return on investment are reported when focusing on high-impact areas. StockIQ has observed that for every \$1 spent on its AI-driven planning platform, clients often see \$5–\$15 in measurable value in terms of cost savings and recovered sales. Similarly, McKinsey has noted AI use in logistics and warehousing can yield multimillion-dollar savings as seen in the earlier examples (tens of millions saved through routing AI, etc.).

Workforce Efficiency: AI doesn’t just save money – it saves time. Planner productivity can increase significantly when tedious tasks (data reconciliation, report generation) are automated. One company eliminated manual spreadsheet reconciliation and saw a notable reduction in planning

time and improved employee satisfaction, as planners could focus on more engaging work. Moreover, AI decision support means even less experienced staff can handle more complex planning scenarios with confidence, guided by the AI’s recommendations. This effectively augments your team’s capability, which is valuable in an era where many firms face skill shortages in supply chain roles.

Real-world success stories underscore that targeted AI interventions can yield outsized returns for mid-sized firms. The common thread in these examples is focus: the companies applied AI to specific pain points (forecast error, inventory bloat, logistics delays) and measured specific metrics (e.g. forecast error %, inventory turns, on-time delivery). When AI is purpose-built and integrated into daily planning processes, it becomes a force multiplier for efficiency.

It’s also noteworthy that many of these benefits are particularly salient for mid-market businesses. These businesses often operate on thin margins and have less room for error in inventory and service. They might not have massive IT teams, but they handle complex product mixes and serve demanding customers. For them, AI-driven improvements in forecast accuracy or inventory turns can be game-changing, leveling the playing field with larger competitors. For example, a regional distributor who implements AI to optimize inventory and thereby delivers 98% fill rates with 20% less stock than before has effectively unlocked capital to invest in growth, while keeping customers happy. That’s a strategic win that goes straight to the bottom line.

In summary, AI’s role in supply chain efficiency is to drive smarter, faster, and leaner operations. It achieves what we might call the “triple crown” of supply chain metrics: higher service, lower cost, and improved agility. But realizing these gains is not automatic – it requires proper implementation and organizational alignment. We turn to that topic next. The following chapter will provide guidance on how to implement AI in your supply chain in a way that maximizes the chances of achieving the kind of benefits we’ve discussed, based on lessons learned from both successes and failures in the industry.

Chapter 4

Implementing AI in your Supply Chain





Chapter 4: Implementing AI in Your Supply Chain

Adopting AI in supply chain planning is as much about people and process as it is about technology. This chapter outlines a roadmap for implementation – from building the business case and securing buy-in, to laying the data groundwork, to piloting and scaling AI solutions. The guidance here is geared toward mid-sized organizations that likely don't have unlimited resources, emphasizing pragmatic steps to get started and generate quick wins.

4.1 Develop a Focused Business Case

Successful AI projects begin with a clear understanding of the problem you are trying to solve or the KPI you want to improve. Rather than “we need AI because it's trendy,” start with pain points: Where are your biggest headaches or opportunities in supply chain planning? Is it forecast inaccuracy leading to stockouts and overstocks? Is it manual effort spent on purchasing and expediting? Is it poor visibility into supplier risks? Identify a handful of specific issues and tie them to metrics that the business cares about. For example, if the pain point is frequent stockouts, the relevant metric might be service level or fill rate; if it's excess inventory, the metric could be inventory turns or carrying cost; if it's slow planning cycles, perhaps order lead time or planner hours.

StockIQ recommends a structured approach to build an ROI-focused case for any supply chain software investment, including AI:

Step 1: Define Key Pain Points and Metrics. Articulate the problems (e.g. “inaccurate forecasts causing stockouts and overstocks”) and link them to specific KPIs (forecast error %, stockout rate, inventory days of supply, etc.). Be as quantitative as possible about how the problem manifests (e.g. “stockout rate is 8% on key items, leading to an estimated \$X in lost sales annually”).

Step 2: Establish the Baseline. Measure your current performance on those metrics. This provides a starting point to later quantify improvement. For instance, if your

forecast accuracy (e.g. MAPE) is 60% currently, note that baseline, or if planners spend 10 hours a week on manual reporting, document it.

Step 3: Estimate Potential Impact and Set Targets. Research or work with vendors to determine what improvement is realistic. Look for case studies or benchmarks (from vendors or consulting research) that show, for example, “AI can improve forecast accuracy by 20%” or “inventory turns improved from 3 to 4.5 after implementing advanced planning software”. Use these to model potential gains for your business (keeping assumptions conservative and grounded). If possible, get references from similar companies who have done it – their results lend credibility to your projections. This step is essentially forming the hypothesis: “We believe by implementing AI for XYZ, we can reduce stockouts to 2%, improve fill rate to 98%, and reduce inventory by 15%, yielding \$Y in savings.”

Step 4: Consider Time-to-Value and Resources Required. How long will it take to implement the solution and start seeing benefits? Many modern AI solutions can be deployed in months, not years, but there is still an onboarding period. You'll want to plan for things like data integration, user training, and possibly a phased rollout. It's wise to ask vendors “How soon until we see movement in key metrics?” and “What's the typical implementation timeline and effort?”. For internal buy-in, outline the expected timeline to ROI – e.g. “We anticipate seeing a lift in forecast accuracy within 3-4 months of go-live and full ROI within 12 months.” Notably, a recent [Epicor/Nucleus study](#) found that a majority of companies now expect to see returns from new tech within 6 to 18 months, reflecting a more rapid ROI mindset than in the past. Ensure your plan sets a realistic but reasonably short payback horizon.

4.2 Secure Leadership Buy-In and Cross-Functional Alignment

Implementing AI will likely require changes that span IT, supply chain/planning, maybe finance, and others. It's crucial to get leadership support early on. Present the business case to the executive team, emphasizing how the AI initiative aligns with strategic goals (cost reduction, scalability, customer satisfaction, etc.). If you can frame it as enabling growth or competitive advantage, even better. Having a C-level champion (say, a COO or CFO who is keen on digital transformation) can help unblock resources and signal the importance of the project.

Also involve the end users (planners, supply chain managers) from the outset. These are the people whose daily work will change with the new AI tools. Early involvement helps in two ways: one, they can provide practical insights into system requirements (and identify potential pitfalls); two, they become change agents rather than resistors since they had a hand in shaping the solution. As mentioned in Chapter 2, people often fear new technology will disrupt their jobs. To counter this, be transparent about roles and expectations – communicate that the goal is to augment their capabilities, reduce drudge work, and help them be more effective (not to replace them). Some companies set up an “AI task force” or working group of planners to pilot the tool and give feedback, which is a great practice.

Change management cannot be an afterthought. Training and education are vital to demystify AI for your team. For example, if you’re implementing an AI-driven forecasting module, do training sessions on how the model works in layman’s terms, what the outputs mean, and how planners should use them. Emphasize that while the AI brings new insights, final decisions remain with humans, who provide oversight. This aligns with StockIQ’s AI+IQ philosophy and helps planners trust the system. One finding from McKinsey’s work is that involving veteran planners as mentors in the AI training process can flip skepticism into engagement – those seasoned experts realize their domain knowledge is needed to train and refine the AI, which makes them feel valued in the new process. In one case, a company specifically told its 30-year planning veterans: “We need your expertise to teach the AI, so it can emulate your best practices.” This kind of inclusion made them more curious and willing to experiment with the new tools, rather than feeling threatened.

4.3 Data Preparation – Get Your House in Order

If data is the fuel for AI, many supply chain organizations have low-octane gas or sludge in the tank. Data quality and accessibility is often the single biggest determinant of AI project success. Before (or concurrently with) implementing an AI tool, invest in data cleansing and integration. Ensure you have a solid handle on your key data streams – sales history, inventory levels, bills of material, supplier lead times, etc. Resolve inconsistencies (common SKU codes across systems, standardized units of measure) and fill gaps where possible. [Modern Distribution Management](#) aptly states that “every process must add value in distribution, and the correct application of AI provides that value”, but AI can only add value if it’s fed with reliable information about those processes.

Many supply chains struggle with fragmented data across legacy systems. If that’s your situation, you might need to implement or leverage a data lake or integration layer that pulls data from ERP, WMS, sales systems, etc., into one place for the AI to analyze. Interestingly, the Epicor survey noted that just over 50% of companies have adopted data platforms that connect operational data – and those companies were 1.4 times more likely to have adopted AI, suggesting that integrated data infrastructure often comes hand-in-hand with AI success. Consider this a prerequisite: if you haven’t already, connect your systems and ensure the AI solution can easily access the data it needs.

Don’t neglect data governance and ongoing maintenance. Set responsibilities for who ensures the data stays clean (for example, assign someone to review forecast error reports and correct any anomalies or adjust model parameters). AI models may also require periodic retraining or parameter tuning – decide upfront who will own that process (it could be the vendor, your IT team, or a hybrid). Establishing these data processes early prevents the “model drift” or decay that can happen if an AI system is left unattended for too long.

4.4 Start with a Pilot and Iterate

One of the best practices is to start small with a pilot project before a big rollout. Choose a scope that is manageable but meaningful – for instance, implement the AI forecasting solution for one category of products or one business unit first. This allows you to work out kinks on a smaller scale. Use the pilot to validate the results against your baseline: Did forecast accuracy improve as expected? Are planners actually using the new system? Gather both the quantitative results and qualitative feedback from users.

Be prepared to iterate. Maybe the first model’s recommendations weren’t fully accurate, or users found the interface confusing – these are normal. Work with the vendor to refine the configuration or provide additional training to users. An iterative mindset is important; think of it as continuous improvement. If something doesn’t work as hoped in the pilot, adjust and try again. Many companies do 2-3 cycles of tuning in a pilot phase. For example, a distributor piloting an AI inventory optimization tool might initially see it recommend inventory cuts that planners feel are too aggressive. They might then tweak the service level inputs or add constraints (e.g. never go below X weeks of supply for critical items) and pilot again until the recommendations are both efficient and realistic to execute.

4.5 Prove Value Quickly and Scale Up

Earlier we mentioned that skepticism runs high for new tech – both at the front-line and executive level – so it's important to demonstrate early wins. Design your pilot to produce a measurable improvement that you can publicize internally. For instance, if after 3 months the AI forecasting pilot improved accuracy by 5 percentage points and reduced stockouts by 30%, share that result widely: it builds momentum and buy-in for expansion. Once the value is proven, have a plan ready for scaling to more categories or the entire business. This might involve phasing the rollout by product lines, regions, or functional area.

As you scale, keep an eye on change management. The larger the rollout, the more you need to keep everyone informed and trained. Some companies adopt a “center of excellence” model where a small team of internal experts leads the AI adoption and helps each business unit or site come up to speed, ensuring consistency and sharing best practices along the way.

One strategic consideration: focus on high-impact use cases first, but also keep a long-term roadmap for other AI opportunities. For example, maybe you start with demand forecasting AI. Once that's yielding returns, your next priority could be applying AI to pricing optimization or to warehouse slotting – whatever aligns with your strategic goals. Supply chain AI is a journey; the most advanced firms treat it as an ongoing capability build, not a one-and-done software install. [BCG's research](#) on AI “leaders” finds they achieve outsized returns by continuously expanding AI into core business processes and not settling for one-off improvements. Mid-sized companies can emulate this by creating a multi-year digital roadmap, e.g. Year 1: forecasting and inventory AI, Year 2: procurement optimization AI, etc., with each phase justified by its own business case.

4.6 Leverage External Expertise and Partnerships

Implementing AI can be complex, and you don't have to do it alone. As noted, a significant number of firms turn to external consultants or technology partners to accelerate their AI projects. For a mid-sized distributor, this could mean hiring a supply chain consultant with AI expertise to help choose the right solution and project-manage the implementation. It could also mean relying on the software vendor's services team to configure the system and train your users. There's value in tapping experts who have done this before, especially in avoiding common pitfalls.

When selecting outside help, ensure they understand your industry and scale. A big consulting firm might have tons of AI know-how but could be overkill (and over-budget) if your needs are straightforward. On the other hand, niche consulting firms or your software vendor's success team might offer more targeted knowledge (for example, knowing the typical data issues distribution businesses face). According to PwC's Digital Operations survey, 48% of companies found using external digital/AI consultants to be very effective, as it gave them access to a more digitally ready workforce and skillset than they had in-house. The takeaway: don't hesitate to get help to ensure your implementation is done right the first time.

4.7 Manage Expectations and Iterate to Maturity

Finally, as an implementation tip: manage expectations throughout the organization. AI is not magic, and initial results may be modest before they grow. Avoid over-hyping the project internally; instead, communicate openly about what's going well and what needs improvement. Many companies find that AI implementation is a learning process – you learn more about your own processes and data through the lens of the AI. Embrace that learning. If the AI uncovers that your sales history data has inconsistencies, fix them. If it turns out a certain planning rule is no longer optimal, be willing to change it. In essence, be ready to adapt your business processes to fully leverage the AI's suggestions, not just adapt the AI to your existing processes. This flexibility is what differentiates companies that truly transform with AI versus those that just layer new tech on old ways.

Leaders in AI adoption tend to also invest in upskilling their workforce continuously. They might train planners in basic data science concepts or hire a data analyst in the supply chain team to continually fine-tune models. As AI takes over grunt work, consider how you can elevate your team's roles – perhaps planners become more like analysts or coordinators who manage exceptions and drive improvements.

In conclusion, implementing AI in your supply chain should be approached as a strategic change initiative. By focusing on real business needs, getting your data and team ready, starting small, proving value, and then scaling deliberately, you set the stage for sustainable success. Many mid-sized distributors who follow these steps find that AI becomes an integral part of their operations, driving not just one-time savings but ongoing improvements and innovation. Next, we'll discuss how to select the right AI solutions in the first place – because choosing wisely upfront will make the implementation that much smoother.

Chapter 5

Evaluating AI Solutions for Your Business





Chapter 5: Evaluating AI Solutions for Your Business

With a solid understanding of what you need and how to implement, the question remains: How do you evaluate and choose the right AI solution or vendor? The market is crowded – from large ERP suites touting AI capabilities, to specialist supply chain AI startups, to consultants offering custom AI models. Mid-sized firms must be savvy in evaluating which solution aligns best with their needs, capabilities, and budgets. This chapter provides a framework for evaluation, including key criteria and questions to ask, and how to incorporate third-party validation in your decision.

It's worth noting that you're not alone in prioritizing AI in new solutions. In a [recent survey](#), 64% of supply chain leaders said that having AI/Gen AI capabilities is important or very important when evaluating a new technology solution. In other words, AI has become a significant selection criterion. However, it's crucial to go beyond checking the "AI" box and dig into how a solution's AI works and what value it truly delivers.

1. Relevance to Your Use Cases: Ensure the solution's AI capabilities directly address the pain points you identified. Fancy features are pointless if they don't solve your specific problems. For instance, if your main issue is demand forecasting, does the solution have a proven forecasting engine? If you need inventory optimization, can it handle multi-echelon inventory decisions? Look for purpose-built functionality rather than generic AI. Ask the vendor for concrete examples of how their AI addresses supply chain planning tasks: "How exactly will your AI help reduce my forecast error or improve my fill rates?" The more specific the answer, the better. Beware of vague claims like "our AI will improve your efficiency" without an explanation of mechanisms.

2. Proof of Results (Third-Party Validation): This is a big one – can the provider credibly back up their claims with real results and customer references? Ask for case studies, ROI analyses, or references from clients similar to you (similar industry, size, complexity). If a vendor says "we

improve forecast accuracy by 20%", there should be a case study or reference client to verify that. Similarly, seek benchmarks: some vendors might share aggregate stats like "our average customer saw 15% inventory reduction in the first year."

3. Domain Expertise & Purpose-Built AI: One key question: "Is the AI **purpose-built for supply chain planning, or is it a generic AI repackaged as 'supply chain AI'?" Solutions that were designed specifically for distribution/manufacturing planning typically have data models and algorithms tuned to that context (e.g. seasonality, BOM structures, lead time variability). In contrast, some software might just bolt on a general machine learning tool that isn't fine-tuned. StockIQ, for instance, emphasizes having proprietary in-house models trained on supply chain data, focused on use cases that actually matter to planners. That focus can mean better performance and usability. When talking to vendors, ask about the origin of their AI tech: Did they develop it with supply chain scientists? Do they have data scientists who understand inventory and demand? Or are they using a third-party AI platform? The answers will tell you a lot about how much you can expect the tool to "understand" your business context.

4. Transparency and Explainability: This criterion is often overlooked but is crucial for user adoption. Does the AI function like a "black box" or does it provide explanations for its recommendations? Planners will trust an AI system more if it can show reasoning (e.g., "forecast increased because a similar product launch had a sales spike last year" or "recommended order = 500 units because we see a stockout risk in 2 weeks"). During demos, ask to see how the system presents its outputs. Some solutions have great visualizations and "reason codes" for forecasts; others might just output numbers. Gartner predicts that by 2028 a quarter of supply chain decisions will be made by AI, but importantly, those need to be understandable to humans. An explainable AI is also easier to fine-tune (you can spot if a certain factor is skewing results incorrectly).

5. Integration and Data Compatibility: Evaluate how the solution will integrate with your existing systems (ERP, WMS, etc.). Does it offer standard connectors to common ERPs like Oracle, SAP, Microsoft Dynamics, NetSuite, Infor, etc.? StockIQ, as an example, lists integrations with popular ERPs which can accelerate deployments. You'll want to know what it takes to feed your data in and get data out (for instance, feeding forecasts back into your ERP). If a solution has robust APIs or existing integration

templates, that's a plus. Don't underestimate the effort of integration – if a vendor glosses over it, probe deeper (“How will you get our last 3 years of history loaded and keep daily sales synced? Who is responsible for that data pipeline?”).

6. Time to Implement and Support Model: As mentioned earlier, time-to-value matters. Ask the vendor, “What is a typical implementation timeline for a company of our size?” and “What resources do we need on our side for implementation?”. A good vendor will provide a detailed plan. Also clarify the support model: will you have a dedicated account manager or customer success rep? What training is provided? Is support 24/7 (especially if you operate across time zones)? Mid-sized firms often benefit from vendors that provide a high-touch support approach, essentially acting like a partner in your success rather than just a software supplier. If the vendor has consulting or data science services, consider if you'll need those (for example, to tweak models or develop custom features).

7. ROI and Pricing: Ultimately, you need the solution to be cost-effective. Review the pricing model – is it subscription, and if so is it per user, per site, or based on data volume? Calculate a rough total cost of ownership for 3-5 years, including licenses, implementation fees, hardware (if any), and internal costs. Then compare that to the benefits you expect (from your business case). Also ask if the vendor offers any ROI guarantee or trial period. Some newer AI companies might do a pilot project for a fixed fee to prove value before you commit long-term. While not always available, it doesn't hurt to ask. A vendor who is confident in their ROI may have reference metrics like “average payback period for our clients is 10 months”; ask if they have such data.

8. Flexibility and Scalability: Consider if the solution can grow with you. Maybe today you mainly want demand planning help, but next year you might want to optimize supplier ordering or integrate external data (like market indices or weather) into forecasts. Can the system accommodate that? For instance, can it ingest external data feeds easily (some AI platforms tout this ability to enrich forecasts with things like point-of-sale data or economic indicators)? Also, if your business grows or changes (new product lines, acquisitions), is the system flexible to adapt? A cloud-based solution typically scales better in volume, whereas an on-premise might need hardware upgrades.

9. Human Factor – User Experience: A fancy AI engine is useless if the end users find the software clunky or hard to use. Pay attention to the user interface and experience during demos. Planners are busy; they need intuitive dashboards and easy-to-understand outputs. Features like dashboards that highlight exceptions (e.g., “these 5 items need attention today”) or mobile access might be very useful. Also consider if the tool allows for human overrides and inputs easily. Planners will always want the ability to adjust forecasts or orders based on their judgment – how does the system handle that? Ideally, it should log overrides and perhaps learn from them over time. User experience might be somewhat subjective, but if possible, have the actual planners on your team test-drive a demo or trial. Their feedback (“I like how it shows the prediction intervals” or “It's confusing to adjust the order quantity”) can be decisive.

10. Vendor Viability and Vision: Finally, evaluate the vendor company itself. Are they financially stable? (You don't want your AI provider going out of business or stagnating.) What's their product roadmap for AI features? The field is evolving quickly – you want a partner who will keep you at the forefront. For example, do they plan to incorporate new advancements like generative AI or agentic AI capabilities? A strong vision (and R&D investment) from the vendor means the tool will improve over time and you'll get updates that keep you current.

When evaluating against these criteria, create a scorecard to compare vendors side by side. Weight the factors according to what matters most to you. For example, if you lack internal data science staff, vendor support and ease-of-use might be weighted higher. If you have very unique processes, flexibility might be weighty. Bring in cross-functional evaluators – IT can assess integration, end users assess UI, finance/execs assess ROI.

During the selection process, don't shy away from asking tough, detailed questions. For example, “What algorithms does your forecasting engine use? Can it model seasonal indices at a weekly level?” or “How do you handle a new product with no history?” or “Show me how the system would respond if a major supplier's lead time doubled unexpectedly.” The quality of answers and demos will reveal the product's maturity and the vendor's expertise. A vendor who answers in clear, practical terms (“We handle new products by using analogies to similar items and incorporating sales input – here's an example”) gives confidence that they know supply chain planning, whereas a vendor who only spews jargon might be covering up gaps.

Lastly, consider a pilot or proof-of-concept (POC) as part of evaluation if the decision is high stakes. Some vendors will run your data through their system for a subset and show you the outputs. This can be extremely illuminating – you can see forecast results or inventory recommendations on your actual products. It's often the best way to judge the potential impact. Even if a formal pilot isn't possible before purchase, talk to references in detail – ask them to quantify the before-and-after metrics.

In summary, evaluating AI solutions requires balancing vision and reality: you want a solution that's innovative and AI-driven, but it must deliver real operational value and fit your business. By focusing on the above criteria – from proven results to user experience to ROI – you can cut through marketing hype and select a platform or partner that will set you up for success. The right choice will make all the difference in how smoothly your AI initiative runs and the outcomes you ultimately achieve.

Conclusion

AI in supply chain planning is not a magic wand – but it is a powerful tool that, when wielded wisely, can yield transformative results. For mid-sized distributors and light manufacturers in North America, the past few years have shown that ignoring AI is no longer a viable strategy. The competitive gap is widening between those who leverage AI (and the efficiency, agility, and insights it brings) and those who stick to traditional methods. As one industry report put it, AI isn't coming – it's already here. The question now is how to navigate this new landscape effectively.

This white paper has provided a comprehensive guide to doing just that: understanding what AI really means for supply chain planning (Chapter 1), staying grounded amidst the hype (Chapter 2), recognizing where AI can drive genuine efficiency gains (Chapter 3), implementing AI projects with a high chance of success (Chapter 4), and evaluating solutions to find the right fit (Chapter 5). Throughout these chapters, a few core themes emerged:

AI + IQ – the Synergy of Human and Artificial Intelligence:

The most successful companies are those that blend the strengths of AI and humans, not those that attempt to replace one with the other. We saw that humans bring context, judgment, and strategic thinking, while AI brings speed, scale, and analytical rigor. Embracing this partnership can supercharge your planning process.

Conversely, treating AI as an autonomous black box or, on the flip side, being too hesitant to trust it – either extreme – will limit its value. The sweet spot is a collaborative workflow where AI handles the heavy analytics and routine decisions, and humans handle exceptions, relationship management, and strategy. Keep this philosophy central as you adopt AI. It will guide how you design processes and roles in an AI-enabled planning team.

Focus on Real Outcomes, Not Technology for Technology's

Sake: Every step of our discussion highlighted tying AI efforts to business value – whether it's reducing forecast error, increasing EBITDA, cutting lead times, or all of the above. This helps ensure you invest in the right areas and also helps sell the initiatives internally. We also discussed numerous external statistics and case studies that you can cite in your own internal pitches – for example, knowing that BCG found only 26% of companies have achieved tangible AI value helps underscore the need for doing it right; or that Epicor's study showed over 90% of AI-ready firms are investing in AI-specific roles might justify hiring a data analyst on your team. Ground your decisions in data and evidence, just as you expect your AI to be data-driven.

Start Small, Learn Fast, Scale Boldly: Many examples illustrate that AI adoption is a journey. It's perfectly fine to start with a narrow pilot (in fact, it's recommended). The key is to learn from that pilot and then scale up once you've proven the value. Companies that treat the pilot as an experiment (with room to fail and adjust) tend to ultimately succeed more than those that bet the farm on a big-bang implementation. However, don't lose the forest for the trees – have a long-term vision. Perhaps your long-term vision is a mostly autonomous supply chain control tower. That's great – but map the stepping stones to get there (forecasting AI, then inventory optimization, then maybe a scheduling AI, etc.). Each project builds capability for the next. By the time you reach more advanced stages like prescriptive or autonomous decision-making, your organization will have climbed the AI maturity curve and will be ready.

People and Change Management Make the Difference:

We emphasized this heavily because it truly cannot be overstated. The best AI tool in the world will fall flat if your team doesn't adopt it or your data isn't reliable. Conversely, a decent tool can yield great results if implemented in an organization that's committed to using it well. Invest in your talent – train your planners on new skills, bring them along the journey. Celebrate



the “planners of the future” in your organization who learn to leverage AI and elevate their roles. Culturally, position AI as empowering, not threatening. Also, adapt your performance metrics and incentives if needed (for instance, if planners are no longer judged by their ability to manually crunch numbers but by how well they manage AI-driven processes, make sure KPIs reflect that). As one McKinsey expert noted, the workforce dynamic will shift towards more value-adding tasks and a reduced manual workload. That should be communicated as a positive evolution for employees.

Keep an Eye on the Future: The AI field is rapidly evolving. What’s cutting-edge today (like some uses of generative AI for scenario planning or GPT-based assistants for planners) might become standard in a couple of years. The good news is that the AI tools you implement can often be continuously updated (especially cloud-based ones), gaining new capabilities over time. As you gain confidence with AI, be ready to explore adjacent opportunities. For instance, once demand planning is optimized, maybe you’ll use AI for predictive maintenance on your equipment, or for customer demand sensing from social media. Many mid-sized firms are also starting to explore AI for workforce planning (optimizing staffing and scheduling in warehouses) and AI in procurement (automating strategic sourcing decisions). The landscape in 2026 and beyond will likely feature more integration of AI across the end-to-end supply chain. Companies that build a strong foundation now – in data, in talent, in processes – will be able to capitalize on these future advancements much faster. In other words, the capabilities you develop today are compounding investments for tomorrow’s tech.

A final point to emphasize is the power of third-party validation and thought leadership as you continue your AI journey. Continue to leverage insights from credible sources: consulting firms (McKinsey, BCG, etc.) for broad trends and benchmarks, industry groups like MDM for distribution-specific findings, and ERP vendors’ research on technology adoption. These will not only keep you informed of best practices but will also help you benchmark your progress. For instance, if next year McKinsey reports that AI leaders achieved 1.5x higher revenue growth and 1.4x higher return on invested capital you can ask: Are we seeing signs of that kind of uplift? If not, what can we do to get there?

In conclusion, navigating the AI landscape in supply chain planning is a journey of continuous learning and improvement. Start with a realistic plan, focus on meaningful outcomes, empower your people, and choose the right partners. Do this, and you will position your organization to not only separate the AI hype from reality, but to harness the very real power of AI to drive supply chain excellence. StockIQ’s perspective is that blending AI technology with human wisdom offers a balanced path forward. By leveraging AI and human IQ, mid-sized distributors and manufacturers can achieve new heights of efficiency, resilience, and customer satisfaction in their supply chain operations.

The road ahead is exciting: as AI tools become more sophisticated and accessible, even smaller firms can build supply chain capabilities that rival those of much larger competitors. Those who navigate this landscape thoughtfully will find themselves with more agile, data-driven supply chains – ready to respond to whatever the future holds, be it market shifts, disruptions, or growth opportunities. In a sense, implementing AI in supply chain planning is not just an IT project, but a strategic evolution of how you run your business. We encourage you to take the insights from this paper and begin (or continue) that evolution with confidence.

Additional Resources

[StockIQ “AI + IQ” Hub:](#)

Collection of webinars, case studies, and tools on supply chain AI (e.g. AI+IQ Webinar Series on real AI value, ROI building, etc.). A great starting point for education and internal training materials.

[IBF Townhall: The Reality of AI Forecasting:](#)

Townhall and moderated discussion hosted by the Institute of Business Forecasting between StockIQ’s Chief Data Scientist, Principal Brand Evangelist, and industry experts. Focused on demystifying where AI can add real ROI to supply chain teams and what’s just hype.

[StockIQ Product Walkthrough:](#)

See how StockIQ’s AI/ML algorithms can deliver better supply chain planning and MRP today. Register for our next 30-min walkthrough for a quick and easy introduction to the platform.

Blog posts: Check out the StockIQ blog for more insights on AI and supply chain.

[The Impact of AI and Machine Learning on Supply Chain Planning in 2025](#)

[AI Demand Forecasting: What’s Hype and What’s Real](#)

[How AI is Revolutionizing Inventory Management - and What Still Needs a Human](#)

[The Role of Machine Learning in Optimizing Inventory Management and Reducing Stockouts](#)

[Autonomous Supply Chain Decision-Making: Will AI Take the Lead?](#)

Navigating the AI Landscape in Supply Chain Planning: Insights from StockIQ

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