The Case for Modernization, and How to Navigate an Evolving Software Landscape to Deliver an Agile, Effective Technology Platform and Support Organization for Planning

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EXECUTIVE SUMMARY

The supply chain software landscape is changing. Enterprise IT leaders and vendors alike have embraced modern architectures that provide advanced capabilities, connectivity, customization, process automation, and artificial intelligence. Innovation, buoyed by data availability and enhanced processing capacity, has accelerated in recent years, and each of the major solutions providers and their partner ecosystems offer new capabilities poised to deliver enhancements to operations with tangible ROI and in many cases improved competitive positions.

That being said, the pivot from monolithic architectures to modern solutions can be challenging. Technology vendors understandably promote (and in some cases mandate) a migration path that provides them with cloud-based revenue streams, new services opportunities, and enhanced profitability with streamlined support on more recent versions. Their customers, however, are often faced with difficulty in defending the expense of the migration to their boards due to limited upside from new features - and substantial risk of business disruption from the implementation and cutover.

However, there is substantial value to be found if the appropriate steps are taken in up front planning exercises. It begins with a champion from the business who is looking to transform the way that the business operates, and/or how it consumes and leverages technology.

The journey can take different forms depending on the sponsor, which can be framed as IT Transformations, Supply Chain Transformations, or simply Application Modernization initiatives (typically of a specific business function).

MODERNIZATION VS TRANSFORMATION

The success of any of these initiatives will depend heavily on the investment made in a) understanding both the current state opportunities in the business that can see improvement and derive benefits throughout the journey, b) considering the changes in business strategy and the competitive landscape where new approaches can deliver market share and profitability growth, and c) the ecosystem of solutions and providers that can deliver those benefits.

IT Transformation focuses on building the platform and tools to leverage the advanced capabilities in a hyper-connected environment of modern SaaS solutions atop a comprehensive data ecosystem and platform tools capable of process automation and generating insights. Mapping the modernization of applications to fit amongst the platform goals requires an assessment of applications, their architectures, and often drives

evaluation of the market to ensure the vendor roadmap is aligned to corporate IT objectives.

Supply chain transformation starts with a focus on how products are sourced, produced, and distributed, often coupling new markets and channels or customer engagement approaches. Alongside new processes or facilities, systems requirements will undoubtedly evolve, demanding new software capabilities or selections and converging with traditional application modernization processes.

Application Modernization is, unfortunately, the most common of these. Navigating the migration from a legacy solution to a cloud based or SaaS native architecture seldom delivers near term returns on the required investment and too often drives standardization and removes earlier customizations that drive efficiency or speed to the business.

THE CASE FOR TRANSFORMATION

When faced with a need to modernize any application, the process of evaluating newcomer capabilities for simplification or optimization can deliver a lower cost, higher value architecture and roadmap for your organization capable of delivering unprecedented value and performance. Across the supply chain, modernization also offers an opportunity to embrace the cultural shifts that SaaS offers – pivoting from cyclical investment patterns that result in gradual degradation of capabilities while preventing investment in the best practices. A major gap that differentiates modernization from IT transformation is a steady state center of excellence approach – whether internal or delivered by a partner, the care and feeding of a solution in a 'stay current' environment can pay huge dividends.

The recent evolutions of software packages and the provider landscape offer a unique opportunity to reimagine how your business operates –outsourcing partners, software providers, services and support ecosystems, and innovation approaches can all be considered when developing a vision and roadmap to modernize or transform your supply chain.

Considering modernization more broadly and plotting a migration to a best-fit operating model leveraging modern IT platform tools and processes requires thoughtfulness on objectives, consensus in strategy, and collaboration in planning and execution – but the benefits of a formal process can ensure the investment required of modernization is leveraged to return optimal value back to the business.

NAVIGATING THE SUPPLY CHAIN LANDSCAPE

The impact of modern technology platforms on the supply chain technology landscape has been considerable. Leading providers having some place some cases been displaced by

disruptive newcomers and in other cases continued consolidation processes to amass more holistic suites that are now converting or collectively modernizing using modern platform tools.

Supply chain planning ecosystems have become increasingly connected, collaborative, and responsive. The availability of insights and application of them to drive or even automate decision making is having a material impact on early adopters, improving fill rates, reducing inventories, and driving customer satisfaction higher.

Looking more closely at each of the areas, a common theme is that each of the traditional best of breed or best of suite providers are being challenged by newcomers with native modern platform architectures, standard tools and processes that reduce complexity (easing the path to improvements and innovation), streamlined implementation tools, improved supportability, and ultimately, a lower total cost of ownership. These newcomers may not meet requirements for larger organizations with specialized requirements or advanced optimization needs to manage operating costs, but they should be considered for their ability to reduce complexity in the core business process, as any shortcomings may also be addressed through partners or plug-ins that bring advanced optimization capabilities.

Alongside the plethora of newcomers that can address the core business problems, adjacent solutions have also emerged, benefitting from similar technology platform attributes such as API driven platform development to extend traditional solutions for advanced optimization or to fill gaps in data availability that prevented a holistic solve. Whether embedded within a best of breed solution or enhancing a particular capability in a tier 2 solution, finding the right mix can deliver strong benefits…and clearly the table is set for partnerships and consolidation across these providers that will deliver some interesting competition in the coming years.

TRANSFORMATION PLANNING

Beyond the software providers, it is always worthwhile to consider whether the less impactful areas of your business could be better managed by a third party with less investment or risk. With industry standard templates for onboarding and management, and thin margins, these organizations can offer lower costs with acceptable performance if that is good enough for your organization’s needs. They can also serve as a proving ground and learning opportunities for companies in growth mode that lack the appropriate competencies for excellence but require a bridge.

A detailed assessment comparing current state capabilities, considering pain points, and injecting opportunities to adopt new approaches will define the scope. Evaluating the

supply chain technology (and in many cases, business process outsourcing) ecosystem thoroughly can vet the promise of provider solutions and inform the development of a modernization or transformational roadmap complete with estimated timelines, high level budgets, and organizational impacts, building consensus on objectives and a shared purpose across the organization.

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The disruption created by modern technology stacks and the promise of SaaS solutions have reached a crescendo in the industry. On the positive side, customers embracing modern platform concepts have accelerated their ability to identify insights to better manage their businesses and deliver profitably to their customers. Unfortunately, adoption rates of these platform concepts are highly variable, and leading software providers, anxious to capture new revenue streams and migrate their customers to a more 'sticky' deployment in their SaaS environment, are driving complex and risky migrations to the latest deployment platforms. In some cases, the roadmap leads to re-implementation while in others, vendors are limiting access to the latest functionality and security standards. Regardless, expect to see punitive maintenance cost increases to entice the pivot to subscription pricing.

In contrast to past scenarios where vendors could impose unexpected fees without concerns for customer attrition, the market dynamics have changed – especially in the mid-market. Emerging technology providers are offering alternatives that are lighter weight, lower cost, and potentially equally effective at providing the core requirements, while others offer extensions to optimize critical functions or infuse advanced data into decision making or extended processes. Adjacent solutions and accelerators round out the market with agile solutions that are easy to implement and can combine with the tier 2 providers to solve real business challenges.

Our intent is to walk through the pain points and opportunities that can be addressed by modern platforms, and the trade-offs to be considered when evaluating next generation technology and migration programs. In this section, we'll begin by exploring the attributes of modern platforms, how enterprise IT leaders might capitalize on them, how various supply chain software providers are infusing them into their development and deployment strategies, and how we see leaders in the supply chain and IT space developing and defending roadmaps for modernization and/or IT transformation.

Platform Pain Points and Opportunities

For nearly 30 years, monolithic software products have reigned supreme across industries where their customers have hungrily consumed the capabilities to provide visibility and efficiency into supply chain operations. As big data, automation, and artificial intelligence transform the ways their companies collect and leverage data to improve performance, modern IT platforms seek to correct the challenges inherent in monolithic solutions, manifested by difficult and costly customization, integration, upgradeability, and support, establishing the fundamental capabilities that will define the operating models of the

future. The following characteristics are representative of the attributes that are critical to an empowering IT strategy poised to support organizational excellence, growth and differentiation.

a. Platform Architecture, Data Ecosystems, & AI: The promise of connected data ecosystems from visibility to analytics has seen great acceleration with the advancement of AI. Embedding third party solutions into enterprise data ecosystems and enabling interoperability across the software environment requires an understanding of the complexity of implementation and maintenance. Still, the value of data insights is fundamentally impacting business performance across industries.
b. Agility and Complexity: Traditional software leaders have developed broad capabilities to serve a wide variety of industry demands. The result Is complexity in both implementation and innovation. Application configurability and rules engines have evolved within domains. Low code - no code platforms and fresh looks at standardized best practices offer low-cost, high-quality opportunities in the next generation of technology.
c. Hyper-Connectivity and Interoperability: Highly customized integration processes can now be streamlined by AI infused mapping tools while API based connectivity, low code platforms, and third-party solutions foster a level of extensibility to fill gaps between applications that resulted in value leakage offer new opportunities to increase visibility and supply chain performance.
d. Constraint Aware Optimization: There is a false perception in the industry that siloed optimization engines effectively orchestrate labor, transportation, and inventory. The truth is that these algorithms have been developed to operate in vacuums, and the promise of modern platforms is that they offer enhanced data awareness into upstream and downstream processes in the supply chain, facilitating a more holistic solve based on extended constraints and additional considerations.
e. Responsiveness & Resiliency: The ingestion of external data and insights can facilitate improved responsiveness to supply chain disruptions and changes in customer demand at the same time as exploring alternative sourcing and delivery options to ensure artificial constraints do not disrupt the flow of goods and the optimal operation of your supply chain assets. Risk management has emerged as a standalone function and quickly become a critical competency for many organizations, especially those with extensive international operations.
f. Supportability & Upgradeability: Entrusting third parties with the management of hosted environments can be risky, but advances in environment management, monitoring and diagnostics, and cloud operations do offer benefits (although few

organizations can adequately articulate their investments). Most software organizations have condensed their upgrade cycle recommendations from six to ten years down to two to three. True SaaS facilitates continuous patching with the ability to adopt functionality following its release, but there are quality costs and risks associated with this approach. The impact is clear on paper, but the legacy of poor service and support from the leading vendors warrants a deeper understanding of the investment and the results across the customer base.

g. Cost of Ownership: Vendors increasingly are raising maintenance costs to drive to a three element subscription model (annual licensing, maintenance, and cloud/hosting fees) increasing total cost of ownership. Upgrades and re-implementations, integration migrations, and the variable costs of change management all pile on to the near-term capital requirements only to result in higher operating expense over the long term. Consumers of their technologies must explore options to defend price negotiations.

Software Providers and Product / Portfolio Modernization

Navigating the supply chain software provider landscape and their commitment to investment in modern platform architectures can be daunting. Strategies very across newcomers who have emerged largely due to their foundations on modern platforms, to best of breed providers seeking to converge suite level data models and capabilities, to vendors attempting to navigate a middle ground of embracing cloud operations to extend services reach, or simultaneously modernizing and reimagining supply chain functionality leveraging advanced data processing capacities. The most extreme are holistic re-writes of application suites atop modern platforms with canonical data models – highly costly, risk intensive, but compelling over the long term (especially for the later adopters).

Incumbent providers and modernization

Cloud Platforms & SaaS: Some examples to start thinking about modernization is with Oracle and what they've done with the Oracle cloud infrastructure; a focus on options across infrastructure as a service platform as a service, and software as a service launched the industry to begin considering how to modernize solutions to take advantage of cloud scalability, and also how to expand revenue streams to incorporate hosting and cloud services. Infor also leaned in on the SaaS concept developing industry centric ERPs and modular bolt on solution sets to be delivered in a SAAS environment. SAP brought forth HANA, which is less focused on hosting services and more focused on cloud scalability and inline memory while supporting canonical data ecosystem; a highly complementary strategy to their extended portfolio and the ability to derive insights of upstream and

downstream supply chain impacts. Each of these strategies are representative of modern platform approaches that could be followed by software companies and startups alike.

In the supply chain application landscape, best of breed providers began experimenting with hosting and cloud services several years ago, but as the promise of true SaaS deployments gained traction in other solution areas, a broader vision was brought to bear.

Perhaps Kinaxis embodies the most impactful development was bringing SaaS native and inline memory capabilities to the supply chain planning landscape offering "what if" scenario planning and real time rapid response capabilities. With an SAP partnership and complementary go to market strategy, this quickly gained momentum and set the bar for modern platforms and the associated value proposition. Shortly thereafter, OM Partners and O9 gained traction as disruptors in the planning landscape with broader visions of collaboration across a comprehensive data ecosystem and high levels of ingestive capabilities.

Ecosystem Connectivity: Building on the availability of capacity for data processing and storage, IoT data generation, AI based data insight development, and the hyper connectivity within and across organizations has rewritten what is possible and anticipating demand changes and business disruptions through the availability of information. Supply chain planning operations have greatly benefited from this development, and streamlined tools enabling the rapid access to these insights has been a major area of focus.

Enterprise Planning to Ecosystem Planning & Execution: Traditional planning processes were siloed, but the supply chain planning software industry has evolved from functionally based capabilities to leverage visibility within the enterprise, and then to enable collaboration across sales and operations. In recent years, this has further been extended through improved coordination from suppliers on the one hand, to demand sensing and customer collaboration on the other.

Orchestration across supply chain planning and execution is nascent in its evolution. High value use cases have emerged while companies touting control towers have sought to develop a comprehensive, actionable ecosystem across applications…but the technology debt they are facing creates barriers and little has developed. The moves by SAP and Manhattan to embrace canonical data models on consistent platforms offer promise, but the reality is that customers truly committed to rapid response to shifting demand and supply chain disruptions must look internally at their own IT platforms and disruption management tools and processes for answers.

Newcomers, Disruptors, and Modern Platforms

a. The Proliferation of Parity in Standard Functionality

Each of the major areas of supply chain software capabilities have been impacted by disruptive vendors bringing functional parity on modern platforms, and in many cases, improving upon the toolkit, methodology approach, and support services as compared to the best of breed and ERP providers. We have already seen modernized platform players such as OM partners and Kinaxis disrupt the planning space, and we have certainly seen streamlined solutions like Shipwell and then digital brokers disrupting the transportation landscape. We have also seen disruptors such as Softeon, Made4Net, and Reply having an impact in the warehouse management space by focusing on industry-centric use cases for manufacturing or order fulfillment. The expectation is the battle for the mid-market will be raged and won by these disruptive providers who bring better service and lower cost of ownership in the next 5 to 10 years, eroding the market share of the traditional leaders as they focus on portfolio strategies and struggle to uplift their platform for transformational opportunities.

b. Adjacent Technologies and Value Opportunities

In both planning and execution, the opportunity to leverage advancements being brought by innovative new entrants to the software and services landscape is also highly compelling. Many of those in the planning space have flown under the radar as the Tier 1 providers have attempted to mimic their insights, but substantial value remains through direct engagement. A specialty ecosystem of niche insights providers will continue to see growth in the coming decade. In the execution space, innovation has also marched forward to a steady rhythm, however with large organizations skeptical of the value proposition of modernizing architectures, these firms have failed to gain the traction due to them based on the value that they offer. As more organizations move to the latest platforms for their core capabilities, these adjacent solutions should be considered as part of any aspirational road map.

Planning and Defending Modernization Investment

The exercise of developing an IT platform strategy and road map can deliver tremendous value to an organization if the right approach is taken. Through facilitated workshops focused on current and future strategic differentiation, executive leadership teams have the opportunity to triangulate on the current and future competitive landscape, and how investment in and around supply chain IT can deliver the greatest value to the organization. Ideally, the facilitators will bring subject matter expertise to the table in terms of industry trends and technology impacts, challenging the leadership team's perception of how they

might differentiate in the future. By defining the critical capabilities required to support an effective operating model and go to market strategy, the organization can look inward and identify build, buy, and partner strategies to uplift the current set of capabilities and hone in on key areas of investment for innovation to outpace their industry peers.

Looking forward, the urgency and complexity of implementing the future state vision will require the development and socialization of a sequential roadmap of initiatives capable of providing speed to value, targeted investment returns, and long-term strategic transformation.

Finally, developing a cadence for measuring the success of the various initiatives against the overall objectives of a transformational program and road map allows the organization to pivot where appropriate and respond to market realities while maintaining focus on and refining the long-term vision that the leaders have aspired to. This organizational consensus building then allows a more holistic approach to near and long term budgeting with a view towards positioning the organization for sustained revenue and profit growth.

Perhaps most importantly, the roadmapping exercises provide a comprehensive vision for how the transformation must develop and the long-term return on investment that it will provide. While not all initiatives will result in a positive return on investment within the preferred timeframe, the program approach offers an opportunity to transcend individual budgeting pitfalls while embracing a broader impact from investment associated with a transformational program, as well as the potential to be unleashed by developing a foundational platform to foster and expedite innovative thinking and speed to value for future investment.

The Urgency to Act

It's often said that Covid brought supply chain awareness to the board room, but the reality is that market disruptions (resulting in shifts in market share) have been initiated or accelerated over the past two decades by investment in supply chains by visionary companies recognizing the importance of customer experience. With evolutions in data availability and insights, supply chain orchestration is poised to increase its influence through its ability to address advancing customer expectations. The Amazon effect has rippled through the mentality of consumers and now has a presence in even the most static and predictable industries, and your customers and partners are not the only ones expecting improvements – impacts to revenue growth and operating profit are also expected by boards enamored with the financial returns being generated by AI.

The expectation of data availability and hyper-responsiveness to disruptions and risk is pervasive, but many companies lag in the investment to achieve this. If they cannot

outcompete with product development, they will fall victim to value degradation and become a target for a competitor with a desire for acquisition and the associated synergies their innovative approach offers.

It goes without saying that the care and feeding of legacy applications and antiquated platforms will remain a disruptive cost center, creating headwinds to investment and progression of best practices and strategic customer engagement as long as they are in place. Ransomware is a material threat, and legacy code bases and deployment platforms undeniably present risk of a magnitude that could undermine business continuity and profitability. Platform security alone offers a competitive justification for modernization; embracing the business opportunities adjacent to the modernization program only makes sense.

Modernization programs represent a large step forward in security and sustainability, but also bring the opportunity to re-establish a focus on customer experience and continuous improvement, with ongoing concentration in operational performance as a core competency. While some areas of your supply chain may not influence your operating costs or customer service capabilities, they do have a material impact on upstream and downstream processes that surely do. As investments are made across the supply chain, a modern platform will ensure that the data you need to support optimized performance and responsiveness is available.

No one would deny that competitive disruption has occurred across industries as technology has progressed. Advanced optimization capabilities, data insights, process automation, and AI have unleashed tremendous value for their investors. The ability to consume these disruptive capabilities is entering the DNA of those organizations that are positioned to capitalize on disruptions and pull away in their competitive markets. Time is running out to establish a culture focused on agility and innovation and supported by the appropriate tools and processes. Those who succeed will follow the age-old tradition of acquisition and assimilation, while those who fail will see shareholder value lost as they fall victim to those disruptive organizations at the forefront of technology investment.

Planning & Orchestration

Supply chain planning systems are under increasing pressure to deliver more than just forecasts and allocations — they must serve as intelligent, connected, and responsive engines of enterprise orchestration. As with warehousing and transportation, this domain is experiencing accelerated disruption: the push for modernization is not just about speed or cloud adoption, but about realigning planning architectures to deliver profitability, resilience, and control in the face of volatility.

For many organizations, the legacy of siloed planning tools, overly manual processes, and disconnected workflows has limited their ability to respond to demand fluctuations, supplier constraints, or geopolitical shifts. At the same time, new entrants and evolved incumbents offer platforms with built-in intelligence, embedded collaboration, and real-time responsiveness — enabling scenario-driven decision-making and automated response to change.

As the market has evolved and matured, it has become obvious that the age-old adage that 'failure to plan is planning to fail', is as pervasive as ever, and in this instance, failing to plan to modernize your planning ecosystem is setting your long-term strategy up for failure. As your organization and executives bolster your long-term plans, it's imperative that there's a cohesive end-to-end view that incorporates a modern planning stack that allows your organization to leverage the latest technologies such as AI, Control Towers, and Integrated Business Planning in order to amplify the benefits and increase your organization's flexibility and proactive abilities.

a. Planning Ecosystem Evolution

The shift from Master Resource Planning (MRP) and standalone Sales & Operations Planning (S&OP) to enterprise-wide, AI-enabled planning and orchestration platforms has been underway for a decade. Recent shifts in data infrastructure, real-time analytics, and SaaS deployment models have catalyzed a new wave of transformation. Modern planning no longer resides within a single function. Instead, it serves as a dynamic decision engine, integrating across sourcing, fulfillment, finance, sales, and external partners.

Today, we are evolving towards **ecosystem orchestration**—platforms that interconnect supplier networks, marketplaces, retail channels, logistics nodes, and macroeconomic signals in real time. This allows planners not just to optimize within the enterprise, but to shape demand and adjust upstream and downstream across a multi-enterprise value chain. We are entering the age of the **Autonomous Planning Layer**—a landscape where inputs from sensors, partners, marketplaces, and macroeconomic signals feed directly into planning systems that generate prioritized, prescriptive actions.

Planning vendors such as Kinaxis, O9, and OM Partners have redefined the baseline—enabling what-if simulation, concurrent planning, and rapid response capabilities as core competencies. These capabilities are no longer aspirational. They are the new standard.

Are you ready to consume the data you already have?
With IoT devices, cloud data lakes, POS systems, and market intelligence sources at your disposal, the limiting factor is no longer access, but readiness, and the ability to manage the data processes. Many organizations have extensive amounts of data, but haven't known how to make heads or tails of it yet. There are endless ways to interpret data, and having an intentional approach about the specific trends or anomalies your organization cares about is an important first step to figuring out what data feeds to analyze. Clean data is also of the utmost importance.

If the data isn't already in a clean format, it won't be the easiest to synthesize or connect the dots. These preliminary steps will make a world of difference in your long-term plans and strategy.

What-if Planning and Machine Learning: Modern platforms enable planners to simulate multiple outcomes (promotions, supply disruptions, pricing shifts) and quickly identify the most profitable or resilient scenario. Machine learning enhances this by learning from past events and continuously improving forecasting accuracy. By allowing planners to play out the different scenarios they have in mind with different market pressure scenarios, they can better understand the implications of various choices. When your planners can understand the cost and value trade off decisions available, they will continue to make better business decisions that will help mitigate risk both for the short and long term. These learnings will then be able to be re-incorporated into future scenarios and the system becomes smarter as your associates do too. It's a multiplied benefit of both your human resources and technology resources symbiotically learning from each other and growing the business concurrently.

Collaboration and Connectivity: Hyper-connectivity is no longer optional. Orchestration demands visibility across sourcing platforms, marketplaces, logistics providers, and retailers. Real-time APIs, digital twins, and cloud-native solutions are enabling supply chain teams to break silos and collaborate cross-functionally and cross-enterprise. This visibility will be the game changer to make smarter decisions faster to stay competitive. Without breaking down silos to understand where your inventory is, or where your demand signals are coming from, the left hand won't know what the right hand is doing, and you'll still be living in a 20th century world. By leveraging the aforementioned accelerators such as APIs and digital twins, your organization have a more wholistic view and representation of all the pressures the business is facing, and the macro impacts to decisions needing to be made for the best interest of the supply chain and customer satisfaction.

Rapid Response, AI, and Real Time Orchestration: AI-powered decision engines are now capable of triggering automated responses—rerouting orders, reallocating inventory, or reprioritizing production—in response to real-time events like port delays, demand spikes, or extreme weather. This is the future of resilient planning whereby anomalies aren't an anxiety inducer, but rather there are preventative measures already anticipating them.

b. Core Functions and Critical Capabilities

A modern planning platform must address the foundational pillars of supply chain decision-making while embedding flexibility, speed, and intelligence. Capabilities can include, but aren't limited to:

- **Forecasting & Demand Sensing** – ingesting internal data and external signals
- **Supply Planning** – multi-echelon, multi-source optimization

- **Inventory Optimization** – node-based and network-wide, with dynamic safety stock
- **Production Planning & Scheduling** – finite capacity-aware planning
- **Scenario Modeling** – trade-offs across cost, service, and risk dimensions
- **Collaboration** – visibility and input across functions and partners

From Planning to Orchestration

The evolution of supply chain planning is best understood as a progression from inward-looking forecasting tools to externally connected, multi-enterprise orchestration platforms. Below you can see the evolution charted in stages, or eras if you will, marked by the technologies that enabled the planners at that point in time:

Stage	Capability Focus	Technology Foundation
MRP	Materials Planning	Batch ERP, On-Prem
S&OP	Enterprise Alignment	Integrated Modules
IBP	Cross-Function Planning	SaaS, In-Memory Models
Orchestration	Real-Time, Automated Response	AI, APIs, Cloud Native

The emerging stage is orchestration: a seamless integration of planning, execution, and decisioning logic that uses structured and unstructured data to trigger prescriptive actions in near real time. This latest era is allowing for organizations to make decisions in real-time with relevant information as it's happening. This allows for decision making that's not mired in delayed intel and anecdotal finger crossing. With technologies that are talking to each other and collaborating about what's happening in the real world, organizations can have confidence that the decisions being made are what is best for their customers both for the immediate needs and long term greater good.

c. Insights & Actionability Technologies

Modern planning must be insight-led. Leading platforms ingest and act. The planning tools of tomorrow will not simply report KPIs. They must generate them, prioritize them, and act on them.

Emerging systems are being built to ingest data such as:

- **Commercial and Channel Insights** (POS data, loyalty, marketing effectiveness)
- **Macroeconomic and Sentiment Indicators** (inflation trends, consumer behavior)

- **Geospatial & Environmental Data** (weather, shipping lanes, regional volatility)
- **Operational Signals** (machine status, lead time variability, OTIF performance)

From the data ingested, a clearer picture is created to help organizations gain insights into behavior drivers in their consumer base. These insights are then translated into actions. Automated adjustments to production schedules, dynamic reprioritization of shipments, or revised sourcing logic based on trade policy impacts or lead time risks are some of the decisions made to meet consumer demand patterns that are identified through the data feeds coming in.

The most sophisticated planning environments convert insights into action. Some key examples include but are not limited to:

Procurement Strategies

- Dynamic trade-off modeling between lead time, landed cost, and risk.
- Strategic sourcing scenarios and tariffs mitigation.

Demand Shaping

- Price optimization and elasticity-aware promotions.
- Joint business planning with key customers and distributors.

Inventory Balancing

- Multi-echelon optimization with dynamic safety stock modeling.
- Return-on-inventory investment prioritization across channels.

d. Differentiation and value proposition

The planning market has evolved with technology as well. Due to varying investment levels, the market has bifurcated into:

1. **Modern Platform Providers** – Kinaxis, O9, OM Partners offering in-memory simulation, native SaaS, and real-time response capabilities
2. **Modernized Legacy Providers** – SAP IBP, Oracle SCP, Blue Yonder offering integration with broader suites and scalable enterprise depth
3. **Insight Layer Innovators** – Tools like Prevedere, Elementum, and custom ML overlays offering next-gen ingestion, visualization, and alerting

Each tier has its place depending on organizational maturity, strategy, and risk appetite. The core question becomes: are you buying a better forecast, or a new way to run your business? It's important that each organization evaluate whether they have the appetite to make incremental changes or if they want to overhaul their abilities altogether ahead of making their selection since this will greatly impact their selection process and criteria.

e. Critical Success Criteria

Because the investment levels and variance in capabilities are so wide ranging, it's important for organizations to understand which capabilities are most important to your own success story. While each of the below functionalities is value-add, some will amplify benefits more than others when applied to specific situations or combined with specific capabilities in a 1+1 =3 type setting.

Success in planning transformation depends on:

- **Scenario Planning Proficiency** – the ability to simulate and compare outcomes
- **Data Integration Readiness** – the ingestion of internal and external signals
- **Latency and Speed** – sub-day response cycles for disruptive inputs
- **Platform Extensibility** – an ability to plug into MES, WMS, OMS, and finance
- **Execution Alignment** – a closed-loop orchestration with execution systems
- **Change Management** – upskilling planners for AI-informed decisioning

f. Designing the Journey

Planning transformation must be purposeful and phased. Key steps include:

- **Define the North Star**: Clarify your orchestration ambition—speed, resiliency, cost control, or all three.
- **Baseline Current Maturity**: Assess existing planning processes, tools, and organizational capabilities.
- **Build the Business Case**: Anchor investment to enterprise objectives—customer experience, inventory turns, margin expansion.
- **Engage the Ecosystem**: Evaluate core platforms, insight providers, and services partners for best fit.
- **Plan for Adoption**: Establish a Planning Center of Excellence to steward capability development, support rollout, and monitor value realization.

Modernization Planning

After reviewing this paper on the promise of embracing a more holistic value-based approach to modernization through transformation, we hope you have achieved a bit of an appreciation for the importance of a thoughtful planning process to ensure organizational alignment on the objectives and an educational process to explore the recent developments in supply chain best practices, software, and services providers.

Our methodology focuses on first developing consensus across organizational leaders regarding the importance of each functional area under consideration to the long-term strategy of the business, including the critical capabilities needed to achieve that strategy. By mixing stakeholder interviews and educational sessions to develop a point of view on success factors across the organization, SCT plays back key concepts for consensus building. Applying corporate IT strategy, tools, and capabilities to the functional requirements and opportunities available to improve performance within these supply chain functions while balancing value, cost, and complexity, we'll deliver a prioritization model enabling a thorough approach for exploring options and developing a business case and road map for the migration.

During this exploration, it is highly recommended to thoroughly vet any and all options on the table including:

- Incumbent strategies: many vendors have dramatically altered their product roadmaps to align to a broader platform strategy. This may include native SaaS development strategies with cloud operations implications, integration platform mandates, the re-architecting of data models, and reimagination of application logic. These uplifts may necessitate a partial or complete reimplementation of this solution.
- Alternative solutions: many newcomers to the supply chain software landscape have built upon modern platforms and quickly achieved parity for the basic capabilities required to operate supply chain solutions. With streamlined processes for implementation, less complexity and system configuration, fresher support models, and a lower cost of ownership, these solutions can easily replace legacy products that have become burdensome to manage.
- Accelerators: Many smaller but high value solutions providers have emerged leveraging unique access to develop data insights or pragmatic approaches for the extension of application logic or interoperability across solutions that are worth considering from a value creation perspective. The landscape is broad, but the promise is considerable, and understanding how these bolt-ons might be consumed as an adjacency to the core applications and platform provides quick win opportunities.

Once your organization’s future state requirements have been identified and prioritized, a combination of Requests for Information (RFIs) And Requests for Proposal (RFP's) offer opportunities for education and the delivery of a short list of contenders to engage in the selection of core Solutions or services and accelerators to round out a future state architecture design and road map planning process. The more intrusive or costly of these

solutions should certainly be vetted through an intense process of demonstrations, scoping and staffing workshops, and contractual negotiation prior to commitment.

The final deliverable from our planning process should not be limited to an implementation plan, but rather focus on both longer-term road map opportunities, and also steady state staffing plans and partner arrangements to ensure the appropriate level of reliability resiliency and continued improvement warranted by the required investments.