From Planning to Orchestration

How AI-Enabled Planning Is Redefining Supply Chain Performance

Introducing the Trinity Planning Orchestration Framework — **ADAPTIVE** Model

Jose Antony, Founder, Trinity Solutions LLC
March 2026

Executive Summary

Supply Chain Planning is in for the biggest shake-up it has experienced in decades.

Supply Chain Planning was once viewed as a periodic forecasting process, where planners were tasked with finding the balance between demand and supply based on available data. Those days are over. The ongoing impact of global instability, geo-political volatility, supply shortages, inflation, and unpredictable customer demand has exposed major limitations to existing planning paradigms.

Organizations today manage supply chains that are more connected, more complex, and more susceptible to disruption than at any point in history. As such, planning is now at the forefront of driving operational results, financial outcomes, and business continuity.

As well, advancements in Artificial Intelligence (AI), Advanced Analytics, and Integrated Planning Software are allowing for a significant shift in planning capabilities. Planning is moving from being a static, predictive-based process, to a dynamic, real-time, intelligence enabled orchestration process that continuously aligns Strategic Objectives, Operational Constraints, and Execution Realities.

The purpose of this white paper is to introduce the Trinity Planning Orchestration Framework - ADAPTIVE Model, an eight-layer framework, that is designed to assist organizations through their transition to Adaptive Planning. Additionally, the white paper provides the structure and methodology utilized by Trinity Solutions to assist organizations to operationally implement Modern, AI-Enabled Planning.

Organizations that can successfully transition to Adaptive Planning will provide themselves the opportunity to achieve superior Service Performance, Improved Working Capital Efficiency, and Enhanced Resilience in an increasingly unstable world.

Historically, Organizations that possess more advanced planning capabilities consistently perform better than their peers in terms of Service Reliability, Inventory Efficiency, and Responsiveness; therefore, establishing Planning as a key Enabler of Supply Chain Performance.

Section 1: The Planning Crisis

Beginning with the fact that "supply chain disruptions" are no longer limited to one-off, "one-time-only," or even occasional instances, they are now an integral part of what we consider to be the "new normal" in today's business world; the reason being that over the last few years, numerous businesses operating within various industries have been

impacted by multiple "disruptions." As such, as a result of these disruptions, there is a new realization about the design of supply chains. Supply chains have been shown to be generally incapable of functioning within high-volatility environments. The results of this reality are significant; organizations have experienced decreasing forecast accuracy, excess inventory in certain parts of their networks while experiencing shortages elsewhere, and increased operational expenses associated with expedited shipping and reactive decision-making. Industry-wide studies suggest that forecasting accuracy is, on average, around 65-75 percent in most organizations; therefore, there is ample opportunity for improvement and risk of either service level or excess inventory exposure. Additionally, as the number of supply chain disruptions globally continues to increase in terms of frequency and severity, the ability to plan will continue to play a significant role in determining the operational performance of organizations. In many instances, the primary reason why an organization is unable to perform at the desired level of supply chain operations is not due to a lack of operational capabilities, but a lack of planning capabilities. Planning processes that were designed for use in relatively stable environments are having difficulty adjusting to rapidly changing environments. Therefore, planning has become the limiting factor in terms of supply chain performance. Organizations that enhance their planning capabilities can experience demonstrable improvements in customer satisfaction (service levels), inventory efficiency and responsiveness, whereas those who fail to do so will find themselves in a cycle of constant reaction to disruptions versus proactive management. Planning is no longer solely a coordinating function, it is developing into a strategic capability that differentiates competitive advantage.

> Research from global supply chain studies suggests that organizations can now expect major supply chain disruptions lasting a month or longer roughly every few years. This frequency alone makes it clear that planning can no longer rely on static assumptions.

Section 2: Why Traditional Planning Models Are No Longer Sufficient

Traditional planning strategies are based on a time period of relatively greater stability and predictability than we see today. Therefore, traditional models rely primarily upon the use of historical data; periodic (i.e., scheduled) planning cycles; and organizational structures which functionally separate decision making processes.

Although such models can be quite effective for organizations operating in relatively stable and predictable environments, they are severely limited when used in today's unpredictable and dynamic environment.

These models rely upon static forecast data which is obsolete long before it can be used to guide decisions. In addition, they are designed to operate independently within their respective functional areas of responsibility, which creates barriers to achieving enterprise-wide strategic alignment. The models also provide little ability to assess potential alternatives or react to disruptions or other unforeseen events.

However, modern supply chain management operates as a system of complex interdependencies. Therefore, the actions taken in one area of the supply chain will rapidly impact all other areas of the organization.

Therefore, planning must balance many competing objectives, including customer satisfaction, operational efficiency, financial performance and risk avoidance.

Thus, the need exists for a fundamental change in how planning is conducted. Planning must evolve from a static forecasting process into a real-time, adaptive process that integrates strategy, operations, and execution, and therefore functions as an orchestration process that enables an organization to achieve its goals and objectives.

The above described evolution of the role of planning represents a transition from planning as a functional activity to planning as an enterprise orchestration capability.

> In fact, even in relatively stable conditions, forecast accuracy in many organizations typically remains in the range of 60 to 80 percent, which means a significant portion of planning decisions are inherently based on uncertainty.

Section 3: The Shift to AI-Enabled Planning and Orchestration

The use of artificial intelligence (AI) is making it possible for the planning process of the supply chain to be transformed at an increasing rate.

Traditional planning processes were almost completely dependent upon the use of historical values and/or manually analyzing data. In contrast, AI enabled planning systems are capable of analyzing enormous volumes of data, and to find trends and patterns in the

data which would normally go unnoticed. This allows for much more accurate and timely planning recommendations to be generated.

AI has many capabilities that make planning much better. Across numerous industries, studies have demonstrated that the use of AI in demand forecasting and planning has resulted in significant improvements in the accuracy of forecasting and in decreasing the amount of time required to plan, thereby allowing companies to more quickly and effectively respond to changes in demand and supply.

The ability of AI to improve demand forecasting is realized through the inclusion of a much broader range of factors/variables in the forecasting process and its continuous update of forecasts as market/demand/supply conditions change. AI enables the rapid assessment of multiple different scenario options with regards to what may happen with the company's planning and production operations, which enable the company to evaluate and understand potential risks and opportunities before they occur. AI enables decision-making by providing planning solutions that represent the best possible way to meet competing demands/constraints.

One of the most significant benefits of using AI is its ability to allow planning systems to learn from actual results achieved during the execution of plans. As planning systems continue to learn from their experiences, the planning will become increasingly accurate and effective.

This is a fundamental change in how the planning process operates. Instead of being an event that occurs periodically, the planning process is developing into a constantly adapting capability.

As a result of these developments, planning is developing into "orchestration." In this model, planning will function as a constant strategic operational execution coordination mechanism that will continuously synchronize the organization's strategy, operations, and execution, thereby enabling the organization to anticipate and prepare for events that may affect its performance and success.

Orchestration is about creating a single unified view of the entire organization and ensuring that all parts of the organization work together seamlessly to achieve the organization's goals.

An organization is ready for Orchestration when it is willing to change the way it does business and when it is willing to adapt to changing environments. If it is not, then it is not in a state to successfully implement Orchestration.

Studies have shown that AI-enabled forecasting approaches can significantly improve accuracy, in some cases reducing forecast error by as much as 20 to 50 percent. This represents a meaningful shift in planning capability.

Section 4: Trinity Planning Orchestration Framework — ADAPTIVE Model

The Trinity Planning Orchestration Framework is a structure to allow for a new way to enable planning. The framework has eight interconnected layers of capability within the ADAPTIVE Model:

A — Alignment to Strategy

Planning can't happen without explicit alignment to an enterprise's strategy. An organization's strategic priorities, service objectives, and financial goals need to be turned into actionable planning decisions.
If there isn't alignment to strategy then planning will ultimately make operational efficiencies better but not help achieve bigger business objectives.

D — Data Foundation

Planning requires reliable data.

Data needs to be consistent and accurate throughout an organization. This means data that is related to demand, supply, inventory, capacity, and lead time.

Having a solid data foundation is critical to being able to plan effectively and use AI enabled capabilities.

Studies from industry show that data quality and data integration are among the most important success factors in terms of planning effectiveness because planning decisions are only as good as the data that the decisions are based on.

A — Advanced Demand Intelligence

Demand planning has to go beyond traditional forecasting techniques.

Advanced demand intelligence uses statistical forecasting, advanced analytics, and external demand signals to provide much more accurate and timely demand insights than traditional forecasting techniques.

Improved demand intelligence decreases uncertainty and increases planning effectiveness.

P — Planning Supply and Constraints

Plans for supply have to reflect what is operationally possible.

Planning has to take into account production capacity, supplier capability, materials availability and operational constraints.

Better planning leads to improved execution performance and less operational disruption.

T — Tactical Scenario and Risk Planning

An organization has to be able to look at multiple planning scenarios.

Scenario planning allows an organization to anticipate problems or disruptions, evaluate how it might respond to them and increase its ability to withstand disruption.

This is becoming increasingly important in today's volatile environment.

I — Integrated Business Planning

Planning has to coordinate all aspects of planning including demand, supply, financial and operational plans. This will help to create a cohesive set of plans that support overall business objectives.

When planning is coordinated it also leads to improved organizational performance and better decision making.

V — Validated Execution and Adaptive Replanning

Planning has to continually validate the execution of plans.

Once plans are executed an organization has to compare actual results against what was originally planned and if necessary change those plans.

This ensures that planning stays current and responsive to changes.

E — Embedded Continuous Improvement and Learning

Planning must continually improve.

Organizations have to measure their planning processes, find ways to improve those processes and continue to build their planning capabilities over time.

Planning becomes a learning process.

Section 5: How AI Enables Autonomous Planning

The ability of artificial intelligence to enhance a planner's ability to make plans has been demonstrated through its capacity to generate faster, better and more adaptable decisions relative to previous systems.

The use of artificial intelligence is also used to enhance the quality of forecasting (i.e., predictability) of a planner and it increases the speed at which a planner can perform a variety of types of analyses that are related to scenarios (and other variables).

Artificial intelligence does not replace a planner but rather provides the planner with additional capabilities. Planners can now devote their time and energy toward making strategic decisions while artificial intelligence handles the complexities associated with analyzing large amounts of data.

Overall, the use of artificial intelligence will result in more intelligent, more responsive and more effective planning processes for the user.

> Industry research has consistently shown that organizations with more mature planning capabilities outperform their peers in both operational stability and financial performance.

Section 6: Planning Maturity Roadmap

Typically, organizations experience a number of phases in their development of planning maturity. The first phase is usually "reactive" planning, as it represents an initial stage of uncoordinated processes and fragmentation. As the organization progresses toward "integrated" planning, planning processes become more aligned. Finally, as the organization reaches "orchestrated and adaptive" planning, planning processes are always aligned with the organization's strategy and operations. This progression is made possible by the ADAPTIVE Model, which serves as the foundation upon which organizations build these planning capabilities. Organizations reaching the highest level of planning maturity

will be best positioned to address disruptions, minimize their working capital, and maintain their competitive position within the ever-changing environment.

Research demonstrates that organizations possessing greater levels of planning capabilities are more likely to have superior operational and financial results, including higher service levels, lower inventory, and a quicker response time when responding to disruption.

Section 7: Implementation Roadmap — Trinity TRINITY Transformation Approach

The TRINITY framework for process excellence, digital enablement, and sustained business value helps organizations to implement ADAPTIVE planning model in a structured and disciplined way.

The TRINITY Framework

Our structured delivery model for process excellence, digital enablement, and sustained business value.

T — Target Outcomes

Define the business outcomes first — what success must look like in measurable terms. Clarify scope, constraints, stakeholders, and decision criteria so the effort is outcome-driven, not activity-driven.

R — Reveal Current Reality

Understand how the process truly operates today through mapping, data review, and stakeholder input. Expose bottlenecks, risks, delays, and control gaps based on facts — not assumptions.

I — Identify the Future State

Design the improved future workflow aligned to business goals. Establish the desired process flow, controls, data structure, and performance expectations before building solutions.

N — Normalize & Simplify

Standardize inputs, definitions, and process steps. Remove unnecessary variation, duplicate work, and manual dependencies to create a clean, stable foundation.

I — Implement Digital Enablement

Apply practical technology and automation — especially Microsoft Power Platform — to digitize workflows, enforce controls, and improve speed and visibility.

T — Test, Tune & Train

Validate the solution with real users and real scenarios. Refine based on feedback and ensure teams are trained and confident before full rollout.

Y — Yield & Sustain Value

Track results, measure impact, and establish ownership. Ensure the gains are sustained through governance, dashboards, and continuous improvement practices.

Section 8: Executive Takeaways

Planning has become an essential driver of how well a supply chain performs.

Organizations which have adapted their planning are able to achieve better service levels, lower inventories and higher resiliency.

Planning Orchestration is a key capability that will define supply chain leadership going forward.
The volatility and uncertainty in today's business environment have created a need to be able to continue to adjust planning based on the execution, which will ultimately create business resiliency and competitive advantages.

Section 9: Closing Thought Leadership Statement

- Supply Chain Planning Is No Longer About Infrastructure. It's about having a planning system.
- Companies that have an ability to adapt their plans will outperform companies that don't.
- Planning is changing.
- Planning is getting better at adapting.
- Adaptive planning will be the future of all supply chain leaders.
- The companies that are investing in planning orchestration today, will be the supply chain leaders of the future.
- Trinity Solutions was created to help companies succeed in making this transformation happen.

About Trinity Solutions LLC

Trinity Solutions LLC helps organizations enable supply chain transformation through planning operating model design, governance frameworks, and digital enablement support.

Disclaimer

This white paper reflects the independent perspective of Trinity Solutions LLC.

SCOR® is a registered trademark of ASCM. Trinity Solutions LLC is not affiliated with or endorsed by ASCM.

References

Association for Supply Chain Management (ASCM)
Supply Chain Operations Reference (SCOR®) Digital Standard
https://www.ascm.org

Association for Supply Chain Management (ASCM)
Supply Chain Maturity Model and Supply Chain Stability Index Reports

---

Association for Supply Chain Management (ASCM)
Top Supply Chain Trends Reports

Gartner
Supply Chain Planning and Forecasting Research Publications.

McKinsey & Company
Supply Chain Planning, AI, and Digital Transformation Research

---

Harvard Business Review
Supply Chain and Operations Strategy Articles