GAINS
MOVE FORWARD FASTER

Whitepaper

There Has to Be a Better Way Forward

The Broken State of Supply Chain Management

Whitepaper

How Decision Engineering & Orchestration Offers a Better Way Forward

The Broken State of Supply Chain Management

Introduction

The world of supply chain management is going through a seismic shift. The complexities of modern supply chains have grown exponentially, driven by rising costs, fluctuating service levels, and an increasingly volatile, uncertain, environment. Despite these changes, many organizations continue to rely on outdated methods and legacy systems that are no longer fit to handle modern supply chain problems. In this whitepaper, we'll explore the shortcomings of the traditional approach to supply chain management and how GAINS Decision Engineering & Orchestration enables supply chains to move beyond process-driven rigidity toward decision-first agility—an essential evolution in the face of increasing complexity and uncertainty.

The Shortcomings of Traditional Supply Chain Management

Outdated Systems for a New World

Supply chains have continually changed and are changing at an even faster pace than ever. So why have the methods and systems that are used to manage them not kept pace with the change? Supply chain management systems that are used today were designed for a world that no longer exists — one that was managed with stability, predictability, and uniformity. Today's supply chains are anything but stable or predictable, yet many organizations continue to use the same aging mathematical models and methods to solve new and vastly different problems.

Survey results from consulting company PwC report that 83% of supply chain executives say their existing systems have failed to deliver the desired results. Their systems aren't equipped to measure and monitor trade-offs, manage risk, or adapt to continuous recalibration and rebalancing efforts that are needed in today's environment. As a result, these businesses often continue to struggle to fulfill their promises to customers and stakeholders.

83%
of supply chain executives say their existing systems have failed to deliver the desired results.

Drawbacks of Monolithic ERP Systems

Enterprise Resource Planning (ERP) systems that are monolithic are a major component of traditional supply chain management. Even while these big systems have a lot of features all under one roof, they frequently lack the flexibility and depth needed to deal with the unstable market conditions of today. Monolithic ERPs' one-size-fits-all methodology is progressively going extinct. Despite being extensive, businesses are discovering that these systems are too inflexible to adjust to the particular difficulties they encounter.

Gartner predicts that 30% of generative AI projects will be abandoned after proof of concept by the end of 2025, underscoring the challenges inherent in monolith ERPs including poor data quality, limited scalability, and difficult integration. Moreover, research shows that 70% of large-scale transformation efforts fail, which many companies attribute to the use of outdated technologies to meet modern demands.

An Innovative Method for a Novel Era: The Argument in Favor of a Composable Supply Chain Structure

In stark contrast to the traditional monolithic approach, GAINS DEO framework offers a more dynamic, flexible, and efficient way to manage supply chains. Instead of applying one-size-fits-all models, Decision Engineering focuses on selecting the most effective method—whether that's optimization, simulation, heuristics, or AI—based on the specific decision context. This approach allows businesses the flexibility to activate or deactivate services as needed and reconfigure them to adapt to changing conditions. Additionally, the no-code/low-code capability allows users to easily swap services without needing to submit an IT change request, optimizing specific areas of their supply chain without requiring a complete system overhaul. Think of it as building with "plastic Danish building blocks"—each piece serves a specific purpose and contributes to the overall resilience and adaptability of the supply chain.

Transitioninng from Generalist to Specialist in Technology and Business Architecture

A monolithic ERP system that aims to fulfill every need is used in the classic generalist approach to supply chain management. This method provides consistency and perceived dependability, but it is unable to deliver the specific insights required to successfully negotiate the intricate supply chain environment of today.

Today's supply chain leaders are stuck in a perpetual balancing act between business trade-offs. Business priorities change over time and often shift dramatically in short periods of time. Legacy systems do not support a specialized strategy needed to balance competing trade-offs. Businesses need to shift for continuous recalibration and re-balancing making both a composable technology and a composable business architecture necessary to compete and win in today's modern supply chain environment.

Research shows **70%** of large-scale transformation efforts fail

Predictions are seldom perfect. Decisions in Supply Chain are about tradeoffs between cost, service, profit, and risk. As conditions change answers may change.

Five Essential Elements of a Decision-Driven Supply Chain.

1. Embrace Composability

In the current climate, using modular supply chain management solutions is essential. Co-founder of GAINS Bill Benton highlights the value of adaptability, pointing out that the organization's goal is to use technological breakthroughs to improve solutions for particular supply chain issues rather than being tied to a single technology. With this modular strategy, companies can improve overall functionality without sacrificing the core advantages of their ERP systems.

2. Integrate Best-in-Class Solutions

Integrating best-in-class solutions is essential for Decision Engineering. Traditional ERP systems provide a wide range of features, but firms can get the efficiency, accuracy, and agility required to succeed in the modern business world by combining specialist technologies and ensuring deep integration through API. Targeted solutions offer more accurate control and optimization in a variety of areas, including demand forecasting, sales and operations planning (S&OP), and inventory management.

3. Adaptability

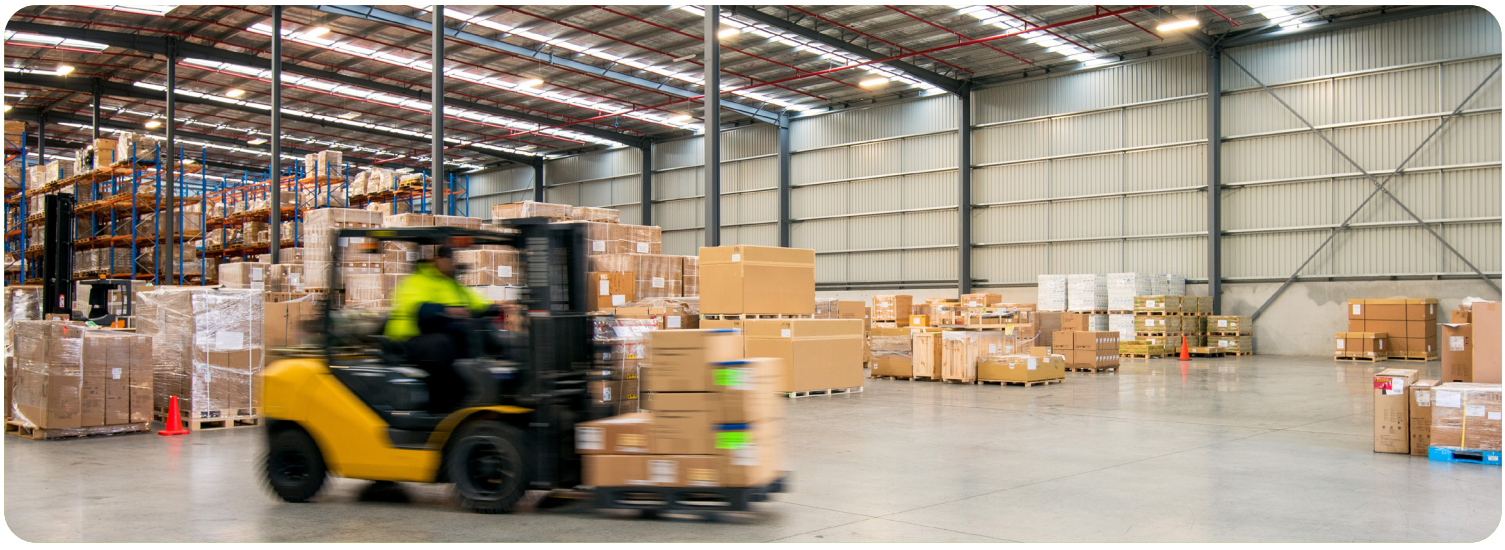
Adaptability is one of a composable supply chain's most important benefits. A composable framework makes it simple to add or remove specific components as businesses expand or as market conditions change. Supply chains can easily adjust to new obstacles because of this built-in adaptability, which eliminates the need for expensive and disruptive system redesigns.

4. Data-Driven Decision Making

An interoperable supply chain's core components are analytics and data integration. Expert analytics technologies offer a profound understanding of operations, facilitating well-informed decision-making and the detection of inefficiencies. Supply chain managers may stay competitive and resilient by reacting proactively to market changes and interruptions with the help of real-time data.

5. Enhanced Collaboration and Visibility

Decision Orchestration enhances collaboration and visibility across the supply chain. Interconnected systems allow for the seamless flow of data, enabling stakeholders to coordinate their efforts more effectively. This leads to better coordination between suppliers, manufacturers, and distributors, resulting in smoother operations and faster response times. Increased visibility also allows for the early identification of potential issues, reducing risk and enhancing resilience.



GAINS' Ten Principles of Decision Engineering

1.	**Supply chains are complex, adaptive, distributed systems that are always changing**	This requires new math, new methods, and new processes to support continuous re-composition. Focus on methods and processes that will help derive better outcomes to support your company's goals and objectives.
2.	**Embrace volatility & uncertainty**	Acknowledge and account for uncertainty and risk in the decision-making process. This includes identifying potential risks, assessing their likelihood and impact, and incorporating risk management strategies into the decision-making process, and building in confidence intervals to meet a range of performance levels.
3.	**Get your priorities straight**	Prioritization is at the heart of Decision Orchestration, which evaluates trade-offs across cost, service, and risk to align decisions with time-sensitive business goals. Understand and prioritize decisions based on time-to-value criteria focused on incremental and sequential improvement.
4.	**Understand the right tools & methods**	One size does not fit all. Specific problems require specific solutions. Decision Engineering principles are based on choosing the right methods for the specific decisions. Data analytics, statistical methods, AI/ML, Optimization engines, solvers, heuristic algorithms and visualization tools as examples.
5.	**There are no perfect answers**	Recognize that predictions are seldom perfect. Decisions in Supply Chain are about tradeoffs between cost, service, profit, and risk. As conditions change answers may change.
6.	**Scientific evaluation of alternatives**	Use of design of experiment methods and tools like discrete event simulations where scenarios can be systemically evaluated and alternate scenarios can be compared generating a clear understanding of cause and effect impacts of specific decisions.
7.	**Continuously iterative**	Recognize that decision making is an iterative process requiring constant revisions of decisions based on new information or changing circumstances. Continuous iteration is the key to enhance the effectiveness of decision making over time.
8.	**Competitive objectives need reconciliation**	Consider multiple perspectives and stakeholders' interests when making decisions. Decision engineering often involves collaborative decision-making processes that consider the competing objectives and viewpoints of various stakeholders.
9.	**Transparency & documentation**	Ensure transparency in the decision-making process by documenting the rationale behind decisions, including the criteria used, the alternatives considered, and the reasoning behind the final choice. This helps promote accountability and allows for scrutiny and learning from past decisions.
10.	**Ethical considerations**	Consider ethical implications and moral values when making decisions, especially in situations where decisions may have significant social, environmental, or humanitarian consequences.

Conclusion

Composable systems alone aren't enough—companies must embrace a structured, iterative discipline for managing decisions. GAINS' Decision Engineering & Orchestration Platform empowers businesses to optimize every decision across their supply chain, unlocking resilience, speed, and better outcomes.

Contact Us

GAINS has a proven process, methodology, and technology that helps customers prioritize decision-making to achieve rapid results and deliver unparalleled customer success. We operate at the intersection of Cost, Complexity, and Service for inventory-intensive organizations. Decision Engineering is a supply chain discipline focused on structuring methods to improve decision outcomes in a world of complexity and uncertainty.

Find out how to construct an intelligent, flexible, and completely connected supply chain solution by integrating the specialized capabilities of GAINS with your ERP. Customized to improve the operational efficiency of your company and your ability to make decisions, our solutions are made to satisfy the needs of the ever-changing market.

Contact us to learn more and to find out how our cutting-edge methodology can improve your supply chain management. Together, let's create an effective, flexible, and robust supply chain that propels your company forward.

About GAINS

GAINS is the supply chain performance optimization company helping companies fulfill their customer's promise. Our first-in-class, best-in-breed composable GAINS DEO Decision Engineering and Orchestration Platform transcends traditional silos of ERP, supply chain planning, and network design, enabling integrated, smarter, faster, and composable decisions across the time to plan horizons from strategic design to order execution. Specifically designed to manage volatility, uncertainty, complexity, and ambiguity, GAINS customers are able to focus on prioritizing the right decisions at the right time at the right speed and scale to optimize supply chain performance, improving profitability and customer confidence. For more information, visit www.gainsystems.com.