Manhattan Active®

Supply Chain Planning

Chasing Perfection:

The Relentless Pursuit of Forecasting Innovation

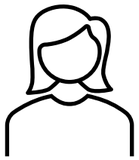
Innovate Forecasting in the Age of Complexity

The modern supply chain landscape is marked by unprecedented complexity and volatility. Traditional forecasting methods often fail to meet the challenges posed by rapidly evolving consumer behavior, globalization and omnichannel commerce.

Organizations need a new approach to navigate these complexities effectively—one that leverages advanced technologies to deliver more accurate, dynamic forecasts.

The Evolution of Demand Forecasting

Forecasting demand has always been a critical yet difficult aspect of supply chain management and over the past decade, this challenge has intensified.



Rapid shifts in consumer preferences driven by shorter product life cycles and social influences.

The rise of omnichannel commerce, requiring seamless integration across in-store, online and delivery operations.

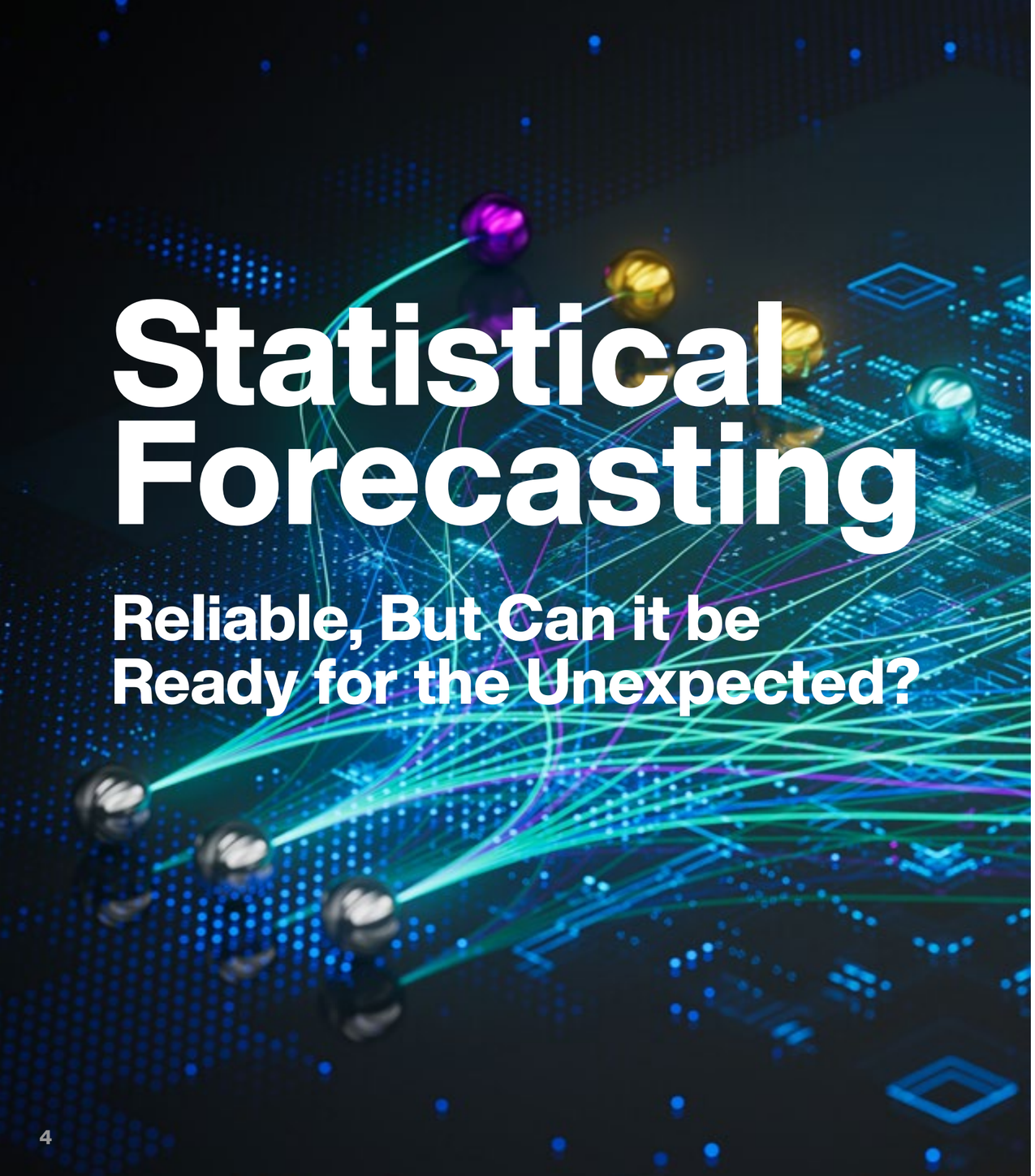
Increasing unpredictability from external factors, such as geopolitical events, economic fluctuations and climate change.

The limitations of traditional methods have resulted in significant inefficiencies.

Overstocks, wasted resources and markdowns.

Stockouts, lost sales and dissatisfied customers.

Ineffective promotions that don’t align with real-time demand.



Statistical Forecasting

Reliable, But Can it be Ready for the Unexpected?

✓ Strengths

Proven accuracy for certain demand patterns
Ideal for seasonality, intermittent demand, and short-term fluctuations.

Transparency & interpretability
Easily explainable models that enable better decision-making and regulatory compliance.

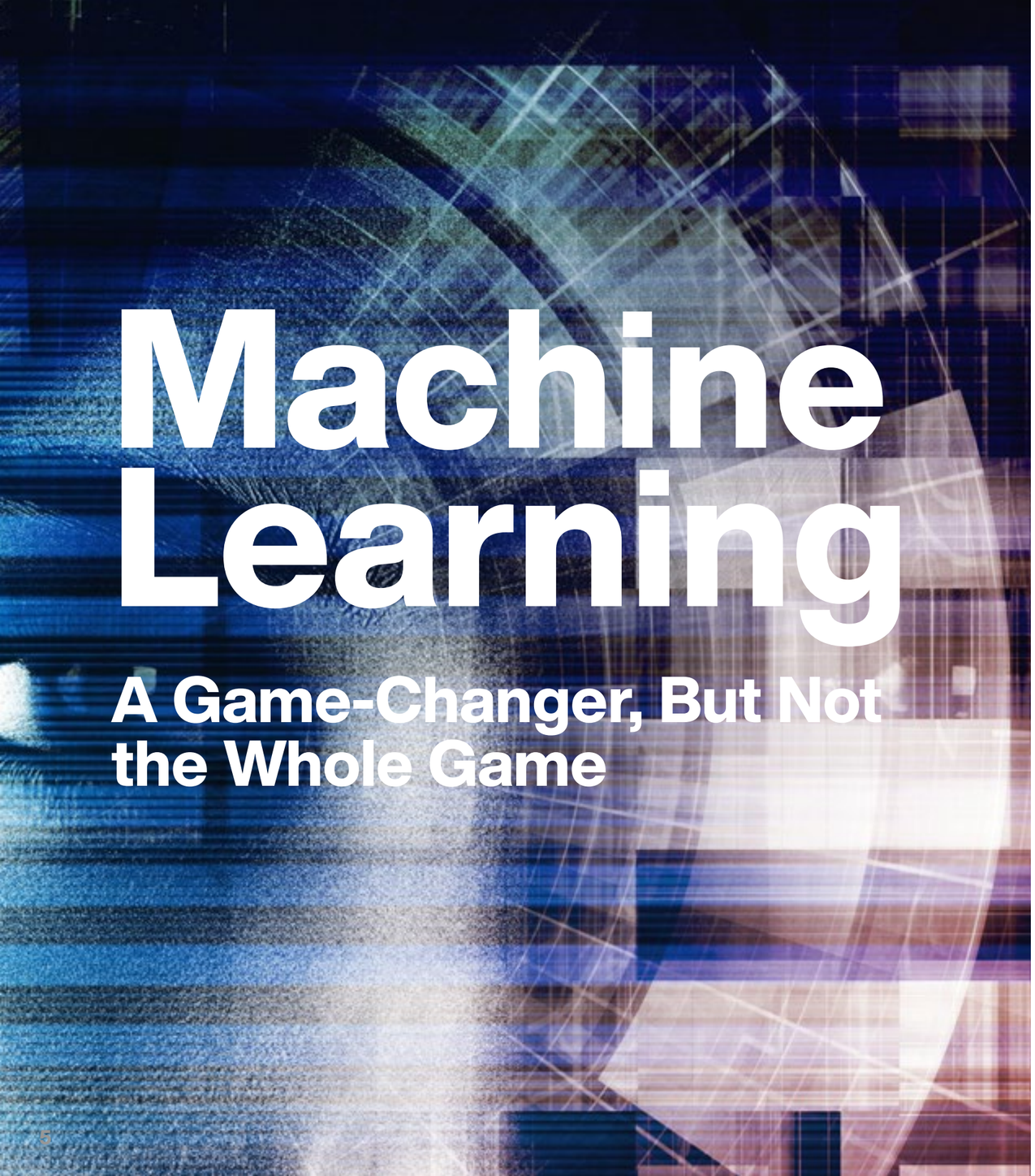
Computational efficiency & faster execution
Lower cost, faster processing, and easier deployment compared to AI-driven methods.

✗ Weaknesses

Lack of adaptability
These models struggle to account for rapid changes in demand caused by promotions, market trends or external disruptions.

Data dependency
Reliance on historical data limits their ability to incorporate real-time, external factors.

High complexity
Tailoring multiple models for diverse products and demand patterns becomes cumbersome as portfolios grow.



Machine Learning

A Game-Changer, But Not the Whole Game

✓ Strengths

Nonlinear pattern detection
AI excels at identifying intricate relationships between variables, such as the impact of weather on sales.

Integration of external data
AI can incorporate diverse sources like social media trends, economic indicators and competitor actions.

Dynamic learning
Continuous adaptation to new data ensures forecasts remain relevant.

✗ Weaknesses

Data quality dependency
Poor-quality or sparse data can compromise accuracy.

Resource intensive Implementation
requires significant computational power and expertise.

Overfitting risks
AI models may focus excessively on irrelevant patterns, leading to inaccurate predictions.

Powerful on their own, machine learning and statistical modeling fall short of covering the full spectrum of forecasting challenges. What if we blend them together?

Introducing Hybrid AI Forecasting

Manhattan Active® Supply Chain Planning with hybrid AI demand forecasting. This groundbreaking capability combines the strengths of **statistical models** and **machine learning** to deliver unparalleled accuracy and adaptability in demand forecasting.

By leveraging both methodologies, Hybrid AI demand forecasting delivers forecasts that are not only more accurate but also better equipped to handle the complexities of modern supply chains.

Robust adaptability

Statistical models provide stability, while AI enhances responsiveness to external influences.

Comprehensive coverage

Hybrid AI demand forecasting can handle a wide range of demand patterns, from stable to highly volatile.

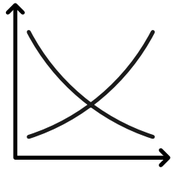
Seamless integration

Incorporates both historical and real-time data for holistic insights.

Unified Forecasting Method™ with Artificial Intelligence

Manhattan's UFM.ai is a pioneering implementation of Hybrid AI demand forecasting, designed to address the unique challenges of today's supply chains.

Learn more about UFM.ai and its groundbreaking capabilities, by exploring our white paper: "Unprecedented Accuracy with Hybrid AI Demand Forecasting."



Unified Statistical Modeling

Combines proven methods like ARIMA and Croston's method to capture trends, seasonality and intermittent demand.

Dynamic AI Integration

Continuously adapts to new data and external factors, ensuring real-time accuracy.

Scalability and Automation

Processes vast datasets efficiently, making it ideal for large-scale operations.

A Hybrid Approach to Forecasting

Validated by 100,000 Time Series. Proven Across 61 Methods.

The Makridakis Competition—one of the largest benchmarking events in forecasting—confirmed that hybrid AI-powered models outperform traditional forecasting methods. Manhattan Active Supply Chain Planning's UFM.ai leverages this hybrid approach, blending statistical precision with machine learning adaptability to deliver industry-leading accuracy. While others rely on theoretical models built for one-off challenges, UFM.ai is a commercially available, enterprise-grade solution designed for real-world complexity.

The result? A forecasting engine that continuously learns, scales effortlessly, and thrives on complexity—because when it comes to demand planning, precision matters.

Why Hybrid AI Demand Forecasting is the Future

Hybrid AI demand forecasting, exemplified by UFM.ai, offers unparalleled advantages:

- **Enhanced Forecast Accuracy:** Adapts dynamically to market conditions, reducing forecasting errors.
- **Cost Efficiency:** Optimizes inventory levels, minimizing waste and markdowns.
- **Improved Customer Satisfaction:** Ensures product availability, reducing lost sales.
- **Future-Ready Technology:** Combines scalability with continuous learning to meet evolving demands.

In industries with frequent disruptions, such as retail and manufacturing, Hybrid AI demand forecasting represents the next step in achieving supply chain resilience and efficiency.

For a comprehensive understanding of UFM.ai and its groundbreaking capabilities, explore the full white paper:
Unprecedented Accuracy with Hybrid AI Demand Forecasting.

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