

#### **EXECUTIVE INSIGHTS**

# Unpacking Demand: How Forecasting Tools Can Help Executives Better Run Their Businesses

Over the past four years, it has been extremely challenging for executives to forecast demand for packaging. COVID-19, supply chain shocks, raw material fluctuations and stocking/ destocking dynamics have all made it difficult to have confidence in short-term (60-90 days) and medium-term (one to two years) demand forecasting and associated financial, operational budgeting and capital planning. And given executives' interest in greater fidelity in customer segmentation, advanced demand forecasting approaches have emerged as a critical tool for success.

Leveraging cutting-edge machine learning (ML) and artificial intelligence (AI) technologies, advanced forecasting surpasses traditional demand budgeting methods, delivering heightened precision, agility and insight. For industry participants across the value chain, particularly converters and distributors, that means reduced costs, optimized operations, and an enhanced ability to identify and capture market opportunities. In this edition of L.E.K. Consulting's *Executive Insights*, we explore how advanced demand forecasting powered by AI addresses key challenges and drives transformative value for packaging value chain participants.

# The evolution of demand forecasting in packaging

### **Traditional limitations**

Traditional demand forecasting methods often rely heavily on historical data, trend analysis and customer-provided forecasts. While these approaches have long served as a baseline for planning, they present several shortcomings and struggle to keep pace with the dynamic



nature of today's markets. First, customers often suffer from bias in their own forecasting process, which can be prone to idiosyncratic order patterns or major misalignments in near-term projections and order volumes. Second, demand surges driven by shifting consumer preferences or economic disruptions are often overlooked or poorly anticipated, leading to costly mismatches between production and actual needs (or to the misallocation of sales resources). Furthermore, traditional models often fail to adjust effectively to seasonality and external macroeconomic factors, leaving packaging executives reactive rather than proactive.

#### The advanced approach

Modern demand forecasting leverages the power of ML algorithms to analyze complex and multidimensional datasets. By integrating data sources such as point-of-sale consumer movements, longitudinal macroeconomic trends and supply chain disruptions, these advanced tools enable significantly higher levels of precision and adaptive forecasting. For instance, Al-driven models can identify emerging demand trends early, allowing packaging executives to adjust production schedules, align resources, and stay ahead of competitors in an industry where agility and precision are paramount.

## Key challenges for packaging executives — and how advanced forecasting solves them

#### Inventory management

Inventory mismanagement — whether excess stock or shortages — is a persistent issue for packaging executives. Excess inventory ties up working capital and increases carrying costs, while shortages lead to stockouts, frustrated customers and lost revenue. Advanced demand forecasting helps align production with actual demand, minimizing these risks. Additionally, reducing lead times through better forecasting enables packaging industry participants to differentiate themselves in a competitive market, enhancing customer satisfaction and retention. Industry participants can better align purchasing to orders and thereby minimize working capital needs.

#### **Operational efficiency**

Packaging executives typically must manage high fixed costs and the ongoing challenge of maximizing plant utilization. Traditional forecasting methods often leave gaps in demand predictions, leading to suboptimal scheduling and resource allocation. With ML-enabled forecasting, executives can better predict demand peaks and troughs with precision, which allows for optimized production schedules, better labor allocation and improved machine utilization, driving significant efficiency gains and cost savings.

#### Capturing growth opportunities

Constantly changing consumer preferences means a growing interest in increasingly subsegmented customers and ever-evolving opportunities for packaging executives. Identifying which market subsegments and packaging formats are poised for growth requires nuanced insight. Advanced forecasting enables executives to track emerging demand patterns (e.g., organic), pinpoint specific high-growth subcategories (e.g., organic baby food), identify "winning" brands and formats (e.g., organic baby food in compostable pouches) and proactively adjust product offerings. As a result, executives are empowered to capture market share in emerging niches and maintain relevance as consumer preferences evolve.

#### Navigating supply chain disruptions

Supply chain volatility, including material shortages and logistics delays, poses significant challenges for packaging executives. Traditional forecasting methods often fail to incorporate external supply chain factors, leaving businesses vulnerable. Advanced forecasting, by contrast, integrates the latest supply chain data to dynamically adjust demand predictions. This proactive approach helps packaging players mitigate risks, maintain production schedules and meet customer demands despite disruptions (see Figure 1).

#### Figure 1

Key challenges facing packaging executives and advanced demand forecasting solutions



Source: L.E.K. research and analysis

# Key benefits of advanced demand forecasting

### Enhanced responsiveness and agility

By incorporating up-to-date data, advanced forecasting equips packaging executives with the agility required to identify and react to demand changes faster than ever before. This capability enables executives to adjust production schedules, inventory levels and supply chain strategies in near-real time, ensuring they can meet customer expectations, adapt to changing market conditions and maintain a competitive edge.

#### Revenue growth potential

Accurate demand forecasting not only prevents costly stockouts but also enables packaging players to seize new opportunities. By aligning with high-growth trends and emerging market demands, packaging players can unlock significant revenue upside.

## **Cost optimization**

Optimizing inventory levels, improving plant utilization, and minimizing production waste contribute to enhanced margins and cost efficiency, directly impacting the bottom line and making advanced forecasting a critical investment.

## Strategic planning and long-term insights

Advanced forecasting tools provide insights that extend beyond day-to-day operations. Packaging executives gain the ability to make informed decisions about product portfolio expansion, capacity planning and market entry strategies, ensuring sustained competitiveness.

#### Sustainability gains

Reducing excess production and material waste results in a more sustainable business, which not only benefits the environment but enhances appeal to eco-conscious brands and consumers (see Figure 2).



Source: L.E.K. research and analysis

## The business case for investing in advanced demand forecasting

Advanced demand forecasting represents a high-impact investment opportunity for packaging executives who need to address critical operational challenges while delivering measurable financial returns. By leveraging advanced technologies, businesses can optimize inventory levels, enhance plant utilization and unlock new revenue streams, significantly improving their bottom line.

Consider a hypothetical packaging converter with \$250 million in annual revenue and \$38 million in total inventory value. Assuming an inventory holding cost of 7% (based solely on capital costs, to say nothing of storage, administrative and other costs), the company incurs \$2.7 million annually in inventory carrying costs. A 10% reduction in inventory levels realized by implementing advanced forecasting solutions results in annual savings of approximately \$270,000.

Continuing the example, assume that our hypothetical packaging converter's operating costs are 20% of revenue and that utilization is 80%. An increase in utilization from 80% to 82% via advanced forecasting results in \$1 million in annual cost savings as the cost of idle capacity falls from \$10 million to \$9 million annually.

Lastly, let's consider the revenue upside. Suppose our hypothetical converter generates 20% of revenue from high-growth categories. But due to suboptimal forecasting, its business within this segment grows only in line with the broader market at, say, 3%. Now imagine that advanced forecasting tools help the company identify and align with "winning" subsegments and brands, increasing the growth rate of its business in this segment to 6%. That's an incremental revenue opportunity of \$1.5 million annually. If you assume an EBITDA margin of 20%, that translates into an EBITDA uplift of \$300,000 per year.

Taken together, the combined benefit in this example reaches at least \$1.5 million of incremental annual profit, which is \$15 million or more in incremental value at a 10x multiple. This demonstrates the transformative financial impact of advanced demand forecasting, making it a compelling investment for packaging players looking to enhance competitiveness and profitability (see Figure 3).





Note: EBITDA=earnings before interest, taxes, depreciation and amortization Source: L.E.K. research and analysis

# Why L.E.K. Consulting?

Our experts combine deep expertise in the packaging industry with advanced data science capabilities to deliver tailored forecasting solutions. Our end-to-end approach ensures seamless integration of ML tools, enabling clients to unlock measurable operational and financial outcomes. With a proven track record of driving return on investment, we help packaging industry participants optimize performance, capture new opportunities and stay ahead of evolving market demands.

# Our approach to Al

At L.E.K. Consulting, we help organizations bridge their "Al Delta"— the gap in enterprise value that arises from successful versus poorly executed Al strategies. By combining deep industry expertise with cutting-edge data science, we empower clients to unlock the transformative potential of Al. Whether optimizing operations, sharpening competitive edges, or identifying new revenue streams, our structured approach focuses on three key value drivers: performance, competition and unique opportunities. With a proven track record of delivering measurable results, we guide companies through the complex journey of Al transformation – from strategy design to implementation. Partner with us to define and activate your Al roadmap, ensuring you remain competitive and resilient in a rapidly evolving landscape.

Al-driven advanced demand forecasting represents a transformative opportunity for packaging executives to thrive in today's volatile and competitive market. By adopting this approach, businesses can achieve enhanced operational efficiency, revenue growth and market adaptability. Partnering with us ensures access to unparalleled expertise and a clear roadmap to success.

**Contact us** today to explore how advanced demand forecasting can unlock new possibilities for your business.

#### **About the Authors**



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Jon Moss is a Managing Director in L.E.K. Consulting's Boston office. Jon is a member of the firm's Industrials practice, with a focus on packaging; he has particular expertise in healthcare packaging. Jon has experience across the full packaging value chain with both organic and inorganic growth strategy development, market assessment, commercial resourcing model development, and buy- and sell-side transaction advisory.



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#### **Austen Park**

Austen Park is an Advanced Analytics Lead based in L.E.K. Consulting's Chicago office, specializing in the industrials sector. Austen has extensive experience deploying advanced analytics and machine learning models, including classification, regression and time series forecasting models, to solve his clients' highest-priority issues. He works closely with clients to harness the power of data, enabling them to forecast business outcomes, optimize operations and build smarter enterprises.

#### About L.E.K. Consulting

We're L.E.K. Consulting, a global strategy consultancy working with business leaders to seize competitive advantage and amplify growth. Our insights are catalysts that reshape the trajectory of our clients' businesses, uncovering opportunities and empowering them to master their moments of truth. Since 1983, our worldwide practice — spanning the Americas, Asia-Pacific and Europe — has guided leaders across all industries, from global corporations to emerging entrepreneurial businesses and private equity investors. Looking for more? Visit <u>www.lek.com</u>.

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