2024

In Pursuit of Consumption-Based Forecasting

Charles Chase
SAS

Kenneth B. Kahn
Old Dominion University, kkahn@odu.edu

Original Publication Citation

Chase, C., & Kahn, K. B. (2024). In pursuit of consumption-based forecasting. *Foresight: The International Journal of Applied Forecasting*, *72*, 69-71.

In Pursuit of Consumption-Based Forecasting

CHARLES CHASE AND KENNETH B. KAHN

INTRODUCTION

Today's most mature, most sophisticated, best-in-class forecasting is what we call *consumption-based forecasting* (CBF). In contrast, the least-sophisticated companies typically do not forecast at all, but rather set financial targets based on management expectations. Companies beginning to use statistical forecasting techniques usually take a supply-centric orientation, relying on time series techniques applied to shipment and/or order history. The next stage of progression is to incorporate promotions data, economic data, and market data alongside supply-centric data so that regression and other advanced analytics can be used. Companies pursuing CBF utilize even more advanced capabilities to capture, examine, and understand "true" demand and combine market planning, operational planning, and forecasting. These capabilities include the areas of analytics, data, people, process, and technology.

ANALYTICS

Companies pursuing CBF rely on predictive analytics using robust data. Going beyond trend and seasonality, the aim is to identify real-time leading indicators and the likelihood of future outcomes. Advanced predictive analytics including artificial intelligence (AI), machine learning (ML), and sentiment analysis focus on sensing consumer demand patterns and shaping future demand to create a more accurate demand response and cost-effective actions.

Consumption-based companies forecast from consumer to supply, rather than from supply to consumer. This allows the company to discern consumer demand patterns, see and predict shifting consumer demand patterns faster, model the impact of promotions and sales/marketing programming, and manage channel loading and sell-through by supply chain partners.

DATA

Consumption-based companies require price, sales promotions, in-store merchandising, economic information, supply chain policies, and other causal factors to run predictive analytics – not just shipment and order history. Data should also include mobile, online, and Web/social-media feeds – structured and unstructured data that can reveal important themes.

In the case of consumer products, manufacturers are no longer allowed to load up retailer warehouses at quarter's end and are obligated to keep inventories low with more frequent replenishment. Those manufacturers using CBF are capturing weekly and some daily data by channel and key account, down to the SKU/warehouse distribution point. Moving to weekly forecasts allows more precision in modeling the effects of marketing, promotions, and sales events. This exemplifies a direct correlation between weekly orders, shipments, and point-of-sales (POS/syndicated scanner) data at the product level, and in many cases at the SKU/UPC levels.

PEOPLE

CBF necessitates people who are comfortable working with copious amounts of data and have analytics skills beyond spreadsheet manipulation – plus a familiarity with ML and AI. Such people would include data scientists alongside demand analysts. To build a culture of forecasting excellence, companies pursuing CBF often establish centers of forecasting excellence to identify and share best practices within their organization. Some conglomerates even host intracompany forecasting conferences so personnel can network and share best practices across divisions.

Designated demand management champions who have the knowledge and experience to drive best practice are crucial for CBF. Serving as mentors and leaders to junior forecasting staff, these individuals help develop a forecasting talent pipeline. An internal champion with executive sponsorship is also important to drive change management and gain company-wide adoption of CBF.

PROCESS

Companies pursuing CBF recognize the importance of internal collaboration and alignment for creating forecasts that drive decisions in and across functional areas. Internal collaboration and alignment occur through company processes that create interdependencies and synergies between the demand planning response, financial plan, marketing plan, supply plan, and sales plan. The use of common performance metrics engages functional areas, and applying linked performance metrics forges internal collaboration. A vibrant IBP process that aligns functional areas and mandates postmortem reviews is essential.

TECHNOLOGY

CBF companies design and implement an end-to-end value supply chain network to fully utilize downstream data. Capitalizing on technology, these companies orient themselves to handle the big data necessary to feed advanced analytics. Technology can even take over the task of information gathering – collecting and investigating petabytes of data, filtering the data through advanced analytics models, and providing insights. Technology also enables event-stream processing, which assists in the support and structure of event-driven information systems. Combining data from disparate data sources and from trading partners for instant analytics is possible using enterprise technology solutions. Such solutions provide the backbone for an expanded value network.

SUMMARY

Companies pursuing CBF are distinguished by the following traits:

- Use statistical forecasting methods and advanced analytics to model demand, events, and explore demand shaping.
- Create robust data systems that house more shipment and order history, and include POS data, pricing data, economic data, market data, competitor actions, social-media data, etc.
- Hire and retain forecasting talent with nontraditional skills in data science/advanced analytics.
- Have a formal S&OP process in place that links demand forecasts to supply planning.
- Install technology that aptly manages data and allocates forecasts down to the SKU ship-to-location level.

Doing the above allows companies to implement appropriate and meaningful performance metrics that measure forecasting value and show the impact of sophisticated forecasting (forecasting maturation). Previous studies have shown that companies pursuing CBF can achieve an average forecast accuracy of 85% or higher at the product-family level, an average customer service level of 90% and above, and high employee satisfaction levels with forecasting processes and systems. Recent evidence suggests those companies using CBF can see improvements in forecast accuracy on average between 5%-8% within the first eight to 12 weeks of implementation.

In pursuit of CBF, companies need to attend comprehensively to the areas of data, analytics, technology, processes, and people. Deficiencies in any of these areas can cloud the demand situation and hinder company agility to respond to market changes. Aspiring to enact CBF pushes the organization to integrate forecasting across the business enterprise, match effective marketing activities with operational efficiencies, and enable product availability to meet consumers' true demand preferences.

Charles Chase is Executive Industry Consultant in the Retail & Consumer Goods Global Practice at SAS. Charlie is the author of *Demand-Driven Forecasting*, *Next Generation Demand Management*, *Consumption-Based Forecasting and Planning* and co-author of *Bricks Matter*. In 2013 he received the Lifetime Achievement Award from the Institute of Business Forecasting.

Charlie.Chase@sas.com

Kenneth B. Kahn is Dean and Professor at the Strome College of Business at Old Dominion University. Ken has a PhD in marketing from Virginia Tech and is the author of *New Product Forecasting: An Applied Approach*.

kkahn@odu.edu