

CRAFTING

COMPLEXITY

BY BEN YOKELL

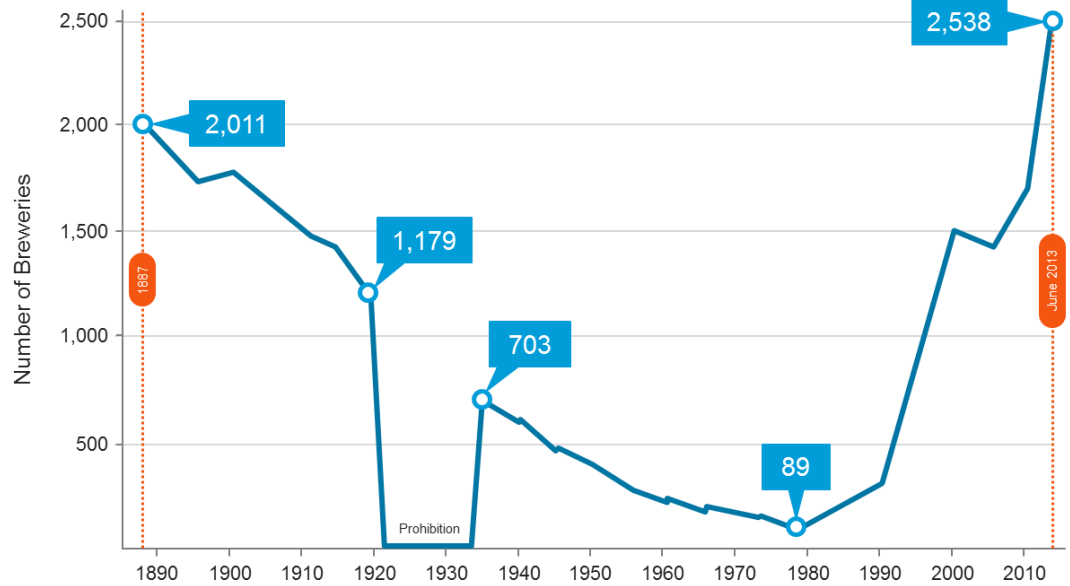
THE IMPACT OF CHANGING CONSUMER TASTES ON PRODUCT PORTFOLIOS

In the late 1970s, the number of breweries in the United States reached a historical bottom at 89. In June 2013, the Brewers Association counted no less than 2,538 breweries, with nearly 1,000 of those having opened in the past five years (Figure 1).

Despite this remarkable increase, overall production (in terms of total barrels of beer) has diminished. What underlies this seeming contradiction? Craft brewing may be the answer.

ACCORDING TO THE BREWERS ASSOCIATION, NEARLY 1,000 OUT OF THE 2,538 BREWERIES IN THE U.S. HAVE OPENED IN THE LAST FIVE YEARS.

FIGURE 1
Growth of U.S. Breweries (1887-2013)



Source: Brewers Association (Boulder, CO)

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COMING TO A HEAD

The recent explosion of craft breweries – which are characterized by small batch production, regional distribution, and independent operations – has created a dizzying array of product options and variations, and even prompted beer-oriented economists (yes, they exist!) to begin debating the very definition of a “craft brewery.”

This cannibalization of volume and market share from “big suds” (i.e., Anheuser-Busch InBev, MillerCoors, etc.) by the craft brewing movement is not only changing the consumer and retailer experience dramatically, but it is also putting massive pressure on global beverage manufacturers and distributors to keep pace. Along with their peers, both Anheuser-Busch and MillerCoors have launched (or acquired) competing “craft” product lines, often under entirely different labels and branding so as to vie for the limited attention and increasingly fickle tastes of the nouveau beer connoisseur. (Sommeliers and wine

aficionados, please keep the scoffing to a dull roar.)

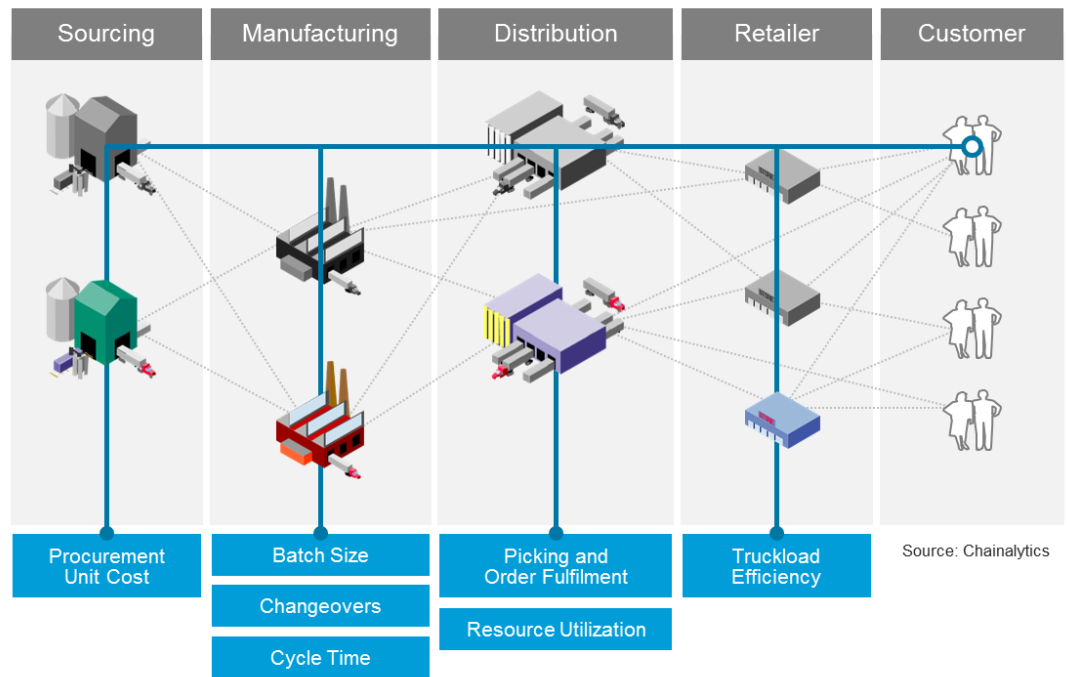
GETTING SOAKED

So, what is the operational impact of the recent increase in portfolio complexity for a market that has been relatively stable for decades? The effects are surprisingly far-reaching for the established players in the market. (Refer to Figure 2.)

Truckload efficiency is down and empty miles are up. Trucks that were once full with homogenous pallets of a single top selling product are being replaced by mixed loads carrying a slew of different low-volume, highly-volatile items. Worse yet, distributors and retailers are beginning to demand mixed pallets – cases of different items on the same pallet – or partial pallet orders.

Picking and order fulfilment challenges are on the rise. Warehouses are racing to reconfigure layouts and slotting in order to support order fulfilment in the brave new world of beer variety.

FIGURE 2
Demand Variability and the Supply Chain



VARIABILITY IN DEMAND CAN HAVE OPERATIONAL IMPACTS AT EVERY UPSTREAM STAGE OF THE SUPPLY CHAIN.

New item introductions and discontinuations have increased. Portfolio churn is at an all-time high; the very nature of the craft brewing movement demands continuous experimentation and innovation.

Procurement and production costs are spiking. The introduction of smaller, more variable batch production and a plethora of lower volume ingredients and recipe requirements have magnified production and procurement complexity exponentially.

Resource utilization is dropping and crew scheduling is becoming difficult. Shift managers are finding themselves challenged to staff efficiently in the wake of new bottlenecks and operational de-synchronization resulting from the increased variability.

In short, the high-velocity, highly-standardized operations of the major players have been partially transformed into a lower velocity, higher variability job-shop environment in the span of just a few years.

WHAT WAS I THINKING?

Consumer-driven trends are not the only engine behind the recent explosion in itemization – that is, the number of distinct items in a given portfolio or operation. Chainalytics recently completed a capacity management assessment for a major CPG manufacturer, and identified a variety of self-imposed factors at play as well.

The company’s products had a short shelf life, which meant inventory was unable to be used as a buffer for uncertainty and variability. As a result, the company needed best-in-class capacity management tools and processes supported by top notch demand planning and production scheduling. Production agility, flexibility, and capacity visibility were paramount to operational and ultimately, strategic success.

Yet to retain a leadership position in the market, the company’s product management and marketing teams had begun introducing new variations of the core product as well as new packaging

applications, and were driving an increasing percentage of volume through promotions at a rate not seen previously in the history of the company. The result was a proliferation of SKUs, increased portfolio complexity, and an increasingly difficult capacity management and planning environment that the company was ill-equipped to manage – despite its

strategic importance to the business. Its product management strategy was in direct conflict with the core operational challenge of the organization.

In fact, this may well be the most common ailment affecting today's

marketplace as a result of increasing complexity: Our ability to plan and manage has not kept up with our capability to innovate. There is now a deficiency in supply chain management and planning methodologies, tools, and processes. The problem as it relates to portfolio complexity will likely magnify as companies fully integrate real-time analytics and big data into their planning efforts.

CONSUMING RESPONSIBLY

How can you avoid getting soaked by increasing complexity and the operational challenges that come with a more fragmented and variable demand stream?

First, a company that is facing increasing portfolio complexity should measure, quantify, and understand the impact of that increased complexity on its supply chain. Despite all the attention being given to the application of analytics to online consumer behavior, many companies still have not deployed analytics inside the supply chain to trace and understand precisely how, where, and how much the relative fragmentation of demand is impacting upstream operations, cost, and service.

A handful of low-cost, fast-ROI data-based analytics tools such as Chainalytics' Demand Planning Intelligence Consortium (DPIC) exist to help companies determine how they're currently doing and where they should focus their demand planning improvement efforts.

Once a company knows what it's dealing with, it can better reset realistic expectations for a future filled with long tails and sharper sawtooths. New norms around supply chain performance can be created within the context of this step-change in portfolio complexity. Let's face it: If a company increases itemization, fragments its demand, and introduces variability inside of its operation, it is a fallacy to expect the same level of service and operating cost without significant investment in processes, tools, or resources.

In the case of demand planning and product management, leaders should be asking themselves questions like:

- What can I reasonably expect my overall demand forecast accuracy to be if I begin promoting a larger proportion of my volume, ramp up new item introduction, or experience increased seasonality?
- What is a realistic target for me to strive for, given the changes in the nature of my portfolio?
- What should those targets be for each brand or business line, knowing each one has different levels of item variability and complexity?

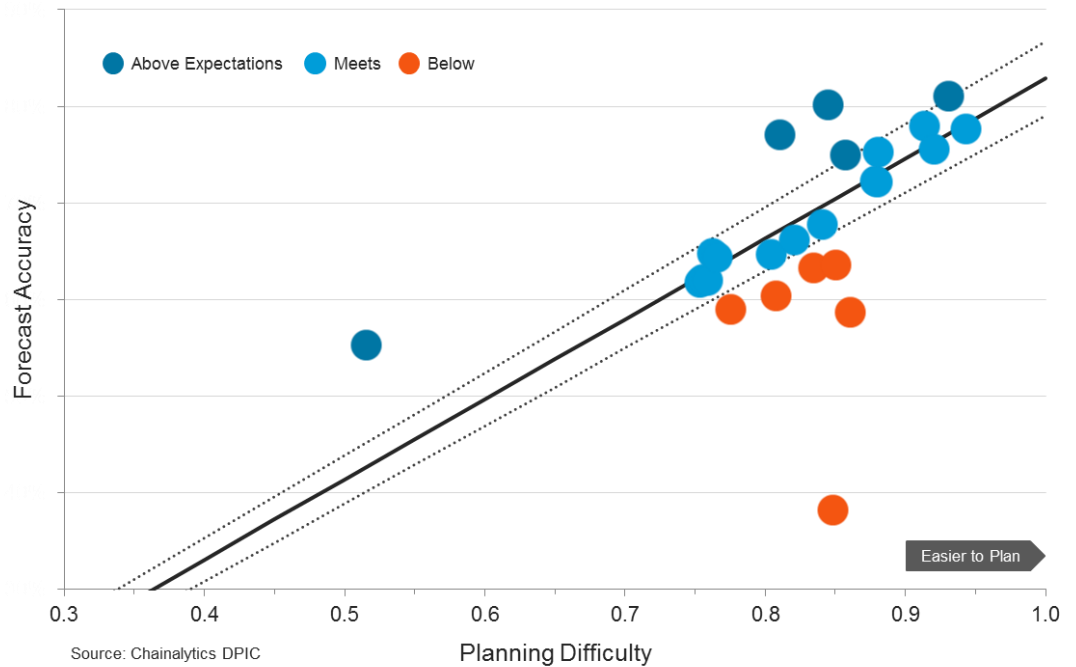
When unbiased, data-driven answers are given to these questions, teams can work toward a target which directly reflects the new realities of their portfolio, rather than a pie-in-the-sky number based on self-reported statistics found in a "study" published once a year. (An example is shown in Figure 3.)

Of course, demand forecast accuracy (FCA) and bias (FCB) are but the tip of the spear. Similar questions should be asked across most key metrics further upstream:

|| OUR ABILITY TO PLAN AND MANAGE HAS NOT KEPT UP WITH OUR CAPABILITY TO INNOVATE.

||

FIGURE 3
Impact of Portfolio Complexity on Forecast Accuracy



AN EXAMPLE OF DATA DRIVEN INSIGHTS PROVIDED BY CHAINALYTICS' DEMAND PLANNING INTELLIGENCE CONSORTIUM.

- How will inventory levels be impacted by the increase in item count, heightened volatility, and general decrease in forecastability?
- What exactly will happen to equipment utilization in the manufacturing environment as more items need to make it into the production cycle?
- How will truckload efficiency, driver productivity, and resulting freight costs be impacted?

Responding to the operational impact of changes in portfolio and product management strategies can be quite challenging, and may require new investments. In the case of the short shelf life manufacturer, a major initiative is now underway at the company to upgrade scheduling tools and processes to better respond to the new mix of items being offered.

This is the third and final pillar of managing increased portfolio complexity: A company should re-assess its current processes, tools, and resource strategy

and then invest in the required improvement initiatives to close the gaps. The task of maintaining corporate profitability and growth by providing high service and low delivered cost in the face of increasing portfolio complexity cannot lie on the shoulders of planning teams alone.

Executives must recognize that changing market conditions as well as their own product strategies may necessitate additional support for their planning teams. Whether that means internal improvement initiatives, an investment in technology, the integration of planning processes, or the use of analytical services, "innovate or die" has become "proact or perish."

This is so important it's worth repeating: Companies and executives must be willing to invest in enhancing supply chain management and planning tools and processes in order to respond to the increasing complexity of product portfolios, or we will all end up where this story began – in the drink. Prost!

ABOUT THE AUTHOR



Ben YoKell is a Principal in the Integrated Demand & Supply Planning practice at Chainalytics, and oversees the Demand Planning Intelligence Consortium where he combines his background in mathematics with his passion for the application of quantitative modeling techniques to real world planning problems to help to create and deliver repeatable, scalable, and high-value supply chain optimization and solutions.

Ben has spent the last decade and a half delivering supply chain strategy, inventory optimization, and other S&OP related projects for clients in the CPG, Food and Beverage, Retail, and Chemical industries.

Ben holds a B.A. in Mathematics and a M.E. in Operations Research from Cornell University

ABOUT THE DEMAND PLANNING INTELLIGENCE CONSORTIUM

Chainalytics' Demand Planning Intelligence Consortium (DPIC) analyzes the underlying drivers of demand uncertainty to help member companies improve demand planning and ultimately supply chain performance.

Chainalytics uses a model-based benchmarking approach to assess detailed forecast and actual order transaction data as well as demand planning policies, approaches, and techniques.

A better understanding of demand uncertainty is essential for an organization to positively impact profitability and customer satisfaction. Why? Financial performance is directly affected by customer expectations related to product availability and delivery. Beyond customer service impacts, forecast accuracy also influences working capital requirements, inventory investments, and overall operating costs such as expediting or multiple deliveries to complete an order.

To learn more about the DPIC, contact Ben directly at byokell@chainalytics.com or call +1 (678) 384-3619.

ABOUT CHAINALYTICS

Bright Minds. Better Methods. Best Outcomes. Chainalytics accelerates fact-based transformation spanning the entire planning horizon for supply chain leaders around the globe, including 18 of Gartner's Top 25 supply chains. Our peer-to-peer collaboration and market intelligence platforms enable our clients to achieve industry-specific insights quickly. Our mission is simple: To help companies reveal the maximum value from their supply chains. With locations in North America, Europe, and Asia-Pacific, Chainalytics serves companies globally in a borderless fashion. To tap into the top minds in supply chain management, visit www.chainalytics.com.