



## Food for Thought

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## COVID-19's Impact on Food and Beverage: M&A Rebound and AI Adoption

As the pandemic response heads into its seventh month, we look at how COVID-19 has influenced M&A activity and the adoption of artificial intelligence across supply chains.

The COVID-19 pandemic has affected nearly every aspect of the food and beverage industry, up and down the supply chain. In this issue of Food For Thought, we examine two areas where the pandemic has produced some particularly interesting dynamics, both in the current phase of the response and longer term: M&A activity and the industry's adoption of artificial intelligence (AI).

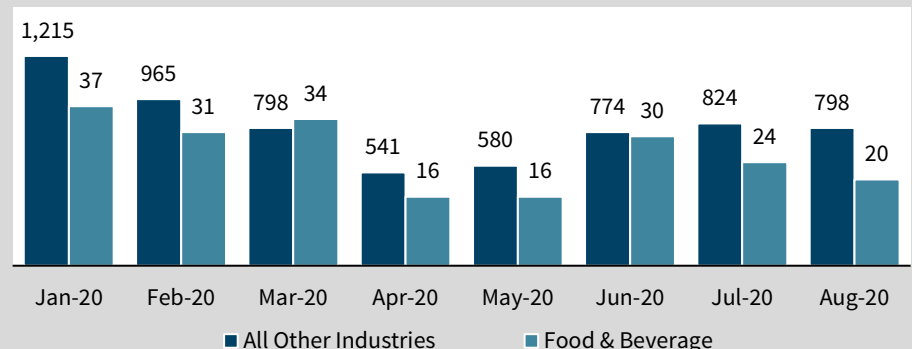
### M&A Activity in the COVID-19 Landscape

Not surprisingly, food and beverage M&A activity slowed considerably in the two months following the March acceleration of the COVID-19 outbreak. There were only 32 completed transactions in April and May combined, a monthly average of 16, compared with an average of 34 for the first three months of 2020. Deal activity rebounded somewhat in June and July, with an average of 27 deals completed in those months.

### After a Q2 Trough, Food & Beverage M&A Activity Poised to Rebound

Like all industries, food and beverage experienced a significant slowdown in M&A activity in the early months of the COVID-19 pandemic. Improving market sentiment, a backlog of deals that have been on pause, and a surplus of private equity dry powder ready to be deployed have set the stage for a significant rebound in the fourth quarter of 2020.

#### North America M&A Transactions (Announced)



Source: FactSet

The slowdown in food and beverage M&A reflects trends seen across the broader market, as no industry has been spared from a decline in dealmaking in 2020. Through July 31, the number of completed U.S. transactions across all industries is down 25% from the same period in 2019, and the value of completed transactions is down 62%.

But the late summer has seen a marked shift in sentiment and numerous green shoots, which point to increasing momentum and a continued resurgence in M&A activity over the remainder of 2020. Based on our analysis of the broader M&A market, as well as observations from our ongoing conversations with companies we advise, we have identified the following trends defining the current state of dealmaking activity.

**Sentiment and Pipeline Point to a Post-Labor Day Surge:** Many companies hit the pause button on their deal processes in the spring, but in July and August there has been a clear uptick in efforts to “recatalyze” those processes as well as an increase in new companies preparing to come to market. There is a large amount of deals that are poised to initiate and restart processes shortly after Labor Day, setting the stage for a strong rebound in M&A activity in the fourth quarter. At William Blair, our pipeline is approaching pre-COVID levels, and this is being driven by activity across sectors.

This deal momentum is related to a notable uptick in market optimism in July and August—with the caveat that this optimism, like many things in a COVID economy, is subject to rapid change. The uptick in market sentiment is the result of multiple factors, including the spillover effect of a strong equity market rebound, the reopening (albeit uneven and non-linear) of large swaths of the U.S. economy, and promising signs of lending activity.

### **Abundance of Capital Tempers Expectations for a “Buyer’s Market”:**

While M&A activity has slowed considerably in 2020, deal valuations have not meaningfully contracted during the pandemic. As a result, there is still a significant gap between sellers’ and buyers’ valuation expectations. While some resetting of expectations may eventually occur and creative deal structures can help bridge the gap, investors counting on a major pullback in valuations will likely be disappointed.

Private equity funds were sitting on \$1.5 trillion of dry powder as of July 2020.<sup>(1)</sup> The pandemic-induced disruption to deal flows has created an unprecedented desire for sponsor-to-sponsor activity, as funds look to deploy capital in high-quality businesses that delivered strong performance through the pandemic. The large amount of capital chasing a relatively small number of deals will spur aggressive buyer behavior and support current valuation levels.

### **Narrower, Relationship-Driven Processes Become More Common:**

Over the past several years, deal processes have become more targeted, with outreach to fewer parties as opposed to broad auctions. This has coincided with potential buyers opting out of processes faster and earlier, a trend that has become more acute during the pandemic. Aggressive financial sponsors are looking to identify high-quality assets that they

can “pull forward” through highly targeted processes. Processes may begin broadening in the fall, however, as bidders continue to get more comfortable with the evolving dealmaking environment.

The pandemic has also placed a greater emphasis on relationships as a critical driver of dealmaking. Many of the transactions that are being completed today result from well-established sponsor relationships and situations where buyers have had meaningful prior engagement with the target’s management team.

### **Adoption of Artificial Intelligence and Advanced Analytics**

Compared with other industries, the application of AI and machine learning (ML) has been relatively nascent in the food and beverage industry. But the adoption of these tools has accelerated in the past several years, and the pandemic has highlighted new opportunities to use AI and ML across food and beverage supply chains.

We have identified four primary ways that food and beverage companies are using AI, ML, and other advanced analytics tools to operate more efficiently and enhance profitability.

### **Improving Demand Forecasting:**

Traditionally, food retailers and manufacturers have used scanner-based data and/or insights from consumer panels to forecast demand. Both of these approaches have

### **Characteristics of M&A Processes Moving Forward**

Deals that are progressing in today’s COVID-19 landscape often exhibit several of the following characteristics:

- Companies that have continued to perform well throughout the pandemic
- Buyers that had meaningful interaction with the target’s management before the process launched
- Strategic buyers that “need to own” the asset
- Preference for minority and 50/50 transactions with funds that have well-established relationships
- Sponsors with established relationships tend to be more comfortable with virtual diligence; strategics without strong established awareness of the target are less likely to transact virtually

(1) Prequin “COVID-19 Slump Bites into Q2 Private Equity Activity” <https://www.prequin.com/Portals/0/Documents/About/press-release/2020/July/PEVC-Q2-2020.pdf?ver=2020-07-08-154129-593>

limitations because of the narrowness and idiosyncratic nature of how the data is collected. AI- and ML-based algorithms can enhance forecasting of assortment needs and inventory stocking by incorporating data from a broad spectrum of sources, ranging from social media to weather.

Lenta, one of Russia's largest supermarket chains, provides a case study in the value of using AI-based forecasting models. Well before the pandemic, Lenta adopted DSLab's AI to enhance demand prediction. While classical heuristic-based models can analyze a maximum of only 50 parameters, DSLab's model captures more than 600. This helped Lenta maintain a high level of on-shelf availability and realize a 13% improvement in promotion prediction accuracy, according to DSLab.

During the pandemic, the application of AI in the industry has become even more relevant with the unprecedented volatility in consumer behavior. Leading data analytics providers for the industry, such as IRI and Nielsen, have responded by developing AI-based demand prediction tools. IRI launched the CPG Supply Index, via the online COVID-19 Info Portal and Data Dashboard, to provide retailers with weekly data regarding on-shelf availability. Nielsen's Rapid Assortment solution uses sales information and the new COVID-19 Index, based on local consumer panel and market data, to estimate localized demand. Other AI companies, such as LLamasoft and Crisp, started to analyze demand in countries ahead of the infection curve, especially China and Italy, to establish COVID-19 adjusted forecasts. Specifically, LLamasoft developed the AI COVID-19 Demand Impact Analyzer that continuously monitors consumer data and automatically detects regional disruptions. Crisp used its proprietary AI platform to produce forecasts for U.S. clients using European consumer food purchasing data captured two to four weeks ahead of the U.S. outbreak.

#### **Food Safety from "Farm to Fork":**

Tighter food safety regulations create a need for complete transparency along the food and beverage supply chain. On the factory floor, AI-based detection can be used to identify abnormalities and enhance adherence to safety protocols. Norway Royal Salmon, for example, is using remote visual detection tools developed by Microsoft and Swiss robotics company ABB to monitor fish health and optimize the feeding process.

AI can improve sanitation and hygiene tasks that have long been critical for food and beverage facilities—and have taken on even greater importance during the pandemic. For example, AI coupled with a sensor system can be deployed to flag workers without appropriate masks or other safety gear. ABB also noted that Martec of Whitwell and the University of Nottingham are partnering to develop self-optimizing Clean-In-Place (CIP) systems, which use AI-powered sensors to detect microbial debris to determine the optimal cleaning time.

#### **Virtualizing Product Innovation and Improving Product Launch:**

For decades, food and beverage innovations have relied heavily on in-person sensory feedback gathered from consumer panels. Today, many CPG companies are taking their product development and consumer analysis to the next level by using AI to analyze consumers' emotions and taste profiles:

- **PepsiCo:** The company uses platforms such as Black Swan's Trendscape to discover trending ingredients that will lead to commercial success within the year. These analytics proved to be highly successful in predicting popular new chip flavors, for example. Since 2019, the company has been using its Pep Worx cloud-based data and analytics platform to strengthen its relationships with retailers by supporting the launch of innovative marketing programs and optimizing shelf space. This, in turn, is helping retailers to increase turnover and profitability.<sup>(2)</sup>
- **McCormick:** The company partnered with IBM in 2019 to analyze millions of data sources using AI to predict new flavor combinations to revitalize McCormick's "Flavor Forecast."
- **Mackmyra:** ABB and Microsoft helped the U.S. distillery develop a new whisky flavor combination, Intelligens, in 2019 using AI to analyze Mackmyra's blends, sales data, and customer reviews.

The pandemic, which halted consumer panels due to social distancing requirements, further highlighted the role of AI in product development. During the lockdowns in Asia, Ai Palette, a start-up that analyzes online consumer chats and social media, identified surging interest in the "snackification of meals"<sup>(3)</sup> and a spike in demand for natural immunity-boosting foods, such as Chinese jujube.<sup>(4)</sup>

(2) MIT Sloan Management Review. "Why Smart Companies Are Giving Customers More Data." <https://sloanreview.mit.edu/article/why-smart-companies-are-giving-customers-more-data/>

(3) CNBC. "From Dalgona coffee to cake and cookies, people are turning to comfort food during lockdown." <https://www.cnbc.com/2020/06/26/people-under-coronavirus-lockdown-are-buying-coffee-cake-and-cookies.html>

(4) FoodNavigator Asia. "Popular purchases during COVID-19: AI predicting changes to F&B consumption trends in Asia." <https://www.foodnavigator-asia.com/Article/2020/04/11/Popular-purchases-during-COVID-19-AI-predicting-changes-to-F-B-consumption-trends-in-Asia>

## **“Intelligent” Production to**

**Optimize Operations:** AI systems have been successful at delivering faster and safer production with lower waste and higher consistency relative to manual workers, leading to significant operational cost savings. Software start-up ImpactVision, for example, has developed hyperspectral imaging tools that can detect chemical qualities related to ripeness, firmness or shelf life of food products, thus improving quality and reducing waste.

PepsiCo has been experimenting with AI for close to two decades to optimize its production lines. Last year, the Frito-Lay segment invented a mass flow estimator, which is essentially an ML model coupled with a vision system, to predict the weight of potatoes being processed.<sup>1(5)</sup> To automate quality control, Frito-Lay is also experimenting with the use of lasers and algorithms to determine the texture of chips on the production line.

## **Staying Ahead of the Curve**

These are just a few examples of the myriad ways AI, ML, and other forms of advanced analytics are being deployed across the food and beverage industry. The rapidly evolving and highly uncertain nature of today’s COVID-19 landscape has made the need for intelligent forecasting, data-enabled innovation, and optimized safety and quality-control protocols more important than ever.

As M&A activity rebounds, companies that are actively using AI to enhance margins and stay ahead of the innovation curve will be especially well positioned to command strong valuations. To learn more about these and other trends shaping dealmaking in the food and beverage industry, please do not hesitate to contact us.

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(5) Automation World. “How Frito-Lay applies machine learning.” <https://www.automationworld.com/products/data/blog/13319607/how-fritolay-applies-machine-learning>