



2019 consumer products outlook

Have consumer products companies reached a technology inflection point?

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This is an extraordinary time in the consumer products (CP) industry. Exciting advancements in technology, many of which have yet to be imagined, are becoming increasingly entrenched in our industry, helping fuel growth and ensuring benefits to both companies and their consumers. These developments are likely driven, in part, by CP companies' continued commitment to a customer-centric approach to responding to marketplace trends, understanding consumer preferences and deepening one-on-one connections with their customers and consumers.

In the past, CP companies haven't generally been associated with being at the forefront of implementation of cutting-edge technology. But consider this: As a growing number of consumers research, purchase, and engage with brands digitally, it is likely imperative for CP companies to adopt newer technologies or risk being outdated. To stay relevant with today's digitally empowered consumers, investments in technology are implicit in strategic initiatives we've observed reviewing CP companies' annual reports and their CAGNY presentations.¹

In our short-article series, "The adoption of disruptive technologies in the consumer products sector," we are exploring, in greater depth, specific applications of newer technologies such as [blockchain](#), [artificial intelligence](#), augmented reality, and cloud. Our research supporting these articles and a qualitative survey of industry trends suggests that, enabled by

these technologies, CP companies appear to be at a technology inflection point—a turning point in the adoption of technology. One might even espouse that in some cases, CP companies have already progressed beyond this point.

Technology advancements coupled with the continued pursuit of customer centricity are at the heart of industry trends we foresee in 2019, sometimes triggering the trend or responding to it:



CP companies are developing proprietary technology to drive innovation and create a continuous and interconnected supply chain to drive operational efficiencies.



Technology is at the core of industry and consumer trends such as the growth of direct-to-consumer brands, the emergence of branded pop-up stores, and online retailers developing a brick-and-mortar presence while investing in smart packaging and exploring newer trends of neuro-nutrition and biohacking in the wellness space.



Technology makes possible on-demand access to information leading to full transparency in consumers' ongoing interest in health and wellness, organic foods, and sustainability.

Developing proprietary technology to drive innovation

Many CP companies are finding and developing technology solutions in nearly every aspect of their operations: They are investing in tech-driven innovation through in-house R&D, acquisitions, or creation of venture capital–style units.

Tech-driven innovation

In an effort to factor in local preferences and develop regionally apt solutions, many global CP companies are extensively collaborating with local partners to develop proprietary technology to enhance their businesses. One example is P&G's \$100 million investment over the next five years in a digital innovation center, called the E-Center, located in Singapore. The E-Center was established in 2017 to spur innovation across P&G's supply chain, e-analytics, and e-business by expanding partnerships with local firms and supporting the development of digital solutions. A new team of data scientists will develop digital capabilities and solutions to strengthen Asia Pacific operations by offering customized brand solutions and better reach through optimized media plans. Advanced analytics will help accelerate the development of superior products and packaging.²

CP companies investing in VC funds

Many CP majors are investing in venture capital funds focused on concepts that are driving food industry trends, such as supply chain technology and e-commerce. This interest in food is likely to steadily grow primarily because this subsector is seeing the most flux in terms of consumer preferences—whether for convenience, wellness, alternative food sources, sustainability, conscientious sourcing, or food traceability. Nestlé, for example, has invested in Five Seasons Ventures, a fund which focuses on early-stage companies developing technological innovations in the food and agricultural sector in Europe, particularly in Italy and France. Areas of its research interest include rising demand for healthier foods and personalized nutrition, alternative proteins, shortening supply chains, reducing wasted calories by addressing unused food production and food waste, and improving agricultural yield without added pressure on land and resources.³



Creating a continuous and interconnected supply chain to drive operations

With remarkable growth in digital connectivity and technological advancements, the established model of a traditional supply chain—that entails a sequential movement of materials, finished goods, capital, and information through assets and from place to place—is often being disrupted.⁴ Many CP companies are choosing to move away from a set arrangement to a dynamic, interconnected system that can integrate consumer demand patterns and ecosystem partners conveniently. This shift to a more open digital supply network (DSN) is evolving traditional supply chain operations through:



Reducing latency and transaction costs

Using tech-enabled information and analysis, CP companies can easily zoom in to each step of operations and understand both customers and suppliers' demand patterns. These more efficient and predictive supply networks enable companies to better connect with different partners as necessary.



Creating innovation in production

Advanced physical production processes coupled with the supporting computing power continue to enhance flexibility and capability of capital equipment. This can enable CP companies to move production facilities closer to demand and allows smaller and more nimble players to take on their larger peers.



Technology at the heart of industry and consumer trends

Enabled by technology, many CP companies are engaging with their consumers in more innovative and direct ways. The continued growth of direct-to-consumer brands, the reemergence of pop-up stores, and online retailers developing a brick-and-mortar presence are all accelerated by the deployment of disruptive technologies, creating more avenues for brands to have a dialogue with consumers.

Direct-to-consumer (DTC) brands

The phenomenon of brands selling directly to consumers and skipping retailers (either in-store or online) altogether continues to grow in popularity. In 2017, DTC sales increased by 34 percent and represented 13 percent of all e-commerce sales.⁵ Brands making a name for themselves in this space include Dollar Shave Club, Warby Parker, Casper, Untuckit, and Glossier. Apart from convenience and competitive product pricing, many consumers appreciate the personalized service they receive from these brands and frequently develop a special bond with them, which also plays a vital role in nurturing brand loyalty.






Large national brands are taking note of the success of DTC brands. In particular, Unilever purchased Dollar Shave Club for \$1 billion in 2016, and beauty brand Glossier, which despite only being four years old, is valued at \$390 million. Unilever's e-commerce business is growing at 60–70 percent, and it is applying DTC lessons from Dollar Shave Club to other parts of the business such as premium tea brand T2.⁶

In addition to DTCs likely realizing greater margins on sales of their own products, having direct access to their consumers can allow DTC brands to collect valuable consumer data that was heretofore solely the property of retailers. This affords brands the opportunity to study their consumers more closely to develop products addressing their needs and build consumer loyalty.⁷

The emergence of branded, pop-up stores

Another avenue allowing brands to more intimately engage and woo their consumers is through the reemergence of pop-up stores. Creating an opportunity for brands to interact with their consumers without the need to visit a conventional store,⁸ pop-up stores can be a fun alternative to traditional distribution channels. Whether in a big-name store, or a kiosk in a mall, the temporary nature of pop-up stores creates a unique impression on consumers, adding excitement to their shopping experience, potentially spurring them to make purchases before the pop-up disappears.

Pop-up stores can benefit brands in a number of ways by providing a unique forum to:

-  Market products around holidays or during peak sales periods
-  Help educate new consumers about the product
-  Reach customers where they are
-  Create brand awareness
-  Sell old stock⁹

Pop-up stores can also afford brands the opportunity to collect customer information and better understand their preferences. For example, Coca-Cola created pop-up stores during Christmas in Dublin and Belfast that added sparkle to the festivities. Using touchscreen technology, visitors created personalized wrapping with their own photos. Visitors also enjoyed virtual reality-based sleigh rides, a Christmas café, and animated Christmas windows.¹⁰

Online retailers developing a brick-and-mortar presence

It's ironic that after years of creating operational efficiencies and building online dominance, large e-retailers Amazon and Alibaba are building a brick-and-mortar presence.¹¹ In addition, many smaller brands that started out as DTC or pop-up brands, such as Warby Parker and Untuckit, are expanding into physical stores as well.¹²

This trend likely resulted from recognizing that consumers are interested in "experiencing" products in-store before purchasing them online. It also acknowledges the importance of engaging with consumers at the ground level to gain insight into their preferences. Further, e-retailer stores build upon the seamless online experiences they've created for their consumers powered by technologies such as Internet of Things (IoT), artificial intelligence (AI), augmented reality (AR), and virtual reality (VR). For example, as Amazon combines its Prime membership service with the Whole Foods shopping experience, it is accessing insight into how the same person shops online and offline, resulting in improved efficacy of targeted ads and promotions as well as the overall buying experience. Because many shoppers still browse groceries online but purchase them in person, this combination can be particularly powerful.

Amazon and Alibaba have announced aggressive growth plans. For example:

- Amazon intends to open up to 3,000 Amazon Go stores by 2021.¹³
- Alibaba has grown its brick-and-mortar supermarket to 65 stores over the last year, and it is rapidly expanding its new offline retail store, Hema, throughout China.¹⁴

From an e-retailer's point of view, the benefits of having a presence in physical stores can include:

- Minimizing costs associated with product marketing, delivery, and returns
- Being able to access shopping data
- Centralizing procurement of niche/regional products and merchandizing, and stocking and delivering fresh food¹⁵

In addition, with access to consumer buying behavior and the resultant insights, e-retailers can now become innovation partners with CP companies. For example, in early 2018, to address Chinese consumer demand, Alibaba provided data-based insights to help Mars Inc. create a candy bar. Also, in consultation with Unilever NV design, a new line of pollution-fighting cosmetics was designed for Alibaba.¹⁶

With online retail companies working toward developing a significant offline presence, there can be interesting implications for CP companies with regards to shelf space and product margins.



Competing for shelf space in retail has always represented a challenge for food and beverage companies. But in recent years, competition has grown even more intense likely due to an increasing presence of private-label brands and specialty foods in retail stores taking away valuable space. With data-rich e-retailers creating smaller, customized stores, space will likely be even more limited as only the fastest-moving products that appeal to the store's target customers will be stocked. This may have a greater impact on second-tier brands and other niche products that are available online and in larger traditional stores.



Product margins will likely be impacted as well. There has always been pricing pressure on food items. Increased competition will likely translate into further squeezed margins for food companies.¹⁷ And, to keep their prices highly competitive, large e-commerce retailers are known for being tough negotiators with suppliers, vendors, and CP companies—ultimately impacting their profitability.

Investing in smart packaging

To address rising consumer concerns around traceability and counterfeit products, CP companies are taking note of the potential applications of smart packaging. As discussed in Deloitte's publication, *Capturing value from the smart packaging revolution*,¹⁸ smart packaging generated revenues of \$23.5 billion in 2015 and is expected to grow 11 percent annually, reaching \$39.7 billion by 2020. Enabled by technologies including IoT, QR codes, RFID labels, NFC, and sensors, many market leaders across industries are embracing innovative smart packaging applications, particularly of

the connected type. These applications generate and leverage data to aid inventory and life cycle management and also delight consumers by addressing their product integrity concerns and user experience.

Exploring neuro-nutrition and biohacking

Neuro-nutrition, a relatively new concept in the wellness space, involves understanding how foods affect the brain, while biohacking helps consumers develop individualized nutrition plans to positively affect their moods. Proponents of neuro-nutrition espouse the food-brain connection, believing that eating certain feel-good foods can stimulate the brain to be happy. The theory is that the brain works 24/7 and requires a steady supply of fuel to make neurotransmitters function properly. Without the right kind of brain food, one can feel anxious, stressed, depressed, tired, exhausted, and emotionally drained. Brain health claims have increased 36 percent on products globally over the past five years.¹⁹ Some companies are developing and marketing DNA test kits that will help consumers determine what foods provide them the best path forward for healthy nutrition.

Biohacking is the art and science of eating the right foods. While "about 10 percent of the world's population is on some kind of 'exclusion diet,'" owing to ailments or allergies, 50 percent exclude certain foods just as a matter of preference. Even some restaurants are helping people find the right combinations of foods in their diets: "Chefs at London's Squirrel Restaurant combine great taste with great nutrition, with on-staff nutritionists who help their patrons choose the foods that are best for their gut health, immunity, cholesterol, inflammation, fatigue and even depression."²⁰

Data transparency facilitated by technology energizes consumers' commitment to ongoing trends

Consumers' requirement for complete product transparency is often a minimum expectation in today's connected world with on-demand access to product information (including ingredients list; source of ingredients; place of harvest; production process; presence of GMOs, hormones, and antibiotics and other undesirable chemicals; movement of goods through the supply chain, and so on). Some consumers are taking advantage of every means possible to support their purchase decisions and lifestyle choices. This helps enhance consumers' ongoing interest in health and wellness, organic foods, and sustainability. As consumers continue their quest for information, and these ongoing trends continue to evolve, CP companies would likely benefit from addressing these themes through innovative processes and products as well as using technology to drive that innovation.

Health and wellness

Many Americans are striving to live healthier lives. These consumers are demanding proof that foods they consume meet their new and evolving requirements. Many CP companies are using technology to provide access to relevant information to facilitate their making better-informed health and wellness choices. For example, consumers increasingly question the ingredients in the products they consume. A 2018 Nielsen survey revealed approximately two-thirds of Americans prioritize healthy or socially conscious food purchases.²¹ Similarly, two-thirds are also concerned with what's not in their food (compared to 45 percent as recently as 2017).²² There's also growing interest in "free-from products," fresh foods, and plant-based foods.²³

Organic foods

The authenticity of organic foods is important to consumers, and blockchain applications can help manufacturers meet the consumer demand in this regard. Some CP companies are using blockchain applications to better inform consumers about the origin of the product, method of cultivation, ingredient details, and presence of any allergens. This is highly relevant because organic foods continue to be on a growth trajectory. The past decade has witnessed CAGR growth of 10 percent, with sales rising from \$13.3 billion in 2005 to \$47 billion in 2017,²⁴ despite being priced relatively higher than conventional foods.

Sustainability

With increased transparency on sustainability enabled by technology, consumers are becoming increasingly committed to sustainable products. According to Nielsen, US food sales growth is highest among products that highlight sustainable farming and social responsibility, at 14 percent and 8 percent, respectively. Further, products that advertise sustainable resource management experienced 6 percent growth.²⁵

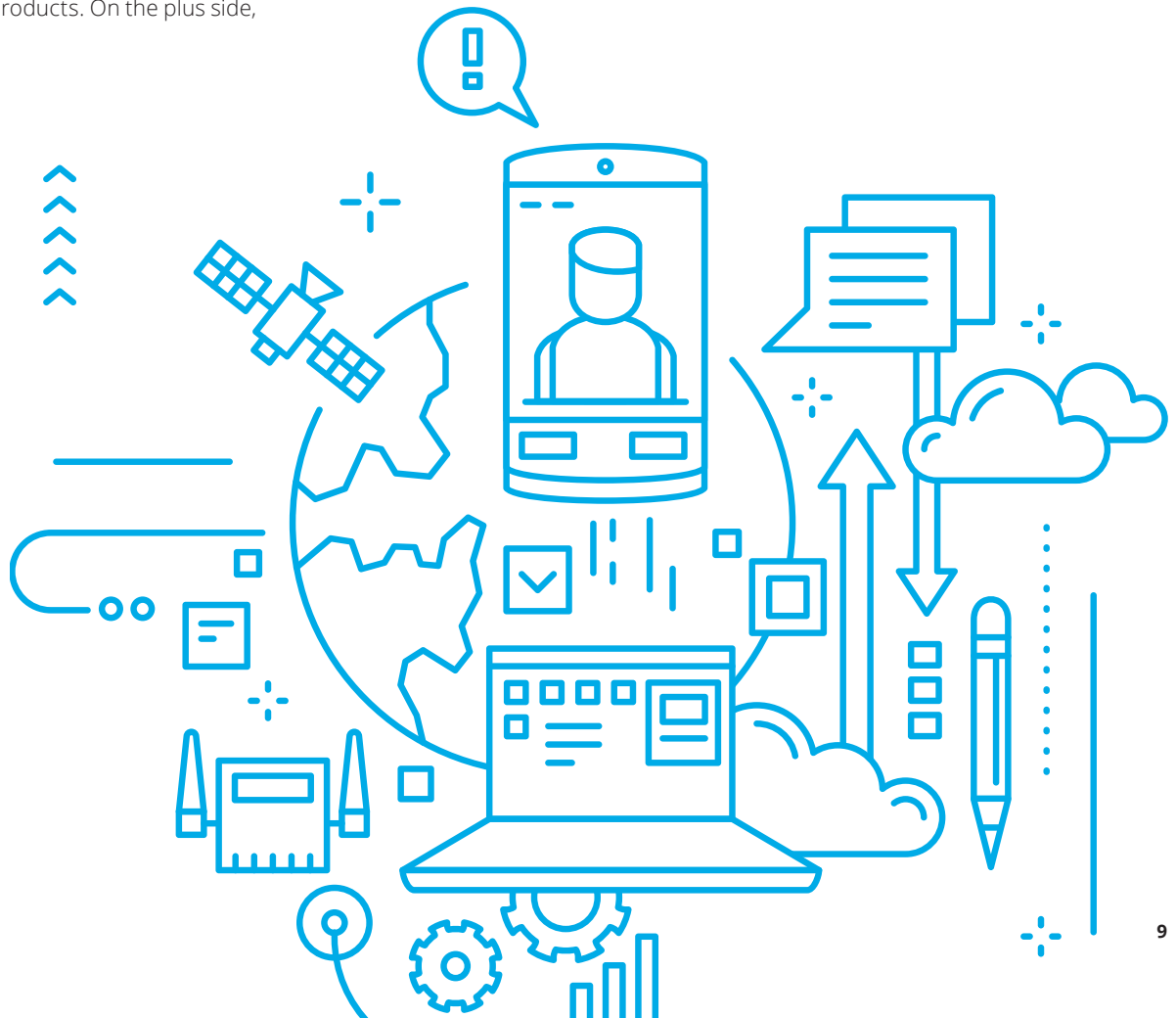
A strong economy empowers technology investments

In light of economic growth in 2018 and recent corporate tax cuts, CP companies have greater power to invest in the technologies we've been discussing.

A quick summary of the US economic outlook suggests the economy appears to be on a healthy footing, though there may be headwinds on the horizon impacting CP companies.²⁶ Real GDP grew 3.5 percent during the third quarter of 2018, continuing the momentum from the previous quarter. Growth is likely to slow to 2.4 percent in 2019 as interest rate hikes by the Federal Reserve and an end to fiscal stimulus measures weigh on economic activity.

Consumer spending faces a mix of headwinds and tailwinds going into 2019, which could impact the ability to purchase consumer products. On the plus side,

consumers have benefited from a strong labor market and rising incomes. Unemployment is at a 49-year low while tax cuts have propped up disposable personal income. However, consumers face two key challenges. First, gains in equities have been low in 2018 vs. 2017. This will likely weigh on consumer wealth growth heading into 2019. Second, consumers face policy-related headwinds. Cost of borrowing is likely to go up as the Fed continues its rate hike path, the impact of tax cuts on income will fizzle out next year, and tariffs are expected to add to price pressures. Any such increase in prices will also keep real wage growth low.

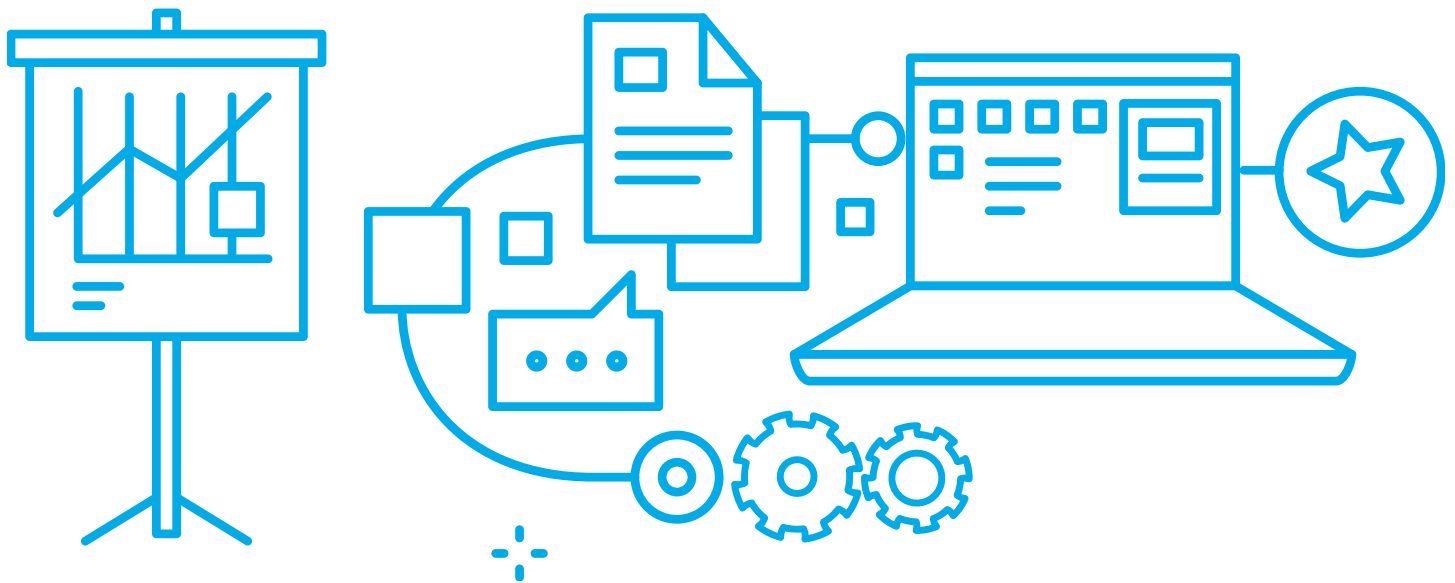


Rising transportation costs resulting from a shortage of truck drivers is a growing concern impacting profitability

Many leading US CP companies have reported that higher shipping and logistics costs have impacted profitability due to a shortage of truck drivers.²⁷ Several factors are contributing to the truck driver shortage:

 <p>Aging of current drivers (the average age of truckers is 49)</p>	 <p>Younger workers disinterested in truck driving careers, preferring higher-paying jobs in manufacturing or construction</p>	 <p>Women only account for 6 percent of the total truck driver population²⁸</p>
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Driver compensation accounts for about 43 percent of a trucking company's operational costs. To attract and retain drivers, many trucking companies are increasing salaries and benefits, which in turn increases overall transportation costs.²⁹ While it was anticipated that US truck transportation volume would grow by 4 percent in 2018, it will likely slow down to 2 percent between 2019 and 2024 due to driver shortage.³⁰



Changing regulations have yet to be resolved

In prior publications, we've discussed the impact of regulatory changes on CP companies. Since then, much remains uncertain on these topics, creating uncertainty for global CP companies.

Brexit

As of this writing, debate continues in the United Kingdom over the terms of Brexit. The UK Parliament is expected to vote on the terms of Brexit the week of January 14, but at present the specific terms remain unclear and negotiations continue. Once a decision has been reached we will provide an update on the implications for CP companies. Regardless of the outcome,

CP companies would likely benefit from scenario planning, as outlined in our paper *Brexit's impact on the horizon*.³¹

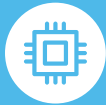
USMCA

As an update to the North American Free Trade Agreement (NAFTA), the United States, Mexico, and Canada are finalizing the United States-Mexico-Canada Agreement (USMCA). The USMCA is likely to give workers, farmers, and businesses a trade agreement resulting in free markets and fair trade—and may bolster economic growth within the region. It is estimated that the agreement will not be in place until 2020, after it is approved by leaders from all three countries.³² While the full implications for the CP industry won't be known till then, at present they appear aligned with those discussed in our paper, *Changing trade policies: How can the consumer products industry prepare and adapt?*³³ We anticipate updating progress and implications of the USMCA as details of the agreement unfold.



Moving beyond the technology inflection point in 2019

Coinciding with CP companies' commitment to increased customer centricity, it's likely 2019 will witness many CP companies advancing well beyond the technology inflection point. The momentum is building as evidenced by the technology applications we've already observed. What's even more exciting are the unrealized technology applications that will likely result from the significant investments currently in progress and from companies continuing to more intimately engage with their consumers. Even though there may be a degree of uncertainty due to economic and regulatory headwinds ahead, there remains seemingly unlimited potential from:



Addressing evolving consumer preferences by pursuing tech-based innovation through steady routes such as investment in in-house R&D and tech-focused VC funds or through expeditious routes of acquisitions.



Managing consumer demand patterns by adopting a continuous and interconnected supply chain to drive operations.



Deploying technology to enable and bolster consumer centricity, exploring its use in growth areas of DTC, branded pop-up stores, and omnichannel retailing.



Enhancing ongoing consumer trends such as health and wellness, organic foods, and sustainability.

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