



A SHORT ARTICLE SERIES

The adoption of disruptive technologies in the consumer products industry

Spotlight on artificial intelligence

Barb Renner, Curt Fedder, and Jagadish Upadhyaya

Consumer products organizations can leverage artificial intelligence solutions to improve efficiencies, personalize offerings, and achieve a coveted outcome—consumer delight.

ARTIFICIAL INTELLIGENCE (AI) is one of several disruptive technologies that consumer products' companies can deploy to further advance their journey to digital maturity. AI technologies “perform and/or augment tasks, help better inform decisions, and accomplish objectives that have traditionally required human intelligence, such as planning and reasoning from partial or uncertain information and learning.”¹ As such, AI technologies can potentially strengthen a company's competitive advantage in the marketplace and enhance the customer experience.

- Through the implementation of AI technologies, companies in the consumer products space can potentially benefit from:
 - **Automated processes** that can help organizations realize greater efficiencies, improved outcomes, and reduced costs
 - **AI-based product and service innovations** made possible through AI-generated permutations of potential product and service dimensions
 - **Augmented decision-making** enabled by advanced AI algorithms that quickly optimize scientific decision-making, allocate resources, and efficiently scale operations
- The possible benefits for the consumer include:
 - **Personalized products.** In the apparel, fashion, and athleisure space, products can be designed to suit a buyer's individual features and needs. Food and beverage companies can customize packaging by using digital printing technology.

- **Online product recommendations.** An algorithm-driven user interface can provide product recommendations based on assessments of consumers' buying patterns and product preferences, making the shopping experience more relevant, enjoyable, and satisfying.
- **Timely service.** Digital supply chain networks driven by AI have dramatically reduced turnaround, delivery, and customer service times.

Figure 1 explores several potential use cases of AI that are applicable to the consumer products industry. They are arranged based on the main categories associated with cognitive technologies: robotic process automation, language technologies, machine learning, and computer vision.



FIGURE 1

Possible use cases of AI in the consumer products industry

Robotic process automation

Connected supply chain (traceability and visibility)

Better managing the supply chain by analyzing the movement of goods

Quality control

Ensuring product authenticity in production

Food and product safety

Identifying "high-risk" situations by using predictive models

Machine learning (cognitive)

Product development and innovation

Suggesting iterations and newer variants in the innovation process

Operations safety

Monitoring data points to identify high-risk situations and for risk mitigation

Data analytics and prescriptive recommendations

Facilitating decision-making based on insights from analyses of multiple variables in large databases

Pricing promotions and forecasting

Using algorithms to decide pricing and forecasting demand

Language technologies (cognitive)

Brand reputation and social media monitoring

Scanning/monitoring social media to protect brand reputation

Computer vision (cognitive)

Customer experience and engagement

Creating multiple ways of using technology to engage with customers, tailoring products to their needs and improving the overall customer experience

Asset tracking

Enabling real-time tracking of assets across the supply chain to make informed decisions

Security

Using AI-based applications to monitor the use of images in social media conversations, with an emphasis on image tracking and recognition

Source: Deloitte analysis.

CASE STUDIES

CARLSBERG TESTS AI TO DEVELOP NEW BEER FLAVORS

Until recently, flavors and aromas were tested using chromatography and spectrometry techniques that were tedious and time-consuming. Developing a new flavor using these techniques potentially took eight to 24 months. Enter “The Beer Fingerprinting Project,” Carlsberg’s latest research project that deploys AI-based sensors to rapidly detect flavors and aromas of beer.² This sensor technology for flavor determination can reduce the time taken to innovate and develop a new beer flavor by up to 30 percent. Carlsberg hopes to use this technology to bring new beer flavors to the market faster than before.³ Success of this project can open doors for similar uses in other diverse industries, including the pharmaceuticals and food industries.

ESTEE LAUDER USES A CHATBOT TO HELP CONSUMERS DISCOVER THEIR IDEAL LIPSTICK

Estee Lauder deploys a patented AI-based facial recognition program to develop a chatbot that helps online customers to choose and purchase their ideal lipstick. The chatbot is accessible on Facebook Messenger and allows online and mobile users to interact with Estee Lauder’s select lipstick brands. In addition, the chatbot administers a quiz to customers and then provides them with personalized shade recommendations.⁴

AI applications can help position companies as digital leaders

AI-based solutions can lead to a competitive advantage for consumer products organizations through increased efficiencies and enhanced customer experience. Companies could likely benefit from identifying applications from the potential use cases we’ve outlined as well as by developing

customized ones of their own. In addition, it may be advantageous to review product, marketing, advertising, and customer service strategies and tactics with the goal of integrating AI into these consumer-facing areas. As consumers become increasingly comfortable with AI-derived products and experiences, their preferences and behaviors may evolve, potentially leading them to expect AI experiences as the norm.

Endnotes

1. Ryan Renner, Mark Cotteleer, and Jonathan Holdowsky, *Cognitive technologies: A technical primer*, Deloitte Insights, February 6, 2018.
2. Carlsberg group, "Carlsberg Research Laboratory behind beer research project based on artificial intelligence," Carlsberg Group, accessed December 11, 2018.
3. Laura Mullan, "How Carlsberg is using AI to help develop new beers," *Food Drink & Franchise*, January 9, 2018.
4. Haley Velasco, "Estée Lauder and ModiFace create chatbot that lets customers try on lipstick virtually," *The Drum*, July 16, 2017.

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