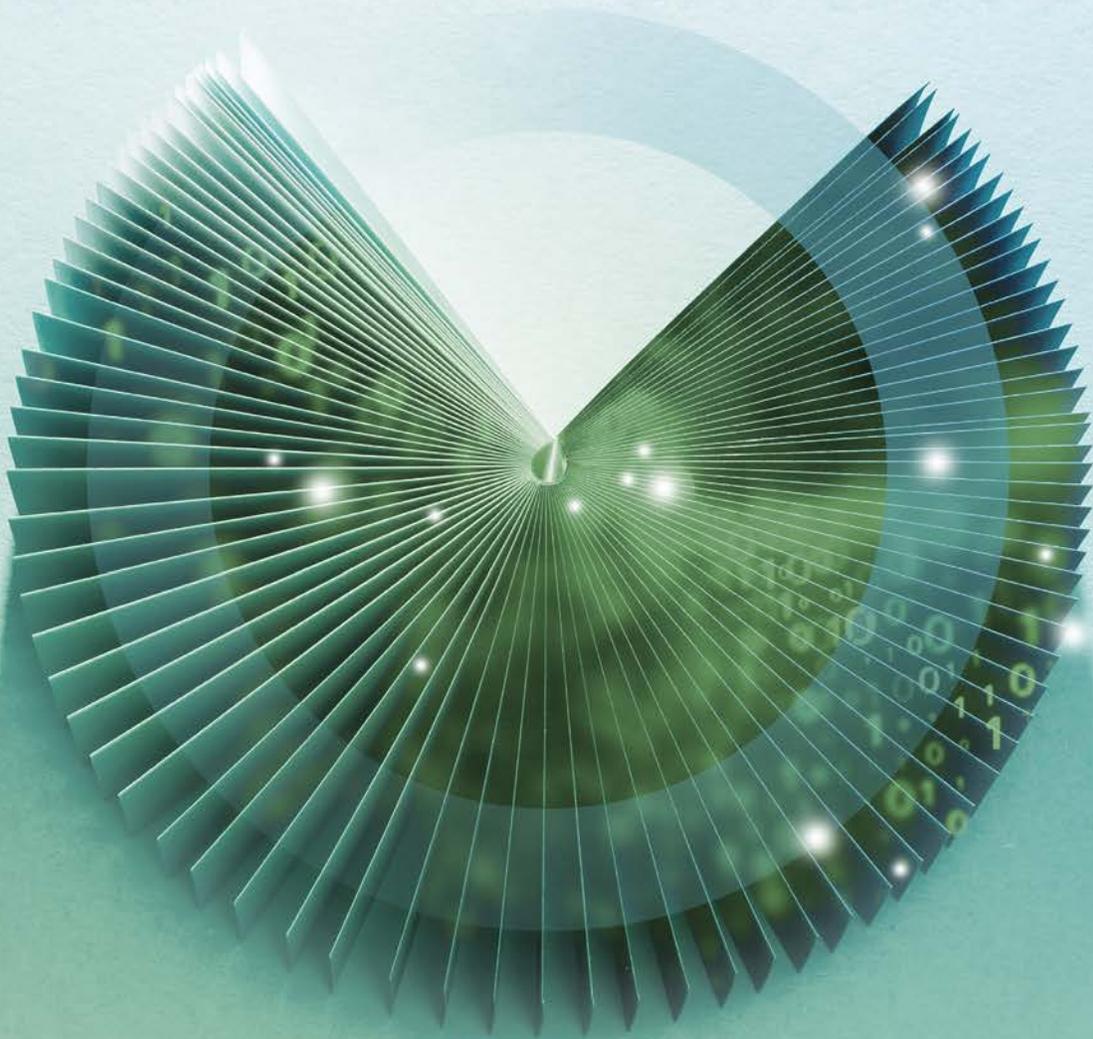**Deloitte.**

The Consumer
AI Dossier

By Deloitte AI Institute

What's inside

About the Deloitte AI Institute
The Deloitte AI Institute helps organizations connect all the different dimensions of the robust, highly dynamic and rapidly evolving AI ecosystem. The AI Institute leads conversations on applied AI innovation across industries, with cutting-edge insights, to promote human-machine collaboration in the "Age of With."

The Deloitte AI Institute aims to promote the dialogue and development of artificial intelligence, stimulate innovation, and examine challenges to AI implementation and ways to address them. The AI Institute collaborates with an ecosystem composed of academic research groups, start-ups, entrepreneurs, innovators, mature AI product leaders, and AI visionaries, to explore key areas of artificial intelligence including risks, policies, ethics, future of work and talent, and applied AI use cases. Combined with Deloitte's deep knowledge and experience in artificial intelligence applications, the Institute helps make sense of this complex ecosystem, and as a result, deliver impactful perspectives to help organizations succeed by making informed AI decisions.

No matter what stage of the AI journey you're in; whether you're a board member or a C-Suite leader driving strategy for your organization, or a hands on data scientist, bringing an AI strategy to life, the Deloitte AI institute can help you learn more about how enterprises across the world are leveraging AI for a competitive advantage. Visit us at the Deloitte AI Institute for a full body of our work, subscribe to our podcasts and newsletter, and join us at our meet ups and live events. Let's explore the future of AI together.

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After decades as science fiction fantasy, artificial intelligence (AI) has made the leap to practical reality and is quickly becoming a competitive necessity.

Introduction

After decades as science fiction fantasy, artificial intelligence (AI) has made the leap to practical reality and is quickly becoming a competitive necessity. Yet, amidst the current frenzy of AI advancement and adoption, many leaders and decisionmakers still have significant questions about what AI can actually do for their businesses.

This dossier highlights several of the most compelling, business-ready use cases for AI in the Consumer industry. Each use case features a summary of the key business issues and opportunities, how AI can help, and the benefits that are likely to be achieved. The dossier also includes several emerging AI use cases that are expected to have a major impact on the industry in the future.

Of course, the best uses for AI vary from one organization to the next, and there many compelling use cases for AI beyond the ones highlighted here. However, reading through this collection should give you a much clearer sense of what AI is capable of achieving in a business context—now, and over the next several years—so you can make smart decisions about when, where, and how to deploy AI within your own organization (and how much time, money, and attention you should be investing in it today).

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Six ways that AI creates business value

Looking across all AI use cases, there are generally six major ways that AI can create value for a business:[1]

Cost reduction
Applying AI and intelligent automation solutions to automate tasks that are relatively low value and often repetitive, can reduce costs through improved efficiency and quality.

Example
Automating data entry and patient appointment scheduling using natural language processing.

Speed to execution
Reducing the time required to achieve operational and business results by minimizing latency.

Example
Accelerating the process of drug approval by using predictive insights to create a synthetic trial.

Reduced complexity
Improving understanding and decision making through analytics that are more proactive, predictive, and able to see patterns in increasingly complex sources.

Example
Reducing factory downtime by predicting machinery maintenance needs.

Transformed engagement
Changing the way people interact with technology, enabling businesses to engage with people on human terms rather than forcing humans to engage on machine terms.

Example
Using conversational bots that can understand and respond to customer sentiment to address customer needs more effectively.

Fueled innovation
Redefining where to play and how to win by using AI to enable innovative new products, markets, and business models.

Example
Recommending new product concepts and features based on customer needs and preferences mined from social media.

Fortified trust
Securing a business from risks such as fraud and cyber—improving quality and consistency while enabling greater transparency to enhance brand trust.

Example
Identifying and anticipating cyber attacks before they occur.

Top AI use cases in the Consumer industry

The Consumer industry, as we view it, encompasses a wide range of businesses including Consumer Products, Retail, Automotive, Lodging, Restaurants, Travel, and Transportation. What these seemingly disparate businesses have in common is a strong and defining focus on serving customers—and a common set of current and future business issues they are solving for.

Consumer-related businesses are actively exploring ways to harness the power of AI, and many valuable use cases are emerging. However, AI adoption and maturity levels vary widely for a variety of reasons, including: scalability due to data quality and complexity; organizational constructs and talent scarcity; and lack of trust.

For most organizations, however, the biggest challenge is moving from concept to scale. For consumer-related businesses, this challenge can be particularly difficult since many have large legacy data and analytics platforms, decentralized data and analytics operations, and (in many cases) decentralized authority and responsibility—whether across business units, or even more so, across independently operated franchises. This often leads to data being inconsistent, poor quality, and limited in usability, which can be a big problem for AI systems, which tend to be extremely data-intensive (with the quality of the input having a direct impact on the quality of the output).

Another common obstacle is achieving alignment and integration across business and IT stakeholders. Often, AI is used in isolated pockets of the organization—sometimes working with IT, sometimes not. However, in order to achieve the full benefits of AI at scale, an integrated business and technology plan (and case for change) is important.

Similarly, in many organizations there continues to be a lack of trust in AI and what it can and should be allowed to do. Tackling this issue should include a coordinated change management approach for communicating with leaders and teams and hearing/addressing their concerns. For businesses without direct control over this critical element, deploying AI at scale can be difficult to achieve.

Over time, the task of building trust in AI will likely get easier as AI technologies become more widely accessible—and accepted—for businesses and consumers alike. Every successful AI deployment fuels a virtuous cycle that improves people's understanding of what AI can do and helps expand the scale and scope of future AI use cases. Also, because these learning algorithms and solutions reduce the effort it takes to deliver insights and decisive action, the resulting operational improvements typically increase confidence and drive increased return on investment.

Looking ahead, AI systems for consumer-related businesses are expected to become increasingly autonomous—changing the way companies move goods, enabling increased mobility, and transforming how they manage their workforces—while at the same time becoming increasingly interconnected across entire ecosystems, enabling AI to add value to business processes from end to end.

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More than fleeting improvements
(Fleet Network Optimization)

Use AI and machine learning to create optimized network plans for ground and air fleets—maximizing efficiencies within and across business lines.

Issue/Opportunity

Inefficient network plans cost companies millions of dollars every year. Yet, according to the Journal of Commerce, 85 percent of shippers and consignees believe their industry has been significantly slower than other industries at implementing new technologies.[2]

How AI can help

- *Optimize fleet utilization and empty repositioning.* Companies can use machine learning and predictive analytics to optimize their fleet utilization and empty repositioning. Initially, this can be done through a human-in-the-loop approach, with AI models providing recommendations for drivers and planners to implement. However, as the models learn over time, the optimization process can evolve to become more automated and prescriptive.

- *Enable real-time decision-making.* AI systems can pull in and process a wide range of data in real time—including information about traffic, weather, road conditions, and other data-in-motion. This can be used to automate change processes and/or enable drivers and planners to efficiently make optimal decisions in the face of unexpected circumstances.

- *Capitalize on IoT.* AI-based IoT enables better, more informed downtime predictions. Machine learning models can use those improved predictions to optimize fleet usage and operations in real time.

Possible benefits

Increased efficiency and profits.
AI can help a company efficiently scale its operations within and across its global ground, air, and sea fleets—boosting efficiency and profits.

Reduced downtime and maintenance costs.
AI technologies can reduce costs and downtime related to maintenance.

Higher revenue.
AI can help improve fleet positioning to better meet demand and maximize revenue.

Next level personalization
(Connected Customer)

Personalize and improve the customer experience through consolidated platforms that harness the power of AI, machine learning, and natural language processing.

Issue/Opportunity

According to Gartner, customer service and support is one of the largest segments of CRM, comprising 36 percent of the CRM market in 2018.[3] Yet, despite the segment's size and maturity, companies need to continue actively keeping pace with their competitors in order to provide consistent customer service across multiple levels, maintain customer loyalty, and prepare for disruption from the new digital business ecosystem. Throughout the customer journey and lifecycle, it is now possible to personalize the customer experience across all channels using machine learning, conversational AI, and natural language processing.

How AI can help

- *Automate customer interactions.* Chatbots and virtual customer assistants have become hot topics for organizations looking to redesign and upgrade their customer service experiences.

- *Use IoT to sense customer sentiment and needs.* Consolidated customer service platforms based on AI and IoT enable customer service providers to sense the sentiments and needs of connected customers.

- *Personalize the customer experience.* Using machine learning and data-in-motion, companies can provide real-time recommendations and decision support that enable a tailored customer experience before, during, and after each interaction—improving customer lifetime value and loyalty.

Possible benefits

Increased revenue.
Greater awareness of customer needs and wants can drive higher revenue.

Better customer experience.
Deeper understanding of problem patterns and issues can help companies improve the customer experience.

Lower costs.
AI and machine learning can be used to handle routine tasks, enabling customer service centers to operate more efficiently at reduced cost.

Mix and match
(Items Assortment Planning Optimization)

Use AI to determine which items should be stocked or substituted to optimize sales, margins, inventory, and customer satisfaction.

Issue/Opportunity
The traditional approach to assortment optimization is costly, slow, prone to human error, and does not maximize profitability and sustainable growth—relying on once-a-year manual reviews that cannot keep pace with the rapidly evolving expectations of today's consumers. Using AI for assortment optimization can help a retailer make better, more sustainable decisions on how to efficiently provide customers with the products they need.

How AI can help

- *Predict consumer demand and next actions.* AI analytics can predict consumers' next actions and their responses to market trends based on past purchasing behavior. This allows retailers to have a better understanding of which items are expected to be in high demand, enabling more informed decisions about which items to prioritize for stocking.

- *Analyze customer data from a wide range of sources.* Neural networks can mine and analyze data from relevant brands, competitors, and social media and then compare those insights against the spending behavior of a retailer's customers—helping to generate more accurate assortment forecasts at lower cost. Also, the algorithms can automatically update their results when the data changes, enabling retailers to track consumer expectations in real time.

Possible benefits

Assortment planning that is more timely and less costly.
By using AI technologies to automate the assortment planning process, retailers can analyze consumer expectations in real time while avoiding the operational costs of yearly manual reviews.

Better decisions about what to stock.
AI can generate more accurate product recommendations, enabling retailers to make smarter decisions about what to stock.

Closing the loop on supply and demand
(Consumer Demand Planning, Forecasting, and Marketing)

Use AI to augment marketing and improve demand planning and forecasting.

Issue/Opportunity
As the number of sales channels used by consumers continues to grow, retailers should continue to improve how they plan across multiple sales channels—and how they handle disruptions. This typically requires improved demand-planning and replenishment capabilities that harness the power of AI. In the past, marketing solutions could only make decisions based on a fixed set of assumptions and narrowly defined inputs and outputs. Although such solutions can provide useful insights on a macro level, they are often difficult to scale and largely lack the ability to look at audience specifics. However, thanks to AI, marketers now have the opportunity to analyze consumer mannerisms on a much more detailed level.

How AI can help

- *Understand consumer demand.* AI can be used to understand consumer demand more deeply by analyzing a wide range of factors such macroeconomic elements and competitor activities.

- *Define segments much more precisely.* AI allows marketers to create hyper-focused, segmented groups out of their audiences, generating deeper insights and increasing the connections between data points.

- *Analyze product clusters.* AI can examine clusters of products and reveal hidden demand patterns for similar and contrasting product groups.

- *Automate decision-making.* AI can help automate planning decisions that involve clear cause-and-effect relationships, allowing planners to focus their time and attention on more complex situations where causality is less evident.

Possible benefits

Unprecedented levels of personalization.
AI enables marketers to process and analyze massive amounts of data and get to know consumers at the individual level.

Improved supply chain performance with fewer stockouts.
Machine learning in demand planning and forecasting can help businesses maximize revenue, improve margins, and optimize inventory while minimizing occurrences of products going out of stock due to unanticipated demand.

Improved decision-making.
AI technologies can help business leaders improve their decision making—and enable simpler, less important decisions to be made more quickly.

Customer contact in the AI era
(Digital Contact Center)

Use AI technologies such as natural language processing and machine learning to improve the contact center experience and overall customer satisfaction.

Issue/Opportunity

Interactions with contact centers can have a huge impact on customer satisfaction and loyalty. Yet, because of the pandemic, today's contact centers face bigger challenges than ever, including higher work volumes, lower IT budgets, and significant labor shortages.

Contact center automation, which has been steadily improving for years, can help address those challenges. However, until now, most IVR systems and chatbots have relied on basic word recognition and simple file retrieval—and were not sensitive to the context of a discussion—giving customers a sub-optimal experience.

A digital contact center that uses AI technologies, such as natural language processing and machine learning, can be more predictive and sophisticated, significantly improving the customer experience while reducing the need for human involvement.

How AI can help

AI technologies such as natural language processing and machine learning enable contact center systems to be more sophisticated and predictive, significantly improving the customer experience while reducing the need for 24/7 human involvement; allowing customer service representatives to focus on more value added tasks.

- *Voice Virtual Assistants.* AI-based natural language tools and machine learning models can be used to build Voice Virtual Assistants that deliver a more efficient, engaging, and human-like customer experience. These tools can train chatbots to answer questions, schedule appointments and calls, and refer customers to the department most appropriate to handle their requests.

- *Intelligent follow-up.* Real-time analytics using AI technologies can inform contact centers about when to follow up on prior customer interactions.

- *Omnichannel quality management.* Using predictive analytics and sentiment analysis, all interactions on all digital channels can be monitored, providing valuable insights about both customers and contact center staff. This can give managers real-time information for retraining workers or deciding on the next best action for customers.

Possible benefits

Improved customer satisfaction with less manual involvement.
AI can help boost overall contact center performance metrics (including customer satisfaction), while reducing the amount of manual intervention required to address customer queries.

Lower costs.
Less manual intervention can mean lower operating costs, since the workforce required to support AI-enhanced call centers can be significantly smaller.

More efficient interactions.
For some queries, interacting with AI-based bots is more convenient and efficient than working with a human agent, resulting in a better customer experience.

Emerging AI use cases in the Consumer industry

The future of shopping
(Autonomous Stores)

Using AI to automate retail outlets, allowing them to operate unattended.

One of the biggest challenges for brick-and-mortar retailers is finding ways to match the cost efficiency of their online competitors while continuing to differentiate themselves by offering a local experience that is hands-on and satisfying. With autonomous stores, deep learning software—in conjunction with cameras and sensors—can recognize everything that is happening within a store (including people's movements, expressions, and actions), making it possible for the store to remain fully stocked and operational with little or no human involvement. It can be a near-perfect combination of full service and self service.

Emerging AI use cases in the Consumer industry

Are we there yet?

(Autonomous Driving)

Using AI to operate vehicles autonomously.

For many people, driving is a chore they would rather avoid. And for many companies, trucking and other driving-related activities are just costs of doing business that eat up precious resources and expose the organization to significant risk. AI is on the verge of dramatically improving the driving experience—with human drivers strictly optional. Autonomous driving combines onboard sensors and localization technologies with AI-based decision models that are designed to reduce human error and make smarter, more informed decisions about steering, braking, and navigation. The goal is to create driving capabilities that are safer, cheaper, and more efficient—reducing accidents and freeing up humans to focus on activities that are more valuable and satisfying.

Fits and smarts

(Fashion Tech)

Using AI to instantly determine which clothing items are the best fit for a customer's particular size and body shape.

Finding items that fit is one of the worst parts of clothes shopping. From a consumer's perspective, it can be a time-consuming hassle during the purchase phase—and all too often leads to dissatisfaction and return hassles as well. From a retailer's perspective, it can arguably be an even bigger problem, requiring large inventories of sizes and styles; sales clerks with sufficient experience and expertise tend to steer customers toward the right items; unhappy customers; and the time and expense of dealing with returns. Systems that incorporate machine learning, computer vision, and 3D scanning can help minimize the problem by obtaining a shopper's measurements in real time simply by having them stand in front of a camera. Those measurements can then be matched against a database of clothing to find the best fit, improving customer satisfaction and reducing the cost of returns.

Emerging AI use cases in the Consumer industry

Health your way

(Personalized Health, Fitness, and Wellness)

Using AI with wearable and non-wearable devices to monitor people's health and provide real-time feedback and coaching.

Imagine a world where every individual's health and wellness experience could be tailored to that person's unique needs—in real time—while also benefiting from the collective knowledge and experience gained from everyone else. With machine learning and other AI technologies, systems can be trained over time based on data from millions of users, enabling data-driven, personalized coaching that drives behavior change and helps manage and prevent chronic diseases. That's the future of health and wellness, and with the latest advances in AI (and the proliferation of devices such as smartwatches) it's already starting.

The paradox of AI personalization

(Service Experience Modernization)

Using AI to transform the customer service experience (and how service is delivered) in many cases allowing customers to be served automatically and effortlessly.

It's ironic to think that introducing more machines and AI technologies into the customer service experience could actually make it more personal. But that's exactly what's happening. By applying AI across the entire customer journey, customer service experiences, processes, and interactions are evolving from human-human to human-machine and ultimately machine-machine, enabling customers to be served in ways that are increasingly convenient, efficient, and effective—and, paradoxically, increasingly personal, with each individual's needs being addressed automatically and autonomously.

Conclusion

Although AI adoption rates and maturity levels vary widely across industries—and even within them—there seems to be no question that AI is here to stay. In fact, AI is quickly becoming a competitive necessity for nearly all types of businesses—driving unprecedented levels of efficiency and performance and making it possible for businesses of every shape and size to do things that simply weren't possible before.

The key to success is to start small but think big. According to a recent Deloitte survey—*State of AI in the Enterprise,* 3rd Edition—74 percent of businesses surveyed are still in the AI experimentation stage with a focus on modernizing their data for AI and building AI expertise through an assortment of siloed pilot programs and proofs-of-concept, but without a clear vision of how all the pieces fit together. By contrast, only 26 percent of businesses surveyed are focused on deploying high impact AI use cases at scale, which is when the real value kicks in.

In this compendium, we've highlighted many of the most compelling and business-ready use cases in every major industry. However, a use case is only as good as the extent to which it is actually used. No matter how compelling an AI use case might seem on paper, its full value can only be unlocked if you embrace and deploy it at scale across your broader enterprise and ecosystem.

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Contact us

Our insights can help you take advantage of chance. If you're looking for fresh ideas to address your challenges, we should talk.

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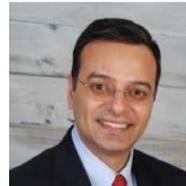
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Endnotes

1. Source: Deloitte analysis

2. "Industry skeptical of pace of logistics tech adoption," *The Journal of Commerce*, June 20, 2017.

3. "Market Share: Customer Experience and Relationship Management, Worldwide," *Gartner*, 2018.

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