

IDC PERSPECTIVE

Barriers and Challenges to AI Adoption in Retail

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EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: Barriers and Challenges to AI Adoption in Retail

This IDC Perspective discusses the barriers to retailers' adoption of AI solutions and the associated challenges with implementation, and it aims to shed light on what is holding retail back from deeper AI investment today. Retailers can use this document to anticipate some of the challenges they are likely to face while vendors can use it to help retailers proactively address challenges to accelerate adoption and, in turn, retail innovation.

Key Takeaways

- Retail is one of the most promising industries for AI solutions, yet the retail industry — where 60% of companies are not yet pursuing AI — lags behind other industries.
- In conversations with retailers and vendors about the perceived barriers to AI adoption, we consistently hear concerns around the level of change management, the lack of a viable business case for investment, challenges with data quality, and an organizational culture that doesn't support AI.
- IDC's 2019 *Global AI Survey* supports anecdotal insights and calls attention to concerns around solution cost and the lack of skilled personnel as the most commonly cited barrier.

Recommended Actions

- Leverage the *AI Use Case x DX Maturity* framework; be deliberate about the intent of AI and honest about your DX to understand the strategic benefits of AI solutions.
- Ensure that you are focused on practical use cases with solutions that are appropriate for your DX maturity and desired outcomes.
- Push your solution vendor for processes that deliver verifiable, easy-to-explain, transparent measurement.
- Focus efforts early in the process on building awareness and buy-in from executives on the importance of an innovative and AI culture and mindset.

Source: IDC, 2019

SITUATION OVERVIEW

Retail is one of the most promising industries for artificial intelligence (AI) solutions. As discussed in *AI Use Cases in Retail: Automating the Automatable Versus Doing What Humans Can't* (IDC #US45533119, forthcoming), the scale, speed, complexity, and consumer orientation of modern experiential retail create conditions ripe for AI. And while AI solutions in retail are on the rise, adoption is still in its early days – almost 60% of retailers are not yet pursuing AI solutions, which lags behind other industries in aggregate, where just under 50% of companies are in a similar stage. In this document, we examine some of the factors that hold retailers back through a combination of anecdotal feedback compiled over a broad range of conversations with retailers and vendors and quantitative research from the retailers that participated in IDC's 2019 *Global AI Survey*.

In our recent IDC Perspective, we discussed the strategic potential of a successful AI solution implementation based on the intent of the use case and the stage of digital transformation (DX) of the retailer. As important as this is, retailers and vendors alike need a solid understanding of current barriers and challenges to AI adoption. This not only helps retailers better anticipate some of the issues they are likely to face but also can help stakeholders across the landscape proactively address challenges in order to accelerate adoption and, in turn, retail innovation.

In qualitative discussions with retailers and vendors, perceptions of barriers to AI adoption center around several themes that consistently resurface:

- **Change management.** Barriers around change management generally are discussed in the context of either concern over the scale of business process transformation that would ensue in organizations that aren't prepared for such redesign or fear of job reduction as a result of automation. As an answer to the first concern, there is a perception that the less a solution disrupts organizational processes, the more likely it is to be adopted. Related to the second concern, there is a perception that focusing on automation use cases for AI helps mitigate this concern that AI technology can help do away with the more mundane parts of a job function. These perceptions may be one factor in the higher prevalence of automation-focused AI solutions (see *AI Use Cases in Retail: Automating the Automatable Versus Doing What Humans Can't*, IDC #US45533119, forthcoming).
- **Limited business case/not delivering value.** Retailers and vendors discuss two general barriers related to value. One is related to the lack of demonstrable value – that is, while a solution has theoretical value for their organization, retailers have a desire to understand the incremental value of an AI solution over non-AI alternatives and to do empirically through a test and learn process that enables transparent measurement of results. Similarly, there is a perception that many solutions on the market today are able to provide insight but are relatively far from the point of making a decision, which limits the value for many organizations.
- **Data quality.** Retailers are often awash in data but aware of the lack of data integrity across systems, the limited quality/accuracy of their data, and perceive their data to be less than actionable. This creates a high degree of skepticism among retailers, and the lack of quality data at scale is often cited in conversations as a limiting factor to adoption. This concern, regardless of whether or not it's valid, is pervasive across companies and contributes to organizational inertia around AI adoption.
- **Culture.** Organizational culture can be a significant barrier to adoption, particularly for companies that are less mature in their analytical decision-making capabilities and digital transformation. This barrier materializes in a general skepticism toward algorithmic decision making fueled by a perception of opaque recommendations and analysis. Cultural barriers not

only are deeply rooted in the organizational mindset but also are widespread across the organization, impacting areas such as incentive compensation and organizational structure.

Quantitative Research on AI in Retail

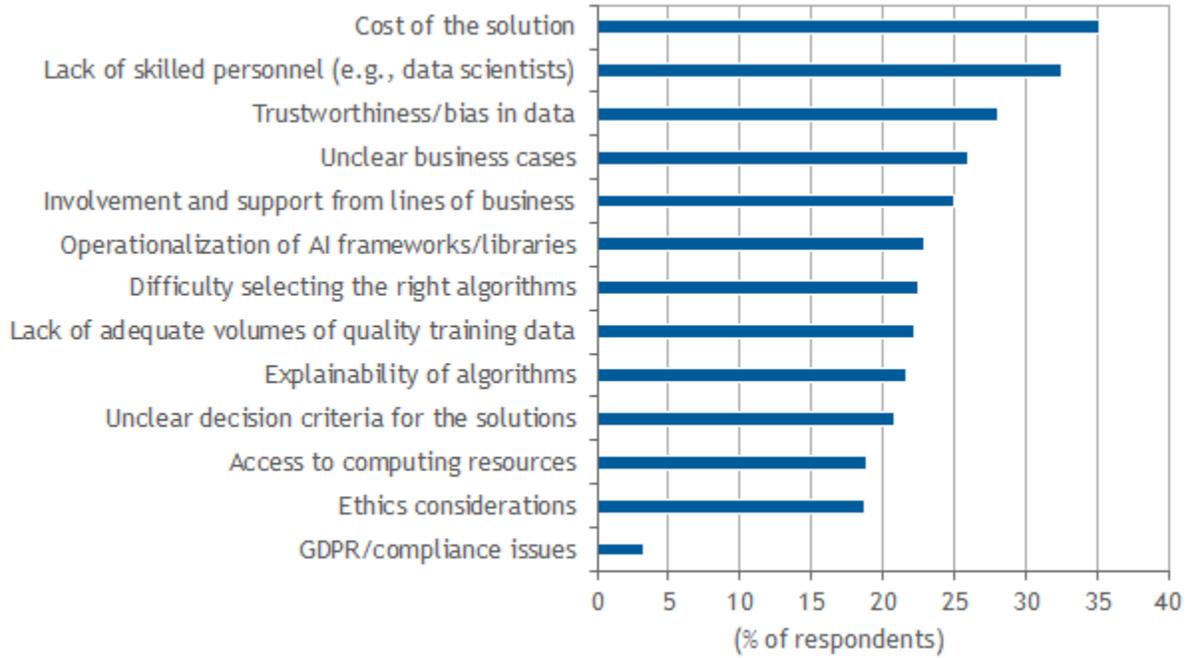
It's important to understand perceived barriers to AI adoption and be aware of how broadly they are voiced, as stakeholders across the industry are likely hearing versions of these concerns in their own conversations. At the same time, it's critical to understand the extent to which these concerns are validated through research.

In IDC's 2019 *Global AI Survey*, we surveyed 161 retailers of various sizes and industry segments that have implemented AI solutions in their organization. As a part of this survey, we sought to better understand the factors that have created roadblocks in the implementation of AI solutions. The results show that retailers' two primary barriers to AI implementation are the cost of the solution and the lack of skilled personnel (see Figure 2). Rounding out the top 5 limitations are concerns around trustworthiness and/or bias of the data, unclear business cases, and support from lines of business.

FIGURE 2

Retailer Barriers to Implementing AI Technology

Q. What are the factors that hold you back, or have held you back, from implementing AI technology?



n = 161 retailers for this sample, n = 2,446 retailers for full study

Base = all respondents

Notes:

This survey is managed by IDC's Quantitative Research Group.

Data is weighted by country GDP.

Multiple responses were allowed.

Use caution when interpreting small sample sizes.

Source: IDC's *Global AI Survey*, May 2019

Quantitative Research Versus Anecdotal Insights

While the factors uncovered in the quantitative research don't perfectly match the anecdotal insights, the two certainly support each other. Setting aside cost concerns for the moment, which often fall to the top of a list of concerns in research, the next most common barrier for the retailers surveyed is the lack of skilled personnel. This can be interpreted in two ways – either there is a lack of AI talent in the labor market generally or the retail industry has a difficult time attracting AI talent. The latter explanation may be a logical one – retail is lagging behind other industries both in digital transformation maturity and in adoption of AI (see *AI Use Cases in Retail: Automating the Automatable Versus Doing What Humans Can't*, IDC #US45533119, forthcoming). Given this scenario, a straightforward hypothesis is that there are more attractive industries for AI talent. Regardless, even if

there is a more general scarcity of AI talent, then DX/analytical maturity and cultural aspects within retail are even more important.

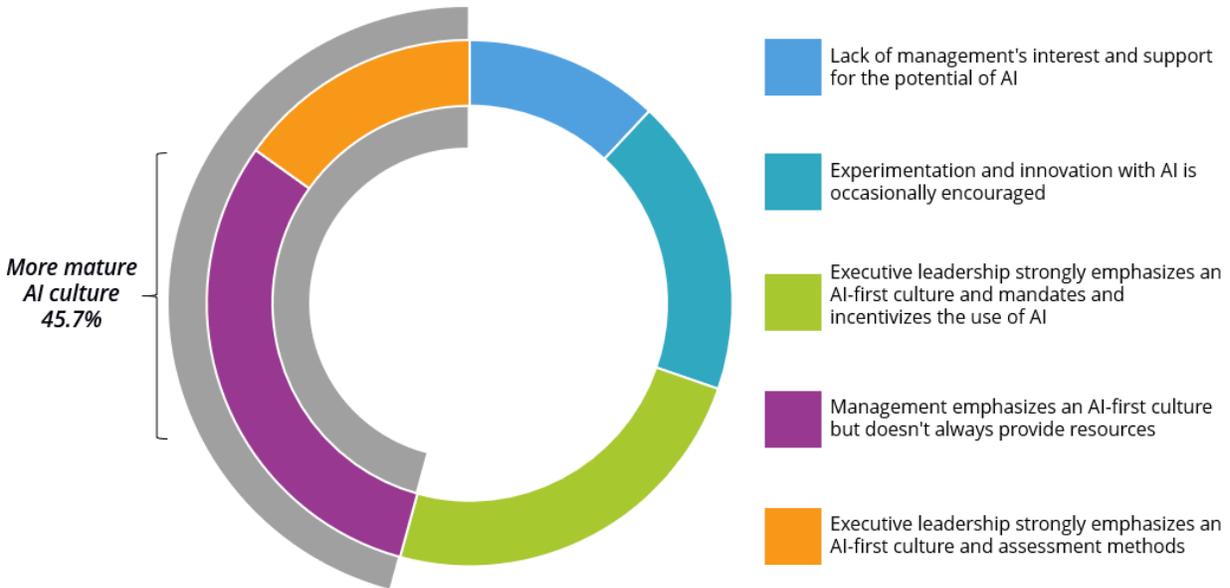
Retailers' concerns over the trustworthiness of data that we hear anecdotally appear to be validated by this survey. It's a widely discussed concern in conversations and the third most commonly cited barrier to implementation among retailers. Similarly, we hear discussion around the lack of a strong business case for AI solutions, which is also validated by our survey. There are several related issues impacting this concern. One is the cost of solutions, which is the primary barrier holding back adoption. The cost of the solution and the value of the business case are inextricably linked. While capital constraints certainly limit the resources available to invest, if the perception of value was higher, the business case could support larger investment. The perception of value is related to the need for relevant and practical use cases of AI. Focusing on impractical use cases or solutions that are inappropriate for a retailers' DX maturity can contribute to the overall lack of a compelling business case. At the same time, vendors need to be transparent with pricing and enable empirical evidence through measurable tests and pilots, including head-to-head comparisons with current processes.

Organizational culture can present serious headwinds to AI implementation. Even among those companies that have already adopted AI solutions to some degree – a minority of retailers – most do not have a mature AI culture (see Figure 3). For the nearly 60% of retailers that haven't yet adopted AI or are not even considering a solution, this cultural barrier is likely significantly stronger. Moreover, for those 63% of retailers that are among the digitally distraught, AI solutions often represent a two-step leap. First, the organization needs to trust an analytical decision-making process, and second, it needs to trust a machine to drive that process or make the decision based on the process. That represents a significant hurdle.

FIGURE 3

AI Culture Among Retailers That Have Implemented AI Solutions

Q. Which response below best represents your organization's artificial intelligence culture?



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Base = all respondents

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Source: IDC's *Global AI Survey*, May 2019

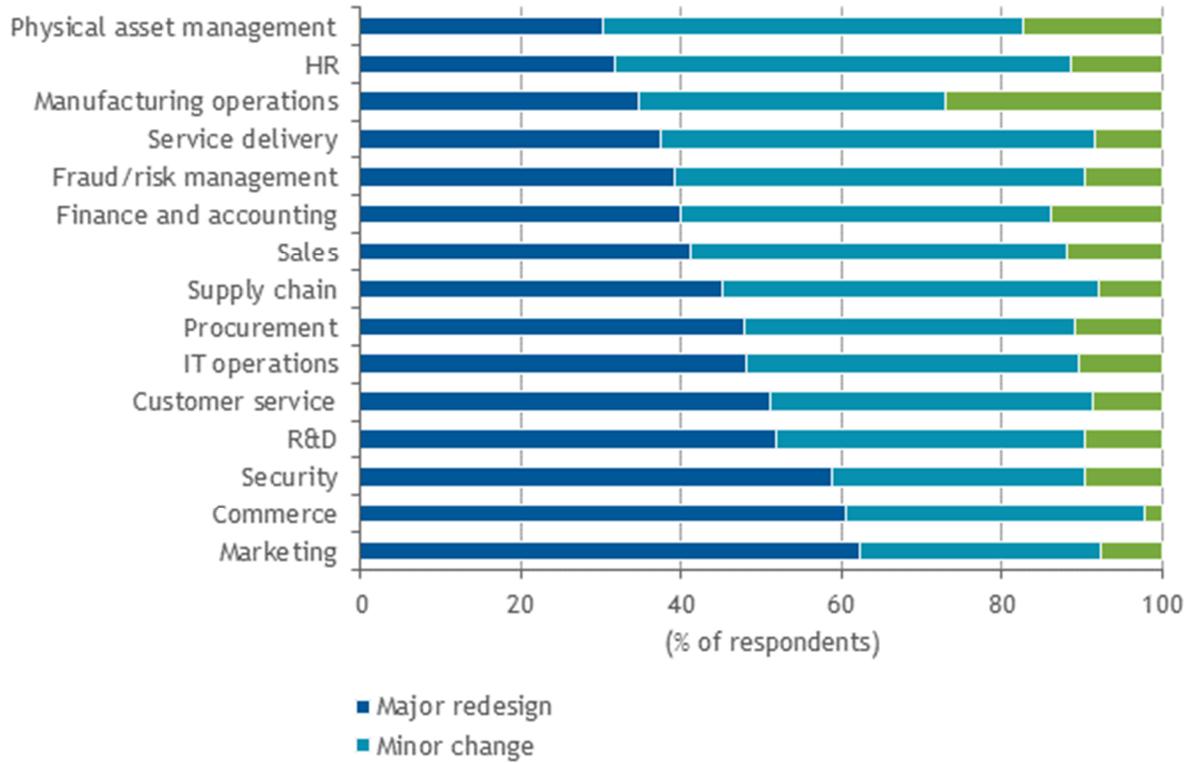
As for the concerns we hear around the challenge of change management, while this was not a factor reported in the survey, it still represents a real hurdle for organizations that varies by the business process impacted by AI.

Particularly for areas of the business such as marketing and commerce that are more likely to see differentiation focused use cases that extend human capabilities (see *AI Use Cases in Retail: Automating the Automatable Versus Doing What Humans Can't*, IDC #US45533119, forthcoming), the level of business process redesign can be significant – more than 50% of companies report undertaking a major redesign of processes across five areas of the business, and at least one-third of respondents report major redesign regardless of the business process their AI implementation was focused on (see Figure 4).

FIGURE 4

Business Process Redesign Undertaken with AI Solution Implementation

Q. Please describe the level of business processes revamp that you have done/are doing to maximize AI benefits.



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Base = all respondents

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Source: IDC's *Global AI Survey*, May 2019

Note: All numbers in this document may not be exact due to rounding.

ADVICE FOR THE TECHNOLOGY BUYER

Understanding the range of barriers to AI adoption allows retailers to anticipate the challenges that will need to be addressed both internally with their teams and externally with their vendors. Being able to anticipate challenges is one thing, but proactively overcoming barriers is another challenge altogether. A few considerations for the retailer:

- Leverage the *AI Use Case x DX Maturity* framework; be deliberate about the intent of AI and honest about your DX to understand the strategic benefits of AI solutions.
- Ensure that you are focused on practical use cases with solutions that are appropriate for your DX maturity and desired outcomes.
- Push your solution vendor for processes that deliver verifiable, easy-to-explain, transparent measurement.
- Focus efforts early in the process on building awareness and buy-in from executives on the importance of an innovation and AI culture and mindset.
- Engage stakeholders in all areas of the organization early in the innovation process. Work to create a sense of ownership as you understand the practical concerns from different departments as well as the required changes to business processes and incentives.
- Provide enough time to allow stakeholders to trust and understand the data. Experiment first to get comfortable.

LEARN MORE

Related Research

- *AI Use Cases in Retail: Automating the Automatable Versus Doing What Humans Can't* (IDC #US45533119, forthcoming)
- *IDC's Worldwide Digital Transformation Use Case Taxonomy, 2019: Experiential Retail* (IDC #US44627719, June 2019)

Synopsis

This IDC Perspective discusses the barriers to retailers' adoption of AI solutions and the associated challenges with implementation, and it aims to shed light on what is holding retail back from deeper AI investment today. Retailers can use this document to anticipate some of the challenges they are likely to face while vendors can use it to help retailers proactively address challenges to accelerate adoption and, in turn, retail innovation.

Jon Duke, vice president of research, IDC Retail Insights, states "It's important to understand perceived barriers to AI adoption and be aware of how broadly they are voiced, as stakeholders across the industry are likely hearing versions of these concerns in their own conversations."

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