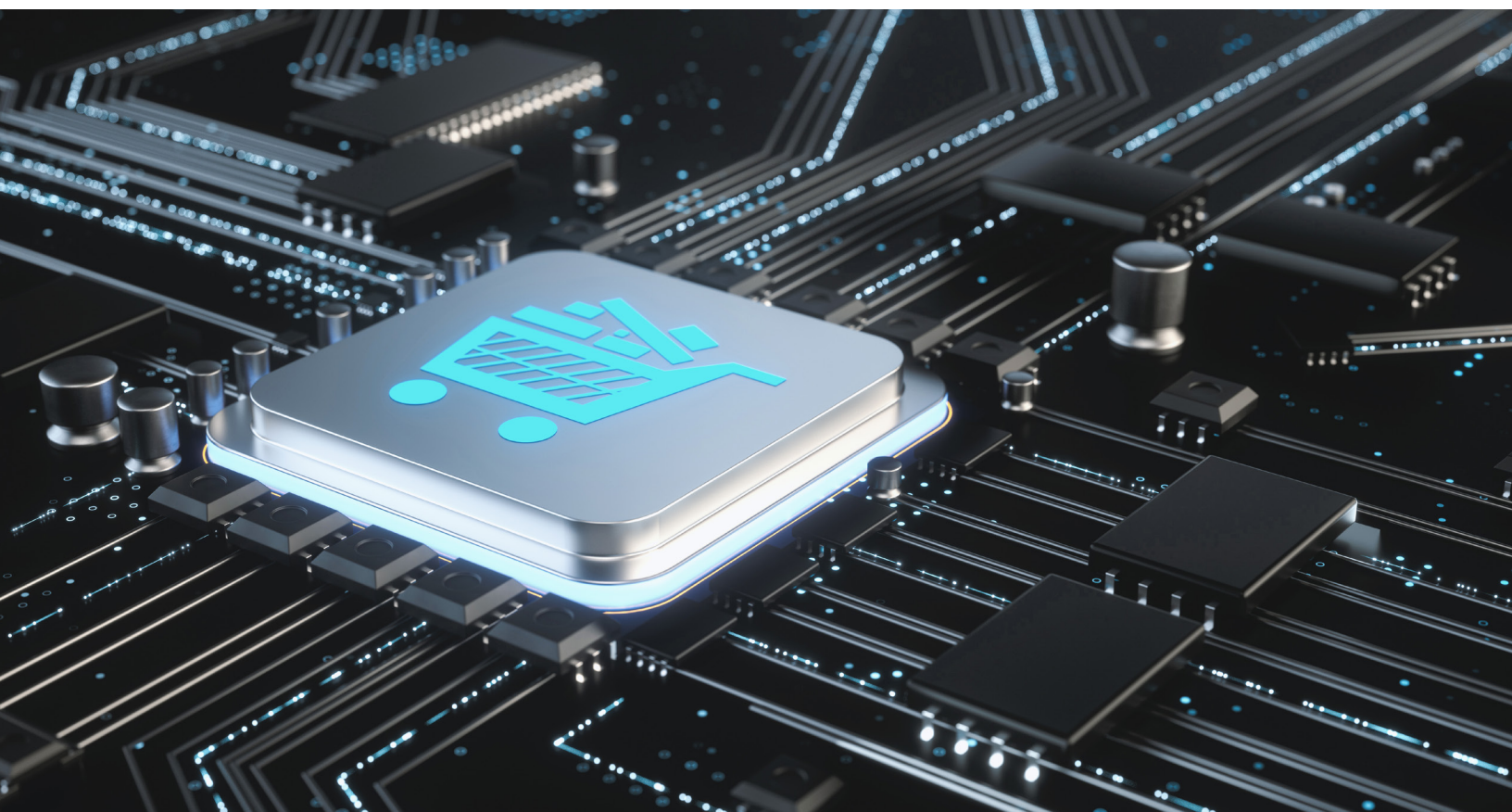


Consumer & Retail Practice

# The tech transformation imperative in retail

Organizations face an urgent need to overhaul their tech architecture and operating model to keep pace with the changing landscape. Five concrete actions can accelerate the transformation journey.

*This article is a collaborative effort by Raphael Bick, Stéphane Bout, Fabian Frick, Marcus Keutel, and Valerie Skinner, representing views from McKinsey's Consumer & Retail Practice.*



**Digital technology has become** a foundational element for all industries, but retail is facing several challenges that have brought it to the fore. The industry has been reshaped by a number of factors—including the rise of e-commerce and omnichannel, changing customer behavior and hyperpersonalization, and growing supply chain complexity—all of which have been accelerated by the pandemic. These shifts have heightened the pressure on retailers' bottom line: over the past five years, margins have been shrinking by two to three percentage points per year, or even by as much as five to six percentage points, depending on the vertical.

A robust tech foundation can give retailers the capabilities to boost performance across the board, but to date, most organizations haven't made sufficient progress and are missing opportunities as a result. Only a few retailers have built true omnichannel offerings, harnessed data at scale, and implemented agile ways of working throughout their organizations. To reverse the negative trajectory of recent years, bold action is needed: retailers must undertake a radical transformation of their tech function—both its architecture and its operating model.

A coordinated, ambitious tech transformation can have a wide-ranging impact. Our Digital Quotient Survey in the consumer and retail industries found that digital leaders generated 3.3 times the TSR of digital laggards between 2016 and 2020.<sup>1</sup> This finding upholds the idea that technology will be a core driver of next-generation retail growth and will fuel omnichannel customer experience, smart offerings, and lean operations, as well as emerging business models such as data monetization. Retailers can follow a five-step action plan to assess the maturity of their IT landscape and their underlying organization and operating model. With these insights, retailers can then make the right strategic investments in technology to supercharge their performance.

## **Technology at the core of the retail industry's transformation**

The retail industry has undergone tectonic shifts over the past decade. The COVID-19 pandemic sped up many of these trends, leaving retailers struggling to keep pace. Consumer activity has been shifting from offline to online, and most traditional retailers have struggled to expand their technological capabilities. In Germany, for example, online sales grew 23.0 percent per year from 2019 to 2020, while offline rose just 3.6 percent annually.<sup>2</sup>

In addition, retailers have seen changes—sometimes dramatic—in how consumers shop for products and engage with brands. Overall, consumers are becoming more connected, less loyal, more informed, and definitively channel agnostic. Consumer purchasing habits are also shifting toward healthy, fresh, local, and authentic products in grocery and casual and crossover categories in apparel.

A significant share of online sales has been captured by e-tailers, which have often been able to build direct relationships with brands; meanwhile, online marketplaces have become dominant platforms.<sup>3</sup> These developments increase the pressure on physical retailers to expand their omnichannel presence.

To become more responsive to these trends, retailers can harness technology as a core enabler across several areas of next-generation retail. Technology supports the seamless integration of online and offline channels with smart digital services that facilitate end-to-end customer decision journeys. Reliable, personalized offerings that have been optimized through advanced analytics can be updated in close to real time and supported by attractive digital content. Technology solutions for the supply chain include advanced, real-time management; cross-channel order

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<sup>1</sup> Yoav Cosiol, Rob Levin, Roger Roberts, and Valerie Skinner, "Breaking the code: Unlocking digital and analytics at scale for consumer goods," McKinsey, October 28, 2021.

<sup>2</sup> *Online monitor 2021*, Handelsverband Deutschland and IFH KÖLN, 2021.

<sup>3</sup> *Ibid.*

management; and automated logistics, HR, and finance. Last, a robust tech foundation can extend retail business models beyond the traditional core business to generate additional revenues, diversify customer touchpoints, and increase customer data.

In our experience, the right investments can accelerate the time to market of digital offerings by a factor of three; double the internal skills needed to develop competitive solutions; and optimize run costs to save up to 20 percent, which can be reinvested in digital-innovation projects. Collectively, these improvements directly improve responsiveness to customer needs, enhance business performance and revenues, and increase TSR.

### **Foundational pillars for a holistic technology transformation**

To fully exploit technology, retailers must undertake a radical transformation of their IT function. Six pillars spanning both tech architecture and the operating model represent a comprehensive approach (Exhibit 1). While some retailers have excelled in one or several of these pillars, few retailers have yet mastered all six. Because these pillars are interconnected, retailers need to work on all six in tandem to get the full value from investments in technology.

### **Tech architecture**

Next-generation retail architecture is fully omnichannel, powered by data, and highly modular.

*Omnichannel integration.* Traditionally, retailers' tech architecture was focused primarily on the store network and supply chain. E-commerce capabilities were developed through a separate effort that used commercial solutions that were integrated only in a limited way with legacy systems, hindering the ability of retailers to implement truly omnichannel journeys (and achieve real-time stock visibility). Best-in-class retailers have been able to deliver a distinctive, consistent customer experience across channels by migrating to a headless commerce architecture<sup>4</sup> that supports all touchpoints with shared functionalities, such as wish lists, appointment booking, and payments.

Home Depot, for example, for many years has focused on creating a personalized omnichannel experience for customers through offerings such as click and collect and personalized marketing.<sup>5</sup> And a retailer in China found that customers that are engaged across both its retail and online touchpoints are one-and-a-half to two times more valuable across loyalty tiers. Customers acquired in retail stores are converted to mobile-app users

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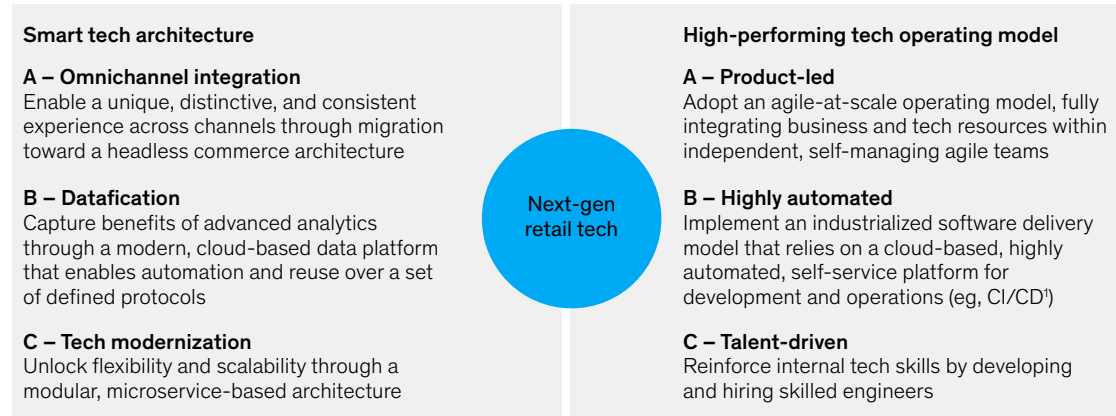
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<sup>4</sup> In a headless architecture, the front end (including website design, content, and mobile apps) is decoupled from the back end (the business logic—for example, the algorithm to calculate prices, PayPal integration, or connection with the fulfillment software). This approach enables organizations to reuse those back-end services with different front ends, such as giving customers the option of paying with PayPal on website and mobile.

<sup>5</sup> Brandon Stewart, "Here's how Home Depot transformed into an omnichannel marketing expert," Emarsys, August 24, 2021.

Exhibit 1

## Activating the technology lever requires a radical transformation in terms of both tech architecture and operating model.



<sup>1</sup> Continuous integration and continuous delivery.

through a dedicated user journey in which they are engaged on personalized content and e-commerce and receive incentives to come back to stores.

**Datafication.** In traditional architecture, data are often fragmented across systems or partly consolidated in on-premises infrastructure with limited scalability. In addition, most companies have implemented only limited data and model standards, making it difficult to reuse and scale analytics use cases. To unleash the power of data and accelerate value capture, leading retailers implement cloud-based data platforms that enable automation and reuse over a set of defined protocols. Digital native Delivery Hero, for instance, harnesses customer data to calculate customer lifetime value and thereby inform strategic and tactical decisions depending on the value of specific customer segments. It uses these insights to shape decisions such as whether to run a marketing campaign for a specific segment or whether or not it should enter a new market.<sup>6</sup>

**Tech modernization.** Traditional retail architecture typically relies on monolithic and aging applications that dramatically hinder agility and upgrades

while resulting in higher overall costs. Moving to a modular, microservice-based architecture can enable organizations to achieve greater flexibility and scalability. A Brazilian retail player transitioned from its monolithic architecture by prioritizing the transformation of all customer-facing business capabilities before upgrading its back ends. These efforts were key factors in the launch of a digital marketplace, which generated astonishing growth: over a four-year span, stock price increased more than 18,000 percent in value.

### Operating model

The ways in which the tech function supports the organization—from embracing agility to building the right workforce—can significantly increase operational performance.

**Product-led organization.** Most retailers have set up an agile digital factory that combines business and tech resources to manage e-commerce (and sometimes analytics) capabilities. However, a transformation of the full IT function is required to meet a consistent baseline for efficiency, flexibility, and speed. A product-led organization focuses on developing and managing business

<sup>6</sup> "Customer lifetime value: The customer compass," McKinsey, October 27, 2021.

capabilities (such as e-commerce checkout, demand forecasting, and warehouse management) supported by tech solutions. These products are then staffed with cross-functional teams of different tech competencies (for example, engineering, design, and architecture) led by business product owners to ensure a consistent focus on business outcomes.

**Highly automated software delivery.** Digital and software companies pioneered advanced engineering practices and automated the software development life cycle, but the retail industry is still in the early stages of adopting these practices. The definition and implementation of these practices will be a core element in achieving next-level performance in software delivery. In the transformation of the Brazilian retail player mentioned above, success factors included the establishment of product-led, agile ways of working as well as end-to-end automation. These capabilities enabled the organization to release new digital products within days.

**Talent-driven transformation.** Most retailers have an IT department that relies on external partners to maintain business applications. As technology increasingly becomes a differentiating factor, the development of an internal pool of highly skilled engineers is critical. An in-house team can not only protect the organization's intellectual property but also drastically improve delivery performance and time to market. Walmart, for instance, created Walmart Global Tech, comprising 15,000 engineers, data scientists, and other roles. By consolidating its relevant digital expertise across the globe into a center of excellence, it was able to develop innovative digital products to compete with online retailers.

## Gauging progress

Most retailers have initiated a tech transformation but are still stuck firmly in the “emerging” phase on both architecture and operating model (Exhibit 2). As a result, they lack the tools, processes, and capabilities to fully resolve next-generation retail

challenges. By contrast, best-in-class players have progressed to the “maturing” phase and are focused on continued improvement.

Retailers that commit to a radical transformation of their tech function can both spark growth and increase performance. UK DIY player Screwfix, for instance, transitioned to an omnichannel business model across digital, stores, and catalog by establishing next-day-delivery and click-and-collect options. Learning from best-in-class players, Screwfix quickly became the fastest-growing company in the United Kingdom's construction and retail market.

## Accelerating the tech transformation

To fully unlock the potential of technology and accelerate their tech transformation journeys, retailers can take several concrete actions.

### 1. Adapt a journey-driven approach by taking an end-to-end customer perspective

Not all customer segments are created equal. Retailers should start by codifying the most relevant customer journeys and quantifying the value that could be generated through an end-to-end omnichannel experience. They can then implement frequent measurement along these selected journeys, comparing customer lifetime value with acquisition costs to effectively allocate resources to increase value. In the final phase, retailers can embed this journey lens across the business and tech organization.

### 2. Redirect tech investments, with a focus on business value

Many retailers still spend significant amounts of resources on legacy systems and software—also known as “keep systems running” expenses. This tech debt is crowding out investments in strategic priorities that would generate business value, as well as in pilots of new business models. They should instead introduce a 360-degree steering process in which joint business and tech teams share progress with the C-suite in quarterly business reviews. This group would

Exhibit 2

**Most retailers have initiated a tech transformation but are still in the middle of that journey on both dimensions.**

		<b>Starter</b>	<b>Emerging</b>	<b>Maturing</b>	<b>World-class</b>
<b>Architecture</b>	<b>Omnichannel integration</b> <i>Omnichannel journeys<sup>1</sup> deployed at scale</i>	None	Basic and partial journeys	Basic end-to-end journeys	Basic and advanced end-to-end journeys
	<b>Datafication</b> <i>Number of advanced-analytics use cases deployed at scale</i>	0	<5	10–15	30+
	<b>Tech modernization</b> <i>Share of IT landscape modernized (microservices, cloud, API-driven)</i>	Traditional architecture	E-commerce application partly modernized	Omnichannel front ends fully modernized	Whole landscape modernized
<b>Operating model</b>	<b>Product-led organization</b> <i>% of product teams working in next-gen delivery<sup>2</sup> mode</i>	Pilots projects only	20–30%	40–50%	100%
	<b>SDLC<sup>3</sup> automation</b> <i>% of changes via automated CI/CD<sup>4</sup></i>	<10%	50+	75%+	100%
	<b>Talent-driven</b> <i>Share of tech vs nontech staff</i>	<30%	50%+	60%+	70%+

<sup>1</sup>Review online purchase in store, endless aisle, online purchase (home delivery), online purchase (click and collect), and remote sales.

<sup>2</sup>Agile, DevOps, design thinking, software craftsmanship, and continuous improvement.

<sup>3</sup>Software development life cycle.

<sup>4</sup>Continuous integration and continuous delivery.

Source: McKinsey analysis

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collectively assess existing business targets and respective KPIs and reallocate resources toward future priorities.

### 3. Double down on data

Many organizations make the mistake of attempting to aggregate and manage all of their data to support strategy—a time-consuming endeavor. Retailers should instead pinpoint priority use cases by their potential to harness data to inform business decisions and create value. By integrating the data required to implement those use cases, IT leaders can closely collaborate with the business to establish the necessary tech and business foundation, such as a central organization with qualified data architects and scientists. Retailers can ensure functions use data on a regular basis by providing easy access, continuous updates, and relevant insights tailored to internal audiences.

### 4. Build next-generation technology foundations

Retailers can take several steps to upgrade their tech foundation and speed the development of new solutions. They should pilot a cloud-based, highly automated development platform with built-in security and development tools. In addition, they should use standard software whenever possible to promote adoption of solutions, implement best practices for business processes, and facilitate upgrades for the newest features. Retailers can also

benefit by getting granular: breaking up monolithic solutions to create a microservice-based architecture can increase flexibility and reusability while accelerating delivery.

### 5. Pilot extreme industrialization

Speed and scale should be priorities for retailers. They can accomplish these goals by industrializing their delivery models. Since organizational silos can be significant barriers, retailers should create cross-functional teams (for example, engineers, designers, and architects led by business product owners) to promote collaboration and visibility. The introduction of a massively automated software delivery pipeline can enable these cross-functional teams to manage the end-to-end delivery of their solutions and thus substantially expedite the delivery of new features to customers.

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At a time when consumers are demanding greater flexibility, customization, and responsiveness, many retailers lack the tech foundation to meet these expectations. The answer is a comprehensive overhaul of the tech architecture and operating model. Time is of the essence, so retailers should take all the necessary steps to expedite the transformation. The benefits will be felt not only throughout the business and tech organization but also on the bottom line.

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