White Paper

Securely Automating Connected Retail Business

Sponsored by: Red Hat

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INTRODUCTION

The retail industry has pivoted toward experiential business models that put the customer firmly at the center. Retail business ended in 2017 on a positive note, with annual sales growth ahead of expectations. That said, not all retailers fared well. What it takes to thrive or merely survive has changed in retail. In the wake of a particularly difficult year for many, marked by a larger than average number of store closings, most retailers acknowledge that the future of retail isn't a destination, but an ever-changing journey punctuated by omnipresence that will require ongoing adaptation to customer expectations for service and differentiated product assortments.

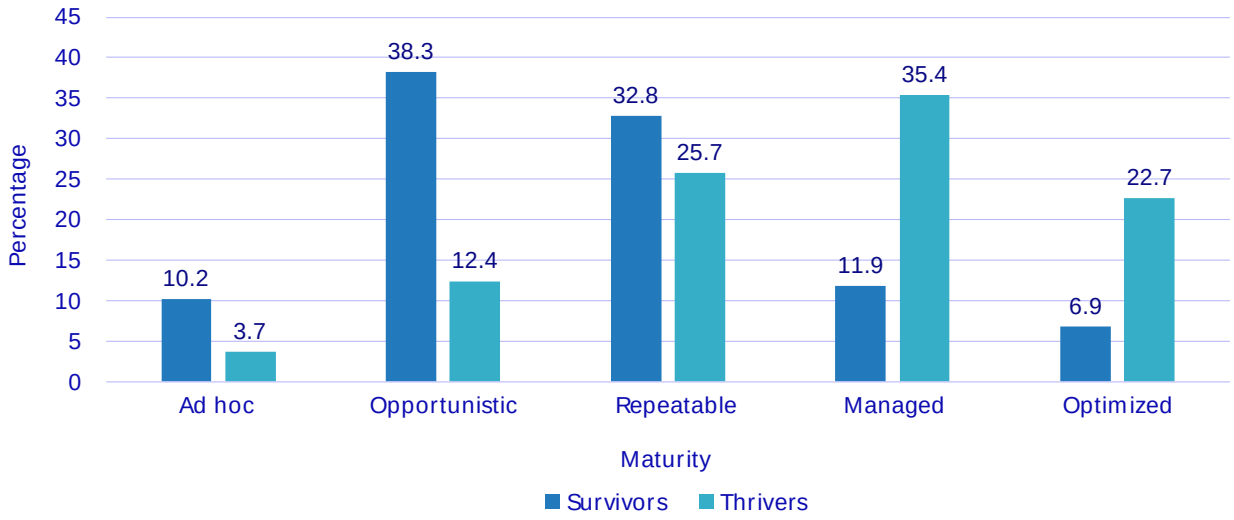
Converged physical-digital business is the new reality, and net-new challengers to industry stalwarts guide new paths to market that are fundamentally more agile and responsive to consumer needs. Retailers must digitally transform themselves to respond to these market dynamics, creating an operating environment that can support the future, which will be led with securely automating connected business with employees, suppliers, and customers. Those that can digitally transform themselves will create new value in the market and thrive.

In fact, IDC predicts that by 2019, the top 30% of retailers will be actively engaged in digital transformation (DX), driving organizational shifts and investment strategies in foundational platform technologies that are cloud based, artificial intelligence (AI) enabled, and composable (see *IDC FutureScape: Worldwide Retail 2018 Predictions,* IDC #US42404617, October 2017). Furthermore, retailers reported via an IDC Retail innovation survey conducted in 2017, that by 2020, 36% of technology spending would fund innovation that could lead to disruption.

Retailers that are thriving have invested more in digital transformation and innovation. Figure 1 depicts retailers' self-report on performance versus where they are from a maturity perspective when benchmarked against IDC's Retail Digital Transformation Maturity Model.

FIGURE 1

Retailers That Are Thriving Have Invested More in Digital Transformation



Source: IDC's *Digital Transformation MaturityScape Benchmark Survey,* April 2017

So what is required for retailers to successfully capture value in the coming years? The key requirements are as follows:

- **Digital transformation.** Retailers will review and adapt strategy, organizational structure, culture, information management, business processes, and tactics to align with customer expectations. To enable new business and growth, retailers will adopt 3rd Platform technologies (IDC's description for technologies include cloud, mobile, social, Big Data, and IoT) that will be applied to empower employees, partners, suppliers, and customers to engage in new ways and that information, insights, and IoT-enabled automation and interaction will unlock new levels of productivity and interaction. Digital transformation can be defined as follows:
  - **Transform:** New sources of innovation and creativity to enhance experiences and improve financial performance. Simply modernizing the technology underpinning existing systems is not transformation.
  - **Decision making:** Using information to create an evidence-based culture. Companies should plan on doubling the productivity of their knowledge workers by using information more effectively.
  - **With technology:** Digital transformation is not to be confused with digital technologies; however, it does use 3rd Platform technologies such as cloud, mobility, Big Data, and social as well as innovation accelerators including IoT, robotics, and 3D printing.
- **Continuous innovation orientation.** Retailers will invest in tools, platforms, integration capabilities, gateways, and other technologies that serve as a catalyst for advancing a culture/workforce that wants to work in a frictionless manner to continuously develop and deliver great customer experiences (CXs).
- **Focus on business execution.** The underlying technical complexities that enable frictionless customer experiences demand more automation, standardization, and seamless integration

behind the scenes. Retail operations, marketing, merchandising, and supply chain teams should have to focus only on creating differentiated business value that aligns with their customers' expectations.

IN THIS WHITE PAPER

This IDC Retail Insights White Paper is sponsored by Red Hat and examines the need for an open technology platform that can support the digital transformation taking place in the retail industry today. This White Paper is based on briefings with Red Hat, IDC Retail Insights research, and interviews with retail ecosystem participants. The objective of this document is to educate retail companies about how the shift toward dynamic customer-centric business models requires adaptable self-learning and secure connected processes to continue to thrive in retail business.

INDUSTRY CONTEXT: THE FUTURE OF EXPERIENTIAL RETAIL IS NOT A DESTINATION — IT'S DYNAMIC OMNIPRESENCE

Disruption is readily apparent in the retail industry as the new customer service mantras are "enable shopping in the stream of life" and "enable shipping from anywhere to everywhere." Quite often the radical shift in business performance agility and speed is not something the customer wants to pay for, but just table stakes, at best, to stay in business. The consumers' shopping journey requires excellence in execution – in a retailer's ability to influence and enable discovery, frictionless selling, and perfect, timely fulfillment. The lines and functional barriers between physical and digital capabilities must be coalesced so that true experiential retail can be delivered seamlessly.

If that isn't a tall enough order, retailers must be ready to adapt in steps to consumer behavior shifts by leveraging the data already present in their enterprises more efficiently. Succeeding in connected business in the stream of life of the customer requires that as behaviors shift, systems of engagement adapt. Systemic automation will be the battle cry as the business doubles down on innovating the core business and collaborating for the context.

As retailers work to connect consumers, employees, and partners to business in the stream of life, they will ingest and analyze more data and apply insights to processes to automate retail business functions. Data will be ingested from devices and historical data sources, and as new patterns are detected, they will adapt execution strategies and tactics.

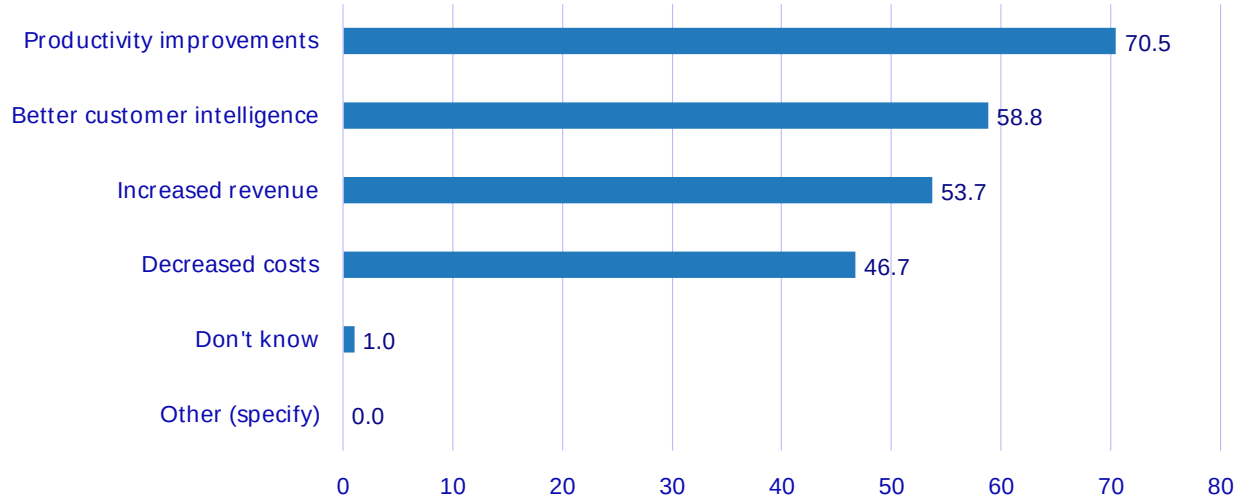
It's important to note that per IDC's 2017 *Global IoT Decision-Maker Survey,* when retailers are asked how is using analytics on your organization's IoT projects providing value back to the business unit or organization, the top 3 answers were as follows (see Figure 2):

- Productivity improvements: 70.5%
- Better customer intelligence: 58.8%
- Increased revenue: 53.7%

FIGURE 2

Image of Connected Retail Priorities

Q. How is using analytics on your organization's IoT projects providing value back to the business unit or organization?



Source: IDC's *Global IoT Decision Maker Survey,* 2017

OPPORTUNITIES FOR RETAILERS

Retailers must rediscover their business models themselves in line with customer expectations, keeping in mind that the value is in being able to continually adapt products and services. Fundamental changes will be made to organizational structures and processes that enable dynamic shifts – informed and often automated through self-learning algorithms.

Data, tools, and platforms will enable business to continually adapt.

Data

The most valuable thing a retailer can do is act quickly on new information that drives sales, improves efficiencies, or reduces risk. Retail enterprises are data-driven enterprises, and as more data is consumed, and insights applied to take new, proactive, and timely actions that drive better business results, the appetite for more data and more automation will accelerate. A virtuous cycle of continually ingesting, digesting, and exporting more data will influence all of the core experiential retail processes.

Retailers will orchestrate data in and out of an intelligent core that enables data collection and AI-enabled business processes that drive greater ROI from the investment through personalization, omni-channel orchestration of product movements, dynamic pricing, campaign optimization, consumer engagement, and the automation of workflow.

Tools

The ability to execute, and seamlessly introduce new processes, can be the biggest challenge and roadblock to overcome — tools can enable business process automation, but they also enable IT staff to have parallel frictionless experience in the development and implementation of innovative processes and technology. IT benefits from standardization and automation on a secure foundation. Automation applies to how well IT executes against business needs, how easily business processes can be adapted, and how quickly and seamlessly solutions are deployed and maintained.

So as the data core is algorithmically determining if data is valuable, and tools automate next best actions, a long list of questions can automatically be answered, service requests issued, and new software deployed. Questions answered automatically might include:

- Is it actionable?
- Does it improve outcomes?
- Does it improve customer experience?
- What processes should change?
- What data should I ingest?
- What algorithms should be changed?
- How can we securely automate implementation of new processes or tactics?

Platforms

Retailers need platforms with a comprehensive set of services, including data, integration, and development services. Platforms integrate the data core and the systems of engagement and enable continuous innovation and rapid response to business needs and customer experience mandates.

Many retailers have a robust core, but quite often data is not actionable. Data accumulates and is quite often analyzed, but a lack of automation in the application of insights to decision processes loses out on a significant opportunity for competitive differentiation. The value comes from execution, and this is where retailers struggle the most to adapt.

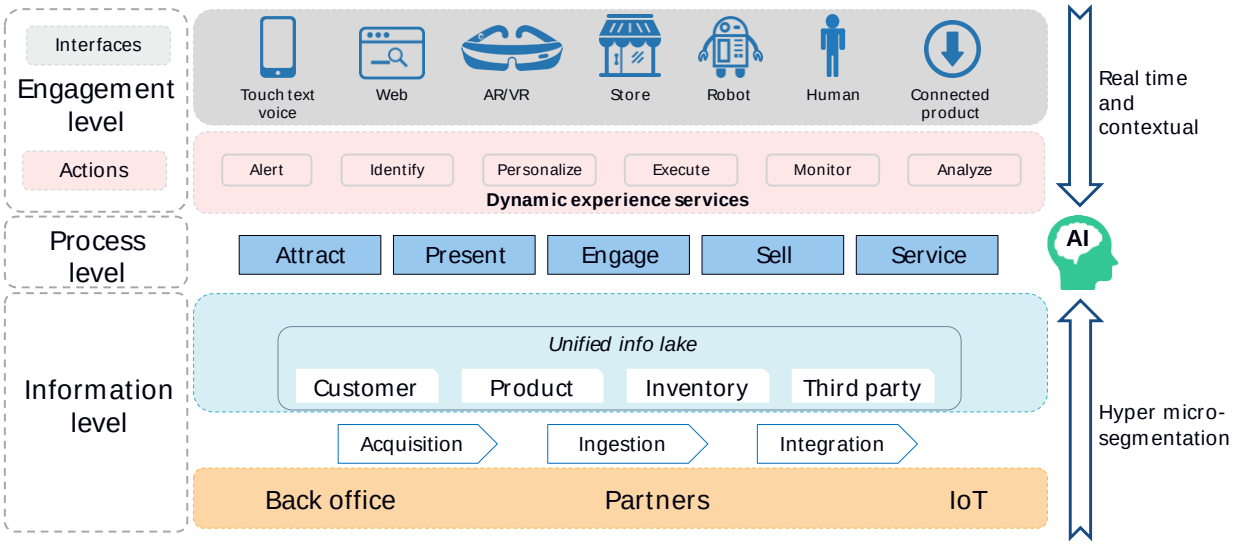
IDC sees a fundamental shift in technology investment priorities, with an adaptable customer experience architecture, based on common industry principles and agnostic to where the applications are running (see Figure 3). To accelerate the ability to execute engaging our customers more effectively and efficiently, an agile customer experience architecture enables the seamless composition of customer services leveraging information, processes, and touch points consistently.

This dynamic retail environment requires a continuous adaptation of the composition of services because of the constant change of the customer journey. The dynamic composition services layer allows businesses to deliver innovative services and meet customer needs through an iterative learn and adapt process. Containers and microservices enable faster development, and virtualized environments enable developers to get access to resources when needed. Moving from development to live environments is simplified.

Leveraging embedded artificial intelligence, organizations can drive more granular levels of engagement and process automation. AI is an important element of data-driven, automated retail. In fact, 37% of businesses are already adopting or planning to adopt AI in the next 12 months — for customer experience personalization, scaling personalization, and increasing conversion and revenue.

FIGURE 3

Retail Customer Experience Architecture



Source: IDC, 2018

Foundational expectations companies should have of the modern CX platform architecture include:

- Platforms must be elastic, open, and secure to foster the collaboration, innovation, and performance necessary in this new era of dynamic experiential retail.
- Virtualized environments and multiple options to run the hypervisor tool of your choice should be available.
- The business process needs to be understood first, and BPM tools and business rules engines enable automation.
- Standardization and automation are key.

There are a number of important technologies that will enable this ecosystem, and the following list highlights those that are critical for success:

- Cloud-first open technology infrastructure — bare metal, virtualized in the public or private cloud environments
- Big Data and analytics that can ingest and provide insight from data coming not only from systems and databases but also from connected products and people
- Microservice software approach, leveraging containers, APIs, and other new technologies
- APIs that can connect with a myriad of data and systems to foster communication, collaboration, and commerce (APIs are the synapses for IoT.)
- Security, which is a paramount (As retailers explore multicloud and virtualized environments, security investments are increased.)
- Artificial intelligence to sense and respond and automate business process change and implementation
- Every retailer being a networking enterprise requiring dynamic, automated adjustments to network configurations

CHALLENGES FOR RETAILERS

The biggest retail innovation challenge — and the largest opportunity — is driving effectiveness in piloting and scaling innovation programs at speed. But the lack of a single platform that can serve as both testing and operation environment forces retailers to implement new use cases only within selected business functions, rather than openly exposing innovation and making it accessible to the entire organization.

Traditional retailers are now competing with digital-native organizations — companies that already have an infrastructure that is built for digital transformation and quite often have a business model anchored by a modern technology stack — and creative developers positioned and hungry to innovate continually. These companies can integrate new capabilities quickly and have the skill set to leverage open source tools, and they were born into organizations that celebrate test and fail, independent and team accomplishment, and working on the things that make a difference.

Traditional retailers often lack digital DNA, and traditional systems were not built for continuous innovation, automation, and the integral development and deployment of tools that can improve organizational agility and digital readiness. Moreover, the new reality of software and services development requires new skill sets, but this should not be an obstacle. Developers want skills and tools that make it easier to do their jobs well and, quite frankly, make them more attractive in the marketplace.

Last, traditional retailers often have processes and workflows that are rigid and cannot adapt to changes in the market. This is a systemic problem that needs to be solved with a systemic solution that enables the broadest spectrum of change as integration, development, and automation need change, all to support innovation and experiences in the stream of life for that are in alignment with customer expectations.

ESSENTIAL GUIDANCE

- Digitally transform to sense and respond to shifting consumer and business needs – adapt process, engagement, and execution more efficiently and effectively
- Establish the platforms and tools for securely automating connected retail business
- Develop an open platform as this is a key enabler to the adaptive ecosystem approach
- Adopt a microservices approach to new capabilities to enable agility and elasticity in the platform

About IDC

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