



Digital Innovation in Retail

JULY 2017

PREPARED FOR





About this paper

A Black & White paper is a study based on primary research survey data that assesses the market dynamics of a key enterprise technology segment through the lens of the “on the ground” experience and opinions of real practitioners – what they are doing, and why they are doing it.

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INTRODUCTION

This report is part of a study designed to explore the extent of enterprise digital transformation worldwide. It assesses how efforts are playing out in consumer retail products and services companies that are planning or actively applying digitization to strengthen competitive differentiation.

The overall objective is to highlight some of the shared learnings of enterprise strategists and practitioners with a working knowledge of digital transformation. The retail industry is under pressure not only to improve customer experience, but also to reduce costs through operational efficiency. Disruption in the retail industry is creating a divide between business leaders and laggards. The retail industry is bursting with digital innovation driving change. As the pace of innovation accelerates, retailers need to act now. Our research shows a significant gap between digital leaders and laggards, and even a modest investment can improve operational efficiency and agility.

This report provides insights, directional indicators and recommendations about the state and status of digital transformation in modern retailers. Using a combination of web-based surveys and telephone-based interviews comprising more than 30 questions, we polled 386 decision-makers at leading retailers across North America, Europe and Asia-Pacific. We thank each and every one for their participation.

KEY FINDINGS



59% of retailers placed a high value on revitalizing retail store initiatives. Now more than ever, leading retailers see the value in creating an immersive shopping experience across both physical and digital channels to meet the needs of the omni-channel shopper.

Leading retailers understand that digital transformation is about being strategic, achieving focused customer outcomes and using transformational partners to succeed: 93% of retailers recognize a role for specialist, external partners as cloud and managed services become increasingly important in the value chain.

Cloud adoption has matured to an advanced stage where enterprises are increasingly relying more on cloud infrastructure, and 64% of retailers stated that cloud services are very important to their digital transformation initiatives as the cloud plays an increasing role in agility and efficiency.

57% of retailers are willing to outsource cloud workload migration, onboarding and management services to a partner in support of a digital transformation project. The data reflects the willingness of IT to improve infrastructure and security - while also leveraging new cloud technologies, data science services and managed IT to optimize costs and efficiencies.

42% of retailers understand the importance of using data for better decision-making to improve operational efficiencies. The ability to finesse operations in response to change makes for a well-oiled retail machine.



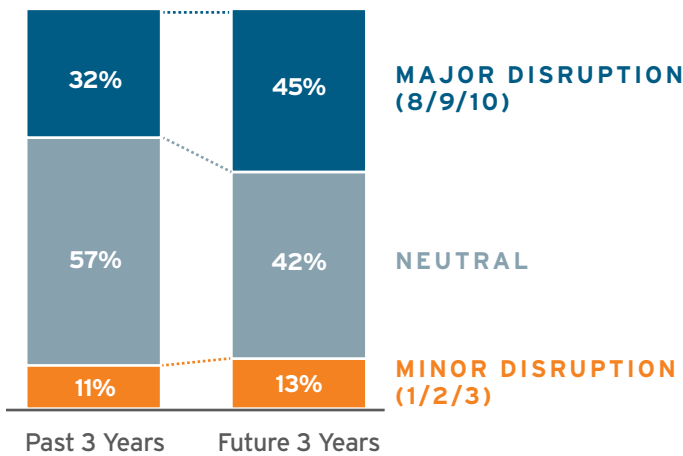
Market Disruption Leads to Digital Innovation

Digital transformation is real, and it's happening – our data in the retail industry lends more insight into the state of the transition. It is an inescapable truth that every business is becoming a digital business controlled by software, which is the manifestation of these digital transformations. As businesses continue to create a digital culture, they need to invest in new approaches to remain relevant in the eyes of their customers. Just 6% of retail organizations don't have any plans for digital transformation at all. In fact, retailers with a formal strategy for digital transformation that are actively digitizing business processes and operations form the majority (54%), and most others are planning their initiatives.

The overall – but seldom-voiced – goal is survival. The industry has already seen its share of disruption from online retailers such as Amazon and Alibaba. Retailers must embrace the next wave of disruptions in a do-or-die digital world. Transformational digital technologies are important because they create immersive, connected retail experiences that blend the digital and physical worlds. New connected devices help ensure that the facets of the physical shopping experience, when tracked, are used as influencing factors in the shopping journey as a whole. The retail industry must rethink the customer experience and leverage innovative technologies to address the 'digital divide' between digital and physical experiences before, during and after a purchase. There's an opportunity to add more value to the customer journey, whether through personalized information, location-based services or empowering front-line associates.

Our data probes the impact of disruptive technologies. We asked respondents to rate the extent to which digital technology (such as cloud, mobile internet, IoT, collaborative software, robotics and automation, intelligent software, etc.) has disrupted the retail industry over the last three years, and the level of disruption expected in the next three years. While 32% of respondents stated the past three years has seen major disruption, 45% see even more disruption coming in the next three years.

Figure 1: Perceived level of disruption in the retail market continues to grow



Source: 451 Research (n=386).

Strong leadership with a willingness to embrace disruption is necessary to guide the company through rapid changes in technology, customer behaviors and business models. Interestingly, IT executives were more adamant about the level of impending disruption than their line-of-business decision-maker peers, with a 13-point differential between the two groups. While line-of-business executives clearly feel the business disruption, IT understands the technology implications that new initiatives such as artificial intelligence, robotics and IoT will have on the workforce. What is clear is that we have entered an era of digital revolution, where competitive advantage depends on how well we use the digital infrastructure to deliver business applications, and capitalize on the massive amounts of data flowing across it.

Four Foundational Pillars of Digital Transformation

Digital transformation forces retailers to move beyond business as usual to embrace organizational change, agile business processes and systems that support transformation. All industries globally identify with four key pillars of competitive differentiation to target digital transformation initiatives. These four pillars are:

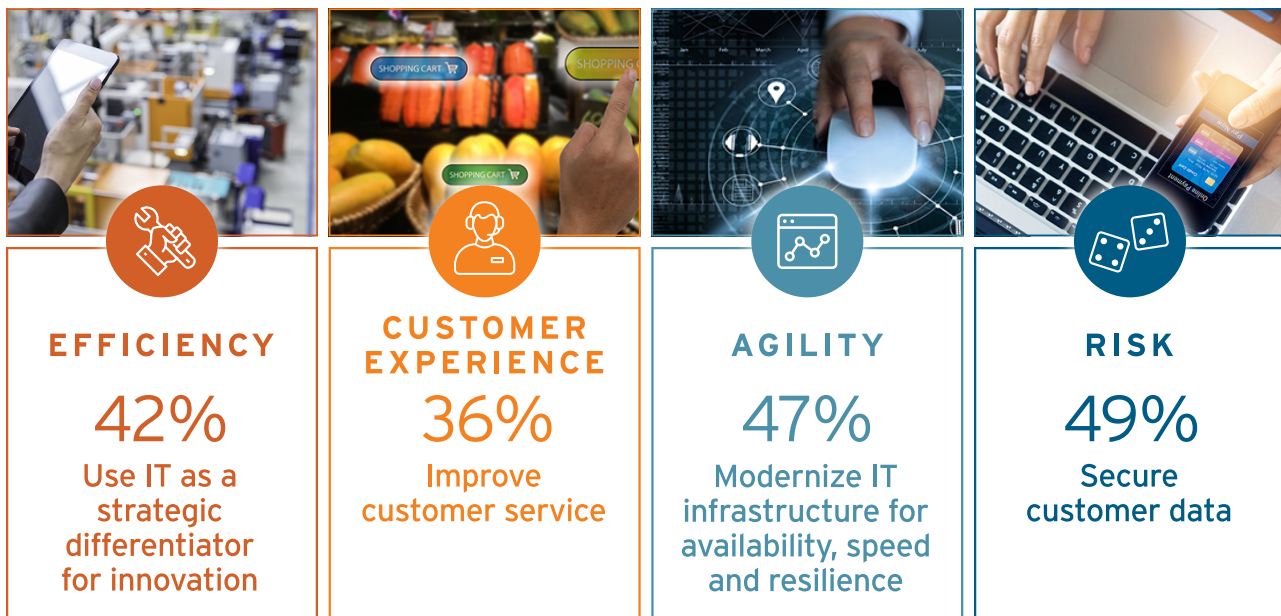
- Enhancing customer experience
- Improving operational efficiency
- Increasing the level of agility of the organization
- Better managing business risk

These four pillars are common across the vertical industry segments surveyed in this project. We asked respondents about their priorities across the four quadrants; although all pillars are clearly important and agility and risk are top current goals (see Figure 2), the retail industry is particularly concerned with improving operational efficiencies as well. The industry is in survival mode in the current competitively charged environment and due to the retail segment’s wafer-thin margins, retailers must improve on efficiency by taking out labor and manual processes.

Online retailers occupy an advantageous position here and could continue to gain market momentum, with disruptive technologies such as real-time predictive analytics, machine learning, and augmented and virtual reality providing a means of enhancing customer experience without heavy manual burden. Retailers with physical stores must increasingly focus on all four pillars with the use of technology-enabled strategies, hoping Wi-Fi and beacon-based location services will help draw in customers with personalized offers delivered to customer mobiles and new shopping experiences at the point of sale.

As a means of driving improvements in these four pillars, retailers’ priorities are fairly balanced (Figure 2).

Figure 2: Retailers’ top goals across key pillars



Source: 451 Research. n=386

Thirty-six percent of the retailers surveyed stated that there is a compelling need to improve customer service across multiple channels of interactions, many times starting with mobile. The customer experience has evolved to incorporate multiple, increasingly digital, channels and touchpoints to provide seamless, connected experiences across all channels of consumer interaction – from retail stores, social, email and voice to SMS, web and the latest mobile applications, as well as back-end processes such as pricing and inventory.

A key element to accomplishing this goal is improving operational agility; 47% of retailers worldwide see 'modernizing the IT infrastructure' as one of the most effective ways to strengthen that pillar. The goal is to simplify IT infrastructure design and delivery in order to become more agile and 'future proof' their organizations. **Retailers must achieve operational efficiency and agility without compromising customer service. Stores need to adapt to the emergence of alternative distribution channels such as e-commerce improvements, supply-chain efficiencies and data-driven marketing promotions. Shoppers abandon purchases frequently due to inefficient checkout lines or difficult online transactions. Retailers also need to enable staff to check item pricing and inventory for shoppers without leaving the sales floor. The ability to check out customers in the aisles also gives retail staff a greater opportunity to make product recommendations, employ upsell strategies and generally provide more personalized customer service.**

Other key elements can be overhauling complex applications, which often leads directly to a hybrid IT strategy. Cloud services play an increasing role in agility, with 64% of respondents saying that cloud services are very important to their digital transformation initiatives. Cloud adoption has matured to an advanced stage where enterprises are relying increasingly on cloud infrastructure. North American retailers' interest in cloud services ranked highest at 71% compared to their European counterparts, which ranked cloud services 15 points lower in interest.

Retailers are already using multiple clouds today, and the need to connect more diverse and traditionally divided ecosystems with demanding performance, user experience and seamless integration expectations will push this trend more aggressively in 2017. Thirty-five percent of retailers are investing in multiple cloud platform strategies – one of the top three IT-led initiatives – to support business applications.

This year will be the tipping point, when the convergence of multiple clouds across the enterprise – data, applications, infrastructure and personal clouds – will fundamentally change the way people and retailers operate. What will not change is the need to better manage risk by securing customer data at all times wherever it resides. Risk has been a constantly moving target, but in the digital age, that target is moving faster than ever. One surefire way to alienate customers is to lose their data or have it fall into the wrong hands, so it's no surprise that securing customer data is a top objective.

Efficiency of the operating model is everything in retail. The ability to pick up on small drivers of change at the very earliest stage, and then finesse operations in response to those changes is what makes for a well-oiled retail machine. We know that a small modification of a product or service can provide competitive advantage. A minor alteration in the layout of a store aisle or commerce website can drive marginal increases in sales. The slightest rerouting of a pick list to speed delivery should enhance customer service or reduce shipping costs. That is why 42% of retailers understand the importance of using data for better decision-making. Making decisions about where and when to make such operational changes and understanding the impact they will have is far from simple, however. Doing so requires an IT environment that allows IT and line-of-business executives to take full advantage of a fast-changing landscape that is geared toward massive data collection and analytics to improve operational efficiency, customer experience and agility – while at the same time managing business risk.

Differentiation Demands Digital Maturity

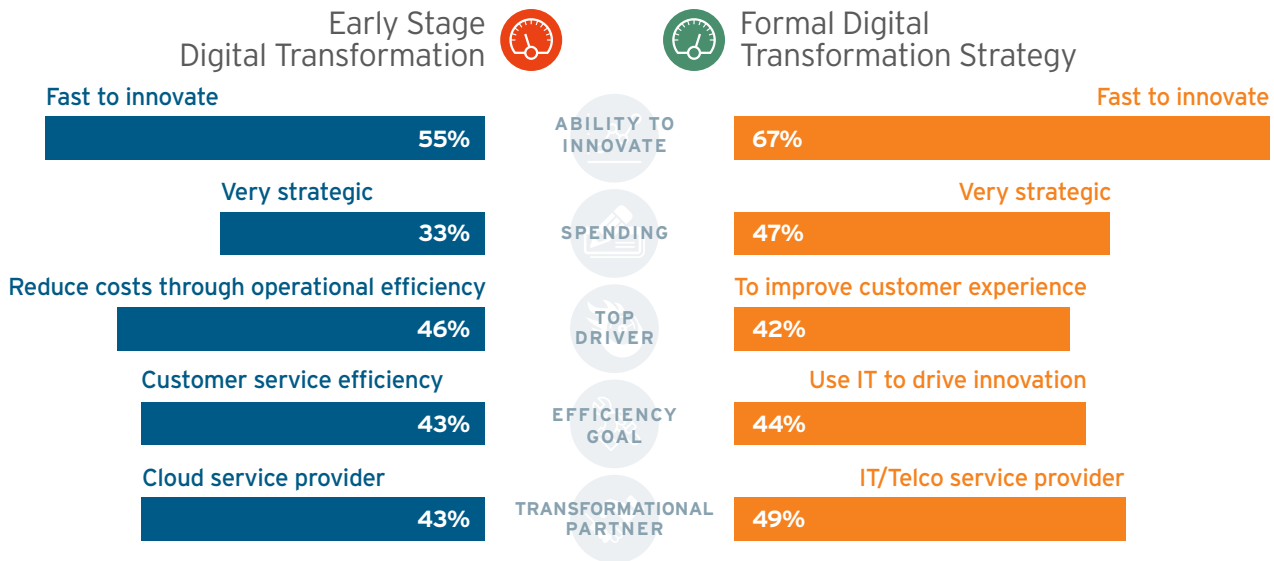
Smartphone-wielding, digitally empowered customers are demanding new forms of engagement with organizations, driving digital transformation projects in the process. No longer willing to be 'sold to,' they are forcing retailers to adopt the latest applications, analytics and infrastructure to deliver a differentiated experience. For retailers themselves, this is not a luxury but a necessity for survival. Businesses can embrace digital transformation to improve, connect and radically change business processes, enhance customer experiences and harness innovation.

The essence of putting digital technologies to work in a transformative way is ensuring that data and insights connect people with the right information and processes, ultimately creating to a better experience for customers, partners and employees. Savvy retailers understand that digital innovation leads to transformational projects that enable them to be strategic and focused on customer outcomes. An important component is also using transformational partners to succeed. Figure 3 provides a baseline for businesses to understand how to measure the state of digital transformation within the organization. All businesses large and small rely on digital assets to jump-start their own business models. Leaders have lived for years with the fact that their resources are split between the competing demands of day-to-day operations and supporting strategic efforts.

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The priorities for digital transformation depend on what stage of the transformation project retailers are in. Figure 3 compares the experiences of retailers just getting started with transformation with those that have progressed further and have a formal strategy in place. In exploring executive sentiment toward digital transformation, as well as the extent, focus and maturity of digital transformation strategies among organizations representative of the modern enterprise, this study reveals some interesting leading-edge indicators of current status.

Figure 3: Strategic vision: comparison of study highlights



Source: 451 Research. n=303

In Figure 3, we grouped companies that are formulating plans or have started without an overarching strategy into the class of early-stage digital transformation to compare with organizations that have a formal digital transformation strategy. When asked to rate their organization’s ability to innovate, 67% of retailers with formal digital transformation strategies in place rated their organization as more capable and faster to innovate, a 12-point differential compared to early-stage organizations. The overarching intention of digital transformation is to enable innovation, and this data indicates the fulfillment of those goals. Additionally, as companies progress with their digital transformation program, the expectation among respondents is the resulting shift toward spending on IT more strategically.

Our data shows that only about 20% of IT budgets are allocated toward strategic development of new cloud applications, with almost 30% of investments today apportioned to maintaining existing retail infrastructure. The remaining 50% is funding a shift to newer types of on-demand, flexible alternatives such as cloud-based infrastructure or moving toward the adoption of applications delivered ‘as a service’ that help embrace new strategic applications that are cloud-native. This results in an overwhelming majority of early-stage transformation efforts being about enhancing operational efficiencies compared to more advanced, leading retail organizations that focus on using IT to drive innovation and improve customer experiences.

The influx of new technologies and more finely tuned practices and processes will help the business transform – but only if the organization has fully embraced the idea that the ‘old way of doing things’ will no longer work.

Managing the burden of ‘run the business’ processes at the same time as making transformational changes introduces tension within organizations, so there is a need to prioritize and accelerate certain moves. To support some of these moves, most of the retailers surveyed said they expect to turn to a service provider for at least some of their requirements. As the worlds of outsourcing, hosting, managed services and the cloud converge, the options are growing exponentially. Every retail application or IT workload should be run where it will deliver the best balance of service, performance and cost. Increasingly, the cloud is becoming a viable option for retailers. In this study, 43% of early-stage retail respondents said they expect to use or are using a cloud service provider as a transformational partner. This compares with 49% of those with formal strategies that prefer to partner with an IT or telco service provider to maintain the momentum of their digital transformation. So according to Figure 3, early-stage retailers may look to the cloud for basic infrastructure services

43% of retail respondents expect to use or are using some form of cloud service as they attempt to make every retail application and IT workload run where it will be delivered with the best balance of service, performance and cost.

and newer applications that are best suited to cloud, while those with formal strategies tend to look to move existing applications and shift the hassle of mundane infrastructure management and security to partners as they progress with their transformation projects.

Digital Transformation Imperatives Shaping the Retail Industry

Over the past decade, retailers have made investments in new technologies that have skewed toward digital channels such as online, mobile and social media because consumers demand to use digital technologies as they shop. Digital is an essential element of the customer experience. However, what about the physical store? More than 90% of revenue still comes from the traditional brick-and-mortar stores, which remain a destination for shoppers.

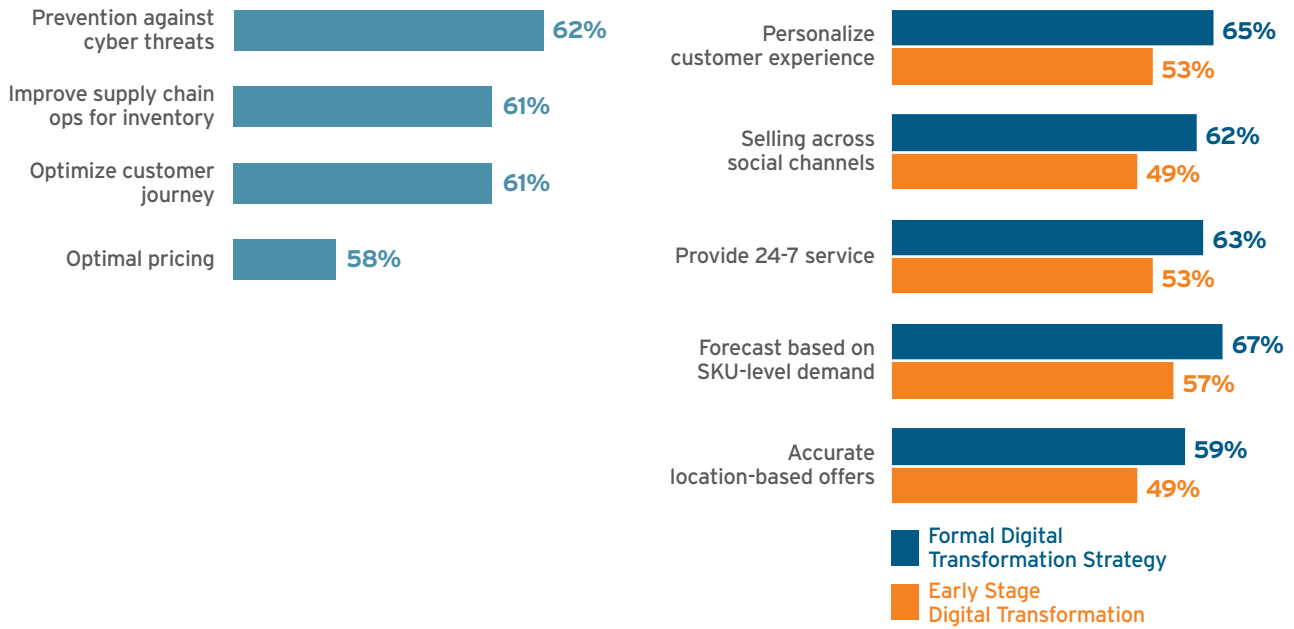
With 59% of our respondents placing a high value on revitalizing retail store initiatives, now more than ever, leading retailers see the value in creating an immersive shopping experience across both physical and digital channels to create a competitive advantage to their online-only counterparts.

The future store must blend the physical and digital retail experiences to create a truly immersive, personalized shopping experience for customers that capitalizes on insight into customer behavior and intent. Retailers can use data to drive conversions, improve customer service and set themselves apart from their competition.

Upgrading the physical store contends with other retail imperatives having to do with digital transformation. When respondents were presented with choices, they considered all to be very important. The differences came down to prioritization based on maturity. Figure 4 delves into a gap analysis of major imperatives facing retailers.

Foundational elements such as enhancing overall supply-chain operations for inventory improvement, prevention of cyber threats and pricing optimization were important to all respondents, with a relatively small differential based on maturity of digital transformation initiatives. However, Figure 4b highlights more strategic acceleration initiatives, such as revenue-generating and analytics-based strategies. These initiatives had at least a 10% differential among retailers with more advanced digital transformation programs.

Figure 4: Foundational and strategic gap analysis of top retail imperatives



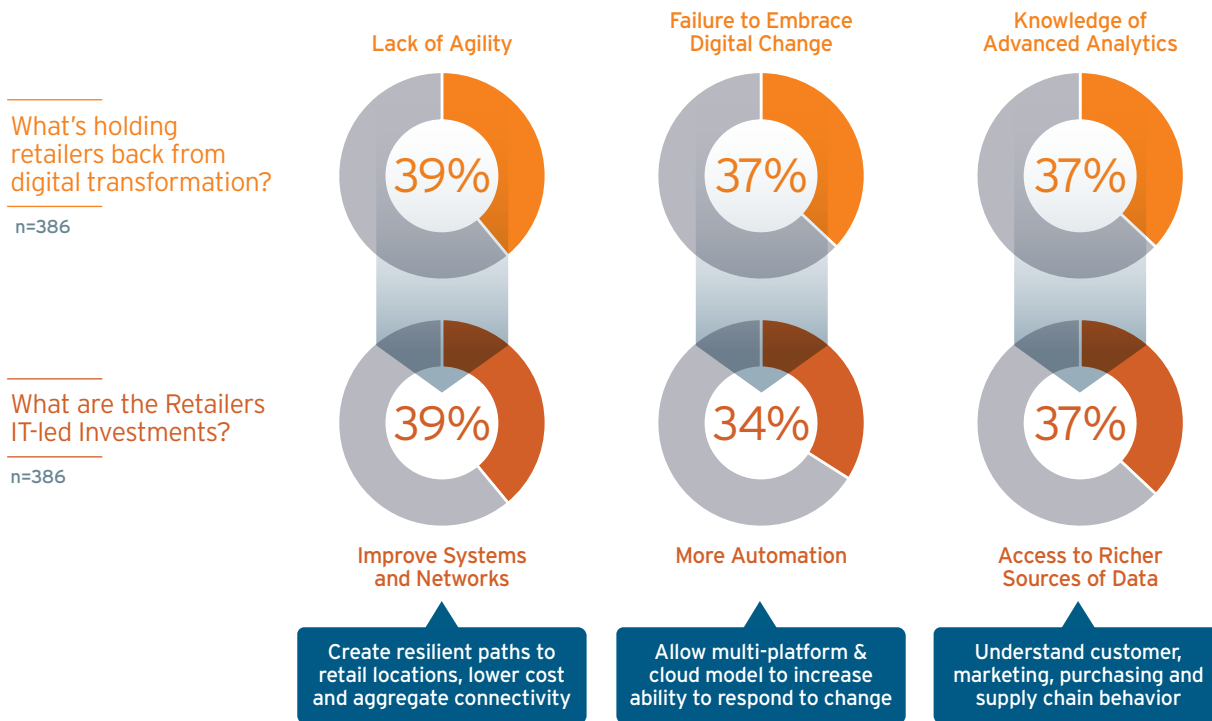
Source: 451 Research. (left) n=386, (right) n=303

Predictive analytic algorithms processing big-data patterns makes for powerful instrumentation. When big data and analytics are coupled with transactional retail applications, these technologies can provide actionable insights at a level of granularity never seen before. Using historical data with forensic attention to detail to look at individual interactions with customers, we can start to predict outcomes, activities or events. This could radically transform forecast accuracy, a measure of how close the actual demand for a stock item is to the forecasted quantity made by planning. Similarly, retailers are interested in using predictive pricing analytics to draw fresh insight from past and current demand, stock levels, product-pricing history, order cycles, sales promotions or marketing campaigns to automatically recommend optimal pricing formula in real time as the market changes.

Agility, Culture and Insight Top Barriers to Change, Not Technology

The power of a digital transformation strategy lies in the executive leadership driving the vision and objectives. Digital transformation may start with creating the ideal retail experience for customers, but it quickly expands throughout all departments. It is a journey that forces a company to move beyond 'business as usual' to embrace organizational change, agile business processes, and systems to support transformation. Figure 5 highlights the top three barriers identified by retailers in our study. These turned out to be less about technology and more about culture and expertise. The trend to 'act like a startup' has been the message to retail companies for the past few years as mature businesses try to stay current. The industry desperate needs to think differently, empower employees and adopt new technologies. Retailers' lack of agility can be correlated to IT-led investments such as the need to improve systems and networks, elimination of legacy systems and willingness to invest in multi-cloud infrastructure to address the barrier. Additionally, the slowness at which the industry has embraced new digital technologies or fully capitalized on analytics has driven increasing investment in intelligent automation and data access. Retailers with more than 10,000 employees were 18 points more interested in investing in intelligent automation.

Figure 5: Yin and yang of digital transformation



Source: 451 Research

Barriers vary by size of company, geographic region and digital maturity. European and North American retailers were 10-13 points higher in their inability to embrace digital change than were retailers in Asia-Pacific. Europe and North America also struggled more acutely with obtaining a single view of the customer, 43% and 40% respectively. Thirty-seven percent of retailers with more than 10,000 employees grappled with the inability to meet customer demands. Finally, retailers said that a lack of knowledge of advanced analytics was holding them back. This was particularly so for those in the early stages of digital transformation (42%), about eight points higher than their more advanced counterparts.

The problem with analytics is that although the necessary data is in plentiful supply and the software tools are proven and available, the internal skills in data science and predictive-analytics formulation can be scarce and expensive. In fact, one-third of retailers in the study flagged big data and advanced analytics as a key service to outsource, part of their prioritizing investments that would provide better access to richer sources of data for better decision-making.

Data-driven decisions call for access to a mix of hybrid delivery options and external IT service providers to help create a total data-integration scenario, bringing together both structured and unstructured data about stock, weather forecasts, cycle times, social trends, inventory levels, order volumes and so on. Managed analytics are becoming available from some IT service providers that bring together advanced analytics technologies with cloud delivery and professional service skills to provide the insights that retailers are striving for while helping to ensure enforcement of security, privacy and compliance controls.

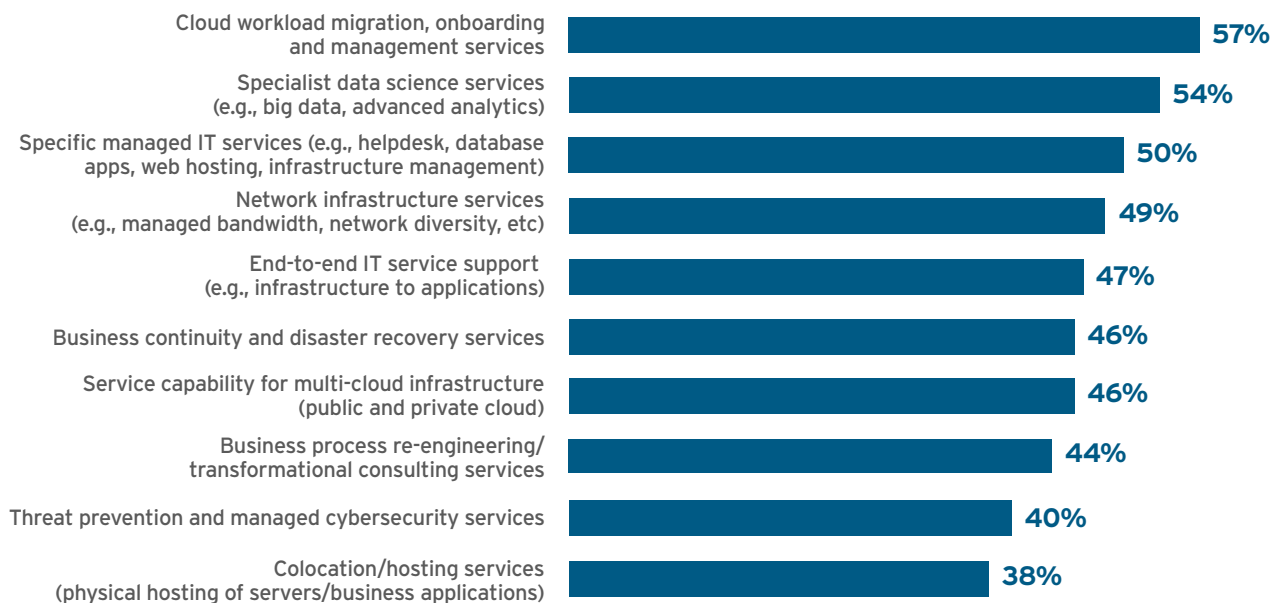
Choosing a Transformational Partner

Considering that 64% of respondents said they see the strategic importance of cloud as an on-ramp to or accelerator of digital transformation, cloud partners will become increasingly important in the value chain. In fact, 93% of respondents recognize the roles of a variety of transformational specialists (see Figure 6) to provide a range of fit-for-purpose skills and support services. In complex multi-year programs, maintaining a balance between 'run the business' and 'change the business' efforts can introduce considerable tension within organizations. It is understandable that businesses want to outsource some of this complexity.

93% of respondents recognize the role for a variety of transformational specialists. The top requirements include 57% cloud migration services, 54% data science services; 50% managed IT services.

Yet, what retailers really need is a true partnership and services that help businesses improve infrastructure, security and cloud workload migration – all while leveraging new cloud technologies, data science services and managed IT to optimize cost and efficiency.

Figure 6: Top IT requirements for an outsourced partner



Source: 451 Research. n=386

One guiding principle to steer decision-making about these service options is what 451 Research calls the best execution venue (BEV). In simple terms, for every business application or IT workload, there is an environment that best balances service, performance and cost, and IT should select that environment as part of a general 'best practice' of IT operations.

Considerations about the BEV for a retailer's e-commerce system will be very different than the supply-chain system to manage real-time inventory. Partners must be able to provide strategic advice on the best approach for workloads and operational and analytics applications; whether the venue is private on-premises, single-tenant cloud or dedicated hosted cloud will likely vary depending on business case.

Retailers need a service provider that tackles challenges with the same energy and creativity as on-staff resources. In short, they need a provider that thinks and acts like a member of the extended IT team. Enabling hybrid IT deployments, by which corporations extend their operating environments outside of the corporate walls, is fast gaining momentum. The data reflects the willingness of IT to embrace innovative technologies and a realization that agile business models have a role to play in expediting the process of digital transformation.

Transformational Technologies Drive Immersive Retail Experiences

The fact that the digital and physical worlds are colliding is felt most acutely in retail. It's virtually impossible to plan for all potential customer journeys, because each is essentially a non-linear, self-directed interaction, or 'micro moment,' across a customer's channel of choice. It's also important to go beyond simply mapping the digital interactions and also map the physical interactions such as phone calls and face-to-face contact. There are facets of the physical journey that, when tracked, can be used as influencing factors in digital interaction.

Figure 7: Top three retail IT strategies



Source: 451 Research. n=386

The future digital retail store, whether brick and mortar or online, is a top IT strategy. With the explosion in new types of physical, digital and blended experiences, the battleground is quickly moving beyond providing omni-channel service strategies to a more unified commerce agenda that provides intelligent and immersive experiences, all personalized to the customer's own changing context.

Retailers must embrace mobile for a variety of initiatives that bridge in-store and online demands, e.g., embracing 'click and collect' in order to compete with the growth of digital commerce. Consumers shop online, find a store with specific inventory, click to purchase and then go to the store to collect the purchase. This is a prime example of embracing the digital and physical convergence, and it is very attractive because it blends online convenience with the option of immediate pickup or seeing the item at a brick-and-mortar location.

36% of respondents are interested in machine learning for context-aware interactions.

We are seeing the growth in customer data for contextualized experiences empowered by technologies such as mobile, cloud and machine learning. This is the main reason the top three retail IT strategies illustrated in Figure 7 will only be successful with the fusion of data, mobile and cloud. Technology is becoming increasingly central to how individuals experience the world around them. It is shifting the center of gravity from businesses to individuals in an unprecedented way. Catering to customers' preferred ways of consuming information and providing unique engagement strategies is a critical part of retailers' strategic value proposition and competitive differentiation.

The desire to capture and analyze new forms of data plays a powerful role in improving digital innovation. Since the universe of what is 'knowable' is expanding, new machine-learning technologies help us to see further and deeper to improve business decision-making. Users aren't limited to what they discover themselves. Human exploration with intelligent guidance, which is derived from the use of machine-learning algorithms, can be a powerful combination. Undeniably, as data grows exponentially, the only way to effectively analyze such datasets is through a combination of human and machine-learning-driven analysis.

Contextual experiences also drive investments in the disruptive technologies shown in Figure 8, which shows the three most disruptive technologies that the retail industry is considering adopting. IoT in retail takes the form of sensors, connected devices

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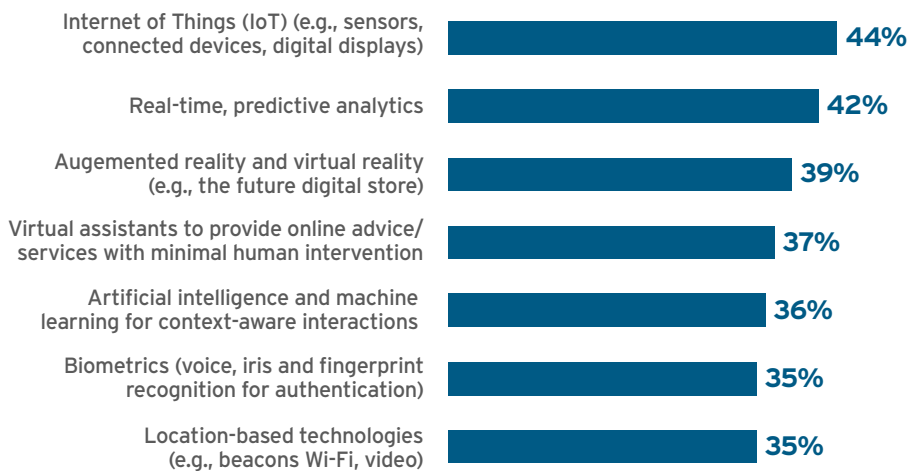
and digital displays. The industry is witnessing a rapid increase of interest in digital signage solutions that can be used as a digital engagement platform that goes beyond the capabilities of static displays to embrace newer technologies such as cloud, edge connectivity and big data. The goal is to use patterns so that the application ‘understands’ and adapts based on a variety of conditions. This, in turn, enables retailers to create more intelligent interactions that demand automated insight on unstructured data with embedded analytics. The purpose is to increase targeting of unique messages to different audiences based on data sources that are approved, such as profile information, social insight and loyalty programs.

Connected devices and sensors give retailers a more complete picture of consumers’ in-store behavior to optimize marketing and merchandising, as well as operations such as tracking customer traffic, optimizing staffing levels and measuring the interest in a store’s window displays.

44% of respondents want connected devices to give them a complete picture of consumers’ in-store behavior in order to track customer traffic, optimize staffing levels and measure the interest in a store’s window displays.

Use of augmented reality and virtual reality in a variety of both digital and physical settings is also about to change retail. These technologies offer retailers the opportunity to transform shopping experiences – such as simplify product selection, elevate customer service, and create a differentiated, personalized customer experience.

Figure 8: Top three disruptive technologies retail executives are considering to adopt



Source: 451 Research. n=386

While our data shows that location-based technologies such as beacons, Wi-Fi and video are important, they have moved down the priority list probably because of the inability to use them effectively. Location-based offers do work, but only if they are intelligent and personalized. Beacons and Wi-Fi geofences digitize the journey to allow easy discovery of relevant information, such as local content and services. Add intelligence to the mix, and retail becomes about aggregated learning with regard to behaviors and preferences that can help ensure relevant customer interactions. The entire outdoor or indoor experience can become a learning opportunity to display personalized location information, product information, pop-up coupons and video demonstrations, etc.

Although virtual assistants didn’t make it into the top three priorities, it still engendered strong interest – with 37% of respondents expressing their interest, and those in North America demonstrated a 15-point higher interest vs. their European counterparts. The implications for retail are in transforming the standards of how consumers expect answers to their day-to-day queries. Retailers must look beyond just putting a bot on a website, and instead strategically identify how it can improve the customer engagement in conversations.

Achieving Transformational Change with Digital Innovation

The retail industry has already been through numerous transformations – some voluntary, some involuntary – and has had to adapt quickly to the effects of technological change, perhaps more than any other vertical. But in a world that talks increasingly of contextual experience, unified commerce and digital retailing, a core differentiator for retail continues to be operational excellence.

With the majority of retailers already undergoing digital transformation projects, it is essential to consult a roadmap to gain value from transforming parts of the core operations for efficiency and agility while creating a path to achieve the full potential of digital transformation.

ENHANCE CUSTOMER EXPERIENCE THROUGH IMPROVED AGILITY

Customer experience must be a center of gravity for business competitiveness. From modernizing applications and infrastructures and streamlining fulfillment processes to providing contextual experiences that win the hearts and minds (and wallets) of customers. Excellence in customer service remains the mantra, and digital initiatives help remove friction points, and provide channels for personalized engagement and new ways to enhance customer satisfaction.



PROTECT CUSTOMER DATA, LAYER BY LAYER

There's no silver bullet for data security; it can't be bolted onto fundamentally insecure infrastructure. There needs to be multiple layers of network-based and application security. Security is not just about privacy concerns or protection against cyber threats, but about fundamentally securing company data throughout its lifecycle. Key to meeting this challenge is prioritizing assets and segmenting according to risk, with appropriate controls and safeguards applied to each.



EMBRACE PARTNERS

We see retail companies transforming three aspects of their businesses most often: the way they use data and business information, how they organize and run their business processes, and the technology platforms they use to underpin their operations. Entrusting some of the IT fundamentals to a partner and leveraging the cost-benefits of such moves is a critical element of the transformation roadmap. Our data shows that enterprises are increasingly turning to third-party providers – managed IT partners and cloud specialists in particular – for services to support their digital transformation programs.



ENGINEER A CLOUD-ENABLED ENTERPRISE NETWORK

Retailers are increasingly relying on cloud services to improve agility, operational efficiency and customer experience. Initiatives such as IoT and the 'digital store of the future' require industrial-strength connectivity, a new generation of applications and the compute power needed to drive intelligent decision-making. Improved reliability of networks, systems and infrastructure is the biggest IT-led priority. As companies start using multiple clouds, the ability to connect at speed and without failure with more diverse and traditionally divided ecosystems becomes paramount.



The overarching intention of digital transformation is to capitalize on disruption to enable innovation. Data from the study reflects the willingness of the retail industry to embrace innovative technologies and operations, in the realization of the role they play in expediting the process of digital transformation.

There are numerous applications, platforms and services that can help retailers capitalize on their data, gain real-time insight into business processes, improve operational reliability and secure environments from a highly dynamic threat landscape. The influx of new technologies and more finely tuned processes will help business transform and provide leading companies with the ability to innovate.

Appendix

METHODOLOGY

The survey data used in this report was collected in March and April 2017 by 451 Research as part of a global digital transformation enterprise study – commissioned by CenturyLink and conducted in 11 countries across North America, Europe and Asia-Pacific. It is designed to provide insights that will help executives understand how businesses leverage the changes and opportunities of digital technologies to serve different stakeholders, manage risk, support continuous improvement in operations, and invent new services and business models.

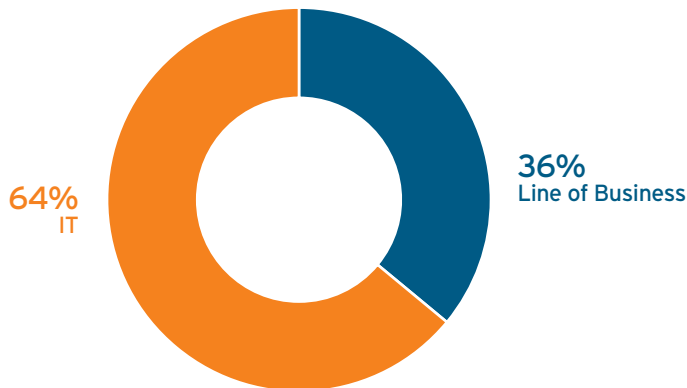
In taking the pulse of digital transformation across a broad spread of businesses, we have been able to identify which new IT choices are becoming popular, explore service partner preferences and track investment priorities, as well as establish the state of vertical-specific digital transformation readiness and evolution.

For this report, we reviewed and analyzed data derived from a sample of 386 retailers in the US, Canada, the UK, Germany, Austria, Switzerland, China (including Hong Kong), Singapore, Japan, Australia and India.

STUDY DEMOGRAPHICS

We conducted the digital transformation survey in March and April 2017 using a combination of web-based surveys and telephone-based interviews comprising roughly 30 questions. All respondents had primary responsibility for making purchasing recommendations and influencing decisions and strategy about digital transformation initiatives, or they had significant decision-making authority. About 40% of respondents are responsible for decisions about digital transformation strategy, with 60% providing input. Overall, 60% of respondents work as senior IT executives, and 40% lead line-of-business departments for their companies. Our business segmentation corresponds with the categories typically used by service providers to identify midmarket and large enterprise customers.

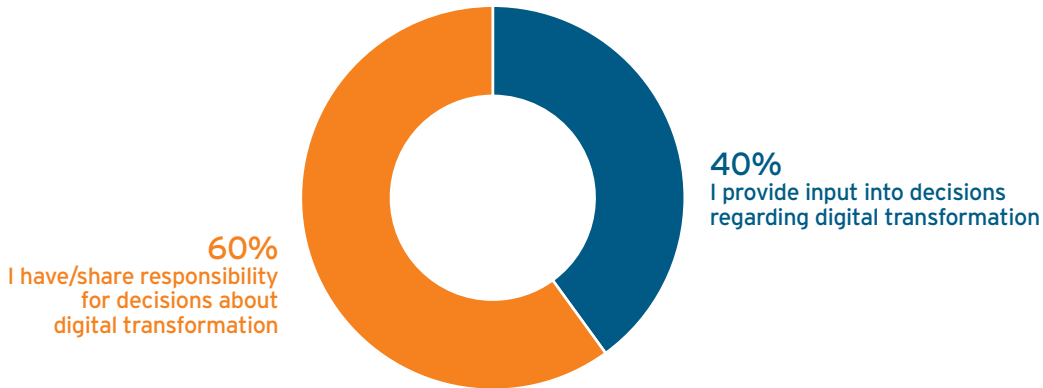
Percentage of retail respondents by IT vs. LOB



Percentage of retail respondents by region



Percentage of retail respondents by responsibility



FURTHER INFORMATION

This report is one in a series to explore the current state of maturity of enterprise digital transformation strategies representative of organizations in key commercial sectors and government agencies in North America, Europe and Asia-Pacific.

The series comprises a set of reports addressing the analysis of the global picture, as well as three summary regional reports that assess some of the variations identified across geographies.

There are also four vertical-market-focused reports to help IT and line-of-business executives in financial services, healthcare, retail and government agencies navigate some of the key issues and considerations specific to digital transformation themes in these sectors.

About CenturyLink

CenturyLink is a global communications and IT services company focused on connecting its customers to the power of the digital world. CenturyLink offers network and data systems management, big data analytics, managed security services, hosting, cloud, and IT consulting services. The company provides broadband, voice, video, advanced data and managed network services over a robust 265,000-route-mile U.S. fiber network and a 360,000-route-mile international transport network. Learn more about how CenturyLink can help you accelerate your digital transformation.

For further information, go to <http://www.centurylink.com/digital-transformation>