2020 Retail Technology Report:
An Analysis of Trends, Buying Behaviors, and Future Opportunities

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Commerce Freedom   NAPCO RESEARCH
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Build commerce your way with the only headless commerce platform that provides a complete set of built-in shopping experiences and omnichannel fulfillment capabilities.

Our API-first platform provides a central omnichannel layer that unifies retailers' existing systems and aligns all customer touchpoints to create engaging shopping experiences. The Orckestra Commerce Cloud platform is built natively on Microsoft Azure to help our customers move quickly in the cloud, while being positioned for unlimited scale and leveraging the global scale and key innovations offered by Azure.

Executive Summary

In order to keep pace in a hypercompetitive retail environment, as well as meet the increasing demands of fickle and fragmented consumers, retailers and brands are looking to technology for help. This extends to all facets of their businesses, from consumer-facing brick-and-mortar stores and digital properties, to back-end systems and solutions that are powering marketing, supply chain, customer service, among other functions.

The result has been increased investments in technology that enables the one-to-one relationships that are at the heart of any retail business today — e.g., marketing automation, personalization, CRM platforms. However, this increase in technology spending hasn't extended to the emerging tech that's generating buzz but, at least so far, little in terms of return on investment. (With the exception of artificial intelligence, which will be addressed later in this report.) These are just a couple of the key takeaways from Total Retail's 2020 Retail Technology Report, which was produced in conjunction with Orckestra Technologies, a leading omnichannel commerce platform for innovative retailers and brands.

Total Retail surveyed its audience of retail executives to get a better understanding of their current usage of technology, future technology needs and wants, and their processes within their organizations for technology purchases. A total of 111 retail execs responded to the online survey, which was conducted in February 2020 and March 2020. Here are some of the highlights from the data collected:

- **We're in the midst of a technology arms race. Two-thirds of respondents said they will be increasing spending on technology in the next 12 months.** Just 3 percent said they will be decreasing technology spending in the next 12 months. While not stated, it's likely these retailers feel the pressure to compete with competitors, both online and offline, that are using technology to improve the customer experience.

- **Leveraging data and technology to create one-to-one relationships with customers is a top priority for retailers.** Nearly half of all respondents (48 percent) identified marketing automation as a technology that they will be increasing spending on in the next 12 months, the top choice among a laundry list of other options. Furthermore, personalization technology (43 percent) and CRM platforms (33 percent) were also among the top five for spending increases, reflecting retailers desire to use data and tech to better engage with customers and prospects.

- **Retailers have adopted, or are planning to adopt, artificial intelligence (AI) at a much higher rate than other emerging technologies.** When asked to choose the emerging technologies that they're not currently investing in but plan to do so within the next 12 months, 18 percent of respondents selected AI, the highest of any technology listed. Furthermore, nearly one-third of respondents (32 percent) identified AI as the emerging technology that they believe will have the biggest impact on the retail industry within the next 12 months.

- **Similar to the data collected for the 2019 report, marketing departments will see the biggest boost to their technology budgets in the next 12 months** (when compared to other internal departments), with spending on personalization software, marketing automation tools, and content management systems at the top of their wish lists.

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This fourth annual report provides valuable insights into the technology landscape within the retail industry. The data serves as a road map for retailers and brands, identifying the technologies their competitors are currently investing in as well as what they're targeting for future spend. Retailers can use this report as a benchmarking tool to see how their technology investments stack up vs. the rest of the industry, and perhaps identify where they might want to make adjustments.

Not to be overlooked, the data on retailers' tech buying processes provides technology service providers with a rare glimpse into how organizations are making budget decisions. This information can be leveraged to hone sales pitches as you look to retain existing clients as well as acquire new ones.

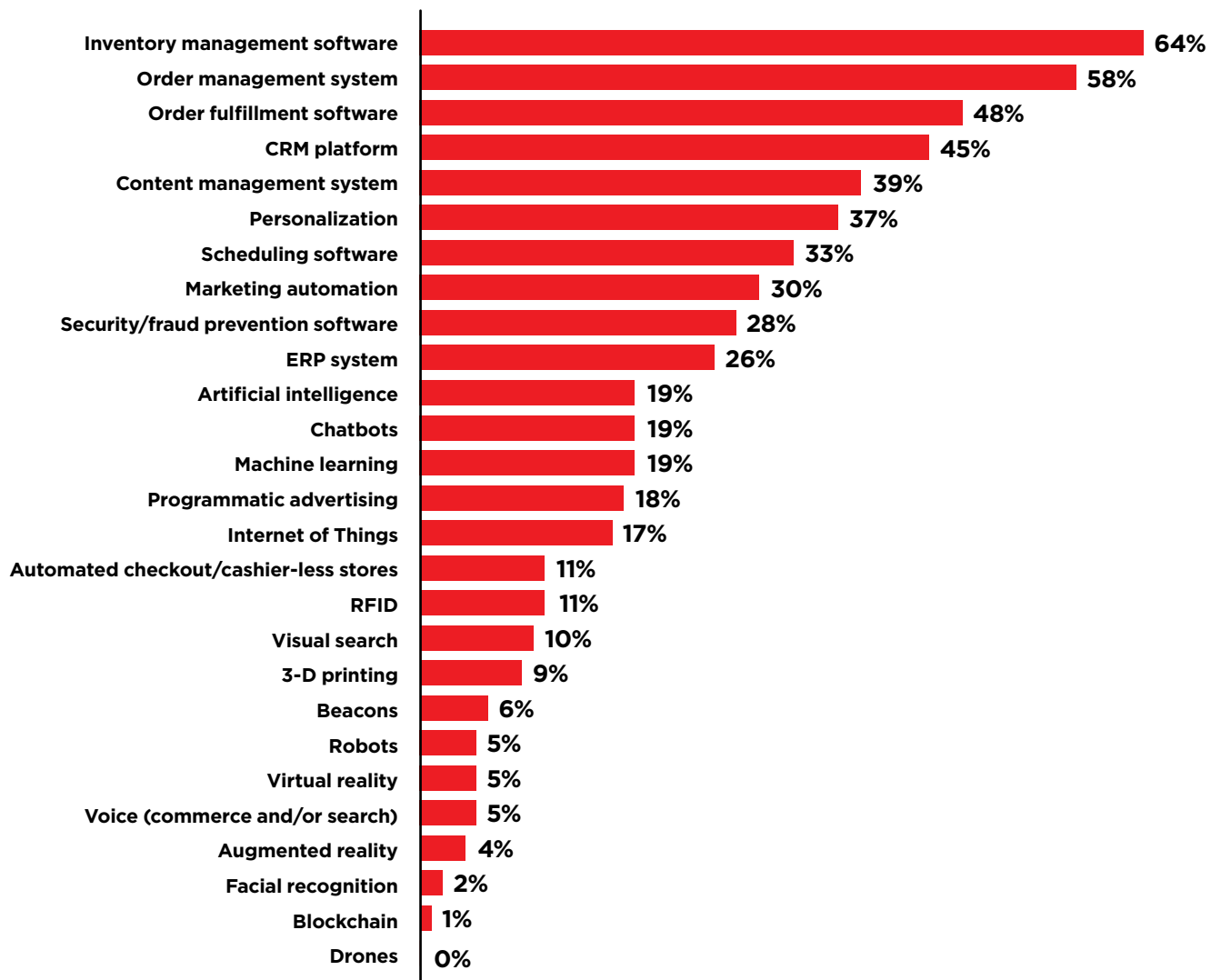## Where Retailers Are Currently Allocating Technology Budgets

Technology	Percentage
Inventory management software	64%
Order management system	58%
Order fulfillment software	48%
CRM platform	45%
Content management system	39%
Personalization	37%
Scheduling software	33%
Marketing automation	30%
Security/fraud prevention software	28%
ERP system	26%
Artificial intelligence	19%
Chatbots	19%
Machine learning	19%
Programmatic advertising	18%
Internet of Things	17%
Automated checkout/cashier-less stores	11%
RFID	11%
Visual search	10%
3-D printing	9%
Beacons	6%
Robots	5%
Virtual reality	5%
Voice (commerce and/or search)	5%
Augmented reality	4%
Facial recognition	2%
Blockchain	1%
Drones	0%

Figure 1
Q: Which technologies is your company currently using?
(n=111)

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The technologies that retailers are currently using (and spending on) reflect the omnichannel nature of today's retail businesses. Systems that can help retailers track inventory and fulfill orders across multiple channels are becoming more critical as consumers engage with brands across a variety of touchpoints, often in a single purchase journey. The chart above reflects that trend, with inventory management systems, order management systems, and order fulfillment software the top choices among respondents.

As brick-and-mortar retailers look for ways to stem the momentum of online pure-plays and direct-to-consumer (D-to-C) brands, they're increasingly using their stores as distribution hubs in addition to a transaction channel. In order to do that effectively, investments in supply chain technology are essential. Inventory and order management systems are the engines driving today's buy online, pick up in-store (BOPIS), buy online, return in-store (BORIS), and ship from store programs, ensuring the right inventory is in the right place at the right time, enabling seamless fulfillment of orders no matter how the customer chooses to transact. As retailer adoption of these types of omnichannel fulfillment programs continues to increase, expect spending on inventory and order management systems to grow with it.

Another interesting takeaway from this chart is the low levels of adoption for some of the more buzzed about emerging technologies. For example, less than 10 percent of respondents are using each of the following technologies: facial recognition, robots, beacons, and blockchain. In fact, none of the respondents are using drones to help with order delivery. However, one emerging technology to keep your eye on is automated checkout/cashier-less stores. Amazon, the trailblazer in this area, announced in March 2020 that it will begin to sell this proprietary technology, which it calls Just Walk Out, to other retailers. The number of retailers using this technology is likely to exceed 11 percent in the 2021 Retail Technology Report.

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How Retailers' Spending on Technology Will Change in the Next 12 Months

	Increase	Decrease	Remain the same	I don't know
Marketing automation	48%	0%	32%	20%
Personalization	43%	0%	37%	20%
Inventory management software	36%	1%	49%	14%
CRM platform	33%	2%	44%	21%
Content management system	32%	1%	45%	22%
Order management system	32%	3%	47%	19%
Order fulfillment software	29%	2%	47%	23%
Machine learning	27%	1%	41%	31%
Security/fraud prevention software	26%	1%	50%	23%
Artificial intelligence	25%	0%	43%	32%
Chatbots	23%	1%	41%	34%
Programmatic advertising	23%	1%	46%	30%
Automated checkout/cashier-less stores	21%	0%	47%	32%
Scheduling software	19%	0%	58%	23%
ERP system	17%	2%	53%	28%
Internet of Things	13%	0%	51%	36%
Visual search	12%	0%	47%	41%
3-D printing	10%	2%	45%	43%
Augmented reality	9%	1%	48%	42%
RFID	9%	1%	49%	41%
Beacons	8%	0%	45%	47%
Robots	8%	0%	47%	45%
Voice (commerce and/or search)	8%	1%	47%	44%
Blockchain	6%	0%	47%	47%
Virtual reality	6%	0%	45%	49%
Drones	5%	3%	48%	44%
Facial recognition	5%	1%	50%	43%

Figure 2
Q: For each of the technologies listed below, indicate whether your spending will increase, decrease or remain the same in the next 12 months.
(n=111)

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This table reveals that retailers are making it a priority to use technology to help them better market to customers in 2020 and beyond. Increased spending on marketing automation tools, personalization, content management systems, and machine learning and artificial intelligence is being done with an eye on the customer. Specifically, brands are seeking to leverage the vast amount of customer data they have to improve their marketing effectiveness. Customer experience is quickly becoming the new battleground for customer acquisition, not price, and merchants are trying to equip themselves with technology that optimizes CX. Personalized marketing drives engagement, which leads to conversion, and, ultimately, customer loyalty.

In addition to marketing, retailers are looking to bolster their supply chain performance with the help of increased technology investments. As noted above, the importance of order and inventory management systems to provide the omnichannel fulfillment options today's consumers increasingly expect is reflected in this table's data. Furthermore, optimizing speed of delivery to better compete in a world of one- and same-day delivery is top of mind for many retailers.

Retailers Not Yet Opening Their Wallets for Emerging Technology

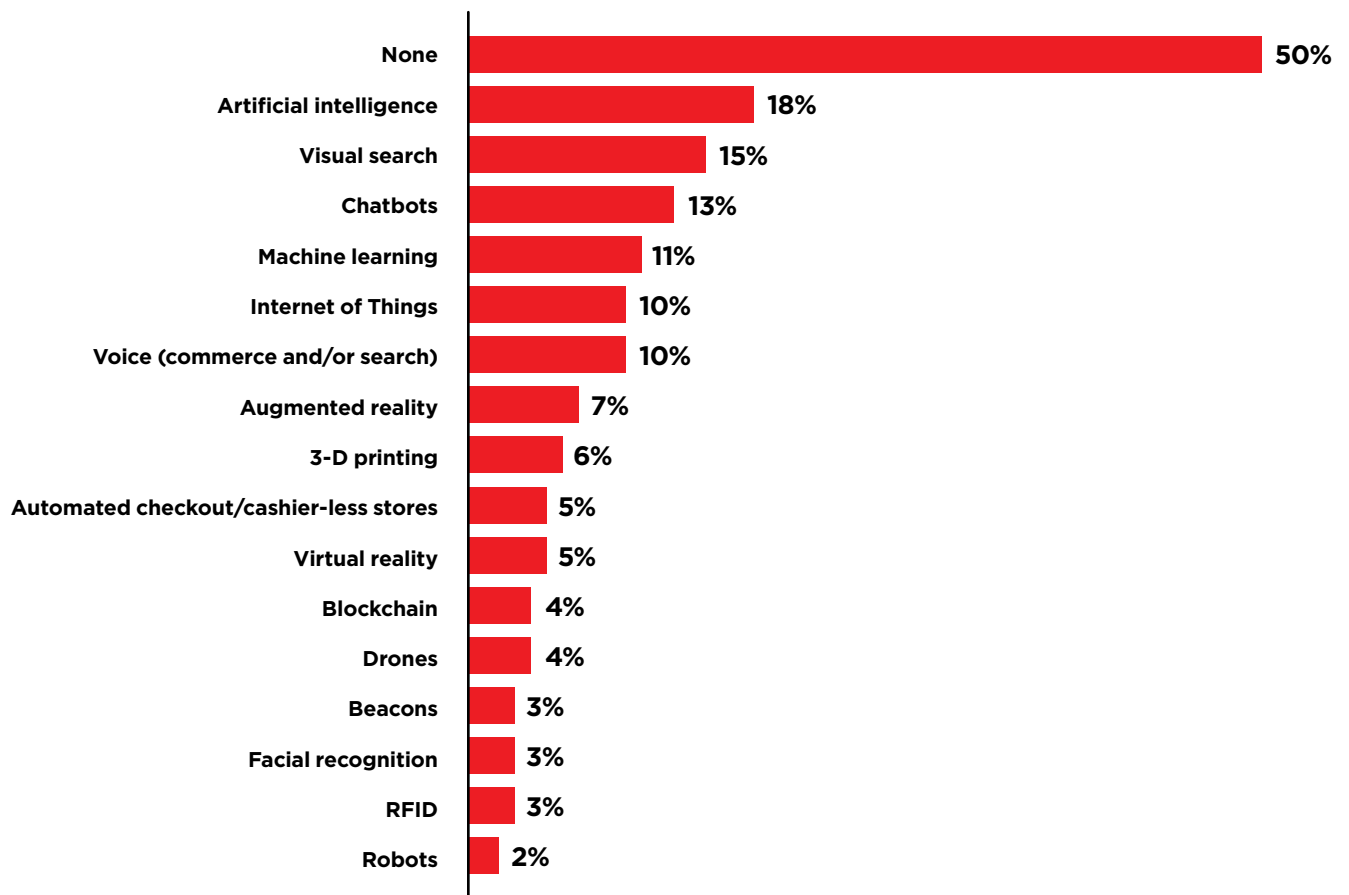| Technology	Percentage
None	50%
Artificial intelligence	18%
Visual search	15%
Chatbots	13%
Machine learning	11%
Internet of Things	10%
Voice (commerce and/or search)	10%
Augmented reality	7%
3-D printing	6%
Automated checkout/cashier-less stores	5%
Virtual reality	5%
Blockchain	4%
Drones	4%
Beacons	3%
Facial recognition	3%
RFID	3%
Robots	2%

Figure 3
Q: For the emerging technologies listed below, choose up to three that you're not currently investing in but plan to do so within the next 12 months. If you're not planning to invest in any, please select "none." (n=111)

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When asked to choose up to three emerging technologies that they're not currently investing in but plan to do so in the next 12 months, the clear winner among respondents was "none." Half all respondents will not be allocating budget to any of the emerging technologies listed. This represents a significant increase from the 38 percent that chose "None" in the 2019 survey. The question is whether that's an indictment on their lack of confidence in the technologies to positively impact their businesses or just a sign that they have limited funds to spend on new technology — or perhaps both.

Are retailers missing an opportunity by not being early adopters of emerging technologies such as visual search? It's difficult to calculate the opportunity cost of being a laggard, but the dynamic exists. The growth of visual-based social platforms such as Instagram and Pinterest portends that visual search is set to have a growing impact on retailers' businesses. Consider the following statistics related to visual search:

- Ninety percent of all information received by the brain is visual, according to the Massachusetts Institute of Technology.

- Images are returned for 19 percent of search queries on Google, according to Moz.

- There are over 600 million visual searches on Pinterest each month, and image-based Pinterest Ads have an 8.5 percent conversion rate, according to Heap, Inc.

- By 2021, early adopter brands which redesign their websites to support visual and voice search will increase digital commerce revenue by 30 percent, according to Gartner.

Retailers that take action and invest in visual search, like the 15 percent of respondents who said they will be investing in the channel in the next 12 months, stand the best chance to capture a piece of a market that's forecast to grow to nearly $26 billion in 2020.

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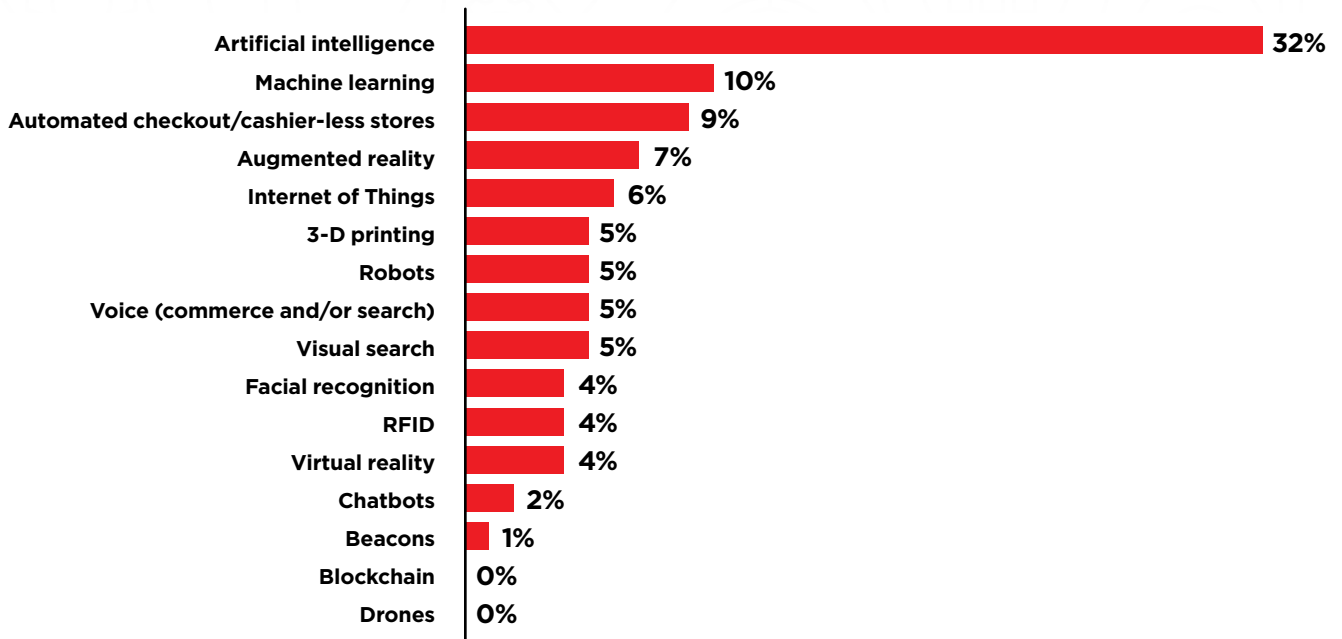
AI Continues to Be Valued by Retailers

Technology	Percentage
Artificial intelligence	32%
Machine learning	10%
Automated checkout/cashier-less stores	9%
Augmented reality	7%
Internet of Things	6%
3-D printing	5%
Robots	5%
Voice (commerce and/or search)	5%
Visual search	5%
Facial recognition	4%
RFID	4%
Virtual reality	4%
Chatbots	2%
Beacons	1%
Blockchain	0%
Drones	0%

Figure 4
Q: Thinking about the retail industry as a whole, which emerging technology do you believe will have the biggest impact within the next 12 months?
(n=111)

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The myriad uses of AI across a retail organization (e.g., marketing, supply chain, merchandising, customer service, among others) have made it the technology that retailers believe will have the biggest impact on the industry in the next 12 months. Nearly a third of all respondents (32 percent) identified AI as the technology they're betting on having the biggest impact on their businesses in the next year, followed in a distant second by its oft-confused counterpart, machine learning.

Retailers are most commonly using AI to analyze massive data sets, whether it be customer data, product data, competitor data, etc., and identify valuable insights and trends, which can then be used to make smarter business decisions — e.g., merchandising your website, personalizing marketing communications, routing shipments, etc.

Here are some comments from the respondents on why they believe AI will be the emerging technology to have the biggest impact on the retail industry in 2020:

- "More than a cost saver, artificial intelligence can provide better selling opportunities."

- "AI has the capability to change and enhance the shopping experience."

- "As the industry continues to personalize and create more unique experiences AI will become more valuable."

This is the second consecutive year that AI was the top choice among retailers as the emerging tech most likely to have the biggest impact on their businesses. At this point, one has to wonder if the use of AI in at least some aspect of running a retail business has become table stakes. Just like the "Year of Mobile" seemed to span nearly a decade, the "Year of AI" is upon us — if not already passed.

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Marketers to See the Largest Boost in Technology Budget

Bar chart values:
- Marketing: 25%
- Digital: 17%
- No departments will see an increase in technology spending: 12%
- Product Development: 11%
- Customer service: 8%
- Supply Chain: 8%
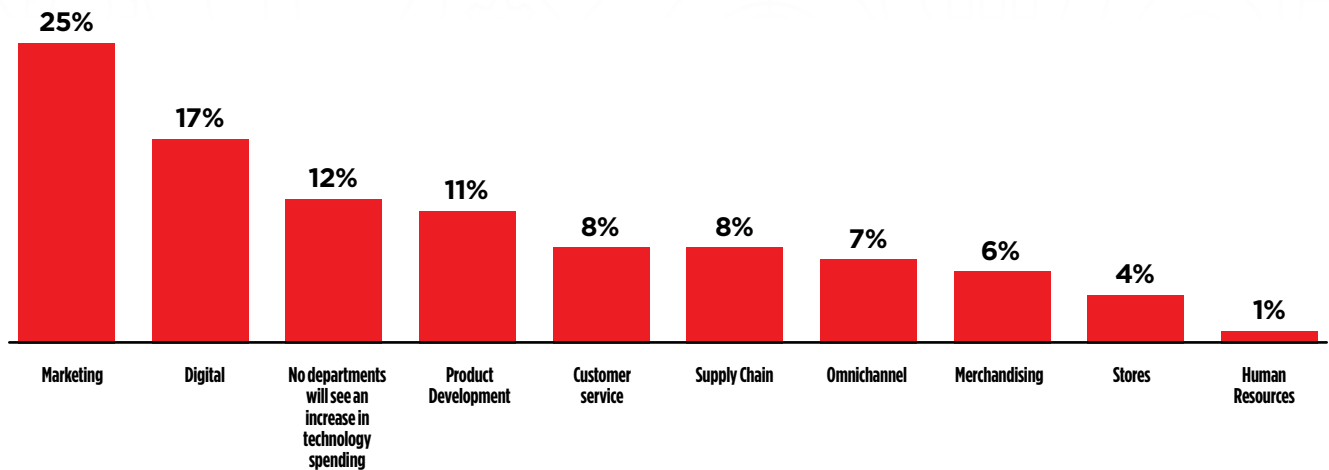- Omnichannel: 7%
- Merchandising: 6%
- Stores: 4%
- Human Resources: 1%

Figure 5
Q: Within the next 12 months, which department within your organization will see the biggest increase in technology spending? (n=103)

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Marketing departments will see the biggest increase to their technology budgets in the next 12 months, with spending on marketing automation tools, personalization software, and content management systems targeted to receive a significant piece of that increased budget. Retail organizations recognize the importance of using marketing communications to build relationships with buyers, particularly as customer acquisition costs continue to escalate. Developing loyal customers that come back to your brand time and again is far more cost effective than acquiring new customers. Marketing is helping retailers to cultivate those types of long-term customer relationships.

Data-driven marketing decisions have proven to be the most effective at engaging consumers and getting them to take the desired action. Retailers are increasingly willing to spend on technology systems that enable easier collection, management and utilization of data, as they better understand its role in fostering personalized, long-term relationships with customers.

In addition to marketing, digital teams will be the beneficiary of the second biggest increase to their technology budgets in the next 12 months. Given shifting consumer behaviors towards more shopping being done online, retailers are wisely looking to bolster that part of their business. Consider that e-commerce sales in the U.S. are forecast to grow to nearly $420 billion in 2020, retailers are trying to increase their share of that total.

Conversely, the department slated to see the biggest cut in technology budget in 2020 is human resources. Seventeen percent of respondents have identified HR as the department that will see the biggest decrease in tech spending during the next 12 months. However, the good news is that the vast majority of respondents (53 percent) said that no departments within their organization will see a decrease in technology spending.

As for who is making the technology buying decisions within retail organizations, four departments have been identified as key stakeholders. Fifty-two percent of respondents said that the IT department has "significant involvement" in the technology buying process, the highest percent of any department. IT was followed by general management (51 percent), digital (47 percent), and marketing (45 percent).

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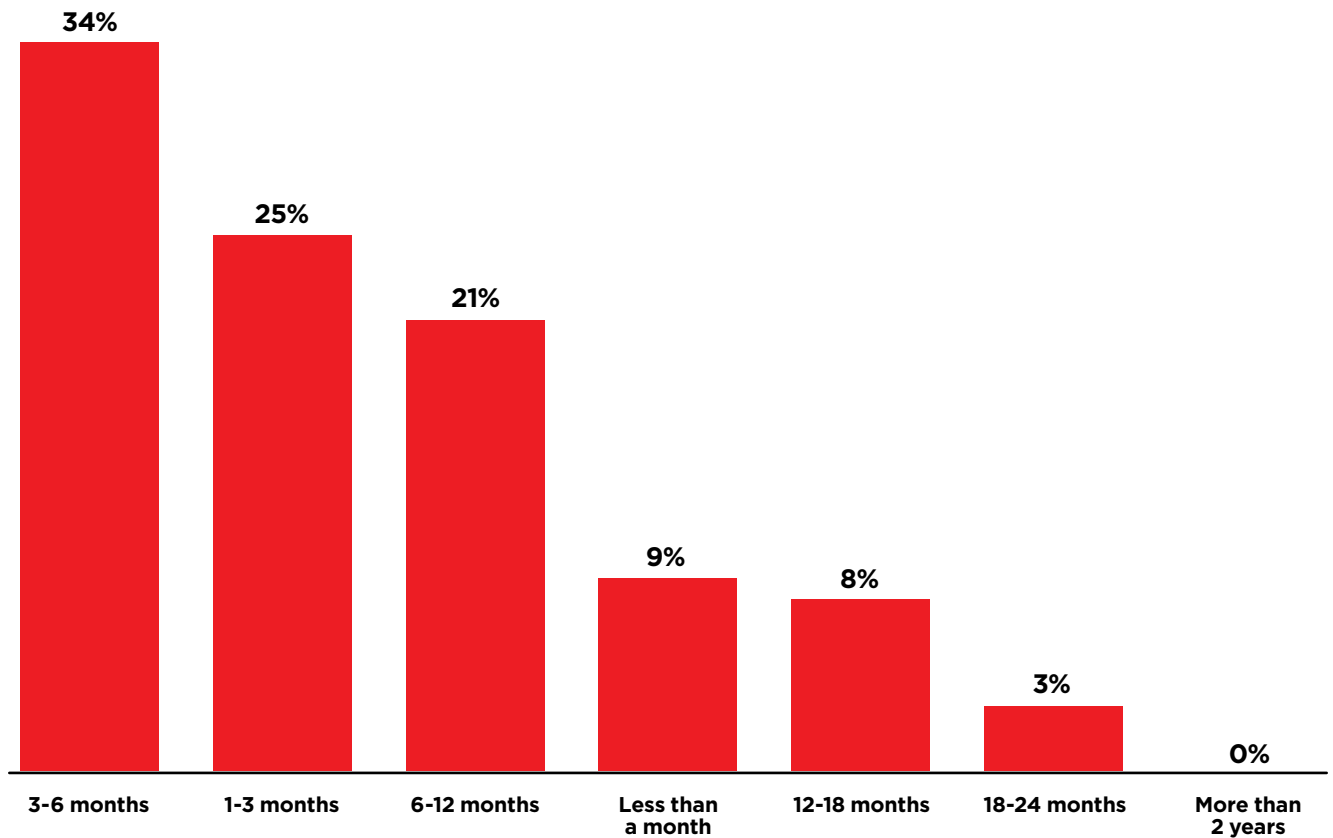# Retailers Moving Quickly on Technology Buying Decisions

Figure 6

Q: Thinking about a moderate to major technology purchase at your company, how long on average does the vendor selection process take? (n=103)

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When asked how long, on average, the vendor selection process takes for a moderate to major technology purchase at their company, 89 percent of retailers said that it takes less than a year. That's an increase from our 2018 survey, when 83 percent said they're making moderate to major technology purchases in less than a year.

This shift in decision making reflects the speed at which the retail industry is evolving, and the growing influence of technology. In order to keep pace with innovative, digital-native brands, including Amazon, and direct-to-consumer (D-to-C) brands, traditional brick-and-mortar retailers have had to embrace change — and do so quickly. This extends to their technology buying processes.

Speed, whether it be for product development, website performance (desktop and mobile), order fulfillment and delivery, among a host of other functions, has never been more critical. Therefore, retailers are no longer afforded the luxury of an extended vetting process when purchasing technology. Their growing sets of competitors are introducing game-changing technologies on a continual basis, and in order to keep pace, decisions must be made swiftly. Those that wait too long make decisions run the risk of being left behind.

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Choosing From a Select Few

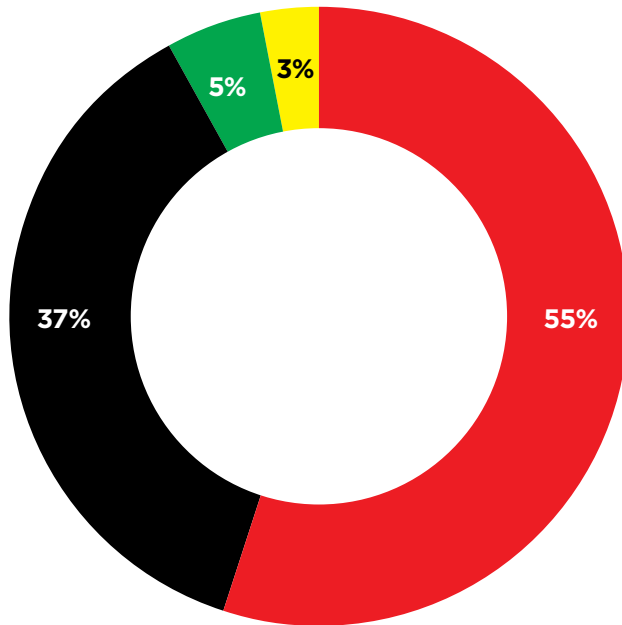**Legend:**
- 2-3 (55%)
- 4-5 (37%)
- 6-plus (5%)
- 1 (3%)

Figure 7
Q: Thinking about a moderate to major technology purchase at your company, on average how many service providers does your company consider?
(n=103)

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> **Having the right technology solution is important, but just as critical, perhaps even more, is finding not just a technology vendor, but a partner that is invested in the success of your business.**

This year's report data revealed that retailers are keeping limited options when it comes to the number of service providers they consider for a moderate to major technology purchase, despite the abundance of service providers in the marketplace.

When investing in a moderate to major technology purchase, due diligence is necessary to properly vet potential partners. Having the right technology solution is important, but just as critical, perhaps even more, is finding not just a technology vendor, but a partner that is invested in the success of your business. The vetting process takes time, as the chart above illustrates. Therefore, it's important that retailers identify a manageable number of potential technology partners — ideally, best-of-breed providers — before beginning the vetting process.

According to our survey, retailers prefer evaluating between two to five service providers. Ninety-two percent of respondents said that when evaluating a moderate to major technology purchase at their company, they consider between two to five service providers, with two to three the optimal number for the majority of retailers.

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Self-Driven Research Leading to Technology Discovery

72% Self-driven research
54% Networking/word-of-mouth
45% Trade shows
25% Trade publications
23% Analyst research
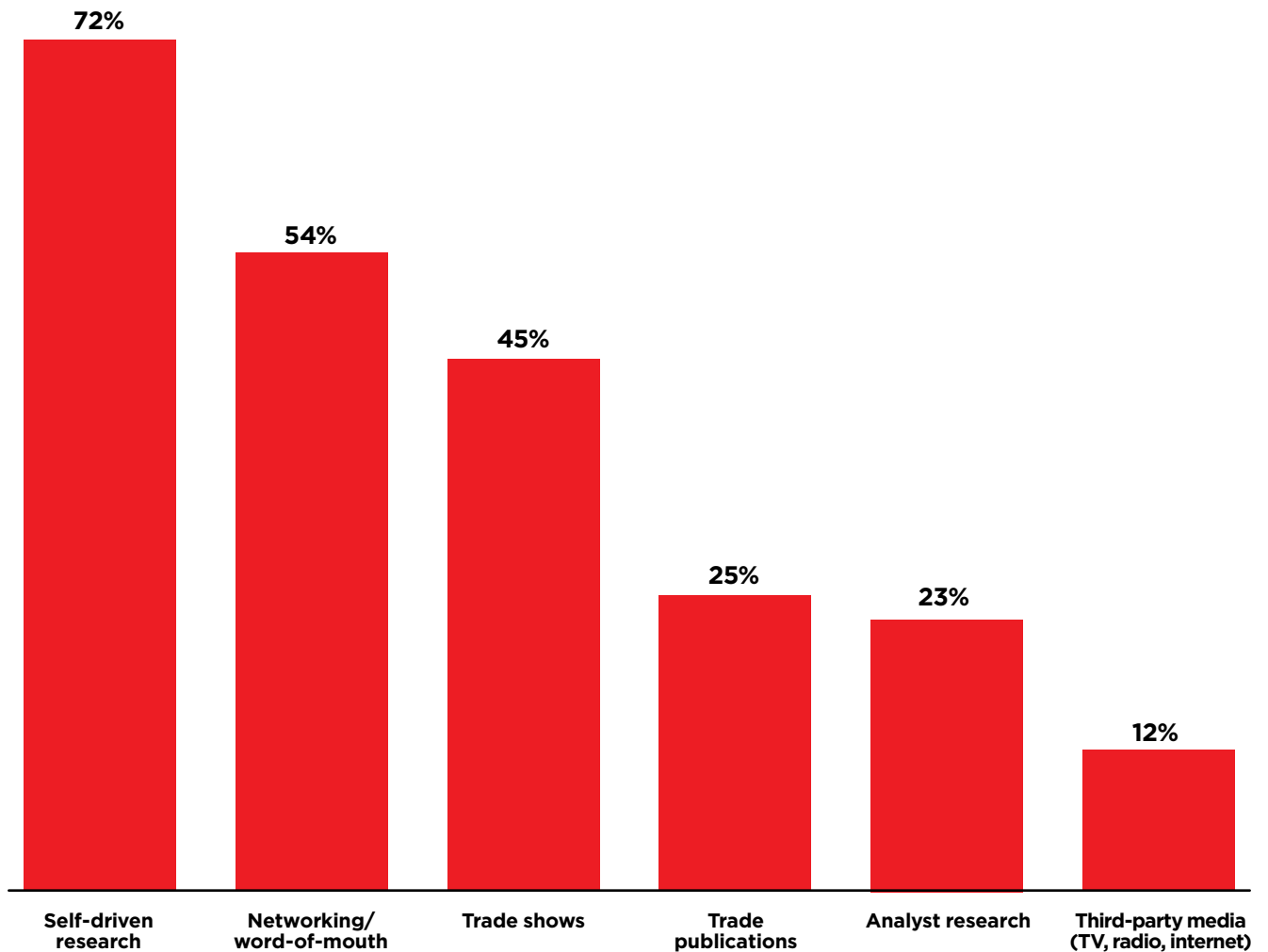**12%** Third-party media (TV, radio, internet)

Figure 8
Q: How does your organization most often discover new technology?
(Choose up to three answers.)
(n=103)

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With all of the different technology solutions in the marketplace, and more being introduced on a seemingly daily basis, it can be an arduous task for retailers to keep abreast of it all. So how are they learning about what is out there? Primarily from their own research.

When asked how their organization most often discovers new technology, nearly three-quarters of retailers (72 percent) cited self-driven research. They're also keeping tabs of innovative new solutions and systems by networking with other retailers, cited by 54 percent of respondents. Networking is particularly valuable for retail execs looking to learn about new technology solutions and service providers before implementing them within their own organizations. They can speak with a peer that has experience working with the vendor and its technology solution, getting insider information on what has worked, what hasn't worked, the implementation process, pricing, level of support, etc. In this regard, retailers can become partners, rather than competitors.

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Integration Challenges Persist for Retailers

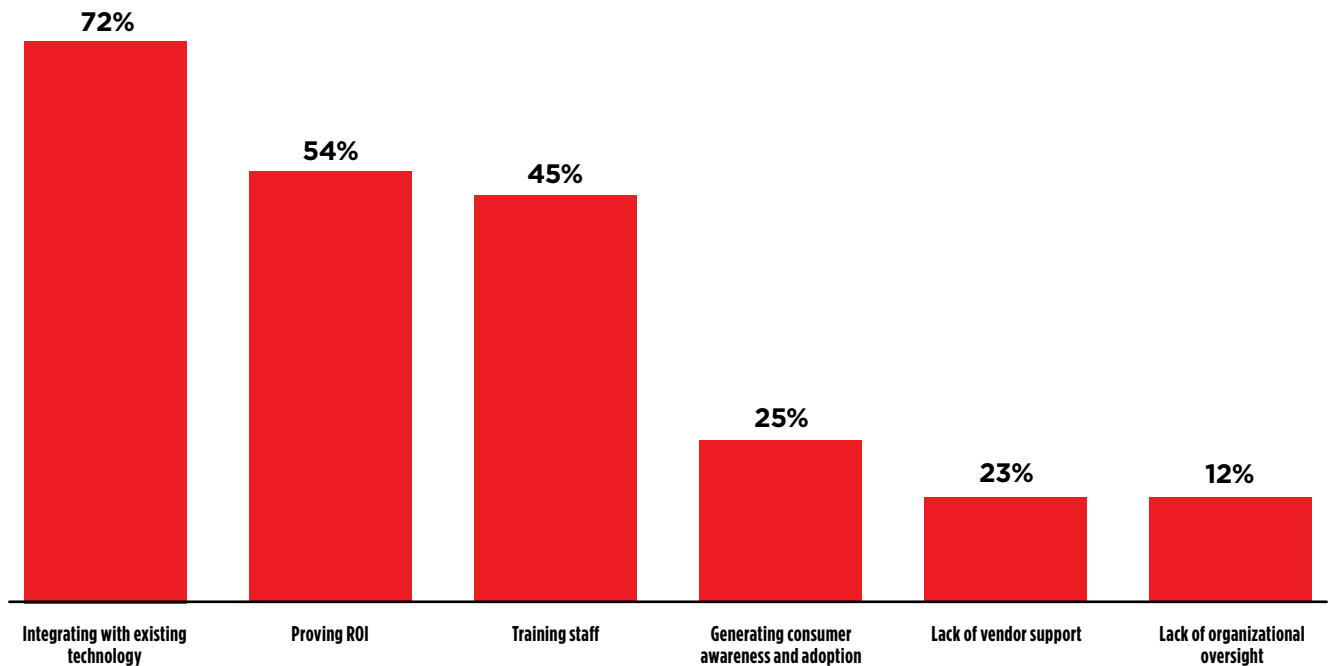| Integrating with existing technology	Proving ROI	Training staff	Generating consumer awareness and adoption	Lack of vendor support	Lack of organizational oversight
72%	54%	45%	25%	23%	12%

Figure 8
Q: How does your organization most often discover new technology?
(Choose up to three answers.)
(n=103)

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With multiple technology systems spanning a modern day retail business, often each with associated functions for different teams of employees, getting them to work in harmony with each other has proven to be a challenge for many companies.

When asked what are the top challenges when implementing a new technology into your business, 69 percent of retailers said integrating with existing technology. This was the second consecutive year that this answer topped the list of challenges cited by retailers. Systems must be able to integrate with each other in order to provide the quick, seamless flow of data that's required to provide a personalized customer experience. This is true across CRM and marketing automation platforms, for example, with CRM data fueling the personalized messaging delivered via automated campaigns such as email, SMS and social media.

To help with technology integrations, retailers should consider the following six tips:

1. Take inventory of systems' features, document APIs.

2. Embrace customer feedback.

3. Understand what customizations are needed before an integration process begins.

4. Understand the level of support available to you from your vendor partners.

5. Identify the right team members involved in the implementation process, and set timelines.

6. Make data analysis a top priority.

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Conclusion

The 2020 Retail Technology Report survey data reveals that retailers are prioritizing one-to-one relationships with customers. They're looking to establish those relationships through technologies such as marketing automation, personalization tools, and CRM platforms. A seamless, hassle-free customer experience is paramount to win over today's choice-overloaded consumers. Technology is a tool to help brands not only engage and acquire customers, but also begin to create long-term relationships with them. That goal is what is driving future technology spending plans.

Artificial intelligence (AI) is fast becoming a must-have technology for all retailers. The multiple applications for AI within retail — marketing personalization, customer service, inventory management, logistics and delivery, among others — underscore its value to an organization. It's for that reason that respondents overwhelmingly picked AI as the emerging technology that will have the biggest impact on the retail industry in the next 12 months.

With regards to technology buying, the vast majority of retailers are trying to simplify the process by limiting the number of service providers they consider — less than five for 92 percent of respondents. Furthermore, retailers are making technology buying decisions in a rather short amount of time considering the investment required — both time and money. More than two-thirds of respondents (68 percent) said they're making moderate to major technology purchase decisions in less than six months. This is a testament to how rapidly the retail industry is evolving.

Lastly, retailers must develop a plan for integrating new tools and platforms into their technology ecosystems. Integrating new technology with existing technology is again the most oft-cited challenge for retailers. Integration challenges cost retailers time and money, weakening their ability to compete in an ultracompetitive market.

Methodology

This online survey was conducted in February 2020 and March 2020. A total of 111 respondents completed the survey. Those respondents comprised a portion of the Total Retail audience, including omnichannel retailers, brick-and-mortar-only retailers, online-only retailers, and CPG brands.

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Total Retail is the go-to source for retail executives looking for the latest news and analysis on the retail industry. Featuring a daily e-newsletter (Total Retail Report), robust website, virtual and live events, comprehensive research reports, podcast channel, and more, Total Retail offers retail executives the information they need to do their jobs more effectively and grow their professional careers.

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Orckestra is a leading provider of modern commerce solutions, offering a single commerce platform to create and manage the most engaging shopping experiences across the web, mobile and in-store. Built on the Microsoft Azure open cloud, our Commerce Orchestration™ platform establishes a unique central commerce layer that unifies all retail systems and customer touchpoints, and helps enterprise organizations grow their business successfully in the global marketplace. We fuel digital innovation for leading retailers and branded manufacturers, enabling them to deliver differentiated commerce experiences faster with lower IT burden and operating costs, and maximum revenue growth.

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Led by a former Forrester Research analyst, the NAPCO Research team crafts custom data-centric solutions that leverage our highly engaged audiences across the markets in which we operate, our industry subject matter experts and in-house research expertise. We partner with our clients to identify their unique business problems and create solutions that enable deeply informed decision making.

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- Content marketing strategy
- Sales strategy and tactics
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- Benchmarking
- Industry trends
- Brand awareness

Contact research@napco.com for a research consultation.

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