



2019 Retail Technology Report: An Analysis of Trends, Buying Behaviors, and Future Opportunities

TotalRetail

arm TREASURE DATA

NAPCO RESEARCH
a service of NAPCOMEDIA



Turn Millions of Data Points into Profit

Create a single view of every customer with a Customer Data Platform

To win in business today, you need to know your customers from every angle, store, and channel. Arm Treasure Data enterprise CDP connects all of your first-, second-, and third-party data to create a unified profile of each customer—even if you have millions of them.

Find out why Arm Treasure Data won the 2019 Mar Tech Award for Best CDP.

Learn more at:
treasuredata.com • 866.899.5386

Executive Summary

The cross-channel behavior of today's consumers are causing retailers and brands to re-evaluate their technology spending. The result has been increased investments in technology enabling omnichannel operations — e.g., order and inventory management systems — and a reluctance to spend on the emerging tech that's generating buzz but, at least so far, little in terms of return on investment.

That's just one of the key takeaways from Total Retail's 2019 Retail Technology Report, which was produced in conjunction with Arm Treasure Data, an enterprise customer data platform. 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 the buying processes within their organizations. Specifically, we wanted to know how their spending on technology was going to change — if at all — in 2019.

Here are some of the highlights from the data collected:

- **Currently, retailers are most likely to be investing in technology systems for order and inventory management to help facilitate omnichannel fulfillment.** In addition, a majority are allocating budget for customer relationship management systems, critical for generating personalized marketing. The data revealed that retailers are less likely to be spending on emerging technology such as drones and robots. Nearly 40 percent of respondents said they are not going to be increasing spending on emerging tech in the next 12 months.
- **Nearly three-quarters (74 percent) of retailers are planning to increase technology spending in the next 12 months.** What is that money being earmarked for? The biggest increases in spending are planned for inventory and order management, as well as marketing automation — driven by increases in artificial intelligence (AI) and machine learning (ML).
- **AI is the clear frontrunner as the emerging technology that retailers are betting on having the biggest impact on the industry in the next 12 months.** The multiple applications for AI within a retail organization make it an attractive investment target.
- **Integrating new technology solutions with existing, oftentimes legacy systems is the top tech-related challenge for retailers.**
- **Retail organizations are measuring the success of a new tech investment primarily through increased revenues and cost savings.** At the end of the day, it all goes back to the retailer's bottom line.

This third 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 spending compares to their competitors, and perhaps identify where they might want to make adjustments.

And for technology service providers, the data on retailers' tech buying processes provides a rare glimpse into how organizations are making budget decisions. This information can be leveraged to hone your sales pitches as you look to retain existing clients as well as acquire new ones.

Tech Spending Reflects Importance of Omnichannel Operations

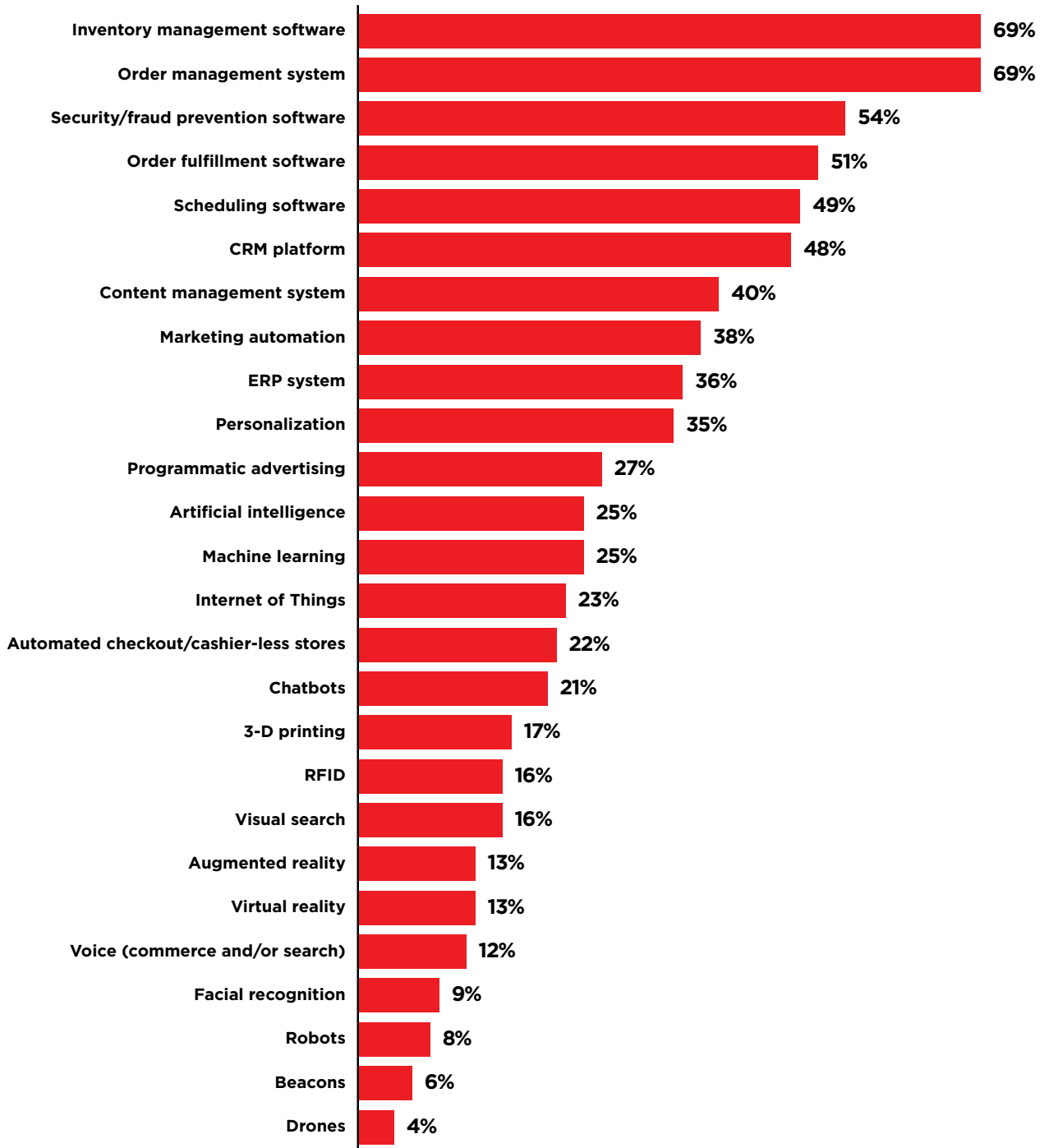


Figure 1
Q: Which technologies is your company currently using?
n = 103

When asked to identify the technologies that their companies are currently using, those at the top of the list had a familiar theme: they were systems that can help retailers track inventory and fulfill orders across multiple channels. As brick-and-mortar retailers look for ways to fend off 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. Programs such as buy online, pick up in-store (BOPIS), buy online, return in-store (BORIS), and ship from store have proven to be popular with consumers and retailers alike. They help to get orders into customers' hands faster — a growing need in a world of same-day and next-day shipping — and save both parties on shipping costs.

Integral to the execution of programs such as BOPIS, BORIS, and ship from store are technology systems such as inventory and order management. They help to ensure 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 this trend continues to grow, expect retailer spending on inventory and order management systems to grow with it.

Another interesting finding 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 drones. As these technologies become more mainstream, particularly robots, I would expect to see these numbers increase.

**74% OF
RETAILERS
TO INCREASE
SPENDING ON
TECHNOLOGY
IN THE NEXT
12 MONTHS**



Getty Images / Westend61

Omnichannel Systems, Personalized Marketing to See Increased Budget

	Increase	Decrease	Remain the same	I don't know
Inventory management software	52%	6%	31%	11%
Order management system	50%	4%	33%	13%
Content management system	47%	3%	35%	16%
Personalization	46%	6%	29%	19%
Marketing automation	45%	3%	33%	19%
Order fulfillment software	44%	6%	34%	17%
Artificial intelligence	40%	4%	31%	25%
CRM platform	40%	5%	35%	20%
Security/fraud prevention software	40%	6%	38%	17%
Programmatic advertising	34%	5%	38%	23%
Automated checkout/cashier-less stores	33%	3%	45%	19%
Scheduling software	32%	4%	45%	19%
Machine learning	28%	6%	41%	25%
ERP system	27%	3%	44%	26%
Internet of Things	27%	7%	40%	26%
Visual search	26%	4%	42%	28%
Chatbots	25%	5%	41%	29%
Voice (commerce and/or search)	23%	3%	41%	33%
3-D printing	21%	2%	43%	34%
RFID	21%	4%	43%	32%
Virtual reality	17%	2%	49%	32%
Beacons	17%	3%	46%	35%
Facial recognition	17%	4%	47%	33%
Robots	16%	2%	45%	38%
Augmented reality	15%	4%	48%	34%
Drones	11%	4%	50%	36%

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= 103

Continuing the theme from the chart above, retailers are most likely to be increasing spending on the technology systems that can help enable them to better serve today's omnichannel shopper. More than half of all respondents plan to increase spending on inventory management software (52 percent) and order management systems (50 percent) in the next 12 months, the highest of any technologies. Again, having the technology to track inventory and fulfill orders across multiple channels will be critical to the future success of traditional brick-and-mortar retailers.

In addition, retailers are looking to improve their marketing efforts through a couple of strategic technology investments. Content management systems and marketing automation tools were identified as two areas where retailers are planning to increase spending in the next year. Consumers expect the brands and retailers they do business with to know them — what they like, what they don't like, how they prefer to shop, etc. — and that knowledge should be reflected in the marketing they're exposed to. To help create those one-to-one relationships with customers, retailers are increasing investments in personalization technology (cited by 46 percent of respondents) as well.

Lastly, the growing impact AI is having on retailers' businesses is reflected in this table. Forty percent of respondents plan to increase their spending on the technology in the next 12 months. That compares to just 20 percent of respondents from our 2018 report. AI is clearly on retailers' radars.

**40% OF
RETAILERS
PLAN TO
INCREASE
SPENDING ON
AI IN THE NEXT
12 MONTHS**



Getty Images/metamorworks

Retailers Taking Cautious Approach to Emerging Tech

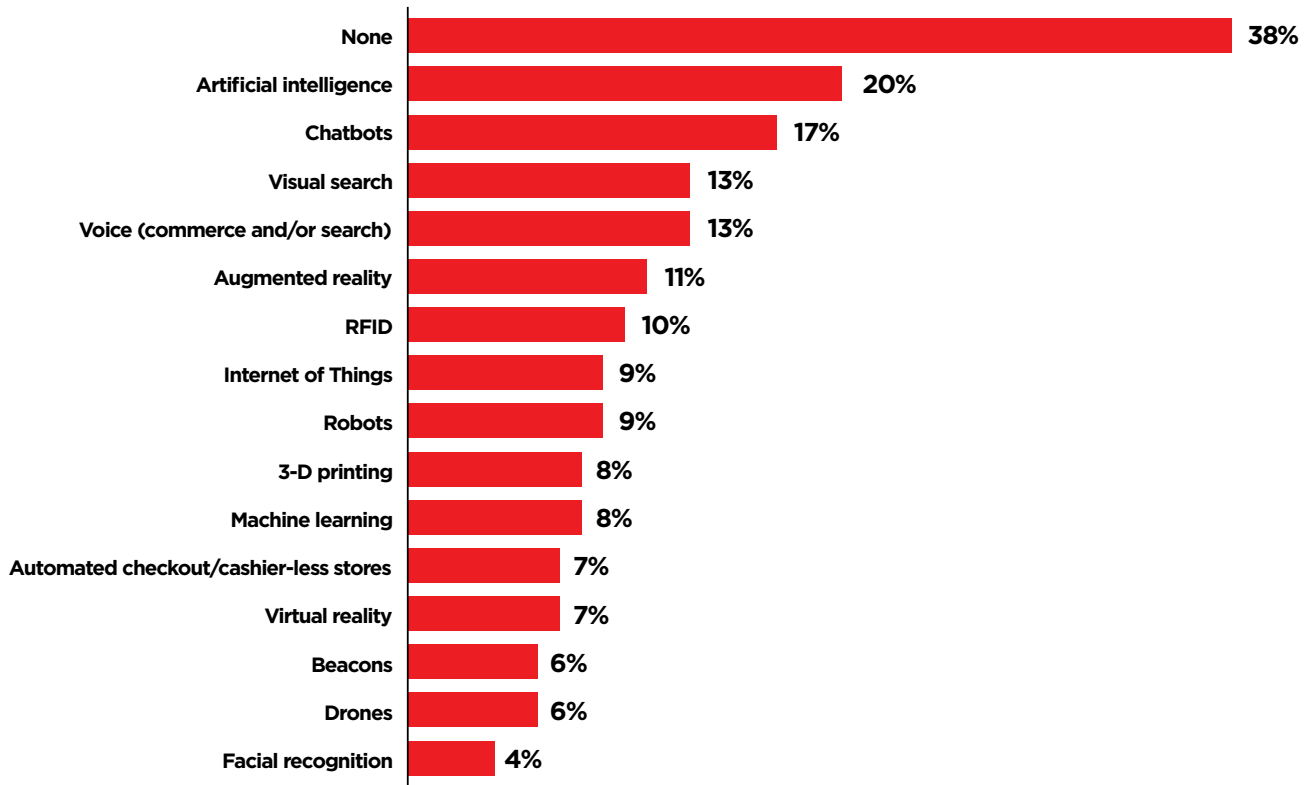


Figure 3
 Q: For the emerging technologies listed below, choose up to three that you're not currently investing in but plan to do so in the next 12 months. If you're not planning to invest in any, please select "none."
 n = 103



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." More than one-third of all respondents (38 percent) will not be allocating budget to any of the emerging technologies listed. 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 voice commerce, automated checkout (i.e., cashierless stores), robots? It's difficult to calculate the opportunity cost of being a laggard, but the dynamic exists. Consider the growth potential of voice commerce. A Juniper Research report predicts that by 2023 there will be 8 billion devices with voice assistants in them, up from 2.5 billion at the end of 2018, and that a massive \$80 billion voice commerce market will grow out of this trend. Those retailers that are capitalizing now on voice commerce figure to capture a larger share of the market as the transactional channel becomes more mainstream in the near future.

What's the next technology that's going to disrupt — or more likely, already has — the retail industry? Figure 4 below provides some insight into what retailers are betting on.



Retailers Believe in the Power of AI

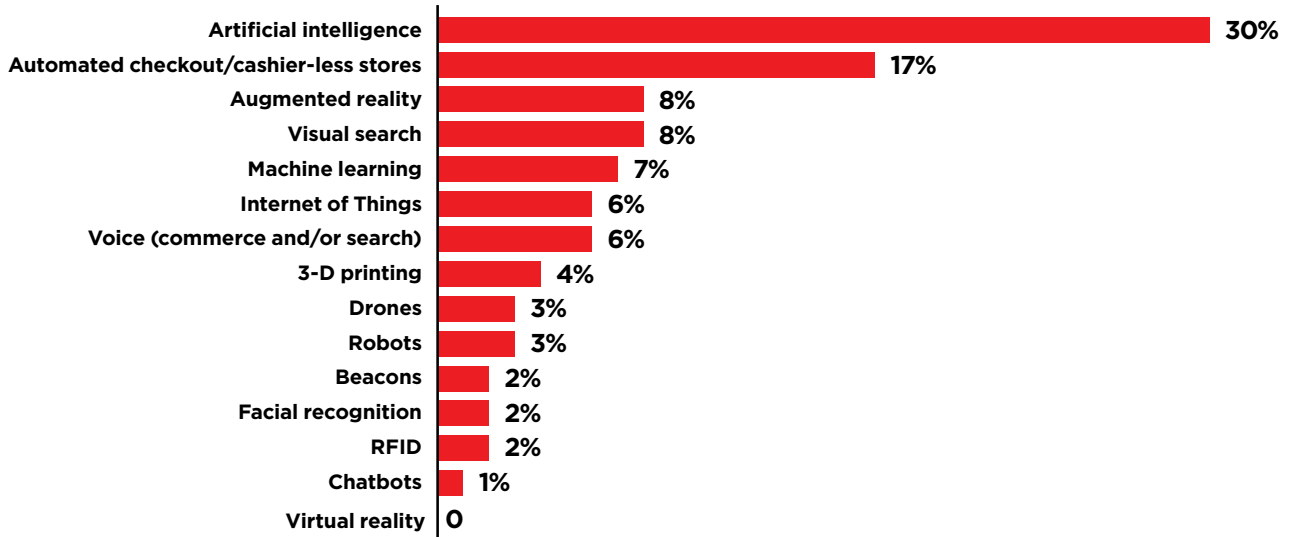


Figure 4
 Q: Thinking about the retail industry as a whole, which emerging technology do you believe will have the biggest impact within the next 12 months?
 n = 103



The potential benefits offered by AI (sales gains and cost savings, to name just two) and its varied applications across a retail organization have made it the technology that retailers believe will have the biggest impact on the industry in the next 12 months. And there’s not another technology that’s particularly close.

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.

Consider the following statistics, which illustrate the impact that AI has already had or will have in the near future:

- Retail and consumer products executives project that intelligent automation capabilities could help increase annual revenue growth by up to 10 percent. (IBM)
- Retailers can save as much as \$340 billion by taking AI to scale across the value chain, including operations, supply chain, planning, product development, distribution, and more. (Capgemini)
- By 2020, artificial intelligence will be used by at least 60% of organizations for digital commerce. (Gartner)

Retailers have gotten the message that AI can help transform their organizations in many different ways, from creating personalized relationships with customers to answering customer service inquiries to optimizing supply chain speed. Therefore, it makes sense that they would increase their investments in this emerging technology.



Money Going Into Marketing

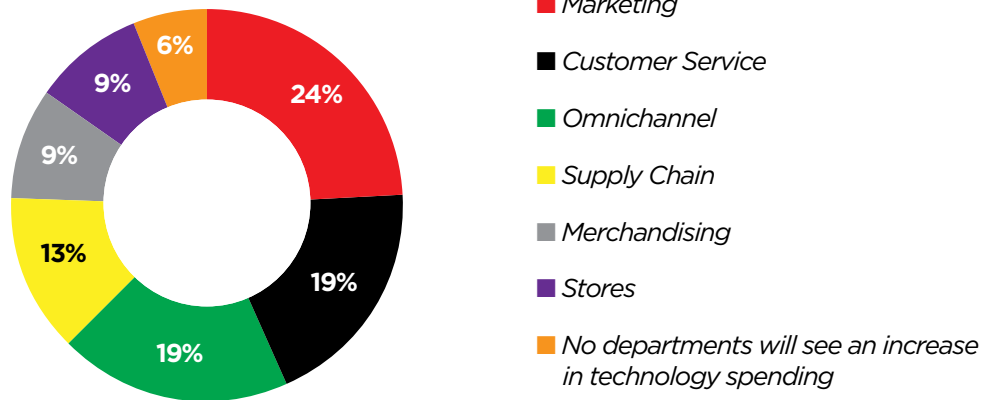


Figure 5
 Q: Within the next 12 months, which department within your organization will see the biggest increase in technology spending?
 n = 102



Marketing departments will see the biggest boost to their technology budgets in the next 12 months, with spending on personalization software, marketing automation tools, AI, and content management systems at the top of their lists. Retail organizations are prioritizing their relationships with customers — and rightly so — and thus allocating more of their technology budgets to marketing.

With the vast amounts of customer data that retailers are collecting today, managing it manually has become untenable. Technology systems that enable easier collection, management and utilization of data have proven to be extremely valuable to retailers and brands as they look to create personalized, long-term relationships with customers.

In addition to marketing, omnichannel and customer service teams will be the beneficiaries of the second biggest increase to their technology budgets in the next year. The case for omnichannel teams is rooted in the need for tech systems to power programs such as BOPIS, BORIS and ship from store, necessary for competing with today’s leading online retailers and D-to-C brands. As for customer service, much of the increased spending is targeted to AI and ML investments. For example, retailers are beginning to use AI-powered chatbots to help answer common customer service questions — making the experience quick and easy for the customer, and saving money for the retailer.

Retailers Making Tech Buying Decisions (Rather) Quickly

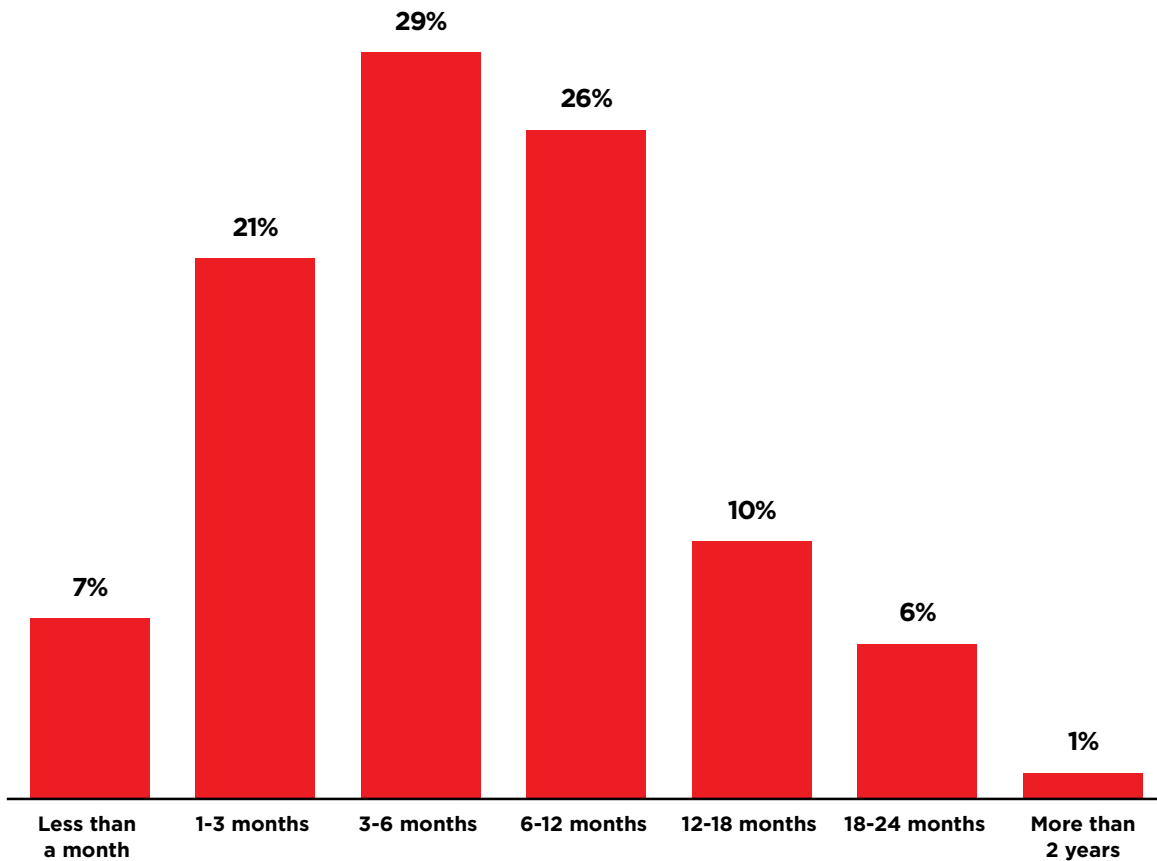


Figure 6
Q: Thinking about a moderate to major technology purchase at your company, how long on average does the vendor selection process take?
n = 102

TotalRetail
NAPCO RESEARCH

When asked how long, on average, the vendor selection process takes for a moderate to major technology purchase at their company, 83 percent of retailers said that it takes less than a year. That's a slight increase from our 2018 survey, when 80 percent said they're making moderate to major technology purchases in less than a year.

This chart 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.com, traditional brick-and-mortar retailers have had to embrace change — and do so quickly. This extends to their technology buying processes for all facets of their organizations.

Speed, whether it be for product development, online checkout, order 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 up decisions must be made swiftly. Those that wait to make decisions run the risk of being passed by.

Narrowing the Field

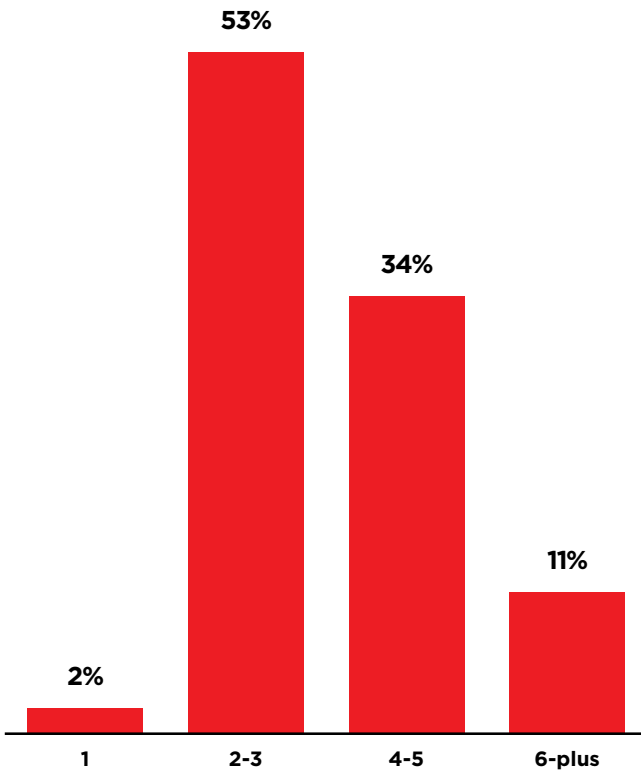


Figure 7
Q: Thinking about a moderate to major technology purchase at your company, on average how many service providers does your company consider?
n = 102



Considering the time and money involved in implementing new technologies within a retail organization, it stands to reason that executives would want to consider a multitude of partner options before making a final purchase decision. Much like a consumer weighing his or her options for the purchase of a big-ticket item, businesses are shopping around for the best price as well as the product benefits and features they’re looking for in new technology systems — to a degree.

When making a significant financial investment such as a moderate to major technology purchase, due diligence is necessary to properly vet potential partners. That involves multiple steps, including but not limited to product demos, site visits, client referrals, pilot programs, etc. As you would expect, the process takes time. 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. Eighty-seven percent of respondents said that when evaluating a moderate to major technology purchase at their company, they consider between two to five service providers.



Retailers Finding New Tech Through Internal Research

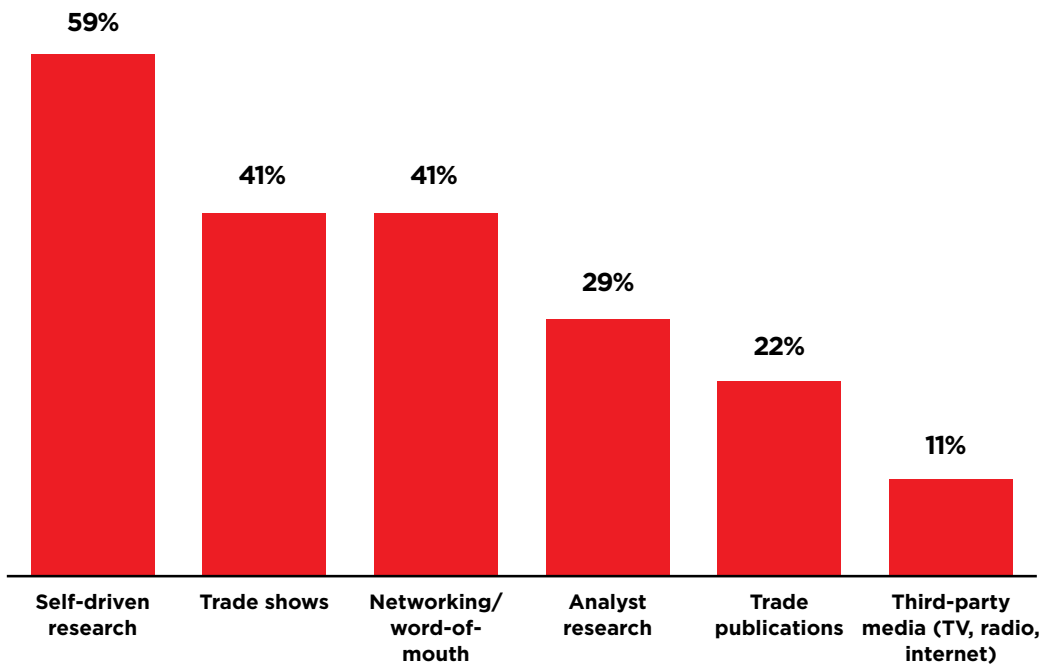


Figure 8
Q: How does your organization most often discover new technology?
(Choose up to three answers.)
n = 102

TotalRetail
NAPCO RESEARCH

Retailers are learning about all of the new technologies in the marketplace through self-research. When asked how their organization most often discovers new technology, 59 percent of respondents cited self-driven research. However, this is down from 67 percent in our 2018 survey. They're also keeping abreast of innovative new solutions and systems by attending industry trade shows (41 percent) and networking with other retailers (41 percent).

Networking is particularly valuable for retail execs looking to learn about new technology solutions. They can speak with a peer that has experience using the technology, getting answers to questions such as the following:

- What was the implementation process like?
- How is the company using the technology?
- How does it integrate with other technology solutions?
- What challenges have come up?
- What benefits has the company realized since rolling out the technology?
- What level of support has the retailer received from its vendor partner?

These are just some of the questions that retail executives should be asking themselves when learning about and evaluating new technology.

Technology Success Measured by Bottom-Line Metrics

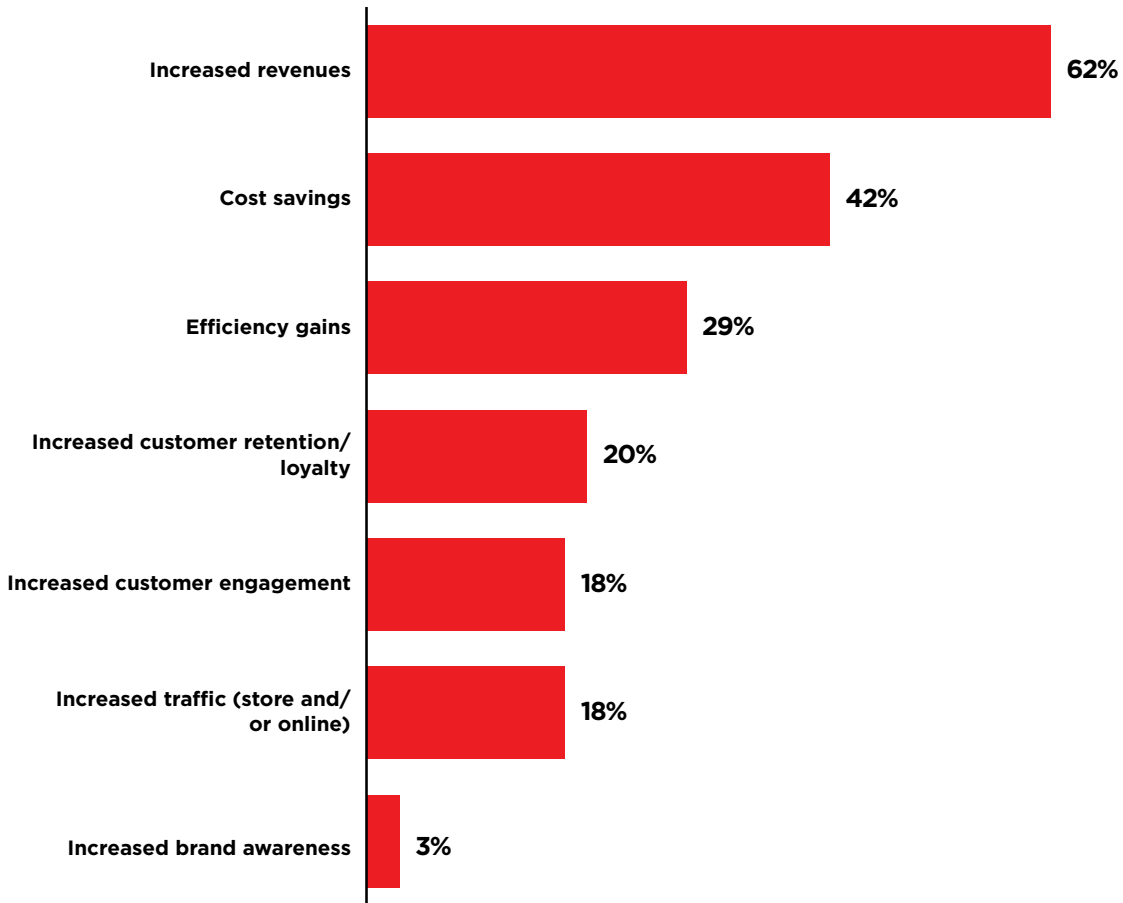


Figure 9
Q: Thinking about how your company evaluates the success of a technology investment, choose the two metrics that are most important to the evaluation process.
n = 101

TotalRetail
NAPCORESEARCH

For retail businesses, return on investment is the ultimate metric. That was the key learning when retailers were asked to identify the two metrics that were most important to the evaluation process for a technology investment.

Increased revenues that can be attributed back to the technology was the top choice among respondents, with 62 percent naming it as their most important metric. A rather distant second choice was cost savings (42 percent). Retailers have cited ROI as the driving force behind their technology investments, and this data bears that out.

The key is that retailers are continuously monitoring their technology investments, much like they would any other area of their business — stores, marketing, customer service, etc. Data enables better decision making. That extends to technology spending as well.

Technology Integration Poses Significant Challenge for Retailers



Figure 10
Q: What are the top challenges when implementing a new technology into your business? (Choose up to three.)
n = 101

TotalRetail
NAPCO RESEARCH

Given the complexity of retail organizations today, driven by the growing number of channels in which consumers can engage and transact with their favorite brands (and the data collected in those channels), the need for technology to help manage it all has never been greater. However, adding in new technology systems and solutions isn't without its challenges, particularly for legacy brick-and-mortar retailers.

When asked what are the top challenges when implementing a new technology into your business, 70 percent of retailers said integrating with existing technology. Systems must be able to talk with each other in order to provide the quick, seamless flow of data that's required to provide a personalized customer experience. Without this level of integration, your business is operating at a disadvantage in today's ultracompetitive environment.

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, and set timelines.
6. Make data analysis a top priority.

CONCLUSION

Upon analysis of the data, the conclusion can be drawn that retailers are prioritizing omnichannel operations when it comes to their technology spending. Having technologies in place to leverage physical stores as more than just a transactional channel is at the top of many retailers' lists. That includes inventory management and order management systems that work to ensure the right inventory is in the right place at the right time.

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 chose 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 89 percent of respondents. Furthermore, retailers are making technology buying decisions in a rather short amount of time considering the investment required — both time and capital. Most respondents (57 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.

When evaluating their technology investments, retailers are looking to their bottom lines. Increased revenues and cost savings were identified as the top two metrics most important to the evaluation process. For executives making technology buying decisions within retail organizations, ROI is the ultimate determinant.

Lastly, retailers must have a plan for integrating new systems into their technology ecosystems. Integrating new technology with existing technology is the most oft-cited challenge for retailers, particularly traditional brick-and-mortar brands. Integration challenges cost retailers time and money, weakening their ability to compete in an ultracompetitive market.

METHODOLOGY

This online survey was conducted in May 2019 and June 2019. A total of 103 respondents from companies with annual revenue over \$10 million 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.

Cover Photo: Getty Images / tdub303

WHO WE ARE



TotalRetail

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.

Visit myTotalRetail.com.

WHO WE ARE



arm TREASURE DATA

Arm Treasure Data enterprise Customer Data Platform (CDP) unifies data from multiple sources - online, offline, and IoT device generated data - and empowers enterprises to disrupt markets with superior customer experiences. Our clients are creating transformational customer relationships by connecting the data dots with CDP, achieving more profitable business results.

Visit TreasureData.com.

WHO WE ARE



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.

NAPCO Research can help with:

- Business goal prioritization
- Opportunity discovery
- Market segmentation
- Landscape insight
- User needs and wants
- Product features and functionality
- Content marketing strategy
- Sales strategy and tactics
- Market conditions
- Benchmarking
- Industry trends
- Brand awareness

Contact research@napco.com for a research consultation.



How Does She Buy? If You Had a CDP, You'd Know

If you don't know how your customers shop, what they like, and where they buy, you're in for a long, hard selling season. The Arm Treasure Data Customer Data Platform (CDP) helps you show every customer the right offer, at the right time, on the right channels—while they're still making up their minds.

Unite in-store and online data for personalized offers that sell, cross-sell, and upsell. Learn more at www.treasuredata.com/retail/