new relic.

State of Observability for Retail

Insights and analysis on the adoption and business
value of observability for the retail/consumer industry

Contents

Overview

Today, the retail industry faces new macroeconomic challenges, with the rapid increase in energy costs, high inflation, and supply chain disruptions. As the threat of shrinking margins looms, retailers are focusing on cost reduction and strategic investments to ensure the best possible business value without sacrificing the customer experience.

While omnichannel is essential, retailers don't have an easy way to gain visibility into their data across different sources, making it harder to observe the customer, product, or order journey across all touchpoints. They often depend on third-party tools and services that they have little or no access to—including onsite or in-store (such as POS systems, kiosks, and video cameras), online (such as web and mobile apps like payment processing services), and en-route (such as external distribution logistics and fulfillment service APIs)—which inhibits them from easily implementing telemetry in their retail strategy. These blind spots make it difficult for organizations to make data-based decisions that could impact the bottom line.
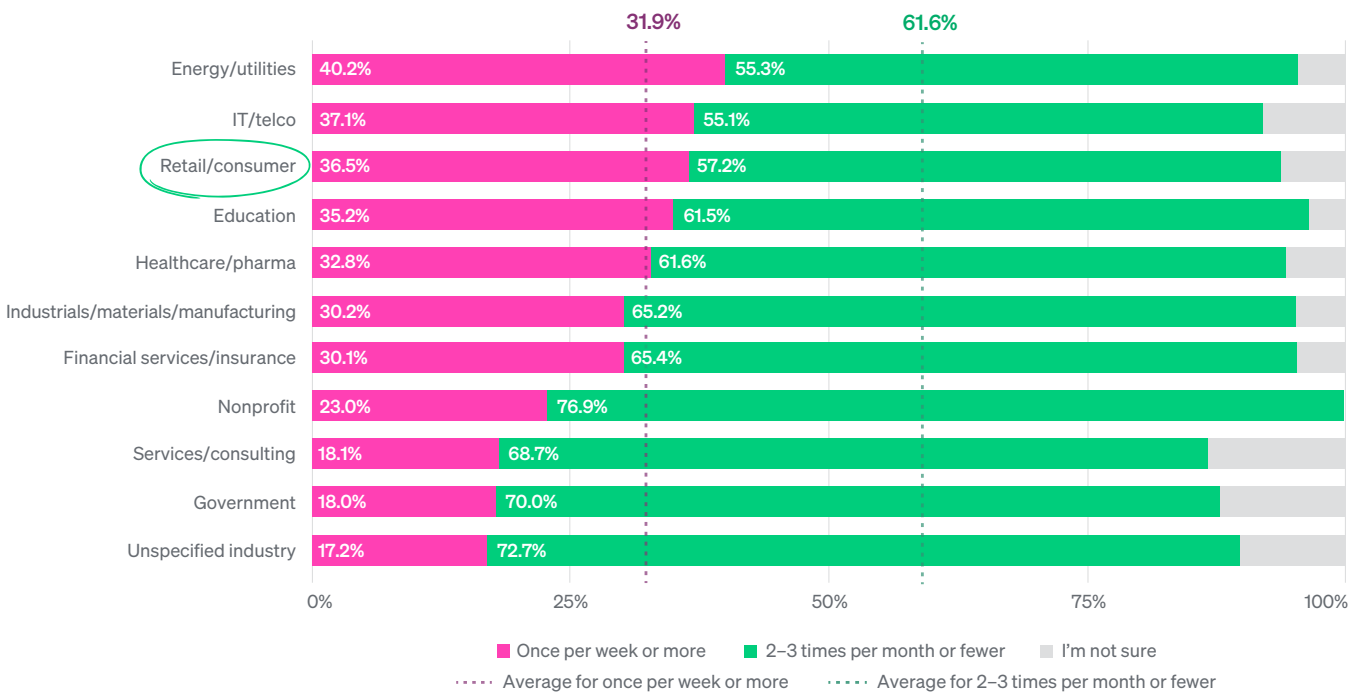
For retailers to keep digital storefronts open and customers engaged, they're investing in observability tools that give them complete visibility into their software across complicated technology stacks. Observability tools proactively collect and visualize data, then apply intelligence so organizations not only understand the behavior of their IT ecosystems but can also detect issues immediately and quickly solve them.

This report focuses on the adoption and business value of observability across the retail/consumer-focused sector. It's based on insights derived from 173 respondents surveyed in association with the _2023 Observability Forecast_.

Outage frequency and downtime

Retail/consumer organizations experienced high-business-impact outages at a higher frequency, with 37% reporting these outages at least once a week compared to the average of 32%. This finding means that retail/consumer organizations had the third highest outage frequency across industries.

Industry	Once per week or more	2–3 times per month or fewer
Energy/utilities	40.2%	55.3%
IT/telco	37.1%	55.1%
Retail/consumer	36.5%	57.2%
Education	35.2%	61.5%
Healthcare/pharma	32.8%	61.6%
Industrials/materials/manufacturing	30.2%	65.2%
Financial services/insurance	30.1%	65.4%
Nonprofit	23.0%	76.9%
Services/consulting	18.1%	68.7%
Government	18.0%	70.0%
Unspecified industry	17.2%	72.7%

Average for once per week or more: 31.9%
Average for 2–3 times per month or fewer: 61.6%

Legend: ■ Once per week or more   ■ 2–3 times per month or fewer   ■ I'm not sure
····· Average for once per week or more   ····· Average for 2–3 times per month or fewer

High-business-impact outage frequency by industry

Many retailers only receive log data of their interactions, leading to errors being discovered after an issue has happened. This leads to longer timelines for resolving downtime from website or mobile application crashes.

Total downtime is calculated by adding the mean time to detect (MTTD) and mean time to resolve (MTTR) outages. More than half (55%) of retail/consumer respondents said it takes at least 30 minutes to detect high-business-impact outages, and 21% said it takes at least an hour. About three in five (61%) also indicated that it takes at least 30 minutes to resolve them, and 28% said it takes at least an hour. Given the relative frequency of outages noted above, this adds up to considerable downtime for retail/consumer organizations.
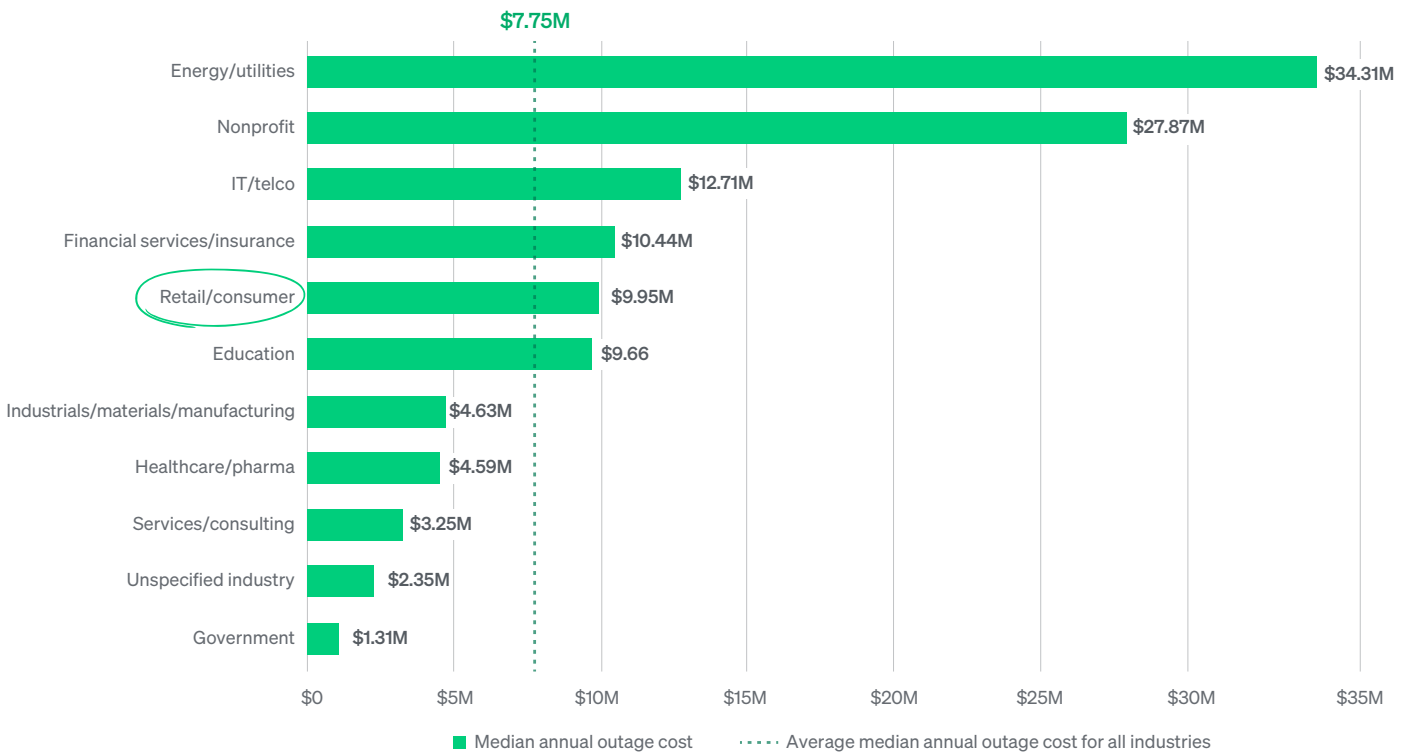
However, 43% said their MTTR has improved to some extent since adopting an observability solution.

61%

took 30+ minutes to resolve high-business-impact outages

Outage cost

Nearly a third (31%) of retail/consumer respondents said critical business app outages cost more than $500,000 per hour. Almost a quarter (23%) estimated they cost their organizations more than $1 million an hour.

Retail/consumer organizations also reported a median annual outage cost of $9.95 million, which is notably higher than the $7.75 million annual outage cost across all industries and fifth highest overall compared to other industries.

$7.75M

Industry	Median annual outage cost
Energy/utilities	$34.31M
Nonprofit	$27.87M
IT/telco	$12.71M
Financial services/insurance	$10.44M
Retail/consumer	$9.95M
Education	$9.66
Industrials/materials/manufacturing	$4.63M
Healthcare/pharma	$4.59M
Services/consulting	$3.25M
Unspecified industry	$2.35M
Government	$1.31M

■ Median annual outage cost   ⋯⋯ Average median annual outage cost for all industries

Median annual outage cost by industry

The stakes are high. If a retailer's website goes down for 30 minutes on a high-traffic day like Cyber Monday, it could cost them millions of dollars and negatively influence customers' brand perception. But observability can help.
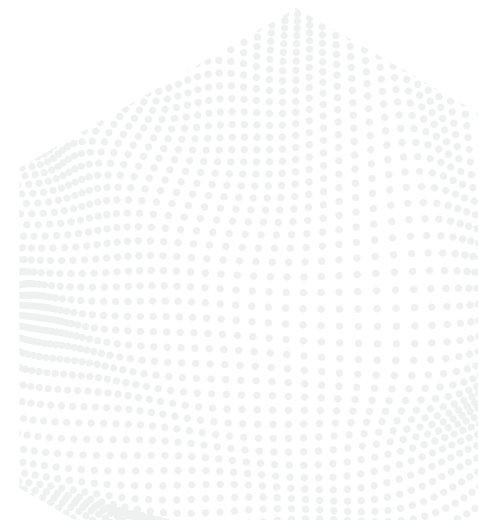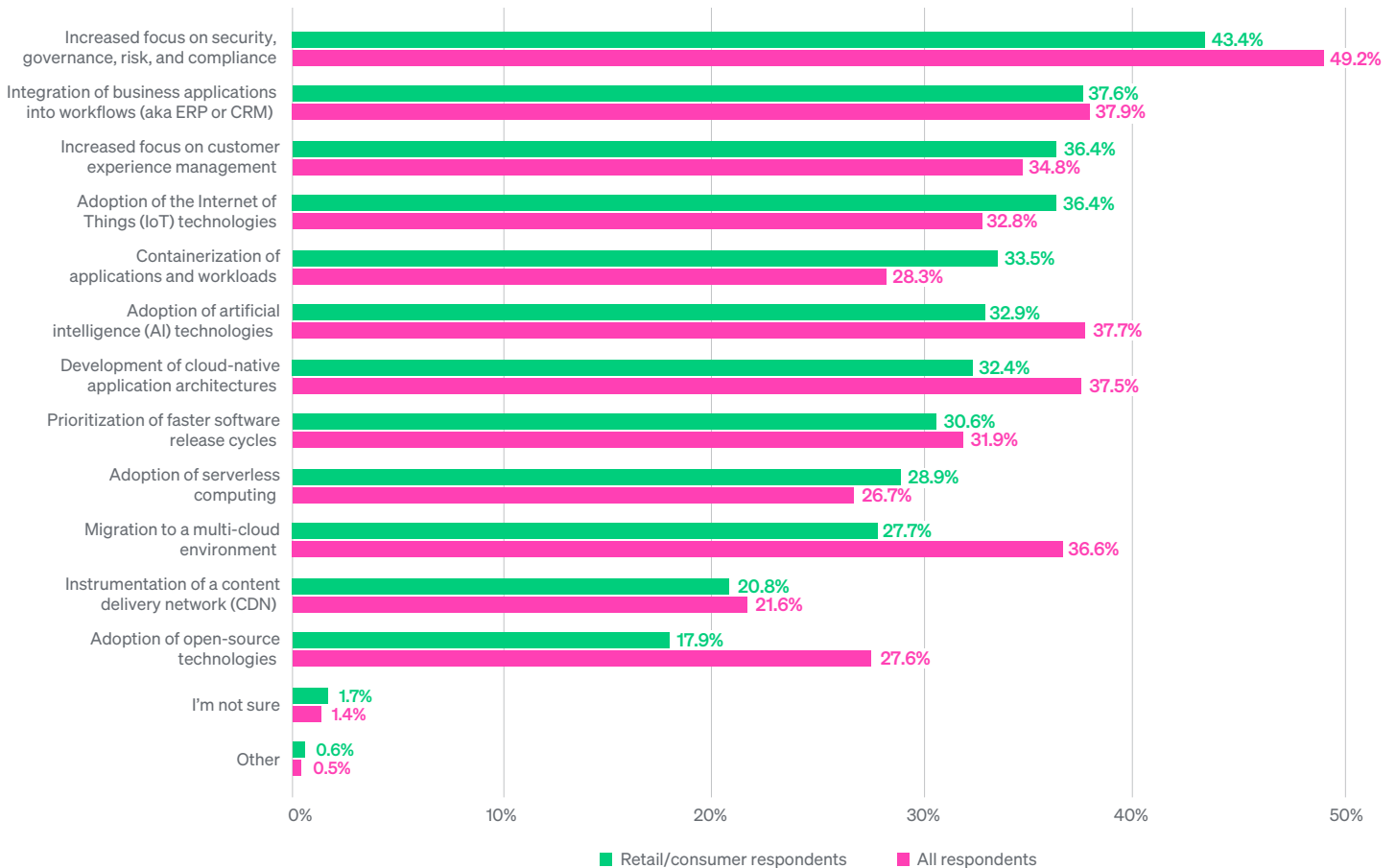
Trends driving retail observability adoption

The top technology strategies and trends driving the need for observability among retail/consumer organizations were an increased focus on security, governance, risk, and compliance (43%) and integration of business applications into workflows such as ERP or CRM systems (38%). Two trends tied for third place: an increased focus on customer experience management and the adoption of the Internet of Things (IoT) technologies (both 36%).

IoT can take on multiple uses for retailers, including inventory tracking and tracking salespeople in the store. The retail/consumer industry put a greater emphasis on IoT technologies driving observability than among all respondents, where it ranked seventh at 33%. They were also more likely to say the containerization of applications and workloads (34% compared to 28% overall) and adoption of serverless computing (29% compared to 27% overall) are driving the need for observability.

36%

said an increased focus on customer experience management is driving the need for observability

Technology strategy/trend	Retail/consumer respondents	All respondents
Increased focus on security, governance, risk, and compliance	43.4%	49.2%
Integration of business applications into workflows (aka ERP or CRM)	37.6%	37.9%
Increased focus on customer experience management	36.4%	34.8%
Adoption of the Internet of Things (IoT) technologies	36.4%	32.8%
Containerization of applications and workloads	33.5%	28.3%
Adoption of artificial intelligence (AI) technologies	32.9%	37.7%
Development of cloud-native application architectures	32.4%	37.5%
Prioritization of faster software release cycles	30.6%	31.9%
Adoption of serverless computing	28.9%	26.7%
Migration to a multi-cloud environment	27.7%	36.6%
Instrumentation of a content delivery network (CDN)	20.8%	21.6%
Adoption of open-source technologies	17.9%	27.6%
I'm not sure	1.7%	1.4%
Other	0.6%	0.5%

■ Retail/consumer respondents   ■ All respondents

Technology strategies and trends driving the need for observability for all respondents compared to retail/consumer respondents

Observability capabilities deployed

With billions of dollars of consumer spending being driven via digital, it's more critical than ever for retailers to improve their uptime and reliability, double down on their digital customer experience (DCX) strategies, and focus on creating a seamless, omnichannel customer journey.

Digital experience monitoring (DEM) is the way to stay on top of DCX and is, therefore, an important focus for the retail/consumer industry. It involves the tracking and optimization of performance and reliability to deliver flawless customer experiences online. DEM is a combination of real user monitoring (RUM)—which includes browser monitoring and mobile monitoring—as well as synthetic monitoring.

"By leveraging incident alerts, mobile, and customer event integrations, we have greater visibility into customer concerns and can react to their needs. We can now pinpoint issues much faster and make fixes before they escalate, which allows us to deliver a better customer experience."

Sandeep Grandhi
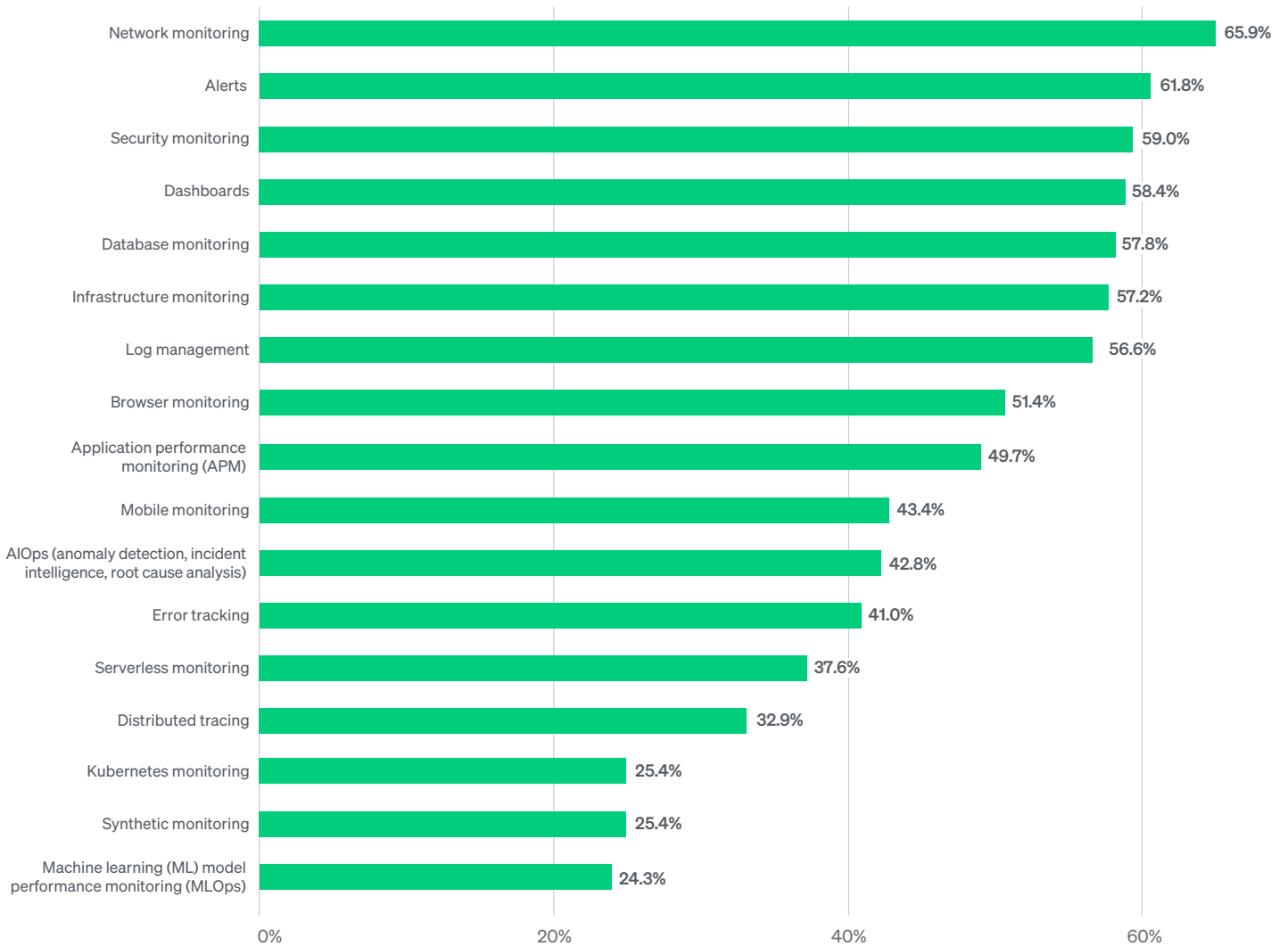Associate Director of Engineering at bigbasket
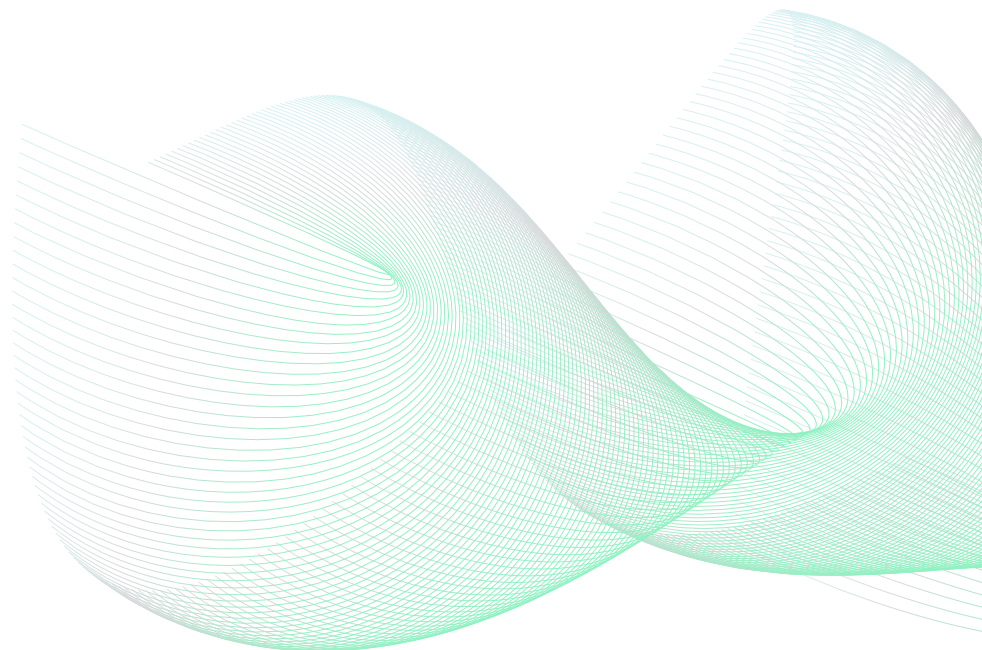
Respondents from retail/consumer organizations reported slightly higher levels of deployment for mobile monitoring (43% compared to 41% overall) and synthetic monitoring (25% compared to 23% overall). However, they reported slightly lower levels of deployment for browser monitoring (51% compared to 55% overall).

As far as other key capabilities retail/consumer organizations are deploying, two-thirds (66%) had deployed network monitoring, the most widely deployed capability for this industry vertical. Alerts were the second most widely deployed (62%), followed by security monitoring (59%) and dashboards (58%). Each of these capabilities was generally more widely deployed by retail/consumer organizations than across all sectors, with the exception of security monitoring.

51%

of retail/consumer respondents had deployed browser monitoring

Capability	%
Network monitoring	65.9%
Alerts	61.8%
Security monitoring	59.0%
Dashboards	58.4%
Database monitoring	57.8%
Infrastructure monitoring	57.2%
Log management	56.6%
Browser monitoring	51.4%
Application performance monitoring (APM)	49.7%
Mobile monitoring	43.4%
AIOps (anomaly detection, incident intelligence, root cause analysis)	42.8%
Error tracking	41.0%
Serverless monitoring	37.6%
Distributed tracing	32.9%
Kubernetes monitoring	25.4%
Synthetic monitoring	25.4%
Machine learning (ML) model performance monitoring (MLOps)	24.3%

Deployed observability capabilities for retail/consumer respondents

# Number of retail data monitoring tools and preference

Retailers typically use a variety of third-party services, which often leads to a dependence on specialized tools. In fact, retail/consumer organizations were more likely than average to use multiple monitoring tools for the 17 observability capabilities included in this study. More than two-thirds (69%) used four or more tools for observability compared to 63% overall. And 23% used eight or more tools.

The proportion of retail/consumer respondents using a single tool has decreased slightly since last year, dropping from 4% to 3%. However, the average number of tools has gone down by almost one tool, from an average of six tools in 2022 to five tools in 2023.

The data indicate that retail/consumer organizations are spending more time and money tool-hopping to try to understand the different aspects of their business and to avoid costly outages.

69%

of retail/consumer organizations toggled between 4+ observability tools
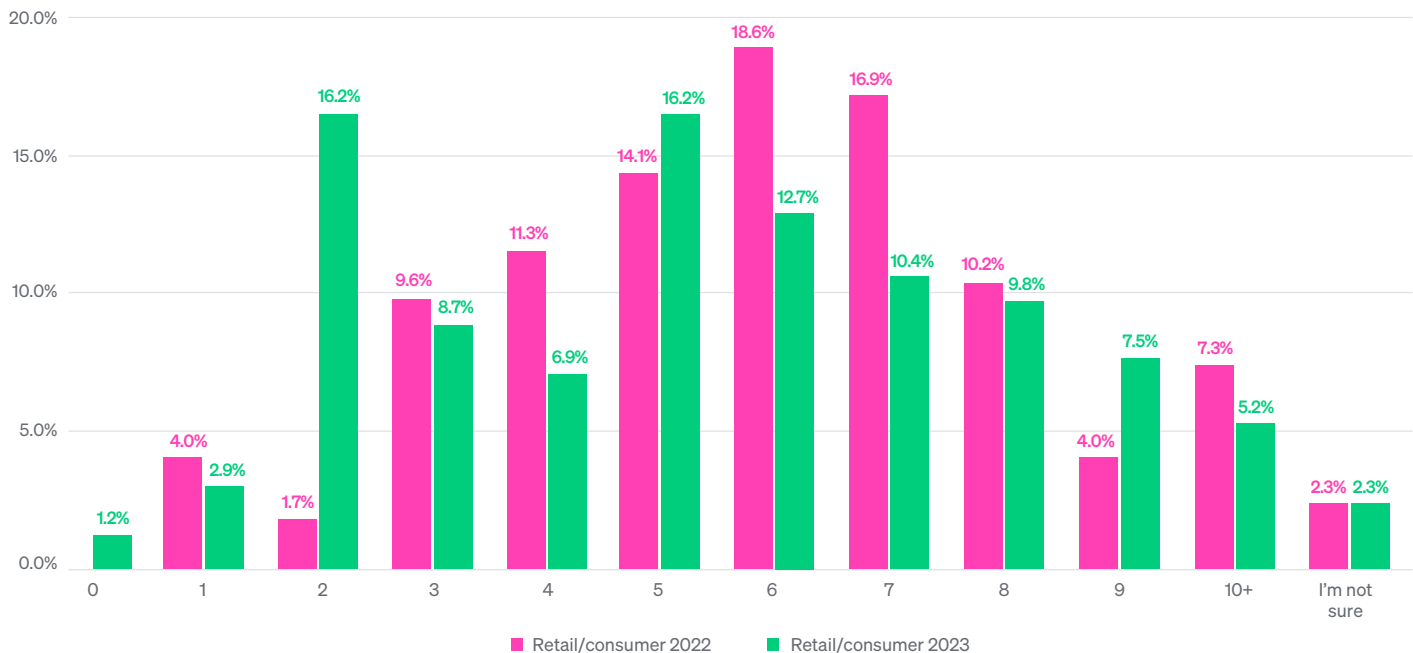
Number of tools used by retail/consumer organizations for observability capabilities in 2023 compared to 2022

When asked how unified their organization's telemetry data (metrics, events, logs, traces) is, 31% of retail/consumer respondents said it's more unified, 32% said it's more siloed, and 35% said it's roughly equally unified and siloed (more than any other industry).

Moreover, IT teams in retail/consumer organizations detected software and system interruptions primarily from one or more monitoring tools (73%), though more than a quarter (27%) said they detect outages through manual checks or tests, complaints, or incident tickets.

That said, the prevailing preference among retail/consumer respondents was for a single, consolidated platform (46%). And 42% said their organization is likely to consolidate tools in the next year to get the most value out of their observability spend.
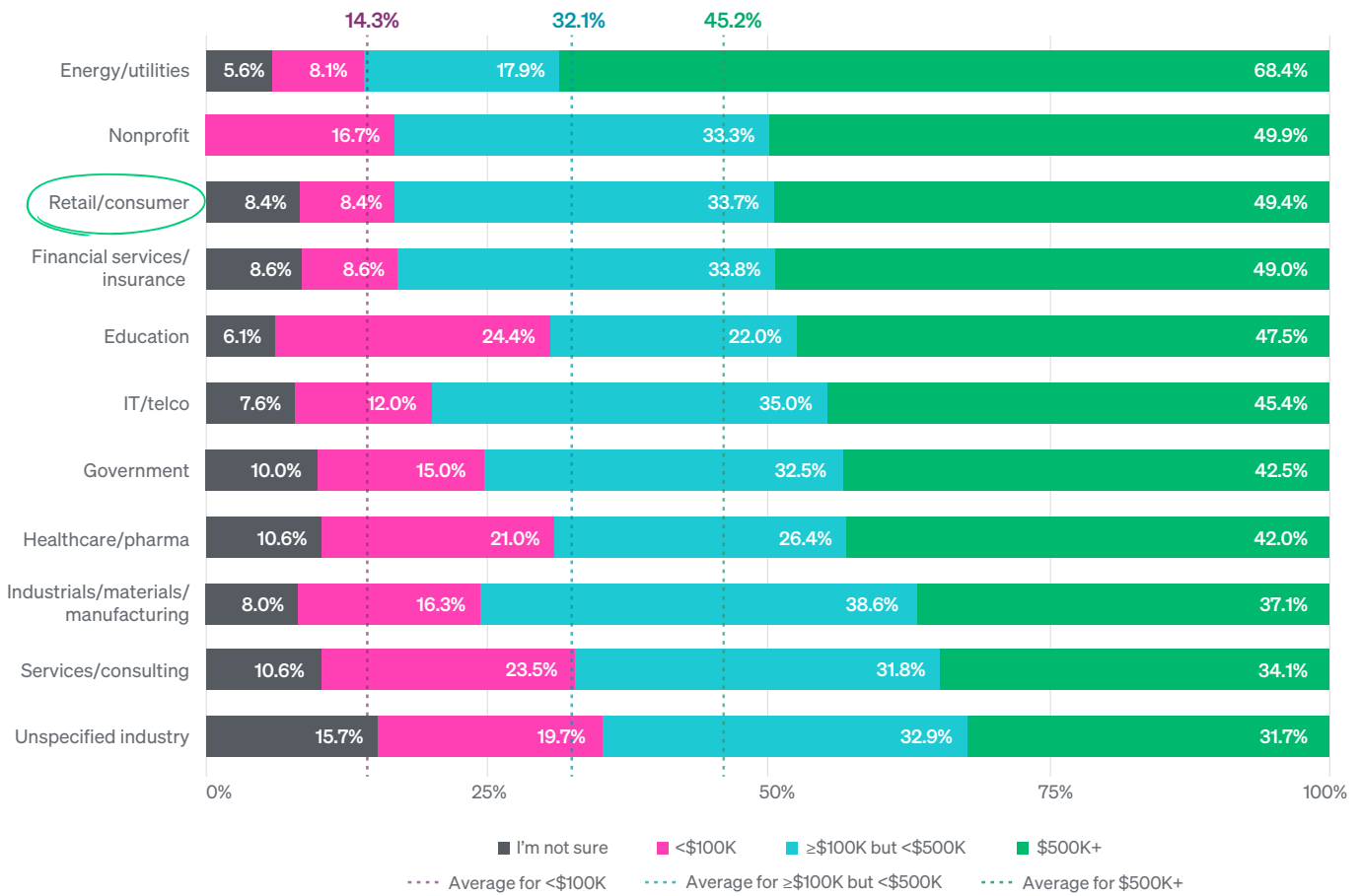
"Just as a carpenter has a suite of tools on hand to complete a job, running an effective ecommerce site requires that the right tools are used—it makes the team much more productive overall."

Goran Stefkovski
Chief Technology Officer at Kogan
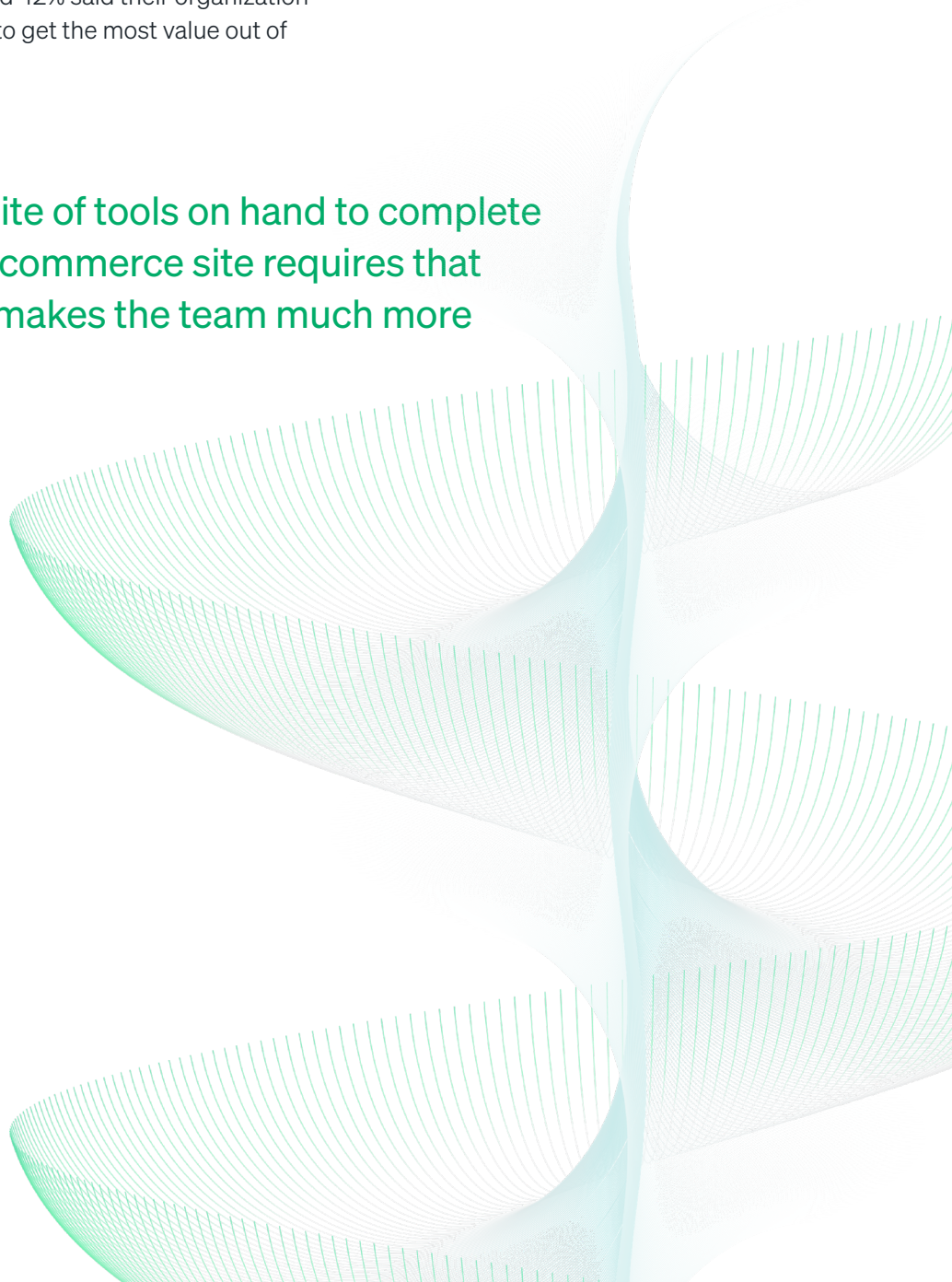
Retail observability spend

Retail/consumer organizations tended to spend more on observability than most other industries—almost half (49%) said they spend $500,000 or more, and 31% said they spend $1 million or more per year on observability. Just 8% said they spend less than $100,000 per year on observability.

	14.3%	32.1%	45.2%

Industry	I'm not sure	<$100K	≥$100K but <$500K	$500K+
Energy/utilities	5.6%	8.1%	17.9%	68.4%
Nonprofit		16.7%	33.3%	49.9%
Retail/consumer	8.4%	8.4%	33.7%	49.4%
Financial services/insurance	8.6%	8.6%	33.8%	49.0%
Education	6.1%	24.4%	22.0%	47.5%
IT/telco	7.6%	12.0%	35.0%	45.4%
Government	10.0%	15.0%	32.5%	42.5%
Healthcare/pharma	10.6%	21.0%	26.4%	42.0%
Industrials/materials/manufacturing	8.0%	16.3%	38.6%	37.1%
Services/consulting	10.6%	23.5%	31.8%	34.1%
Unspecified industry	15.7%	19.7%	32.9%	31.7%

Legend: ■ I'm not sure ■ <$100K ■ ≥$100K but <$500K ■ $500K+
···· Average for <$100K   ···· Average for ≥$100K but <$500K   ···· Average for $500K+

Annual observability spend by industry

The business value of observability

We also asked retail/consumer respondents what ways observability helps improve their life the most. The top two answers for IT decision makers (ITDMs) were that it helps drive business strategy (39%) and achieve technical KPIs (37%). The top two answers for practitioners were that it increases productivity so they can find and resolve issues faster (50%) and enables less guesswork when managing complicated and distributed tech stacks (36%).

As far as business outcomes enabled by observability, nearly half (47%) of retail/consumer respondents said observability improves revenue retention by deepening understanding of customer behaviors—which was considerably more than all other industries and 38% more overall. In addition, more than a third said observability shifts developer time from incident response towards higher-value work (41% compared to 35% overall), improves collaboration across teams to make decisions related to the software stack (40% compared to 46% overall), creates revenue-generating use cases (36% compared to 26% overall), and mitigates service disruptions and business risk (34% compared to 33% overall).

Retail/consumer respondents also indicated that the primary benefits enabled by observability were increased operational efficiency (40%), improved system uptime and reliability (34%), security vulnerability management (30%), and an improved real-user experience (26%).

47%

said observability improves revenue retention by deepening understanding of customer behaviors

"In particular, deployment markers have helped us to shed light on the customer journey by correlating incidents with releases and configurations. As a result, we have been able to identify and resolve issues while improving our mean time to recovery by 70–80%."

Sandeep Grandhi
Associate Director of Engineering at bigbasket

When we asked them how much total value their organization receives from its observability investment per year, 57% said more than $500,000, with 43% saying the total annual value is $1 million or more. A fifth (21%) estimated they receive $5 million or more per year in total value. Retail/consumer organizations reported a somewhat higher total annual value received from observability than average and more than all other industries except energy/utilities.
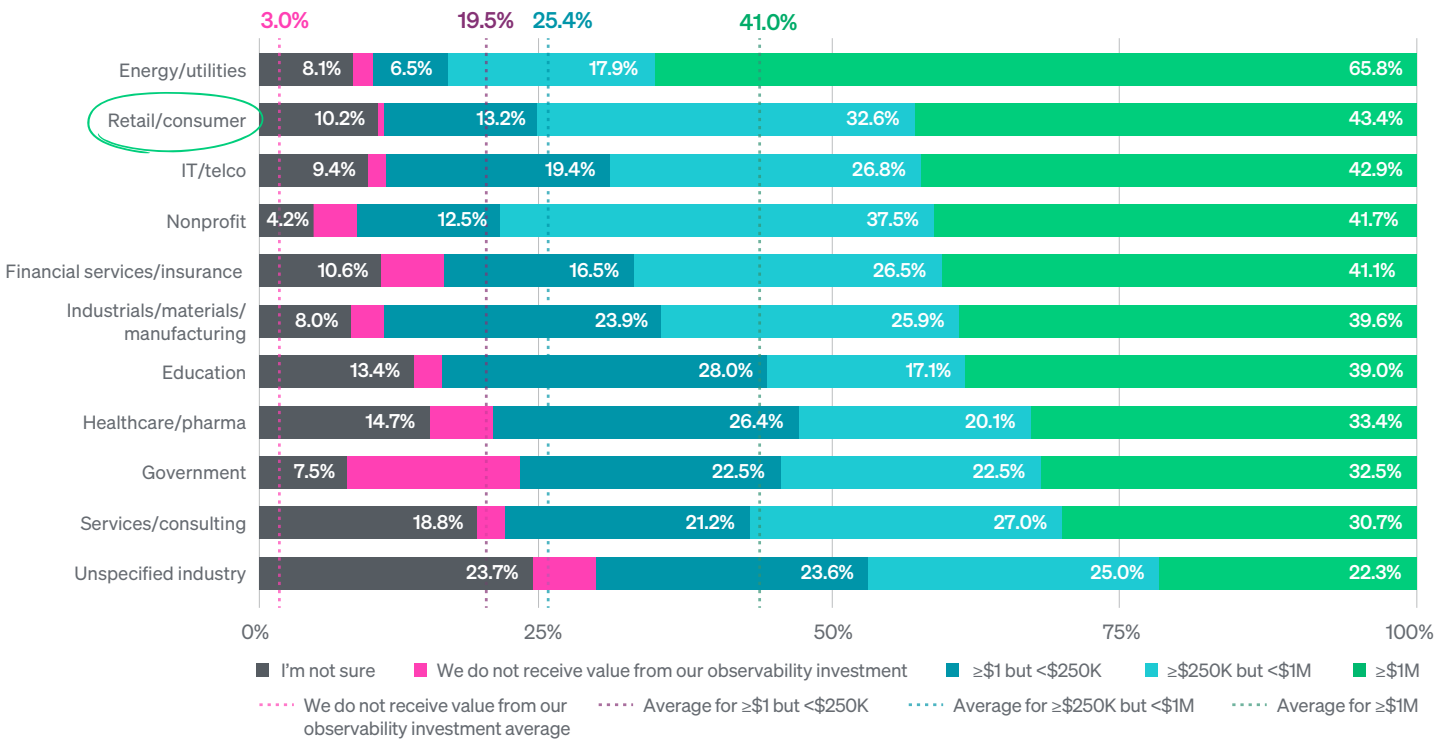
Total annual value received from observability investment by industry

Based on annual spend and annual value received estimates, retail/consumer organizations receive a 2x median annual return on investment (ROI).
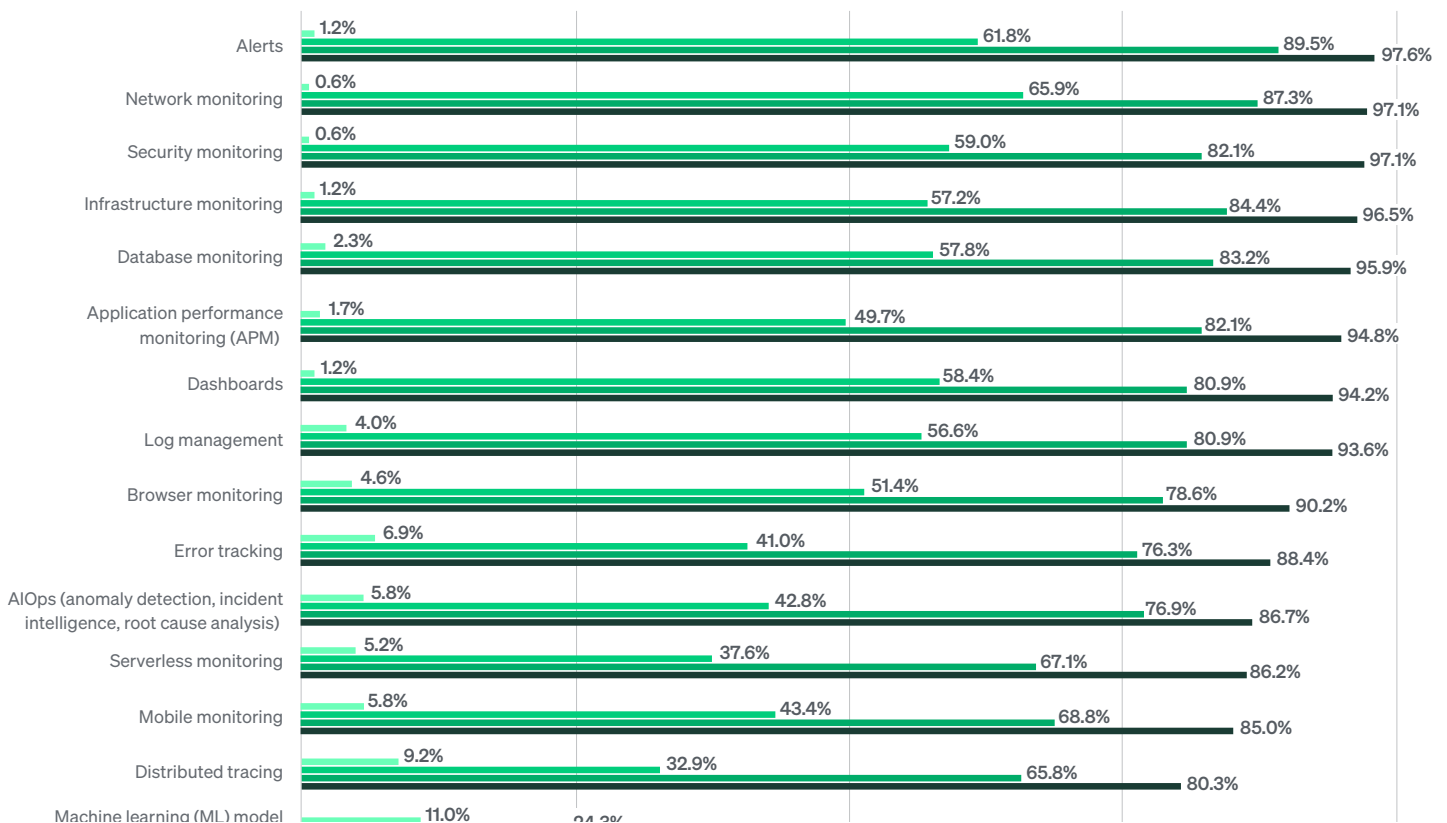
Several factors had an even more positive impact on ROI. Respondents whose organizations had:

- Achieved full-stack observability (by the report's definition) had a higher median annual ROI (114%) than those who hadn't (100%).
- A mature observability practice (by the report's definition) had a higher median annual ROI (250%) than those with less mature practices (100%).
- Five or more capabilities currently deployed had a higher median annual ROI (114%) than those with 1–4 deployed (0%).
- Five or more observability practice characteristics currently employed had a higher median annual ROI (114%) than those with 1–4 employed (100%).

These findings strongly suggest that retail/consumer organizations receive a minimum 2x ROI and that the ROI is even higher for organizations that monitor more of their tech stack or have a more mature observability practice.

Challenges preventing full-stack observability

The top challenge preventing retail/consumer organizations from achieving full-stack observability was that it's too expensive (28%). Too many monitoring tools (25%) was the second most-cited challenge.

Alerts	1.2%	61.8%	89.5% — 97.6%
Network monitoring	0.6%	65.9%	87.3% — 97.1%
Security monitoring	0.6%	59.0%	82.1% — 97.1%
Infrastructure monitoring	1.2%	57.2%	84.4% — 96.5%
Database monitoring	2.3%	57.8%	83.2% — 95.9%
Application performance monitoring (APM)	1.7%	49.7%	82.1% — 94.8%
Dashboards	1.2%	58.4%	80.9% — 94.2%
Log management	4.0%	56.6%	80.9% — 93.6%
Browser monitoring	4.6%	51.4%	78.6% — 90.2%
Error tracking	6.9%	41.0%	76.3% — 88.4%
AIOps (anomaly detection, incident intelligence, root cause analysis)	5.8%	42.8%	76.9% — 86.7%
Serverless monitoring	5.2%	37.6%	67.1% — 86.2%
Mobile monitoring	5.8%	43.4%	68.8% — 85.0%
Distributed tracing	9.2%	32.9%	65.8% — 80.3%
Machine learning (ML) model	11.0%	24.3%		

Primary challenges preventing retail/consumer organizations from achieving full-stack observability

When asked what would be the most significant business outcome if their organization did not have an observability solution, 34% said higher operation costs due to increased operational effort, 22% said revenue loss due to increased downtime, and 16% said reputation loss due to a worsened customer experience.

In addition, the top three pricing- or billing-related issues experienced by retail/consumer organizations with their observability vendor(s) in the past year were paying for the whole month or year at the peak usage level (39%), rapid data growth significantly impacting their bill (35%), and frequent re-forecasting and re-contracting for multiple SKUs (33%).
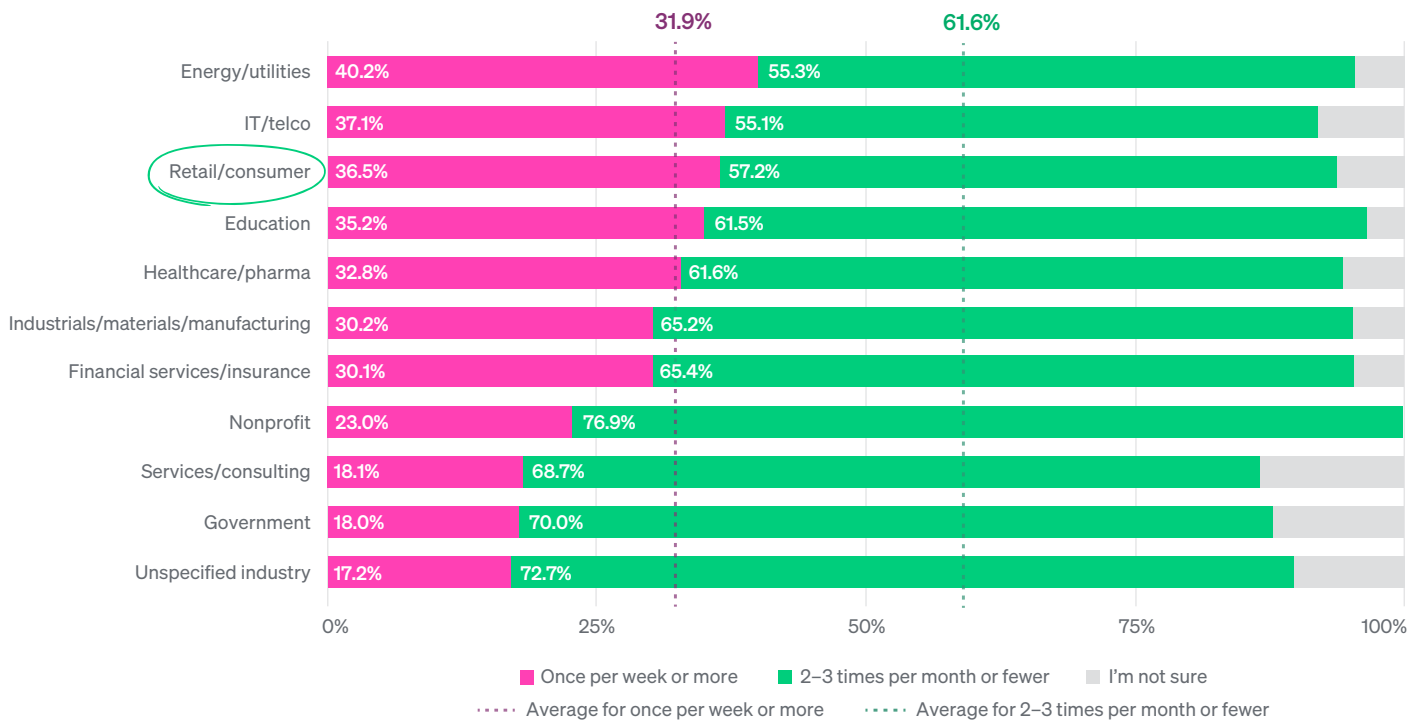
The future of observability for retail

Retail/consumer organizations had ambitious observability deployment plans for the next one to three years. For example, by mid-2026, most (98%) expected to have deployed alerts, followed by network monitoring and security monitoring (both 97%).

DEM is also an important focus. More than half (53%) expected to deploy synthetic monitoring in the next one to three years, 42% expected to deploy mobile monitoring,

and 39% expected to deploy browser monitoring. These findings indicate that by mid-2026, 90% expected to have deployed browser monitoring, 85% expected to have deployed mobile monitoring, and 79% expected to have deployed synthetic monitoring.

To get the most value out of their observability spend in the next year, 49% planned to train staff on how to best use their observability tools and 42% planned to consolidate tools.

Observability capabilities deployment summary for the retail/consumer industry from 2023 through 2026

Summary

Retailers often face challenges like adapting to changing consumer expectations and customer retention, remaining competitive from a digital transformation perspective (especially during Black Friday, Cyber Week, and the holiday shopping season), responding to economic and geopolitical circumstances, and staying resilient.

Insights from the *State of Observability for Retail* show that the ecommerce industry is experiencing a high number of outages. Engineering teams are spending significant time and money tool-hopping to try to understand the different aspects of their business and to resolve issues that lead to costly outages and poor customer experiences. The data also indicate that retail/ consumer organizations are starting to consolidate monitoring tools. Given their strong interest in deploying more capabilities in the next few years, signs point to these organizations moving from point solutions to more robust platforms that provide end-to-end visibility.

Next steps

New Relic is uniquely positioned to help retailers improve their DCX and achieve omnichannel observability amidst these challenging macroeconomic headwinds.

Retailers can use the New Relic core web vitals quickstart (a pre-built, open-source integration that includes dashboards and alerts) to monitor their site's core web vitals with New Relic browser monitoring agent data and then take action
on low scores.

Consolidating monitoring tools on the New Relic observability platform enables retail organizations to achieve greater visibility into their tech stack and every stage of the shopping experience. Retailers can also use New Relic Pathpoint—the industry's only business observability app—to merge customer, product, and services paths into a single business journey and quantify the financial impact of business metrics. For example, if their website went down, Pathpoint could show not only that the outage occurred, but also how much potential revenue was being lost for every minute of downtime.

With New Relic capabilities like service level management and DEM (browser monitoring, mobile monitoring, and synthetic monitoring), retailers and their IT teams can detect and resolve issues proactively before customers check out and ultimately deliver an optimal user experience across all retail channels. It enables retailers to easily scale for Black Friday, Cyber Week, holiday shopping, and beyond—and keep customers buying.

"We decided to start a program to improve our Core Web Vitals score. … New Relic helped surface the visibility of our score. We noticed quickly that our score was really low, around the 45–50 mark. We needed to aim for a score of around 80–85 to be successful. … Six months after we started this project, we saw our Core Web Vitals score jump from 45–50 to 85–90. We're exceeding our expectations. Now, I don't get customer complaints that the site is slow. We're sure that 99% of our customers are having a good experience."

Chet Patel
QA Manager at Kurt Geiger

Core web vitals are metrics Google uses to gauge overall site user experience, which can influence the site's search engine optimization (SEO) rankings and provide valuable insight into how users perceive the business. The benefits of understanding core web vitals include an improved user experience, better SEO, enhanced performance optimization, greater insights and analytics, and increased business value. Learn how retailer Kurt Geiger used New Relic to improve their Google Core Web Vitals score during their two peak periods (European summer and Black Friday).

Learn more about New Relic for retail and request an in-depth, customized demo to find answers to your tough technical questions and get competitive pricing information.

Request a Demo

About this report

All data in this report are derived from a survey, which was in the field from March to April 2023 as part of our work in publishing the *2023 Observability Forecast* report. It's the only study of its kind to open-source its raw data. View the *2023 Observability Forecast* survey results.

Retail/consumer respondents comprised 173 of the total respondents surveyed in the *2023 Observability Forecast* report, or 10%.

ETR qualified survey respondents based on relevant expertise. ETR performed a non-probability sampling type called quota sampling to target sample sizes of respondents based on their country of residence and role type in their organizations (in other words, practitioners and ITDMs). Geographic representation quotas targeted 15 key countries.

All dollar amounts in this report are in USD.

Definitions

View the definitions used in this report.

About New Relic

As a leader in observability, New Relic empowers engineers with a data-driven approach to planning, building, deploying, and running great software. New Relic delivers the only unified data platform with all telemetry—metrics, events, logs, and traces—paired with powerful full-stack analysis tools to help engineers do their best work with data, not opinion.

Delivered through the industry's first usage-based pricing that's intuitive and predictable, New Relic gives engineers more value for their money by helping improve planning cycle times, change failure rates, release frequency, and MTTR. This helps the world's leading brands and hyper-growth startups to improve uptime, reliability, and operational efficiency and deliver exceptional customer experiences that fuel innovation and growth.

About ETR

Enterprise Technology Research (ETR) is a technology market research firm that leverages proprietary data from its targeted ITDM community to deliver actionable insights about spending intentions and industry trends. Since 2010, ETR has worked diligently at achieving one goal: eliminating the need for opinions in enterprise research, which are typically formed from incomplete, biased, and statistically insignificant data.

The ETR community of ITDMs is uniquely positioned to provide best-in-class customer/evaluator perspectives. Its proprietary data and insights from this community empower institutional investors, technology companies, and ITDMs to navigate the complex enterprise technology landscape amid an expanding marketplace.

new relic.