The State of Observability 2022

Global research: As observability becomes essential, leaders extend multicloud visibility and dramatically improve digital experiences

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Observability Becomes Essential

Still a relatively new discipline, observability has continued to gain ground in the year since our first State of Observability report. The pandemic-era rush of cloud adoption has exacerbated monitoring challenges for traditional IT teams. And catching up to the growing number of frontline practitioners, analysts now advise that observability is a solid aspect of modern IT rather than a fad. Which means just as more IT orgs are experiencing the visibility challenges of hybrid, multicloud infrastructure, they're also more readily identifying observability as the solution.

We surveyed 1,250 observability practitioners, managers and experts to identify the success that observability brings. The brightest highlights:

- Observability leaders are 2.1 times as likely to say that they can detect problems in internally developed applications in minutes.
- Leaders report a 69% better mean time to resolution for unplanned downtime or performance degradation.
- Leaders' average annual cost of downtime associated with business-critical internally developed applications is $2.5 million, versus $23.8 million for beginners.

Those are incredible benefits and it's still early days. Organizations that build a rich observability practice into everything they do can expect to see compounding benefits in security, performance and cost savings each year. A strong observability practice gives organizations a sizable advantage over the competition.

Observability leadership defined

We define the maturity of an organization's observability practice by four factors: Experience (at least 24 months defines a leader, fewer than 12 marks a beginner), ability to correlate data across all observability tools, progress in vendor rationalization, and adoption of AI/ML technology within their observability toolset. Leaders achieved the highest tier in all four categories; any three define an intermediate phase, and beginners reached the highest level in two or fewer categories.

The overall results of our survey suggest little change from last year. Where 2021 broke down like this:

- **Leaders: 11%; Intermediate: 29%; Beginners: 60%**

In 2022, we see:

- **Leaders: 9%; Intermediate: 31%; Beginners: 59%**

But those two-point spreads belie significant changes in the data. What is most notable is the dramatic uptick in organizations with less than one year of observability practice.

- **Experience: Length of time maintaining an observability practice**
  - **Beginner: Less than 12 months (24% versus 12% in 2021)**
  - **Intermediate: 12-23 months (44% versus 42% in 2021)**
  - **Leader: 24 months or more (31% versus 45% in 2021)**

Having twice as many new practitioners in the survey sample underscores a rapid rise in observability adoption. Yet despite so many new adopters, the overall maturity breakdown is essentially unchanged. Looking more closely at the other three factors, we see mixed effects from the surge of new entrants.

Methodology

Between Feb. 1 and Feb. 17, 2022, researchers from the Enterprise Strategy Group surveyed 1,250 application development and IT operations leaders who spend more than half their time on observability issues.

11 countries

Australia, Canada, France, Germany, India, Japan, the Netherlands, New Zealand, Singapore, the United Kingdom and the United States

15 industries

Aerospace and defense, consumer packaged goods, education, energy, financial services (banking, securities, insurance), government (federal/national, state and local), healthcare, technology, life sciences, manufacturing, media, retail/wholesale, telecom, transportation/ logistics, utilities

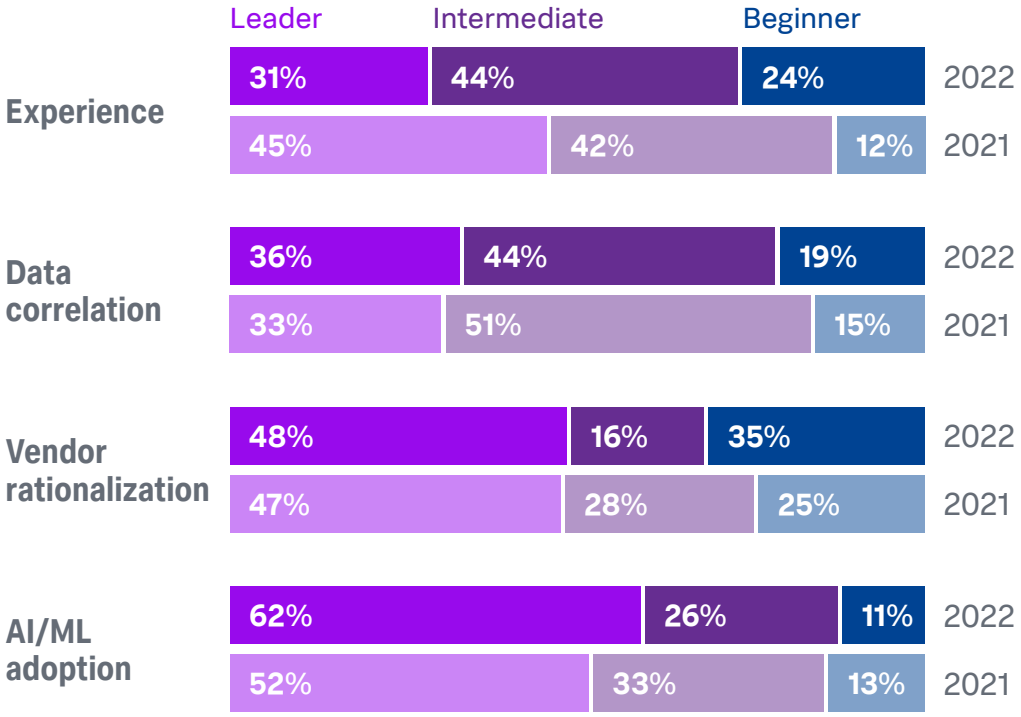
We saw a meaningful jump in beginners on the vendor rationalization metric, with 35% rating at the beginner level, versus 25% a year earlier. While it makes sense that an influx of new practitioners would be just starting their journey, there was not such a substantial increase in beginners at data correlation, and the percentage of respondents at ground level for AI/ML adoption actually dropped a couple of points.

Here are the breakdowns on the other three essential factors:

- **Data correlation: How much data can be correlated across IT systems and observability tools**
  - **Beginner: Limited to none (19% versus 15% in 2021)**
  - **Intermediate: Moderate (44% versus 51% in 2021)**
  - **Leader: Extensive (36% versus 33% in 2021)**
- **Vendor rationalization: Progress from scattershot tooling toward a platform approach**
  - **Beginner: "Somewhat or significantly increasing vendors" (35% versus 25% in 2021)**
  - **Intermediate: "No change in number of vendors" (16% versus 28% in 2021)**
  - **Leader: "Somewhat or significantly consolidating vendors" (48% versus 47% in 2021)**
- **AI/ML: Use of artificial intelligence/machine learning within observability tools**
  - **Beginner: "Not currently planning/deploying" (11% versus 13% in 2021)**
  - **Intermediate: "In process of deploying" (26% versus 33% in 2021)**
  - **Leader: "Use to a limited/extensive degree" (62% versus 52% in 2021)**

AI/ML adoption surged in the leadership tier while it declined at the intermediate and beginner levels, indicating that adoption of advanced analytics and automation has become commonplace rather than cutting edge.

Four Factors of Observability Maturity



Cloud complexity demands observability

The growth of observability trails the rapid rise in cloud use. Organizations have been moving to the cloud for more than a decade, and in more recent years, hybrid architectures and multicloud operations have complicated many organizations' cloud ecosystems. Organizations today are not just in the cloud, but making significant use of multiple public clouds: 70% of respondents are using multiple cloud services. Of that group, 55% say that they're making meaningful use of multiple public cloud providers, while 45% say that their secondary clouds are of minor significance.

Other findings about the growth of cloud and observability:

- **Multicloud increases complexity.**
  - **75% of respondents have many cloud-native applications that run in multiple environments (multiple public clouds or on-premises and in a public cloud).**
    - **Leaders are even more likely to report commonly running applications of this type (92% versus 68% of beginners).**
  - **Including those who say, "yes, but as a rare exception," the percentage increases to 96%.**
  - **36% of organizations (and 47% of leaders) that use the public cloud to run internally developed applications use three or more different public clouds today.**
    - **67% expect to do so within 24 months.**
- **Cloud-native applications are significant and expected to grow.**
  - **34% of internally developed applications are cloud-native (i.e., use containers and a microservices-based architecture).**
  - **67% of organizations expect that proportion to increase over the next 12 months (79% of leaders versus 58% of beginners).**
  - **28% (versus 18% in 2021) say they exclusively run cloud-native applications on public cloud infrastructure.**

It's reasonable to conclude that leaders' more aggressive move to cloud native relates to their higher success with digital modernization initiatives. Leaders are moving faster because they're able to move faster: Greater success re-platforming and developing cloud-native apps lets them achieve better digital transformation outcomes.

Leaders are more likely to run all their internally developed applications' cloud-native workloads on public cloud infrastructure (44% versus 22% of beginners).

Cloud drives top-down skills transformation. And burnout.

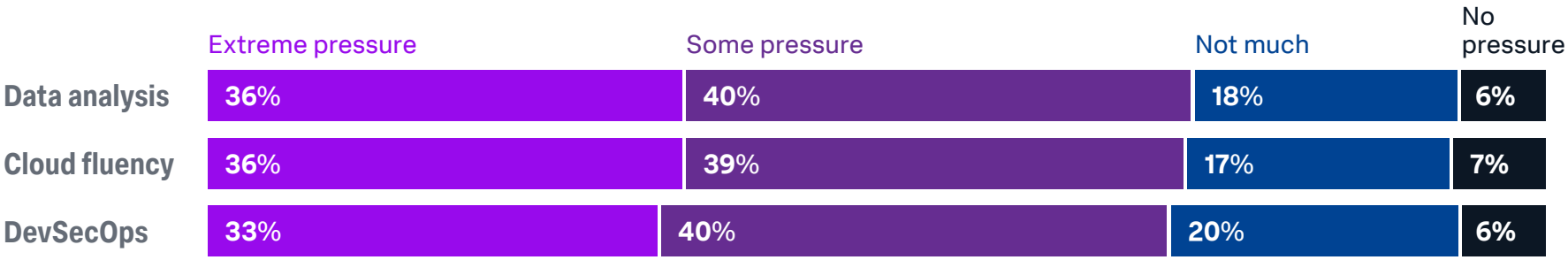
Staffing up a cloud or observability initiative, you expect to have to retrain frontline workers and hire new team members with specific skills. Our research found that to be true, but we also saw that the pain starts at the top. Leaders are under pressure to increase their knowledge about key cloud and observability skills.

- **75% of respondents say the leader of their application development organization is under pressure to increase their cloud fluency.**
- **AppDev executives at leader organizations are under the most acute pressure, with 47% reporting that this pressure is extreme, versus 29% of beginners.**
- **The numbers are very similar for DevSecOps and data analysis: About three-quarters of AppDev leaders are under pressure, and at leader organizations, they feel extreme heat — about 20 points more than at beginner orgs.**

We will see in subsequent sections that skill and talent shortages are also affecting application performance management teams, causing project failure and high attrition. We'll also discover that respondents see tighter, more collaborative relationships between development, operations and security teams ahead. All of which underscores the need for leadership that understands the new demands of a cloud-based world, and the solutions that support it.

Exec Education

AppDev leaders face pressure to keep up with three new(ish) disciplines.*



* For each area, 1% selected "Don't know"

The Benefits of Maturity

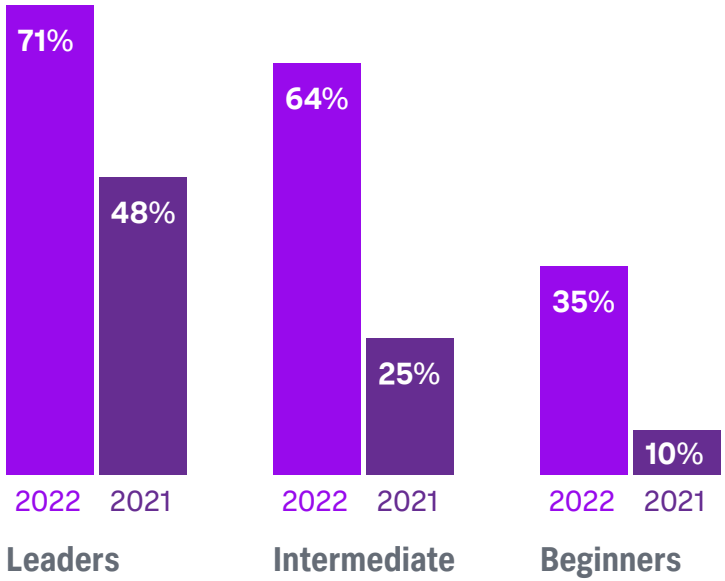
The benefits of observability maturity boil down to two things: You can see what's going on, and you can fix things faster — including before they break. We also found that a mature observability practice improves practitioners' confidence in their ability to deliver an excellent and reliable digital experience. They see measurable improvements in terms of visibility, successful software delivery, cross-team relationships, and progress of innovation and digital transformation initiatives.

Among the most notable findings:

- **Confidence: Year over year, confidence rose for all levels, signaling increased observability success across the board. Still, twice as many leaders as beginners (71% versus 35%) are completely confident that they can meet application availability and performance requirements.**
- **Visibility: 66% of leaders report that their visibility into application performance is excellent (compared to just 44% of beginners).**
  - **Similarly, 64% of leaders report that visibility into their security posture is excellent (versus 42% of beginners),**
  - **58% have excellent code-level application visibility (versus 43% of beginners),**
  - **64% have excellent visibility over containers (versus 39% of beginners).**

Full Confidence Rises

At all levels, more orgs are "completely confident" in their ability to meet application availability and performance commitments. Leaders still lead.



More reliable development, faster

Observability leaders outperform beginners across several application development and reliability KPIs, including:

- **2.1 times as many leaders (59% versus 28% of beginners) can push code to production on demand for most internally developed applications.**
- **2.1 times as many leaders (41% versus 20%) can detect problems associated with internally developed applications within minutes, resulting in an estimated 37% better MTTD.**
- **Though leaders push code to production more frequently, they report that downtime is less common; 64% say that business-critical internally developed applications go down once every few quarters or less — while only 40% of beginners can say the same.**
  - **Median number of such outages per year: Leaders: 2; Beginners: 6.**
- **Resolutions come faster, too: Twice as many leaders say that they resolve instances of unplanned downtime or serious application degradation to business-critical internally developed applications in four hours or less (53% versus 27% of beginners, for an estimated 69% better MTTR).**

Leaders were more likely than beginners to report that observability solutions have:

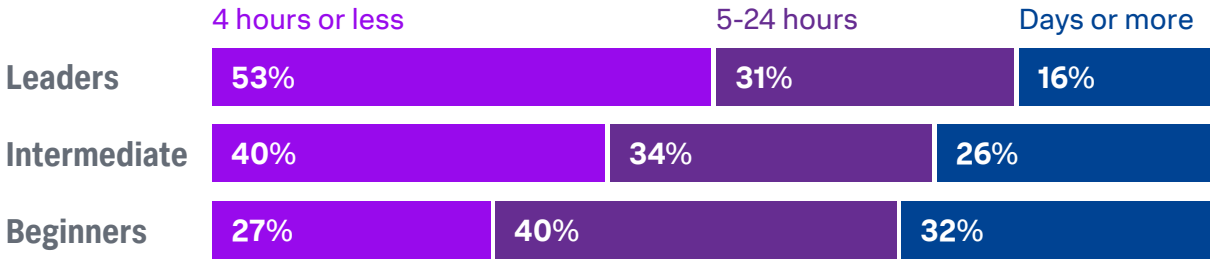
- **Accelerated development times: 68% say they've seen an improvement versus 57%.**
- **Accelerated deployment times: 73% say they've seen an improvement versus 62%.**
- **Increased visibility across cloud-native and traditional apps: 75% say they've seen an improvement versus 58%.**
- **Accelerated problem detection: 75% say they've seen an improvement versus 65%.**
- **Accelerated problem resolution: 73% say they've seen an improvement versus 65%.**

These differences, especially that 17-point gap in visibility across traditional and cloud-native apps, are noteworthy. Certainly the data shows that every organization is heading toward this hybrid, multicloud reality and will need true visibility across all of it.

They've also seen that observability solutions are helping promote cross-functional alignment. Sixty-nine percent of leaders attribute improved alignment among ITOps, developers and security teams to their use of observability solutions, compared to 60% of beginners. Also, 63% of leaders say they've seen an improvement in hiring efforts versus 53% of beginners.

Leaders Slash MTTR

An advanced observability practice correlates to quicker resolution of performance issues.



Innovation, transformation — with acceleration

Observability leaders are distinctly more innovative. Leaders have launched 60% more products or revenue streams out of their application development teams in the last year compared to beginners — eight new launches to the beginners' five.

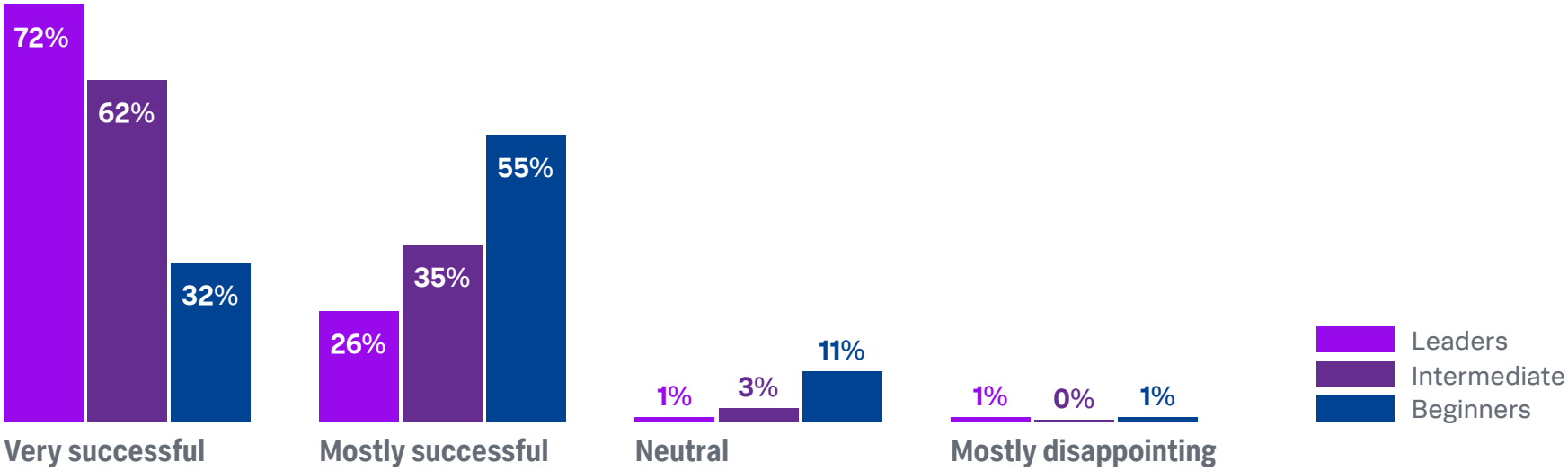
Rate of innovation is a crucial business metric. Our State of Data Innovation report in late 2021 found that more innovative organizations increase employee productivity at twice the rate of less-innovative orgs, and are twice as likely to enter new markets and to win greater customer wallet share.

Closely tied with innovation is ever-evolving digital transformation. Every organization looks to provide better customer experiences and find efficiencies of time and cost, new customer insights and market strategies. We find new ways to attract customers and talented workers. Digital transformation in 2022 is no longer a discrete part of business, it is business: It's competitiveness defined.

It's also the purview of observability leaders. Our research found that 72% of leaders (up from 50% a year ago) describe their digital transformation efforts as very successful. Just 32% of beginner organizations report the same level of success.

Leaders Are Transformative

Top observability orgs more often report runaway DX success.



Cost of unmet challenges

Along with the benefits of their observability success, we asked organizations to quantify the costs of failure. Across industry and company size, the impact of a business-critical system going down can vary widely. But looking at the averages across our research sample is instructive, particularly to demonstrate the value of higher observability maturity.

We calculated the cost of downtime for our three tiers. Based on respondents' estimates of their hourly cost of downtime for internally developed business-critical applications, multiplied by the annual number of outages and their typical duration, we found a meaningful advantage for observability leaders:

- **Leaders: $495,936.70 x 2 x 2.5 = $2.5M**
- **Intermediate: $495,936.70 x 2 x 8 = $7.9M**
- **Beginners: $495,936.70 x 6 x 8 = $23.8M**

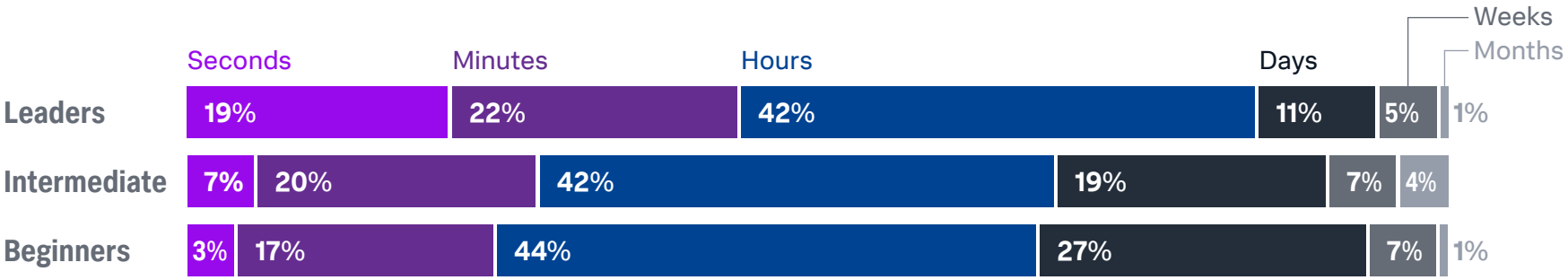
Organizations see different costs based on industry, size and much more. But the fact that observability leaders, on average, cut the cost of downtime by more than 90% is a pretty compelling vote for the power of observability.

Following up to understand how these costs accumulated, we asked whether respondents had suffered various negative consequences in the past 24 months. As a result of recent service-impacting issues, many organizations have observed:

- **Reduction in customer satisfaction (53%)**
- **Loss of revenue (48%)**
- **Reputation loss (44%)**
- **Loss of customers (39%)**

Leaders Find Failures Faster

Leaders have an advantage when asked how long it takes to detect an outage.*



* 1% of beginners and intermediates responded "Don't know"

As application innovation is increasingly vital to strategic outcomes, the hard business costs of service-impacting issues will continue to climb. This is borne out by the year-over-year numbers, at right. Across the board, the pains of performance problems afflicted our 2022 cohort more than the 2021 participants.

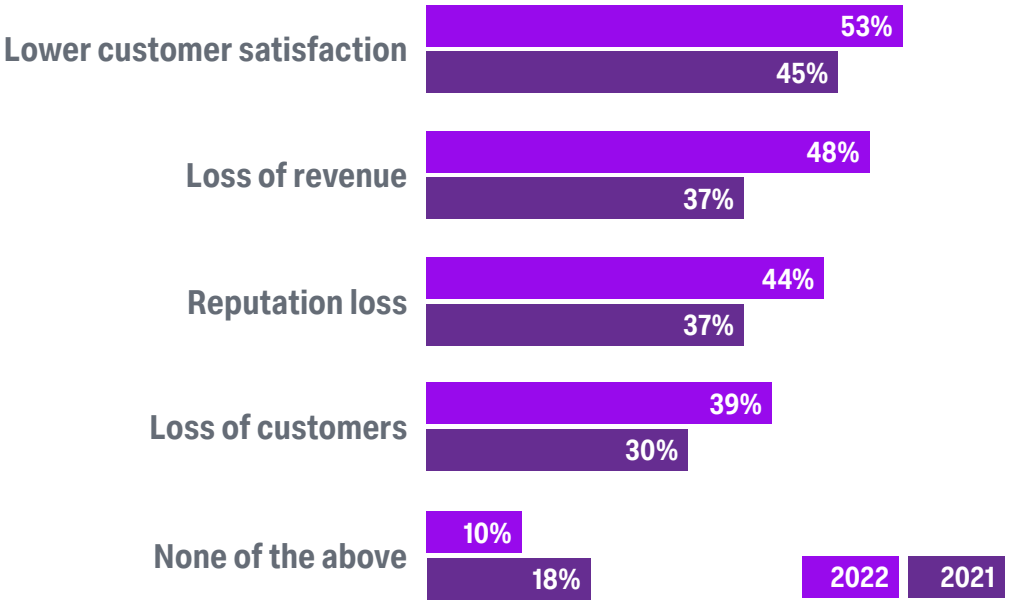
Soft costs are also on the rise. Service-impacting issues were associated with:

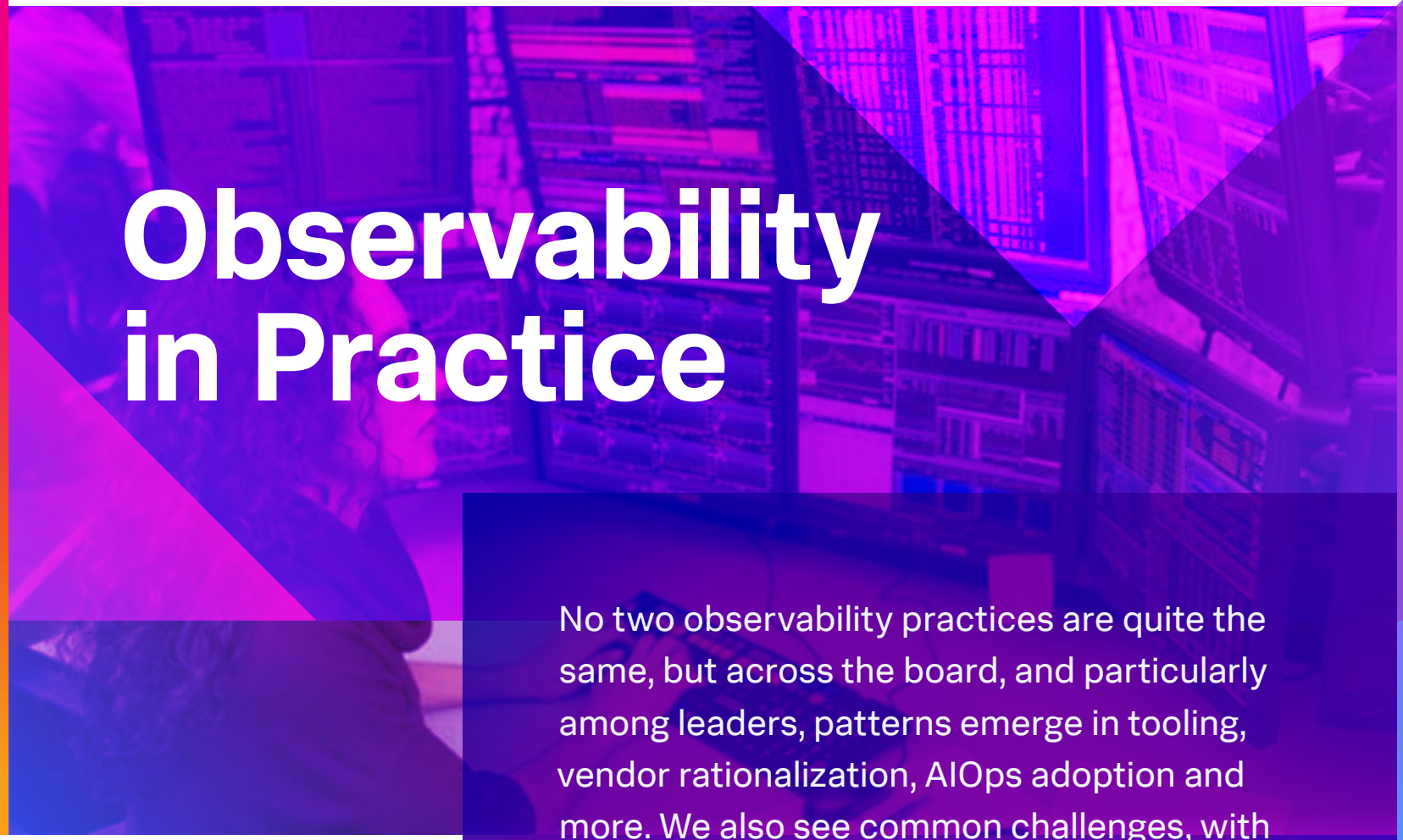
- **Turnover among observability stakeholders (45%, up from 32% a year ago)**
- **Friction between observability teams and IT leaders (42%, up from 38%)**
- **Increased friction between observability stakeholders and line-of-business leaders (42%, up from 32%)**

All of these costs and benefits are driven by the rapid adoption, and rising complexity, of cloud infrastructure. Next, we asked for a peek under the virtual hood.

The Effect of Service-Impacting Issues

Respondents describe the pain of application downtime.





Observability in Practice

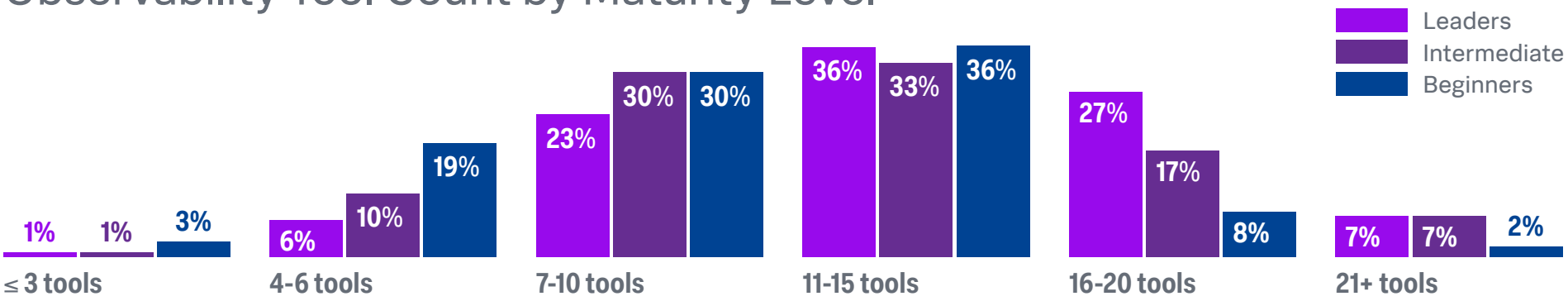
No two observability practices are quite the same, but across the board, and particularly among leaders, patterns emerge in tooling, vendor rationalization, AIOps adoption and more. We also see common challenges, with the talent crunch chief among them.

We asked why organizations had started an observability practice. The most common answer was the least surprising: to generally improve application performance and/or user experience. The No. 2 response was more surprising: as a talent magnet. While it came in second overall, it was the top answer given by leaders, who selected it 68% of the time (versus 56% of beginners). In full, the responses were:

- **An effort to generally improve application performance/availability/end-user experience: 62%**
- **Modernization of operations to better recruit/retain top-tier development/operations talent: 61%**
- **Response to a specific application performance issue/instance of downtime: 51%**
- **Driven by changes in application development/ architecture design at my organization: 51%**
- **Executive mandate from our CIO, VP of engineering, etc.: 47%**
- **Driven by broader cloud usage trends at my organization: 47%**

Not on the list of answers: to simplify the tool stack. The complexity of multicloud environments is on par with the complexity of observability tooling. Just over half of all respondents — 52% — say that they collect data from their application environment using more than 10 observability tools (though not necessarily from different providers).

Observability Tool Count by Maturity Level*



*1% of beginners and intermediates responded “Don’t know”

The most popular tool type in everyone's arsenal are CSP-provided tools, with 72% of respondents using them to see what's going on in a specific cloud service provider's environment. Open source solutions are used by 59% of respondents, and 53% use third-party products. Leaders are most likely to report using third-party and CSP tools, and intermediates have a slight lead in using or building upon open source solutions.

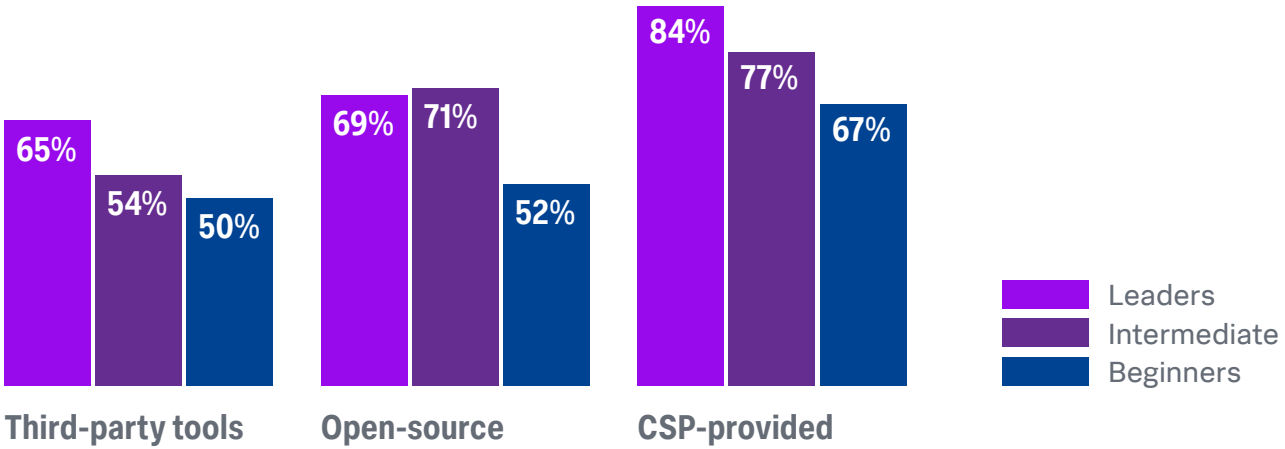
The cloud providers' tools, of course, come with their cloud resources, but they may not deliver the multicloud visibility an organization needs, requiring additional solutions to get the entire picture. Think of the distributed app that operates across multiple clouds; CSP tools would provide varying experiences and cannot display data across environments. (Not being able to see across multiple clouds because you're locked into CSP-specific tools matters a lot in a world where 75% of orgs — and climbing — are multicloud.)

While it appears that leaders are most likely to incorporate a broader, more complete range of tooling, they're also most aggressively reducing the number of vendors providing those tools, as the charts on the next page demonstrate. Across the board:

- **79% of respondents say that their organization has been adding tools and capabilities to their observability portfolio; only 8% are consolidating.**
- **At the same time, 48% of organizations are partnering with fewer vendors (versus 35% who say that they're increasing their number of observability vendors).**

Seventy-two percent of respondents say that IT operations teams are influential in the selection of observability solutions. Application developers follow at 59%. Breaking that number down, it's interesting that developers are cited as influential more often at leader organizations — 68%, versus 55% of beginners.

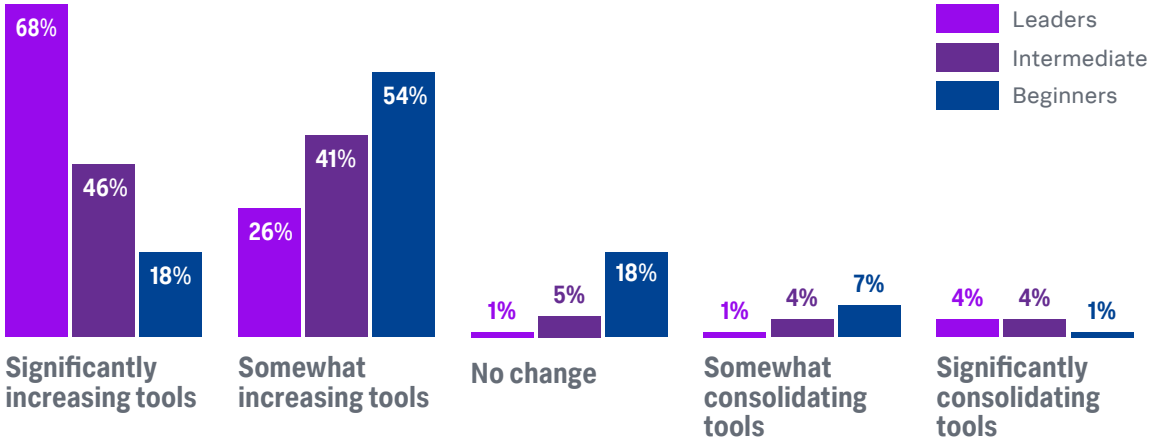
Tooling: It Takes All Kinds



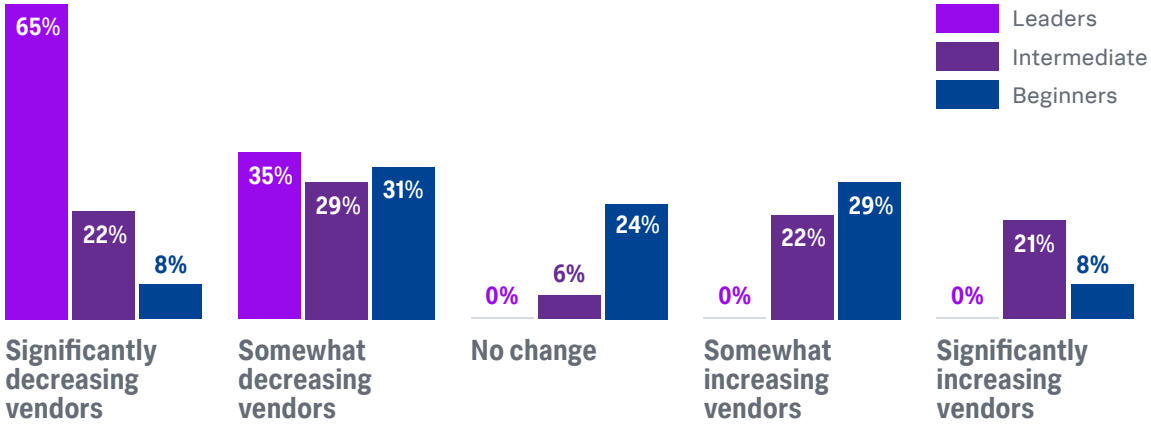
Looking more deeply at the tooling data reveals another area differentiating leaders and beginners. Leaders tend to have more tools, but fewer vendors, than beginner organizations. Every leader organization was consolidating vendors, which suggests that over time, leaders figure out what really works for them and pursue the advantages of working with fewer vendors, which may include lower costs of training (and better training materials), better interoperability, and simpler purchasing and onboarding processes.

A specific aspect of tooling that leaders adopt is automated CI/CD. Continuous integration and delivery/deployment of software is an essential element of DevOps, which continues to gain ground particularly in line with aggressive cloud adoption. We found that fully 96% of leaders are using a CI/CD pipeline tool that helps development teams automate the delivery of new code. Intermediate orgs follow closely at 93%, while beginners come in at (a still strong) 80%.

Tool Count Up



Vendor Count Down



AIOps gains mindshare

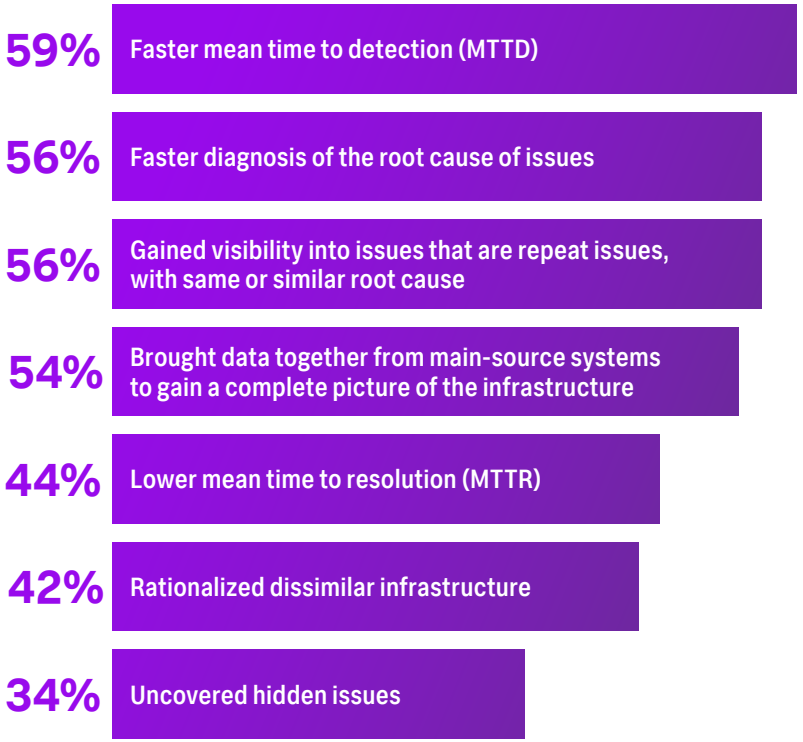
Fully 71% of respondents report using AIOps technologies either extensively (34%) or in a limited fashion (37%). No surprise — in the modern hybrid, multicloud world, performing event correlation and analysis, IT service management, availability and performance monitoring and other core ITOps functions is difficult. Doing it without AIOps must feel like having one hand tied behind your back.

Key reasons for AIOps adoption include:

- **Responding to and remediating incidents with greater intelligence and automation (49%).**
- **Improving the ability to detect anomalies faster (47%).**
- **The organization's focus on building one set of tools for DevOps, SREs and ITOps (47%).**

The majority of users of AIOps technologies have seen a measurable improvement in mean time to detect and repair, faster root cause diagnosis, and in their ability to bring data together from main source systems to gain a complete picture of the infrastructure.

The Benefits of AIOps



Challenges across maturity levels

Key challenges and concerns associated with observability have shifted since our 2021 survey. This year respondents are:

- **Struggling with the ability to correlate data from multiple sources in a timely fashion (according to 29%, up from 23% a year ago).**
- **Collecting an amount of data that exceeds human capacity to digest (27%, up from 21%).**
- **Experiencing a lack of visibility across distributed environments (26%, up from 20%).**
- **Using legacy tools that lack visibility to cloud-native environments (26%, flat year-over-year, but unseated as the most frequently cited challenge).**

Observability leaders' top concerns are a little different. The inhuman amount of data tops their list, followed by "observability tools lack visibility into legacy application environments" (which placed seventh overall), followed by the lack of visibility across distributed environments, the struggle to correlate data, and the legacy tool challenge.

For observability beginners, there were two anomalies in the top answers. While beginners cited struggling to correlate data as the No. 1 challenge, a close second for them was "concerns about scalability" (fifth place overall). As with leaders and the general results, "visibility across distributed environments" came in third, but fourth was "inability to pinpoint root cause of problems." This and the scalability issue are concerns likely to most challenge newer practitioners.

The top three bullets directly reflect the reality of modern IT operations. The difficulty in correlating myriad data streams is in part a symptom of cloud complexity. The overwhelming volume of data underscores the appeal — the necessity — of AI/ML solutions. And the visibility struggle reflects the challenges of deploying and managing distributed apps.

Beginners are more likely to struggle with issues of scale and root cause analysis.

The observability (talent) gap

One thing we learned for sure from this research: In observability, good people are hard to find. Ninety-five percent of respondents report challenges finding IT operations staff to monitor and manage infrastructure and application availability. Whether that be finding enough staff (36%), the right skills (13%), or both (46%).

AppDev, too: 94% face challenges, including not being able to find enough developers (37%), devs with the right skills (12%), or both (46%).

Across all maturity levels, staff or skills shortages contributed, at least once, to:

- **Appointment of team leaders despite lack of proper skills (77%)**
- **Projects/initiatives delayed (81%)**
- **Projects/initiatives failing (71%)**
- **Resignations due to burnout (69%)**
- **Respondent considered quitting due to workload (74%)**

While many of the above outcomes are about equal at all levels of maturity, leading orgs suffered burnout resignations at a higher rate than others (56% logged multiple resignations, versus 46% for intermediates and 35% for beginners).

Leaders are more likely to report multiple failures in all four of those categories. Despite having so many of their observability challenges mastered, leading orgs are likely to have more, and more ambitious, initiatives. Which means the pain of being short-handed can be more acute.

50% of leaders report multiple project delays, vs. 41% of intermediates and 34% of beginners.

40% of leaders, and 37% of intermediates report multiple project failures, vs. 29% of beginners.

When adding “once” and “multiple times,” the difference between the three maturity levels on project delay or failure is small. For multiple occurrences, leaders often report more problems.

In the face of these labor-related challenges, respondents say the best way to overcome their skills gaps is by:

- **Improving their ability to understand/quantify the relationship between software performance and customer outcomes so we can more intelligently apply resources (57%).**
- **Increasing the level of investment in application performance/monitoring training for IT/ development staff (52%).**
- **Increasing their use of automated solutions (powered by AI/ML) to detect and respond to availability/performance issues (51%).**

And don't forget what leaders told us: One of their key reasons for pursuing observability is to attract talent. So call it a Catch-22 (it's hard to attract the talent to build your practice until you have built your practice) or a virtuous cycle (every step forward makes you more attractive to the workers you need to hire and retain).

Observability leaders were also 10 points higher than the average, and 14 points higher than beginners, to cite increased training for IT/development staff as a solution. A focus on creating the environment and opportunities that will engage top-tier employees may be a leader hallmark.

"One of the key reasons organizations pursue observability is to attract top talent."

The Future of Observability

The future of observability is a continued expansion throughout the IT organization. For all but the youngest digital-native businesses, traditional IT operations have bigger teams and bigger budgets than DevOps and observability. But the proliferation of cloud and the constant pressure to move faster will drive observability forward.

To understand the direction and velocity of that ongoing transformation, we asked how observability fits with other, more established performance management and monitoring solutions. Roughly three-quarters of respondents see application performance monitoring (75%), network performance monitoring (74%), and security monitoring (73%) as critically important to achieving observability goals. On the other end of the spectrum, 59% see log management solutions as critical to observability.

Most expect that the tools and teams in these adjacent areas will converge with observability tools and teams over time, if they haven't already:

- **APM: 22% say these tools and teams are converged, 55% say they are in the process of converging or likely to converge in the future. Only 24% say they are separate and likely to remain so.**
- **Digital experience monitoring: 23% say these tools and teams are converged, 50% say they are in the process of converging or likely to converge in the future. About 26% say they are likely to remain separate.**
- **Infrastructure monitoring: 24% say they're converged, 55% say it's happening now or is likely soon, while 22% expect them to remain separate.**
- **Log management: 22% have converged, 51% say they are in process or expect it, and 27% think they'll remain separate.**
- **NPM: 25% say these tools and teams are converged, 49% say they are in the process of converging, or probably will. Only 26% say they are likely to remain separate.**
- **Security monitoring: 24% say they're converged, 49% say it's happening, or probably will. About 27% say they are likely to remain separate.**

There is some variance in these responses between leaders and beginners. One significant gap is that leading organizations are significantly more likely than beginners to say that digital experience monitoring (38% versus 21%) and security monitoring are likely to remain separate practice areas (43% versus 22%).

The research does not uncover the reason for these diverging perspectives. Certainly digital experience monitoring and IT security are very different practices in terms of technology and processes. Beginners may see the overlap in data sources, which increases thanks to automated analysis. Leaders could have a deeper understanding that, despite this, the two disciplines have very different goals and cultures. While certainly there's a logical case to bring together data and some tooling, the two disciplines are likely to remain distinct.

Forging the Future

96% of organizations run at least some cloud-native apps across multiple environments.

Two-thirds of orgs expect their proportion of cloud-native applications to increase over the next year.

57% say the best way to overcome the talent crunch is to better understand the relationship between software performance and customer outcomes, to better apply limited staff resources.

51% are counting on more automated solutions powered by AI/ML.

Carpe momentum

Observability is about to have its moment: It has gained considerable user traction in the last two years or so, and the analyst community is buying into the concept in a big way. That means that not only will even more cloud-stretched companies seek observability solutions, but more B2B software vendors are going to fight for their business.

The research also shows that the value of observability has been proven and is understood. The question is, how do organizations continue to improve their visibility and responsiveness across increasingly dynamic infrastructures?

First off, keep an eye out for what we sometimes call "o11y washing." We saw it with AI/ML, when that term hit critical buzz. Vendors will start to assure customers that the new hotness — in this case observability — is totally in the product. In a meaningful way? What does meaningful even mean, y'know? So don't fall for jargon. Hold your vendors and partners accountable, and make sure that what they deliver is what will give you the visibility you need so you can act.

The bottom line with the coming observability boom is that there's a real need. Frazzled ops teams know that their monitoring is fundamentally broken in this new multicloud reality, and they know that new tech can solve the problem. Matching the right solutions to their needs, and going through the tool adoption and vendor rationalization curves, will be a considerable undertaking.

There's a growing fluency with observability and the understanding that it's necessary, not niche. As you move forward with your own initiatives, we offer the following few points of advice.

Bottom line: Real need will spur the coming observability boom

Key Recommendations

1. Build to attract talent.

The right tools and practices attract the best workers. Does a Michelin-rated chef want to work at a hot dog cart? No. (Well, there's always one.) The most skilled observability experts want the freedom to use the right tools — modern tools (and practices) that help them not only do good work, but keep their skills current and their careers moving forward. Organizations that make workers feel hamstrung by inadequate tools or outdated processes will take their ambitions and abilities elsewhere.

One takeaway from our research: Start building a talent pipeline. Just over half of organizations plan to increase investment in training for IT staff. That's the half you want to be in. This takes time, so it's not a short-term solution; you'll have to take other measures. But the talent shortage will be a long-term problem.

Also, shop for the talent you actually need. If you're still bulking up your observability practice, remember, the people who build practices like to build, and they get bored doing the actual monitoring. They're quick to move on to the next green-field playground of all-new toys. That's okay; you need those folks to establish your practice, and you need other talent (which maybe you've trained up in the meantime) to maintain it.

2. Tackle data volume and variety with artificial intelligence.

Organizations look to AIOps for all sorts of things; the term isn't fully established and defined in the marketplace (and the marketing folks apply it … liberally). But it's good for one key problem: making sense of unrelated data streams, in real time, at massive scale.

Ask beginners what they want to use AIOps for, and they tend to say MTTD and root cause analysis. Why? Because it's hard to efficiently diagnose and repair a problem when your team has to manually sift through multiple dashboards to interpret data that an algorithm could knock out instantly.

Leaders do that too, but also use it for correlation of data to get a predictive edge on the health of their applications and infrastructure, at a much higher rate than beginners.

They're both right. Use AIOps both for the basics of MTTD and evolve (quickly) to more advanced, predictive data correlation.

3. Improving visibility requires more tools, but fewer vendors.

Consolidate vendors and rationalize your tools to curate the set that gives you the most visibility with the least drag, in terms of overwhelming your humans. The data says there's low-hanging fruit to consolidate. The same teams might not look at security and digital experience data, but that doesn't mean that they don't want to consolidate tools or visualizations to give everyone the best picture possible. Maybe "best of breed" is as much about vendors as it is about individual tools.

Step one: Find gaps in your tooling. Take an inventory among all your teams to find out what's being used and why. Multiple DevOps groups that are aligned to different applications might create a mismatched sprawl of tools. Are there gaps to fill? Overlap to curtail?

This exercise might help you also complete the security shift-left into AppDev. Every organization talks about it, and our recent State of Security 2022 report found that three-quarters of respondents are doing DevSecOps to some degree. This is a good time to turn up the heat.

4. Invest in skills training.

Observability as a discipline has marched a few steps behind the adoption of cloud services. That evolution is going to continue. Leaders in observability maturity have a greater percentage of their cloud-native applications deployed in the public cloud, but it is still less than 50%. And 92% of them say that their cloud-native applications run in multiple public clouds and on-premises. So things are only going to get hairier, and mature observability is not an endpoint, but an ever-growing continuum.

Key industry highlights

Financial services

Financial services organizations are less likely to have converged observability tools and teams with their digital experience monitoring practices (10% versus an average of 25% across other industries).

Financial firms are less reliant on a multicloud strategy. Seventy-two percent use two or fewer CSPs today (versus an average of 63% across other industries), and only 23% expect to use four or more CSPs in two years (versus 35%).

Financial services organizations are more likely than other industries to be using third-party solutions within their observability toolsets (62% versus 52% across other industries).

Financial services organizations tend to have more siloed observability tools, with 25% reporting extensive data correlation across solutions. This trails the 38% average across other industries.

The stakes in the financial services vertical are high: 16% quantify the hourly cost of downtime of their business-critical apps at U.S. $500,000 or more, nearly twice the rate across other industries (9%).

Communications and media

More communications and media organizations have proactively shifted to an observability approach: Only 39% of comms/media orgs say they developed an observability practice in response to a specific issue (versus 51% across other industries).

Conversely, 70% report that the shift to observability was due to a desire to modernize operations and recruit top talent (versus 60% across other industries).

Seventy-one percent of communications and media companies report that their shift to observability has helped them attract top talent, a higher percentage than the 58% average across other industries.

Comms/media orgs lead on AIOps adoption, with 47% reporting extensive use, compared to just 33% across other industries.

Comms/media orgs use more public cloud service providers today: 25% partner with more than four, compared to a 9% average across other industries.

Fully 50% expect to partner with four or more in two years, compared to 32%, on average, across other industries.

It's hard to find good people in this industry: 63% report experiencing challenges related to both the quantity and quality of staff available, compared with 45%, on average, across other industries.

You have to move fast in this industry; 41% of communications/media respondents say that their time to detect a performance degradation or outage is typically measured in minutes or seconds (versus 23% across other industries), while time to resolve those issues takes a few hours or less for 54% (versus 33% across other industries).

Technology

Technology companies appear to be further along in the observability journey: 51% are beginners (versus 63% across other industries) and 12% are leaders (versus 8%, averaged across other industries).

Tech companies are more confident in their ability to meet application availability and performance SLAs: 54% were "completely confident" versus a 45% average across other industries.

Tech companies were more likely than average to report using AIOps extensively (40% versus 31%) and to be prioritizing incident response and remediation as a use case for AIOps (55% versus 46% across other industries).

Tech companies were more likely to report having actually achieved a faster MTTR as a result of their AIOps adoption (64% versus 57% across other industries).

Manufacturing

Manufacturing companies trail in their observability journey: 68% are beginners (versus an average of 58% across other industries).

Manufacturers were also less likely to report using AIOps extensively (25% versus a cross-industry average of 35%).

Manufacturers are less confident in their ability to meet application availability and performance SLAs: 39% were completely confident versus 49% of respondents across other industries.

High points: Manufacturers were less likely to note issues with a cultural resistance across teams (18% versus 25% of respondents across other industries) and slow or non-delivery of alerts (16% versus 26% averaged across other industries).

Public sector (Education and government agencies)

Public sector organizations trail other industries in their observability journey: 78% are beginners (versus an average of 59% across other industries) and none of the organizations surveyed qualified as leaders.

It appears that the initiative to start an observability practice has less executive sponsorship in the public sector: Just 28% say their start in the observability space was driven, in part, by a top-down strategy (versus 47% of respondents, on average, across other industries).

Public sector organizations were less likely to report using AIOps extensively (9% versus 34% across other industries).

Public sector organizations trail their peers in the adoption of cloud-native application architecture usage: On average, they estimate 24% of internally developed applications are cloud-native, compared to an average of 32% across other industries.

Public sector organizations are less confident in their ability to meet application availability and performance SLAs: 22% were completely confident versus 48% of respondents across other industries.

Public sector organizations were less likely to report hiring challenges related to both the quantity and quality of staff for their application development teams (28% versus 46% across other oganizations). It's likely that this is partly due to the fact that their environments and processes are less advanced.

Retail

Retailers were more likely than their peers to say they run applications with cloud-native architectures only on-premises (15% versus 8% of respondents across other industries).

Among retailers running cloud-native applications on public cloud infrastructure, 55% report using one primary CSP and using other CSPs for small, discrete purposes (versus 44% of respondents, on average, across other industries).

Retailers appear at an elevated risk of having application issues result in customer satisfaction problems. About 61% of retailers report that they saw lower customer satisfaction scores as a result of service-impacting issues in their application environment (compared to an average of 52% across other industries).

Retailers appear to be well able to secure funding for observability investments. Only 18% report that a lack of funding is holding back their observability practice, versus 25% across other industries.

Healthcare and life sciences

The shift toward observability in the healthcare space was more often driven by broader cloud usage strategies (58%) than the average across other industries (46%).

Drivers for AIOps in the healthcare industry differ from other industries: 55% say that determining the root cause of anomalies with greater intelligence and automation is top of mind (versus 42% of respondents across other industries) and 42% cite cohort analysis for different types of alerts (versus 30% across other fields).

Healthcare organizations were more likely to report a public-cloud-only approach for running applications with cloud-native architectures (41% versus 26% of respondents across other industries).

Healthcare organizations were particularly bullish about their visibility into API availability and performance: 67% report having excellent visibility, as opposed to 54% of respondents across other industries.

In healthcare, more groups seem to influence tool purchases. More often cited as influential were development teams (70% versus 58% across other fields), business units (41% versus 32%), and cloud architecture teams (69% versus 56%).

Key country-level findings

Australia and New Zealand

Respondents across Australia and New Zealand were significantly more likely to report having consolidated APM tools and teams with their observability practice (38% versus 21% across other countries).

One-third (34%) of organizations in Australia and New Zealand report using a single cloud today versus a 20% average across other countries.

Orgs in Australia and New Zealand are less likely to use open source tools for observability: 42% use them today versus 60% across other countries.

Only 44% of orgs in Australia and New Zealand say application development teams have a say in the purchase of observability tools, versus 60% across other countries.

Canada

Canadian organizations trail in their observability journey: 79% are beginners (versus 58% averaged across other countries) and just 2% are leaders (versus 10% in the rest of the world).

Executive sponsorship of observability seems lacking among Canadian organizations: 36% say their start in the observability space was motivated, in part, by a top-down strategy, compared with 48% among orgs across other countries.

Canadian organizations were less likely to report using AIOps extensively (12% versus an average of 35% across other countries).

Canadian organizations trail in the deployment of distributed cloud-native applications: 61% say many of their cloud-native applications run in multiple environments, compared with 76% across other countries.

Only 14% of Canadian organizations say they have been significantly increasing the number of observability tools/capabilities, versus an average of 33% of respondents in other countries.

Respondents in Canada have greater concerns with meeting SLAs: Only 26% report being completely confident in their organizations' ability to meet its application availability and performance commitments, versus 49% across the rest of the world).

France

French organizations trail in their observability journey: 74% are beginners (versus 58% averaged across other countries) and just 5% are leaders (versus 10% in the rest of the world).

French organizations more often report that their investments in AIOps technologies have helped them achieve lower MTTR (58% versus 43% averaged across other countries).

French organizations are less bullish on the future of cloud-native applications: 46% report that a larger proportion of their developed applications will be cloud native versus an average of 69% across other countries.

French orgs tend to have more siloed observability tools; 20% of respondents in France report extensive data correlation across solutions, trailing other countries' 38% average.

Only 19% of French orgs report using AI/ML extensively in their observability toolset (versus 28% across other countries).

Germany

German organizations are further along in the observability journey: 19% are rated as leaders versus 8% of organizations, on average, across other countries.

One of the cornerstones of this maturity is evident in German organizations' ability to correlate data across observability tools. Forty-six percent of German respondents report being able to consolidate and correlate data across their entire toolset versus a 35% average across other countries.

Fifty-one percent of German organizations are able to push code to production on demand for the majority of their internally developed applications (versus a 36% average across other countries).

As such, it is not surprising to note that German respondents were more confident in their ability to meet application availability and performance SLAs: 57% are completely confident versus a 46% average across other countries.

German orgs were among the most likely to say that security monitoring and observability will remain separate practices: 38% report as much, versus an average of 26% across other countries.

German organizations are more aggressively using open source tools for observability: 69% use them today, versus 58% on average across other countries.

India

Indian organizations are further along in the observability journey: only 29% are rated as beginners, versus 62%, on average, across other countries.

Indian organizations were more likely to report that their start in observability was in part driven by a top-down mandate from leadership (69% versus 45% on average across other countries) and with an eye toward bolstering talent recruitment (73% versus 61% elsewhere).

Indian orgs were more likely to report that they're more likely to keep observability separate from digital experience monitoring (48% versus a 23% average across other countries) and security monitoring (47% versus 23% elsewhere).

Indian orgs lead on AIOps usage, with 47% using the technology extensively (versus an average of 32% across other countries). As a result, Indian organizations were more likely to report achieving faster MTTD (72% versus 58% elsewhere) and root cause diagnosis (70% versus 55%).

Japan

Japanese organizations were the most apt to say they want to consolidate multiple functions (both tools and teams) within their observability practice. They were less likely to report that the following functions are, and will remain, separate from observability:

- Digital experience monitoring (10% versus a 27% average across other countries)
- Log management (8% versus 28% across other countries)
- Security monitoring (6% versus 28% across other countries)

Japanese organizations have had noteworthy success using AIOps technologies to help solve recurring issues in their environment:

- 74% report that this has been a benefit of AIOps, versus a 55% average across other countries.
- 68% of Japanese respondents have seen an improvement in MTTR tied to AIOps usage (versus 43% across other countries).

Japanese orgs more often use third-party observability solutions (66% versus 52% across other countries) and open source tools (72% versus 59% elsewhere).

Japanese orgs were also among the least likely to say that they've been consolidating observability vendors (25% versus 50% across other countries).

When it comes to observability challenges, Japanese companies more often report facing pushback from teams about the shift toward observability practices (36% versus 22% across other countries) and a dearth of observability talent on staff (38% versus 22% elsewhere).

Singapore

Organizations in Singapore tend to be less confident in their ability to meet application availability and performance SLAs: 29% were completely confident versus a 49% average across in other countries.

The adoption of new observability tooling in Singapore trails other parts of the world, with 15% reporting that their organization has been significantly adding new capabilities versus 33% across other countries.

The purchase process for observability tools looks different in Singapore versus other countries: Respondents in Singapore were less likely to report that IT operations teams have influence (60% versus 73% across other countries) and more likely to say that business units (46% versus 32% elsewhere) and security teams (60% versus 49% elsewhere) are influential.

Respondents in Singapore were less likely to report that they can push code to production on-demand for most of their internally developed applications (21% versus 39%, averaged across other countries), and they were also less likely to report that time to root cause analysis has been accelerating significantly (12% versus 29% across other countries).

When it comes to observability challenges, Singaporean orgs more often say that it's too hard to use or learn observability tools (28% versus 19% across other countries).

United Kingdom

UK organizations trail their counterparts in other countries in their observability journey: 66% are beginners (versus an average of 58% across other countries), and just 2% are leaders (versus an 11% average elsewhere).

UK orgs were more likely than their peers to report that they got their start in observability as a result of changes in their application development/design processes (57% versus 49% across other countries).

When it comes to using the cloud to run cloud-native applications, UK organizations tend to be more diversified: 35% report using one primary CSP (versus 47% across in other countries) while 63% report meaningful usage of multiple CSPs (versus an average of 53% elsewhere).

UK orgs report several observability challenges at higher rates, including:

- Lack of executive support (28% versus 19% across other countries)
- Concerns about scalability (31% versus 24% elsewhere)
- Lack of visibility across data center, edge and cloud environments (33% versus 25% elsewhere)

United States

U.S. organizations are further along in the observability journey than the average for other countries in the research: 56% are rated as beginners versus a 61% average elsewhere, while 13% are rated as leaders versus 8% across other countries.

In part this is because of U.S. orgs' ability to correlate data across observability tools: 42% report being able to consolidate and correlate data across their entire toolset, versus 33% across other countries.

As such, it is not surprising to note that U.S. respondents were more confident in their ability to meet application availability and performance SLAs: 53% are completely confident versus 45% across other countries.

U.S. orgs more often report that functional consolidation with observability tools and teams has already occurred in the areas of:

- APM (27% versus 19% across other countries)
- Infrastructure monitoring (30% versus 20% on average elsewhere)
- Log management (27% versus 20% elsewhere)
- NPM (31% versus 21% elsewhere)

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