



The **Internet Resilience** Report 2024

Your business requires a resilient Internet Stack



Introduction

At Catchpoint, our mission is to make the Internet better for everyone.

The Internet is continually evolving and highly complex, and therefore, fraught with risk for businesses. As it gets increasingly complex, it must also respond ever faster to deliver a positive experience to a demanding user. Positive customer and employee experiences are what differentiate leading companies from the rest of the pack, and the key to ensuring these experiences is Internet Resilience.

To this end, CEOs and boards are prioritizing resilience above everything else in a post-pandemic world. More and more companies are relying on the Internet for connectivity in place of, or in addition to, their WAN. The increased hybridization of IT infrastructure and increased reliance on the Internet means businesses are more and more dependent on a fragile, shared resource for the most critical elements of their business. Applications are also more and more distributed, introducing further variability to - and dependency on - the Internet. Add to this the fact that the remote workforce has permanently expanded, pushing the network edge into employees' homes and creating further visibility challenges. These concerns together are propelling Internet Resilience into a board-level discussion for every organization.

We are proud to be launching The Internet Resilience Report within this high-stakes business landscape. We interviewed 310 digital business leaders whose revenue streams rely on the Internet to deliver digital experiences to find out more about what Internet Resilience means to them and why. If this also applies to your business (and let's face it, it likely does), this report is for you.

Mehdi Daoudi, CEO
Catchpoint

Internet Resilience:

The capacity to ensure availability, performance, reachability, and reliability of the Internet Stack despite adverse conditions

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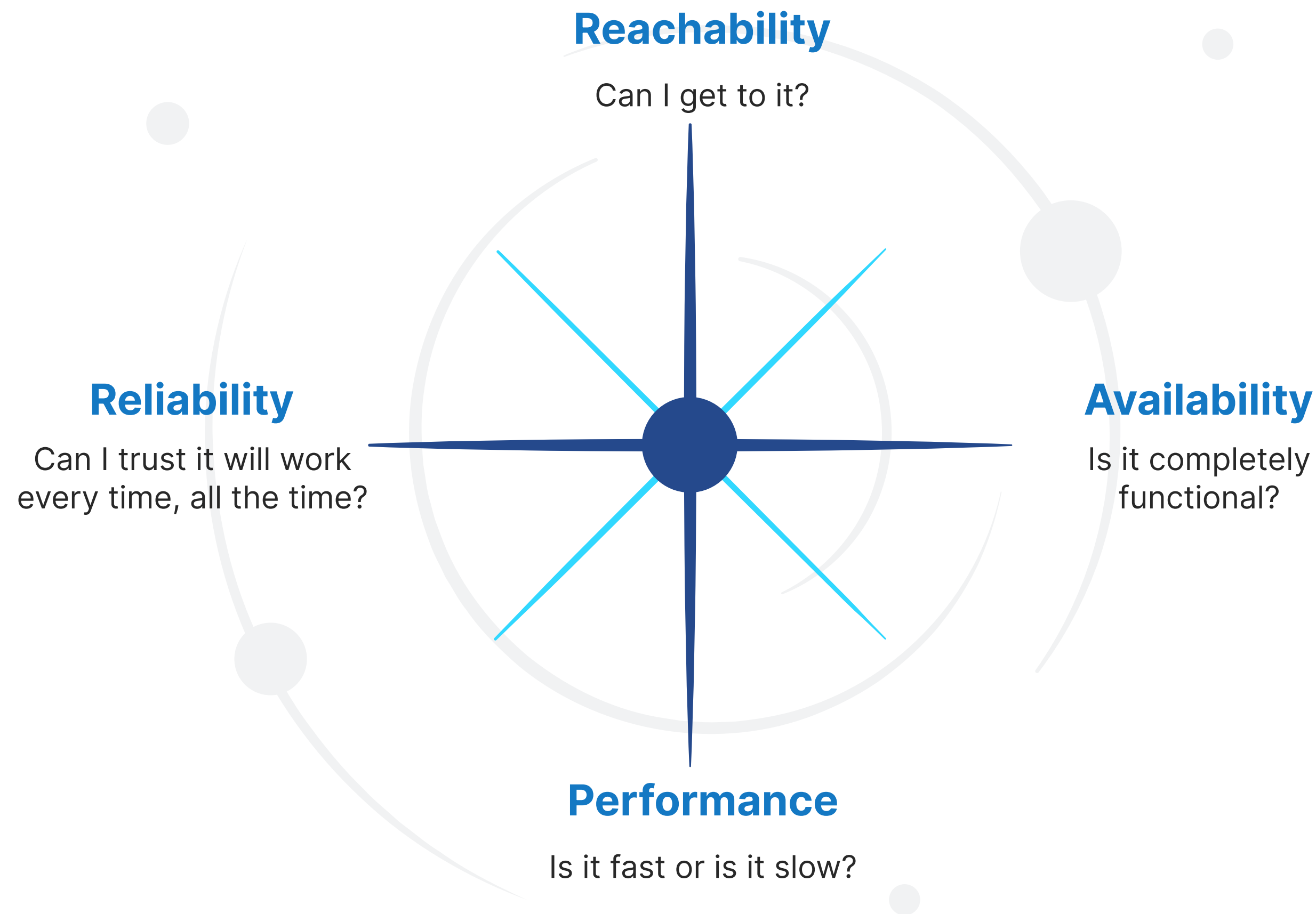
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Internet Resilience is driven by four cardinal points



Key Findings

97%

of respondents say a reliable, resilient Internet Stack is of utmost importance to their business success

78%

of respondents cite improved customer experience as the key driver for resilience programs

77%

of respondents say third-party technology providers are extremely or highly critical to their Internet Resilience success

43%

estimate a total economic impact or loss of more than \$1 million monthly due to Internet outages or degradations

Your business success depends on resilience

In today's cloud-native era, a resilient Internet is key to business success. A resilient Internet allows you to sustain and grow commerce. Indeed, it's where significant revenue originates. What's more, the Internet is now how our workforce meets each other and our customers. Yet, as Brian Krebs infamously described it¹, it's "held together with spit and baling wire."

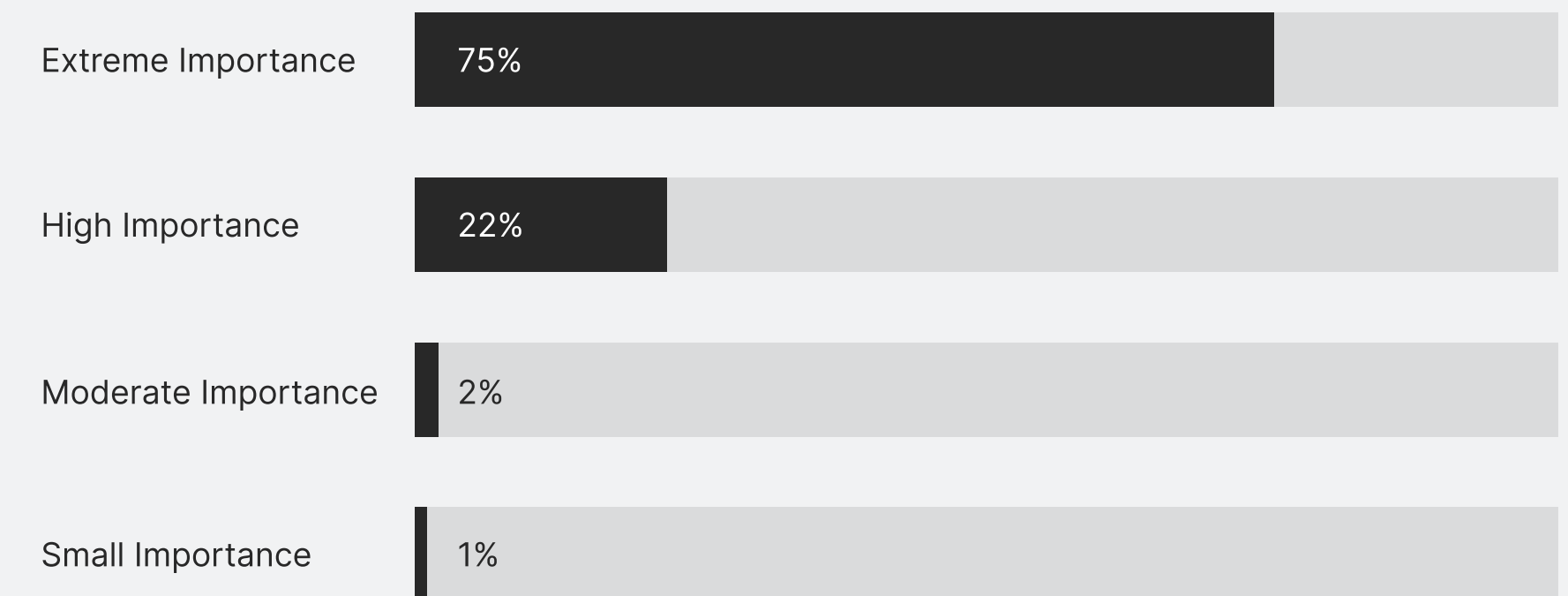
This combination of criticality and fragility means that **businesses must expand their traditional observability boundaries beyond Application Performance Monitoring (APM) to include Internet Performance Monitoring (IPM)**. Only by proactively monitoring every component of the Internet Stack can you rapidly react to issues that could impact your business.

97%

of respondents say a reliable, resilient Internet Stack is of utmost importance to their business success

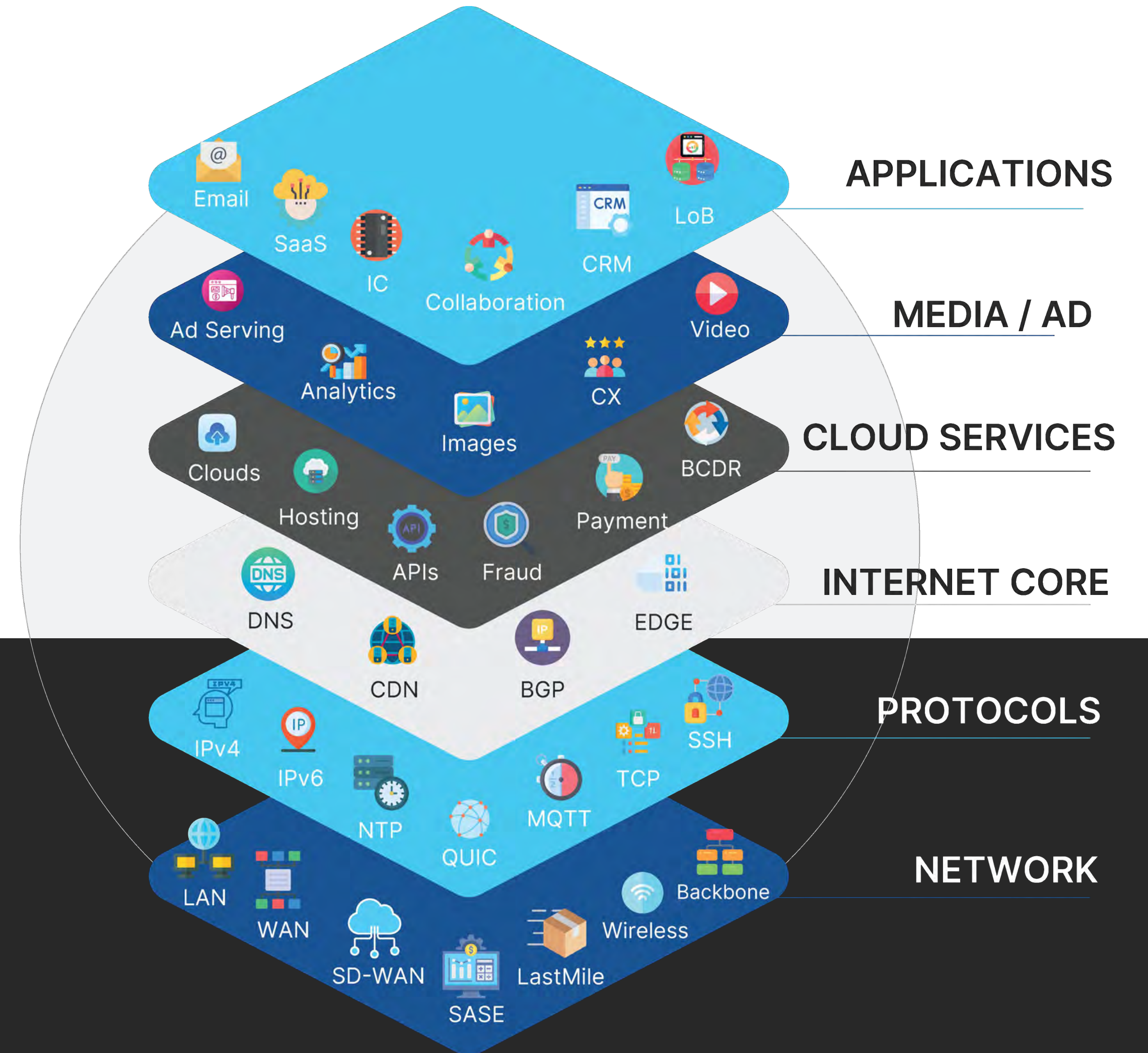
¹ <https://krebsonsecurity.com/2021/11/the-internet-is-held-together-with-spit-baling-wire/>

How important is a reliable, resilient Internet Stack to your business's success?



The **Internet Stack** is the collection of technologies, systems and services that make possible and impact every digital user experience.

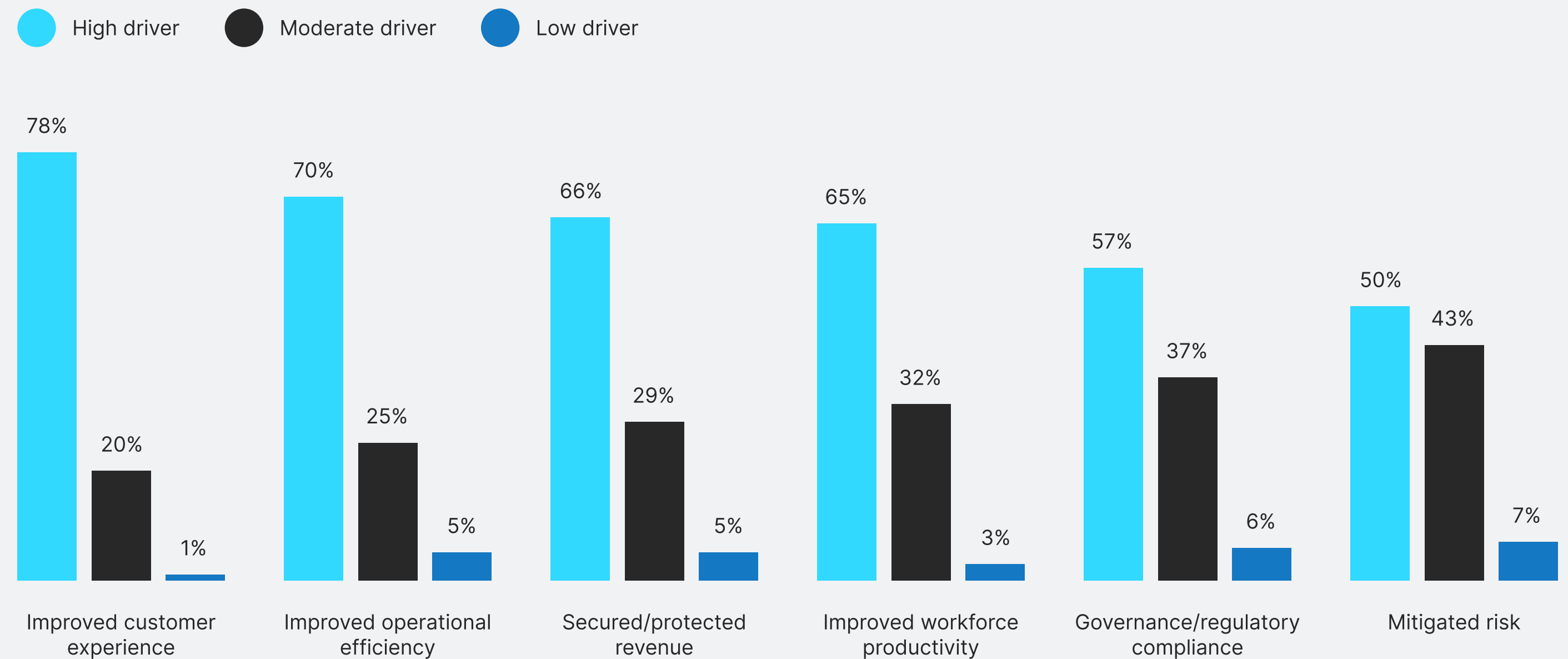
It runs across six layers. Each layer works together to deliver seamless digital services from businesses to their end-users, from the application layer down to the network foundation. Each component must be continually managed – and monitored – to ensure overall Internet Resilience.



It's not just your website that needs to be resilient

Resilience matters across all dimensions of your business. There are multiple categories of risk that result from Internet outages or degradations. These range from damage to your brand's reputation to financial impacts to legal compliance and regulatory concerns. The quality of customer experience is of course at the center of this, but so is workforce productivity, given our reliance on connectivity to perform our work and the sustained rise in remote employees.

What drives the need to make digital experiences resilient and able to adapt to or withstand adverse conditions?



The Internet, after all, sits at the intersection of your customers, workforce, partners, technology of course, and facility interconnection. In answering what drives the need to make digital experiences resilient, IT leaders likewise highlighted a broad range of business drivers, from improving customer experience - their number one priority - to mitigating risk. Protecting revenue, enabling operational efficiencies, improving workforce productivity, and ensuring the business is meeting regulatory requirements are all additional drivers.

How do we find common ground? Don't perform Internet Resilience activities in silos. Avoid different teams duplicating the same work and morale sapping mismatches of synergy. Look for the efficiencies around overlapping tasks and enable economies of scale. Consider establishing a center of excellence and bringing together a community around Internet Resilience best practices to catalyze communication and collaboration across many lines of business. **Within this same intersection, implementing IPM enables consistent, standardized measurements across the business, so different teams aren't responding differently to different information.**



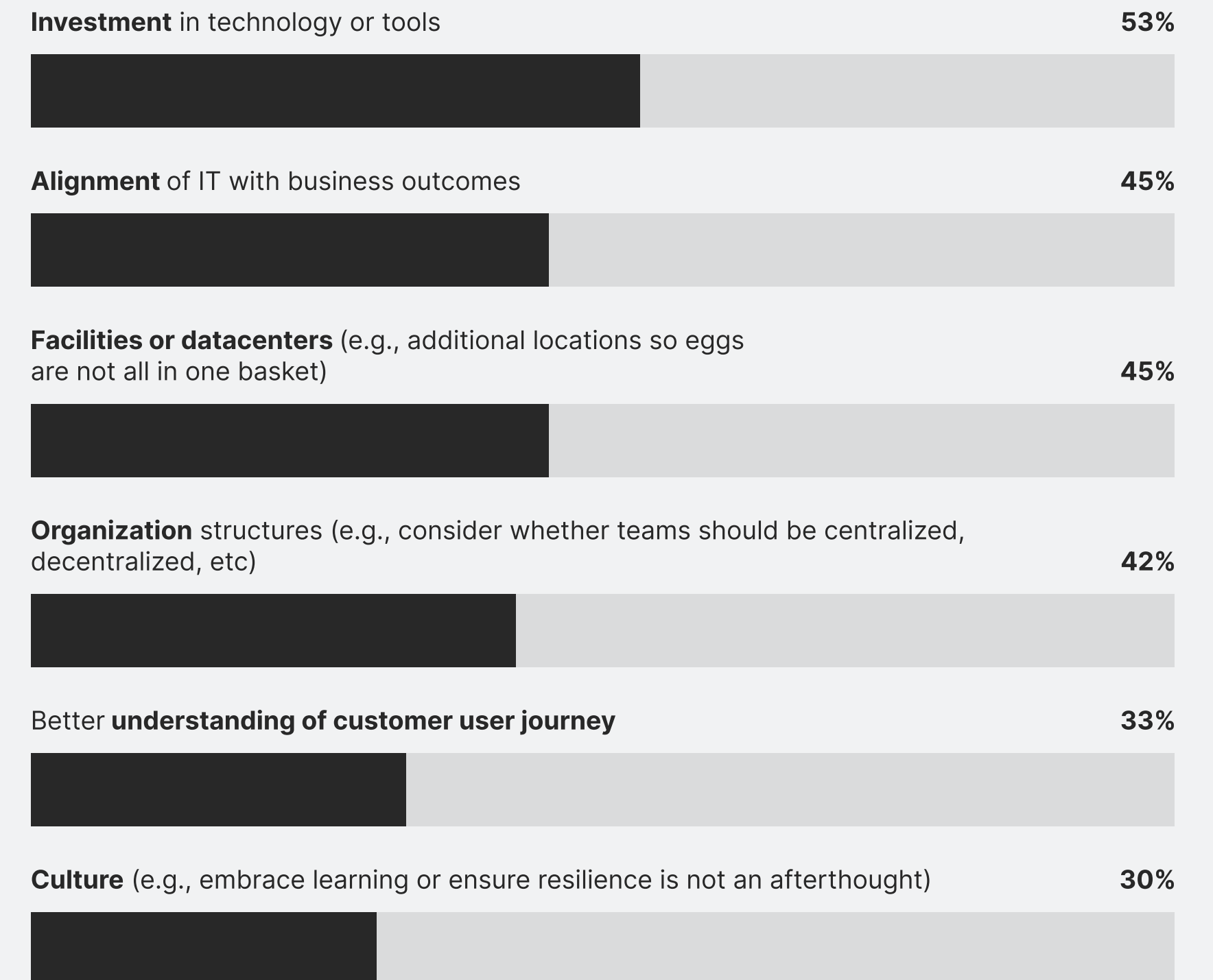
Align internally around resilience or fail

What's the biggest impediment to change? Digital leaders state 'investment in technology or tools,' followed closely by the 'alignment of IT with business outcomes'. After all, to secure investment, you need alignment. It's clear from the responses to this question that IT leaders are contending with a range of competing challenges. Once again, this points to the need for alignment first. Businesses who don't risk failure down the line with teams scrambling to deal with an outage without an effective plan in place.

How? Continue to break down organizational silos. Find ways for interdisciplinary teams to collaborate effectively. Set aside regular time for IT teams and executives to meet. Ask them to assess their different positions on Internet Resilience and agree on investments and investment outcomes. You do not have to herd cats; do it incrementally. **Remember, mitigating incident impact from outages and service degradations needs to be a continuous effort since you never know when failure will strike.** Regularly reassess your processes and configurations. Redefine your runbooks and playbooks. And invest in the right tools like IPM and APM so that your operations team can sleep, knowing there are 'eyes' always on across the application stack *and* the Internet Stack.

Which of the following needs the most change to ensure successful digital or Internet Resilience programs?

Respondents were encouraged to make multiple choices.



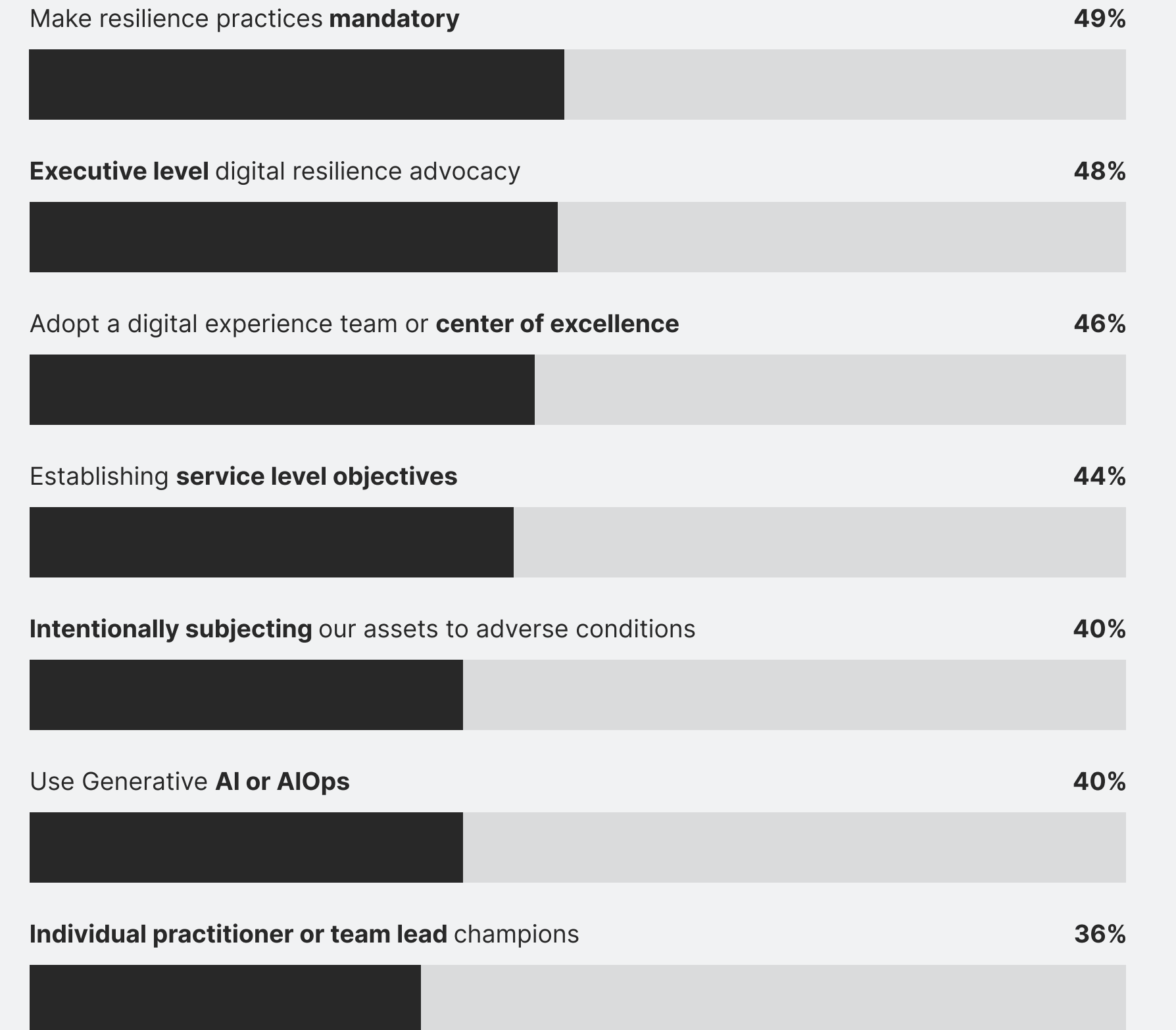
Embed Internet Resilience from the top down

Breaking organizational silos only happens from the top down. Businesses are already investing billions annually in observability, but are these funds allocated to the areas that impact your revenue and your reputation the most? Do you have complete visibility into your end users' journey? Can you catch issues before they impact the business?

To make this investment count, leaders at the highest corporate level must incorporate an Internet Resilience dimension to their plans, leading by example and embedding resilience practices into daily operations. Only then will there be a real shift in culture that continually protects the business from the impact of outages and posits resilience practices into your organization's DNA. This is the main reason we are seeing increasing numbers of Fortune 2000 companies implementing a Chief Reliability or Chief Resilience Officer.

What is the best strategy for embedding an Internet Resilience mindset into your organization's DNA?

Respondents were encouraged to make multiple choices.



Remember, however, that no one size fits all. Each organization, whether a startup or large organization, needs to develop its own resilience journey. Evaluate your specific contributing factors and work from there.



Internet resilience should be a critical part of your overall Disaster Recovery/Business Continuity program.

Ultimately the CIO/CTO is accountable for the organization's digital resilience, but these are not just technology problems. Resilience and business continuity are in fact overall organizational issues that need to be discussed at the organization's highest levels and tested as frequently as possible.

Obviously, you cannot simulate every possible outage, but if the past few years have taught us anything, it is that you need to plan for the unexpected."

Pete Charlton, IT Vice President
Tokio Marine North America Services

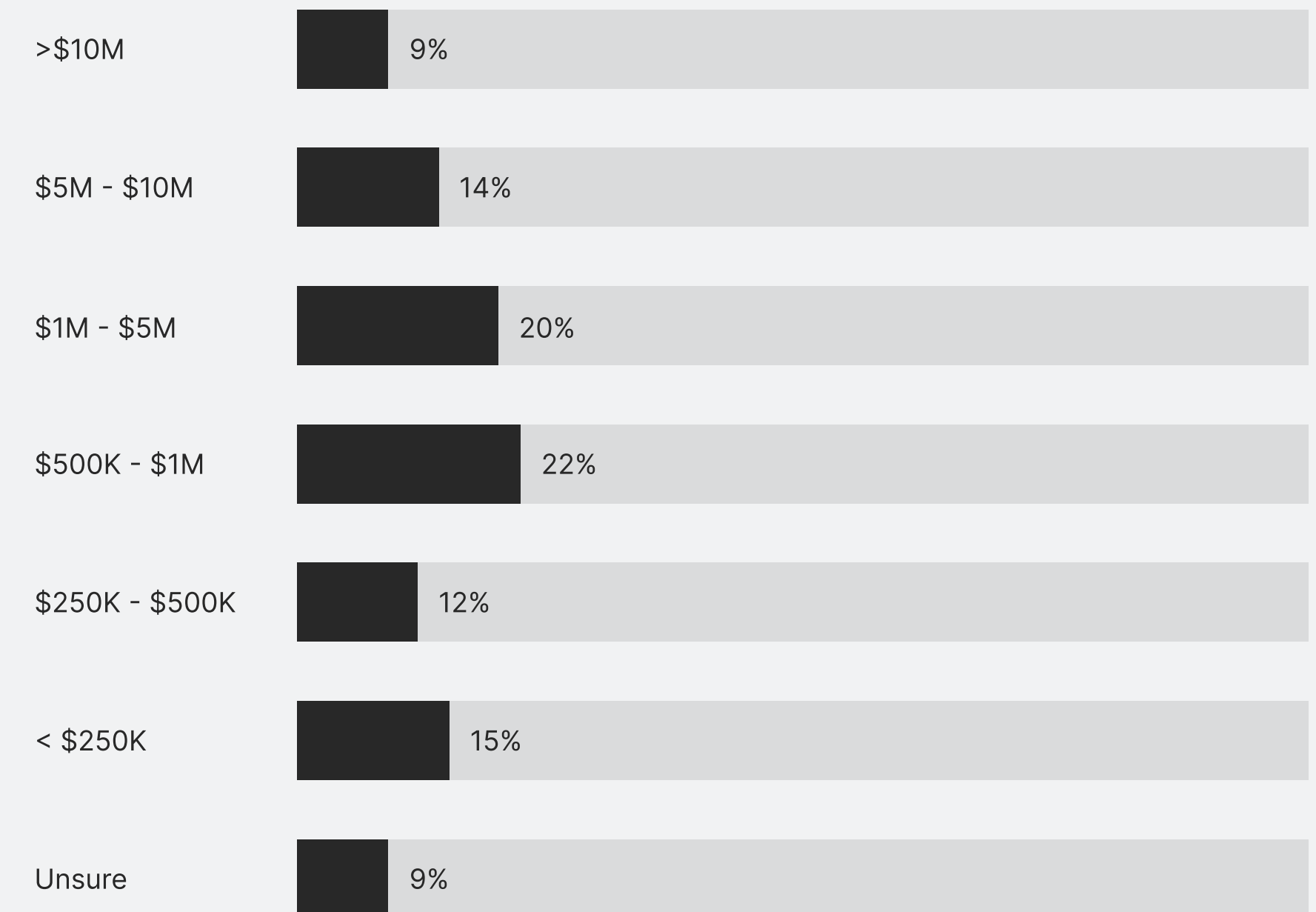
Businesses are losing millions monthly to outages

Since outages will occur, the question becomes, “What are you prepared to lose?” Our findings show that the total economic impact of Internet outages or degradations on business is consistently underestimated. Among our survey respondents, nearly half report their companies lost over \$1 million due to Internet outages or degradations in the month prior to the survey. Almost 10% said their losses amounted to over \$10 million.

These numbers are high because we asked respondents to estimate the total economic impact (TEI) on business. In addition to income lost, TEI factors in such elements as time spent fixing the problem, compensation to consumers, penalties incurred, legal fees for review, impact on reputation, etc. **Total economic impact, therefore, goes far beyond, “We were down for 5 minutes, and we lost \$1M in shopping carts.” There are economic ramifications across the whole business.**

Moreover, as the Internet becomes an increasing set of dependencies on dependencies on dependencies, every individual outage has a wider ripple effect. If, for instance, you’re a technology provider who goes down, not only will you have to pay service level credits or penalties to affected customers, but your customers themselves will have lost revenue. Quickly restoring service to normal levels is essential to protect all sets of revenue and the wider damage to reputation.

How much total economic impact did Internet outages or degradations have on your business (over the past month)?



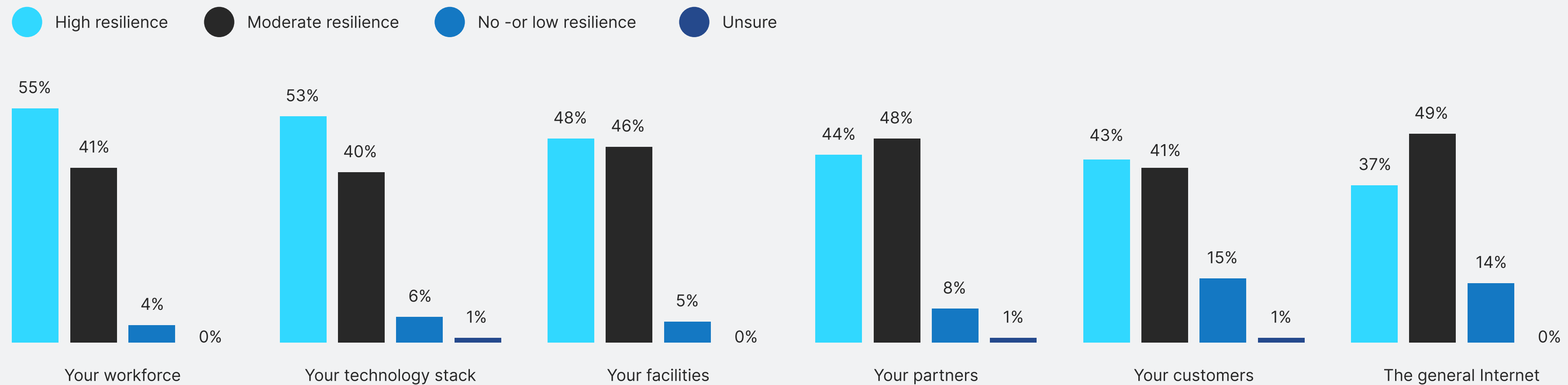
43%
estimate \$1M+ monthly TEI due to Internet outages and degradations

Resilience is not “a one and done”

Your customers and the Internet are arguably the two most critical components to business success in 2024, yet paradoxically both were deemed the least resilient by our respondents. And of course, your Internet needs to be resilient for your customers to be. Easier said than done when relying on large, complex and/or distributed architectures to deliver digital experiences. What’s more, as we’ll shortly see, most companies are critically dependent on third parties to deliver customer experiences.

Even though much of the infrastructure of the Internet, from DNS to BGP, is typically provided by third parties and physically outside the control of your IT teams, having visibility and ensuring continuous reachability is nonetheless a business imperative. This piles on pressure for IT practitioners attempting to add or adjust an in-house monitoring system. As they strive for always-on service, the level of 24/7 manual grunge work can become overwhelming. **The longer MTTR takes, the more the risk of payouts and other ramifications increases, including the threat of decreased customer loyalty.**

Which are most resilient?



We are dependent on dependencies

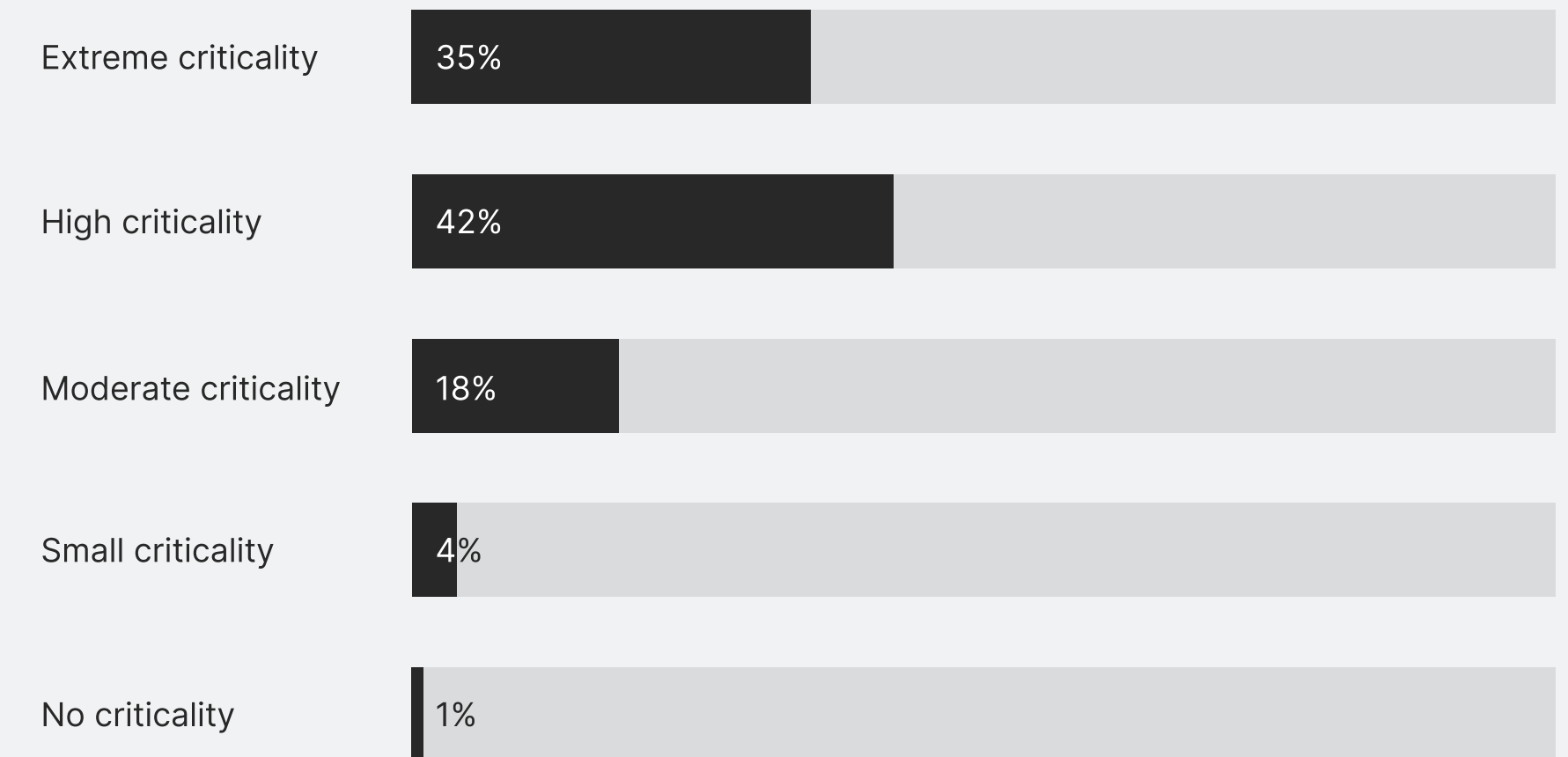
Given how critical third-party providers are to the success of most companies' Internet Resilience efforts, it is crucial to develop a hand in glove approach to visibility. APM does not provide the breadth of insight necessary to peel through the layers of the Internet Stack to identify exactly where the problem resides. For this level of visibility, IPM is required.

Understanding observability and its crucial role in Internet Resilience becomes easier when we think of it as a set of capabilities instead of just a tool or product. These capabilities might involve things like being able to see how changes impact a customer's experience of your website or app. Thinking about observability in this way will allow you to federate many third-party platforms, parts of your workforce, or other Internet endpoints, into your overall playbooks and recovery plans. There's no need to be an isolationist. **Incorporate your third-party dependencies into your Internet Resilience playbooks and runbooks.** Create rules of engagement that include your CDNs, managed DNS, backbone ISPs, and other third-party vendors. Share the information gleaned through IPM as soon as you have it to jointly resolve the problem as fast as possible.

If businesses don't develop this kind of approach to observability, they may fail to subsequently realize the value from their Internet Resilience activities.

²Examples given for third-party providers were Microsoft 365, Google Workspace, content delivery networks, third-party payment processors, DNS, or 'anything you use "as a service" '.

How critical are third-party platform technology providers to your digital or Internet Resilience success?



77%
of respondents say third-party technology providers² are extremely or highly critical to their Internet Resilience success.



Since modern enterprise software often draws its lifeblood (i.e. data, application dependencies, analytics and so on) from a variety of sources, service disruption can come from many different locations and can manifest itself in many forms.

While we talk about observability platforms for the cloud, there is a defined requirement to assess the web itself as an integral part of the application supply chain if we want to shore up our digital journeys."

**Adrian Bridgwater, Senior Contributor
Forbes**

You can't put a price on customer success



Previously, most organizations ran digital teams and customer teams that were separate and ran in parallel. They were like two little kids who play in the sandbox next to each other, but were not actually interacting.

Today, that's not possible.

You can't keep running organizations that way because the physical experience and the digital experience are now so fully integrated. Digital experience is customer experience. Customer experience is digital experience. You can't separate them anymore."

Rob Markey, Advisory Partner
Bain & Company

On the path to resilience, what challenges will you face along the way? Digital leaders did not answer with one voice when asked about their primary challenge. Nonetheless, 'cost or budget' concerns came first with 'technology limitations' a close second. Other issues, such as resistance to change or alignment challenges are also in play. In regard to the obstacle of cost, we can think of this as pay now or pay (a lot more) later when an outage happens.

Surmounting this array of potential roadblocks may seem daunting. To maximize your efficiency and overcome technology limitations and cost concerns, fine-tune your observability strategy. Don't monitor your internal and external networks just to collect data. Instead, monitor what matters. Consider your business outcomes and the CX required to achieve them. **Start from the outside-in by understanding the global impact of all the components within the Internet Stack from your user's perspective.** When executed with the user perspective in mind, the volume and variety of internal telemetry can be optimized to reduce costs and minimize operational burden.

Which of these challenges will most hinder successful Internet Resilience program implementations?

Respondents were encouraged to make multiple choices.

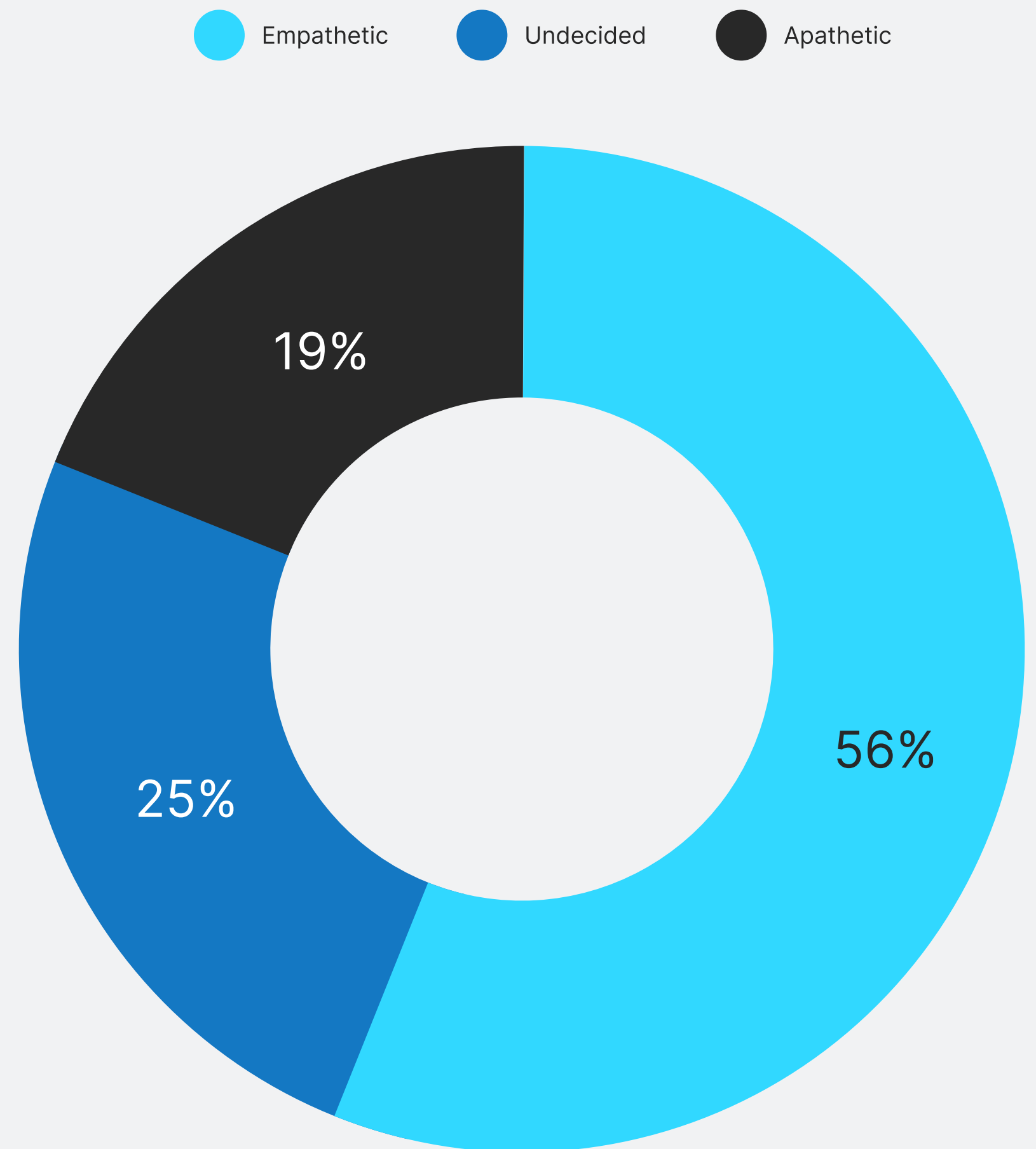


Practice empathy backed by independent data

The majority (56%) of IT and business leaders call for empathy when incidents occur. These same leaders will also need objective, independent IPM data to settle disputes and remove emotion from the equation. Fortunately, as noted earlier, 44% of organizations believe establishing SLOs is the best strategy for embedding an Internet Resilience mindset in your organization's DNA.

Service Level Objectives (SLOs) are a critical part of any resilience program. They establish what success looks like and guide the set of actions or inactions to take when digital properties go into incident. Since SLOs are fundamental, they should be set as part of IT and business conversations to align on plans. In certain cases, Service Level Agreements may be necessary to dictate what happens when Service Level Objectives are not met. This will apply both as a provider of services and as a consumer of them. More importantly, they will lessen emotional factors.

Apathetic or empathetic?
When it comes to Internet outages or degradations, what should be the default disposition?



Closing thoughts

The last few years have accelerated the need for a resilient Internet. Several inflection points have converged to put Internet Resilience at the forefront of business priorities:



The Internet is your new everything.

It is your means of delivery and your new application infrastructure. Your revenue streams are dependent on it. But not only can you not instrument it, it's fragile and continuously in flux.



Your customer is in control of the buying journey.

If their encounter with your brand has any hitch, the competition is a click away.



Your workforce is anywhere, anytime.

They expect to be able to connect – without issue – to their workforce applications. If they can't, productivity, efficiency and morale all suffer.

Internet Resilience is driven by four cardinal points:

- Reachability: Can your end-users reach your applications and websites?
- Reliability: Can you trust that it will work every time, all the time?
- Availability: Is it completely functional?
- Performance: Is it fast or slow?

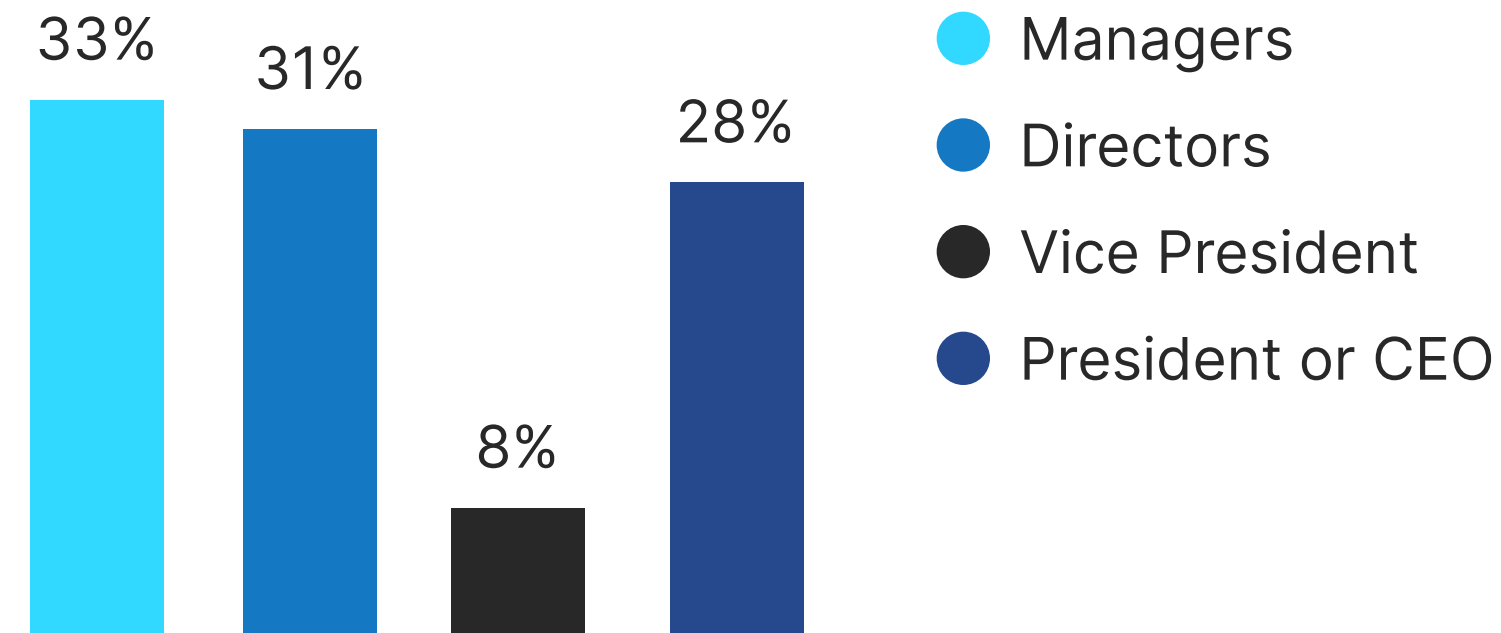
Resilience, however, is not just about the underpinning Internet technologies. It encompasses the workforce, facilities, partners, customers, and processes which together create resilience. The Internet exists at the intersection of all these.

Within this context, observability has become a fundamental business capability, not merely a tool to be deployed at crisis moments. Moreover, observability that is relevant to today's hybrid digital architectures. You can no longer stop at APM. You simply won't have sufficient visibility into the end-to-end journey of user experience. A far-reaching, intelligent IPM solution is also required – one that has a depth and breadth of vantage points across the Internet to enable real-time identification of exactly where bottlenecks, pinch points, outages, and other traps lie. IPM is the objective ally that allows you to ensure Internet Resilience.

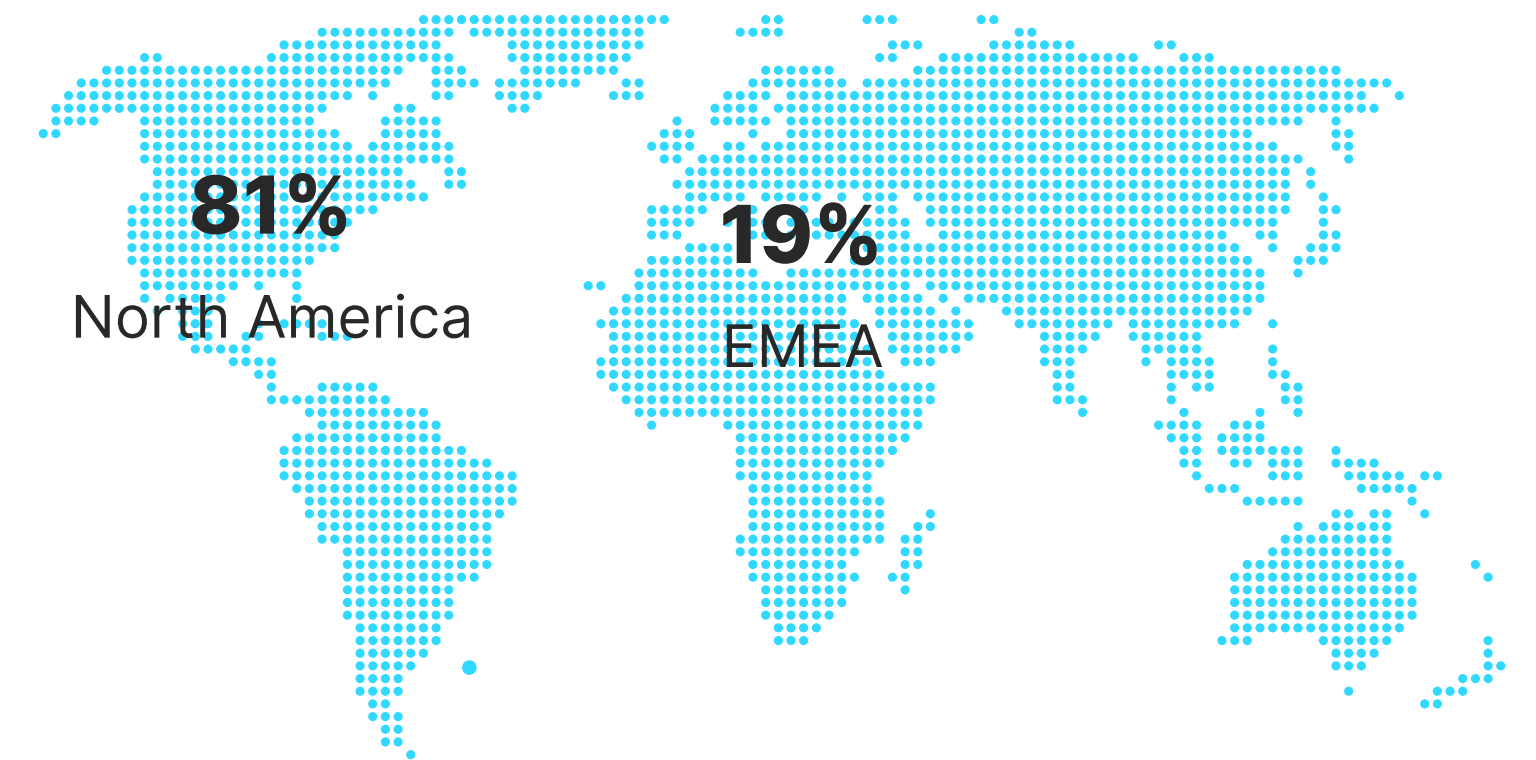
Demographics

The survey used to produce insights for this report collected data for the month of February 2024. The survey elicited 310 responses from IT or digital business leaders whose revenue streams have any reliance on the Internet to deliver digital experiences.

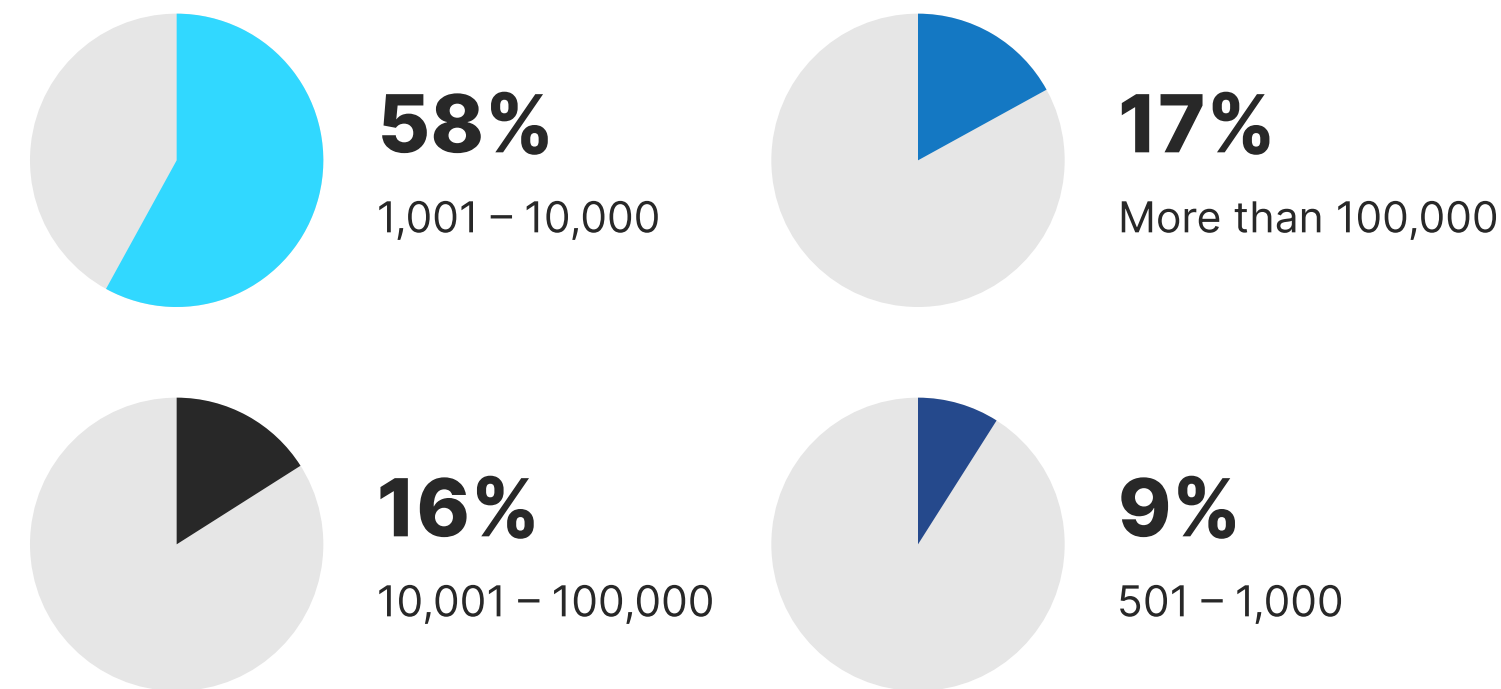
Organizational Ranks



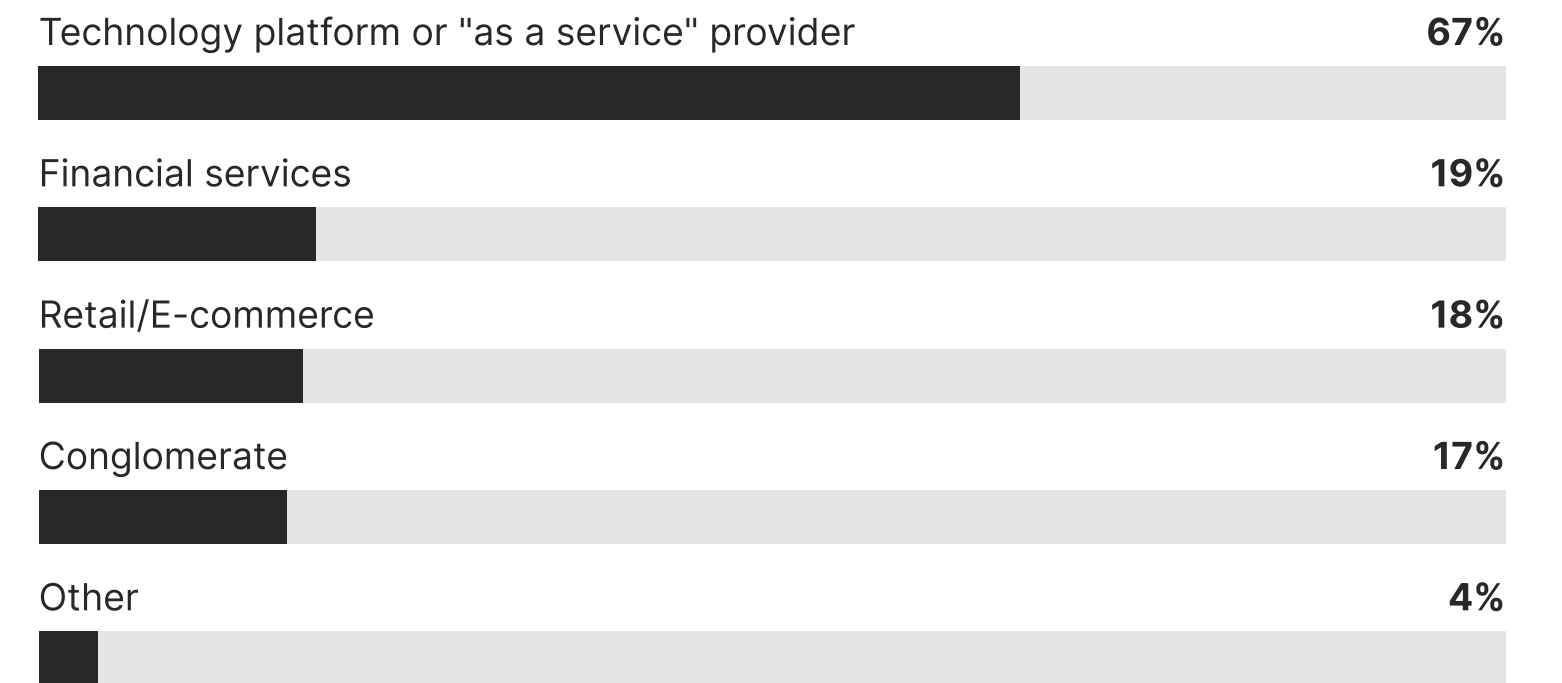
Geography



Number of Worldwide Employees



Industries



About Catchpoint

Trusted by the world's leading brands who understand in the digital age performance is paramount, Catchpoint is dedicated to monitoring what matters from where it matters to catch issues across the Internet Stack before they impact business.

The Catchpoint Platform offers a comprehensive suite of Internet Performance Monitoring capabilities, including Internet Synthetics, RUM, BGP, Tracing, performance optimization, and advanced analytics, all supported by high-fidelity data and flexible visualizations. Leveraging thousands of global vantage points inside the critical systems that make the Internet work, Catchpoint provides unparalleled visibility into what affects customer experiences, workforce efficiency, network performance, websites, applications, and APIs.

Today's digital world requires resilience and exceptional performance, which is why *The Internet Relies on Catchpoint.*



**Make resilience your
competitive edge**

www.catchpoint.com