BLACK & WHITE PAPER

451 Research® | Advisory

# Cloud monitoring services

## An opportunity emerges for service providers

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COMMISSIONED BY

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## About this paper

A Black & White paper is a study based on primary research survey data that assesses the market dynamics of a key enterprise technology segment through the lens of the "on the ground" experience and opinions of real practitioners – what they are doing, and why they are doing it.

## About 451 Research

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# INTRODUCTION

As application environments grow more complex and dynamic, IT teams are struggling under a broad set of pain points caused by gaps in their monitoring tools. We conducted this research to determine the opportunity for cloud service providers to fill those gaps and solve pain points for their customers.

To do so, we surveyed 204 IT decision-makers, asking them about the worst challenges they experience with monitoring, as well as whether and how much they're willing to spend to resolve those difficulties. We discovered that their existing tools are indeed lacking in important capabilities and that IT teams are interested in monitoring services that would solve some of the pain they experience with current tools. Most importantly, we found that these end users are willing to pay a premium for the high-value monitoring services that they require. These results indicate a potential revenue opportunity for cloud service providers to target services to customers around the pain points that they're most willing to pay a premium to solve.

To deliver the kinds of monitoring services that customers value and are willing to pay a premium for, service providers will need to better understand their customers' needs and the capabilities that they value. Many service providers already provide basic monitoring services to their customers. But as their customers' application environments grow more complex, we found that an opportunity emerges for cloud service providers to offer more sophisticated monitoring services that can drive revenue.

Indeed, service providers tell us that their customers are overwhelmed with the growing complexity of systems and the commensurate complexity of monitoring.

> *"What we see today is clients are going more and more to managed services mainly because everything is getting too complex… Clients come to us and ask, 'we want a monitoring solution but we don't know anything about monitoring and we don't know how to operate a solution, so can you offer us a solution that will monitor our infrastructure, our OS, our apps? We want to see alarms, events, dashboards. We want to control capacity management, but we don't want to have the hassle of having to operate the solution itself.'"*
>
> *– Leading Worldwide Service Provider*

## Key Findings

- Our survey respondents reported that they experience a very broad range of pain points, with 34% of respondents experiencing all 28 pain points that we presented.
- The proportion of respondents who said their current tools were either very limited, somewhat limited, or neither limited nor comprehensive ranged from 30% to 36% across 15 specific capabilities we cited.
- Among those who don't have the 15 capabilities cited, the percentage of those willing to pay a premium to get those capabilities ranged from 55% to 79%, indicating areas where cloud services providers have potential to deliver additional services to customers.

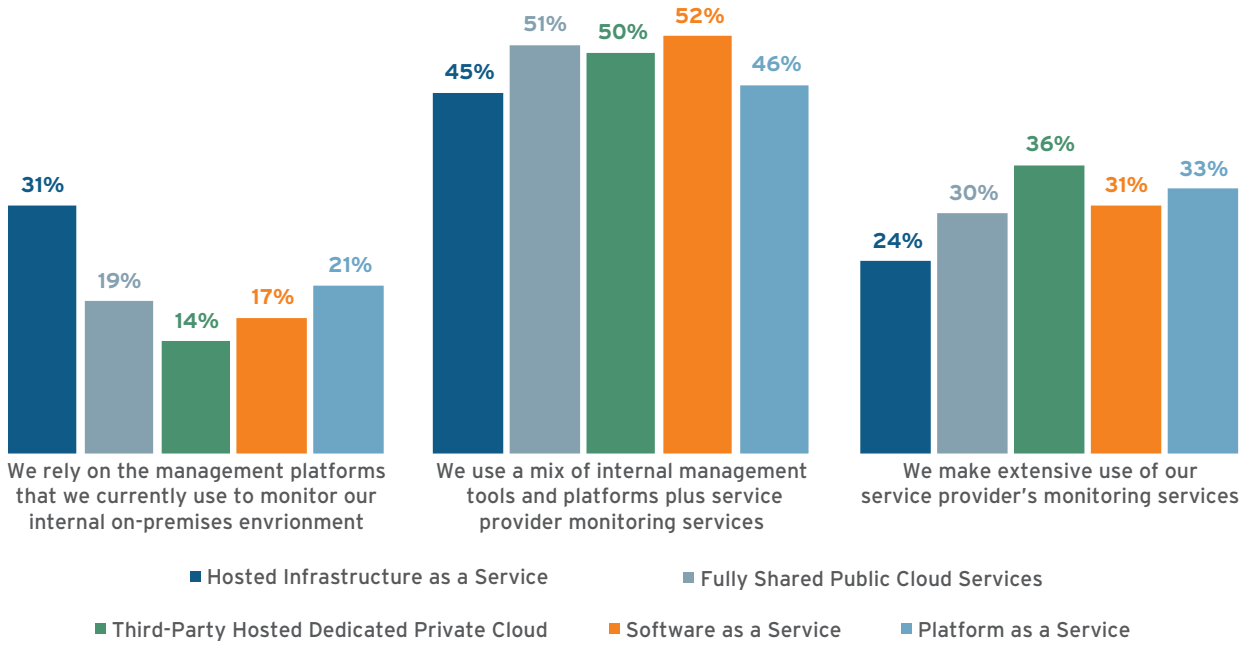
- Among those who said they've experienced the pain points cited in our survey, the percentage willing to pay a premium to address them ranged from 53% to 88% across the 28 specific pain points cited.
- Businesses want to consolidate their monitoring environments. Our survey found that 77% of respondents want their cloud provider that is monitoring their cloud-based applications to also monitor applications that are running in their own datacenters. The same portion – 77% – said they'd like their cloud provider to monitor both their primary and secondary cloud service venue.

## Current Market Approaches

We found that while the bulk of survey respondents – 93% – currently use cloud monitoring services offered by a service provider, the most common approach to monitoring is to rely on a mix of tools, including internal management tools and platforms, in addition to monitoring services delivered by service providers. We asked survey respondents about their approach to monitoring depending on which type of cloud service they employed: hosted infrastructure as a service (IaaS), fully shared public cloud services, third-party hosted dedicated private cloud, software as a service (SaaS) and platform as a service (PaaS). The most common scenario, regardless of the deployment venue, is to use a mix of tools for each of those environments, with 45% of hosted IaaS users employing a mix of tools, 52% of SaaS users turning to multiple tools and the others in between.

The least likely scenario across deployment venues was to rely on the platforms currently used to monitor on-premises environments. Only 14% of respondents operating in a third-party hosted dedicated private cloud said they use on-premises tools for monitoring, and 17% of SaaS users. While hosted IaaS users were most likely to rely on on-premises tools for monitoring, this group was the least likely to turn to service providers for monitoring, at 24%. Most likely to make extensive use of a service provider's monitoring offering are third-party hosted dedicated private cloud users, at 36%, followed by PaaS users, with 33% saying they make extensive use of their service provider's monitoring offerings.

### Figure 1: Current approaches to cloud monitoring

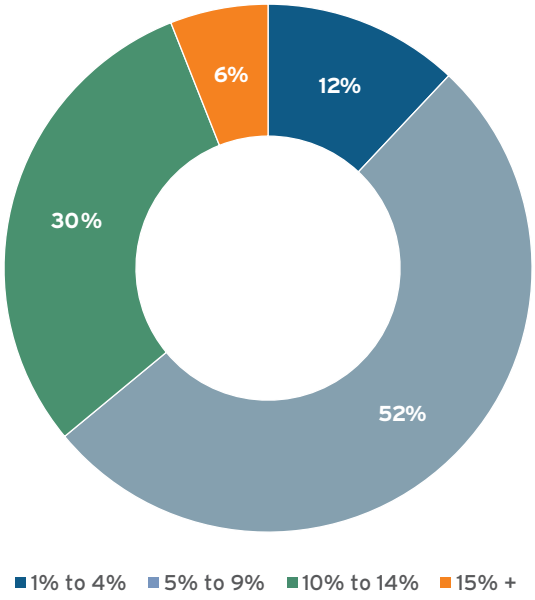



*Source: 451 Research*

We found that survey respondents are accustomed to paying a premium for cloud monitoring services, with 85% saying they pay a premium for the services. Of those that do pay a premium, 52% said they pay 5-9% over the base cloud service charge.

### Figure 2: Premiums paid for cloud monitoring services

*How much of a premium are you currently paying?*




*Source: 451 Research*

Customers use an array of monitoring services from their service providers, with the percentage of survey respondents that receive network, database, server, virtualization, application or OS monitoring from providers ranging from 57% (for OS) to 76% (for network). This wide range suggests that customers are accustomed to buying a broad set of monitoring offerings from their service providers.

### Figure 3: Range of monitoring services customers receive from their cloud service provider


*Source: 451 Research*

## Market Demand

Our research found that many organizations believe that current monitoring capabilities are lacking, and as a result, businesses feel a very broad range of pain points related to their monitoring environments. We further found that organizations are willing to pay a premium – above the premium they already pay for monitoring services – to solve these pain points and acquire the capabilities that their current tools lack. These pain points represent an opportunity for cloud service providers to respond with services that can alleviate these problems for customers.

We presented respondents with a list of 28 potential pain points (see Figure 7), and at least 34% of respondents experienced all of them. The variety and number of challenges with monitoring that businesses struggle with is remarkable.

The top pain points indicate that shortcomings in current monitoring environments expose enterprises to significant business risk. The number one pain point, cited by 58% of respondents, is receiving complaints about application performance, an issue that is particularly troublesome because it indicates that end users, who may be customers, have a poor enough experience that they are moved to lodge a complaint. Users of monitoring tools state that they experience other important business impacts due to underperforming monitoring tools as well: 51% said that their current approaches allow them to see IT issues only after they occurred, and 64% said their tools take too long to fix problems.

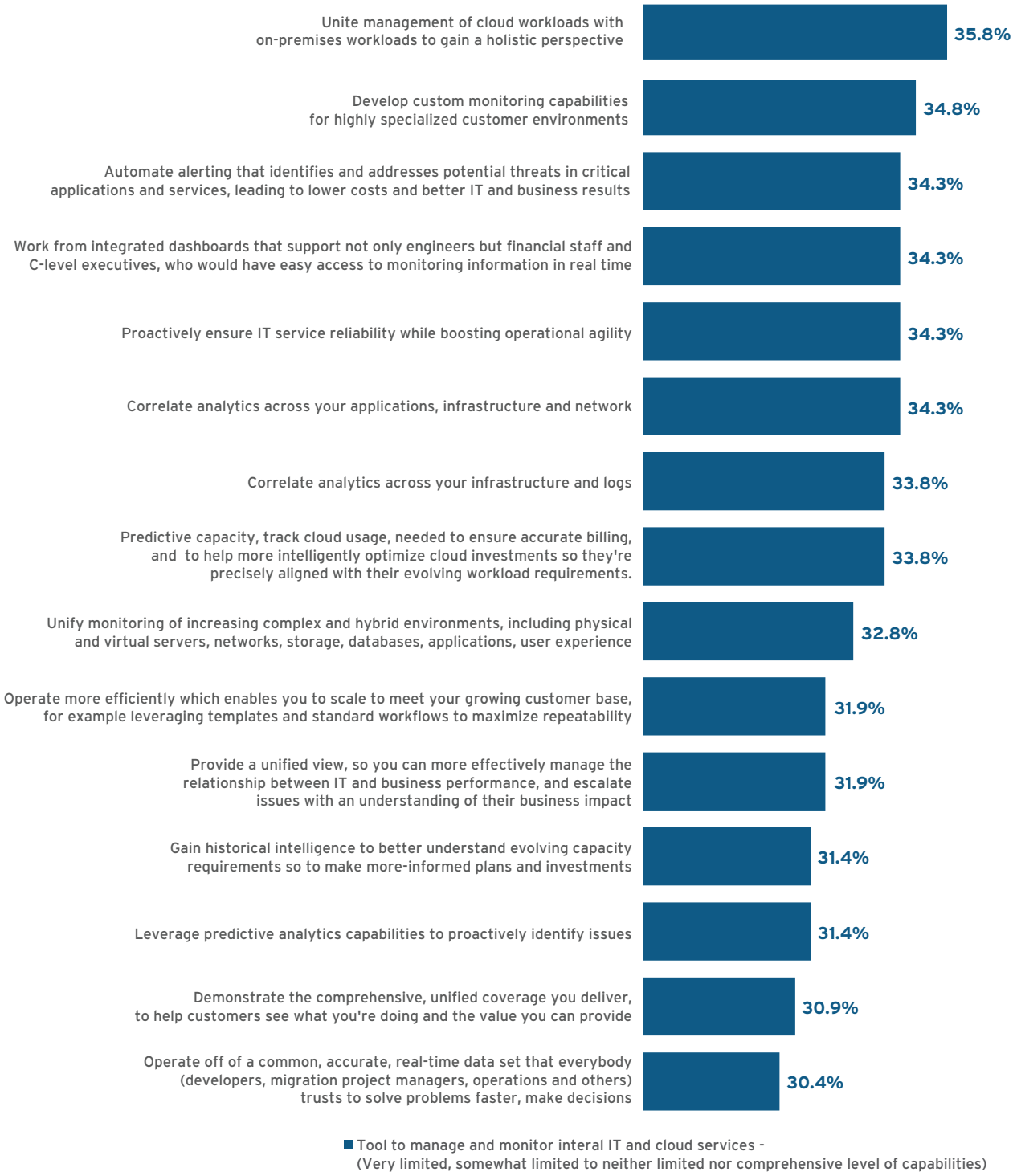
Wrangling with ineffectual monitoring tools has an impact on IT performance, too. The second most common pain point, with 55% of respondents saying they experience it, is slow IT deployment times. Forty-eight percent of those we surveyed said that they struggled due to slow time to market for new services. A poor monitoring environment is also to blame for challenges preventing cloud server sprawl and virtual server sprawl, with 43% and 40% of respondents, respectively, reporting that they experienced pain around these issues.

In addition to describing the monitoring environment pain points that most directly affect users/customers, survey respondents told us about the limitations of their current tools for managing and monitoring internal IT and cloud services. This is additional insight that cloud service providers can use to develop targeted offerings for customers. Again, we found a set of limitations that are very broadly felt. The proportion of respondents who said their current tools were either very limited, somewhat limited, or neither limited nor comprehensive ranged from 30% to 36% across the 15 specific capabilities cited (see Figure 4).

One important issue that emerged as a clear struggle for respondents is the lack of capabilities that allow for a unified monitoring environment. Top of the list of limitations in current tools is the ability to unite the management of cloud and on-premises workloads, which 36% of respondents said their current tools either didn't have or had in only a limited capacity. Other capabilities related to an integrated monitoring environment rose to the top of the list. Tied for third place (at 34%) among capabilities that current tools lack include the ability to work from integrated dashboards that support engineers, financial staff and c-level executives. Nearly the same number of respondents said that their current tools lack the ability to correlate analytics across infrastructure and logs. Thirty-three percent said their tools are very to somewhat limited in the ability to unify the monitoring of complex hybrid environments, including physical and virtual servers, networks, storage, databases, applications and user experience.

The survey also showed that monitoring tool users understand the business implications of employing tools that lack advanced capabilities. Thirty-four percent of respondents said their current tools have limited capability to automate alerts that identify potential threats in critical applications – capabilities that, if available, could lead to lower costs and better IT and business results.

## Figure 4: Respondents cited limitations of current tools for managing and monitoring internal IT and cloud services




*Source: 451 Research*

## The Opportunity

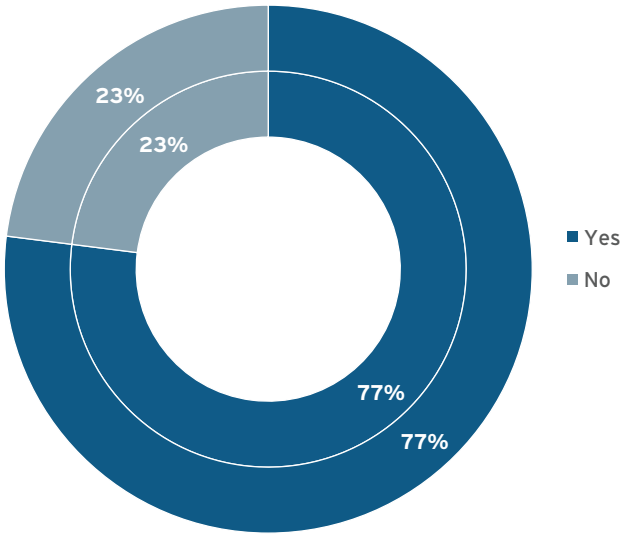
The broadly felt pain points and lack of capabilities in current monitoring tools create a clear opportunity to better serve the needs of enterprises with monitoring services that can deliver high value and command premium pricing.

We found that cloud service providers are well-positioned to help solve these problems for their customers. When we asked respondents whether they would be interested in having their cloud provider that is monitoring their cloud-based applications also monitor applications running in their own datacenter, the answer was a resounding yes – a full 77% said they would want that. The same number – 77% – said they would want their primary cloud service provider to monitor cloud apps running in their cloud, as well as a secondary cloud service venue.

### Figure 5: Cloud service providers are well-positioned to solve customers' monitoring pain points

*Outer Circle: Would you want your cloud provider that is monitoring your cloud-based applications to also monitor applications that are running in your own datacenter?*

*Inner Circle: Would you want your primary cloud service provider that is monitoring your cloud-based applications to also manage and monitor applications that are running in a secondary cloud service venue?*




*Source: 451 Research*

One reason that businesses want to consolidate their monitoring under one service provider is to avoid some of the confusion that ensues from receiving monitoring services from different providers. A worldwide service provider who we spoke with as part of our research aptly described the challenges enterprises face when employing monitoring services from multiple providers:

> *"A client will have issues and be unable to determine where the issue resides and who's responsible for the issue because it can be in the network, which is from provider A, or the server which is provider B, or the app which is provider C, and they all have their own monitoring tools, which show no issue. So at that point, the client comes back and starts looking into, 'can I have something that can monitor everything for me so that I can challenge my service providers.'"*
>
> *– Leading Worldwide Service Provider*

To get important capabilities from their cloud providers, respondents said they're willing to pay a premium. We asked respondents whose monitoring tools lacked or were limited in certain capabilities whether they'd pay a premium to get those capabilities and found that the appetite among our survey respondents to pay a premium for important capabilities is striking. Among those who don't have the 15 capabilities cited, the percentage of those willing to pay a premium to get those capabilities ranged from 55% to 79%, indicating areas where cloud services providers have potential to deliver premium services to customers.

Among those who said they currently lack or have limited ability to operate off a common, accurate, real-time data set that developers, operations staff and others trust in order to solve problems faster, 79% said they'd be willing to pay their cloud provider a premium for that capability (see Figure 6). This was the top capability that those who lacked it said they would pay a premium to acquire it.

Respondents are also willing to pay a premium so they can provide a unified view in order to better manage the relationship between IT and business performance, and escalate issues in the context of business impact. Sixty percent of respondents who said they lacked this ability in their current tools said they'd pay a premium to get it. Respondents similarly said they'd pay a premium to unite the management of cloud and on-premises workloads in order to gain a holistic perspective, with 70% of respondents who lack that capability saying they'd pay a premium for it.

Among those who said their current tools fall short in enabling them to proactively ensure IT service reliability while boosting operational agility, 69% said they'd pay a premium to achieve that kind of important impact on their operations. A high percentage – 75% – of those who don't have the capability said they'd pay a premium for predictive functionality that would allow them to optimize cloud investments.

## Figure 6: Capabilities heat map

| On a scale of 1 to 5 where 5 is Comprehensive, please indicate the level of capabilities that the tools you use to manage and monitor your internal IT and Cloud Services have that would allow you to... | Total Number of Respondents who answered '1' to '3' | % of Total Respondents Willing to Pay a Premium... for a more comprehen-sive monitor-ing service | How much more of a premium, above what you are currently paying, would you be willing to pay? | | | | |
|---|---|---|---|---|---|---|---|
| | | | 0% | 1% to 4% | 5% to 9% | 10% to 14% | 15% + |
| Operate off of a common, accurate, real-time data set that everybody (developers, migration project managers, operations and others) trusts to solve problems faster, make decisions | 62 | 79% | 2 | 16 | 19 | 6 | 6 |
| Unite management of cloud workloads with on-premises workloads to gain a holistic perspective | 73 | 70% | 4 | 14 | 17 | 11 | 5 |
| Gain historical intelligence to better understand evolving capacity requirements to make more-informed plans and investments | 64 | 52% | 0 | 10 | 9 | 10 | 4 |
| Leverage predictive analytics capabilities to proactively identify issues | 64 | 64% | 2 | 14 | 13 | 8 | 3 |
| Correlate analytics across your infrastructure and logs | 69 | 67% | 3 | 16 | 16 | 6 | 5 |
| Correlate analytics across your applications, infrastructure and network | 70 | 76% | 2 | 17 | 17 | 13 | 4 |
| Predict capacity and track cloud usage to ensure accu-rate billing, and to help more intelligently optimize cloud investments so they're precisely aligned with their evolving workload requirements. | 69 | 75% | 1 | 8 | 28 | 11 | 4 |
| Operate more efficiently which enables you to scale to meet your growing customer base, for example leveraging tem-plates and standard workflows to maximize repeatability | 65 | 65% | 2 | 12 | 17 | 7 | 3 |
| Automate alerting that identifies and addresses potential threats in critical applications and services, leading to lower costs and better IT and business results | 70 | 67% | 0 | 12 | 15 | 15 | 4 |
| Develop custom monitoring capabilities for highly specialized customer environments | 71 | 56% | 1 | 14 | 11 | 10 | 4 |
| Demonstrate the comprehensive, unified coverage you deliv-er, to help customers see what you're doing and the value you can provide | 63 | 46% | 1 | 7 | 8 | 9 | 4 |
| Work from integrated dashboards that support not only en-gineers but financial staff and C-level executives, who would have easy access to monitoring information in real time | 70 | 57% | 1 | 14 | 15 | 7 | 3 |
| Proactively ensure IT service reliability while boosting operational agility | 70 | 69% | 3 | 10 | 14 | 13 | 7 |
| Unify monitoring of increasing complex and hybrid envi-ronments, including physical and virtual servers, networks, storage, databases, applications, user experience | 67 | 78% | 1 | 13 | 23 | 9 | 6 |
| Provide a unified view, so you can more effectively manage the relationship between IT and business performance, and escalate issues with an understanding of their business impact | 65 | 60% | 3 | 11 | 14 | 9 | 2 |

*Source: 451 Research*

Our research found that enterprises are willing to pay a premium to solve the biggest pain points that they experience with their current tools. Among those who said that receiving too many false alarms (as a result of multiple monitoring tools) was a moderate to significant issue, 88% said they'd pay a premium to solve this pain point. A similar issue – too many false alarms, which wastes time, and real issues are missed – ranked second; 81% of those who experience that pain point said they are willing to pay a premium to solve the problem. Other top issues that respondents expressed strong willingness to pay a premium to resolve include difficulty managing new cloud-based infrastructure; the inability to correlate data across network, applications and infrastructure; difficulty identifying the impact of IT incidents; and a perception of poor service quality. Among those who said they experienced these pain points, the percentage willing to pay a premium to address those pain points ranged from 53% (Too many disparate monitoring tools) to 88% (False alarms resulting from having multiple monitoring tools).

## Figure 7: Pain points heat map

| Number of respondents (Mult. Select) | Current Pain Points Identified for Monitoring and Management of internal IT and Cloud Services | Level of Business / Technical Operations Impact Identified by Respondents (Level 1 - 5) | | | | | (Moderate to Significant) % of respondents willing to pay a cloud provider a premium to solve current pain points |
|---|---|---|---|---|---|---|---|
| | | Minimal Impact | | Moderate Impact | | Significant Impact | |
| | | 1 | 2 | 3 | 4 | 5 | |
| 106 | False alarms resulting from having multiple monitoring tools | 10 | 12 | 25 | 40 | 19 | 88% |
| 94 | Too many false alarms, which wastes time; real issues are missed | 3 | 17 | 24 | 26 | 12 | 81% |
| 118 | Complaints on application performance | 4 | 7 | 34 | 33 | 14 | 54% |
| 100 | Too long to fix problems | 7 | 8 | 30 | 22 | 18 | 64% |
| 87 | Perception of poor service quality | 4 | 7 | 21 | 29 | 12 | 68% |
| 93 | Difficult to showcase the value of IT | 4 | 12 | 21 | 23 | 13 | 47% |
| 90 | IT monitoring not aligned with business performance goals | 4 | 6 | 10 | 39 | 15 | 53% |
| 105 | Only see IT issues after they have occurred | 2 | 9 | 25 | 27 | 23 | 53% |
| 69 | Poor capacity planning due to low visibility of resource utilization | 7 | 7 | 14 | 22 | 13 | 67% |
| 76 | Can't correlate data across network, applications and infrastructure | 3 | 8 | 19 | 22 | 16 | 70% |
| 89 | Difficult to identify impact of IT incidents | 4 | 6 | 22 | 28 | 12 | 68% |
| 82 | Preventing virtual server sprawl | 6 | 6 | 20 | 28 | 11 | 59% |
| 88 | Preventing cloud server sprawl | 3 | 11 | 16 | 26 | 21 | 57% |
| 85 | Difficulty managing new cloud-based infrastructures | 2 | 10 | 19 | 27 | 10 | 75% |
| 94 | No single view of virtual/physical and on-premises/cloud environments | 5 | 13 | 17 | 24 | 17 | 57% |
| 97 | Optimizing capacity across cloud and hybrid environments | 4 | 8 | 24 | 29 | 12 | 66% |
| 98 | Optimize and track user experience with cloud and mobile applications | 4 | 15 | 20 | 33 | 13 | 68% |
| 97 | Maintaining service levels when migrating workloads to the cloud | 5 | 5 | 20 | 29 | 18 | 61% |
| 90 | Too many disparate monitoring tools | 6 | 10 | 25 | 18 | 17 | 53% |
| 101 | Heavy admin labor supporting homegrown tools | 6 | 12 | 15 | 30 | 19 | 61% |
| 100 | Too much time spent in monitoring and managing tools | 5 | 7 | 24 | 27 | 16 | 57% |
| 95 | Limited human capacity to monitor full IT estate | 4 | 10 | 21 | 27 | 16 | 63% |
| 105 | Maximizing ROI and decrease revenue lost potential | 5 | 11 | 22 | 30 | 15 | 61% |
| 76 | Highly dispersed and diverse hybrid IT | 5 | 4 | 16 | 25 | 14 | 62% |
| 99 | Rapid response to business needs (agility) | 8 | 8 | 20 | 27 | 20 | 69% |
| 87 | Managing SLAs | 3 | 8 | 21 | 21 | 16 | 59% |
| 113 | Slow IT deployment times | 4 | 15 | 20 | 36 | 15 | 66% |
| 98 | Slow time to market for new services | 6 | 8 | 14 | 32 | 17 | 65% |

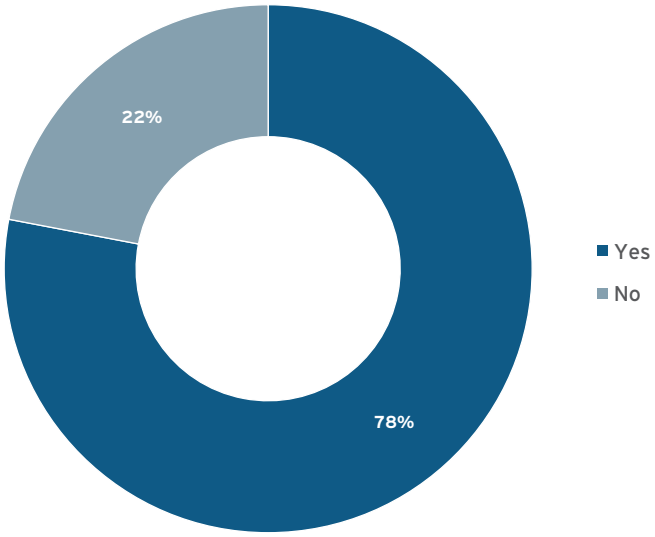
*Source: 451 Research*

## Recommendations

While our study demonstrates that there's ample opportunity to address the pain points that businesses experience and bridge capability gaps, service providers face some challenges bringing new monitoring services to market. One is the perception that monitoring in the cloud should be less expensive than monitoring on-premises workloads. We asked businesses whether they expect the cost of service-level monitoring to decrease when they move applications to the cloud, and a resounding 78% said yes.

### Figure 8: Organizations believe it is less expensive to monitor workloads in the cloud than on-premises

*Would you expect the cost of service level monitoring to decreae when moving your application workloads into the cloud?*




*Source: 451 Research*

We asked why they expect costs to decline and received a variety of answers from the respondents. The most common was that that running monitoring from the cloud is inherently less expensive because of reduced investments in internal resources that otherwise would be required to run and manage monitoring software on-premises. However, the second most common reason respondents gave for why costs should go down is they expect to be able to boost productivity and achieve other benefits once they move monitoring to the cloud. These benefits, many of which the same respondents also said they'd pay a premium for, represent an opportunity for service providers to demonstrate the value of premium monitoring services.

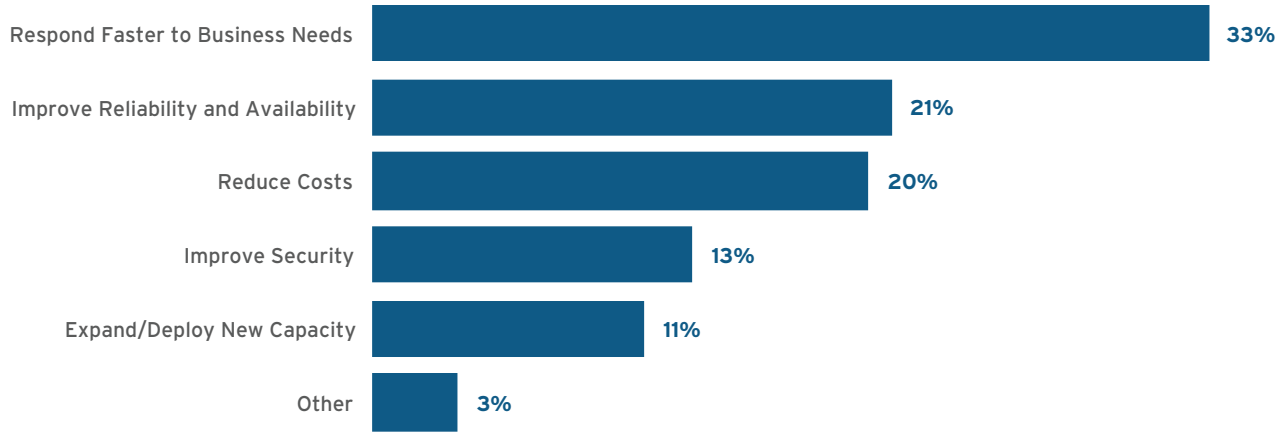
In addition, some IT organizations may need to prove the value of investing in new monitoring environments. The worldwide service provider that told us about customer demand for unified monitoring services also told us that such an offering faces roadblocks:

> *"This is something currently being looked at by the market, but the problem is that the budget for that is difficult to get. But they all say this is something that should be done by their managed services provider."*
>
> *– Leading Worldwide Service Provider*

To overcome these challenges, cloud service providers should deliver monitoring offerings that solve the pain points that businesses experience and meet the shortcomings of current tools. To successfully deliver the capabilities that end users are demanding, service providers will need to carefully choose the monitoring services and products that give them the flexibility to offer those capabilities. We heard this from the cloud service providers we interviewed, including from one that emphasized the value it found in choosing a monitoring product that allowed it to meet customer demand for a single pane of glass for viewing performance information about multiple clouds.

One way to demonstrate the value of effective monitoring is to establish the relationship between monitoring and achieving important IT goals. In a recent 451 Research Voice of the Enterprise survey, we asked IT decision-makers about top goals for their organizations (see Figure 9). Number one was to respond more quickly to business needs, and the second was to improve reliability and availability. A comprehensive and effective monitoring platform can help businesses meet both of those needs by identifying problems that impact reliability of apps and by freeing up IT teams to focus on delivering new products and services rather than spending all of their time putting out fires. Respondents to our cloud service provider monitoring survey told us that they'd pay a premium to solve pain points around quickly responding to business needs and more easily identifying the impact of IT incidents.

### Figure 9: Top business goals among IT decision-makers




*Source: 451 Research Voice of the Enterprise*

In addition, service providers should develop and deliver advanced offerings that solve the pain points and provide the capabilities that enterprises currently lack and that they told us they're willing to pay a premium for. Key capabilities that we believe best serve businesses include:

- **Intelligent, accurate alerting.** In our survey, 67% of respondents who lacked the capability said that they'd be willing to pay a premium to automate alerting that identifies and addresses potential threats in critical applications. Getting too many false alarms as a result of having multiple monitoring tools was the top pain point that decision-makers said they'd pay to solve, with 88% of those who said that's a pain point indicating they'd pay a premium to receive accurate alarms that ensure they don't miss real issues.
- **Data correlation and tools integration.** The top two capabilities that our survey respondents said they'd pay a premium to access are related to unifying data and tools so that a variety of user roles, including developers and operations staff, are working from a common data set and so that IT can escalate issues in-line with business impact. Respondents complained about challenges related to lacking these capabilities, too, with 70% of those who said they can't correlate data across network, applications and infrastructure willing to pay a premium to solve related pain points.
- **Capacity planning.** Businesses want their monitoring tools to offer visibility into resource utilization in order to better manage spending. Seventy-five percent of respondents who don't have the capability said they'd pay a premium for predictive capabilities and to track cloud usage in order to ensure accurate billing and more intelligently optimize cloud investments. That finding aligns with the 66% of respondents who said that they'd pay a premium to be able to optimize capacity across cloud and hybrid environments. Sixty-seven percent of respondents who cited poor capacity planning due to low visibility of resource utilization said that they'd pay a premium to solve that pain point.
- **Measure and ensure service reliability**. Sixty-eight percent of our survey respondents said that they had difficulty identifying the impact of IT incidents and that they suffered because of a perception of poor service quality, and they'd be willing to pay a premium to address those issues. Similarly, 69% of respondents that said that they lacked the ability to ensure IT service reliability said they'd pay a premium for the capability.

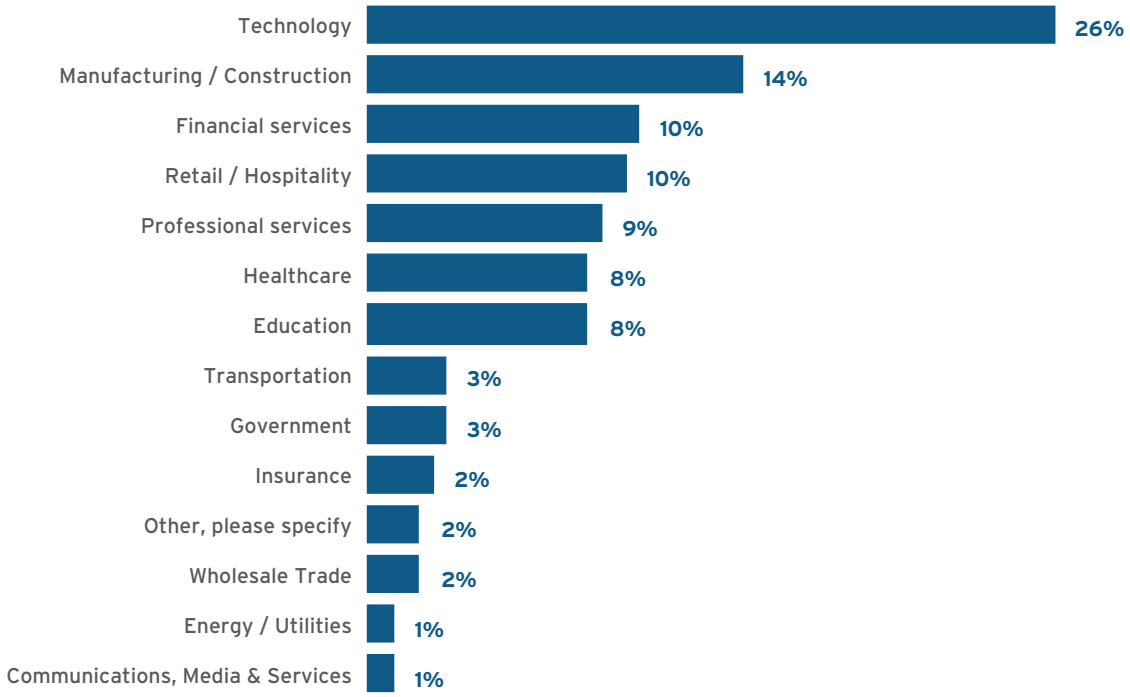
## Study Demographics

To get a pulse on experiences of current monitoring product users, we surveyed 204 professionals across industries, primarily in medium and large businesses. In addition to the survey, we also conducted extensive interviews with five global cloud service providers, asking them about their customers' needs, the services they offer and the approaches they've taken to successfully offer monitoring services to their customers. These interviews helped inform our analysis of the service provider perspective.

Although technology was the largest industry segment of our 204 respondents, it was just 26% of the total. Respondents also came from manufacturing and construction, financial services, retail and hospitality, professional services, healthcare, education and other segments.

### Figure 10: Primary industry of respondents' organizations

*QS2. What is the primary industry of your business? (n=204)*

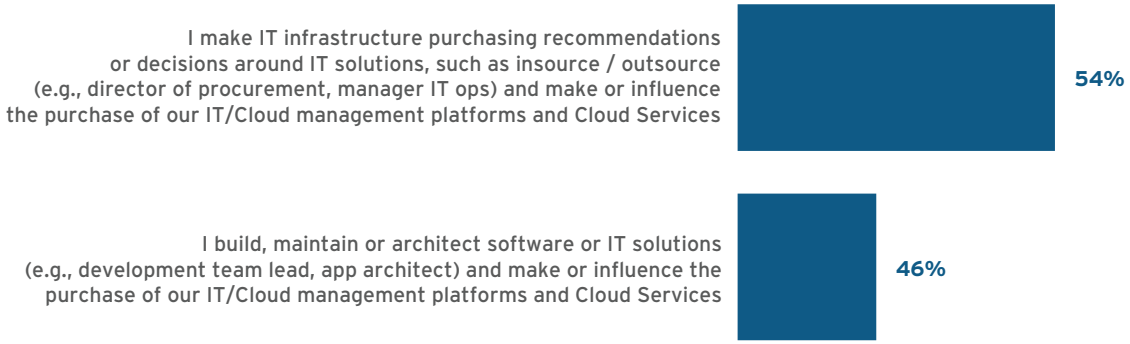



*Source: 451 Research*

We identified decision-makers in a close split between those who make IT infrastructure decisions and those who build or maintain software, with 54% of the group falling in the former group and 46% in the latter. We think this affords useful insight into a broad range of use cases, pain points, challenges and opportunities since these two groups make up a large portion of the monitoring tools user base, yet may have somewhat different needs.

## Figure 11: Respondents' roles within their organization

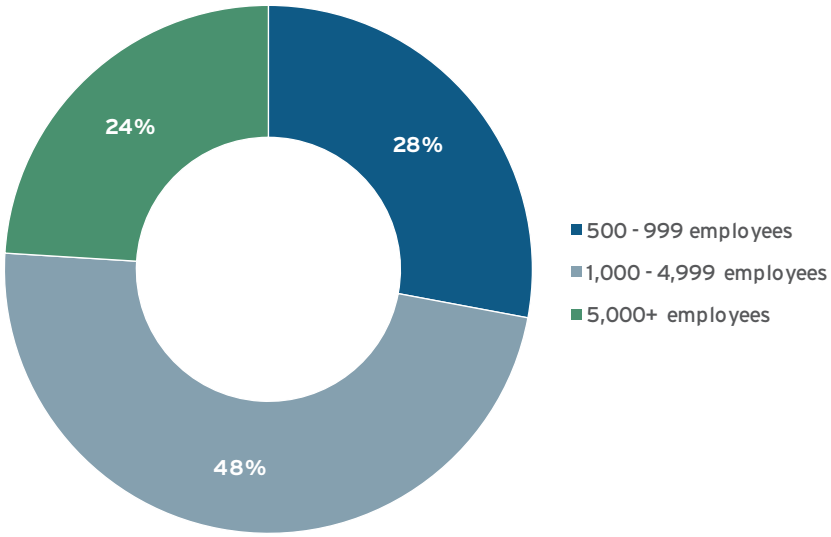
*QS3. Which of the following statements best describes your role at work? (n=204)*




*Source: 451 Research*

Those decision-makers come from relatively large businesses: 24% work for enterprises with 5,000 employees or more; 48% work for companies with 1,000-4,999 employees; and 28% come from businesses with 500-999 employees.

## Figure 12: Number of employees at respondents' companies




*Source: 451 Research*

This is a cloud-centric group. Sixty-five percent said they currently use hosted infrastructure as a service in production, with a further 18% piloting usage. Nearly half – 49% – use fully shared public cloud services, and a bit more than half use PaaS in production. Forty-one percent use third-party hosted dedicated private clouds, and 66% use SaaS. Insight from a group that so readily has embraced the cloud is particularly important here since customer cloud adoption will be crucial to managed services providers that want to best understand how to position their monitoring services and products.