HOW TOO MANY TOOLS OBSCURE AUTOMATION ISSUES

A Global Survey of Executives and IT Leaders

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Introduction

This paper reviews key findings from a global research survey across 501 automation professionals to understand how companies are managing, monitoring, and observing their workload automation. The research sought to determine if automation issues contribute significantly to SLA breaches, how frequently they occur, and their impact on the customer. The study also examined the use of monitoring and observability tools to understand downstream effects of automation issues, and whether those tools can predict and prevent automation issues. Following the survey, 8 automation experts including architects, IT directors, operation managers, and executives were interviewed to understand the context and drivers behind findings and information collected in the survey.

Executive Summary

This research finds that 98% of companies indicate automation issues contribute to breaches in SLAs, which 61% state happen monthly or more frequently. Those breached SLAs result in direct business impact resulting in decreased customer satisfaction, loss of revenue, compliance violations, and contract penalties.

Eighty percent of companies use 3 or more automation platforms, and 74% use 3 or more observability solutions. However, issues raised by these tools result in 'alert storms' for more than 7 out of 10 companies, which obscure the root cause issues and delay resolution. Even with numerous tools, nearly three quarters (74%) report they don't have end-to-end visibility of their automated business processes, and the same magnitude reported they lack visibility across their data center and cloud environments (private, public, and hybrid). This constrained visibility results in nearly half of companies being blind to the downstream effects of automation issues, resulting in 68% being ignorant of whether an automation issue will ultimately result in a breached SLA. Issue prevention is always preferred to remediation, but unfortunately only 28% possess tools that can predict automation issues. Furthermore, 68% cannot model or predict whether a new or updated automation jobs will actually meet SLAs.

The lack of key data is apparent as 69% of companies are unable to properly size automation workload resources, driving unnecessary costs. With breached SLAs having major business consequences, only 55% of those surveyed can provide SLAs and key metrics in a format that is appropriate for business stakeholders. These findings reveal that companies possess numerous tools yet still lack needed visibility and critical data. With this lack of visibility and key data, not only are operational efficiencies missed but issues resolution takes longer, and SLAs are missed. This impacts the business and their customers. Companies need the right tools, and they need to be integrated to provide visibility and key data to all stakeholders, which 90% stated would result in faster issue resolution.

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Key Findings

- Automation Issues and SLA Breaches Increase Costs, Reduce Revenue, and Impact Customer Satisfaction
  - 98% report automation issues drive breaches in SLAs
  - 61% report SLA breaches monthly or more frequently
  - SLA breaches affect the business, especially in regards customer satisfaction

- Many Automation and Observability Solutions Fail to Provide Needed Visibility and Critical Data
  - 80% of companies use three or more automation platforms
  - 74% use three or more observability tools
  - 74% of companies suffer 'alert storms' that obscure causes and delay remediation of automation issues
  - 74% of companies do not have end-to-end visibility for their automated business process
  - 68% cannot predict whether an automation delay will result in an SLA breach
  - Only 28% have tools that predict and prevent automation issues

- Automation Intelligence needed to Optimize Business Operations
  - 69% of companies lack the data to properly optimize workloads
  - Only 55% provide visibility of SLAs and key metrics in a format designed for business stakeholders
  - 61% have no way to simulate automation workloads and validate SLAs and key metrics can be met

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Broadcom's Enterprise automation lets you visualize and manage complex workloads across scheduling platforms, ERP systems, business apps from mainframe to microservices, and the cloud. Intelligent pipelines enable you to easily construct and monitor releases including dependencies across the pipelines. Proactive and autonomous remediation across systems, applications, and multi-cloud helps create more resilient production environments.

By bridging functional and technology silos and providing a single control point for all automation, IT organizations will have the backbone they need to support their automation center of excellence initiatives.
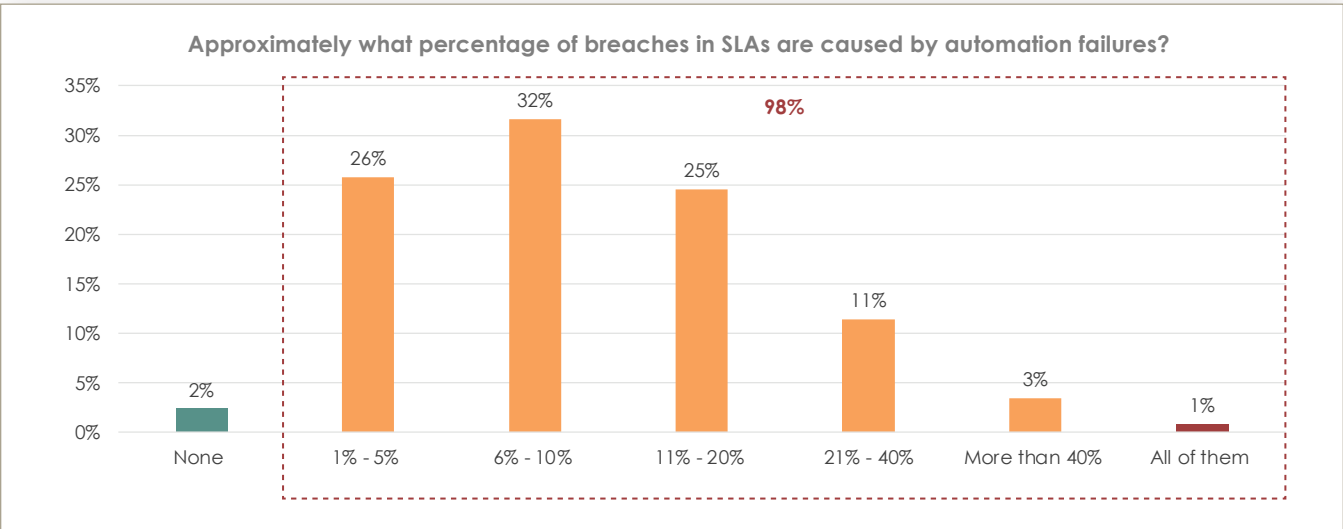
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Detailed Findings
Automation Issues Drive Breaches in SLAs

Automation is often the unseen enabler of business updating inventory, implementing shipping routes and logistics, reporting key sales and tax data, and ensuring compliance. Service Level Agreements (SLAs), long a staple in IT, ensure key infrastructure and applications are up and running to the service levels, the business, and its customers expect. However, 98% reported that automation issues can directly result in SLA breaches.

Approximately what percentage of breaches in SLAs are caused by automation failures?

Category	Value
None	2%
1% - 5%	26%
6% - 10%	32%
11% - 20%	25%
21% - 40%	11%
More than 40%	3%
All of them	1%

98%

"Yes, absolutely workload automation failures directly contribute to missing some of our SLAs."
- IT Manager Ops, Retail

"Automation really isn't sexy like a store purchase, but it makes the business run fulfilling orders, restocking inventory, collecting payments, and capturing compliance information."
- IT Manager Ops, Retail

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SLA Breaches are a Monthly Occurrence for Most Companies

For many companies, SLAs evolved from simple 'speeds and feeds' to uptime and availability and then progressed to direct business-oriented SLAs, such as purchase transaction latency, account retrieval time, and submitting tax or compliance reports by a specific time each day. It was shocking then to discover that 61% have a SLA breach monthly, and even worse, 35% have them weekly or more often. With such a direct relation to business this means that business is suffering on a regular basis, delivering a poor customer experience, creating inefficiencies, or incurring penalties.

How frequently do breaches in SLAs occur at your organization?

	61%				
Daily 6%	Weekly 29%	Monthly 26%	Quarterly 22%	Once a year or less 16%	Never 1%
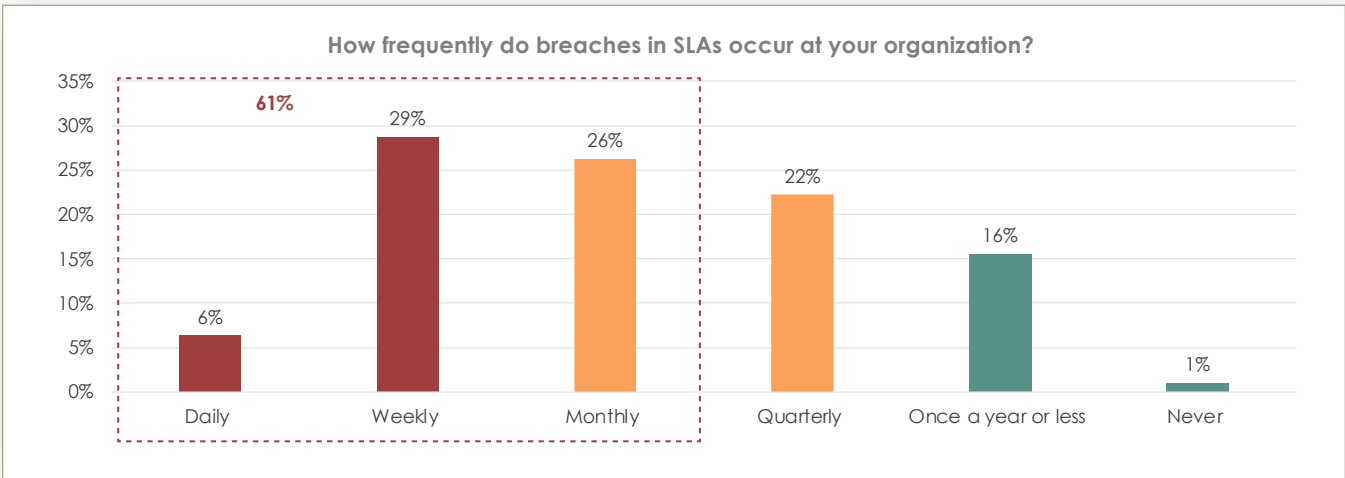
> "Automation jobs are absolutely critical to our business remaining complaint and meeting regulatory requirements. Violations from missing deadline can cost millions."
>
> *- SVP Technology, Financial Services*

> "We have SLAs breaches because we don't have enough visibility or warning to do something to prevent it. It isn't always due to bad IT practices. For example, a new application was released that was buggy which caused another system to go down. It wasn't IT's fault but we still have a missed SLA."   *- IT Director, Financial Services*

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SLA Breaches Most Commonly Impact Customers

In fact, the research asked participants to indicate the impact of a breached SLA on various business areas. The top business area affected was customers, for which 88% indicated SLA breaches directly impacted customers in a significant way. SLAs are no longer just a set of metrics for IT operations but are thresholds that need to be achieved to ensure business success.

Please indicate the magnitude of the impact to customer satisfaction when a breach of an SLA occurs.

	Legend
	Very high
	High
	Medium
	Low
	None

Customer satisfaction: 19% Very high, 40% High, 29% Medium, 11% Low, 1% None — **88%**
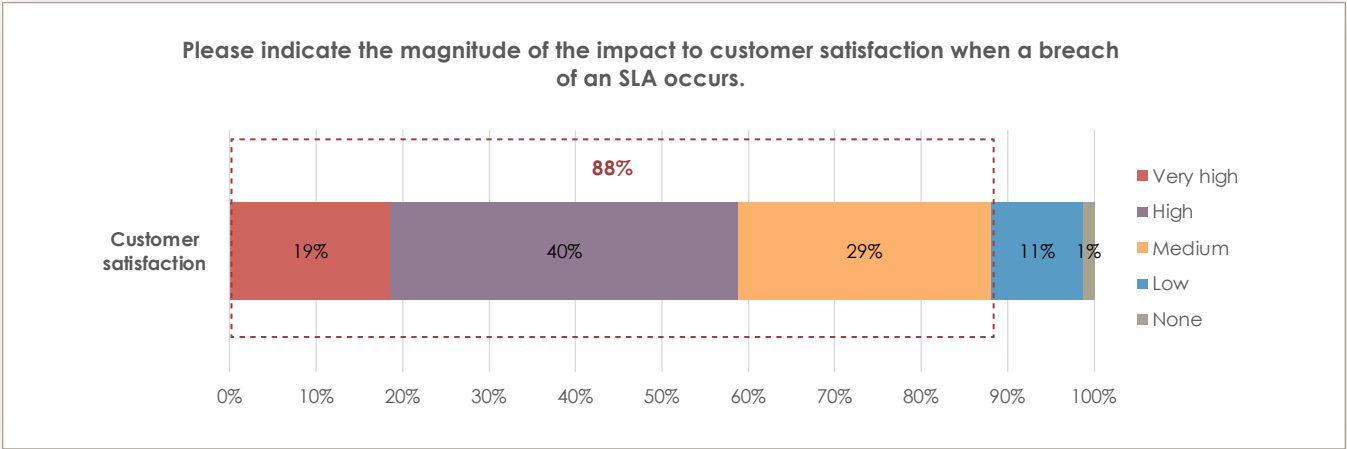
> "There is a heightened focus on the customer, and all of the applications and services that face the customer have SLAs, so if they [SLAs] are breached the customer is feeling it."
> *- CIO, Technology*

> "Most of our critical systems have SLAs -- they run our business. So, if we are missing SLAs it impacts operations and our customers, such as delayed product delivery."
> *- IT Architect, Manufacturing*

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Multiple Automation Platforms Often Used

Correlating the direct impact of the SLAs and automation on the business, the research then sought to understand the tools teams were using to manage workload automation. Participants shared that 80% of companies are using 3 or more tools and 27% use 6 or more. When participants were asked why there were so many tools, they provided a myriad of answers, such as different applications or different environments required different capabilities, team preference, mergers and acquisitions, unique features, and many more. However, during discussions with participants, none of this tool sprawl is by design and nearly every organization wanted to have fewer tools. But ironically the selection, replacement, and integration require the same resources that are currently fighting issues often caused by too many tools.

Approximately, how many different automation platforms and tools is your organization currently using to cover all environments and applications?

Category	Percentage
1	4%
2	16%
3 – 5	53%
6 – 10	14%
More than 10	13%

(80% bracket covers 3 – 5, 6 – 10, and More than 10)
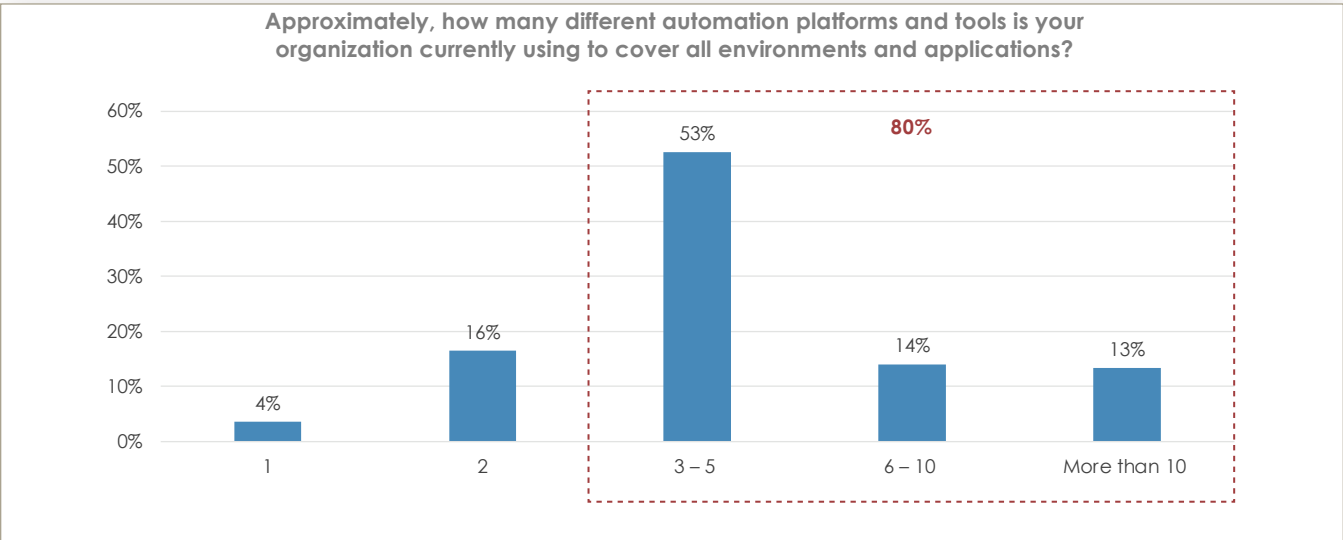
> "We use a lot of automation tools and it's not ideal. Some applications or platforms necessitate specific tools, or there is a tool preference by some teams, as well as mergers and acquisitions. It does cause issues and is a hard problem to solve."
>
> *- IT Architect, Healthcare*

> "We are on a preferred tool path for new products which helps us fade out older tools organically. A wholesale changeout isn't an option. We have too many new business needs to direct resources to tool optimization." *- IT Architect, Manufacturing*

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Case-by-Case Implementation Yields Numerous Observability Tools

IT and automation professionals were asked how many observability and monitoring tools were used in their organization. Similar to findings for automation tools, 74% shared they used 3 or more, 24% rely on 6 or more. Most organizations indicated the numerous observability tools was not part of a strategic plan, but often a new tool is purchased to support a specific application, process, or environment. Numerous tools also tend to create data silos or too much redundant information. Participants indicate that these many tools also drive a lot of costs and inefficiencies as the tools require maintenance, paid support, and user expertise. Many times, solving a complex IT and automation problem means many tools are accessed, but there are few individuals that are skilled enough to use all the different tools.

Approximately, how many different observability and monitoring tools is your organization currently using to cover all environments and applications?

Category	Percentage
1	4%
2	22%
3 – 5	50%
6 – 10	15%
More than 10	9%

74% (3 or more)
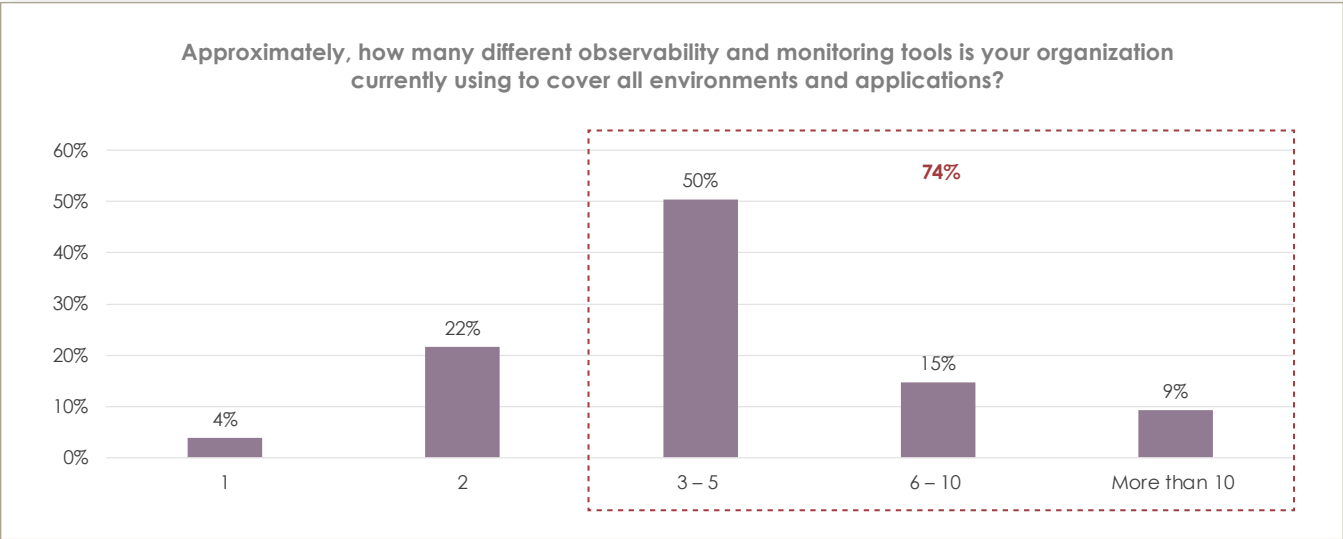
"A lack of integration certainly slows things down as it generates a lot of manual tasks to find and access the right data."
- IT Architect, Healthcare

"It would be very valuable to have automation, monitoring, and observability tied in with a collaboration solution. For really serious issues, it would speed up resolution with increased visibility and information sharing."
- CTO, Healthcare

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"Alert Storms" Obscure Root Cause and Delay Restoration

Perhaps a predictable consequence of so many monitoring and observability tools are the "alert storms" or "cascading alerts" in which different systems are reporting the same issue and generating numerous alerts. In fact, 74% of participants admitted that all the alerts actually make it more difficult to resolve the situation. They mentioned that with so much uncorrelated information it is hard to know if all the alerts relate to one issue or which alert is the one that indicates the issue that started the situation. IT professionals stated that while it may be counterintuitive, too many systems and too much information actually increases the MTTR (mean time to restore). Only one company indicated they have an automated process that collects and correlates all related alerts in a single location.

Does your organization's team receive numerous alerts (alert storms) that make it difficult to identify the root cause of an automation issue?

No, our tool clearly shows which alert happened first and caused subsequent alerts
26%

Yes, we get numerous alerts at the same time which makes finding the root cause difficult
74%
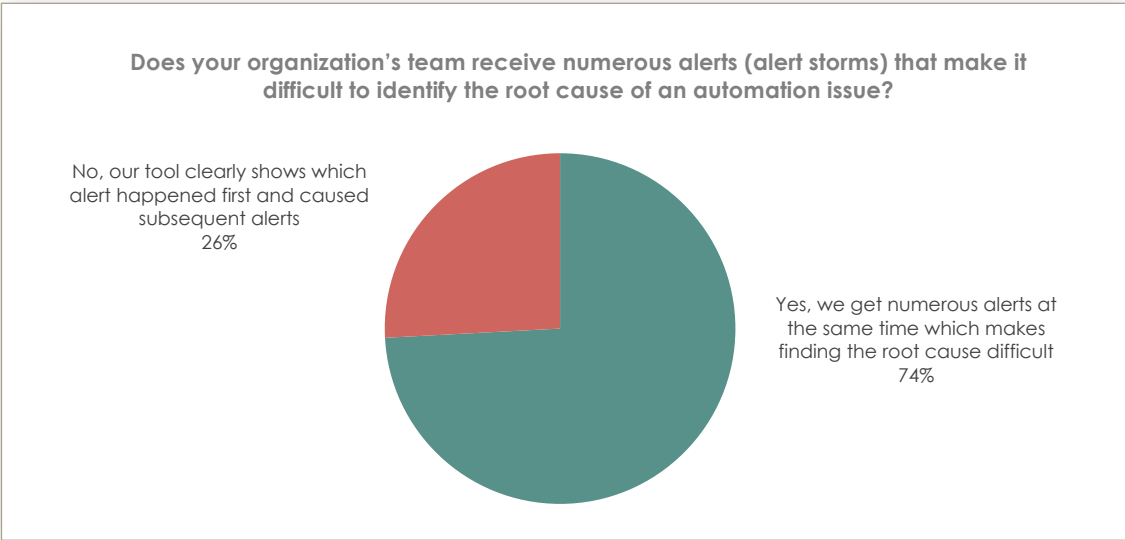
> "Yes, some events create a flurry of alerts. It can take our team a few hours to determine what started it all. But in general, our team is experienced and has seen this before and knows what to do."
> - *IT Director, Technology*

> "We assign our alerts based on applications, so if 10 alerts go off and they are related they get filed as 10 events on a single ticket."   - *SVP Technology, Financial Services*

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Lack of End-to-End Visibility

With so many observability and automation tools deployed, often for specific application or automation requirements, it was unexpected that 74% reported that their organization doesn't have end-to-end visibility for their automation jobs. Nearly at the same magnitude, 67% of professionals indicated they don't have end-to-end visibility for automated processes across all workload automation environments. In fact, during the interviews many indicated they only know that an automation job has issues when they receive an alert that the job failed, which begins a manual root cause identification process.

Does your organization have complete end-to-end visibility (start, progress status, completion, verification) for each automation job that is executed?

No, none of our automation jobs
7%

Yes, all automation jobs
26%

74%

No, but some of our jobs have
end-to-end visibility
67%

Does your organization have complete end-to-end visibility for automated processes (batches, streams, process flows, etc.) across all environments (public cloud, private cloud, legacy, etc.)?

No, we don't have end-to-end visibility for any automated process in any environments
8%

Yes, for all automated
process in all environments
33%

67%

No, we only have end-to-end
visibility for some automated
processes in some environments
59%

> "We don't have real-time visibility into automation jobs and our systems aren't integrated. When an issue occurs the team has to manually open up different tools, or grep logs, and piece together what happened. It's worse if an automation job spans the public cloud and on-prem resources."
>
> *- IT Architect, Manufacturing*

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Little Knowledge of Downstream Effects of Automation Issues

Many times, alerts are tied to a specific process, function, or automation job such as an inventory update, or completing a transaction. The research investigated whether those alerts also indicated the downstream effect of that issue, such as the customer being unable to retrieve their account information, orders being suspended, delayed product shipping, or the inability to submit a compliance report. More than half (56%) are completely blind to the downstream effects of an initial alert and do not inform response teams which systems, jobs, applications, and business processes are affected. In discussions with IT and automation professionals, issue resolution relied on personal experience to know which systems are likely affected. Many acknowledge that if that key person is sick or leaves the company and a complex issue occurs, the business would suffer.

At your organization, when an alert for an automation issue occurs, does it indicate the downstream impact of the issue?

We don't have a solution that alerts for automation issues
4%

56%

No, it just indicates the current issue
52%

Yes, it provides the downstream effects (affected applications, impact to automated business process, etc.)
44%
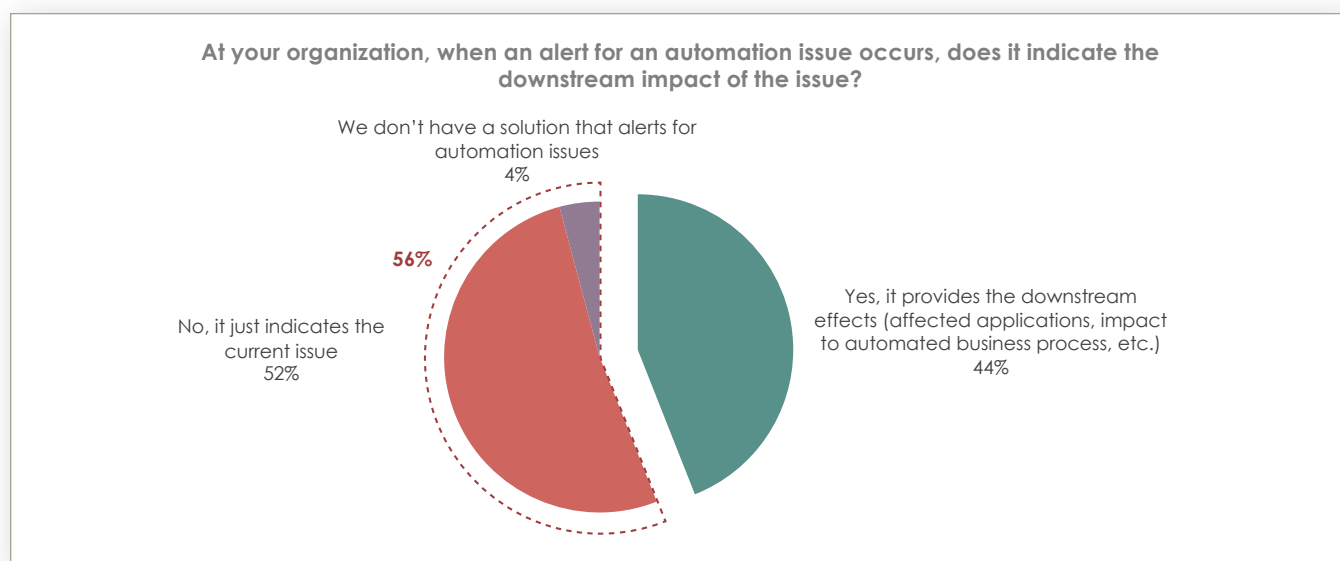
> "No, none of our alerts indicate a downstream impact. We rely on our response team - they often know what has happened and what systems will be impacted."
>
> *- IT Manager Ops, Retail*

> "Nearly all our processes and automation jobs use names or codes that most in IT understand. It's not directly obvious how they're linked to specific applications or services. It is something that is just learned and takes time."   *- IT Manager Ops, Retail*

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No Ability to Prioritize Issues Based on SLA Impact

Based on the previous findings that most are blind to the downstream effects of an alert, it is not surprising that 68% have no idea if a current alert will result in an SLA breach. Thus, with numerous monitoring and observability systems, when an alert occurs the multitude of tools often fail to definitively indicate what system is or will be affected and if that will result in a breach of an SLA. For nearly every company interviewed they revealed that understanding the impact of an alert is reliant on personnel experience and interpretation. This should be concerning for any IT or business leader.

If a delay occurs in an automated job stream, does your organization have tools that predict if that delay will result in breaching an SLA?

We don't use SLAs
4%

No, we don't have a tool that predicts automation job delays
24%

68%

Yes, we are immediately notified if an automation job delay will cause a breach of an SLA
32%

No, we are notified of automation job delays, but it doesn't predict if it will cause a breach of an SLA
40%

> "A small automation job that doesn't execute properly often has downstream business effects, but it is hard to know if that will affect an SLA."
>
> *- IT Architect, Manufacturing*

> "If we get an alert, we rely on our team's experience to know which application is likely affected and assign a priority response level. We know which are the critical applications and which have SLAs. So knowing a critical application is being affected is a proxy for a possible SLA issue."
>
> *- IT Architect, Manufacturing*

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Few Can Predict or Prevent Automation Issues

In the preceding discussions we found nearly all tools in use today are unable to indicate the downstream effects of an issue or whether it will impact an SLA, and that information is often reliant on personnel experience. But can these monitoring and observability solutions help predict and prevent issues in the first place and thereby forestall any business impact? Unfortunately for most the answer is no, with only 28% having tools with predictive trending and threshold alerting to enable the prevention of automation problems. Those interviewed indicate this inability to predict and prevent issues is a combination of tool issues, such as missing capabilities, difficult to use, and lack of integration. Participants also indicated that insufficient skills and experience are also a problem as teams lack the ability to properly configure available tool functionality.

Do the tools used to observe and monitor automation tasks provide comprehensive predictive trends to help prevent automation problems?

We don't have tools to observe or monitor automation tasks
1%

No, they don't provide any predictive trends
28%

No, the predictive trends are limited
43%

Yes, they provide comprehensive predictive trends
28%
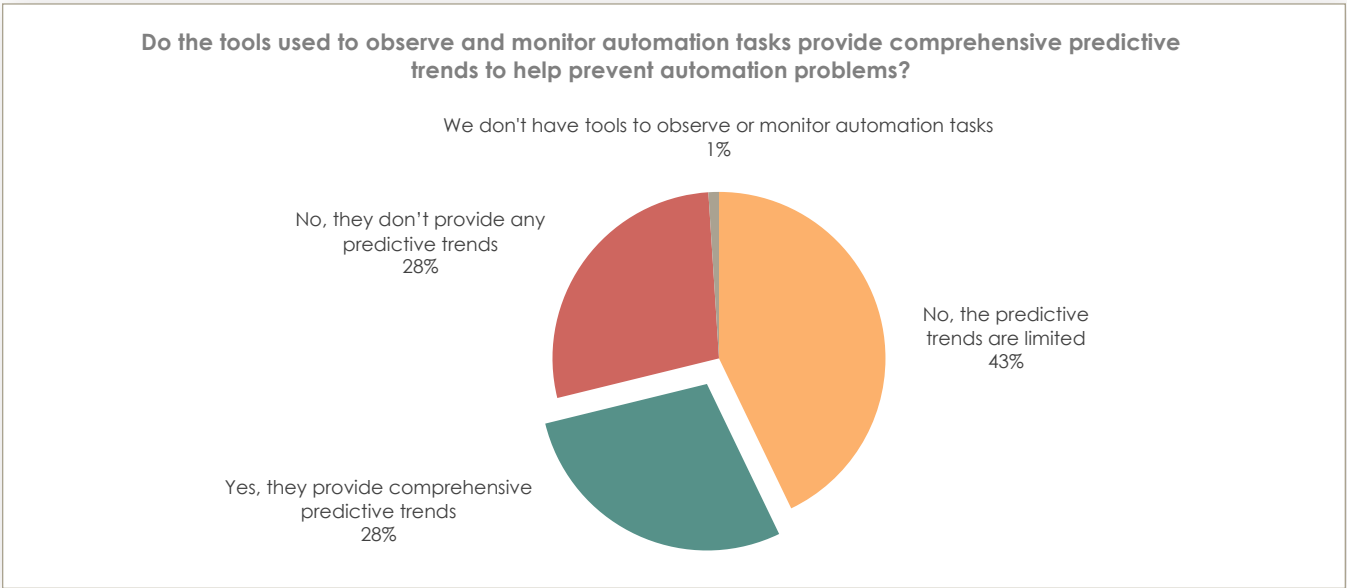
> "Typically, when we get an alert, something has already happened, so it isn't a warning, and it is obvious what is being impacted. On the infrastructure side, we get threshold alerts, but we don't always know the exact application or process affected so the team has to figure it out."
> *- IT Director, Technology*

> "No, we can't proactively tell stakeholders something is about to happen. We just don't have that information or capability."
> *- CTO, Healthcare*

> "We wish we had more sophisticated tools to predict and prevent automation jobs issues. Right now, the automation just checks to ensure there are no infrastructure alerts or warnings on the intended system prior to execution."   *- SVP Technology, Financial Services*

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Most Can't Simulate Workload to Ensure SLA Adherence

Conceptually a newer area for automation and IT teams is the ability to simulate workloads and their performance. Ideally a team would be able to simulate a workload and ensure that its operation will meet all IT- and business-related requirements as well as applicable SLAs before it is deployed. Yet, 61% of those organizations surveyed lack the ability to simulate potential workload additions or changes before deployment. Thus, most organizations take on the business and customer risks that a new or updated automation job will run as expected.

Does your organization have tools that can simulate automation workloads to validate key metrics (performance, reliability, etc.) and SLAs will be met?

- We don't track key metrics or SLAs — 2%
- No, we don't have tools that simulate workloads — 26%
- No, we can simulate automation workloads, but it does not provide projected key metrics or SLAs adherence — 33%
- Yes, we can simulate automation workloads to validate key metrics and SLAs can be met — 39%
- 61%

> "Heck, yeah, people would love to know if an issue would possibly result in an SLA breach. Most of our Ops teams have bonuses based on meeting SLAs. It would drive the right behavior."
> — *CIO, Technology*

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Most Workloads Are Unoptimized, Driving Costs into the Business

When adoption of the public cloud first started, the primary advantage was to only pay for what was needed at the time. This was supposed to reduce equipment costs, time spent racking and cabling, energy used for cooling, and maintenance costs. More than 10 years later, 69% report that they don't have the tools to properly right-size and optimize their environments for the intended workloads. Participants stated they regularly use larger than needed resources 'just in case' as a standard operating procedure and thus costing the business unnecessarily. When asked why they don't properly size resources it was explained that it is a difficult process, and most team members don't have the knowledge, experience, or time to do it.

Does your organization's observability and monitoring tools provide the necessary data to optimize workload resources for each environment (public cloud, private cloud, on-premises, etc.)?

No, we lack necessary data for all workloads in any environment
8%

69%

Yes, for all workloads in all environments
31%

No, but we have the necessary data for some workloads in some environments
61%

"Yes, we really don't have the tools or experience to efficiently right-size resources. It drives wastes and costs in IT and the business ultimately."
                                                                        - IT Director, Technology

Conclusion

The business and IT have set up SLAs to provide a minimum standard for customers and ensure profitable and competitive operation of the business. But the fact is most IT shops today are blind and reactive to alerts that pop up from their many monitoring and observability solutions. When those alerts occur, it commonly generates numerous other alerts, obscuring the root cause and leading to longer time to resolution. And restoration is often entirely dependent on a few IT veterans to know what systems, business processes, and application will be affected, and whether an SLA is possibly in jeopardy.

The research data clearly shows that most companies' ad-hoc approach to monitoring and observability specifically for automated business processes is subjecting the business to unnecessary risk. Companies need fewer solutions and ones that provide end-to-end visibility across all environments and all automated business processes. Monitoring and observability solutions need to correlate the events so resolution teams have all the data in once place, and those tools need to identify which systems, applications, and SLAs are being affected. These more advanced tools move the discussion from just IT systems and code-named automation jobs to which business process and SLAs are being affected, thus providing critical information that business stakeholders can understand.

Additionally, IT and automation teams want to be proactive. They want a warning before something happens, and that warning needs to be understood by all IT and resolution personnel, not just the highly experienced IT veterans. The proactive approach includes the ability to simulate new automation jobs and changes that have an impact on the system, the customer, and the business and therefore ensures key operating SLAs are met.

While systems and environments are more complicated today than 10 years ago, we should not be operating with the tools and the reactive approaches that we did 10 years ago. Throwing more tools at the problem is actually making it worse. Companies need to find and deploy the right tools and move from reactive problem resolution that relies entirely on experience and move to tools that provide end-to-end visibility and can predict events, downstream effects, and SLA impacts before they occur. The business would agree.

Survey Methodology

Executives and team members for automation and observability at companies of all sizes representing all seniority levels were invited to participate in a survey on their automation tools and practices. Eight technology leaders from the survey were invited to participate in in-depth interviews to discuss their survey answers and provide deeper insights into the findings.

A total of **501 qualified participants** completed the survey. All participants had direct responsibilities for automation and/or observability. Participants were from five continents representing a global perspective. The survey was administered electronically, and participants were offered token compensation for their participation.
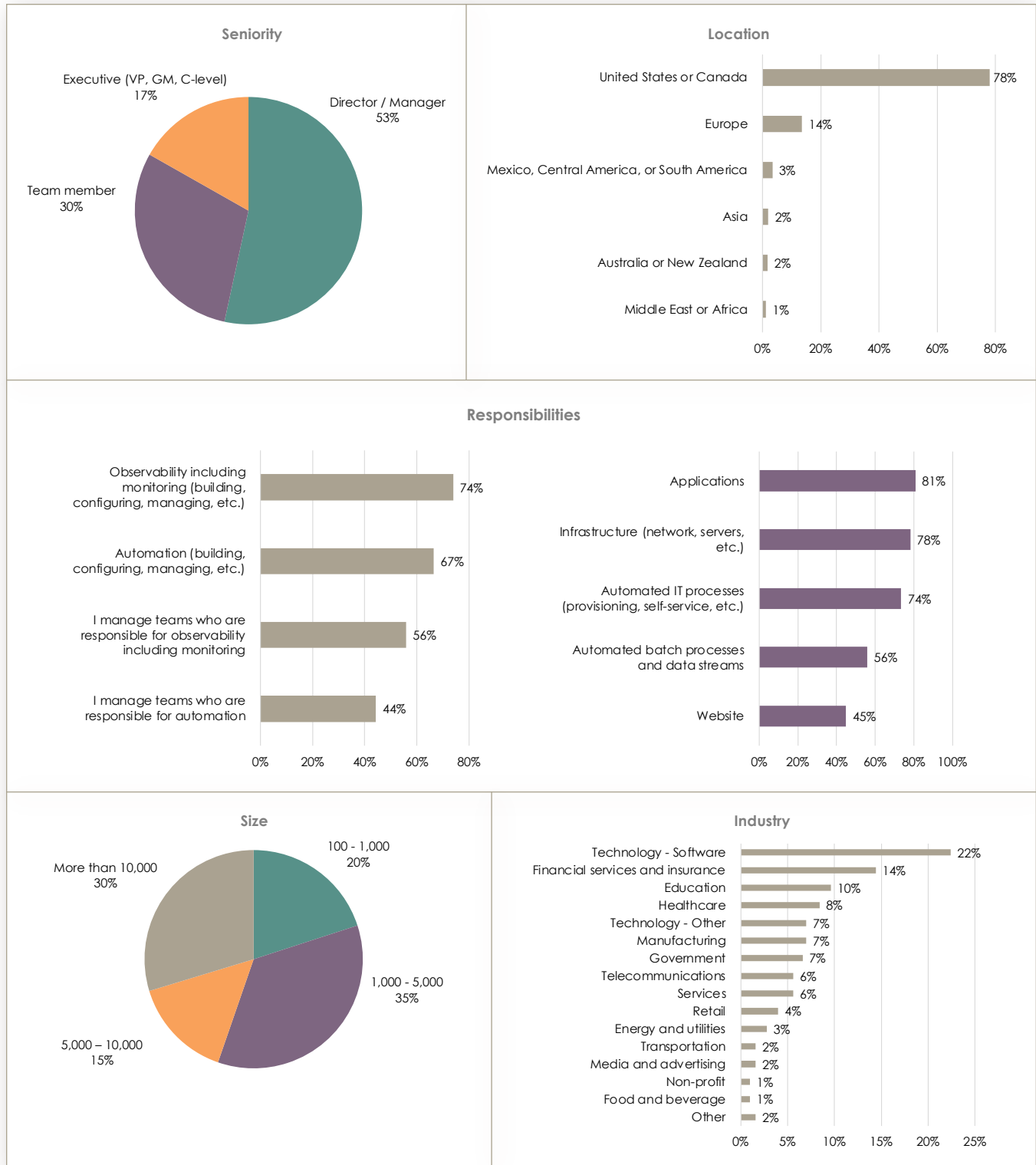
Participant quotes were lightly edited for grammar, readability, and context.

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Seniority

- Executive (VP, GM, C-level) 17%
- Director / Manager 53%
- Team member 30%

Location

- United States or Canada — 78%
- Europe — 14%
- Mexico, Central America, or South America — 3%
- Asia — 2%
- Australia or New Zealand — 2%
- Middle East or Africa — 1%

Responsibilities

- Observability including monitoring (building, configuring, managing, etc.) — 74%
- Automation (building, configuring, managing, etc.) — 67%
- I manage teams who are responsible for observability including monitoring — 56%
- I manage teams who are responsible for automation — 44%

- Applications — 81%
- Infrastructure (network, servers, etc.) — 78%
- Automated IT processes (provisioning, self-service, etc.) — 74%
- Automated batch processes and data streams — 56%
- Website — 45%

Size

- 100 - 1,000 20%
- More than 10,000 30%
- 1,000 - 5,000 35%
- 5,000 – 10,000 15%

Industry

- Technology - Software — 22%
- Financial services and insurance — 14%
- Education — 10%
- Healthcare — 8%
- Technology - Other — 7%
- Manufacturing — 7%
- Government — 7%
- Telecommunications — 6%
- Services — 6%
- Retail — 4%
- Energy and utilities — 3%
- Transportation — 2%
- Media and advertising — 2%
- Non-profit — 1%
- Food and beverage — 1%
- Other — 2%

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Automation Types In Use

Automation Type	Percentage
Application (deployment, scaling, etc.)	84%
Infrastructure (provisioning, configuration, DR etc.)	82%
User (access management, IT service requests, user provisioning, etc.)	79%
Batch process and data streaming (data, analytics, etc.)	71%
None of the above	1%

Interview Participants

Industries Represented		Participant Titles	
Financial Services	2	SVP Technology	1
Technology	2	IT Architect	2
Healthcare	2	IT Director	2
Manufacturing	1	CTO	2
Retail	1	IT Ops Manager	1

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