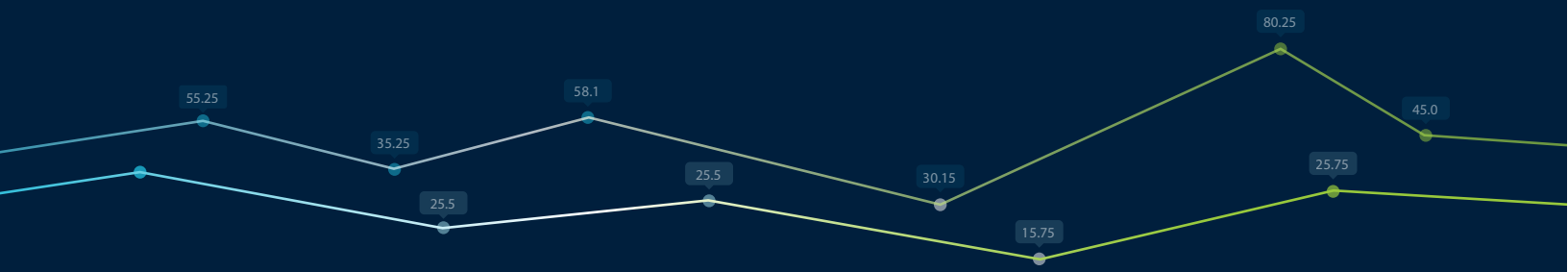
xMatters Atlassian DevOps Maturity

SURVEY REPORT

2017



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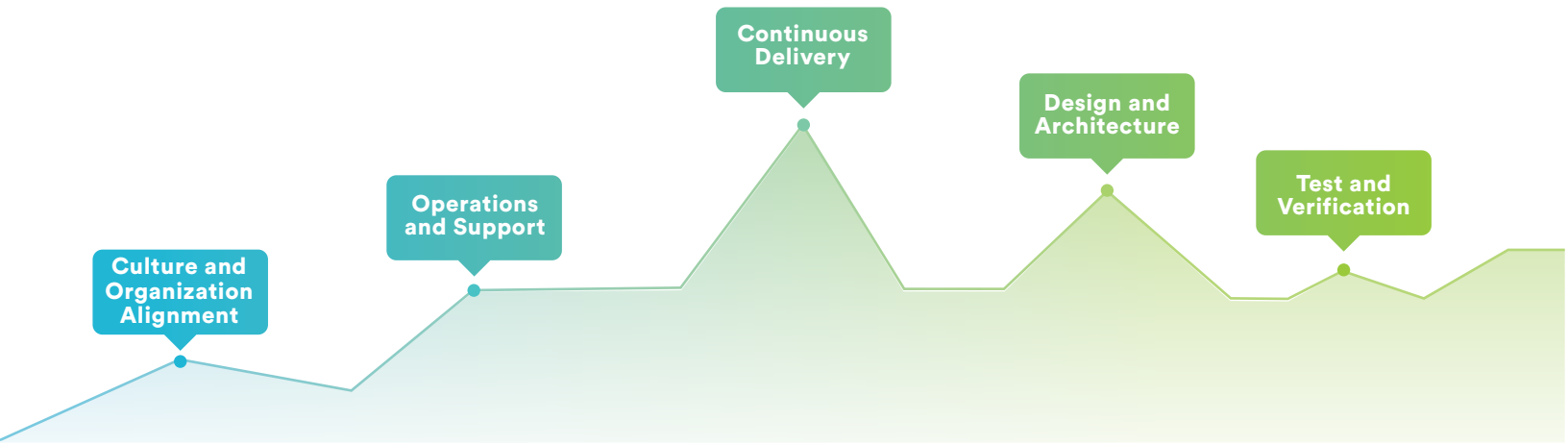
Introduction

When we started asking businesses about the maturity of their DevOps processes, we had to first agree on what makes one organization a hack and another an expert.

So we developed a maturity model that we could use to measure our survey results, with five DevOps categories that assess adoption:



Here's a simplified look at our model:

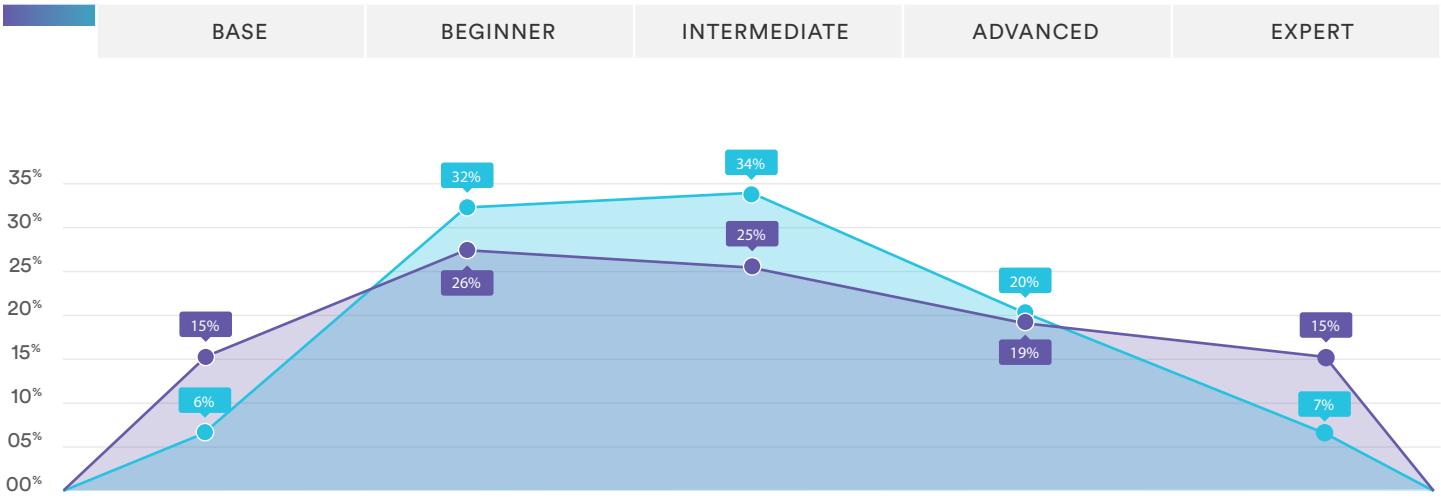
	BASE	BEGINNER	INTERMEDIATE	ADVANCED	EXPERT
CULTURE AND ALIGNMENT	Siloed roles	Planning cultural change	Implementing cultural change	Removing boundaries	Sharing tools
OPERATIONS AND SUPPORT	Customers report incidents	Static on-call schedules	Auto-routing alerts	Communications across toolchains	Integrated issue tracking tools
CONTINUOUS DELIVERY	Code to prod every 6 months	Code to prod monthly	Rolling updates	Feature branch development	Trunk-based development
DESIGN AND ARCHITECTURE	Undefined platforms	Standardized platforms	Configuration as code	Performance scale testing	Infrastructure as code
TEST AND VERIFICATION	Manual tests	Automatic integration tests	Automated deployment	Automatic acceptance tests	Experiments in production

Initial Self-Assessment vs. Survey Evaluation

Before taking the survey, respondents were asked to evaluate the maturity of their organization's DevOps initiatives. Most identified themselves as beginner, intermediate, or advanced.

As it turned out, nearly twice as many respondents received a base or expert rating after completing the survey than in the initial self-assessment. And fewer ranked as beginner, intermediate, or advanced after answering questions than in their pre-survey evaluations. This tells us that many businesses don't really know where they are in their Devops journey.

Blue: *Pre-Assessment* ***Purple:*** *Survey Results*



Since we mapped each question to one of the five categories in the maturity model, people received a category score as well as an overall score by completing the survey. We found that they are most mature in culture and organization alignment and least mature in design and architecture.

With this information for context, let's dig into the results. Here are a few major themes that revealed themselves through the results of our survey. As you read this report, consider how these results relate to your DevOps processes.

Here's how people rated in our survey by category.

	BASE	BEGINNER	INTERMEDIATE	ADVANCED	EXPERT
CULTURE AND ALIGNMENT	5.5%	21.6%	18.6%	**29%**	25.2%
OPERATIONS AND SUPPORT	14.4%	18.6%	**25.6%**	21.2%	20.2%
CONTINUOUS DELIVERY	20.5%	22.4%	**29.5%**	16.7%	11.8%
DESIGN AND ARCHITECTURE	23.2%	**28%**	21.0%	17.0%	11.2%
TEST AND VERIFICATION	10.9%	**37.6%**	29.9%	13.3%	8.4%

THEME 1

Culture First

Companies have got DevOps culture down. They are overwhelmingly sharing tools, and they are making strides toward open knowledge-sharing.

Why? Put simply, culture came first.

When DevOps became a thing during the late 2000s, early proponents and adopters urged companies to address culture and processes before thinking about tools or systems. Even in the early days, when few of us knew what DevOps was, experts tried to explain that it's a way of doing business. Adoption of tools to enable DevOps processes came later. So the first theory is that companies have been practicing culture longer and therefore are more cognizant of it and better at it.

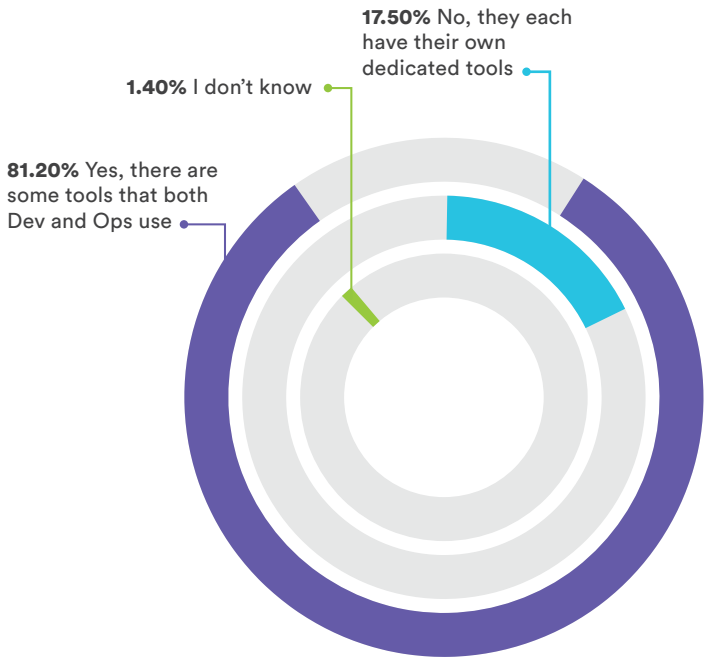
Here are a few results that highlight the hits and a few misses that reared their heads in our survey.

Culture Hits – Tool sharing

More than 80% of respondents say development and operations share at least some tools. This landed our aggregate survey responders in the **advanced** level.

Development and operations groups do share information generated from common tools, but with limited access. This landed our responders as a group in the **advanced** level as well.

Do those with development and operations responsibilities share tools?



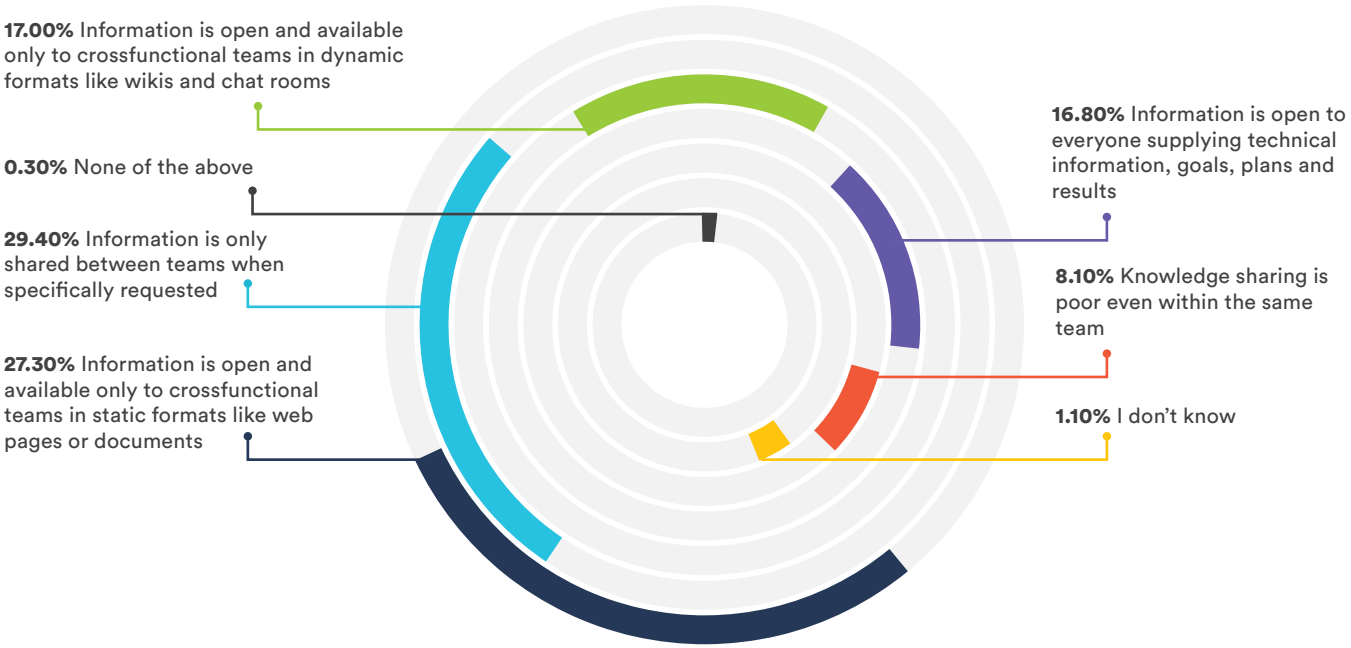
Value	Percent	Responses
Yes, there are some tools that both Dev and Ops use	81.2%	831
No, they each have their own dedicated tools	17.5%	179
I don't know	1.4%	14
	Total: 1,024	

Culture Misses – Information flow

While development and operations teams share knowledge when requested, it is not consistently made open and accessible in a dynamic format. Because of this, the majority of responders landed in the **beginner** level.

How would you describe knowledge sharing between the company's develepment and IT teams?

Select the answer that best applies.



THEME 2

Companies Monitor Everything

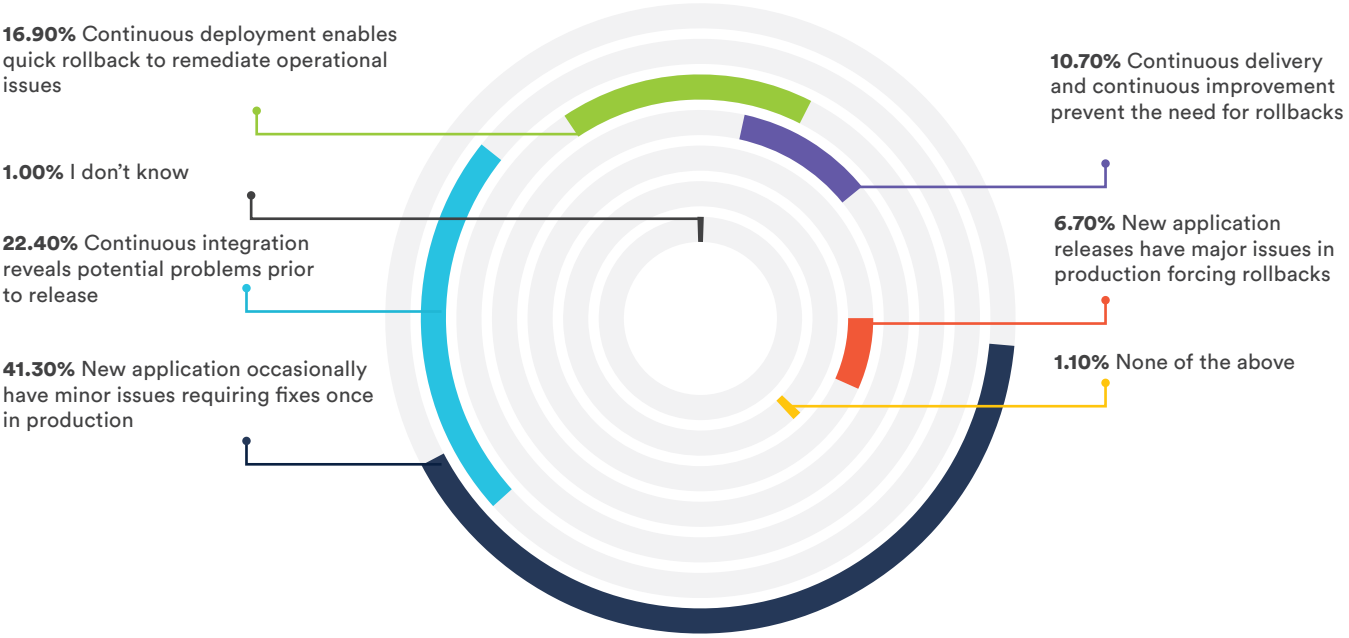
We asked companies whether they monitor any or all of four different business elements: infrastructure, applications and services, transactions, or user experience. All four areas are monitored by at least half of the surveyed companies, and two of them are monitored by more than 75% of companies. But as organizations grapple with how to prioritize the resulting data, code issues continue to reach production.

The good news is that all testing activity in our survey except hostile environment testing and duplicating transactions from production environments to test environments generated a majority response. Only 7% of organizations in our survey report major issues in production that cause them to roll back a release.

But it's not all a bed of roses. 41% of respondents say they do have to fix minor issues in production. Now that DevOps practices are beginning to mature, better incident response should follow. Automated testing has become one of the foundational tenets of DevOps, which should lead to fewer incidents and better ability to respond.

In general, how do applications perform once released into production?

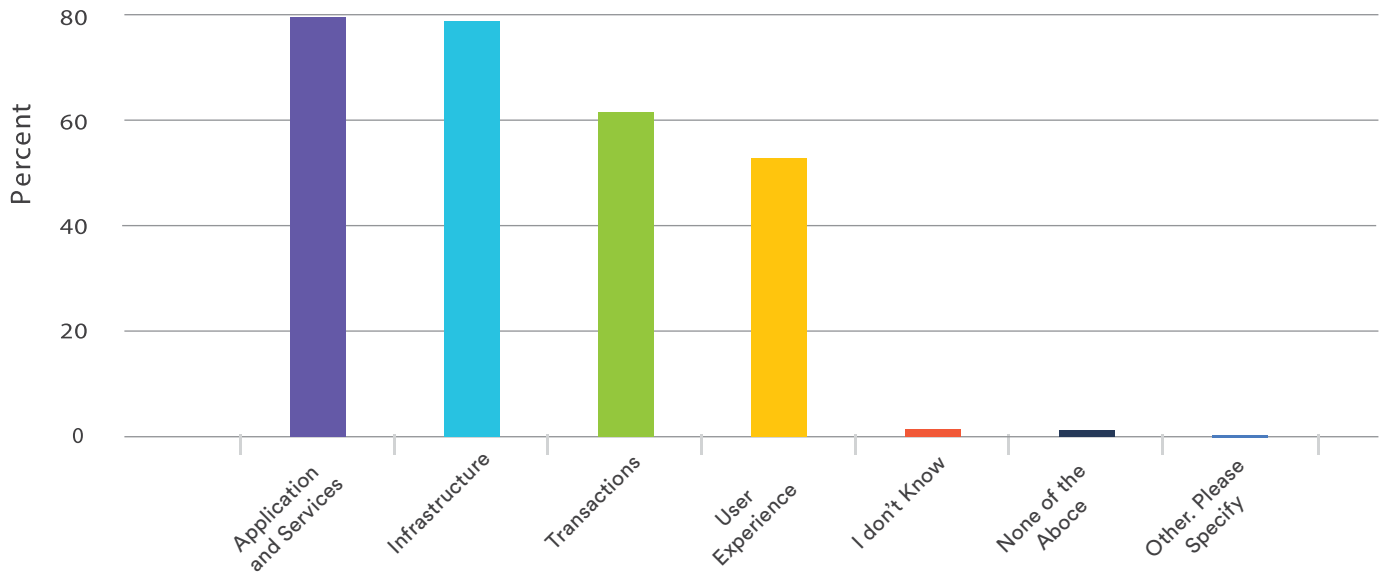
Select the answer that best applies.



If so many organizations monitor infrastructure, applications, and services, why do 50% of respondents report issues in production after code release? Part of the problem may be that fewer companies (61%) monitor transactions and still fewer (51%) monitor user experience issues. Another could be that barely half practice automated testing during their QA and testing processes.

Which of the following can your company monitor today?

Select the answer that best applies.



Value	Percent	Responses
Application and services	76.9%	774
Infrastructure	76.1%	766
Transactions	59.4%	598
User experience	50.9%	513

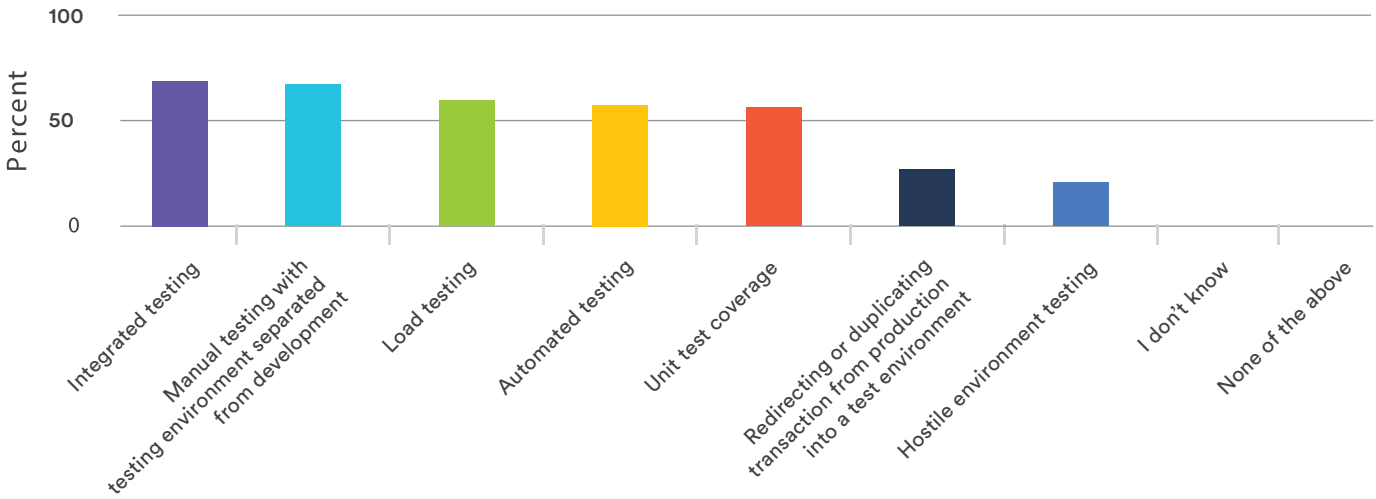
Value	Percent	Responses
I don't know	1.6%	16
None of the above	1.1%	11
Other. Please specify:	0.5%	5

Respondents overwhelmingly monitor infrastructure, and applications and services, and transactions. The responses were impressive enough to merit an advanced rating for the question. Nearly 2/3 of respondents say their monitoring solutions predict potential issues before users are affected.

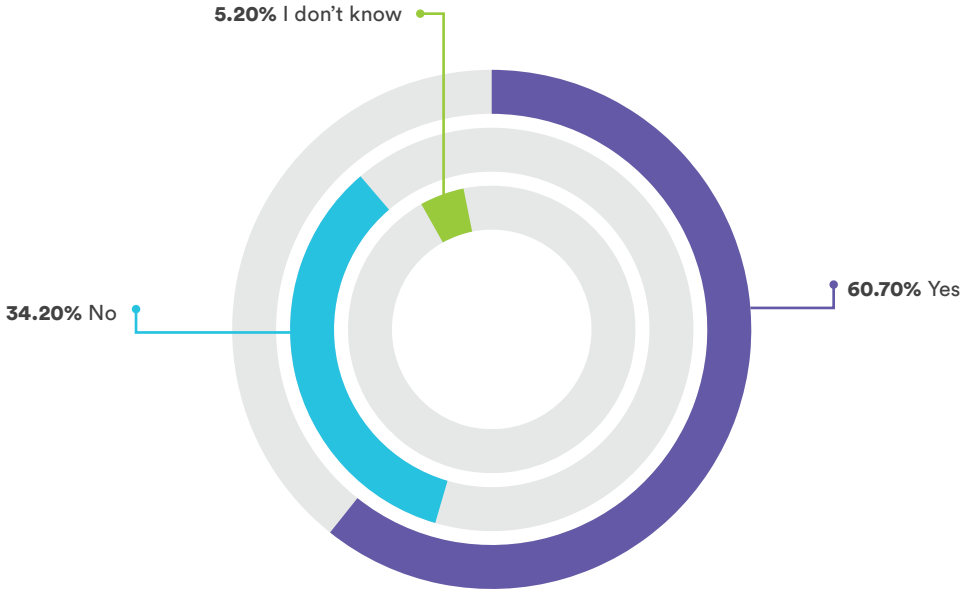
So companies monitor everything. But should they? It would seem that without automated testing practices in place, monitoring services will continue finding issues with code that's not been fully stress-tested. This can have significant consequences during high stakes major incident management. The next theme delves into this topic.

Which of the following occurs during your QA testing process?

Select the answer that best applies.



Do your monitoring solutions predict potential issues before users are affected?



Value	Percent	Responses
Yes	60.7%	611
No	34.2%	344
I don't know	5.2%	52

Total: 1,007

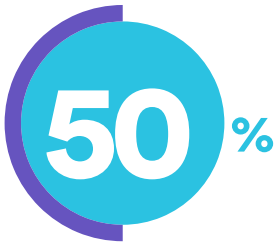
THEME 3

Major Incident Responses Lack Consistency

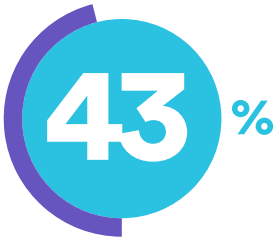
Incident prevention and rapid response is easily the cornerstone of a mature DevOps operation. But when the servers are on fire, many companies are stuck waiting on dependencies and getting bogged down in the process.

All the monitoring services available provide plenty of relevant and actionable data to apply to incident management. In addition, survey results show that companies are testing across their processes. In fact, more than half of the respondents perform five of the seven testing activities in our survey.

Half of the responses indicate that the tools, processes, and steps vary from incident to incident. Other data points didn't exactly either scream best practice either:



Wait for the operations center to declare a major incident



Use manual process to keep customers and internal stakeholders up to date

Say waiting for subject matter experts delays incident resolution

Say duplicate tickets are created while the incident is being resolved

Say tickets are routed without proper assignments and must often be rerouted

So companies in our survey rated **beginner** for a number of actions that have to occur during major incident management due to a lack of automation and defined process. They rated **advanced** for how they route incidents and alerts, leaving them as intermediate for the major incident category overall.

So why haven't companies improved more in major incident management? We have a few theories.

1

Too Much Data

If companies are truly monitoring virtually everything and trying to use it all, they may get to an incident and find a firehose of data gushing at them. Connecting dots and figuring out a fix can be extremely difficult.

2

Conflicting Data

According to our survey, 61% of companies say monitoring predicts issues before they affect customers. But nearly 1/3 of companies learn about service interruptions from their customers.

3

Communication

Those with development and operations roles overwhelmingly share tools and information. However, when development and IT teams share knowledge only upon request, and in static formats that aren't real-time, knowledge doesn't truly spread across the organization.

Without automated data handoffs between systems and ChatOps tools containing unstructured data that hinders accessibility, companies collect information repositories that are too overwhelming to be useful.

A Couple of Other Notes

CI/CD: Companies say they deploy code every few months, which probably means quarterly. They release code to their customers several times a year. It's more frequent than the semiannual gigantic releases of yesteryear, but still not the more frequent and smaller releases associate with a DevOps culture. Despite improvements in culture and organization alignment, 20% still use waterfall methodologies. Another 20% are using experimental methods, showing that companies are all over the board.

Design and Architecture: In keeping with cultural improvements, nearly 75% of companies use agile teams, and 15% use lean practices. But 2/3 still use manual configurations when managing and deploying infrastructure. Automated configuration processes would help ensure consistency, reduce risk, and leave more time that could be used for optimization and innovation.

CONCLUSION

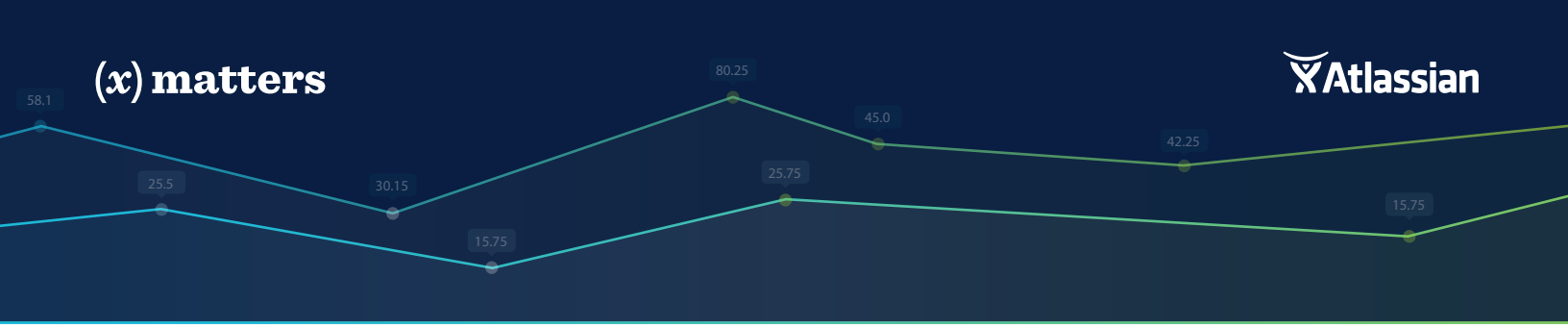
The DevOps Gap

Companies are aware of the benefits of DevOps practices, and have largely laid the groundwork in culture and organization. Development and operations teams share tools and information, but companies have been slow to move forward with their implementations. These companies need to address the gap between a ready culture and lagging functions.

Even with these challenges, 65% of our survey respondents reported that their DevOps initiatives are producing the benefits they expected to see. Which is great news. These DevOps practitioners are experiencing a faster time to market, improved customer experiences, fewer customer-facing incidents, faster resolution times, and a rapid-fire pace of innovation.

But, not everybody is doing DevOps at that level…yet. Of the survey respondents we asked about DevOps, around 60% either didn't know what it was, or weren't sure if their companies were doing it (these companies were disqualified from the rest of the survey). This tells us that in the industry there is quite a big gap between companies doing DevOps, and companies who still consider it a buzzword. The good news is: For the 41% embracing and practicing DevOps, they have a strong competitive advantage over their peers in the market.

And to keep that edge over the market, companies must continue evolving their DevOps practice, focusing on the divide between culture advancements and the functions required to run a full-fledged DevOps machine.



Bridging the Gap

To move forward, companies have to start automating processes everywhere. To an extent this is where DevOps jumps from a culture concept to a tool concept. Leading companies use tools to check in code, communicate, and manage issues from a single issue management system.

They also use a communication platform that can connect tools to people to enable the sorts of open communications that the DevOps cultural shift is made for. When processes and tools work in conjunction with culture, companies will significantly mature in their DevOps journey.

xMatters and Atlassian Research Methodology

Our survey was based on 1,004 qualified responses, mostly team managers or executives. Organization sizes ranged from fewer than 500 to more than 10,000 employees. Another 1,093 respondents were discounted because their organizations don't have a DevOps initiative. The survey was administered electronically and participants were offered a token compensation for their participation.

Most of our respondents were from the United States, Europe, or Australia or New Zealand.

Research Objectives

The primary research goal was to capture the status of DevOps initiatives within enterprise companies. The research investigated numerous aspects of the DevOps process including design, architecture, culture, organizational structure, application quality, operations and support. The research was conducted so the resulting data could be injected into the DevOps Maturity Model constructed by xMatters and Atlassian.

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