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PagerDuty Helps Organizations Optimize Their Digital Operations Management

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Navigating this White Paper

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BUSINESS VALUE HIGHLIGHTS

Click on highlights below to navigate to related content within this white paper.

795%
three-year ROI

2.1 months
payback period

18% improved
IT staff productivity

85% reduction
time needed to identify critical issues

77% reduction
time required to troubleshoot issues

74% reduction
in unplanned downtime

27% more productive
DevOps teams

10% more efficient
Customer Support teams

18% more efficient
IT infrastructure teams

Executive Summary

PagerDuty is a platform for managing digital operations across technology environments. It helps DevOps, engineering, information technology (IT), customer support, SecOps, and other teams optimize the performance of their digital services, infrastructure and devices, and reduce the cost of managing digital operations.

PagerDuty capabilities provide:

- **Machine learning-enabled grouping of alerts** to accelerate the acknowledgment and prioritization of incidents.
- **Automated routing of incidents** to the right people and teams at the right time.
- **Real-time incident response tailored** for operations teams and business owners to improve coordination and impact assessment.
- **Intelligent post-mortem assessment** to learn and benchmark, improve, and automate operational responses.
- **Integrations with over 500 observation, monitoring, customer support, security, automation, and service management tools** with a platform to develop new integrations as required by unique or emerging use cases.

These comprehensive capabilities are built on machine and human response data from over 13,000 customers and over 500,000 users. PagerDuty applies machine learning to this data to enable companies to automate the process of bringing the right teams together, armed with contextual information, to reduce the time teams spend troubleshooting problems and ultimately help businesses avoid any impact to the end

PagerDuty helps teams optimize the performance of their digital services, infrastructure and devices, and reduce the cost of managing digital operations.

customer experience. It delivers on the efficiency gains and speed to innovation that IT leaders seek, while also improving ROI.

IDC interviewed organizations using PagerDuty to understand, validate, and quantify its business value. Interviewed organizations reported that the use of PagerDuty resulted in significant business value, which IDC quantified at $3.48 million per organization per year ($16,154 per 100 IT users), resulting in an average three-year ROI of 795%.

This benefit is realized by:

- **Increasing the efficiency and productivity** of IT teams across the incident response life cycle.
- **Significantly reducing** the time required to identify, troubleshoot, and resolve issues.
- **Creating a culture of autonomy and full-service ownership,** which improves efficiencies in DevOps, IT, customer service, and security teams.
- **Reducing the effects of unplanned downtime** on business users and customers.

Situation Overview

Success in today's highly competitive digital business landscape depends on providing great customer and user experience with fast, reliable, and secure access to services and applications at any time and from anywhere. The need to deliver these experiences is driving companies to undertake digital and DevOps transformation initiatives so they can deliver consumer-grade digital experiences to operations staff, employees, and customers. This transformation was dramatically accelerated by the worldwide pandemic of 2020, placing unprecedented pressure on developer, ITOps, security, and customer service teams.

Today's complex digital ecosystem requires a new approach to operations management to deliver on customers' growing expectations.

As organizations progress in their accelerated digital transformation journey, they are increasingly faced with a proliferation of applications, cloud services, and microservices supported by distributed architectures, which have created hugely complex and interconnected technology ecosystems. These ecosystems are ill-served by traditional methods of incident management that matured before the 3rd Platform era characterized by the shift from client-server to cloud-based architectures, which relied on sequential command and control workflows.

Today's complex digital ecosystem requires a new approach to operations management to deliver on customers' growing expectations. Rather than staying hampered by traditional IT operations practices, organizations are adopting a dynamic approach to continuous application support, improvement, integration, security, and scale. Although in its early stages, this method of digital operations management has the potential to stabilize the value generated and captured in other parts of the digital transformation journey.

The basic requirement of successful digital operations management is the aggregation, grouping, and correlation of digital signals from an ever-increasing array of sources to create operational awareness. This basic activity enables timely incident response and continuous improvement of operations and incident management practices.

Unfortunately, technologies continue advancing with containers, dynamic infrastructure and applications, hybrid and multi-cloud deployments, and so forth. Applications are being accessed across a variety of devices including handheld and mobile use outside the enterprise firewall, thus introducing new security and vulnerability risks. Edge computing, and emerging IoT technologies compound the complexity to an unmanageable scale.

This technological complexity makes it increasingly difficult to satisfy the basic requirement of successful operations. It also brings corresponding increases in organizational complexities. IT and business service experiences now involve and affect more cross-functional teams, which include application development, customer support, facilities, operations, infrastructure, IT security, and physical security. Each of these groups has its own organizational mandate, structure, and operational protocols to consider.

This organizational complexity requires a scalable digital operations management platform that integrates dynamic context, best practices, and human response workflows to accelerate incident identification, response, resolution, and prevention across a broad spectrum of technologies and use cases. This platform needs to provide a variety of automation capabilities such as machine learning to analyze exponentially increasing volumes of data being collected. To maximize these capabilities, the platform must also be integrated with the widest variety of applications and services used across the organization.

Taken together, the technological and organizational complexity layered on top of an accelerated digital transformation journey suggest that the trend of enterprises consolidating hundreds of applications to three to five "platforms" will also accelerate. This response will increase the return on investment (ROI) for companies that provide broadly deployable platforms which both consolidate specific functions (e.g. sales, digital operations) and enable modern product/program management approaches (e.g. Agile, DevOps, SecOps).

PagerDuty Overview

PagerDuty is a publicly traded digital operations management company providing a SaaS-based platform and ecosystem that enables organizations to deliver optimal, "always on" digital experiences to their customers. PagerDuty's digital operations management solutions include on-call scheduling, intelligent event management, incident response and automation, advanced analytics, and real-time insights capabilities. The company provides per-user licensing for its key modules along with special "impact pricing" for mission-driven organizations. More than 13,000 organizations and over 500,000 users utilize the platform, including over half of the Fortune 100. The full platform provides the following capabilities:

PagerDuty's digital operations management solutions include on-call scheduling, intelligent event management, incident response and automation, advanced analytics, and real-time insights capabilities.

The full platform provides the following capabilities:

- **Analytics:** provides insights from human and machine data with a data science engine designed to assess the cost of incidents and surface patterns. It also helps identify team performance benchmarks versus other companies, so teams can continually improve the performance of their digital operations.

- **Event Intelligence:** applies machine learning to correlate and automate the identification of incidents from billions of events across the entire technology environment, reducing "alert fatigue" and enabling improved focus and prioritization.
- **Modern Incident Response:** automatically engages the right responders and stakeholders for effective response to critical incidents with best practice playbooks, workflows, and task automation.
- **On-Call Management:** includes on-call scheduling, notifications and escalations to ensure that the right people and teams can take action in real-time to avoid disruptions in the services that they own.

PagerDuty's original focus, and what it has been traditionally known for, is its on-call management solution to drive 24/7 visibility and accountability for both DevOps and service management–based IT operations. However, PagerDuty has expanded its capabilities the past several years to focus on the full suite of services required for real-time operations, which includes integrated event management, response automation, and analytic insights — what the company characterizes as "digital operations management." This allows the company to enable its customers to support real-time, always-on digital business applications with consumer-grade responsiveness, availability, and security.

The Business Value of PagerDuty

Study Demographics

IDC conducted research that explored the value and benefits of using PagerDuty as a digital operations management platform in support of IT and business operations. The study included interviews with 14 organizations that are current customers of PagerDuty and have extensive experience with and knowledge of PagerDuty's benefits. During the interviews, companies were asked a variety of quantitative and qualitative questions about the impact of the solution on their IT, event management, and incident response operations, businesses, and costs.

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Table 1 (next page) presents study demographics of the interviewees. Interviewed organizations had an average base of 22,700 employees, of which 21,543 employees were using IT services. These users were supported by an IT staff of 1,852 overseeing 194 business applications. In terms of geographical distribution, 11 companies were based in the United States, one in Australia, one in the Netherlands, and one in the United Kingdom. In addition, these organizations represented a mix of industries including the retail, information technology, financial services, energy, and hospitality sectors. (Note: All numbers cited represent averages.)

TABLE 1

Firmographics of Interviewed Organizations

	Average	Median	Range
Number of employees	22,700	7,750	275 to 130,000
Number of IT staff	1,852	625	110 to 14,000
Number of IT users	21,543	6,200	275 to 130,000
Number of business applications	194	150	15 to 750
Revenue per year	$3.57B	$2.40B	$130M to $20B
Countries	United States (11), Australia, The Netherlands, and United Kingdom		
Industries	Retail (5), informational technology (4), financial services (3), energy, hospitality		

n = 14, Source: IDC In-depth Interviews, December 2020

Choice and Use of PagerDuty

The companies that IDC surveyed described usage patterns for PagerDuty and provided a snapshot of their overall IT and business environments. They also discussed the rationale behind their choice of PagerDuty. Interviewed customers cited a number of key criteria such as the need to scale up alert processing, understand and prioritize alerts to mitigate business risks, and how PagerDuty was able to address these challenges. The broad platform extensibility to integrate with existing tools and the company's strong vision, product road map, and solid customer support capabilities were also cited.

Study participants elaborated on these and other benefits:

→ **Desire to automate incident management task:**

"*We serve in the network operations center and we drive a lot of incident management. Basically, when an incident pops up, we are charged with making sure we respond quickly and involve the correct teams. We wanted to really introduce automation into our team in order to drive down Mean Time to Acknowledge (MTTA) and Mean Time to Report (MTTR).*"

→ **Alerts were being missed:**

"*We had a couple of incidents and because there was no system to notify that something happened, it was very easy to miss. We determined it would make sense for us to have a tool like PagerDuty to help notify people, 'Hey, there is something going on here and get somebody to investigate before it gets worse.'*"

Table 2 (next page) describes the aggregated average organizational environment supported by PagerDuty based on the 14 interviewed customers. These companies supported an average of 1,200 physical servers and 6,160 virtual servers. They had an average of 403 PagerDuty-licensed users supporting 6,750 internal IT users. These organizations supported 137 business applications with PagerDuty, accounting for approximately 70% of these organizations' revenue. (Note: All numbers cited represent averages.)

TABLE 2

Usage of PagerDuty by Interviewed Organizations

	Average	Median
Number of datacenters/sites	6	4
Number of physical servers	1,200	350
Number of virtual servers	6,160	3,000
Number of licensed users of PagerDuty	403	288
Number of internal users supported	6,750	55
Number of business applications	137	55
Percentage of total revenue	70%	75%

n = 14, Source: IDC In-depth Interviews, December 2020

Business Value and Quantified Benefits

IDC's Business Value model expresses the accrued benefits for organizations using PagerDuty to support their various IT and business incident response operations and associated teams. Survey data from PagerDuty customers was applied to this model to arrive at quantified benefits. Using this methodology, IDC found that these customers realized significant value for their IT and business operations in several ways. They were able to increase the efficiency and productivity of IT teams that have incident response responsibilities, significantly reduce the time required to both identify and troubleshoot issues, improve user productivity by reducing unplanned downtime, and enable organizations to respond to both internal users, business stakeholders, and customers more efficiently. To that point, PagerDuty customers using the entire Digital Operations platform found even more value by including additional capabilities around intelligent event management, automated incident response, and real-time and historical analytics. These capabilities allow teams to better contribute to business needs, goals, and results.

"From our perspective, if you have a major incident and you can resolve it in 20 to 30 minutes, or even one hour, you could easily capture the cost of the PagerDuty within one incident from just the opportunity costs alone."

Study participants discussed these and other benefits:

→ **Improved ability to respond to issues:**

"*From our perspective, if you have a major incident and you can resolve it in 20 to 30 minutes, or even one hour, you could easily capture the cost of the PagerDuty within one incident from just the opportunity costs alone. If our platform is really busy, and we are out of it for five minutes instead of 30 minutes, that could easily be hundreds of thousands of dollars, if not more.*"

- **Easy to manage:**
  "*There's definitely automation around faster response and assembling people. There's reduced alert noise because advanced intelligence can combine similar things together. You can get more context of what's going on around the incident by looking at the visibility dashboard or even more incidents. The operational metrics are built right into the tool. So out of the box, you can use the operational reviews to track your operational metrics each month, each quarter. And you can feed that into the areas where you need to focus on application improvement. That's all out of the box with a few button clicks.*"

- **PagerDuty becomes more useful with more teams using it:**
  "*I am a big proponent of the product when it comes to people who are interested in leveraging a centralized helpful monitoring and alerting solution as part of event management. PagerDuty is now official as the parent of event management within the organization. I certainly am happy to integrate more teams into it. Like I mentioned earlier, it only gets better the more insights it has, and therefore the more people who are adopting it. If you've got certain critical IT systems, and teams not leveraging PagerDuty, then you're missing information. You're missing the contact stability of those teams. They can't reach out to you if you're not onboarded to PagerDuty; they have to go back to calling up people on the phone and using email.*"

- **Better reporting means more proactive customer support:**
  "*One of the key benefits I see is greater awareness to the leaders, because we didn't have the ability to provide them with the level of detail we now can with PagerDuty. They're no longer receiving communications after the fact. They're receiving information during the event, which positions them to be able to get with their counterparts at a potential impacted customer, proactively versus reactively. In the past, often we received a phone call that we were having a problem, and that would trickle upstream. Now we are able to alert our executives and they can contact their counterparts and provide details. 'We're having a problem. Here's what we're doing to fix it. Here's when we estimate it to be taken care of.' That was one of the indirect benefits of the past couple issues that we had.*"

"PagerDuty is now official as the parent of event management within the organization.... it only gets better the more insights it has, and therefore the more people who are adopting it."

IDC's analysis shows that these benefits translate into significant business value, which IDC quantifies as worth an annual average of $3.48 million per organization in the following areas (see Figure 1, next page):

- **IT staff productivity benefits:** Enabling better incident response communications improves efficiency, alignment, and productivity across disparate teams. IDC quantifies the value of these IT staff efficiencies at an annual average of $2,447,878 per organization.

- **Business productivity benefits:** Having improved incident response operations that are integrated with business teams such as customer care and support enables organizations to deliver an optimal experience for users and customers. This translates into additional revenue that IDC calculates at an average of $679,973 per organization.

- **Risk mitigation — user productivity benefits:** Reducing the frequency of outages means higher employee productivity and less revenue loss. IDC quantifies this value at an annual average of $352,319 per organization.

FIGURE 1

Average Annual Benefits per Organization

n = 14, Source: IDC In-depth Interviews, December 2020

Improved Productivity for IT and Incident Response Teams

Data overload driven by monitoring tools is a hazard in today's environment. Business stakeholders and technical responders require ongoing insight into digital services so that immediate action can be taken during disruptions, thereby minimizing any impacts to users and customers. But, because of the persistence of team silos as well as highly fragmented and manual processes, many organizations still face challenges in effectively addressing service-impacting issues.

In speaking with IDC, PagerDuty customers identified benefits that they found to be most advantageous. They reported that the use of PagerDuty helped them free up more staff time because team members spent less time in reactive firefighting mode and incident response teams could automate processes around identifying issues and allocating the appropriate resources to take action. Interviewees told IDC that having these processes in place with PagerDuty allows the platform to automate remediation of certain issues that could occur during day-to-day operations, which would also enable additional time savings. The result was that a more proactive approach to handling an ever-increasing volume of data improved the signal-to-noise ratio and helped teams better resolve issues.

Customers reported that the use of PagerDuty helped them free up more staff time because team members spent less time in reactive firefighting mode.

Study participants elaborated on these and other benefits:

→ **Teams alerted to issues quicker:**

"*One of the biggest benefits is issue identification. Now we have separated the teams, who support what and where the pain points are, so we are able to map those things and route it to the proper team. We are able to take care of issues and seamlessly respond as they happen. Knowing which team is responsible is a huge deal for us; we have schedules and explorations, and everything is identified within PagerDuty.*"

"One of the biggest benefits is issue identification."

- **Better alerting and resolutions systems:**
  "*PagerDuty has automated a lot of things for IT teams. Before, when a platform went down, IT used to respond to the call incident and do what was needed to resolve it. Now, when IT gets the incident they have an API with a bunch of rules that can usually self-heal the incident. Then PagerDuty sends them a response in a few minutes and says, 'Hey, this issue is resolved,' and it will close the incident automatically.*"
- **Increased automation of tasks and enhanced reporting tools:**
  "*The automation is definitely the biggest benefit. It has cut down a lot of the manual labor significantly, in terms of manual call-outs via phone and page-outs. I think there's going to be an IT benefit for metrics in terms of capturing user behavior and when they respond to incidents. Things like how fast they respond, if they don't respond, if they escalate, so just metrics around there will probably lead to new types of reporting for our executive leadership team. The other main benefit is the tool's collaboration and syncing a lot of that information into a more centralized location. We have already seen benefits like a bi-directional communication between the tools, mainly Salesforce and Prometheus, at the moment. We've seen correlating alarm events benefits and things of that nature, when it comes to incidents.*"
- **Better automation allows teams to do more innovation:**
  "*With the time freed up by using PagerDuty, we are innovating more with automation features, and working more on our (business) platforms. As our products increase, the number of things this team needs to handle increases, and the number of products that are getting developed are increasing at a rapid rate.*"

"PagerDuty has automated a lot of things for IT teams.... when IT gets the incident they have an API with a bunch of rules that can usually self-heal the incident. Then PagerDuty sends them a response in a few minutes and says, 'Hey, this issue is resolved,' and it will close the incident automatically."

These benefits helped incident response teams be more efficient in the course of their day-to-day responsibilities such as troubleshooting. As one interviewee told IDC "Just a few months ago, I was able to spin up an incident and get everyone on a Zoom call and start working on the issue with them in about five minutes. We had the issue solved in 20 minutes. That same issue took us at least two hours in the past because of the time it took to determine that we need this person, or we need that person. It was a very slow process." IDC quantified productivity benefits for troubleshooting teams (see Table 3). These teams saw an efficiency gain of 18%, which translated into a financial benefit of $760,000.

TABLE 3

IT Troubleshooting Team Impact

	Before PagerDuty	With PagerDuty	Difference	Efficiency (%)
IT Troubleshooting team, FTE equivalent per organization per year	42.1	34.5	7.5	18%
Value of staff time per year	$4.21M	$3.45M	$760,000	18%

n = 14, Source: IDC In-depth Interviews, December 2020

PagerDuty had a significant impact on the time required to identify and resolve troubleshooting issues, as the KPI (key performance indicators) metrics in Table 4 illustrate. Troubleshooting incidents per month decreased by 13%. But more importantly, there was a substantial improvement in the average time needed to identify issues that required troubleshooting, which decreased by 85%. There was also a 77% reduction in the average total time needed to troubleshoot per issue.

TABLE 4

Troubleshooting KPIs

	Before PagerDuty	With PagerDuty	Difference	Change (%)
Troubleshooting incidents per month	1,948	1,688	260	13%
Average time to identify issues that required troubleshooting (hours)	2.2	0.3	1.9	85%
Average total time to troubleshoot per issue (hours)	2.2	0.5	1.7	77%
IT staff time to resolve each issue (hours)	2.8	0.9	1.9	67%

n = 14, Source: IDC In-depth Interviews, December 2020

Study participants reported that PagerDuty is allowing IT infrastructure management teams to focus less on firefighting and spend more time on higher-value projects (see Table 5). After PagerDuty deployment, the time needed for management of IT infrastructure, measured in FTE per organization per year, saw an efficiency improvement of 18% and a business value benefit of about $510,000.

TABLE 5

IT Infrastructure Management Team Impact

	Before PagerDuty	With PagerDuty	Difference	Change (%)
IT Infrastructure Management team (FTE equivalent per organization per year)	28.6	23.5	5.1	18%
Value of staff time per year	$2.86M	$2.35M	$510,000	18%

n = 14, Source: IDC In-depth Interviews, December 2020

Study participants also reported that the benefit of PagerDuty extended to IT security teams. These teams showed improved operational efficiency because they were able to address incoming threats more efficiently (see Table 6). The time required for IT security tasks, measured in FTE equivalent per organization per year, saw an 9% improvement in efficiency, yielding $110,000 in business value.

TABLE 6

IT Security Team Impact

	Before PagerDuty	With PagerDuty	Difference	Change (%)
IT Security team (FTE equivalent per organization per year)	11.6	10.5	1.1	9%
Value of staff time per year	$1.16M	$1.05M	$110,000	9%

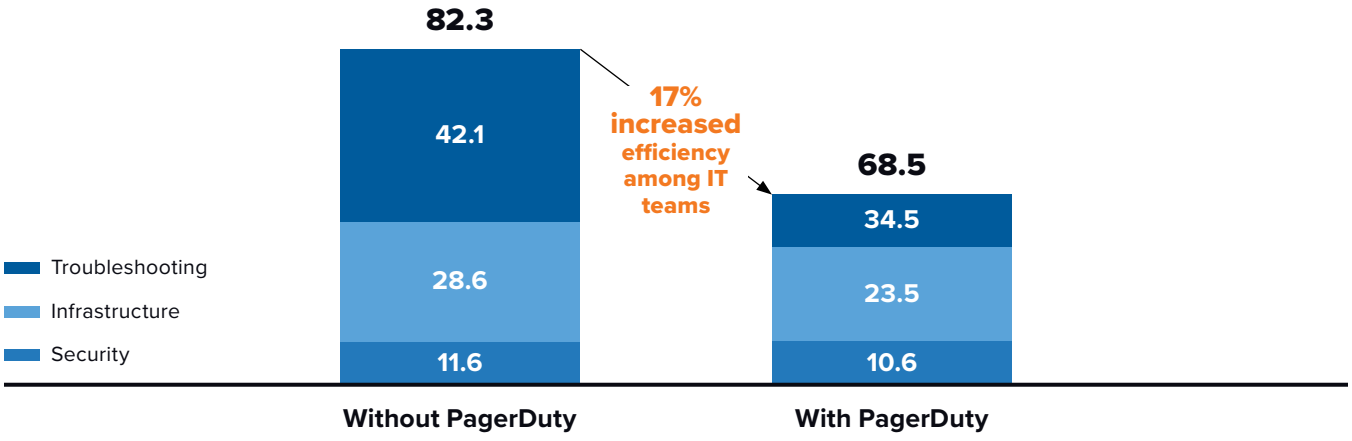
n = 14, Source: IDC In-depth Interviews, December 2020

By aggregating the previously described benefit metrics, IDC calculated the total IT management impact (see Figure 2). With PagerDuty, overall efficiency was increased by 17%.

FIGURE 2

Total IT Management Impact

(Total number of FTEs)



n = 14, Source: IDC In-depth Interviews, December 2020

Optimizing Business Processes

Interviewed PagerDuty customers have complex businesses that involve a variety of processes. Study participants reported that the use of PagerDuty has enabled them to reduce the risk to their business by ensuring smooth operation and fewer disruptions to both IT teams and business units. They cited features and capabilities that are enabling these improvements such as better service and application availability for internal users and customers, the ability to proactively attack any issues that come up, and the ability to ensure a better customer experience overall.

Study participants reported that the use of PagerDuty has enabled them to reduce the risk to their business by ensuring smooth operation and fewer disruptions to both IT teams and business units.

One interviewee described the benefit of a more efficient IT troubleshooting operation on their business by saying "*The business benefit is that, if IT is reacting and preventing issues that otherwise would end up with the business side having to actually deal with, then that's a great outcome for the business.*"

Another customer described the reduced impact to the business of missing SLAs (service-level agreements) and incurring penalties by reducing their MTTA (mean time to acknowledge): "*The continual ability to drive down our MTTA for a problem is very beneficial to the business that could translate into a reduction in penalties based on SLA violations. As well, the mean-time-to-repair metric is critical to the business because that is a direct reflection on how many penalties we absorbed in a given 30-day period. We never even drifted into a penalty discussion because the customer was just overwhelmed by being notified proactively (once we were alerted).*"

Addressing customer experience, one study participant commented: "*The biggest business benefit is customer satisfaction. Before when something happened, we never knew until the customer says, 'Hey, why is it that I'm not seeing this data come through? What happened?' Then we had to look for people to find out what happened, and it used to take a day or so, and when we'd find the issue, we didn't know which team or who had to resolve that.*"

"The biggest business benefit is customer satisfaction."

PagerDuty's ecosystem includes integration with partners whose products are used by teams directly related to business operations such as IT operations, DevOps, service management, and customer service. With respect to DevOps teams, study participants reported that teams were able to focus more on developing new applications and features instead of firefighting. FTE equivalence saw a 27% improvement in productivity, leading to increased business value of $1.07 million (see Table 7).

TABLE 7

DevOps Staff Impact

	Before PagerDuty	With PagerDuty	Difference	Higher Productivity (%)
DevOps staff (FTE equivalent per organization per year)	39.2	28.5	10.7	27%
Value of staff time per year	$3.92M	$2.85M	$1.07M	27%

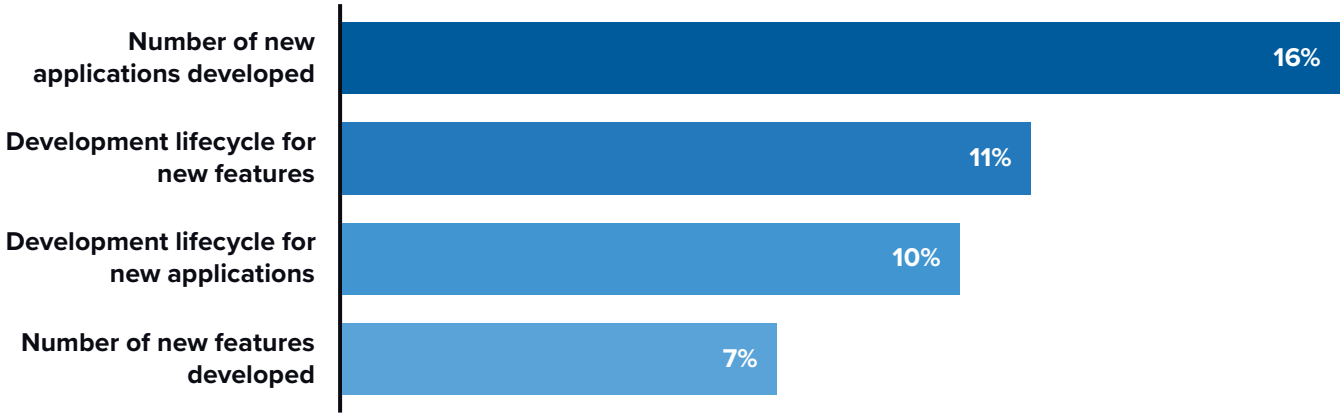
n = 14, Source: IDC In-depth Interviews, December 2020

Where was that value realized? Figure 3 provides a more granular look at typical DevOps task KPIs. Development life cycles for new features realized an 11% improvement, while development life cycles for new applications realized a 10% improvement. Thus, organizations were able to generate 16% more new applications and 7% more new features every year, without having to add staff or outsource development.

FIGURE 3

DevOps KPIs

(% Improvement)



n = 14, Source: IDC In-depth Interviews, December 2020

Another key area that IDC evaluated was customer service. PagerDuty helps frontline customer service agents resolve issues faster and deliver better experiences to customers by proactively sharing information between applications and technical teams. Organizations mentioned to IDC that PagerDuty helped these teams get notified right away of a potential issue, such as a payment system being down, so they could be proactive with managing these issues with their customers. Study participants validated and reported specific benefits in this area. FTE equivalence for customer support saw a 10% efficiency improvement, with an annual business value of $570,000 (see Table 8).

TABLE 8

Customer Support Staff Impact

	Before PagerDuty	With PagerDuty	Difference	Efficiency (%)
Customer support staff (FTE equivalent per organization per year)	85.4	76.8	8.6	10%
Value of staff time per year	$5.98M	$5.38M	$600,000	10%

n = 14, Source: IDC In-depth Interviews, December 2020

Study participants also reported that PagerDuty reduced lost productivity from unplanned downtime significantly and reduced MTTA and MTTR. Table 9 presents metrics for unplanned downtime impacts. Study participants reported that after deployment of PagerDuty, the frequency of downtime events per year was reduced from 9.2 to 5.6, representing a 39% improvement. In addition, the time to resolve outages, measured in hours, was reduced from 3.5 to 1.1, representing a substantial improvement of 69%. In addition, value of lost productivity per year was reduced to $114,000 from $436,000, a 74% improvement. Additional metrics are presented in Table 9.

TABLE 9

Unplanned Downtime Impact

	Before PagerDuty	With PagerDuty	Difference	Change (%)
Frequency of downtime incidents per year	9.2	5.6	3.6	39%
Time to resolve (hours)	3.5	1.1	2.4	69%
User impact — lost productivity due to unplanned outages (FTEs)	6.2	1.6	4.6	74%
Value of lost productivity per year	$436,000	$114,000	$322,000	74%

n = 14, Source: IDC In-depth Interviews, December 2020

Reducing unplanned downtime events had both tangible and intangible impacts for interviewed companies. One study participant explained how PagerDuty was able to limit the amount of revenue losses these organizations face: "*One example is some sort of threshold alert like, 'hey, if revenue drops below 'X', this should be an all-hands-on-deck situation, something is very seriously wrong.' If something starts downward trending or gets really slow, we'll know immediately by going to PagerDuty notes. Instead of hearing about it from our users and then reacting to it, we usually find the issues before the users do, and hopefully be able to fix it if we get it before them. Some of our processes are really dialed down to the important business or engineering metrics that we have and we tie those into PagerDuty, so if it goes out, it will notify someone to immediately investigate.*"

"Instead of hearing about it from our users and then reacting to it, we usually find the issues before the users do, and hopefully be able to fix it if we get it before them."

In terms of tangible and more measurable benefits, Table 10 presents additional unplanned downtime revenue impacts. Total revenue loss avoided annually per organization was $197,033. Additional metrics are presented in Table 10.

TABLE 10

Unplanned Downtime Revenue Impact

	Per Organization
Total revenue loss avoided per year	$197,033
Assumed operating margin	15%
Total recognized revenue per year — IDC model*	$29,555

* The IDC model assumes a 15% operating margin to any new revenue to account for any costs associated.

n = 14, Source: IDC In-depth Interviews, December 2020

Study participants reported that PagerDuty allowed their organizations to have more confidence in protecting revenue streams and addressing new business opportunities. In this context, Table 11 presents a summation of previously discussed business operations and user impacts. One organization was able to recognize over $500,000 annually by reducing revenue loss due to downtime by 92%. Average annual additional revenue from better business operations was $519,250. The combination of returned revenue from reduced downtime and additional revenue from better business operations averaged $821,000 (0.05% of total revenue) annually.

TABLE 11

Business Operations and User Impact

	Per Organization
Total additional revenue per year	$519,250
Assumed operating margin	15%
Total recognized revenue per year — IDC model*	$77,888

* The IDC model assumes a 15% operating margin to any new revenue to account for any costs associated.

n = 14, Source: IDC In-depth Interviews, December 2020

ROI Summary

Table 12 presents IDC's analysis of the financial and investment benefits related to study participants' use of PagerDuty. IDC calculates that, on a per-organization basis, interviewed organizations will achieve total discounted three-year benefits of $7.47 million ($34,700 per 100 IT users) based on the previously described IT incident response capabilities and business improvements. These benefits compare with projected total discounted investment costs over three years of $830,000 on a per-organization basis ($3,900 per 100 IT users). The investment costs take into account all licensing for user seats, deployment, and management costs associated with using PagerDuty. At these levels of benefits and investment costs, IDC calculates that, using PagerDuty, these organizations will achieve a substantial three-year ROI of 795%.

TABLE 12

Three-Year ROI Analysis

	Per Organization	Per 100 IT Users
Benefit (discounted)	$7.47M	$34,700
Investment (discounted)	$830,000	$3,900
Net present value	$6.64M	$30,800
ROI	795%	795%
Payback	2.1 months	2.1 months
Discount factor	12%	12%

n = 14, Source: IDC In-depth Interviews, December 2020

Challenges/Opportunities

The PagerDuty platform is flexible and easy to integrate into customers' evolving technology stacks. The configuration and runbook automation tools conform to standard IT conventions and should not represent a technical challenge to the average IT organization. This ease of technical implementation should not, however, be mistaken for an easy implementation in general, as customers need to adopt cultural and process changes to get the most out of PagerDuty. However, PagerDuty does have a solution engineering organization dedicated to helping organizations plan for more efficient implementations of the platform based on existing customer best practices.

To derive the benefits described in this white paper, an organization using PagerDuty is challenged first to organize its own work and then to embark on an enterprise-wide journey of continuous response improvement. The detailed process documentation created by many organizations over the years provides a good starting place for this

The organizations interviewed by IDC in this study reported that the use of PagerDuty resulted in significant business value, which IDC identified as delivering an average 795% ROI over three years.

effort but cannot be considered authoritative. They represent the organization's current best understanding of how work has occurred in a less complex digital ecology. The organization will have to identify how work is done "on the ground" today and how it might want to do that work in the future. This initiates the journey of continuous improvement, focused on the desired outcome rather than the processes that deliver that outcome.

In addition, the organization needs to be able to embrace and benefit from "unplanned" or "emergent" work. Emergent work is a characteristic of digital ecosystems; it is a normal state of affairs rather than an interruption of them. Embracing it and transforming it from a cost to an opportunity to create value is the next challenge in the evolution of digital operations management. The methods for doing so are not yet clear, although the potential for value (as described in this white paper) is clear.

Finally, many of the cultural transformations required to take advantage of digital operations are unclear. DevOps, SecOps, site reliability engineering (SRE), and Agile are constantly transforming targets as industry practitioners, academics, and executives adapt to the changing environment. This can lead to an impression of "wasted effort" or "change for change's sake" as the organization learns, grows, and adapts. This process of adaptation and growth can be accelerated if the organization adopts a single, coherent operations platform or significantly inhibited if systems of both record and action remain fragmented.

Conclusion

The organizations interviewed by IDC in this study reported that the use of PagerDuty resulted in significant business value, which IDC identified as delivering an average 795% ROI over three years. The key elements include increasing the efficiency and productivity of IT incident response teams; significantly reducing time to identify, troubleshoot, and resolve issues; improving end-user productivity by reducing unplanned downtime; and creating a culture of autonomy with full-service ownership.

PagerDuty achieves these impressive benefits by both updating process-based incident management with machine learning and automation and creating an opportunity to reimagine the work of IT from its traditional categories. The improvement brings immediate benefits to individual teams and is magnified as the organization expands the platform's footprint to more teams and users, while also expanding their use of the platform's capabilities. Leveraging the opportunity, which PagerDuty presents, requires a corresponding evolution in how the organization handles emergent and unplanned work, as well as attempts to capture the value of that work — in other words, a new approach to operations management of technology environments is required.

PagerDuty's move toward digital operations management reflects awareness of rapidly changing requirements for business and technology applications and digital transformation initiatives. Focusing on real-time operations in increasingly dynamic environments that are continuing to grow in scale and complexity will be table stakes for success in any digital transformation initiative.

Appendix: Methodology

IDC's standard ROI methodology was utilized for this study. This methodology is based on gathering data from current users of PagerDuty as the foundation for the model. Based on interviews with organizations using the PagerDuty service platform, IDC performed a three-step process to calculate the ROI and payback period:

1. **Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of PagerDuty.** In this study, the benefits included staff time savings and productivity benefits as well as operational cost reductions.
2. **Created a complete investment (three-year total cost analysis) profile based on the interviews.** Investments go beyond the initial and annual costs of using PagerDuty and can include additional costs related to migrations, planning, consulting, and staff or user training.
3. **Calculated the ROI and payback period.** IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of PagerDuty over a three-year period. ROI is the ratio of the net present value (NPV) and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

IDC bases the payback period and ROI calculations on a number of assumptions, which are summarized as follows:

- Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and manager productivity savings. For purposes of this analysis, based on the geographic locations of the interviewed organizations, IDC has used assumptions of an average fully loaded salary of $100,000 per year for IT staff members and an average fully loaded salary of $70,000 per year for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks times 40 hours).
- The net present value of the three-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- Because IT solutions require a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

Note: Numbers in this document may not be exact due to rounding.

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Tim Grieser is Research Vice President for Enterprise System Management Software. His coverage includes software and SaaS solutions for managing systems, applications and IT operations across a wide variety of deployment models including on-premises, private and public clouds. Mr. Grieser has published IDC research in market sizing, market forecasting, technological trends, vendor strategies and IT user needs and priorities. Current interests include IT Operations Analytics encompassing both log analysis and predictive insights and cognitive/AI technologies.

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More about Harsh Singh

Message from the Sponsor

PagerDuty is a digital operations management platform that empowers the right action, when seconds matter.

The PagerDuty digital operations management platform is designed to manage urgent, mission-critical work—and keep digital services always on.

PagerDuty can be set up in minutes, it's intuitive to use, works at cloud scale, and delivers clear and immediate value. With over 500 integrations, we can easily fit into and augment any team's toolkit—no matter what environment or cloud.

PagerDuty uniquely combines the power of machine automation with human action to help automate menial, repetitive tasks, while also organizing and directing the more urgent, important work to the right people for the job. Thanks to our secure, reliable platform, the teams who use PagerDuty spend less time on frustrating tasks and toil—and more time focused on creating new and better digital experiences.

Find out how to keep digital services always on.

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