Planning for Long-Lasting
Digital Operations Maturity

Getting From Reactive to Preventative

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Introduction

We are living in a digital-by-default world. Digital services need to work perfectly to deliver on digital experiences, but the very tools that help drive innovation also introduce an increase in complexity. Complex, interdependent systems will fail. It's digital operations maturity that will help businesses react to this inevitability—to respond and resolve faster and limit the impact on the end-customer.

We've spent a lot of time talking with customers about their challenges when it comes to digital operations. Over the years, different behavioral patterns for organizational cohorts of varying maturity have emerged.

In this eBook, we'll explore those patterns, look at how to define and evaluate your organization against a maturity model, and share best practices for a more mature and proactive approach to digital operations.

What is Operational Maturity?

Operational maturity is a measure of the overall consistency, reliability, and resilience of IT infrastructure, including how it is managed and maintained. In the context of digital operations, operational maturity is how prepared an organization is to detect, triage, mobilize, respond, and resolve outages or system failures.

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Laying the Foundation for Digital Acceleration

Modern technologies and practices like cloud computing and microservices enable companies to move and to scale faster—but they can also introduce complications. With hybrid environments becoming increasingly common, many organizations are faced with the challenge of dealing with additional complexity in their digital operations infrastructure. Teams are also increasingly decentralized into lines of business—each with their own toolchains and workflows—which can lead to difficulties with visibility and collaboration.

As systems and teams become more complex, it's nearly impossible to efficiently manage everything in a traditional and centralized fashion. This can be especially painful when it comes to incident response because, when incidents happen, siloed systems and teams operating in traditional models can create a slow down that negatively impacts the customer experience and puts your business at risk.

The bottom line is that incidents are going to happen. The faster pace of innovation that businesses seek will come at a cost of more complexity to the system and a higher likelihood of applications and platforms breaking or running into each other in production. While service failure is an inevitable part of operating with technology and systems, the level of preparation that your company has in place when incidents happen makes all the difference when it comes to the customer experience—and ultimately your revenue and reputation.
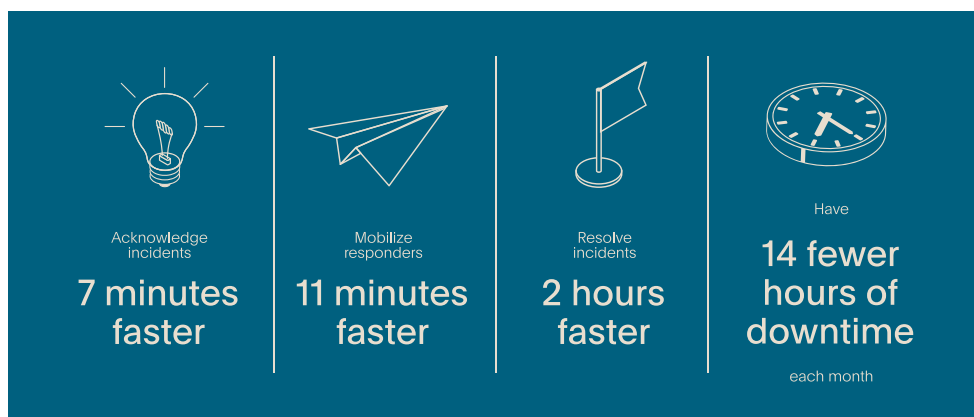
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Why
Maturity Matters

With an increased reliance on digital services, companies have more at stake when things go wrong. Those without a way to manage unplanned, real-time work are putting a lot at risk. Technical teams are the backbone for digital transformation projects that drive the business forward, yet every moment that ITOps professionals or developers spend troubleshooting or fixing issues takes time away from opportunities for innovation.

Understanding your current level of digital operations maturity is a critical step to becoming an innovative, resilient organization and comes with three key benefits:

1. **It helps organizations benchmark themselves against best practices to reflect and identify areas for improvement**

2. **It allows technical leaders to visualize their current and desired future state so that they can build it into their strategic roadmap**

3. **It enables companies to identify some of their personal "north star" metrics to help measure success and set goals for improvement**

The biggest benefit of digital operations maturity is that mature organizations perform better: they have happier, more productive teams, healthier operational efficiency, and improved customer experiences. Research that PagerDuty conducted with **IDG** underlined this fact. Our research found that, on average, organizations with a mature digital operations approach are able to:

Acknowledge incidents	Mobilize responders	Resolve incidents	Have
7 minutes faster	**11 minutes faster**	**2 hours faster**	**14 fewer hours of downtime** each month

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These findings demonstrate the clear business impact of digital operations maturity and why it's important to reach a maturity level that will help minimize outages and reduce time to resolution.

In order to rise to the challenge, technical leaders need to understand how to measure their current maturity level, identify where their ideal state is, recognize what's keeping them from getting there, and make a plan for how to build long-lasting maturity for their organization.

The PagerDuty Digital Operations Maturity Model

To help organizations measure their operational maturity, PagerDuty developed a Digital Operations Maturity Model (fig.1). The model gives IT organizations a way to define operational maturity, learn how to identify where they fall on the spectrum, and understand where to focus their efforts to improve.
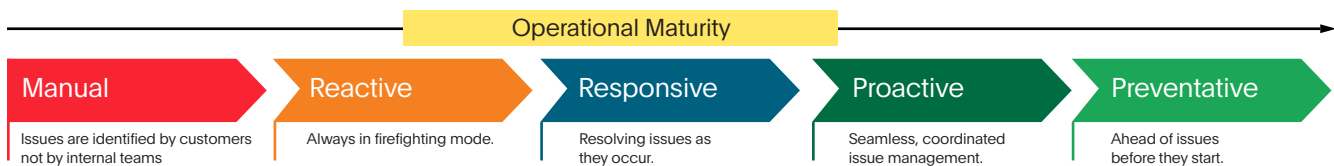

| Operational Maturity				
Manual	Reactive	Responsive	Proactive	Preventative
Issues are identified by customers not by internal teams	Always in firefighting mode.	Resolving issues as they occur.	Seamless, coordinated issue management.	Ahead of issues before they start.

Fig.1. PagerDuty's Operations Maturity Model.

[1.] *Benchmarking Operational Maturity for Your Digital Business: Why Understanding Key Performance Indicators for Your Real-Time Ops Matters,* PagerDuty and IDG, November 2018

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The Five Stages
of Digital
Operations Maturity
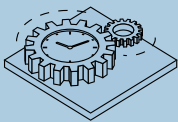
1. **Manual: Issues are identified by customers not by internal teams.**
   - Operations processes are engineered for legacy environments, with incidents initiated manually and entirely by humans using queued workflows such as tickets.
   - Urgent issues are manually escalated by a central team through the changing of ticket priorities
   - Little to no mechanisms to reach experts in an urgent and timely manner.
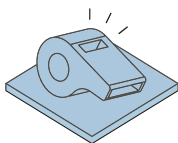
2. **Reactive: Always in firefighting mode.**
   - Initial technology investments bring visibility and real time mobilization as your hosting methods (Cloud) and applications mature to more complex digital services
   - Distributed team approaches surface, but skills in silos
   - No defined process for managing issues

3. **Responsive: Resolving issues as they occur.**
   - Teams have better visibility into customer-impacting issues and respond as quickly as possible.
   - Machine learning is used to identify potential issues, reduce false positives, and reduce noise.
   - Issues are automatically identified and actioned by subject matter experts, but assembling the right team is still a challenge.
   - Distributed teams begin to take full ownership of microservices.
   - Ad hoc knowledge sharing continues, but is not formalized.
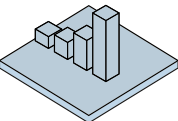
4. **Proactive: Seamless, coordinated issue management.**
   - Issues are detected and fixed by technical teams before customers are aware.
   - Relevant information about issues is delivered in a timely manner to the right people, including business stakeholders.
   - Organizations have seamless cross-role response and action.
   - Programmatic learning and identification of optimization opportunities are prevalent.
   - Distributed teams relate service changes with impacts and are fully accountable to production operability.

5. **Preventative: Ahead of issues before they start**
   - Superb customer experience is consistently the norm.
   - Predictive issue remediation occurs based on machine learning insights
   - Consistent best practices occur across the organization.
   - Highly automated processes eliminate toil and escalations.
   - Continuous learning, improvement, and prevention are woven throughout the organization, including to non-technical stakeholders.
   - Teams can predict future impact of changes.

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From Reactive to Preventative: Four Key Levers for Long-Lasting Digital Operations Maturity

Change is hard, but accepting two facts can help lay the groundwork for your team to embrace the need to adapt: 1) Incidents are going to happen, 2) there are ways to prepare your team and your technology stack to help ease the pain and impact when things go wrong.

As we've discussed throughout this ebook, digital operations maturity is a journey. The first step is to understand where you are, where you want to get to, and what's keeping you from getting there. Only then can you make the strategic decisions and lay out a plan for how to approach any hurdles and land where you want your organization to be.

There are four key levers that can help businesses accelerate their journey towards adopting a more proactive posture for digital operations. Companies are at varying degrees of sophistication in any of these areas, but investing in any or all of these areas of opportunity and building them into your strategic roadmaps will set your teams up for success.

Lever One: Leverage AI/ML & Automation Across the Incident Response Lifecycle

One of the key differences between reactive and proactive organizations is the use of artificial intelligence/machine learning (AI/ML) and automation. Not only can it help reduce and collate noise so that only the most urgent and significant signals come through, it can also help with root cause analysis and auto-remediation. Adding automation to various phases of the incident response lifecycle can dramatically cut down on repetitive, highly manual tasks, reduce the number of false positives, and streamline processes to help empower more individuals to take action.

Mature organizations are looking to technologies such as AIOps and runbook automation for more efficiency and improved productivity. AIOps uses big data, machine learning, and analytic insights to suppress noise, correlate events, and automate the identification and resolution of IT issues, while runbook automation removes toil and allows for organizations to delegate action to operators to help create shorter incidents and fewer escalation.

To learn more:

- Autoremediation Ops Guide

- AIOps, Explained: What It Is and How It Can Boost Your Real-Time Operations

- Improving Automation in Incident Response with PagerDuty and Rundeck

- Report: 451 Research: What Do We Mean When We Say "AIOps"?

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Lever Two: Shift Towards Full-Service Ownership

Full-service ownership, commonly known as "You Build It, You Own It" or "code ownership," can improve digital operations maturity by having developers take responsibility for the software they write in production.

Mature, proactive teams reap the benefits of this cultural shift in the form of bringing developers closer to their customers, the business, and the value being delivered by the service or application. It also means they will have to be on call for their own work, which involves some change management, but ultimately it puts accountability directly into the hands of that engineer or team. When ownership is established, this direct connection helps to orchestrate the incident response lifecycle, and makes escalation and routing of an incident more straightforward.

Lever Three: Establish a Blameless Culture of Knowledge Sharing and Continuous Learning

A feature of mature, proactive organizations compared to their more reactive peers is a commitment to knowledge sharing and continuous learning. Sharing information may sound easy, but building the right foundation for pervasive continuous learning requires cultural change and cannot be achieved overnight. Making this shift involves a change in philosophy and an intentional effort to create a blameless culture and psychological safety based on the acceptance that with complex systems, incidents are inevitable and will happen. Collectively, these efforts help to ensure that ITOps and DevOps teams have access to the right information to do their jobs and operate effectively.

Establishing this blameless culture starts with breaking down silos of knowledge and encouraging sharing and productive conversation around how to solve for issues and furthermore, prevent them in the future. Otherwise, engineers will hesitate to speak up when incidents occur for fear of being blamed. This silence increases overall mean time to acknowledge (MTTA), mean time to resolve (MTTR), and exacerbates the impact of incidents. The mindset must be one of accepting that failure is inevitable in complex systems, but being aware that how we respond to failure is what matters. Once you have that, then you can leverage practices like blameless post-mortems to proactively plan for preventing repeat events in the future.

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Lever Four: Collaborating Across the Enterprise as a Unified Front for Customer Experience

In a time when customer and enterprise service expectations have never been higher, technical teams don't want to be learning about issues from their customers. An invaluable trait of more digitally mature organizations is improved communication and collaboration with cross-functional partners in the business. This creates a united front for handling updates to external stakeholders (such as partners or customers) to manage that end-user experience.

Organizations can then be more proactive about handling any customer-impacting issues. It keeps all involved stakeholders on the same page and improves internal coordination among developers, IT, operations, and customer service. Better alignment enables each segment of the business to keep their respective leadership teams up to date on resolution status and proactively make any plans necessary to address real-time issues.

To learn more:

- Internal Stakeholder Communications Ops Guide

- Where Real-Time Operations Meets Customer Service

- Business Incident Response Ops Guide

- Customer Service Ops Guide

Sign up for a free trial

To learn more about PagerDuty's digital operations management platform,
visit **https://www.pagerduty.com/platform**

About PagerDuty

PagerDuty, Inc. (NYSE:PD) is a leader in digital operations management. In an always-on world, organizations of all sizes trust PagerDuty to help them deliver a perfect digital experience to their customers, every time. Teams use PagerDuty to identify issues and opportunities in real time and bring together the right people to fix problems faster and prevent them in the future. Notable customers including GE, Vodafone, Box, and American Eagle Outfitters.

To learn more and try PagerDuty for free, visit www.pagerduty.com.

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