State of Digital Operations
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Digital services—defined as anything experienced through a digital interface, like a computer, tablet or smartphone—are becoming essential in the lives of consumers, from the way they order groceries or book a getaway, to the way they pay bills or interact with colleagues.

The ultimate goal of these new services is to automate menial tasks, connect people to brands and make life more convenient. As a result, customers’ expectations for always-on, user-friendly services have reached new heights. Behind the scenes, IT practitioners (e.g. developers, DevOps and IT operations teams) are faced with a growing number of new operational and technological challenges to ensure the delivery of a seamless digital experience.

A recent two-part survey of more than 300 IT personnel in development and operations, as well as over 300 consumers, discovered a major disconnect. Consumers have high expectations for digital services, but many organizations struggle to resolve customer-impacting incidents quickly enough to preserve brand loyalty and revenue.

Additionally, the surveys showed a perception gap amongst those IT personnel who feel their organizations are equipped to support digital services. Despite having confidence in their ability to deliver a seamless digital experience, these organizations are still experiencing frequent consumer-impacting disruptions, and struggle with a number of operational challenges that ultimately impact the business.

EXECUTIVE SUMMARY

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THE DIGITAL SERVICES EXPECTATION GAP

The average consumer relies heavily on digital services to make daily tasks more convenient while saving time and money, and has high expectations for application/service performance. Nearly 70 percent of consumers will stop trying a digital app or service—those spanning online banking to e-commerce to work tools—within 15 minutes or less if it stops working or the service slows down. Meanwhile, more than one third of organizations take an average of 30 minutes or more to resolve IT incidents that impact consumer-facing digital services. This expectation gap increases the likelihood customers will become frustrated and leave during the disruption of service or downtime, leading to lost customers, lost revenue and a loss of brand equity.

IT READINESS PERCEPTION VS. REALITY

A majority of IT personnel who took the survey feel confident that their organization is prepared to support digital services. However, more than half of those who identify as prepared to support digital services are still experiencing customer-impacting incidents (slowness or downtime) at least one or more times per week. The rise in digital service offerings has also created operational challenges for IT organizations and has resulted in a shift in their roles.

KEY FINDINGS

DEVOPS IS KING

Nearly one third of organizations report that one hour of IT downtime costs them $1 million or more. Yet, only 16 percent of IT organizations prioritize informing business stakeholders of IT incidents.

In assessing best IT practices, DevOps methodology reigns supreme amongst IT organizations that consider themselves well-equipped to handle the rise of digital services.
The “State of Digital Operations” research was conducted in February 2017 through separate surveys of IT practitioners and consumers in order to represent the expectations and challenges on both sides of digital experiences.

IT Practitioner Survey Demographics

PagerDuty surveyed 304 IT practitioners across a variety of industries and roles to better understand how organizations maintain digital services. The respondents were asked to answer 17 questions about their individual roles, organizations’ challenges and IT practices. Nine of the questions allowed participants to mark more than one answer that applied.
In order to better understand the general population's expectations of digital services, PagerDuty surveyed 306 consumers of varying ages and income. Survey participants answered eight questions about their digital service usage habits. Three of the questions allowed respondents to mark more than one answer that applied.
THE DIGITAL OPERATIONS DISCONNECT

The “State of Digital Operations” research, surveying IT personnel and consumers, revealed major disconnects between consumers and IT practitioners, as well as internally amongst members of IT teams.

The Digital Services Expectation Gap

The consumer survey confirmed one thing we already know to be true—the average consumer relies heavily on digital services to conduct daily tasks, but has high expectations for application/service performance.

69.2% of consumers will stop trying or leave a digital app or service if it takes more than 15 minutes to resolve a service disruption (i.e., stops working or the service slows down).

Meanwhile, 38.4% of organizations take more than 30 minutes to resolve IT incidents that impact consumer-facing digital services, increasing the chances that customers will leave during the time it takes to get things back up and running.

Average time it takes organizations to get consumer-facing digital services running after an incident:
59.8 percent of consumers use digital services at least one or more times daily to complete tasks such as banking, making dinner reservations or finding transportation.

85.3 percent use these services at least one or more times a week.

The primary reasons consumers use a website or mobile application:

- Convenience: 86.3%
- Time Savings: 69.3%
- Cost Savings: 44.1%

Consumer brand loyalty is heavily influenced by digital experiences, with poor speed and reliability among the primary reasons consumers stop using a given app or service.

The digital services consumers most commonly use are:

- Retail Shopping: 72.2%
- Entertainment: 63.4%
- Social Media/Social Connections: 86.3%
- Travel Booking: 34.6%

Top reasons consumers stop using a digital app or service:

- Security: i.e., there is concern that personal information may be compromised (71%)
- Reliability: i.e., the mobile app or website does not work (69.3%)
- Speed: i.e., the mobile app or website does not respond as fast as they expect (51.2%)
Concurrent with these operational challenges, IT personnel reported that they experience a change in their roles as their organizations support more digital services. Some also see a shift in the amount of time they spend on-call. The areas where respondents experienced the most change include the amount of data they now have to manage, new technologies they need to learn and an increase in the number of tools they have to use.

In contrast to this high level of confidence, the rise in digital service offerings has created operations challenges for IT organizations. IT personnel cited increased complexity resulting in more cognitive load, an increase in the number of tools and increased difficulty in capacity planning (e.g., increase in volume of data) as the top operations challenges. IT organizations are also challenged with reduced budget, lack of full stack visibility, lack of contextual data when troubleshooting, siloed IT functions limiting collaboration and alert fatigue.

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**How IT personnel’s roles have shifted to support digital services:**

- **More Data to Manage**
  - 58.7%

- **Need To Learn New Technologies Such as Incident Management, Automation, Orchestration, Cloud, Etc.**
  - 57.3%

- **More Tools to Use**
  - 48.1%

- **More Time Spent On-Call**
  - 26.3%

- **Less Time Spent On-Call**
  - 8.2%

- **Role Has Not Shifted**
  - 5.1%
SOLVING FOR DIGITAL DISRUPTION CHALLENGES

DevOps Dominates Digital Operations

While digital services are adding extra pressure to developers and IT operations teams, many practitioners identified a number of processes and tools that help them prevent disruptions. DevOps reigns supreme amongst IT organizations that feel they are equipped to handle the rise in digital services. Other best practices employed by these organizations include incident management and modern development methods like agile or continuous delivery. Nearly one third of these organizations are also using ChatOps, or conversation-driven development, to help support digital services.

Monitoring is the Name of the Game

Survey results indicated that monitoring plays a critical role in helping organizations support digital service offerings effectively, with security monitoring being the most widely used tool or service amongst organizations who feel they’re equipped to support digital services (67.7%), followed by infrastructure monitoring (50.2%) and application monitoring (58.6%).

The top practices used to help organizations feel effectively prepared for digital services:

- **63.4%** DevOps
- **41.7%** Incident Management
- **35.4%** Continuous Delivery
- **30.7%** ChatOps
- **30.3%** Agile Development

Respondents’ application architectures:

- **63.1%** On-Premise Infrastructure
- **47.5%** Cloud-Only Infrastructure
- **30.6%** Microservices-Oriented Architecture
- **22%** Monolithic Architecture
- **14.7%** SOA-Oriented Architecture
- **2%** Other

The top DevOps and ITOps tools or services used to help organizations feel effectively prepared for digital services:

- **67.7%** Security Monitoring
- **58.6%** Application Monitoring
- **50.2%** Infrastructure Monitoring
- **35.1%** IT Analytics
- **30.3%** Incident Management
THE BUSINESS IMPACT OF DIGITAL DOWNTIME

IT Incidents Aren’t Just a Headache for IT

IT disruptions are no longer just a headache for the developers and IT operations teams responsible for managing infrastructure; these incidents have a direct impact on stakeholders in the lines of business, with nearly one third of respondents (32.7%) reporting that one hour of IT downtime costs their companies $1 million or more.

Non IT Department Impacted Most by ITOps Issues:

- Sales: 40.4%
- Research & Development: 38.7%
- Marketing: 37%
- Accounting & Finance: 31%
- Production: 27.9%
- Customer Service: 26.3%

Communication is Key

The survey of IT personnel revealed major communication issues between IT teams and those affected by downtime—both internal business units and external customers. Despite IT incidents becoming increasingly tied to business success and the bottom line, only 16.7 percent of organizations prioritize informing business stakeholders after a disruption occurs. Furthermore, less than half of organizations (43.9%) contact affected customers or users after resolving a disruption to a consumer-facing service.

Most Common Steps Taken After Resolving a Disruption:

- Conduct a Post-Mortem to Discover Underlying Cause: 51%
- Leverage Analytics Tools to Understand Impact: 44.6%
- Change Business Processes to Avoid the Issue in the Future: 32.7%
- Inform Business Stakeholders: 16.7%
- Develop New Code and Roll Out Updates: 48.3%
- Contact Affected Customers or Users: 43.9%
CONCLUDING THOUGHTS

As consumer demand for and consumption of digital services continues to increase so too will the bar for what consumers consider as the ultimate digital experience—fast, reliable, easy and always on. It’s imperative that organizations prepare for this new normal now by gaining a better understanding of the digital customer journey and its critical moments. They must also employ the right combination of digital operations practices that’s tailored for their business and customers—such as DevOps, event management and incident management—to consistently meet or exceed consumer expectations. Doing so will result in reduced downtime, lower operating costs and stronger brand equity.

IT organizations that use the right tools and leverage modern development and operational best practices, can reduce the time it takes to resolve consumer-facing incidents. This is the ideal path to meeting customer expectations and limiting financial consequences of digital disruptions.

LEARN MORE ABOUT PAGERDUTY

PagerDuty is the leading digital operations management platform for businesses. Through its SaaS-based platform, PagerDuty empowers developers, DevOps, IT operations and business leaders to prevent and resolve business-impacting incidents for exceptional customer experience. More than 8,000 small, mid-size and enterprise global customers such as Comcast, Lululemon, Slack, IBM and Panasonic use and trust PagerDuty to maximize their time and increase their business response and efficiency. When revenue and brand reputation depends on customer satisfaction, PagerDuty arms businesses with the insight to proactively manage incidents and events that may impact customers across their IT environment. Headquartered in San Francisco, the company was recently listed in the 2016 Deloitte Technology Fast 500, Inc. 500 and Forbes Cloud 100 lists.

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