Driving DevOps Success with Intelligent Automation and Analytics

Trends and priorities in converging IT operations and service management

Second edition commissioned study by Hanover Research
Table of Contents

03  Executive Summary
04  Meeting the Demands and Opportunities of a Modern Economy
06  Investing in Seamlessly Converged ITSM-ITOM
07  Successful Innovation Requires Speed, Scale, and Quality
08  DevOps: Change Management is the Only Constant
10  Ensuring Quality at DevOps Speed
11  Conclusion
Executive Summary

The modern digital economy offers exciting opportunities for companies prepared to capitalize effectively. Customers today are demanding more compelling experiences—more innovative and customer-centric, and higher quality—and the ability to meet these expectations can be a powerful competitive differentiator. These requirements also support adopting DevOps processes, accelerating the continuous integration/continuous delivery (CI/CD) pipeline; and increasing service quality through more effective IT service management and IT operations management (ITSM and ITOM). With markets moving quickly, IT must be able to meet these goals with digital speed and agility—without increasing risk.

Companies recognize the urgency of these requirements. The measures they’re taking in response make 2021 the de facto “Year of the Autonomous Digital Enterprise (ADE)”—a model in which organizations embrace intelligent, tech-enabled systems across every facet of the business to enable agility, customer centricity, and actionable insights. Successful organizations are already implementing ADE, using artificial intelligence (AI) across converged ITSM-ITOM teams to enable intelligent automation, support DevOps, manage change, enable data-driven decisions, and ensure a reliable customer experience. Ultimately, these advances are helping companies get new applications and services into production faster, at higher quality, while also adhering to process, governance, and security.

This white paper draws on a recent survey by Hanover Research to explore these trends and identify the best practices driving digital business success in 2021. The analysis, based on responses from 400 technology decision-makers and influencers working for companies with at least $500 million in annual revenue across North America, Western Europe, and Asia-Pacific, provides insight into questions such as:

- What are the status and trends around ITSM-ITOM integration?
- What are the most important converged ITSM-ITOM use cases that IT leaders would like to prioritize?
- How do companies handle ITSM-ITOM functions, and which business leaders are involved?
- How do companies currently apply AI and analytics to their service and operations management processes?
- How do companies maintain and operate a change management analytics program?
- How important are data analytics to the key processes and components of change management?
Meeting the Demands and Opportunities of a Modern Digital Economy

As the global economy rebounds and new opportunities arise, it’s more important than ever for businesses to drive innovation, quality, and agility to meet customer demands and beat the competition. For enterprise organizations, it’s essential not only to maintain 100 percent uptime, but also to optimize for maximum performance so compelling innovations can be continually delivered. Along with their journey to be an ADE, organizations must ensure the speed and scalability demanded by DevOps without increasing the risk of security breaches, compliance violations, compromised customer privacy, or downtime.

ITSM and ITOM processes, teams, and technologies play a central role in DevOps success. One of the most striking findings in the Hanover Research study is the degree to which usage of these solutions has both increased and converged—with survey responses showing sweeping changes within a single year. Taken individually, ITSM usage increased from 75 to 81 percent from 2019 to 2020, while ITOM usage increased from 74 to 81 percent. Meanwhile, the involvement of IT managers in ITSM-ITOM integration rose from 36 to 51 percent from 2019 to 2020, showing a rapidly growing level of interest and activity in this convergence.

Organizations are also investing heavily to establish the foundational core needed to ramp up and accelerate DevOps practices.

This has resulted in a dramatic increase in the usage of DevOps frameworks, which boomed from 30 to 71 percent in just a year.

These prescriptive processes and practices not only ensure proper governances are followed, but also play an important role in ensuring the effectiveness of AI/ML and making it possible to achieve the speed, quality, and efficiencies DevOps success requires. Building on this core foundation, organizations are spinning up newer and more extensive services and management capabilities to ensure that they can deliver excellence and manage effectively in complex and constantly changing dynamic environments.

The Hanover Research study also highlights the increasing use of intelligent automation across ITSM-ITOM processes, with a focus on change management as a key enabler of DevOps success. We’ll explore these findings in more depth in the following sections.
The combination of service and operations management continues to be a key enabler of enterprise DevOps initiatives. The data shows that across the board, there's been expanded use of the combination to support DevOps use cases and practices.

It's not just DevOps that has benefited from an increase in service and operations management practices coming together. Business use cases have also seen growth in all areas as organizations continue to hone in on operational excellence.
Investing in Seamlessly Converged ITSM-ITOM

A large majority of the companies in the Hanover Research survey either have a full integration ITSM-ITOM strategy in place (44 percent), or have already completed integration of the two (23 percent). Only three percent have no intention of integrating. In fact, most IT practitioners would like to go even further, believing that their company would benefit from more extensive integration (81 percent) and a unified view of ITSM-ITOM processes (87 percent). In geographic terms, companies in North America were the most likely to say that their organization would benefit from more integration (95 percent) across ITSM-ITOM processes. The goals for this integration effort are wide-ranging; survey respondents cited drivers including more efficiently remediating events; resolving service issues; bolstering security; and helping transform into an ADE.

Because DevOps requires seamless harmony with service and operations, company leadership is taking an active and growing role across converging ITSM-ITOM processes. The involvement of chief information officers (CIOs) across both domains has grown from 39 to 55 percent since 2019; chief technical officer (CTO) involvement has risen from 41 to 55 percent, and IT director involvement has risen from 43 to 54 percent.

An increase in executive investment will accelerate evolution to the Autonomous Digital Enterprise
Successful Innovation Requires Speed, Scale, and Quality

Given the broad industry consensus around the need for digital transformation, it’s no surprise that 61 percent of companies surveyed by Hanover Research named this one of their top strategic issues for the coming three to five years. Other commonly named priorities flesh out the nuances of the digital transformation agenda, with 47 percent of respondents driving to increase automation, 34 percent adopting DevOps, and 34 percent focusing on customer experience.

With the evolution to an ADE well underway at many companies, it’s now commonplace for them to apply automation or analytics to ITSM-ITOM processes; consider analytics important when making ITSM updates; and seek to expand automation in change management processes. A full 69 percent of companies now apply AI to both ITSM and ITOM, compared with just 15 percent applying AI solely to ITSM, and five percent to ITOM processes.

Excellent service requires excellent operational management. Among companies applying AI to both ITSM and ITOM processes, top use cases include:

- **60%** Predictive alerting
- **56%** Root cause analysis
- **55%** Prioritizing events
- **54%** Predicting outages
- **50%** Service desk ticketing

With organizations already establishing their core ITSM-ITOM foundation, they are turning to adding intelligent automation capabilities to realize DevOps innovation at speed, scale, and quality. Automation is most effective when applied within strictly defined processes and workloads; to date, DevOps is the mostly commonly used framework for ITSM-ITOM, tied with ITIL® at 71 percent.

In traditional approaches, these process and workflow standards have often been considered overly cumbersome and certainly time consuming. In the automation world, they act as accelerants, enabling AI/ML to operate at top speed without organizations having to worry about the quality lapses or disruptions caused by manual mistakes.
DevOps: Change Management Is the Only Constant

The average organization makes over 10,000 change requests each year as developers rush to meet the dynamic demands of digital business. This volume presents a significant challenge for infrastructure and operations (I&O), which must determine not only if it’s making the right changes, but also whether each change will negatively affect downstream services. In most cases (83 percent), companies reported that they had established their change management practices to help avoid poor decisions related to ITSM.

Asked about the greatest challenges they faced in managing these practices, common responses included: a lack of familiarity with change management procedures (41 percent); insufficient infrastructure for endpoint monitoring (39 percent); and incomplete information to make sound ITSM decisions (38 percent). This has a significant impact not only in terms of operational performance, but also in ripple effects across the organization, which take time and money to fix.

Data analytics now play a major role in improving the speed and effectiveness of change management processes. By incorporating analytics into change management, companies can more effectively determine whether things will perform as they should, foresee unintended consequences elsewhere in the infrastructure, and enable seamless operations. A full 78 percent of companies now have a change management analytics program; in nearly two-thirds of cases (65 percent), its scope is enterprise-wide versus IT-only. More than three-quarters (78 percent) report past use of data-based change management to inform decisions that positively impacted their ITSM positioning.

Asked about the greatest challenges faced in the oversight of change management practices, the responses were:

- Lack of familiarity with change management procedures: 41%
- Insufficient infrastructure for endpoint monitoring: 39%
- Inability to address oversight challenges resulting from remote work: 38%
- Incomplete information to make sound ITSM decisions: 38%
The impact of data-driven change management will only increase in the coming years, with most companies planning to expand their data-based change management capabilities in the near future (85 percent); expecting increased frequency of system changes from their change management analytics program (84 percent); and placing strong importance on automating change management analytics (83 percent).
Ensuring Quality at DevOps Speed

As businesses seek to accelerate innovation to compete in the modern digital economy, effective change management is both a competitive differentiator and an operational imperative. By applying automation and data analytics to change management processes, organizations can transform change management to become an enabler of digital success rather than a brake on innovation. Leveraged within the context of a DevOps framework, and operationalized through a data-empowered, converged ITSM-ITOM team, this approach makes it possible to ensure quality at the speed and scale of digital business. In this way, the organization can maximize the full value of the evolution to an ADE.
Conclusion

To compete and capture opportunities in the growing economy, companies need to accelerate innovation while maintaining quality. The year-over-year growth captured by the Hanover Research survey in areas such as ITSM-ITOM convergence and DevOps framework adoption are no fluke—they represent a wholesale, accelerating transformation of industry practices. By integrating ITSM-ITOM processes, technologies, and teams—and leveraging data analytics across change management—I&O can support DevOps, manage change at the speed and volume of digital transformation, and maintain service quality and uptime to ensure a good customer experience. As shown in the Hanover Research study, this approach can help organizations bring new services to market faster while becoming an Autonomous Digital Enterprise.

Methodology
Hanover Research conducted a global survey of 400 IT and business decision makers on behalf of BMC Software. Respondents are full-time employees of companies with a minimum revenue of $500MM. The survey was conducted online and respondents were recruited via a panel.

For more information
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