Cloud-based device health management solutions driven by artificial intelligence (AI) can be a key differentiator for IT organizations looking to manage the overall health of diverse device fleets and enhance employee productivity and user experience with the IT resources provided.

Next-Generation Device Management: Aligning the IT Experience and Employee Satisfaction

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Introduction

The modern enterprise faces a wide variety of operational challenges as it attempts successful digital transformation initiatives in a time of unprecedented change. Organizations must maintain and grow existing businesses while innovating rapidly to support future growth and expansion, supported by IT organizations adept at demonstrating how technology delivers specific and material value to business users and customers.

In particular, today's workforce relies on a constantly expanding mix of devices to work productively anywhere, anytime, and on any device. From traditional PCs and laptops to mobile phones and tablets to proprietary field technologies, users need their devices to work together seamlessly and maintain productivity with minimal disruptions. At the same time, IT organizations need to easily maintain the reliability, fitness, security, and efficiency of devices throughout their life cycle. In addition, digital experience monitoring (DEM), which enables more consistent visibility of the end-user device experience, is now an important new initiative for IT organizations. For CIOs and IT managers, successful management of a heterogeneous and disparate catalog of devices across an increasingly diverse workforce remains a critical element of maximizing business and IT capabilities across the enterprise.

AT A GLANCE

KEY STATS

» Average savings of 201 hours per year with DEM

» 47% of enterprises surveyed will buy more advanced support contracts to help eliminate downtime from the datacenter

WHAT'S IMPORTANT

» Shift in working environments

» Improving employee satisfaction with DEM tools

KEY TAKEAWAYS

A DEM solution should include:

» Advanced predictive analytics

» Robust fleet health monitoring capabilities

» Root cause analysis

» Quick access to remediation and support

Device Management Is an Ongoing Challenge for Enterprises of All Sizes

IT organizations are managing an increasingly complex mix of devices across a broad and diverse workforce, with varying requirements in terms of performance, access, and availability. As enterprises allow employees to perform critical tasks

from any number of devices, CIOs and IT managers are constantly looking to improve their device management policies and processes. With a sharper focus on monitoring employee satisfaction and engagement, DEM has also risen in importance for many IT organizations. Given the wide variety of disparate solutions available, sometimes limited to specific vendors and products, these efforts are often undertaken with mixed results.

Over the past year, the number of employees working remotely has increased substantially. IDC has seen a surge in devices purchased for employees working almost exclusively from home. Since March 2020, IDC has conducted an ongoing series of surveys examining enterprise needs during this shift in working environments. Survey respondents indicated that remote support capabilities remained a top priority, with about 60% of organizations believing they will invest in secure remote technologies to assist remote workers in device management (see Figure 1).

FIGURE 1: *Demand for Endpoint Device Management and Secure Remote Support*

Q *Due to COVID-19 and the need for new technology and changes to the working model of some organizations, for which of the following technology investments do you think demand will change, and in which direction?*
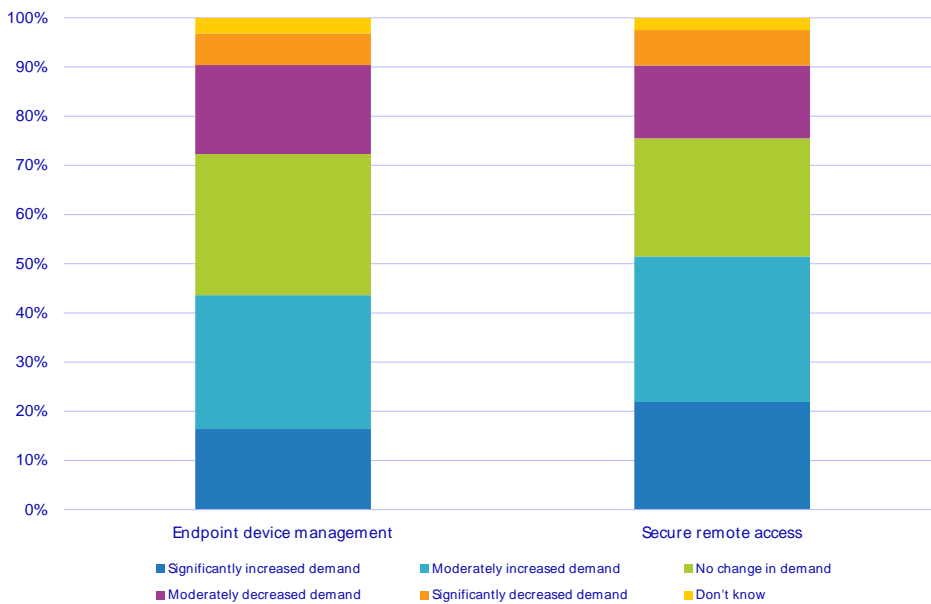
Source: *IDC's* COVID-19 Impact on IT Spending Survey, *May 2020*

For most IT organizations, ensuring top performance across a complex catalog of devices is crucial to making sure the enterprise can achieve strategic advantage. Well-executed device management can help maximize user productivity, allowing faster access to new technologies and helping resolve problems faster when they occur. In addition, tools that can monitor and report on the employee device experience are increasingly critical for IT staff. These steps are key to help business users move quickly to address rapidly changing business conditions in competitive global markets.
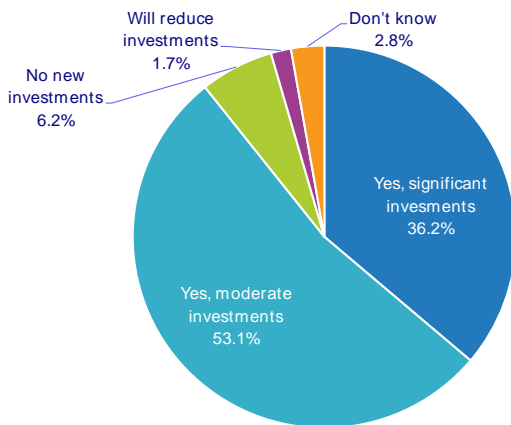
Notably, IDC research continues to show that many organizations struggle to improve device management. Key challenges for resource-strapped IT organizations include:

» Seamless health monitoring and the use of AIOps analytics across a complex mix of devices to maximize performance and improve reliability

» Tools to expedite identification of current and potential issues that could affect productivity

» Improved asset management, including accessing device information swiftly and easily to better optimize asset life-cycle and investment spend

» Data collection to discover employee workstyle personas and hardware/software utilization trends to rightsize resource investments to help maximize employee productivity

» Solutions that can provide remediation and workarounds to help solve problems on the first try

For most CIOs and IT managers, improved device life-cycle management – for technology, health, performance, and employee experience – is a key strategic imperative to make sure business users can achieve desired outcomes. In addition, technology investments that improve the employee experience remain a top priority. In a recent survey, IDC research found that 70% of respondents indicated the technology provided to employees impacts the organization's ability to attract and retain top talent. In this same survey, the majority of respondents indicated their organizations' plan to invest in new services and technologies to improve the ability of IT to support the workforce with technology (see Figure 2).

FIGURE 2: *Additional Technology Investments to Support the Workforce*

Q *Does your organization plan to invest in new services or technologies to improve its ability to support the workforce with technology?*

Will reduce investments 1.7%
Don't know 2.8%
No new investments 6.2%
Yes, significant invesments 36.2%
Yes, moderate investments 53.1%

n = 1,020

Source: IDC's Lenovo PC Deployment Survey, *April 2020*

IT Organizations Look to Cloud-Based, AI-Driven Device Management for Help

Given these challenges, CIOs and IT managers are considering new approaches to device life-cycle management that are AIOps driven and can more effectively meet the needs of the enterprise. Many IT organizations are adopting cloud-based tools to manage and monitor the health of a disparate and complex fleet of devices used by today's "work from anywhere" employees. These device management solutions can offer considerable flexibility in IT operations and eliminate the need to maintain multiple management systems inside an already complicated IT environment. Cloud-based device management solutions that can monitor effectively across device manufacturers and deliver real-time insights on device health and maintenance requirements are key for resource-strapped IT personnel.

In addition, IDC believes device management solutions that incorporate machine learning, analytics, and AI-based methods to manage heterogenous enterprise device fleets can be an important differentiator. These advanced technologies are required for the proactive, preventive, and predictive identification capabilities that can help detect problems before end users are affected. In IDC's March 2020 *Cost of Downtime Survey,* almost 70% of respondents reported using proactive/preventive support technologies – and saving an average of 201 downtime hours per year across technologies in their IT environment. Device management solutions featuring these advanced technologies can help improve:

» Proactive and predictive notification of potential issues across devices

» Issue remediation strategies, including specific steps and recommendations

» Asset utilization, including rightsizing the device and software assets to the employee

» Access to custom data insights and analytics tailored for specific enterprise environments

» Improved visibility on how IT resource constraints and performance degradation impact end user's productivity

Finally, with employee experience now top of mind for most enterprises, access to cloud-based DEM tools for device management can be an important capability. Many CIOs and IT managers are tasked with monitoring and improving employee satisfaction with an emphasis on digital experience, especially with regard to ease of use and daily productivity. IT organizations often struggle to balance their resources and service capabilities with end-user expectations, especially for devices and software provided by enterprise IT.

Key Considerations When Evaluating Cloud-Based Device Management Solutions

For enterprises that are considering adopting cloud-based device health management, IDC recommends looking for providers that can offer the following capabilities:

» Advanced predictive analytics for devices, with demonstrated machine learning and AI capabilities designed for continuous improvement that can adapt to specific IT environments

» Robust monitoring capabilities across a wide variety of devices that include a mix of hardware and software insights to keep systems running at peak performance

» Comprehensive DEM capabilities that provide detailed insights and analysis of the employee experience, including productivity impacts, sentiment, and satisfaction

» Lightweight agents that can monitor and transmit telemetry data without impacting system performance

» Root cause analysis that can assess both systemic and isolated issues

» Quick access to remediation when problems occur with paths to integrate into other industry-standard IT tools such as support ticket management and device provisioning

» A cloud-based portal with intuitive UIs that make it easy to spot and proactively respond to current and potential issues across devices

IDC also recommends considering providers that can help IT organizations measure the alignment of current technologies with long-term business objectives while showing the value of the technology over time. In addition, robust solutions should offer a broad view of overall fleet and device health, with the ability to get granular, as necessary.

Considering Lenovo: Lenovo Device Intelligence

Lenovo offers two digital experience monitoring solutions for advanced device health management that can also measure employee satisfaction with the IT experience: Lenovo Device Intelligence (LDI) and Lenovo Device Intelligence Plus (LDI Plus). These solutions provide the capabilities that allow for the proactive and predictive analytics that IDC has highlighted throughout this document.

Key measures Lenovo has found for its LDI solution include an average of 85% accuracy rate for predicting common blue screens of death prior to failure (based on 1 million crash instances). Lenovo has also found that its device intelligence deep learning model is >90% accurate at pinpointing applications (current and new) causing performance degradation (based on 400,000 data points collected from 5,000 laptops). As utilizing connectivity and enabling the features to collect this information are important to getting the value of proactive and predictive deep learning–based AI, IDC recommends that organizations take the time to evaluate the benefits. Other key features in the LDI solution include:

» Cloud-based, PC fleet health monitoring and visualization of both current and future performance issues in a streamlined, intuitive IT administrator's portal

» Hardware monitoring of storage, battery, and drivers

» Proactive identification of applications that could impact user experience and system performance

» Predictions of potential issues before they affect systems using self-learning AI technology

» Advanced crash analytics to identify problems

» Suggested remediations to help resolve detected issues

» Support for multi-OEM PC devices

LDI Plus will include all of the core LDI capabilities, with expanded monitoring of additional data points across the device fleet. In addition, the solution will allow IT personnel to set rules and policies to execute specific actions without

notifications. LDI Plus also features digital user experience scoring to help monitor the end user's experience with their devices. This scoring features a combination of monitored user experience and survey data when collected. Taken together, the digital user experience scoring can help identify potential issues before they affect employee productivity.

Challenges/Opportunities

While Lenovo has significant opportunities to grow the adoption of its Lenovo Device Intelligence solution, the company will also face some challenges in the dynamic market of device management and support. The proliferation of devices in most enterprises will continue at a dizzying pace, and expanding coverage for the most relevant and widely used technologies will be critical for long-term success. IDC believes Lenovo will need to carefully plan continued investments across the company's device management portfolio as well as third-party OEM and support integration and continue to expand its device coverage.

In addition, Lenovo should focus on continuing to maintain and improve service delivery when customers contact IT with questions or problems. While LDI Plus offers many of the considerable advantages and benefits of predictive and preventive device management and support, the importance of each customer-facing interaction increases substantially. The opportunity for Lenovo will be to deliver a non-demand, high-quality service experience while helping organizations achieve the desired business outcomes across their fleet of devices and improving the overall employee experience with Lenovo Device Intelligence Solutions.

Conclusion

As enterprises continue their digital transformation journeys, IDC expects necessary changes to the process of supporting technology users far outweigh any changes to the technology. However, with the increasingly complex mix of devices required to achieve strategic business outcomes, IT organizations will continue to look for effective ways to manage the overall fleet health and appropriate allocation mix of their devices and other IT assets. As CIOs and IT managers adopt preventive, predictive, and automated operational processes, features that can enable these processes will be increasingly important for device management. IDC expects that providers with comprehensive, advanced offerings that can deliver robust preventive and predictive support with a close eye on the employee experience will be well positioned to help IT organizations support the ever-expanding catalog of devices that deliver ongoing value to the business.

About the Analyst

Rob Brothers, Program Vice President, Datacenter and Support Services

Rob Brothers is a Program Vice President for IDC's Datacenter and Support Services program, as well as a regular contributor to the Infrastructure Services and Financial Strategies Programs. He focuses on worldwide support and deployment services for hardware and software and provides expert insight and intelligence on how enterprises should be addressing key areas for datacenter transformation and edge deployment and management strategies. IT hardware services covered include IoT devices, converged infrastructures, storage, servers, client devices, networking equipment, and peripherals. Software covered includes software-defined infrastructures, cloud support, operating systems, databases, applications, and system software. He also has expertise in the latest consumption models, which include as-a-service models such as device as a service.

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Elaina Stergiades is the Research Manager for IDC's Software Support Services program. In this position, she provides insight and analysis of industry trends and market strategies for software vendors supporting applications, the development environment, and systems software. Elaina is also responsible for research, writing, and program development of the software support services market.

MESSAGE FROM THE SPONSOR

Digital experience monitoring (DEM) software provides analytical tools for examining PC fleet health to uncover factors that influence end-user productivity, impact IT efficiencies, and are primary drivers of support costs. They also deliver analytics to help businesses make data-driven decisions around how to allocate hardware and software resources, discover where the end-user experience appears to suffer, and help pinpoint the areas to improve. Clearing paths for organizations to innovate faster and deliver more value, with dramatically less effort, in turn leads to a better overall user experience, higher productivity, and user satisfaction as well as significant ROI for organizations over time.

To learn more about Lenovo Device Intelligence Plus, contact your Lenovo sales representative, business partner, or visit our webpage: www.lenovo.com/device-intelligence.

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