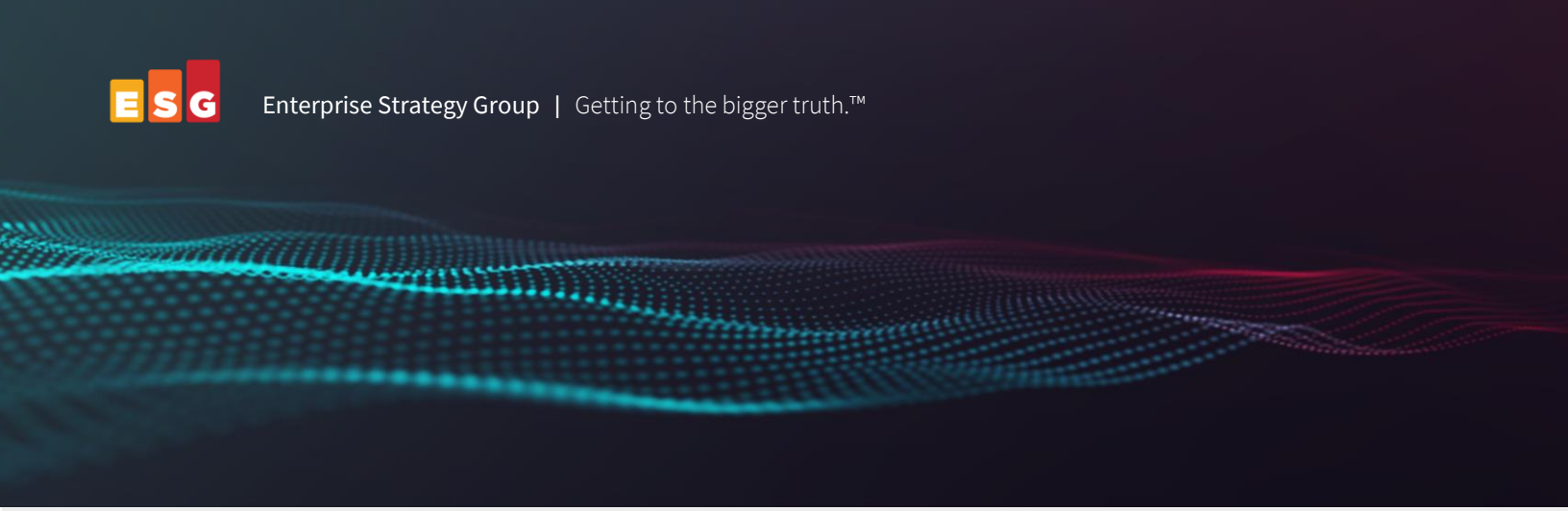

ESG WHITE PAPER

Autonomous Digital Experience Management (ADEM) Yields Benefits Across the Organization

Palo Alto Networks' ADEM Improves Visibility, Operational Efficiency, and the User Experience

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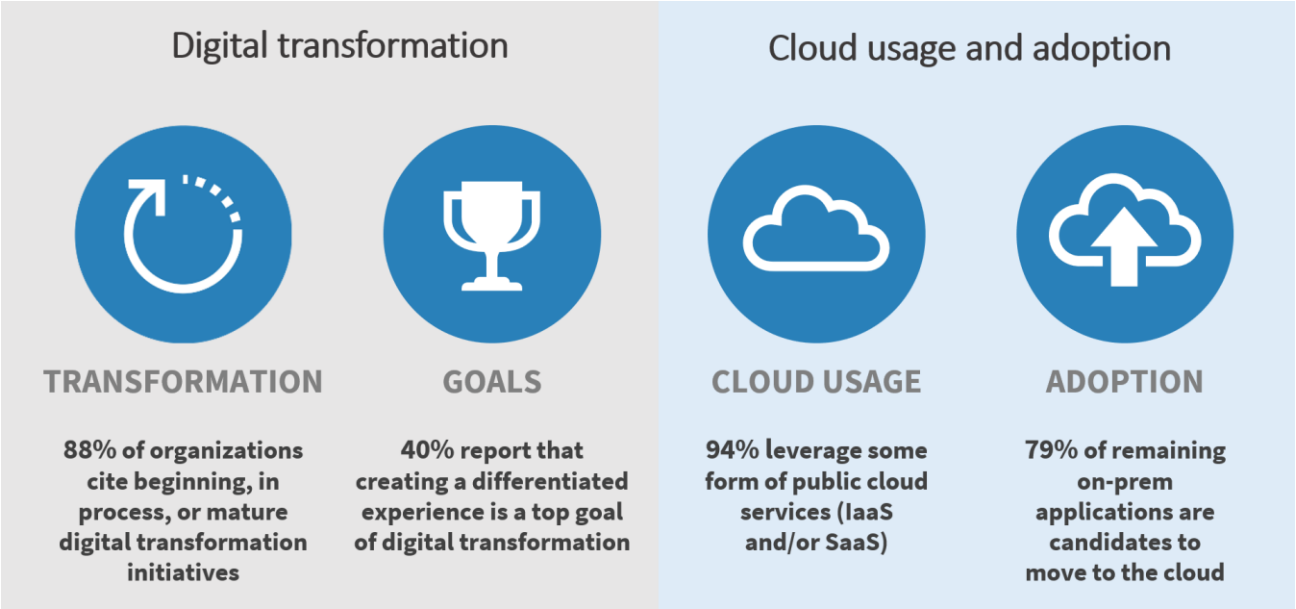
IT Environments are Rapidly Evolving

Highly distributed, modern environments are continuing to drive organizations to accelerate their digital transformation initiatives. In fact, based on ESG research, 88% of organizations report that their digital transformation initiatives are mature, in process, or beginning.[1] Thus, it should come as no surprise that the top goals reported by respondents for these initiatives are to drive greater operational efficiency (56%), adopt digital tools and processes to allow users to collaborate in new ways (49%), and provide better and more differentiated customer experiences (40%).

These digital transformations are also driving the rapid adoption of cloud-based applications. According to ESG research, 94% of organizations cite using public cloud services (i.e., IaaS- or SaaS-based applications) and more than three-quarters (79%) of their on-premises applications and workloads are potential candidates to move to the cloud over the next five years. Since these highly distributed environments are also more complex, it is increasingly difficult to ensure secure connectivity and positive user experiences—especially as increasing numbers of organizations continue to adopt hybrid work models for knowledge workers (see Figure 1).

Figure 1. Digital Transformation and Public Cloud Usage

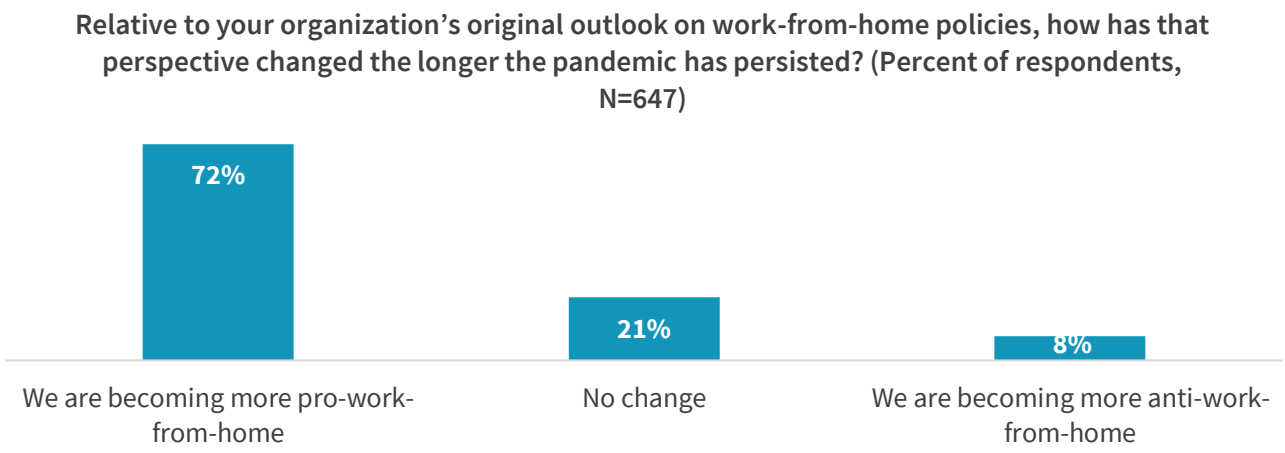


Source: Enterprise Strategy Group

Indeed, ESG research highlights that nearly all (97%) organizations reported still requiring at least some of their knowledge workers to work remotely as a result of the COVID-19 pandemic, and almost three-quarters of organizations (72%) reported that they were becoming more "pro" working from home the longer the pandemic has persisted (see Figure 2).

[1] Source: ESG Research Report, *2021 Technology Spending Intentions Survey*, January 2021. All ESG research references and charts in this white paper have been taken from this research report, unless otherwise noted.

Figure 2. Nearly Three-quarters of Organizations are Pro Work-from-home



Source: Enterprise Strategy Group

Clearly, hybrid work is here to stay, and organizations must employ modern solutions to ensure that remote workers can securely access all required applications—and enjoy a positive experience while doing so. At the same time, IT operations teams must have complete visibility into all of the segments in the service delivery path for the hybrid workplace. From the application—to the user—IT must be able to rapidly detect and alert users to any problems that arise in order to ensure a positive digital experience and improve user productivity. This, in turn, will aid in minimizing tickets for operations teams, while lowering costs and enhancing operational efficiency. While this all sounds ideal, it is easier said than done.

Challenges Created by Highly Distributed Environments

No doubt, these highly distributed environments are far more complex than they were in the past. According to ESG research, 75% of organizations believe that their IT environments are more complex than they were just two years ago. But what are the causes driving this complexity? A top driver is the rising number of remote workers due to COVID-19 work-from-home mandates (49%).

From a network perspective, challenges persist in wide area networks (WAN), and ESG research indicates that lack of security integration (28%), and the performance of internet connections (25%) are two of respondents' top wide area network challenges.[2] Given the need for secure and consistent connections, this scenario sets up the classic dilemma of balancing security efficacy with network performance. Ultimately, organizations need both. IT cannot afford to swap out one for the other since network performance directly impacts user experience and productivity.

Lack of security integration (28%), and the performance of internet connections (25%) are two top network environment challenges.

There is no doubt that effectively troubleshooting issues in highly distributed environments can be difficult. What's more, achieving end-to-end visibility into the network is problematic due to a number of factors, including:

[2] Source: ESG Research Report, *Network Modernization in Highly Distributed Environments*, November 2021.

- Lack of comprehensive control and visibility into all components of the service delivery chain including home networks (inclusive of device, Wi-Fi, and home router), ISP path, applications, and internet traffic. The root cause of the problem can lie within any of these segments.
- Deploying multiple agents on user devices, branch networks, and cloud infrastructure.
- Accessing tightly controlled SaaS applications.
- Defaulting to traditional swivel-chair management and correlation efforts among team members across disparate management tools.

Together, these factors have contributed to extended troubleshooting times, loss of productivity (think of the influx of help desk tickets from users), and poor user experiences. Existing solutions used for network monitoring, endpoint monitoring, and application monitoring provide siloed visibility into their respective domains, but lack the context of the overall environment, making it difficult to troubleshoot effectively. Consequently, organizations began turning to digital experience management (DEM) solutions.

Organizations require end-to-end visibility into the actual data paths for all applications—regardless of location.

Initially, many attempts at DEM solutions did not offer the visibility IT required to determine and mitigate any negative impact on the user experience. Instead, these DEM solutions relied only on simulated user traffic (not real-time traffic) and required organizations to deploy appliances and additional agents. Though this worked well enough in centralized data centers and for employees working in the physical office, it still did not offer comprehensive visibility, was a cumbersome process, and added another layer of IT complexity.

The pace of business has accelerated and the way we do business has changed. Working "good enough" is no longer good enough. Modern distributed cloud environments and hybrid workers have coalesced to produce highly dynamic application environments. To be operationally efficient and ensure positive user experiences, organizations require end-to-end visibility into the actual data paths for all applications—regardless of location. Enter Palo Alto Networks.

Palo Alto Networks' Autonomous Digital Experience Management (ADEM) for Prisma SASE

A recognized leader in next-generation firewalls and innovative cloud cybersecurity solutions with more than 85,000 customers in 150+ countries, Palo Alto Networks has been actively building out innovative, comprehensive solutions to help organizations accelerate the adoption of highly distributed application environments and workforces.

Palo Alto Networks has continued to evolve its portfolio, offering Prisma SASE, a secure access service edge (SASE) solution. Prisma SASE encompasses SD-WAN connectivity, network security, and Autonomous Digital Experience Management (ADEM), rolled into a single, cloud-delivered service.

For organizations currently using or planning to use Palo Alto Networks' Prisma Access for security, and Prisma SD-WAN for connectivity, ADEM provides significant benefits across the organization. Simple to deploy, ADEM can quickly deliver value as there is no need to deploy any additional appliances or agents.

ADEM enables organizations to effectively address the typical challenges found in highly distributed and complex environments by providing the following:

- Segment-wise Insights. Operations teams can view every segment in the application delivery path for all users—in branch, home, or remote locations.
- Expedited Troubleshooting. With its single pane of glass, ADEM provides comprehensive visibility that aids organizations to substantially reduce the time to identify potential issues and then remediate them. For outages beyond an organization's control (e.g., SaaS, internet, etc.) ADEM enables operations teams to proactively notify users, reducing wasted effort and minimizing loss of productivity.
- Comprehensive Monitoring. ADEM collects and monitors data from endpoint devices (including CPU, memory utilization, and Wi-Fi statistics),leveraging both real user traffic and synthetic tests to provide a holistic view of the entire distributed environment.
- Optimized Digital Experiences. While deploying a SASE solution can be challenging, ADEM is tightly integrated into Prisma SASE to ensure that organizations have the ability to verify optimized user experiences when leveraging a cloud-based SASE solution.
- Operational Efficiency. By leveraging existing Palo Alto Networks' GlobalProtect App, Prisma SD-WAN, and tight Prisma integration, ADEM does not require organizations to deploy additional agents on user machines or at branch sites.

Palo Alto Networks' ADEM Provides Value

ADEM provides value across the organization, assisting both IT teams and end-users—from outages outside an organization— to common user device problems. With ADEM, there is no longer any need for IT to rely on cumbersome, manual processes to identify and mitigate potential issues or use monitoring methods that take a siloed approach and only provide a fraction of the required visibility, saving time and resources—while also assisting users to maintain a high level of productivity and enjoy consistent, trouble-free user experiences. These are some examples of how ADEM can provide value.

SaaS Application Outages No Longer Bring Work to a Standstill

Palo Alto Networks leverages ADEM in the vendor's own environment, ensuring employees enjoy the best possible experiences by enabling IT to work more efficiently. During a recent SaaS-based social media platform outage, ADEM was able to quickly identify the issue and alert users within seconds of the problem occurring, mitigating user frustration and stemming the potential loss of productivity.

While a routing problem in a major cloud provider data center is not something an enterprise can repair, ADEM will alert operations teams to notify users in near-real time that it has isolated a problem with a popular site and that the site itself is experiencing difficulties. Doing so eliminates the need for users to continue attempting to access the application. In essence, users can be more productive, reducing time and effort focused on troubleshooting their own devices, e.g., checking Wi-Fi connections or first-mile connectivity providers—or even worse, creating help tickets to engage the organization's corporate support team.

Let's do the math. In an organization with 2,000 employees, sending a simple alert email to users notifying them that a particular application or platform is down could save hundreds or even thousands of hours of lost productivity. Users no longer need to spend valuable time and energy chasing down issues that don't exist. What's more, support teams must no longer waste countless hours manually checking on reported user issues, enabling IT to work on more value-added strategic initiatives.

This example highlights a social media application; however, if the outage occurred for a business-critical application, the loss of productivity would be much higher, and the ability to rapidly detect and inform users would be even more impactful.

End-user Device Issues are Quickly Identified and Resolved

A single pane of glass provides IT teams with visibility into a highly distributed network, allowing them to quickly identify and locate an issue—with the ability to narrow it down to an individual user device. ADEM then supplies detailed information on how to resolve the issue, e.g., too many applications are open, or one application is consuming too many CPUs, etc. For example, a user working at home using their home Wi-Fi may end up roaming (i.e., Wi-Fi signal travels to different areas of their house). As a result, the user may encounter low signal strength, which in turn negatively impacts their application experience.

Another scenario might find a user performing an operating system upgrade, or perhaps an upgrade kicked in without the user's knowledge. In either case, this event might result in high CPU usage. IT teams using ADEM would be able to observe that a user's new OS software install/update resulted in high CPU usage, which in turn would negatively impact performance on user applications.

Possessing this level of visibility ensures that operations teams can significantly reduce the amount of time needed to locate and fix an issue that is impacting user experience. Using ADEM, IT is able to determine if internet connections or endpoint devices are causing issues and proactively notify users of the potential problem.

Visibility into Branch Endpoints and IOT Devices Offers Greater Operational Efficiency, Better User Experiences

With ADEM, operations teams not only have a unified view into user experience, but also possess visibility into remote sites. Since the ADEM agent is natively integrated into Prisma SD-WAN, organizations are able to monitor end-to-end user experiences for critical branch endpoints, including IoT devices.

The same dashboard that provides visualizations of an organization's hybrid workforce delivers visibility for both mobile/home user experience and enables IT to view those users connecting to the network from branch locations. This allows an administrator to view an application experience score on a per-path basis, whether that path is active or backup. With the capability to run proactive synthetics on every path, the administrator can recognize the best path, per application, for all users in a branch office. Without this ability, IT would not be able to attain such comprehensive visibility, thus maintaining operational efficiency and providing better user experiences.

The Bigger Truth

Distributed application environments and hybrid work models continue to gain momentum across virtually all organizations. As a result, operations teams struggle to regain control of very complex environments. To achieve better control and operational efficiency, these teams will require comprehensive visibility into all the segments in the application delivery path for the hybrid workplace in order to deliver positive user experiences.

Ensuring every user, regardless of their location, will have a positive experience and remain highly productive is a requirement for these new environments. Organizations need modern DEM solutions to enable them to regain visibility of these environments without re-instrumenting or deploying additional agents.

Palo Alto Networks' modern Autonomous Digital Experience Management (ADEM) solution builds off the widely deployed Prisma Access and SD-WAN solutions (now Prisma SASE) to provide a single pane of glass for end-to-end visibility, enabling

organizations to significantly reduce the time needed to locate and resolve issues, and ensuring that workers are more productive and can consistently receive enhanced experiences.

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