Analyzing the Economic Benefits of Cloud-native Network Management with Aruba Central
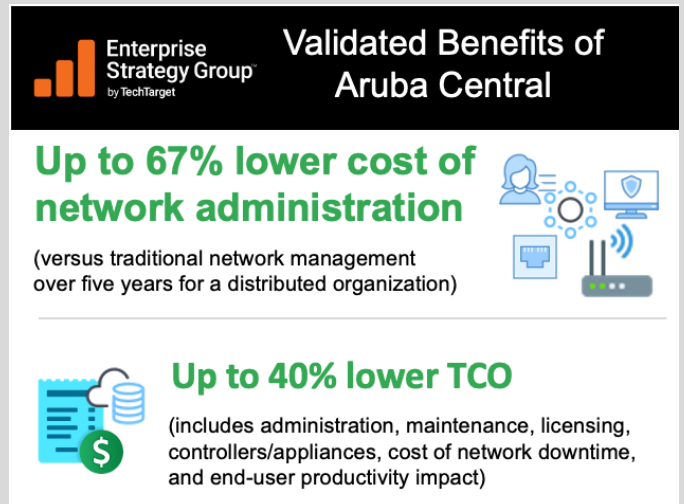
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Executive Summary

Networks have never been more important to business operations than they are now, and the role they play in organizations of all types is continuing to become more critical and more visible to operations. However, there is a major and widening gap between the capabilities offered by legacy network management tools and the functionality that is actually needed to handle the complexity and growing burden of modern network management.

To address this issue, IT organizations are now turning to a new generation of comprehensive, cloud-native network management tools built on a scalable microservices-based architecture that incorporate AI and high levels of automation.

Validated Benefits of Aruba Central

Up to 67% lower cost of network administration

(versus traditional network management over five years for a distributed organization)

Up to 40% lower TCO

(includes administration, maintenance, licensing, controllers/appliances, cost of network downtime, and end-user productivity impact)

This Economic Validation of Aruba Central by TechTarget's Enterprise Strategy Group (ESG) revealed that organizations can provide faster time to value and improved business agility while reducing operational complexity, administrative overhead, and risk to the organization. Our models predict that Aruba Central can lower the cost of administration and maintenance of wired, wireless, and WAN network devices by up to 67% for distributed organizations at a total cost of ownership that is roughly 40% lower than using traditional or legacy network management solutions.
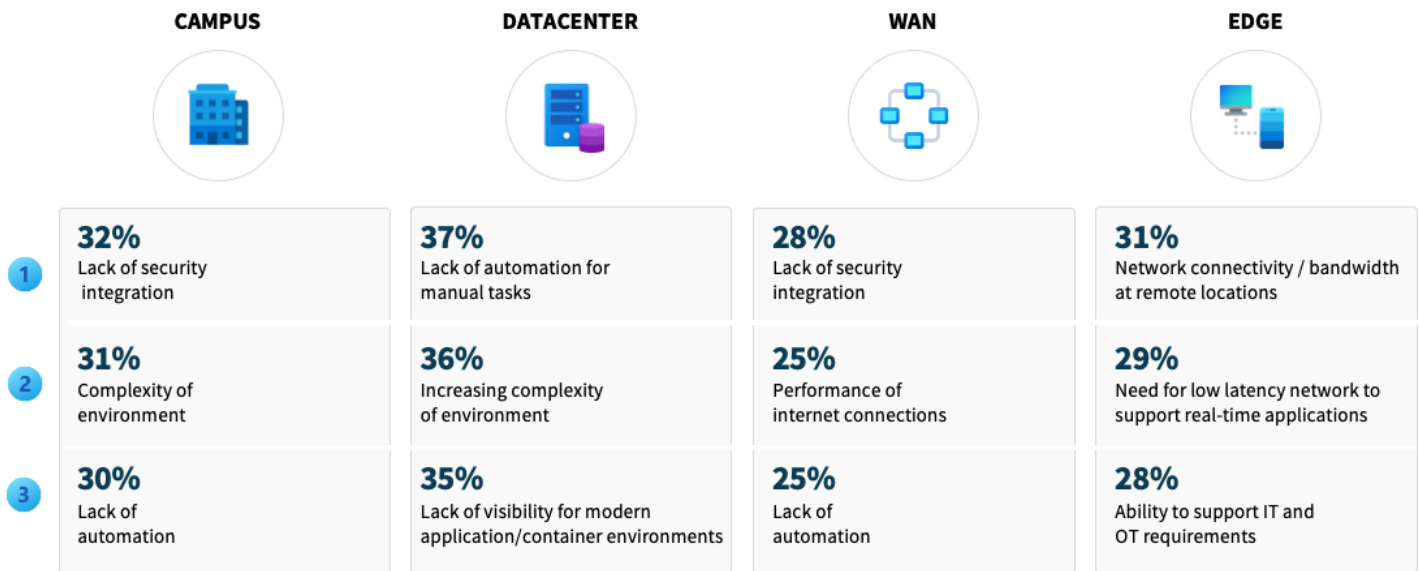
Introduction

This Economic Validation focused on the quantitative and qualitative benefits organizations can expect from Aruba Central, a cloud-native networking solution that is integrated into the HPE GreenLake Cloud Platform. As part of the Aruba Edge Services Platform (Aruba ESP), Aruba Central delivers built-in AI-powered insights, workflow automation, and edge-to-cloud security. Our analysis found that Aruba Central has helped distributed organizations to provide significantly improved business agility, reduced operational costs, and reduced risk to the organization.

Network Challenges

IT organizations face increasing pressure to boost the agility of their parent organizations by being agile themselves. Within IT departments, network teams must meet SLAs that deliver modern, high levels of service, with increasingly limited resources. The breadth of challenge that this creates is illustrated by the responses to recent Enterprise Strategy Group (ESG) research surveys of networking professionals. When asked about their top networking challenges today, organizations reported some common challenges. More specifically, the respondents identified the increase in complexity and the need for automation as top challenges across the campus, data center, and WAN environments. As the environments become more distributed, security also becomes a top challenge, as does performance across the WAN or at Edge locations.[1]

Figure 1. Top Networking Challenges

CAMPUS	DATACENTER	WAN	EDGE
32% Lack of security integration	**37%** Lack of automation for manual tasks	**28%** Lack of security integration	**31%** Network connectivity / bandwidth at remote locations
31% Complexity of environment	**36%** Increasing complexity of environment	**25%** Performance of internet connections	**29%** Need for low latency network to support real-time applications
30% Lack of automation	**35%** Lack of visibility for modern application/container environments	**25%** Lack of automation	**28%** Ability to support IT and OT requirements

Source: Enterprise Strategy Group, a division of TechTarget, Inc.

So it shouldn't be a surprise that ESG research found that 54% of respondents believed their organizations' network environments were either more or significantly more complex today than just two years earlier.[2] Unfortunately, many organizations administering these increasingly complex networks are using equally complex legacy network management tools. Such tools create administrative bottlenecks that limit both networking and overall business agility while imposing multiple management silos across wired, wireless, and WAN networks, each with different requirements for administrator skills and certifications.

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[1] Source: Enterprise Strategy Group Research Report, *Network Modernization in Highly Distributed Environments*, November 2021.
[2] Ibid.

As networks are required to connect highly distributed environments and continue to become more complex, so, too, do the difficulties created by these legacy management systems. A lack of AI/ML technology and understanding of network operations makes determining the impact of problems on productivity or customer satisfaction a highly manual process that involves much guesswork. As a result, the time it takes to find and fix problems is extended. In addition, the lack of automation in legacy management systems slows the deployment, configuration, and lifecycle management activities as they are more labor intensive. The effect on productivity is compounded by the fact that lack of automation significantly increases the risk of human error as IT is forced into more manual data entry.

Legacy management tools can make network operations less agile and more costly by requiring IT staff to make on-site visits to remote or branch locations for rollouts or upgrades. And enterprise networks are also more vulnerable to cyber-threats because of public cloud usage, an increase in remote workers, and IoT initiatives that are increasing the surface area open to attack. To counter this trend, IT organizations must meet levels of sophistication that include data traffic segmentation and the securing of endpoints that legacy management tools cannot deliver.

To address these issues, many IT organizations are turning to cloud-based network management. By providing centralized, single-pane management and global visibility into networks, cloud-based solutions can improve business agility and operational efficiency, while also reducing risk.

The Solution: Aruba Central

Aruba Central is an AI-powered, cloud-native network management solution developed by Aruba, a Hewlett Packard Enterprise company. Cloud-native solutions are modern applications designed to run on scalable and secure microservices in the public cloud. Aruba Central provides a single point of visibility and control for wireless, wired, WAN, and remote network infrastructure. The operations of campus, branch, remote, data center, and IoT networks are combined into a single dashboard and benefit from workflow automation, end-to-end orchestration, and advanced security features. Key benefits of Aruba Central include:

- **Centralized workflows** - Provision, configure, deploy, maintain, and optimize network infrastructure and services from a single cloud-based dashboard.

- **Full-stack AIOps** - AI-powered insights and automation for faster identification and resolution of network- or user-impacting issues, plus the prioritization of areas that will benefit from optimization improvements.

- **Built-in security -** Role- or policy-based access control for users and clients; AI-driven profiling and classification for all connected endpoints in real time, including IoT and BYOD; integrated IDS/IPS for advanced threat intelligence; and protection.[3]

- **Simplified management of remote work/WFH** - Deep visibility and insights into VPN-connected clients, as well as those connected to Aruba remote access points, thereby extending secure, in-office-like experiences to employees anywhere they go, all via a minimal footprint. EdgeConnect Microbranch architecture provides WAN-like functionality in an access point—no need for a separate gateway—making it ideal for smaller offices, ad-hoc locations, and users at home.

- **Open APIs and webhooks** – Promote network programmability and automation by making it easy to integrate with other IT tools such as Slack, ServiceNow, Ansible, and more.

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[3] IDS/IP applies to SD-Branch only.

- **Flexible consumption and deployment models** – SaaS, on-premises, network-as-a-service, or managed services help organizations address a range of technical, staffing, and financial needs without compromising on IT business objectives.

Figure 2. Aruba Central Cloud-native Network Management
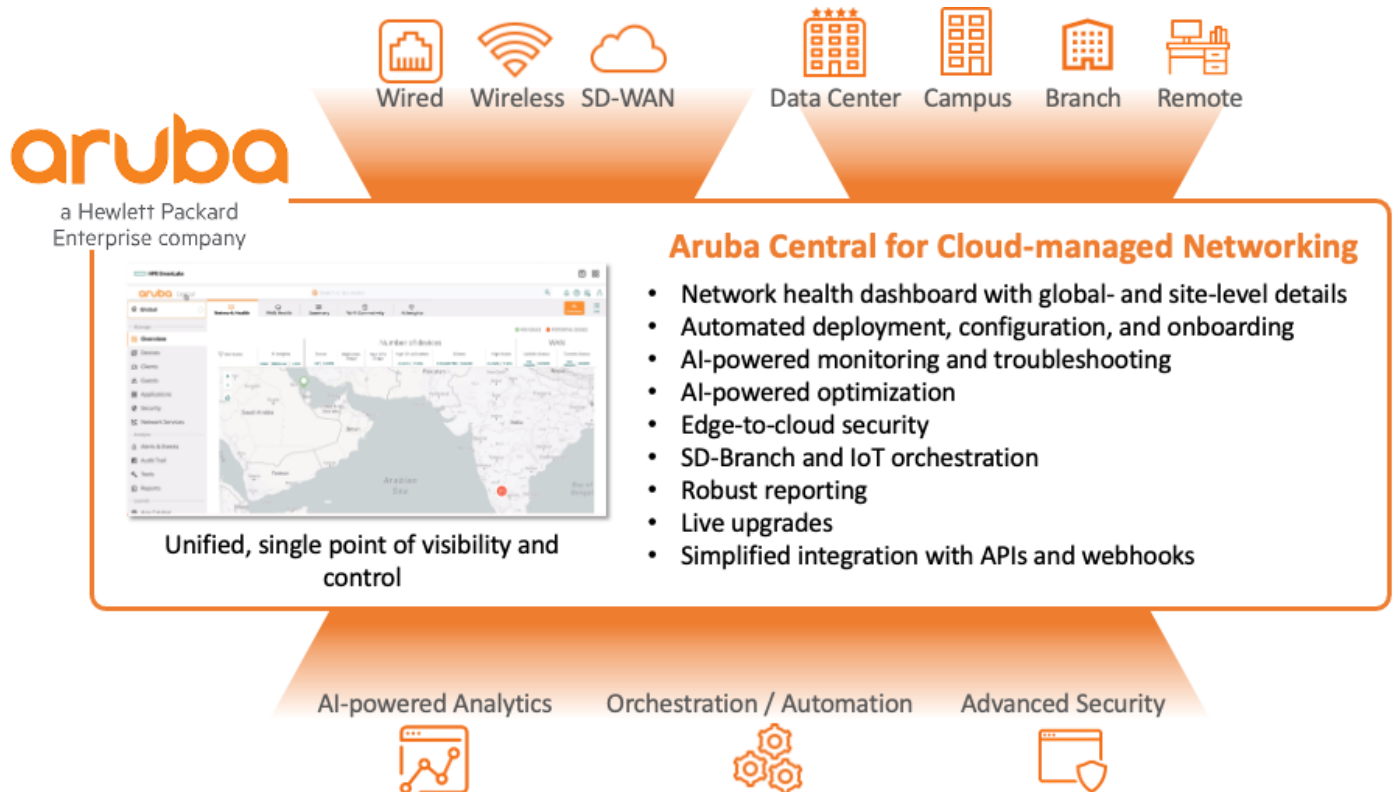
Source: Enterprise Strategy Group, a division of TechTarget, Inc.

Enterprise Strategy Group Economic Validation

Enterprise Strategy Group (ESG) completed a quantitative economic analysis of Aruba Central, applying a proven method for understanding, validating, quantifying, and modeling the economic value propositions of a product or solution. The process leverages ESG's core competencies in market and industry analysis, forward-looking research, and technical validation. ESG conducted in-depth interviews with end-users to better understand the experiences customers have had related to network management and to learn how Aruba Central has provided savings and benefits to their organizations. The qualitative and quantitative findings were used as the basis for a conservative economic model illustrating the savings and benefits that might be achieved by an organization.

Aruba Central Economic Overview

Our economic analysis revealed that Aruba Central provides its customers with significant savings and benefits in the following categories:

- **Business agility and faster time to value** – improved overall business agility and, hence, competitiveness by increasing the speed at which IT teams can support new business initiatives, modify services, or deploy networks at new venues.

- **Improved operational efficiency** – the platform's high level of automation and provision of AI-driven insights, alerts, and automated self-healing workflows improve the efficiency of IT teams, reducing costs and increasing the level of service provided to end-users and, hence, business customers.

- **Reduced risk** – ability to radically reduce the frequency and severity of network issues and the average time taken to resolve them. The threat of cyber-attacks is also reduced by automation, role-based policies, improved IoT visibility, and AI-based insights, for both conventional and IoT endpoints with Client Insights.

Business Agility and Faster Time to Value

Alongside our assessment of the functionality of Aruba Central, discussions with existing users found that the platform has significantly increased the agility of IT teams across multiple sites and has also improved the agility of their wider organizations:

- **Business agility -** boosts overall enterprise agility by allowing IT teams to more quickly support new business initiatives or alter services to suit changing business conditions. In a 2021 Aruba-sponsored survey of 167 networking professionals at various-sized enterprises that had deployed Aruba Central, almost two thirds said the platform accelerated new network or business-venue deployments by at least 50%.[4] This results in fewer missed business opportunities and faster time to revenue for business expansion and new initiatives.

- **Networking agility -** IT teams spent significantly less time on reactive or operational network activities. In the above survey, 66% of respondents said Aruba Central allowed them to complete network changes or updates at least 50% faster than they could before. This allows network teams to reduce time spent on day-to-day maintenance and focus more on proactive high-value initiatives.

> *"To do a complete school deployment, it's gone from days to hours."*
> - *Head of Network Operations, regional school system*

- **Rapid, no-touch onboarding of new locations and staff** – New business venues can be onboarded without requiring technical staff to be present at remote locations. Home offices are linked to the enterprise WAN using employee-installed plug-and-play access points and cloud-downloaded security policies or by using VPNs that require no client software.

- **Flexibility of deployment –** To best suit their individual financial requirements and levels of technical expertise, IT organizations can choose between three methods of implementing Aruba Central: as a cloud-hosted SaaS service, as a managed service provided by a third party, or as an on-premises deployment. The first two OpEx-based options eliminate upfront spending and maintenance of on-premises appliances.

> *"There are significantly fewer network issues coming into the service desk and those [that are coming in] are dealt with 20% faster. We wouldn't have been able to roll out Office 365 as quickly as we did—in five days—if we were still managing the network day-to-day."*
>
> - *Chief Digitalization Officer, manufacturing company*

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[4] Source: *Aruba Central TechValidate Customer Survey*, July 2021. All Aruba research references in this economic validation are from this customer survey unless otherwise noted.

Improved Operational Efficiency

Aruba Central increases the efficiency of IT departments in multiple ways, including a single management system that covers wired, wireless, and WAN connections; high levels of automation; and AI-driven insights and alerts. As well as reducing network management costs, the resulting improvement to IT service levels boosts the operational efficiency of wider organizations:

- **Single point of visibility and control –** orchestrates an organization's entire network, with unified management across wired, wireless, and WAN connections. All workflows are centrally managed, rather than device-by-device or site-by-site. In the survey described above, over half of the respondents said Aruba Central cut operational costs by at least 25%, while another 32% said it did so by at least 50%.

- **AI-driven automated monitoring and optimization –** continually monitors all network infrastructure and endpoints, without requiring collectors, agents, or other devices. When an Insight identifies a problem, the platform can implement a self-healing or closed-loop workflow that automatically helps solve the problem. Aruba Central also recommends intelligent network optimizations using insights derived from AI-based analysis of billions of records from telemetry data collected from over 120,000 customer networks, 200+ million endpoint clients, and across more than 30 industries and verticals.

> *"We used to have six people on-premises managing our networks, but with Aruba Central, just two people can easily do the same work, and the other four can focus on other activities."*
>
> *-   CIO, large retail organization*

- **Improved end-user experience and productivity –** resulting from improved network service levels. 38% of surveyed users reported that Aruba Central reduced the frequency of trouble tickets by at least 50%. End-users also benefit from simplified processes for employee onboarding, connection of home offices to WANs, and application of security policies.

- **Improved networking team productivity –** in the survey referred to above, 48% of networking professionals said Aruba Central caused a 50% or greater reduction in configuration and other errors by eliminating manual data entry.

- **Simplified IoT management –** includes an integrated IoT dashboard and access to an app store for third-party integrations and plug-ins. The platform also includes a remote access system that includes role-based network access controls for all IoT devices, including headless devices that cannot be onboarded using standard processes.

> *"Aruba enabled us to pinpoint, in just a few hours, that continuous broadcasts and multicasts from a decommissioned SIEM server were saturating our network. Without the Aruba solutions, such troubleshooting would have taken us days and possibly some service interruptions."*
>
> *-   Director of Infrastructure, large financial services provider*

⚠ **Reduced Risk to the Organization**

Enterprise Strategy Group (ESG) and existing Aruba Central users have identified multiple ways in which the platform reduces risk. These include significant reductions in the frequency of network outages, faster resolution of problems, and increased protection against cyber-attacks for both traditional and IoT endpoints:

- **Reduced network outages** – overall, enterprise and end-user productivity is increased by boosted network uptime. In addition to orchestrating live, non-disruptive updates to networks, Aruba Central heavily reduces the risk of outages caused by human error.

- **Faster remediation of issues** – a third of surveyed users have reported that Aruba Central reduced their average trouble-shooting times by 75%. This results in lower network operating costs and reduced impact of problems on end-users or transactions. Service levels continue to improve over time, as Aruba Central uses AI-driven insights to optimize networks, thereby increasing both employee and customer satisfaction.

> *"It used to be almost taboo to even upgrade any network device because it would take so long, and it would take everything down. Now, it's a regular thing. We deploy the changes throughout the night, and then it's good to go."*
>
> - *Network Engineer, large construction company*

- **Integrated support** - a live chat feature within the platform gives network administrators rapid access to support engineers in an Aruba technical assistance center (TAC). This reduces the workload for networking teams during problem resolution and, by speeding the resolution of issues, reduces their impact on business operations.

- **Automated, AI-based security** – security features built into Aruba Central include unified threat management, intrusion detection and prevention, authentication, content filtering, and endpoint profiling. The platform monitors all network elements and makes AI-based comparisons of connected devices with profiles of both conventional and IoT clients, making administrators aware of what is attached to their networks.

- **Security policy management** – heavily simplifies policy enforcement, the adoption of Zero Trust security strategies, and network segmentation across multiple sites by using overlays based on widely adopted protocols such as EVPN/VXLAN. Unlike legacy systems, this feature works with existing network configuration and security tools, allowing IT organizations to modernize networks at their own pace.

Enterprise Strategy Group Analysis

Enterprise Strategy Group (ESG) leveraged the information collected through vendor-provided material, public and industry knowledge of economics and technologies, and the results of customer interviews to create a five-year TCO/ROI model that compares the costs and benefits of managing a network deployment with Aruba Central against that of managing an equivalent configuration using traditional non-cloud-native network management software. ESG's interviews with customers who have recently made the transition, combined with experience and expertise in economic modeling and technical validation of Aruba and other networking technologies, helped to form the basis for our modeled scenario.

ESG assumed that a modeled organization managed their distributed network consisting of a corporate data center site, 5 campus locations, 25 branch office locations, and 50 small remote worker's locations. The rapidly expanding organization was expecting to add an average of 1 campus site, 1 branch site, and 5 additional remote sites per year over the next five years (through new growth and/or acquisition). We assumed that, in addition to deploying new sites, existing sites would grow over time by adding wired switches and wireless APs as well. A detailed list of our assumptions is found in Appendix A.

> ## Why This Matters
>
> Traditional network management (multiple tools, non-cloud, limited or no AI, etc.) for wired, wireless, and WAN networks can be complex to manage, maintain, update, scale, and protect, and often requires manual tasks performed across multiple management interfaces.
>
> Aruba Central leverages cloud-native management, AI-powered insights, automation, and integrated support to greatly reduce the cost and complexity of managing distributed networks.
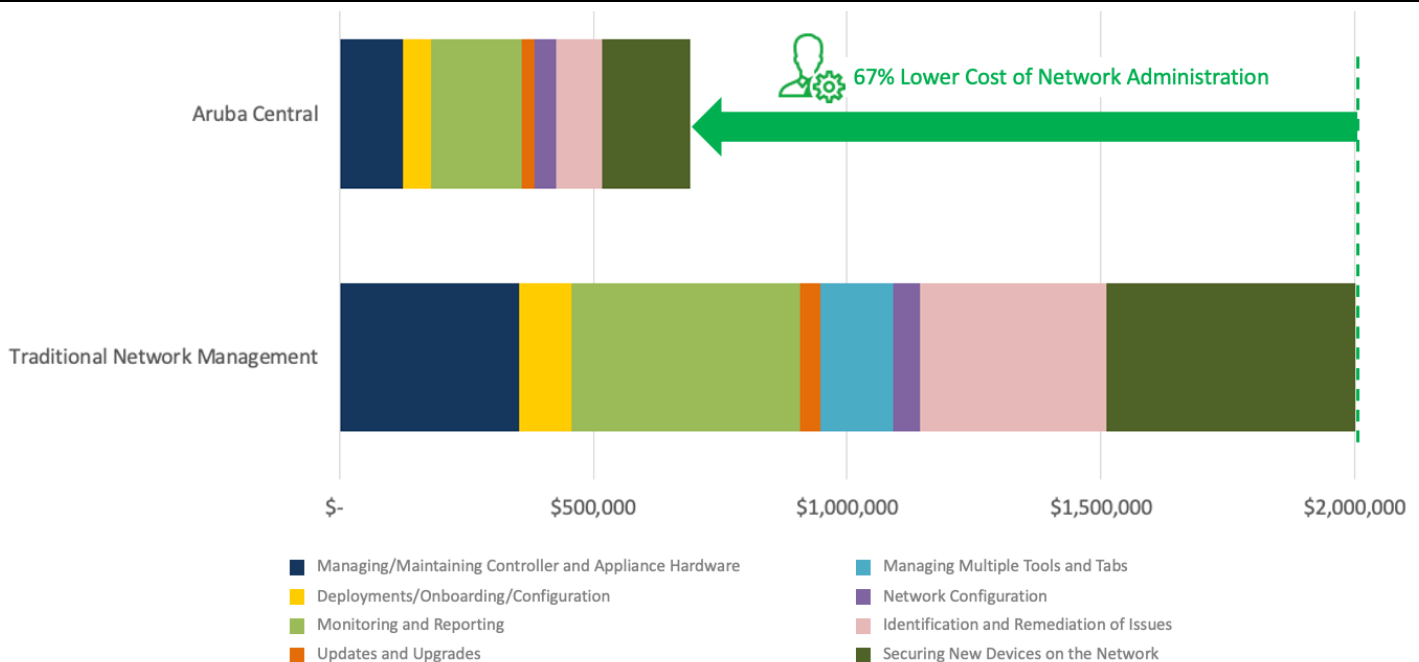
We then modeled the time expected to deploy/onboard/configure new wireless APs and wired switches, perform updates and upgrades, monitor and manage the network, perform network configuration tasks, identify and remediate issues, and secure new end-user and IoT devices that were added to the network. The times that we assumed for traditional networks and the improvement due to Aruba Central were each based on a good-faith combination of ESG research, vendor-collected data, and customer interviews/case studies. Our models predicted that Aruba Central could lower the cost of network administration by up to 67% compared to using traditional siloed network management tools. The results are shown in Figure 3.

Figure 3. Cost of Network Administration

67% Lower Cost of Network Administration

Legend:
- Managing/Maintaining Controller and Appliance Hardware
- Deployments/Onboarding/Configuration
- Monitoring and Reporting
- Updates and Upgrades
- Managing Multiple Tools and Tabs
- Network Configuration
- Identification and Remediation of Issues
- Securing New Devices on the Network

Source: Enterprise Strategy Group, a division of TechTarget, Inc.

The tasks that make up the total administrative savings of 67% are described in the *improved operational efficiency* section of this report and can be broken down and categorized further. We found that administrators could expect to spend up to 69% less time on daily administration. A single pane for management, improved visibility, and reporting simplified tasks like dealing with multiple tools and tabs, performing network configuration, and monitoring and reporting while AI-powered intelligence helped to speed daily identification and remediation of issues. Aruba Central admins could expect to spend 48% less time deploying, onboarding, and configuring new network devices and 62% less time performing controller, appliance, and AP management, maintenance, and upgrades. And Aruba Central could help to automate up to 95% of the manual tasks required to identify, categorize, and secure new devices on the network.

ESG then modeled the expected cost of licenses and subscriptions required for traditional management software and Aruba Central based on the modeled number of devices under management each year. We also calculated the avoided cost that is saved by not having to purchase, manage, and maintain additional controller/gateway hardware at each branch and remote site (based on AP-only deployments) and a virtualized server to run various network-related services at each regional campus location.

Finally, ESG modeled the increase in expected network uptime with Aruba Central due to proactive AI-based identification and elimination of issues and faster remediation enabled through improved visibility and support. We assumed conservatively that the traditional network would provide 99.8% uptime (17.5 hours of downtime in year 1) and Aruba Central could avoid 35% of expected downtime (6.1 hrs) through faster updates and avoidance of network issues. We then assumed that network-related activities contributed to $100M for the organization, resulting in an estimate of roughly $11.4K/hour of expected downtime. Similarly, we calculated an expected cost of impacted productivity based on the hourly rate of 2,000 employees, with 30% of employee productivity impacted for an average of 24 hours per incident.

Putting this together, we calculated the expected five-year total cost of ownership (TCO) for the modeled organization, including the cost of licenses/subscriptions, administration and labor, supporting hardware, impact of network downtime on revenue, and lost employee productivity due to network issues. We found that Aruba Central could provide a 40% lower cost of network management, saving the organization over 4 million dollars. The results are shown in Figure 4.

Figure 4. Total Cost of Ownership for Network Management
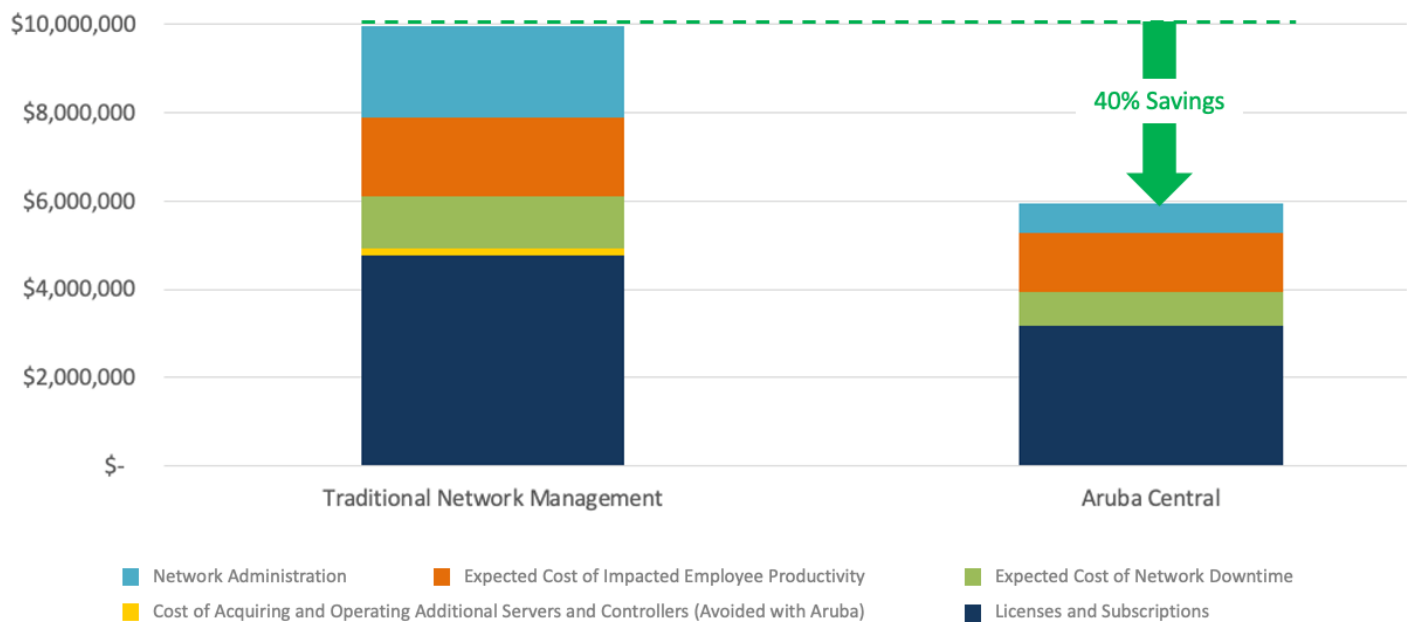
Source: Enterprise Strategy Group, a division of TechTarget, Inc.

The Bigger Truth

Modern organizations need to move at the speed of business, and data networks are critical to meeting this need. Customers, employees, IT teams, and business operations all rely on these networks. However, multiple factors such as the rise of public cloud computing, the increase in remote work, and the expanding adoption of IoT, are revealing the limitations of legacy network management systems that are simply too slow and complex to manage, scale, and secure.

Enterprise Strategy Group (ESG) has validated that as an AI-powered, cloud-native management platform, Aruba Central handles all aspects of network implementation and administration, providing automation, orchestration, intelligence, and security across all types of network technology, location, employee roles, and devices.

Our models predict that Aruba Central can lower the expected cost of network-related administration and labor by up to 67% and provide a total cost of network management that is 40% lower than traditional networks relying on hardware controllers and siloed network management tools. Customers were happy to share their experiences and reported greatly simplified operations, improved network uptime, improved end-user productivity, and a greatly improved support experience with Aruba.

Providing the simple, continuous, and stress-free experience that end-users demand, as well as the performance and agility expected out of today's modern applications, is a near-impossible task when relying on legacy management tools designed and optimized for use in decades-old enterprise architectures. To keep pace with the demand of modern users, applications, and businesses, network admins need to reduce complexity and accelerate operations with cloud-native network management, automation, and AI-driven intelligence. If you are looking to simplify management of your wired, wireless, and WAN devices while modernizing your network to provide seamless, scalable, and secure operations, ESG recommends that you consider Aruba Central.

Appendix A: Detailed Assumptions Used in Our Modeled Scenario

	Data Center Location	Campus Locations	Branch Locations	Remote Locations
Starting Count (Y1)	1	5	25	50
Ending Count (end of Y5)	1	9	29	70
# Wired Switches / Site (Y1)	21	13	1	0
# Wired Switches added each year / Site	5	2	0	0
# Wireless APs / Site (Y1)	1000	600	10	1
# Wireless APs added each year / Site	50	30	0.5	0
Current Administrative Resources (before Aruba improvement)	5 x FTE Onsite	2 x FTE Onsite	0.25 x FTE Onsite (Regional)	Managed Service
# Legacy controllers, gateways, or servers decommissioned or avoided / Site	0	1 (Virtualized Server for services)	1 (Gateway)	1 (Gateway)

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