

AHEAD



AUTOMATION

scale

PLAYBOOK



No matter the size of your organization, developing a clear automation strategy and roadmap are the vital first steps to automating your network and network security infrastructure.

That's why AHEAD's team of automation experts has designed this eBook resource to help you Automate @Scale using proven best practices and frameworks for your automation approach.

Embracing the Future

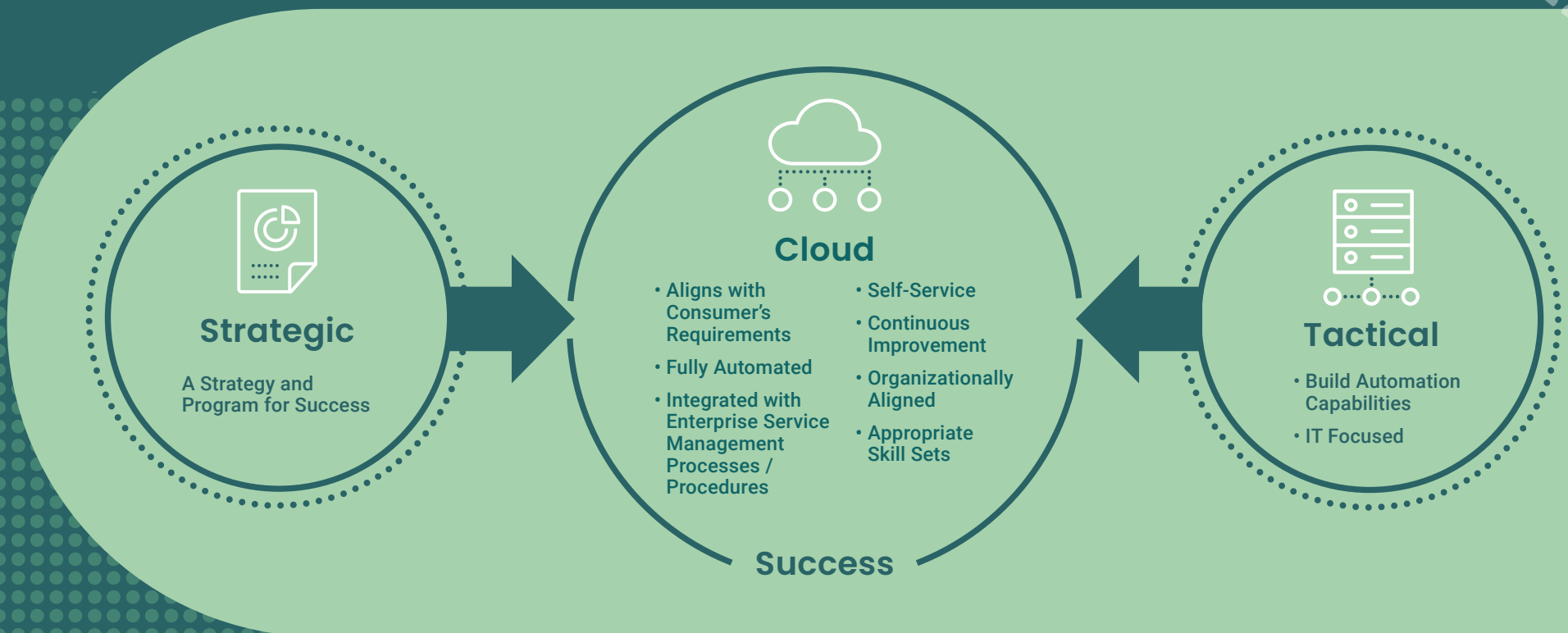
Automation is a vital component of digital transformation, but it's too often approached in a piecemeal fashion. And enterprises without automation guidance are wrestling with where to begin and how to automate at scale.

The key is to focus on the fundamentals of provisioning, deprovisioning, and integration. This lets organizations get to the real results within networking, cloud, security, and infrastructure automation.

To help CIOs navigate common automation setbacks—such as complex IT environments, tool sprawl, and insufficient strategy—AHEAD's approach is designed to help organizations quickly and soundly jumpstart their relentless automation journey.

AHEAD Automation Approach

Strategic and Tactical Workstreams for Success





A Framework for a Well-Built Network Automation

IT teams must create a conducive environment by standardizing processes and pooling shared infrastructures for automating. This creates a greenfield environment for application developers to consume. The streamlined configuration makes it possible to build recognizable and repeatable actions that are ripe for automation.

To alleviate the struggles and fears of network automation, AHEAD applies a standard framework to real-world use cases to move from fragmented, disjointed automation efforts to those which support true digital transformation.

Network Automation – Framework Example

Network Automation Use Cases / Stories



Test/Validate

How will we automatically test and validate our actions before and after deployment? How do we automatically roll back?



Trigger & Notify

What can we use to trigger our pipeline and get notified of activity (success, failure, etc.)?



Build

What tools or languages will we use to build our changes and deploy?



Sources of Truth

What holds the authoritative information we need for building?



Orchestrate

What ties it all together?

Adopting Your Framework

Approach Suggestions



Focus on Orchestration Tooling, Triggers/Notifications

Adopt a preexisting orchestration tool used by other teams in the organization or pick a new one. Select how you'll trigger your pipelines/jobs, and how you'll notify admins of actions, results, etc.



Shore Up Sources of Truth and Explore Validation Methods

Ensure your network infrastructure data is accurate and consolidated; select and explore validation methods for your use cases.



Explore Configuration Build Tools

Start with the most common tool categories and expand as skills progress.



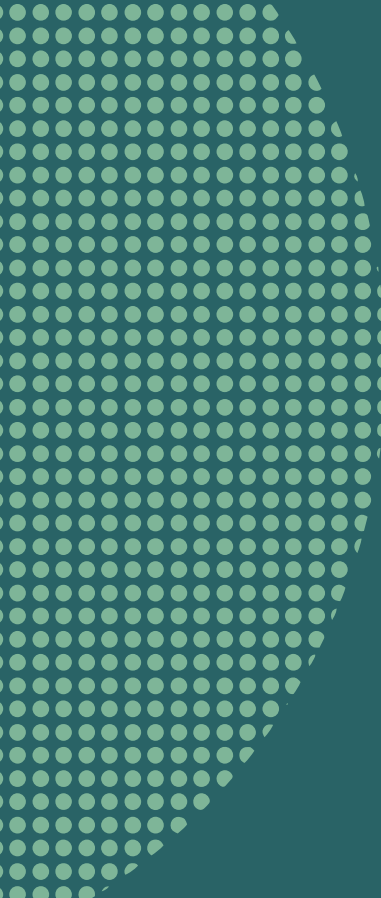
Think Critically About Use Cases

Continue to think of use cases as an end-to-end process. E.g. what drove a change to write a script to assign a VLAN to a port? What else can be automated that's related to that workflow?

Over-Automation Does Not Equal Successful Automation

Enterprises must understand that tool sprawl is real. Automation features exist in a large majority of the management tools on the market, and each tool boasts a unique benefit or capability. Unfortunately, these diverse tools are not always readily compatible, creating a need for more service orchestration functions. The consequence? An organization may experience an uptick in overall spending.

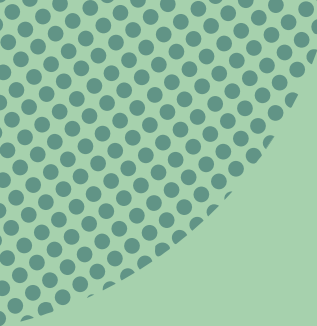
And while each management tool may have its own enticing capabilities and key features, a company must identify which tools will actually get them where they need to be and act accordingly.



Why an Automation Strategy Matters

As a result of complex environments and notable tool sprawl, the entire IT industry is experiencing significant automation inertia. It's important to understand the benefits of automation, but also to evolve accordingly for a positive impact on your company's bottom line. Organizations that lack a strategy and mandate will remain unmotivated until change is imperative and, therefore, will struggle to determine where and how to apply automation.

Determining the complexity and nuance of a task—as well as the frequency of its occurrence—is key. This will identify which tasks and processes will experience automation benefits that outweigh its upfront and recurring costs. By maintaining a standardized resource pool, selecting the right management tools, and establishing a strategic automation model, companies can embark on their relentless automation journey and free up resources to drive their organizations forward.



Cut Through the Security Alert Noise with S.O.A.R. (Security Orchestration Automation Response)

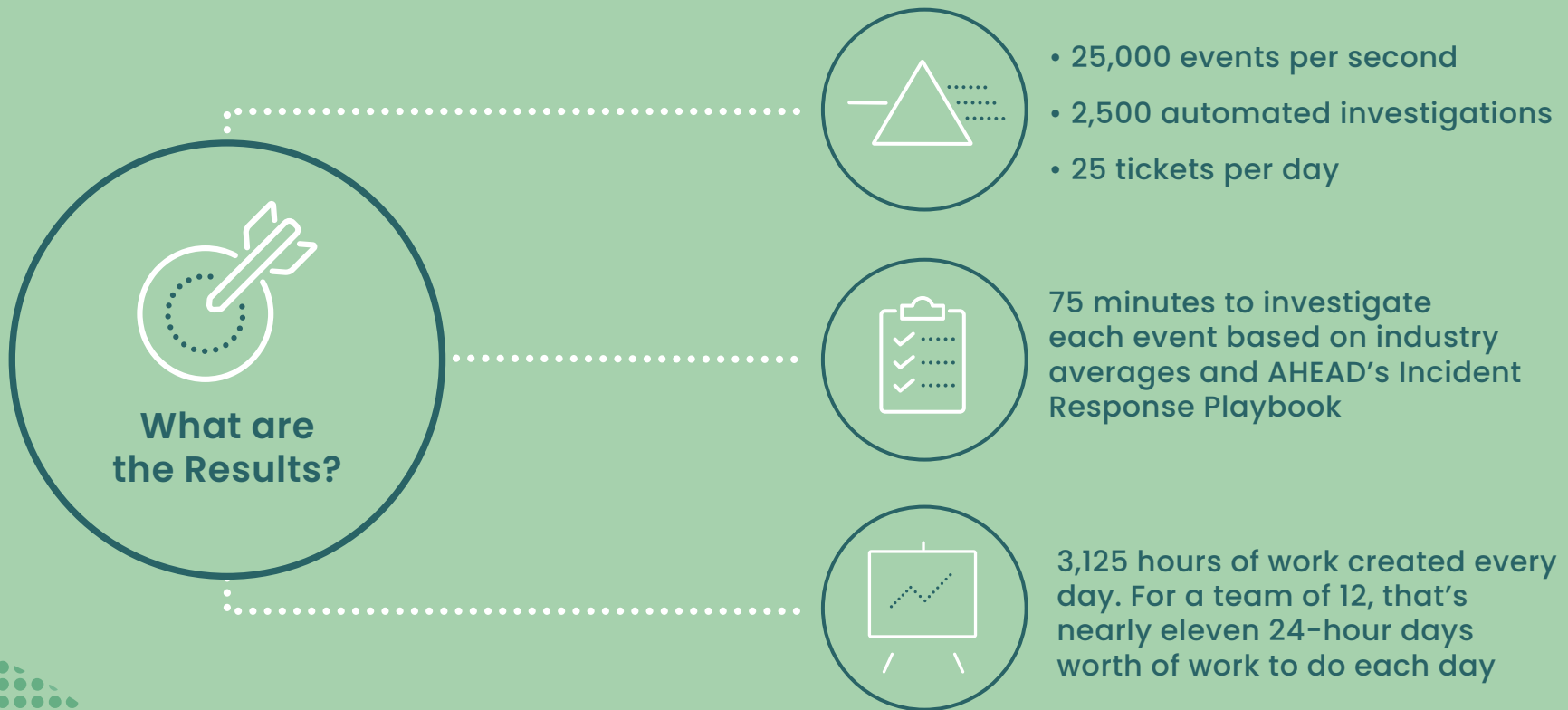
Security teams face an overwhelming number of alerts on top of being understaffed and usually underwater. Incidents can take hours to investigate, and it's predicted that only 4 percent of them are investigated.*

On average, organizations receive almost 17,000 malware alerts in a typical week but only 19 percent of these alerts are considered reliable. And of the 3,218 reliable alerts, only 705 are investigated.* This suggests that participating organizations do not have the resources or in-house expertise to detect or block serious malware – all of which leaves companies at significant risk. Leveraging security automation to cut through the noise of security alerts is critical.

**Ponemon Institute. The Cost of Malware Containment.*

Too Many Security Alerts

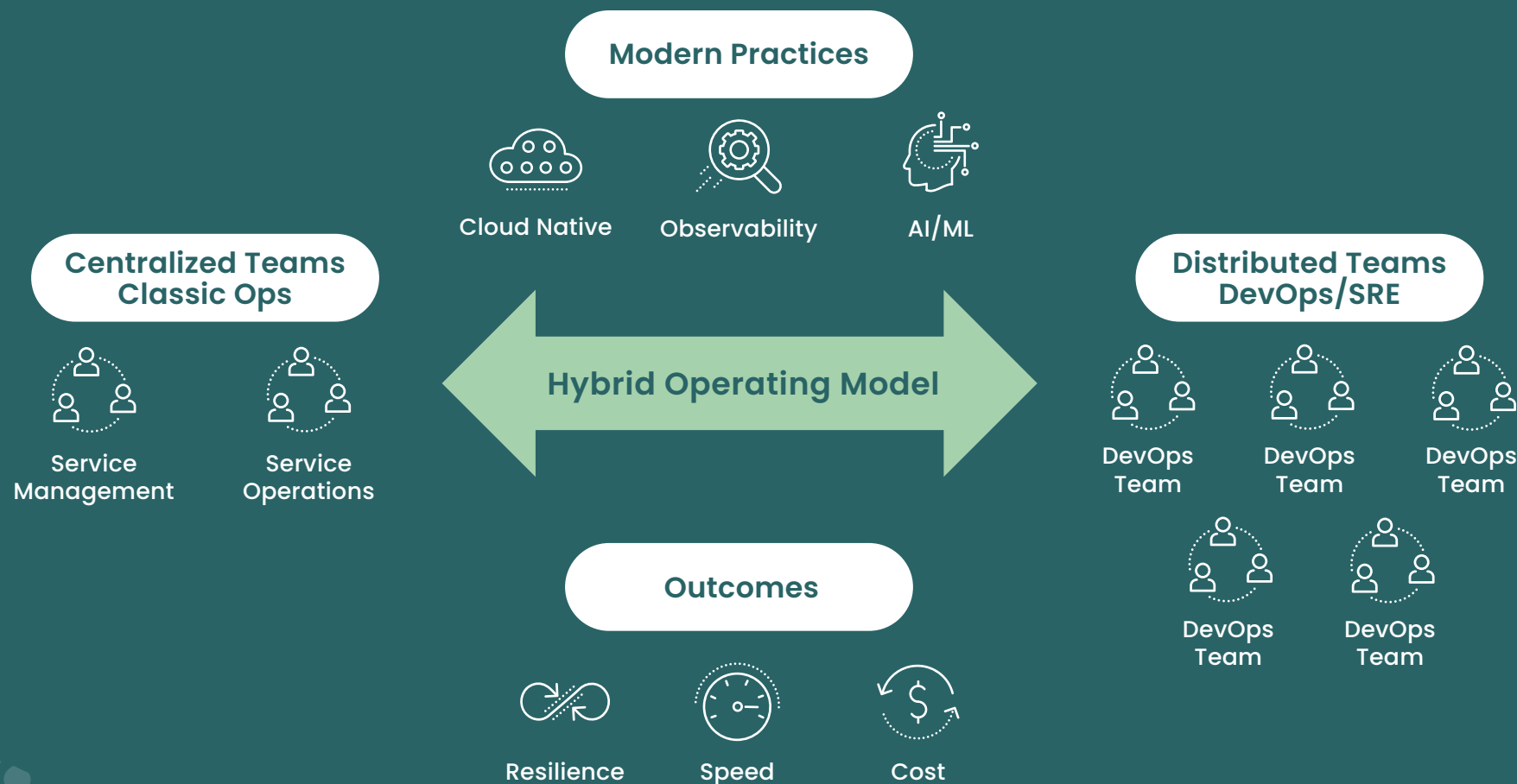
Attacking the Problem by the Numbers



Combining Automation with Observability

A key ingredient to AHEAD's Automation @Scale is the standardization and automation of both observability and remediation processes to create operational efficiencies and drive down mean time to identify (MTTI) and mean time to resolve (MMTR). By linking your observability stack to the correlation engine to reduce noise and adding auto incident create, auto paging of personnel, and where feasible, auto remediation, you'll more proactively identify the downstream implications of change and more readily support the business.

The New Operating Model



GitOps for All:

Adopting More Advanced Automation Strategies

GitOps and automation can bring unparalleled speed and consistency to enterprise CI/CD toolchains. Gathering lessons learned from the last decade, GitOps focuses on defining your entire system declaratively in a git-based repository.

The Four Principles of GitOps



Declarative

The entire system is described declaratively



Versioned

The canonical desired system state is versioned in Git



Automation

Approved changes can be automatically applied to the system



Self-Healing

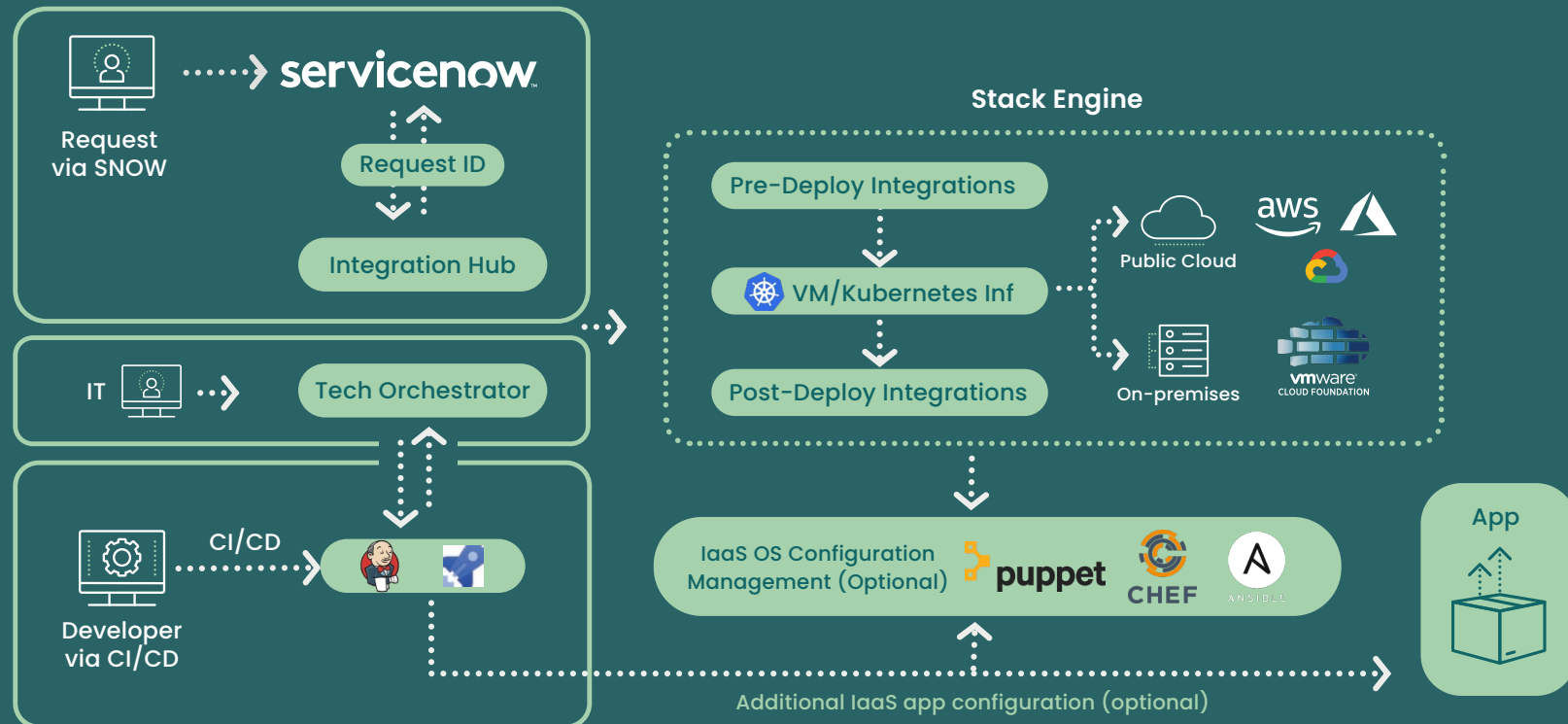
Software agents ensure correctness and alert on divergence

Source: GitOps Working Group

Managing Your Automation Journey @Scale

Day-2 operations are a critical element of automation at scale. An Automation Hub can empower your teams with a modern, simplified automation architecture that allows them to manage services, release software efficiently, and ultimately serve their internal audiences more effectively through improved project visibility.

Modern Automation Architecture



Enterprises that relentlessly automate move faster, reduce errors and risk, and free up overburdened staff to perform higher-value work.

People, Process, Technology, and Change Management

- Reallocate headcount to higher-value work
- Reduce error and process variability
- Lower operating risks through more auditability
- Work faster

AHEAD understands that converting network operations to automated processes that support the business can require a culture shift.

Just as a culture change was required back when the phone system changed from PBX to voice over IP, many of the adoption principals are the same. In fact, the transition from manual processes, infrequent changes, and change control boards is similar.



Automation is a Journey – Bring Everyone Along

Automation, with its clear and established list of benefits for networking and infrastructure, positively impacts every part of an enterprise – from cloud, manufacturing floors, sprawling campus offices and individual remote workers.

Removing the traditional day-to-day management of network infrastructure required to sustain businesses is a journey.

There may be changes in staff roles, but in the end, automation's processes and technology will allow individuals to be more productive in their performance. To set a positive tone, encourage everyone to participate and give the team time to adjust to all that automation has to offer. Remember that the greatest risk is staying still while your competition moves forward.

AHEAD Helps Implement Your Relentless Automation Journey



- Establish a vision and alignment for automation with executive sponsorship
- Map service requests and business workflows identifying optimizations; establish baselines
- Define gaps and opportunities through maturity assessment
- Accelerate automation, increase backlog delivery, and measure results

Network Automation Conclusion



Divide and conquer, make gradual and realistic progress



Leverage training, but be experimentalists too



Stick to tools and methods with large community support

- Ansible, GitLab, etc.



Always keep testing and validation in focus



Define and measure successes along the way



Form bonds with other teams, offer to add to their pipelines, and learn to speak their language



Approach on-prem automation the same way you approach cloud



Take The Next Step

AHEAD's approach embodies the best practices for automating network and network security infrastructures. We're ready to help our customers begin and sustain their network automation journey – together.

AHEAD

Learn. Grow. Achieve

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