An effective approach to optimizing network operations is automating the lifecycle of physical and virtual devices within a network, sometimes referred to as NetDevOps. Automating everyday network tasks and functions and repetitive processes improves network service availability. **Network automation helped our client's ability to cope with the growing complexity of network operations.** As network device provisioning, configuration, and management become automated, the people that perform network operations also become more productive and capable. Ultimately, the network becomes more stable, scalable, and resilient.

Our client, a networking provider, needed assistance automating network services delivery, including service catalog, device onboarding, and network orchestration. They sought to join forces with a technology partner providing flexible, long-term network and business process automation that integrated the latest automation concepts.

TSG's Managed Solutions team recognized the importance of developing a solution that enabled a network administrator to automate configuration changes to critical network infrastructure. Working closely with our client, we understood that their network operators struggled with resource constraints caused by manual network changes and human error. A network automation solution was necessary to improve operational efficiency, reduce complex, labor-intensive tasks, and improve ROI.

Network Automation Challenges

Network infrastructure is fragile; therefore, most companies avoid making changes whenever possible. Changes to a network are often lengthy processes involving strict and long certification or validation steps before implementation. Despite all this validation, network changes can be full of challenges and unexpected impacts. Most of these problems occur due to human error and lack of a thorough validation process.

The task of network automation is a combination of the following attributes:

- **The first consideration is the network itself.** Today's networks are complex because they are built on top of multiple vendor designs with various physical, virtual, and cloud devices.
- **The second is tools and data.** There are lots of network automation tools; each tool does its job but functions independently. Many devices with an abundance of data means that automation troubleshooting or change management is not straightforward.
- **The third is people.** Finding the right talent to fill network automation engineer roles is a challenge within itself. These team members need a strong understanding of the network and a background in software development.

Project Engagement

Network automation initiatives often require supporting change management activities to gracefully transition a team's approach to projects. Project leaders must communicate expectations to ensure a team is well prepared for the changes and prevent mistakes.

Our client was looking for a partner that recognized these unique challenges and offered various potential solutions in an unbiased approach to achieve its goals quickly and smoothly. We worked with the client to ensure they understood our service delivery options:

- **Project-Based Resources:** Provide technical resources on a contingent basis to support project needs.
- **Talent Management Solutions:** Allow our clients to stay focused on project deliverables while we manage the resources and the resource plan for the project.
- **Hybrid Managed Solutions:** Allow our clients to manage the broader program while we manage components or projects as part of the overall program.
- **Outsourced Managed Solutions:** Allow our clients to outsource the entire project to us, including project management, resource planning, and resource management.
- **Professional Services:** We deliver a specific, high-quality project outcome to the client on time and within budget.

Our experts spent time with the client's team to understand their needs and craft a comprehensive solution. We recognized the need to carefully manage the rollout with an adaptive but proven process to scale to meet the overall project schedule. When developing a solution, our engineers prioritize network infrastructure security.

We provided recommendations to properly size the project teams given the project's scope and size, based on our experience. We also worked with the client to develop a customized and flexible pricing model.

Managed Solutions

In close collaboration with the client, our team identified the different services required to create a successful project team to meet and exceed the quality requirements expected. Our client leveraged us as a reliable partner to provide a solution composed of multiple scrum teams automating network services and leveraging the following high-level skills:

- Scrum Master / Project Management Skills
- Use Case Definition / Product Owner Skills
- Continuous Integration Infrastructure
- Continuous Delivery Infrastructure
- User Interface Integration
- Middleware Integration
- Microservices Integration
- Workflow Automation
- Network Services Orchestration
- QA and QA Automation

Our Managed Solutions team appointed a long–term engagement manager to be the single supplier point of contact for our client, ensuring service–level agreements (SLAs), deliverables, and milestones are met. Serving as the single supplier point of contact, the engagement manager connects periodically with the client to ensure project milestones are being met and any issues are resolved. The engagement manager also identifies and manages the project's scope, including all financial performances like invoicing and budget tracking.

Network Automation Results

Our client's decision to partner with us resulted in increased efficiency and a shorter, more structured process to measure value from their network automation.

TSG's Managed Solutions team provides a secure relationship to our client, built on the trust of delivering a proven solution that meets and exceeds expectations set by the client.

Our client saw the following benefits:

- Increased operational efficiencies and reduced costly human errors.
- Improved business agility to respond to demand quickly.
- Reduced the risk by automating legacy routine tasks.
- Delivered faster return by leveraging best practices and operational strategies.
- Enabled faster rollout of new services, saving them time and money.