INFOBRIEF | THE ADAPTIVE NETWORK

Be prepared for what's next with the Adaptive Network

Why now?

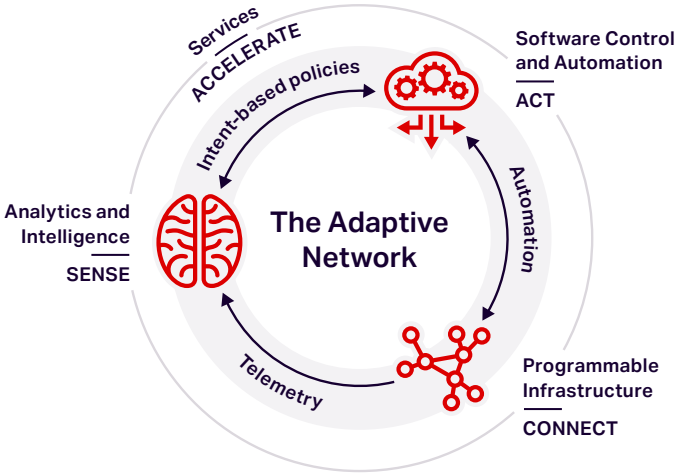
The entire networking industry is being disrupted, driven by the confluence of several market forces.

New and emerging applications are changing network connectivity expectations by end-users. Gone are the days where just increasing bandwidth would satisfy most new application requirements. Connectivity requirements have evolved beyond more bandwidth to include low latency and high availability provided in a dynamic and sustainable manner. End-users, both people and machines, require the ability to access content, cloud services, and each other—when and where they choose. These disruptions are exacerbated by the rapid adoption of 5G, artificial intelligence (AI), network convergence, and new environmental sustainability targets.

However, today's networks simply were not designed to optimally address such unpredictable demands. So, how can network operators successfully adapt to ever-changing end-user demands?

The Adaptive Network vision

To address new and emerging challenges, network operators have been looking at a several technologies to create better cost structures and improved agility in their network assets. Some believe an autonomous network alone may be the answer. Ciena has a different vision, one that considers the importance



of autonomous networking but looks beyond just automation to ensure networks can intelligently adapt to change in real time, driven by analytics and intelligence, not just automated reactions to changes.

The Adaptive Network is Ciena's vision of network optimization—leveraging intelligent automation and guided by streaming telemetry, data-driven analytics, and intent-based policies to rapidly self-configure, self-optimize, and self-heal by constantly assessing and addressing ongoing network pressures and demands.

The Adaptive Network enables network operators of all kinds to optimize their existing infrastructures while incorporating new technologies and ways of leveraging their network assets. It's built on key foundational elements that enhance network and

business outcomes independently but are a force multiplier when working together. These foundational elements include:

Programmable Infrastructure (CONNECT): Comprised of highly instrumented and converged routing, switching, and optical infrastructure that incorporates both virtual and physical network elements, open and programmable infrastructure is crucial to adaptive networking. It is accessed and configured using common open interfaces leveraging real-time streaming telemetry data used to dynamically adjust available resources, so operators optimally meet their customers' ever-changing needs. Ciena's routing, switching, and optical platforms provide this critical network performance data to Ciena's Navigator Network Control Suite™ (Navigator NCS), the Blue Planet® Intelligent Automation Portfolio, or any other third-party analytics tools so network performance is continually optimized.

Analytics and Intelligence (SENSE): Collecting network performance data and analyzing streaming telemetry data using machine learning (ML) and AI provides the ability to proactively predict network problems and anticipate trends by turning vast amounts of data into actionable insights. Leveraging these insights helps network operators develop smarter, data-driven business policies that enable them to sense and quickly adapt to customer needs securely, and in real time. Ciena's Navigator NCS and the Blue Planet Intelligent Automation Portfolio allow network operators to leverage powerful analytics, ML, and AI, to uncover network insights and sharpen their overall competitive edge.

Software Control and Automation (ACT): End-to-end service orchestration across multiple domains, multi-layer visibility, dynamic inventory, and software-defined control of individual domains are critical to adaptive networking. Through the implementation of model-driven orchestration, software-defined networking (SDN), and open APIs, network operators can simplify the act of managing their resources and automating the services lifecycle across multi-vendor, multi-domain, multi-layer hybrid networks. Ciena's Navigator NCS and the Blue Planet Intelligent Automation Portfolio address these requirements through analytics-driven closed-loop automation, allowing a service provider's network and business to run smarter, more efficiently, and more sustainably.

Services (ACCELERATE): Technical and professional services are required to help network operators build, operate, and improve their networks while on their network evolution journey. Ciena Services are purposefully designed from the real-world, field-proven experience of driving some of the most complex network deployments and transformations in the industry. These services leverage our people and their expertise, proven methodology, and a suite of tools that ensure that network operators of all kinds gain the many business benefits provided by the Adaptive Network, regardless of where they are in their network transformation.

Ciena's portfolio is uniquely designed with the Adaptive Network vision in mind and is driven by our relentless pursuit to lead the networking industry through technology and product innovation. Network operators of all kinds—from access network to submarine networks and everything in between—can lead in their markets by providing a highly differentiated network experience to their customers.

The Adaptive Network **Explore**