

INFOBRIEF | THE ADAPTIVE NETWORK

Enabling the next generation of broadband applications

Residential users are increasingly seeking immersive experiences for sporting events, online learning, and business meetings—all within the comfort of their homes. Is your broadband network equipped to support the adaptive services these users need and expect, delivered directly to their homes?

The broadband landscape is riddled with challenges, particularly as dependency on connectivity increases exponentially. The traditional approach of offering more bandwidth for less money is no longer sustainable in the current market dynamics. Additionally, new applications are demanding lower latency, better symmetry, and higher availability, making the quality of experience (QoE) a key differentiator in the competitive market. However, while striving to meet these demands, price continues to remain a significant competitive factor. This forces network operators to control their costs while simultaneously seeking innovative ways to better monetize their network assets. These challenges require strategic planning and innovative solutions to ensure sustainable growth and customer satisfaction.

On the network side, the advent of new applications is presenting unique challenges as they require intelligence closer to the edge, where content is delivered and consumed. Expanding to new areas while supporting these new applications necessitates a flexible and scalable infrastructure capable of adapting to changing needs. Furthermore, network convergence, which combines multiple functions into a single energy-efficient network platform, is becoming increasingly necessary for sustainability. To deliver QoE cost-effectively, a powerful domain controller solution is required. This solution should provide visibility into all network layers and associated services, facilitating efficient management and optimal performance. These challenges underline the need for robust, adaptable, and efficient network solutions.

Benefits of the Adaptive Network

- Network operators can cost-efficiently deploy broadband infrastructure aligned to existing application requirements while being ready to adapt to new applications and the constant evolution of customer demands
- Customers are offered a differentiated QoE, which strengthens loyalty, reduces churn, and avoids price erosion
- Average revenue per user (ARPU) is increased by offering value-added services and monetization through addressable market expansion
- End-users will have optimal broadband connectivity that allows them to continue to work, learn, and play from their homes as applications and use cases continue to evolve
- The Adaptive Network helps shrink the digital divide by creating more connected communities so end-users can enjoy the socioeconomic advantages provided by broadband

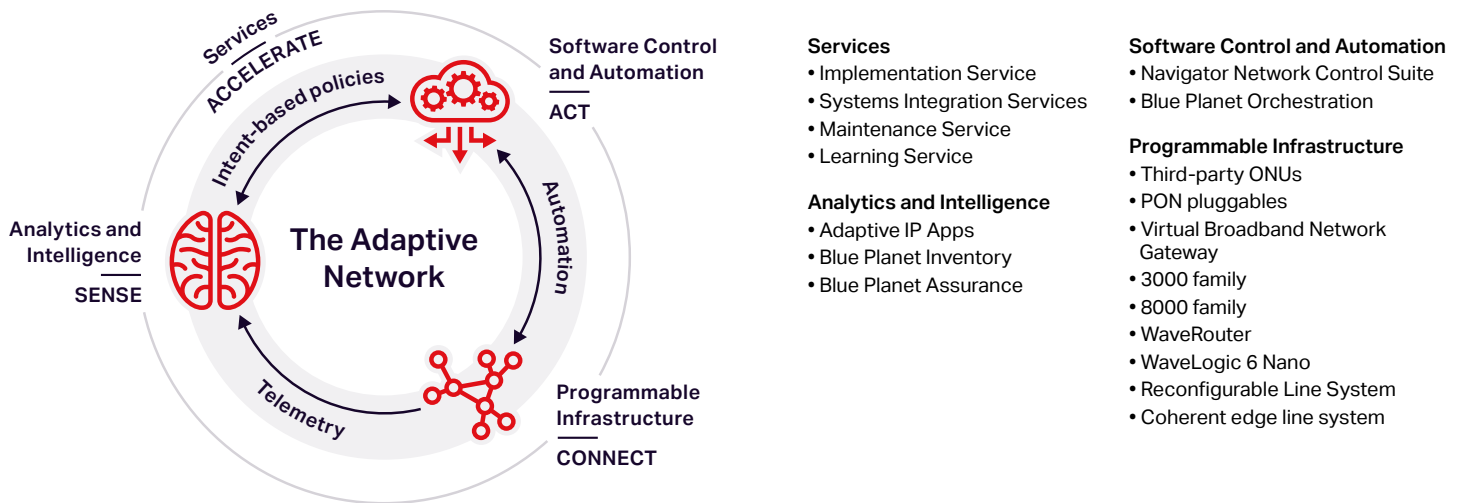


Figure 1. The Adaptive Network

Ciena's customer-centric strategy focuses on establishing a comprehensive, flexible network using advanced technologies. Our infrastructure is open, flexible, and scalable, facilitating superior performance and supporting both existing and new applications. Ciena provides comprehensive control and visibility over multiple network layers and promotes smooth integration in various environments. Our broadband solution is designed with a sensing capability to adapt to evolving application requirements, and our services offer customized solutions to optimize network utilization and support new applications—providing necessary support and solutions for each unique broadband journey.

Foundational elements of the Adaptive Network

Software Control and Automation: In the fast-paced world of network technology, we're not just reacting—we're acting. Ciena's Navigator Network Control Suite™ (Navigator NCS) acts as a central hub, providing customers with comprehensive control and visibility over multiple network layers, from access to aggregation—including broadband, IP, and optical. Recognizing the need for smooth integration in brownfield environments, we act decisively to support open APIs that streamline integration with multiple operations support system (OSS) and business support system (BSS) solutions. Navigator NCS and Blue Planet® Orchestration (BPO) are essential tools, enabling integration in a multi-vendor, best-of-breed environment, which includes third-party optical network units (ONUs), optical network terminals

(ONTs), and gateways. Our customer-centric approach ensures that we offer solutions that make sense for customers' specific needs and promote optimal network performance and seamless integration.

Programmable Infrastructure: At the core of our customer-focused strategy, we establish a comprehensive, flexible network using Ciena's routers, XGS-PON micro-OLT (uOLT) pluggable technology, WaveLogic™ 5 Nano (WL5n) coherent pluggables, open line systems (OLSs), and virtual Broadband Network Gateway (vBNG). Our framework is flexible and scalable—helping network operators use edge cloud or telco cloud technologies to provide superior performance. Ciena is dedicated to facilitating both existing and new applications while concurrently reducing network power and space requirements. This not only promotes optimal sustainability but also boosts efficiency and cost effectiveness. Our customers demand a sturdy and flexible network, and we are committed to delivering solutions that are designed to meet these requirements effectively and efficiently. The concept of connecting is central to our approach, linking our customers to a network that can adapt and grow with their needs.

Analytics and Intelligence: Adaptive IP™ Apps embody the concept of sensing by simplifying your operations through complete visibility and analytics, thereby enabling effortless migration of IP intelligence to the edge. This understanding is further leveraged with the use of Blue Planet Inventory (BPI) and Blue Planet Analytics (BPA), allowing operators to optimize

their asset utilization, speed up time to market, and enhance customer QoE. This sensing ability provides operators with a keen awareness of their operations and customer needs. Ciena's solutions are designed with this sensing capability in mind, flexibly adapting and catering to evolving application requirements. Thus, sensing is at the core of Ciena's approach, allowing us to intuitively understand and respond to the ever-changing needs of our customers.

Services: Ciena Services offers customized solutions designed to optimize network utilization, facilitating the support of new applications. The flexible suite of tailored, integrated services is designed to assist you along your broadband journey. We understand that each journey is unique, and our services are customized to meet individual needs and requirements. Whether you're just starting out or looking to expand your network capabilities, Ciena Services is equipped to provide the necessary support and solutions to ensure optimal network utilization and seamless integration of new applications.

Outcomes

Using Ciena's Adaptive Network vision, network operators can deploy broadband infrastructure in a cost-efficient manner. This deployment is not only aligned with existing application requirements but is also adaptable to new applications and the ever-evolving demands of customers. This adaptability allows operators to offer customers a differentiated QoE, strengthening their loyalty and reducing churn, thereby avoiding price erosion. Furthermore, operators can increase ARPU by offering value-added services and expanding their addressable market.

On the other end, end-users reap the benefits of optimal broadband connectivity. This allows individuals to continue working, learning, and playing from their homes as applications and use cases continue to evolve. Moreover, this approach supports the emerging right to more connected communities—enabling the socioeconomic advantages provided by broadband and working toward shrinking the digital divide. This commitment to connectivity and adaptability ensures that both network operators and end-users can navigate the rapidly evolving digital landscape successfully.

Broadband with unmatched flexibility

Thriving in the rapidly evolving broadband market requires the ability to support the newest and most sophisticated applications while offering customers the highest QoE and reducing costs. Successfully achieving this mission leaves no room for network operators to compromise by deploying outdated legacy architecture that won't meet future customer and application demands. The future of broadband calls for a flexible, scalable, and sustainable architecture that has the capacity to adapt. It calls for the Adaptive Network.

The Adaptive Network

Explore

Was this content useful?

☐ Yes

☐ No

Ciena may make changes at any time to the products or specifications contained herein without notice. Ciena and the Ciena Logo are trademarks or registered trademarks of Ciena Corporation in the U.S. and other countries. A complete list of Ciena's trademarks is available at www.ciena.com. Third-party trademarks are the property of their respective owners and do not imply a partnership between Ciena and any other company. Copyright © 2024 Ciena® Corporation. All rights reserved IB185 7.2024