Hewlett Packard Enterprise

Strength at the core of a nation

Hindalco Industries upgrades its digital foundations to power India's infrastructure boom

India's rise to global economic prominence is well documented, yet we may have barely scratched the surface of its potential. The country's leaders believe the next phase of infrastructure investment will unlock further opportunities for dramatic growth, prompting the transformation of Hindalco and some of the country's largest heavy industries.

Investing to grow a business — and transform a nation

India's National Infrastructure Pipeline plans to spend $1.4 trillion by 2025 on building and upgrading the country's highways, rail links, power plants, and urban centers. The hope is that, with more efficient transport links and sustainable energy, infrastructure investment will drive double-digit growth in GDP.

The challenge will be to deliver these huge projects on time and within budget. With the government setting high expectations, this generational spending program is prompting transformation across the Indian industry. To capture a slice of the investment, raw materials suppliers and traditional heavy industries are racing to upgrade their operations.

"We have seen investment in our digital infrastructure increase by 100% each year for the past five years," says Kunal Shah, Head – Network & IDC at Hindalco Industries. "We're building entirely new digital foundations."

This is an enormous undertaking. Hindalco is one of the world's biggest suppliers of aluminum and copper. Its products are essential to rail lines, construction sites, and wiring. It owns smelting plants, factories, and chemical processing sites; it even owns the coal mines and power plants needed to run its round-the-clock operations.

"We've grown significantly over the past 20 years, organically and through acquisition. This is an opportunity to establish consistent new standards to boost business agility," says Shah.

ADITYA BIRLA
HINDALCO

Industry: Manufacturing

Country: India

Vision

Accelerate digital transformation of traditional mining and metal business to power the next leap in productivity and sustainability performance.

Strategy

Establish consistent, new standards of network and application performance across nationwide operations.

Outcomes

- Reduces network costs by 30%
- Improves application performance, halving latency
- Establishes a single view of network health across 55 locations

Setting new standards in application and network performance

Hindalco's new, digital foundations will enable the business to connect every aspect of its operations. It will ensure real-time reporting and allow the testing and adoption of new environmental sensors and production automation. Like the country itself, this investment will propel Hindalco into the next chapter of growth.

"We're not looking to rip up everything overnight, but to set new standards for network and application performance," says Shah.

Digital transformation, he explains, will enable mobile and a consistent quality of data. Hindalco will strengthen its ties to customers — some of India's largest enterprises and infrastructure leads — with up-to-the-minute status checks on production. It will allow Hindalco to set new sustainability standards with the use of new management systems to govern waste, recycling, biodiversity protection, and resource allocation.

This will involve a move to cloud and Secure Access Service Edge (SASE) applications. Hindalco is also moving its entire Enterprise Resource Planning (ERP) system to Oracle® Cloud.

To accommodate this shift, Hindalco has partnered with HPE Aruba Networking to build an entirely new network architecture. Rather than a traditional hub-and-spoke approach, the business has created a mesh approach — an SD-WAN fabric. This allows Hindalco to prioritize certain application traffic and to create different segments within the network while streamlining access to critical applications.

Reducing network costs by 30%

Hindalco's mesh network is built on HPE Aruba Networking EdgeConnect SD-WAN. This enables Hindalco to bring together 55 diverse locations and more than 10,000 network connections.

"Hindalco is one of the first major enterprises in India to adopt HPE Aruba Networking EdgeConnect SD-WAN in a production environment, but we were happy to get onboard early because we'd tested the solution so thoroughly," Shah explains.

An initial proof of concept (POC) at one particularly challenging site led to a wider, 90-day test including HPE Aruba Networking Orchestrator. "Everything was stable, the technical evaluation was sound, and we were confident we could get the implementation done in one go," he adds.

The implementation was completed in December 2023, with all 55 sites connected within 45 days. Zero Touch Provisioning (ZTP) meant each site took less than 30 minutes to complete. "The hardest part was finding some downtime at the production sites," says Shah. "We worked as the shifts changed."

Automation enables operational — and cost — efficiencies

With the new SD-WAN solution from HPE Aruba Networking, Hindalco experienced seamless integration with cloud services, enabling secure and optimized access to cloud applications and services.

"Operationally, HPE Aruba Networking EdgeConnect SD-WAN has improved bandwidth efficiency through intelligent traffic steering and data deduplication," says Vijay Vora, Hindalco's Head of IT Infrastructure. "Additionally, it has

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simplified deployment by allowing new branches to be set up without the need for on-site IT expertise.

Hindalco employs HPE Aruba Networking SD-WAN Orchestrator-as-a-Service for streamlined operations and enhanced efficiency. The Orchestrator automates tunnel configuration between the branch and hub sites, automatically discovering WAN links and creating tunnels, based on application needs. A seamless integration between HPE Aruba Networking EdgeConnect SD-WAN and Zscaler SSE enables Hindalco to adopt a best-of-breed Zero Trust and SASE framework. This automated, scalable, and cost-effective solution protects users and IoT at the edge when connecting to SaaS and cloud-hosted applications.

Network costs are down 25-30%, says Shah. Hindalco is using internet links and ditching its expensive Multiprotocol Label Switching (MPLS). With less traffic routed through the data center, data center hardware and license costs are significantly reduced. More importantly, business applications are more performant. Business Internet Overlays (BIOs) automatically define and segregate traffic, finding the optimum routes across the SD-WAN fabric for the most important applications.

"Instead of five hops, application traffic is now moving directly to the cloud. Where latency was 100 milliseconds, today, it's 50–60 milliseconds," reports Shah. "Users might not appreciate the topography of a mesh network, but they can see the quality of their video calls has improved."

Further refinement of the user experience

The engagement establishes, for the first time, a single pane of glass across all network activity. This delivers real-time reporting on the health of links and enables Hindalco to act immediately where and whenever performance drops. Shah says the next step is to go further:

"We want to drill down to the user experience. We're testing HPE Aruba Networking User Experience Insight (UXI) sensors to understand the end-user experience, from laptop to SASE application."

This will see Hindalco strengthen its relationship with HPE Aruba Networking. The plan is to standardize on HPE Aruba Networking Wi-Fi 6 and CX 8360 switches and to move entirely to HPE Aruba Networking Central for AI-powered device management and monitoring, ideally within the next two years.

"This is a journey," says Shah, "and it is one Hindalco plans to take with HPE Aruba Networking."

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Solution

Hardware

- HPE Aruba EdgeConnect Enterprise SD-WAN
- HPE Aruba Networking CX Core and Access Switches
- HPE Aruba Networking Wi-Fi 6 Access Points
- HPE Aruba Networking User Experience Insight (UXI) Sensors

Software

- HPE Aruba Networking EdgeConnect Orchestrator
- HPE Aruba Networking Central
- HPE Aruba Networking ClearPass

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