

The Network Economy

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Ceyba and Innovance's Optical Fixation

By [Joe McGarvey](#)

Startups refuse to give up on the all-optical network of the future.

Despite the bursting of the telecommunications bubble and drastic cutbacks in capital spending among service providers, equipment makers have not abandoned the quest for the all-optical network.

The latest startup to officially announce intentions to provide carriers with next-generation equipment for the long-haul portion of their networks is Ceyba, which today introduced its Agile Networking Solution. In a sense, Ceyba is making some of the same promises as first-generation all-optical players, such as Corvis and Qtera, which has since been purchased by Nortel Networks. The major failings of these players and others, says Benoit Fleury, vice president of marketing at Ceyba, is that, although they let carriers extend the reach of optical networks, they did little to make them more dynamic.

"Removing electronic regeneration isn't enough," says Fleury. "A collection of innovative capabilities is needed for the idea of an all-optical network to be realized."

What Ceyba is introducing this week is a collection of transport and switching devices that perform the monitoring, power balancing and provisioning functions usually done by electronic gear in the optical domain. Contributing to the shortcomings of first-generation all-optical systems is the fact that, by pulling out costly regeneration points along the network path, they also eliminated the control points that made it possible to provision new services, equalize power imbalances and adjust for noise and dispersion.

Two of the essential ingredients in Ceyba's product family, says Fleury, are fully automated power management and the integration of lightwave diagnostic. Both of these features are designed to provide carriers with the ability to turn up, monitor and maintain optical channels from a centralized location, rather than through highly trained personnel in the field, he adds.

"The ultimate design plan is to eliminate the skill in the field," says Fleury. "You want to put your Ph.D.s in a NOC [network operations center]."

At the center of Ceyba's business model is an attempt to reduce the cost of operating a network and provisioning services by integrating all of a carrier's backbone infrastructure into a single platform.

For example, Ceyba's transport system is designed for both long-haul and ultra-long-haul spans. Several equipment makers force carriers to purchase separate systems to address the two markets. Ceyba's C420 Dynamic Optical Networking System is also designed to handle both 10-gigabit-per-second wavelengths and 40-Gbps wavelengths. The advantage over 40-Gbps-only systems, says Fleury, is that they let carriers more efficiently deploy bandwidth to intermediate locations. In other words, 40-Gbps-only systems would require a carrier to dedicate a wider swath of bandwidth than might be necessary to serve the market.

A flexible "wavehub" is another attribute of the Ceyba transport system. Optical add/drop modules are capable of turning nodes into on and off ramps to the optical network. Ceyba's OADM uses a hierarchical approach, says Fleury, which enables transit traffic to pass through at multi-wavelength granularity. Not breaking the traffic in a fiber down to individual wavelengths at each junction helps reduce the need for regeneration or amplification, says Fleury.

In addition to Ceyba, Innovance Networks is also set to introduce an all-optical switching and transport system.

Both companies agree that to be attractive to carriers during such lean financial times, equipment for the core of the network must offer extremely compelling economic value, as well as the ability to implement the technology on a route-by-route basis. Gone are the days, says James Frodsham, chief operating officer at Innovance, of greenfield network buildouts.

"It's not like the late 1990s, with four or five players building a new network," he says. "The players are on the field with established networks, and it's about showing them a technology plan that allows them to evolve incrementally to a more efficient value proposition."

Both Ceyba and Innovance say carriers will begin making those incremental infrastructure improvements beginning next year. Several carriers, they say, have submitted requests for proposals that indicate they will begin evaluating new transport and switching systems this summer and begin deployment early next year.

Anticipating that carriers will be interested in addressing their transport needs before their optical-switching needs, Ceyba has concentrated on leading with transport technology and then following up with a dynamic switching system. Ceyba's OADMs are capable of evolving into full-blown optical switches.

Innovance, which will release product details this summer, is delivering an integrated transport and switching system from the start.