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Innovance Out from Shadows with Strong Next-Gen Systems Entry

Canada's Innovance is putting the finishing touches on an optical system entry using technology that photonics engineers have been talking about for as long as there have been fiber optic systems.

The optical-centric network includes an all-optical switch and only tunable lasers, Innovance's James Frodsham told *fibertoday.com* Friday. It is scheduled for network commercial debut in the second quarter.

The entry, anticipated for some time now, is fascinating on a number of levels. For one thing, in many respects the company is seeking to out Nortel Nortel, the dominant Canadian systems vendor for some time now. In fact, Frodsham and other key Innovance figures owe much to their Nortel pedigree.

In several respects, the company has learned from Nortel's mistakes. For one thing, it is encouraging product from a variety of components vendors and even has signed on venture capital from Corning and JDS Uniphase. This is in stark contrast to Nortel and its captive components supplier mentality.

"We are a systems equipment vendor rather than a components vendor," says Frodsham. "The days of vertically integrated equipment vendors are coming to an end," he continues. "It is not the most flexible and capital efficient model." Adds Frodsham: "Captive vendors do not take advantage of the full innovation across the component level. It is not an affordable model."

One thing we believe that is extraordinarily exciting about the entry is that it looks beyond simply integrating the photonic switch into the network and starts looking at what next generation optical components make sense supporting that photonic switch in the network after the fact.

"Vendors like JDS Uniphase and Corning are interested in designing products working with photonic switching elements," says Frodsham. "They are interested in that value proposition and the resulting suite of components to support that value proposition."

Okay, let's touch base with reality here. The longhaul market has shrunk considerably in the past 12 months and carriers are looking for better, faster, cheaper. New technology sounds expensive. "The market environment is a tough one and 2002 is shaping up to be a very challenging year," Frodsham acknowledges.

"What our investors see value in first and foremost is the disruptive nature of our value proposition," Frodsham notes. "This is not an incremental improvement, it is a new architecture concept for the core. We believe it is timed very well to the emerging needs of major service providers and next-generation overbuilds," he adds.

"This is a new breed of company architected on an operations model to be very scalable and capital efficient to move with the speed and innovation of a startup," says Frodsham. The company's photonic switch will sit in the major nodes of the core acting as a "bandwidth cop," Frodsham says. The company understands the need for electronics at the edge of the network and Innovance's architecture will be very compatible with it. "We will continue to use the electrical switch for edge aggregation and grooming functions," he notes.

In that sense, he sees the as-yet-undefined (we know it is not MEMs-based) Innovance photonic switch as being complementary with O-E-O switches such as those offered by Ciena, Tellium and Sycamore, which would be pushed out to the edge of the network.

"We would replace today's static networks with a point-to-multipoint system," says Frodsham. "We could turn up capacity between any pair of cities in the network through software control. This is faster and more efficient and represents less than half the cost of today's solutions."

Frodsham identifies four key elements to the Innovance proposition. These include 1) the transparent photonic switch, which he says enables per-wavelength management through the node and eliminates the need for costly O-E-O connections. Yet Frodsham is quick to qualify that by noting that, "we have an all-photonics switch but not an all-photonics

network; 2) a point-to-multipoint mesh system. Corvis is pursuing a “similar value proposition,” Frodsham says, but he notes that there are “a number of differences between our approaches, including the fact that Innovance is coming to market as “a second generation of photonic networks that is leveraging component technologies that have matured in the past 12 to 18 months”; 3) the tunable edge, which includes the fact that all sources are tunable sources. While noting that tunables have not come close to reaching parity with fixed wavelength transceivers in price, Frodsham says the Innovance solution will reduce the number of transmitters by 70 percent in the network; and 4) the operating system, which will provide the automated services that Innovance says lie at the heart of their value proposition.

“WDM has done a phenomenal cost of reducing the cost of fiber optics networking to where it is now 25 percent in the line and 75 percent in the node and that 75 percent cost function is dominated by O-E-O conversions,” Frodsham tells *fibertoday.com*. “Our architecture first and foremost seeks to solve that network cost challenge,” he adds.

“We are being very careful to architect our product line to deploy in an incremental fashion with an installed base of WDM systems,” says Frodsham.

The time is coming for larger network deployment, Frodsham believes. For 1.5 Tbps to 2 Tbps systems most transmissions are less than 10 Gbps, he observes. However as those networks grow to 4 Tbps and above 10 Gbps transmissions can reach up to 85 percent of the transmissions to be used.

Why hasn't an all-optical switch worked yet? Frodsham believes it is a matter of timing and flaws with MEMs-based designs.

The round of financing that includes Corning and JDS Uniphase is a Series B round that raised \$55 million. Other investors include Advanced Technology Ventures, Morgenthaler, Thomas Weisel Capital Partners, Azure Capital, Banc of America Securities, KPL Ventures and Archery Capital. The largest investor in this round was ATV. Jack Harrington, General Partner at ATV, will be joining Innovance Networks' Board of Directors.