

First Place  
**John Berger, David Emmons**  
ArcSwitch, Inc.



Though each has had a different career focus—Berger in operations and Emmons in design—collaborating on this project gave them the opportunity to play to both their strengths.

**J**ohn Berger and David Emmons are excited about something most techies would rather forget: the mid-'90s dot-com bust that left the market with a supply-side surplus of thousands of unused miles of fiber-optic cable. The aftershocks of that bust have calmed, they believe, and there is increasing interest in potential uses for those cables. Which means the time is right to dust off a product they conceived of during those boom years—the optical switch and attenuator—and seek to give it new life.

“Fiber-optic lines are the size of a human hair, and they carry data signals that are transmitted by laser light,” Berger explains. “Currently, most of these signals are switched by turning them into electricity, then switching them, then turning them back into light. Our optical switch moves light from one fiber directly to another fiber. It’s smaller and less expensive than current technology.”

In fact, Berger says that clients who are currently paying \$20,000 for a switch could pay as little as \$1,000 for their

product, and have better signal quality throughout the switching process.

Berger and Emmons started working on their switch in the late 1990s, and completed most of the development in 2001, at which time the pair began attending trade shows. At that point,

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—John Berger

the market for optical switches collapsed. “When the dot-coms went under, everything related to telecommunications hit a brick wall and died,” Berger says matter-of-factly.

The partners have been waiting for the fiber-optic market to rebound, and Berger believes it has done so. “There’s much more interest in these types of devices, and excess inventory of them

has been burned up,” Berger says. “There’s fiber-optic cable all over the world, more than was needed for a while; now, the demand is starting to catch up.”

Berger has extensive experience managing operations; Emmons has experience bringing products to market and was itching to work on another start-up. But science is more than just business for these partners. It is the continuation of a friendship that began in seventh grade and has spanned decades, as the two attended the same schools, got their mechanical engineering degrees together at the University of Minnesota, and act as godparents to each other’s children.

Berger and Emmons have patented their device, created three generations of prototypes, and have demonstrated the device to a number of potential customers. They are now seeking \$2 million to \$3 million in venture capital to bring their idea to the commercial product stage, something that could be accomplished within a year if funding became available, Berger says.

But a lack of funds isn’t the only hurdle these inventors face. JDS Uniphase is the leader in the optical switch field Emmons and Berger wish to enter, and that company has held sway for many years. Yet Emmons and Berger claim their product offers several technical and cost advantages. “They have owned the market for a long time, but we feel that we have demonstrated that we have a superior product,” Berger says.

Berger looks forward to continued growth in the optical-switch market.

The current market for optical switches is estimated at about \$500 million, and Emmons says it’s projected to reach \$2 billion within five years—easily a double-digit growth rate, says Berger. At a mere 2 to 5 percent of the market share, the company would reach profitability.

“There was a lot of interest in this product when the bust came,” he says. “Now we’re looking for the water level to return to where it should be, and for it to rise at its expected rate.” ■