



## CASE STUDY

### Development Alternatives, Inc. Accelerates Deployment of Temporary Network Connectivity with LightPointe's Gigabit Ethernet Optical Wireless Link

*Global Consulting Firm Rapidly Extends Highly Secure Corporate Network While Producing Seven-Month ROI and Avoiding Costly Monthly Leased-Line Fees*

For the past 35 years, Development Alternatives Inc. (DAI) has been instrumental in providing social and economic development solutions to governments, communities and corporations with projects in developing and transitioning countries.

Headquartered in Washington D.C., DAI has 2,000 employees in 75 countries, as well as operating companies in Brazil, South Africa, Palestine and the United Kingdom.

Since its founding by a trio of graduates of Harvard University's Kennedy School of Government more than three decades ago, DAI has remained committed to its core mission of helping to build fair and effective governments, improve the local management of natural resources and agricultural production, fuel economic growth, as well as leverage private investments in emerging country markets. Clients include the U.S. Agency for International Development, the World Bank, bilateral development agencies, global corporations and host-country governments.

*"This was one of the fastest and most straightforward network expansions we've completed to date. The LightPointe link performed exactly as described and we were able to provide secure, high-speed access to DAI's LAN as though everyone was located in the same building."*

**Sanjin Sahadzic** | Network Planning Manager,  
Development Alternatives, Inc.

DAI equips its consultants worldwide with leading-edge, highly reliable technology, as well as access to a secure Virtual Private Network (VPN) for connecting to corporate applications, including email, internal databases, financial research and project management systems. A 12-person systems administration group oversees DAI's corporate network while also providing planning and implementation assistance to about 60 system administrators working at dispersed remote offices worldwide. According to Sanjin Sahadzic, network planning manager for DAI, ensuring connectivity to the corporate network while guaranteeing availability of business-critical applications can be extremely challenging, especially in developing and third-world countries. "Our goal is to give DAI's consultants real-time access to all the information and tools they need, whether located at headquarters or out in the field," he explains. "DAI's VPN offers quick, efficient and around-the-clock access to vital corporate data."



## CASE STUDY

DAI has consistently deployed best-in-class computer and networking solutions at the company's Washington D.C. headquarters, taking into consideration the best ways to ease remote access while accommodating continuing corporate expansion. "Reliability, security and speed are among the top selection criteria we use in evaluating any potential technology or communications solution," comments Sahadzic. To that end, the company approached the challenges posed by two consecutive corporate headquarter expansions in less than three years by focusing on the optimal approach for transparently extending the corporate network to the new location.

### THE CHALLENGES:

In addressing ever-increasing business opportunities, DAI outgrew its headquarters building several years ago and was forced to expand to another nearby location. As Lilleth Robinson, home office systems administrator for DAI recalls, the company's networking team was under a tight timeframe to connect the two facilities while providing 20 employees with seamless access to corporate systems, files and applications. "We looked at leasing Gigabit Ethernet lines from the local service provider but were concerned about timing and the recurring monthly lease fees," she says. "So, we also looked at emerging optical wireless links based on free-space optics (FSO) technology that could deliver up to 1.25 Gbps capacity."

The networking team was intrigued with how optical wireless carried high-speed network traffic securely by transmitting light beams through the air. However, DAI's executive management in 2002 was initially skeptical about the concept and felt more comfortable with a lower-speed, DS3 45-Mbps leased fiber-optic solution for connecting the two buildings. Two years later, however, continuing company growth created a pressing need for further expansion into the second location. This time the company rented another floor in the second building to accommodate 50 additional employees, bringing to 70 the number of employees in the satellite facility.

During the network planning stages, the team realized they would need to increase bandwidth to this facility substantially or go the conventional route of setting up a second data center in the satellite facility with its own dedicated servers to house critical applications and databases. However, the server room in the satellite facility lacked the proper air conditioning, as well as standard environmental and quality control features. A major upgrade to the server room would be necessary, which the team estimated could run upwards of \$80,000.

Another option was upgrading the DS3 line with high-speed Gigabit Ethernet circuits from the local service provider, which would cost the company approximately \$3,500 per month at each location for a total of \$7,000 per month in leased-line fees. Because the team had already been paying \$3,000 per month on the DS3 line, they were reluctant to nearly doubling the monthly costs for network connectivity. Compounding the decision-making process was the fact that DAI was planning yet still another corporate expansion within a year or so, eventually moving the entire corporate staff under a single roof into a new building that would offer ample space to support the burgeoning business.

"In reviewing different options, we had to cost justify each and every technology investment, taking into consideration DAI's impending final move into a new corporate headquarters," says Sahadzic. For that reason, the team ruled out the server-room upgrade and revisited various wireless options for delivering higher speed transmissions between the existing corporate locations.



## CASE STUDY

Radio frequency-based wireless connectivity was ruled out because the networking team was concerned over potential interference and significant security limitations. Next, they reviewed the latest developments in optical wireless, soon discovering that this highly secure connectivity solution had gained substantial market traction since DAI's initial investigation.

A review of the offerings from market leaders, including LightPointe, Canon, MRV Communications and fSONA, yielded some interesting results. DAI evaluated each contender based on technical and end-user reviews of their products. Additionally, the network planners ranked responsiveness, global presence and experience working in environmentally challenging areas. "LightPointe was extremely responsive, providing us same-day answers to our initial questions," says Robinson. "In contrast, Canon took a month to respond to our preliminary inquiry." Still, the in-depth analysis of each vendor's solution and established market presence narrowed the field to LightPointe and Canon. "We spoke to end-users of both products before determining that LightPointe offered the best performance overall," adds Sahadzic. "While Canon is a strong performer, several of their customers weren't as satisfied as LightPointe's with uptime and overall connectivity."

*"With optical wireless, we avoided the constraints of a multi-year leased-line contract as well as total reliance on the local-loop provider to ensure network uptime. We'd much rather be responsible for, and in control of, our own connectivity requirements."*

**Lilleth Robinson** | Home Office Systems Administrator,  
Development Alternatives, Inc.

During the comparative evaluations, DAI sought the assistance of TelData Communications, a provider of voice and data communications solutions based in Gaithersburg, Md. and long-time LightPointe channel partner. According to Charlie Harter, business development manager for TelData, DAI was impressed with the variety of organizations with highly secure and reliable LightPointe deployments, including the Department of Homeland Security, Smithsonian Institution as well as assorted corporate clients. "After a completely thorough review of different options, DAI realized that optical wireless delivered the highest networking capacity while meeting their stringent security and reliability requirements," he says. "Moreover, they were impressed with the scope of LightPointe's customer deployments, ranging from installations on Capitol Hill to far-flung locales around the world."

In fact, a glowing customer reference from a large Internet Service Provider in Jakarta, Indonesia, convinced DAI's networking experts that LightPointe provided not only the best optical wireless choice locally, but also offered a viable solution for connecting remote offices if needed. "LightPointe's proven expertise in working with different types of physical locations and environmental challenges gave us ideas for leveraging optical wireless beyond our immediate priority to improve home-office connectivity," adds Robinson.



## CASE STUDY

### THE SOLUTION:

With TelData's installation support, DAI deployed a LightPointe FlightStrata Gigabit Ethernet link between its two Washington, D.C. sites in February 2005. With bandwidth speeds up to 1.25 Gbps, the FlightStrata Gigabit accommodates the most data-intensive enterprise networks while offering advanced features for ensuring maximum network performance. The system includes Multi-Beam Array Tracking (MBAT), Automatic Power Control (APC) and Optical Beam Shaping (OBS) to ensure system redundancy via multiple send and receive paths, additional power during reduced weather visibility and continuous adjustment to address any movement from building sway.

Installation went smoothly and without incident. The roof-to-roof link was deployed and up and running in less than a week. "This was one of the fastest and most straightforward network expansions we've completed to date," remembers Sahadzic. "The LightPointe link performed exactly as described and we were able to provide secure, high-speed access to DAI's LAN as though everyone was located in the same building."

TelData's Harter was confident the FlightStrata would deliver as promised, providing DAI higher bandwidth and faster return on investment than all the other technology solutions considered. "Since these units typically produce a six-to-nine month ROI over expensive, copper- and fiber-based alternatives," he explains, "they are excellent replacements to leased-line solutions."

### THE BENEFITS:

In DAI's case, the team determined that the LightPointe link cost roughly half the projected expense of the server-room upgrade while yielding a faster return on investment than other technologies. "Not only did LightPointe do away with the need to upgrade the server-room at the second site, it produced a seven-month ROI when compared to leasing a Gigabit Ethernet line from a local service provider," says Sahadzic.

In addition to eliminating the monthly cost of leasing lines, DAI's networking team reduced the company's physical dependence on the local service provider. "With optical wireless, we avoided the constraints of a multi-year leased-line contract as well as total reliance on the local-loop provider to ensure network uptime," explains Robinson. "We'd much rather be responsible for, and in control of, our own connectivity requirements."

Avoiding all the additional hassles, costs and delays in pulling fiber between the two corporate locations also was greatly appreciated. "Optical wireless delivered the easiest, fastest and most trouble-free route between our two home offices," Sahadzic adds. In the long run, optical wireless delivered an excellent temporary solution for DAI, as plans are now underway to bring all the home-office employees under a single roof sometime in 2006. At that point, Sahadzic will explore other options for its FlightStrata unit, including the possibility of using it for disaster recovery purposes by serving as a secondary, alternate path to the company's offsite backup location.

In the long run, LightPointe's optical wireless solutions could provide building-to-building connectivity to other DAI locations as the company continues to expand many of its international operations. "LightPointe's FlightStrata has proven itself to be a highly reliable and secure transmission solution, giving us numerous opportunities well beyond this initial temporary link," concludes Sahadzic. "The flexibility and versatility of optical wireless make it an ideal solution for a variety of connectivity demands."



## CASE STUDY

### CUSTOMER:

Development Alternatives, Inc., headquartered in Washington, D.C. ([www.dai.com](http://www.dai.com))

### INDUSTRY:

Global consulting firm providing social and economic development solutions.

### RESELLER:

TelData Communications, a Gaithersburg, Md.-based provider of voice and data communications equipment and services ([www.teldata.net](http://www.teldata.net)).

### CHALLENGES:

- Aggressive growth required DAI to expand its corporate headquarters temporarily to a second building two blocks from main facility.
- Needed completely secure communications link between the two facilities to carry highly sensitive data.
- Required Gigabit Ethernet bandwidth to support data-intensive applications.
- Wanted to eliminate monthly fees for leased-line services while reducing dependence on local-loop provider for high-speed communications.

### SOLUTION:

- LightPointe FlightStrata Gigabit Ethernet optical wireless link with 1.25 Gbps bandwidth speeds, Multi-Beam Array Tracking (MBAT), Automatic Power Control (APC) and Optical Beam Shaping (OBS).

### BENEFITS:

- Seven-month ROI for the pair of linkheads.
- High-speed networking at a fraction of the price of leased-line alternatives.
- Highly secure network transmission immune to interference and eavesdropping
- Flexibility to redeploy in the future for disaster recovery or remote communications link.