

Lighting San Leandro

A visionary businessman is collaborating with local officials on a fiber network for world-class connectivity.

By Masha Zager ■ *Broadband Communities*

San Leandro, Calif., is a city in search of a new future. Situated across the bay from San Francisco and north of Silicon Valley, San Leandro was once a manufacturing center. Today, much of the manufacturing is gone, and the city never attracted the kind of tech companies that cluster near Stanford University. On the other hand, it still has many advantages – a convenient location, good transportation, civic infrastructure and housing prices that are lower than elsewhere in the region.

One successful software company that did locate in San Leandro is OSIsoft, whose business intelligence system is used by enterprises worldwide to monitor and analyze industrial operations in real time. As OSIsoft grew, however, its communications needs began to outpace the available infrastructure, and it saw no prospect of being able to meet its future needs. The area's incumbent providers, which focus on residential services, had no plans to upgrade their commercial infrastructures or even to lease dark fiber to businesses.

OSIsoft's owner, Patrick Kennedy, knew that other businesses in San Leandro – or businesses interested in moving to San Leandro – would need robust communications infrastructure. He also knew the city had installed conduit, along with some home-run fiber, for such municipal applications as intelligent traffic systems. Kennedy suggested, over several years, that the city leverage its conduit system for broadband, but the city did not have the financial capability to build out a fiber network.

However, the mayor was willing to help Kennedy build fiber to businesses – and Kennedy was happy, he says, “to do something for the city I built my com-

The ingredients were all there: San Leandro had underused conduits, the BART system had dark fiber and the owner of a locally based software company had technical expertise and capital.

pany in.” So the Lit San Leandro project was born.

A COMPLEX PARTNERSHIP

The project involves a complex partnership of public and private entities. Kennedy founded and financed two new private companies, San Leandro Dark Fiber and Lit San Leandro, to install the passive and active infrastructure respectively.

San Leandro Dark Fiber contracted to install a fiber ring through the city's conduits, paying for its use of the conduits by dedicating fibers for the city's use. A number of businesses are close enough to this proposed fiber ring to connect to it at a reasonable cost. The city government is applying for grants to build lateral conduits from the ring to more of its own facilities; these new laterals will pass additional businesses, potentially allowing them to connect to the network, too. Still more locations could be connected if existing conduits in poor condition were replaced; Kennedy says he is contemplating making these replacements.

In addition, the fiber network may grow over time because of the city's in-

formal policy of installing broadband conduit whenever possible – during street construction and other public works projects and when utility lines are moved underground. The city is also considering adopting a formal open-trench policy under which telecom providers would be notified in advance of any street cut.

Kennedy is amenable to extending the network to serve major new developments, such as the conference center being planned at a local marina. “My tendency is to put in conduit if I see a big development going in,” he says. “I don't see any reason not to run conduit there and wait.” He is also in discussions with a nearby town that wants to complete its loop by using some of San Leandro Dark Fiber's fibers. The arrangement would save money for the other town and increase San Leandro's loop diversity – and hence network reliability.

Kennedy's second company, Lit San Leandro, is responsible for buying equipment to light the fiber and preparing the network for service. It also recruited a competitive local exchange

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Community Broadband

carrier, Oakland-based CrossLink Networks, to operate and maintain the network.

In addition to the city, another critical public partner is Bay Area Rapid Transit (BART), the regional light-rail operator, which has fiber running between its tracks. "BART is one of the few entities that will sell you dark fiber," Kennedy explains. He acquired several strands of fiber from BART under an infeasible right of use and brought them up at a meet-me room in Oakland, where he can connect to 16 long-haul carriers.

MAKING THE CONNECTION

A few months ago, all the pieces of the puzzle began to come together: Two buildings occupied by OSIsoft were tied into the San Leandro fiber loop, the San Leandro loop was tied into BART fiber, the BART fiber was connected to carriers in the Oakland meet-me room, all the fiber was lit, and OSIsoft suddenly had a very-high-speed connection to the Internet.

The remaining fiber cable is expected to be delivered and installed by early July, and Lit San Leandro can then begin selling connectivity to other local businesses. Though California's economic development agencies were defunded in February 2012 – a casualty of the state budget crisis – the city of San Leandro is helping Lit San Leandro with its marketing by arranging meetings, developing informational brochures, securing rights of way and publicizing the network to companies

World-class broadband may attract new businesses to San Leandro – the kinds of businesses that "use the Internet as a workhorse."

interested in relocating to the city.

Kennedy gives public lectures at the local library and speaks with business groups and individual businesses, promoting his vision of a fiber-connected San Leandro. The companies he talks with are "all across the board," he says. They are as varied as a film studio that uploads media over six T1 lines ("and it still takes all night"), an auto dealer, an insurance agency, a warehouse, small factories, and a new hospital with a research lab. In addition, he has seen interest from real estate brokers who are trying to rent empty commercial buildings and from the developer of an affordable housing project.

Much of Kennedy's job in marketing the fiber network is to educate businesses and property owners about the benefits of fiber. Though most businesses now understand that they need broadband connections, they do not always understand that they can do more with better broadband. "People have



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**Kennedy's advice to municipalities:
Save those conduits; then go
talk to the big users. There are
a lot of companies that want
your city to survive.**

been living with what they can get for so long that they haven't started thinking about what they can do," he comments. "They cannot imagine how important being freely connected into the Internet is – it's very different from taking whatever you're delivered. It will be the determining factor in the success or failure of entire areas."

ATTRACTING NEW BUSINESSES

In addition to connecting the businesses that are already located in San Leandro, Kennedy and the city government hope to attract new businesses to occupy some of the city's unused manufacturing and commercial space. With world-class connectivity, Kennedy believes, San Leandro can become a competitive location for business incubators, entertainment pro-

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duction companies, data centers, backup and recovery centers, call centers, DNA sequencing centers and many other businesses that need to move massive amounts of data. "The people I'm trying to attract want to use the Internet as workhorse, not browse the Net," he says.

The city has plans of its own for the fiber strands it will receive as compensation for the use of its conduits. It hopes to connect schools and libraries, provide municipal Wi-Fi and possibly even sell wireless broadband services in underserved neighborhoods.

THE BUSINESS MODEL

Though Kennedy says he has no plans to "make a mint" from the network, he hopes to recoup the \$3 million or so in capital outlay, most of which came from his own pocket, and to generate enough revenues to continue leasing the BART fiber and possibly to extend the network. He estimates that he could break even with monthly fees of about \$75,000 – and though he hasn't set a fee schedule yet, he is confident that a relatively small number of "Internet as workhorse" customers will quickly add up to \$75,000. (His own company, OSIssoft, was spending \$11,000 per month on connectivity before becoming the first customer of Lit San Leandro.)

As a backup plan, Kennedy is buying properties adjacent to the fiber ring in the expectation that access to fiber will eventually raise their value by around 20 percent. Existing appraisal standards for commercial buildings don't fully account for the value of fiber connections, Kennedy says, largely because few buildings have been fiber-lit for very long. Even in New York City, where many buildings are fiber-connected, appraisal standards are still evolving, and in a place such as San Leandro that has virtually no fiber connections, appraisers have no sales data to use as guides. But Kennedy, who believes that business demand for bandwidth is "just barely on the cusp of an accelerating phenomenon," is willing to bet that buildings on the San Leandro fiber loop are underappraised.

Even the worst-case scenario, in which incumbent providers upgrade their infrastructures and take the customers Lit San Leandro was expecting to attract, wouldn't make Kennedy unhappy, because his principal goal is to make sure businesses in the city have access to high-quality broadband services. "If they [the incumbents] started to compete by offering those packages at a low rate, I would say, 'Hey, I won,'" he says.

Even if Lit San Leandro succeeds financially, is the model replicable? Conduits are the key, Kennedy says. He notes that, in many cities, private telecom companies bore conduits right next to municipal conduits (though the cost is higher, they have more control over them), leading cities to abandon the conduits they have already placed. "Save those conduits," Kennedy advises municipal officials, "and then find people like me or companies that want to do what Google is doing in Kansas City. Talk to the big users."

He adds, "In every one of the old cities, there are a lot of companies that want the cities to survive. They just don't know how to do it." ♦