TECHNOLOGY

Why fiber optics is key to future Silicon Beach tech expansion

In this Sept. 27, 2014 file photo, a man in a dress shirt and sport jacket skateboards his way along the Venice beach boardwalk in Los Angeles. The relocation of tech companies to Southern California is part of a growing movement of U.S. cities seeking to duplicate the formula that turned Northern California's Silicon Valley, slightly south of San Francisco, into a mecca of society-shifting innovation and immense wealth. AP Photo/Richard Vogel/File

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In the future, doctors will meet virtually with patients via video-conferencing apps linked to body sensors that can monitor health and detect ailments like never before.

Libraries will serve as community high-tech centers and research-and-development hubs for young tech startups.

Public safety officials will have digital eyes that can scan for lawbreakers in all public areas.

And apps will direct autonomously driven vehicles to available parking spaces that double as electric-charging stations — and maybe even to elevators into an underground Hyperloop electric train network.

Southern California stands to profit immensely from investment by tech companies building this future. But the wealth will continue to be unevenly distributed unless smaller, poorer cities can develop the light-speed communications infrastructure of Silicon Beach.

A new study has found that fast, high-capacity fiber-optic lines — the current gold standard of internet connectivity — are hard to find in areas south and east of Playa Vista, Playa del Rey, Westchester, Santa Monica, Culver City, Venice and Manhattan Beach.

That's because the infrastructure is expensive to install and requires a major shift in thinking for many regions.

Google, Snapchat, Yahoo!, Facebook and other major companies that are clustered in Silicon Beach are large enough to buy their own broadband communication systems — unlike smaller and home-based businesses. And, in some cases, large companies have partnered with the forward-thinking city governments that have installed fiber-optic communications infrastructure to support broadband availability.

But, as Silicon Beach bleeds inland, tech-heavy companies are running up against a wall for quality internet access. Small and medium-size businesses are particularly vulnerable and are increasingly turning to local governments to complain or seek help.

"For a while, we've been watching Silicon Beach move south," said Jacki Bacharach, executive director of South Bay Council of Governments. "We've learned that, in general, they don't have a lot of options — it's very expensive and they don't have a lot of gigabytes or whatever."

Bacharach is holding regular brown-bag meetings with community leaders to hasten the development of reliable broadband internet service.

THE DEMAND: MORE BANDWIDTH FOR LESS

The South Bay Workforce Investment Board and South Bay Council of Governments, two nonprofits dedicated to spurring regional job growth and modernizing government services, recently joined forces and commissioned a study on the issue, The South Bay Fiber-Optic Master Plan.

Without government intervention, wealthy cities will continue to get richer and the poor poorer, according to the 100-page study of broadband availability by Denver-based Magellan Advisors.

The consulting firm specializes in helping governments transition into "smart communities."

"A smart South Bay starts with the cities getting more bandwidth for less," the Fiber-Optic Master Plan states. "The full vision is of high-tech companies starting up, relocating and growing across the South Bay."

Small local governments need to work together so they can all affordably build the infrastructure of the future now. A regional approach would prevent smaller, poorer cities from being left behind, the report states.

"One of the things we've been trying to do is to get people to think of broadband as a utility. People can't live without their broadband and their internet anymore — it's like water and food," said Chris Cagle, the South Bay Workforce Investment Board's regional affairs manager. "If you're a giant company, you have the money to build whatever you need. But if you're midsize or smaller, you can't afford to do that."

Regional leaders became especially alarmed about lack of broadband availability when they learned that aerospace and defense supplier Chemring Energetic Devices was closing its Torrance location partially because of poor data access.

The loss of those high-paying, in-demand jobs was a wake-up call, Bacharach said. Other companies could follow in Chemring's footsteps, and the problem could discourage others from moving to the area — a potentially devastating domino effect.

The Council of Governments is seeking support from political leaders to invest in a basic backbone of South Bay fiber infrastructure that municipalities can then build on.

"It's not really a future problem, it's something we really have to address as soon as possible," Bacharach said. "We're encouraging cities to lay down fiber at any opportunity they have."

Los Angeles and Long Beach have been working on plans for citywide networks for years. They still rely on a patchwork network of underground cables, cell towers, and communications satellites.

Redondo Beach, El Segundo and Inglewood are working quickly to lay down extensive fiber networks, along with Riverside County, Beverly Hills, West Hollywood, Huntington Beach, Carlsbad, Ontario and Culver City.

Meanwhile, the main public-sector digital communications providers are fiercely competing for dominance in the marketplace. Verizon has the most extensive fiber network. But Spectrum (formerly Time Warner), Comcast, Frontier and AT&T are busily building out their infrastructure, along with Google Fiber and many others.

About 150,000 homes in Los Angeles, West Hollywood, Corona, Fontana, Glendale, La Mirada, Palmdale, Riverside, Irvine and some others recently got access to AT&T Internet 1000, the company's fastest, 1 gigabit-per-second data service that it advertises can "download 25 songs in 1 second."

But public-private partnerships like Santa Monica City Net, which offers up to 100 gigabit-per-second community broadband, have already proved they can force down costs charged by commercial providers.

Jory Wolf helped lead Santa Monica's early transformation into a "smart city" as its longtime former chief information officer. He set about building a citywide fiber-optic network in 1998.

"The other cities went to sleep on the topic, as did most cities across the country," Wolf said. "We continued studying it and put together a task force with the community, the City Council and Verizon — the entrenched service provider at the time.

"We developed three tenets: Provide universal access to all members of the community to eliminate the 'digital divide,' assemble a network that would benefit the school district, community college district and city, and take a look at providing internet services to businesses to help stimulate the local economy."

With Santa Monica's digital networks well developed, Wolf left a year ago to be vice president of digital innovation at Magellan Advisors, which conducted the new South Bay fiber-optic study.

'CHANGE IS HARD'

"The concept is to incrementally build out fiber-optic connectivity — starting with the cities," the report states. "As cities develop their own infrastructures, starting with conduit and poles, they can spur private technology investment."

Once city halls are connected, they can expand to support businesses and homes with a variety of applications. Already, Beverly Hills is installing fiber-optic lines directly to residents' homes.

Cities can help school district and community hubs get connected — and lease out access to businesses to generate new revenue streams, the report suggests.

Hasan Ikhrata, executive director of the Southern California Association of Governments, or SCAG, which oversees planning for the region's 191 cities, said he's working to push reluctant cities and regions into the future before they're left too far behind.

"The future is different. The future is not going to rely on attracting car dealerships," Ikhrata said. "The future is about being ready for autonomous vehicles and a lot of other things that cities haven't precipitated."

SCAG is studying ways to alter street infrastructure for electric vehicles and to expand charging station networks. It's trying to get communities to work together to tackle the costly challenges as a united front.

"Tech companies will not come to a place where there are no fiber optics," Ikhrata said. "But change is hard. Unless we start thinking differently, we're not going to do well. Cities need to behave like a corporation — not for profit, but for providing the services they need to provide.

"The future is not 100 years from now, the future is now. And it's different from the past."