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Silver Spring's chief product officer Lin shares vision, strategy

Former Cisco senior VP guided by devotion to grid

Judy Lin, Silver Spring Networks' first-ever chief product officer, loves history. She double-majored in European history and computer science at the University of California-Berkeley. But she became an engineer since "it's that instant gratification of getting something to work very quickly," she told us in an exclusive interview Friday.

Lin left Cisco Systems in June (SGT, [Jun-15](#)) out of the same need for speed: to accelerate her career in the smart grid. At Cisco, she served as senior VP and

general manager of the Ethernet switching technology group. We first interviewed her while she was at Cisco when she declared, among other things, that Cisco sees the communications part of the smart grid industry earning \$20 billion in five years and that Cisco plans to get a healthy chunk of that (SGT, [May-19](#)).

Before Cisco, Lin worked at HP developing the first commercial version of the Unix operating system, at Apple developing the Mac and at internet-security firm Verisign for 11 years.

At Cisco, she learned of the smart grid through representing the routing and switching operation on the firm's smart

grid team. After being chosen to lead Cisco's smart grid product development in late 2008, "I got fascinated with applying technology to solve this whole new set of problems," she added.

Cisco is large and has many lines of business. Before long, Lin realized she "wanted to focus the rest of my career on making smart grid a reality. And after a lot of soul-searching, I thought going to a smaller, more focused company was a better way to accomplish that objective."

With 500 employees and a singular focus on the smart grid, Redwood City, Calif.-based Silver Spring was an obvious choice. There she is responsible for all product development including engineering and product marketing and management. After eight months on the job, she said, her objective is clear: to help build Silver Spring from a smart grid networking firm into what she calls a platform.

"We've been very successful at helping our customers deploy smart metering but we think that's just the first step in a long journey. I want us to have the networking foundation and the data infrastructure to support a variety of smart grid applications," she added.

Two recent announcements advance that goal. An alliance made last week with Freestyle Technology, of Mount Waverley, Victoria, Australia, will let Silver Spring's customers use technology from Freestyle. That technology lets customers more easily make devices such as streetlight sensors usable on Silver Spring-created networks, Lin said.

"We don't have the bandwidth to spend time developing code for each device. This will help us extend our footprint to work with these devices," she said.

Silver Spring is working with Freestyle on the Australian Smart City initiative, she added. Meanwhile, Freestyle's website says it has joined with an undisclosed "major industry player" to compete for a Smart Grid-Smart City grant from the Australian government. Neither Freestyle nor Silver Spring and Lin, through a spokesperson, would verify whether the firm being referred to was Silver Spring.

Lin expanded on last week's announcement from Greenplum, of San

Moderator of NARUC closed-door smart grid meeting fills us in

Smart grid integration involves a handful of issues that state commissioners need to explore more, David Owens, executive VP of the Business Operations Group at the Edison Electric Institute (EEI), told us this week. At NARUC's winter meeting Monday in Washington, DC, he led a discussion on "regulatory issues resulting from the deployment of smart grid technologies" that was closed to the media.

Owens spoke with us after the event about several issues he said were "tee'd up" for play inside public utility commissions around the US -- namely data access/privacy. "The question is, 'Who owns the data?' I think they all agreed that the customer owns the data," he added, referring to the attendees of the closed meeting.

"I said, 'Shouldn't one federal agency -- for example the FCC -- have control over that?'" He saw some anxiety over suggesting that a single federal agency would have control over it. "They indicated they have relationships with the customers. They want to maintain reliability. They have that responsibility... They indicated their concerns about data privacy. There are significant privacy issues

and significant operational issues with respect to how the data is used."

Cyber security is a work in progress, some attendees reported. "They recognize there is the perception that smart grid raises a host of new cyber security issues because the meter is now like a computer with two-way communication. They said that's something they need to work a little bit more closely on with FERC and DHS and other agencies that have cyber security oversight."

Cost recovery for utilities that operate in more than one state is also a work in progress, Owens quoted attendees. Utilities are sensitive to the cost associated with putting in the smart grid but they are in particular concerned about the impact on low-income customers that may not be well informed about how this technology may benefit them. The commissioners said a lot more education has to be provided and that there has to be greater coordination among the states to make sure cost-recovery mechanisms are appropriate, Owens quoted. They indicated there has to be a sharing of information," in part to make sure utilities working in multiple states

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Mateo, Calif, that Silver Spring is using Greenplum's technology to create "the first version of a data warehouse." Silver Spring is moving to separate its multi-terabyte database, filled with interval metering data from customers, into transaction processing and data. It will put the data into a warehouse, a type of specialized, large database.

"Once we have a data warehouse, we can do simple things like generate reports, which is something we want to do for our customers," said Lin. "And we can let customers generate their own reports. Over time, that will become a foundation for business intelligence. Third-party applications will be able to use the data to provide additional value for our utility customers."

Buying Greenbox helped

Lin also caught us up on Silver Spring's September purchase of Greenbox Technology, a provider of web-based energy-management software (SGT, [Sep-23](#)). That purchase "falls very nicely into the theme of extending our product portfolio," she said.

Silver Spring already offered Utility IQ, software that utilities can use to manage metering data and networked devices. The firm lacked software utilities could use on websites to display metering data and other consumption information to consumers --

BALLER: Incumbents take anti-community efforts into stimulus realm

Some big telecom and internet firms are trying to throw up roadblocks to applications from some municipal utilities and co-ops for a piece of the few billion dollars in federal stimulus funds dedicated to extending broadband internet access to places in the US where it is lacking, Jim Baller, president of the Baller Herbst law group, told us last week (**EDITOR'S NOTE:** His firm has represented a number of community broadband projects over the years and is considered a key champion -- in court cases and state legislative efforts -- for communities seeking to deploy broadband).

Baller Herbst does counseling on

Moderator of NARUC closed-door smart grid meeting fills us in

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don't double-dip in rate cases. "They did not describe how [the improved coordination] would happen."

Rate design is not controversial. "They all agreed you need some dynamic pricing -- that the meter is not a smart meter if you don't have smart rates." Leadership could come from states such as California "that have been more involved in setting dynamic pricing" in the past, Owens said. "You'll have new rate design for PHEVs and distributed resources -- all those technologies that the smart grid will enable."

Regulators support recent interoperability policy efforts, reported Owens. "They are fairly pleased with what's occurring." NIST and FERC will be initiating rulemakings based on the consensus standards from NIST, her added, referring to the first official guide to smart grid standards that was released last month (SGT, [Jan-21](#)).

"We wanted to make sure the states felt they had an active involvement and they indicated that they do have representation. They feel pretty confident they are well informed about what's taking place."

[\[Comments\]](#)

an offering the utilities were asking for.

"We saw Greenbox had great technology, wonderful engineers and product-management talent, so it was a simple, straightforward build-vs-buy decision," she said. The Greenbox team has been "fully assimilated" into Silver Spring and is now leading Silver Spring's Smart Home initiative that includes everything relevant to the residential customer: electric vehicles, DR, energy efficiency and energy

awareness. Greenbox's product has been rebranded as Customer IQ.

Will Silver Spring's Smart Home initiative and Customer IQ compete with firms such as OPower (SGT, [Feb-12](#))?

"OPower provides a slice of functionality," Lin responded. "They're focused on energy efficiency, helping utilities manage and implement energy-efficiency programs. Over time that

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applications for entities interested in the funds that will be distributed by NTIA and RUS, Baller told us.

The stimulus funds are just as available to "incumbents" already providing at least some broadband access in or near where the munis and co-ops want to do so, and the incumbents are "gripping about taking these funds because there are conditions on them," such as maintaining open networks built or expanded with federal funds and reporting back to Uncle Sam about project progress," said Baller. Thus, he added, the incumbents haven't yet tried for the stimulus funds. "They aren't serving the areas adequately and

they are griping about others who are willing to step forward and do so."

NTIA, with which the "incumbents" have reportedly filed thousands of comments challenging utilities' applications for stimulus funds, could not be reached for comment.

It is not yet clear whether the objections raised by telecom and internet firms will present a serious roadblock to broadband plans on the drawing board inside some munis and co-ops. "We'll have to see when all the awards are out whether it was a big deal or not," Baller said, noting that he personally doubted the situation was highly troublesome.

NTIA and RUS last month announced the second funding round for their broadband programs, known as Broadband Technology Opportunities Program (BTOP) and Broadband Initiatives Program (BIP), respectively.

The agencies plan to accept applications for the second round now through mid-March and will announce all awards by Sept 30.

ARRA provided a total of \$7.2 billion to NTIA and RUS to fund

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projects that will expand access to and adoption of broadband services.

NTIA will use \$4.7 billion for grants to deploy broadband infrastructure in un-served and underserved areas in the US, expand public computer center capacity and encourage sustainable adoption of broadband service. RUS will use \$2.5 billion in budget authority to support grants and loans to facilitate broadband deployment in primarily rural communities.

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EEI plans to probe embattled PG&E AMI program

The IOUs' trade association will likely perform an independent analysis of the controversial PG&E smart meter program, an executive with the Edison Electric Institute (EEI) told us yesterday. EEI will probably hire a consultant to analyze the events and circumstances that led to a lawsuit filed in October against PG&E (SGT, [Nov-12](#)), said Lisa Wood, executive director of the Institute of Electric Efficiency, a foundation within the Institute. The suit alleged 11 civil violations against PG&E after plaintiffs received much larger electric bills following the installation of smart meters.

EEI will likely do its own analysis regardless of the independent investigation promised -- but not yet delivered, or even begun -- by California's PUC (SGT, [Feb-02](#)), she added.

"This is a bad situation and with 60 million smart meters rolling out across the country, it's important to understand what

happened so other utilities can avoid it," Wood said. She believes the analysis will likely reach the same conclusion PG&E did: that the unusually high bills in the Bakersfield area last summer resulted not from meter defects but from a combination of newly revised rates and higher-than-average temperatures.

"This isn't rocket science. It's not a difficult analysis. Electricity usage is not that hard to figure out," Wood said. But the issue has become so politicized that "the case isn't about the truth; it's about whoever has an agenda."

Wood presented a summary of the situation during the NARUC meeting in Washington, DC this week (SGT, [Feb-16](#)). Despite voting in November to take expedited action (SGT, [Nov-23](#)), California's PUC has not yet hired an investigator "so far as I have heard," spokesperson Andrew Kotch said yesterday.

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might be an application we provide." But, she said, "we don't believe our role is to provide every single application the utility is going to need. We want to provide an infrastructure to enable third-party applications. We could very well partner on the energy-efficiency

part and have that as a module that sits in our suite of customer-facing applications."

It takes people power

Silver Spring is bulking up for Lin's initiative, with plans to nearly double her engineering staff's size by year's end to 270 employees from 150. Overall, the

firm will grow to 700-800 employees by year's end from 500 now, she added. Product development will use a good part of the US\$100 million in financing the firm got in December (SGT, [Dec-15](#)).

The firm will pursue four objectives, she said: working with existing customers, winning as many new customers as possible in the "land grab out there," building its product portfolio and expanding internationally. She declined to be more specific on the last point but said "there is some activity under way."

Similarly, Lin said she has four product-related goals: continuing to innovate in networking, increasing security and adhering to new standards; adding more types of meters and more functionality to Silver Springs' AMI; building network-management and distribution-automation capabilities, and a greater focus on the end-user.

What business worries keep her up at night? "We are truly inside a tornado and I worry about our ability to scale and execute with very, very fast growth while maintaining the excellence we have demonstrated," she said. "The good part is it's all within our control and we have seasoned folks who have done this before, so we can do it again."

When she isn't working, Lin is a "huge baseball fan -- a long-suffering San Francisco Giants fan," she said.

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2 stories in 90 seconds

Eurotech sells lots

of cellular routers: Eurotech of Baltimore, MD, sold over \$1 million worth of its ZyWAN cellular routers to an unnamed southern US utility, the firm told the press Monday. The units wirelessly transmit data over commercial cellular networks between base stations and the utility's operations center, Eurotech VP of Marketing Hilary Tomasson told us yesterday. The routers are certified for operation with several cellular networks including AT&T's and Sprint's, she added. The utility asked not to be identified, Eurotech said.

Western state weighs virtual net metering:

Washington state's legislature is considering a net metering bill -- to let customers sell excess power from onsite generation back into the grid. Thus said

a Seattle lawyer who follows legislative activities. "Currently, if electricity generated by the customer generator exceeds the electricity supplied by the electric utility, the customer generator gets a credit for its excess kilowatt hours generated during the billing period," wrote Graham & Dunn attorney Judy Endejan in [a blog post Monday](#). But on April 30th of each calendar year, any remaining unused kwh credit accumulated during the previous year is granted to the electric utility, without any compensation to the customer generator. The bill would change that scheme by allowing for "virtual net metering," she wrote. The purpose of the bill was to make it easier for customer-owned electrical generators, on farms for example, to expand their capability to supply electricity to the grid.

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Vermont to implement TOU rates, expand AMI ten-fold plus

Vermont will use dynamic pricing to help its residents maximize the benefit of a smart grid, Gov James Douglas told attendees at NARUC's winter meeting in Washington, DC Monday.

The smart grid will help utilities identify problems and control their loads -- and it will help consumers avail themselves of the opportunities that TOU pricing will provide, he said, according to his prepared remarks.

Douglas cited recent news from DOE that a \$69 million SGIG award is going to Rutland-based Vermont Transco.

Total project investments of nearly \$150 million would help the state meet

its goal of universal broadband coverage and bolster its investments in energy efficiency.

Transco's project would expand the deployment of Vermont smart meters from 28,000 today to 300,000, implement customer systems such as in-home displays and digitally controlled appliances, secure control systems for substations and generation facilities and

automate the electric T&D system grids, said a document released by the White House.

The smart grid is a needed foundation for the widespread adoption of electric vehicles, said Douglas. He noted, too, that the smart grid will benefit consumers who are seeking out renewable, local sources of power.

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