Cisco: Smart grid will eclipse size of Internet

by Martin LaMonica

Cisco knows a bit about building networks and it sees a $100 billion market opportunity in the smart grid.

The company, whose networking gear is installed in all corners of the Internet, on Monday will announce its intention to make communications equipment for the electricity grid--everything from routers in grid substations to home energy controllers. CEO John Chambers is scheduled to discuss Cisco's smart-grid push Monday morning at a JP Morgan conference in Boston.

Cisco's move is a sign that the creaky electricity distribution system is poised for a digital upgrade. Other high-tech companies, including IBM, Intel, and several start-ups, are ramping up smart-grid efforts to capitalize on expected investments from utilities and federal governments. Cisco estimates that the communications portion of that build-out is worth $20 billion a year over the next five years.

The idea of the "smart grid" is to modernize the electricity industry by overlaying digital communications onto the grid. Smart meters in a person's home, for example, can communicate energy usage to utilities in near real time. That allows the utility to more efficiently manage the electricity supply and potentially allow a consumer to take advantage of cheaper rates.

Cisco started devising a strategy to enter the smart-grid arena last fall. Some utilities are already testing how well its routers and switches can help more efficiently manage the flow of electricity and prevent

outages in grid distribution equipment. Cisco also released EnergyWise software earlier this year for managing energy use in office buildings.

Cisco's smart-grid program covers goods already part of its product portfolio, such as data center equipment. But in other cases, such as home networks and smart-meter security, Cisco is developing new products, said Marie Hattar, vice president of marketing in Cisco's Network Systems Solutions group.

For example, Cisco could make a home energy controller device or software for its Linksys routers and set-top boxes to give consumers a read-out of how much energy different appliances use.

More data

There's potential for communications gear in "neighborhood-area networks" as well. Using sensors or an embedded router in substation, a local utility could send information on the demand for electricity in real time to power generators. That will allow generators to run more efficiently and incorporate more wind and solar, said Hattar.
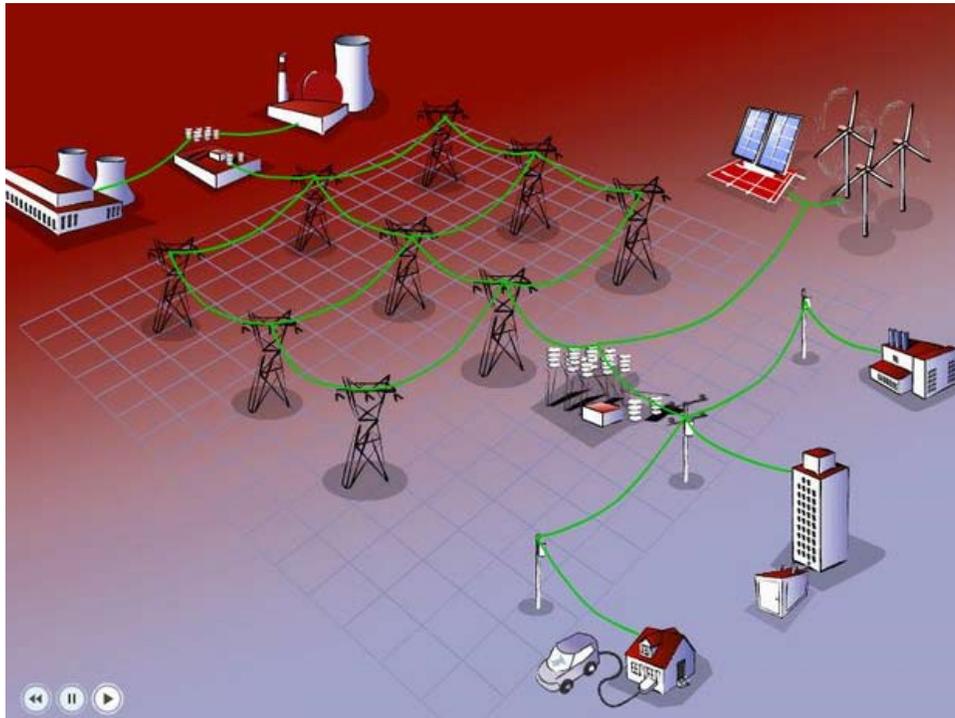
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A "smart grid" infrastructure adds digital communications to the power grid so it can manage the flow of energy to run more efficiently and to incorporate more wind and solar power.

Over time, people's homes will have more sensors in appliances, which will give consumers more detailed usage information to help cut usage and help utilities avoid stressing the grid during peak times, smart-grid advocates say. More sensors also mean that utilities will need to bulk up their data center communications to handle much more data, Hattar said.

Cisco's position is that the communications over the grid should be done using IP (Internet Protocol) in conjunction with existing industry protocols and standards. Not all smart-meter companies use IP to communicate information and the utility and IT industries are still defining a number of different standards.

Even though Cisco advocates IP, Hattar said that a modernized electricity grid will be separate from the Internet, which she indicated should lessen security vulnerabilities.

"Our expectation is that this network will be 100 or 1,000 times larger than the Internet. If you think about it, some homes have Internet access, but some don't. Everyone has electricity access--all of those homes could potentially be connected," she said.

Even though many vendors expect a lot of money to be spent on modernizing the grid, smart-grid technology is for the most part still in the testing phase at utility-sponsored trials.

Many utilities tend to be conservative about investing in IT. Another factor that makes at least some utilities unenthusiastic about smart-grid technology is that many states have regulations structured around power plant investments rather than efficiency-related IT.

Cisco—along with General Electric and SilverSpring Networks—was picked for a large smart-grid project in Miami from Florida Power & Light, which aims to install 1 million two-way utility meters.