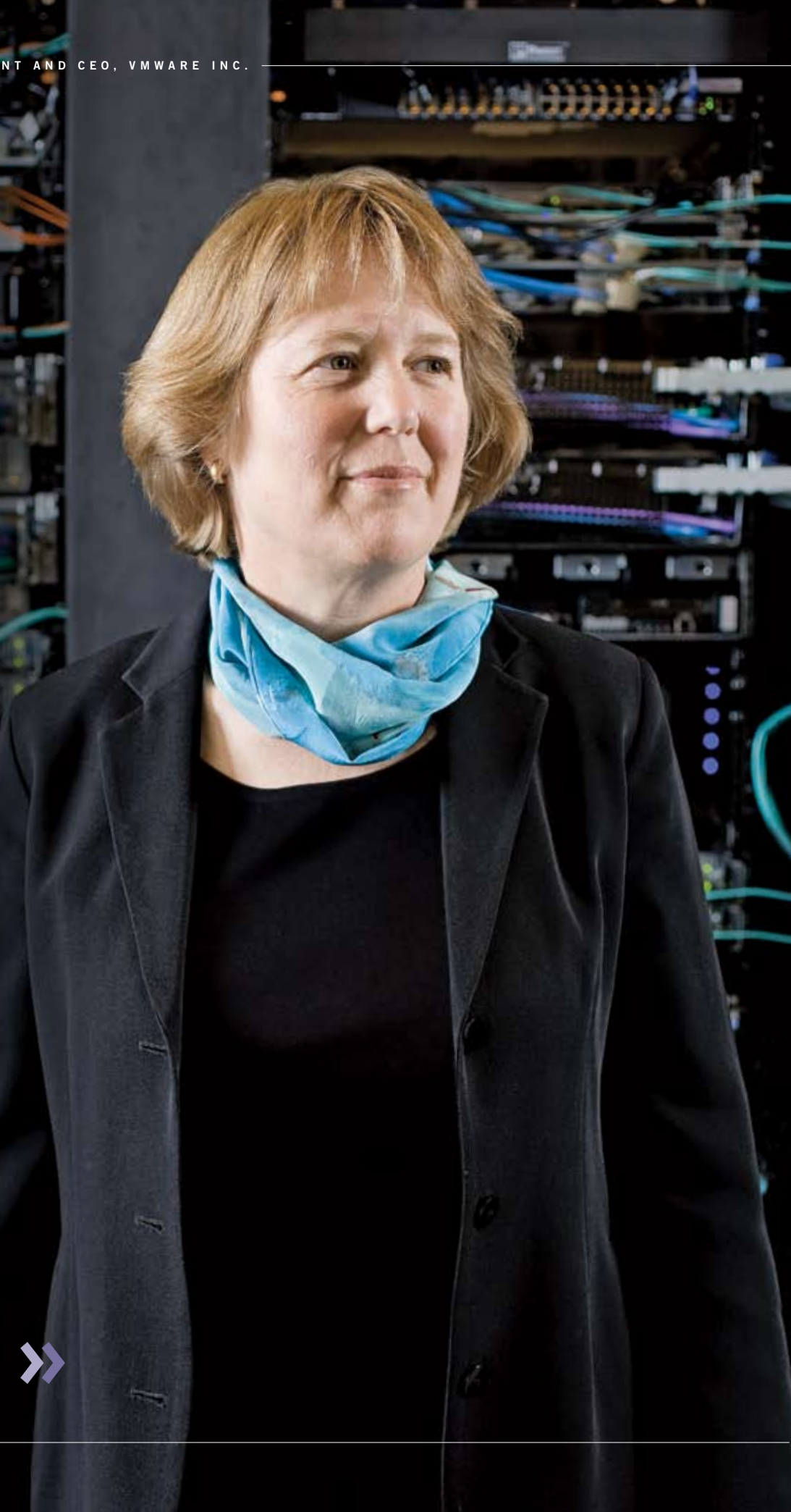


**M**OST INDUSTRY-STANDARD servers are underutilized, running at a mere 5 percent to 10 percent capacity, says VMWARE INC. (VMW), the leader in virtualization solutions for industry-standard desktops and servers. VMware reports that the virtualization software that it develops allows companies to drive utilization rates up to 80 percent by consolidating server workloads that would ordinarily exist on five to 10 servers onto just one and create an always-on-and-responsive data center. President and CEO Diane Greene notes that VMware recently introduced Distributed Power Management, which automatically consolidates workloads across multiple servers onto fewer servers, powers down the unused servers during slow periods (typically nights and weekends) and powers them back up when computing demands increase.

Virtualization leads to power reduction, Greene says. "Servers consume 40 percent of the power that runs a data center, and data centers account for nearly 2 percent of the power consumed in the U.S.," she explains. Market research firm IDC estimates that the power and cooling bill for servers in the world was \$28.9 billion in 2006 and could reach \$44.5 billion by 2010. For VMware customers, including all of the Fortune 100 companies, a sizable virtualization deployment can save them each millions of dollars per year in power savings alone, Greene says. She adds, "We feel great about the impact we're having on saving power."

Greene says she is one of five founders of VMware, which reports that its 2007 IPO was the largest offering since Google. »



# A GREEN VISION

*VMware's CEO explains how her company's virtualization solutions reduce power consumption in data centers.*

BY LAUREN DONALDSON

## » What does virtualization do?

Virtualization increases the efficiency, flexibility and reliability of computers from desktops to large data-center racks of servers. Think about it this way: You can have five cars driving on the freeway with one person in each car, or you can have one minivan driving down the freeway with five people in it. Taking that metaphor a step further, virtualization can reduce the number of minivans running on the weekends and in the evenings when ridership is lower.

## Does VMware partner with other companies on green IT solutions?

VMware collaborates with a broad spectrum of vendors in the IT industry to optimize for virtualization and our products. VMware is also a founding member of The Green Grid, an industry consortium of more than 100 companies dedicated to advancing energy efficiency in data centers. VMware is actively engaged in The Green Grid's efforts to define industry models and metrics, develop standards for measurement processes and promote the adoption of energy efficiency.

## Which partnership would you cite as a model example?

**PG&E CORP.** (PCG) is a utility company based in northern California that looks for new power-saving methods for its customers. A few years ago, some customers told PG&E

about the power savings that resulted from employing VMware virtualization software. So PG&E approached us, and we helped them develop an incentive program, announced in 2006, that pays companies to reduce power and cooling costs in their data centers through virtualization. PG&E pays customers 8¢ per kilowatt saved through virtualization, up to \$4 million per physical site. This is the first utility to offer a financial-incentive program of this kind. Several

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**“CEOS SHOULD SEEK OUT INITIATIVES THAT PRESENT THE GREATEST OPPORTUNITY FOR ENERGY SAVINGS.”**

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other public utilities have since launched similar programs, and many more are planning to do so.

## How do you communicate the power-saving benefits of virtualization?

VMware educates CIOs and IT and facilities people about the financial benefits of greener data centers. We show them how virtualization solutions will affect their companies' bottom lines. We use capacity planning assessments to help explain what types of server-consolidation ratios and benefits a particular company might get when it virtualizes and consolidates its servers.

## How would you advise CEOs on reducing power consumption?

CEOs should seek out initiatives that present the greatest opportunity for energy savings and high returns. Data centers are a great place to start. Within the data center, servers and cooling infrastructure are the biggest consumers of electricity. Look at how virtualization can lower your power consumption. Fewer servers with high utilization rates means a lot less cooling required, so virtualization can double your energy savings.

## What challenges will VMware face in the next five years?

VMware is growing rapidly, which requires proactive investment in our internal infrastructure and people so that we can remain nimble and responsive to our customers, our partners and the market. VMware has outstanding products in terms of quality and functionality. We regularly release major advances in our product lines as well as new product areas for the Fortune 1000, small- and medium-size businesses, and consumers.

## How has VMware included sustainable initiatives in its operations?

We use VMware products to run our own data centers more efficiently. We also recently built a new campus in Palo Alto, where we prioritized sustainability. We used reclaimed and recycled materials for the furniture, carpets and flooring, and we designed the building to take advantage of the sunlight during the day to reduce dependence on artificial light. Additionally, we constructed photovoltaic-ready roofs. We also provide minivan shuttle service and bike lockers. We'll continue to take advantage of green operating options in the future. ■