Going Green:
How To Enable More Environmentally Friendly & Cost-Efficient Global Services Delivery

Cognizant's CIO discusses how Cognizant is shrinking its carbon footprint and conserving energy, while reaching out to clients for suggestions on ways to accelerate the green journey for all.

By Mark Greenlaw

As a knowledge-based business, Cognizant is not considered a heavy contributor to greenhouse gases compared with other "heavy" industries. But with 60,000 employees (and growing) -- many of whom work in our large development centers in India, China and Latin America -- we understand the significant impact Cognizant can have on reducing carbon emissions globally. Cognizant recently formalized its "Go Green" initiative, a program that is being led by our largest delivery center in Chennai, India. Go Green is a cross-functional initiative whose mandate is to coordinate numerous sustainability projects that span various groups across Cognizant. The major elements of our Go Green program include:

- Establishing a Greenhouse Gas (GHG) emissions policy.
- Setting GHG reduction targets.
- Conducting a baseline GHG inventory.
- Identifying and executing mitigation programs to reduce GHG.
- Educating employees on how they can reduce GHG emissions.

We have already made some significant early progress in reducing our carbon footprint:

Facilities: Cognizant has three new campuses that will be certified by LEED (Leadership in Energy and Environmental Design) early in 2009, two at the Silver level and one at Gold. LEED is a third-party certification program and nationally accepted benchmark for the design, construction and operation of high-performance green buildings. Within other facilities, we have undertaken a program to reduce air conditioning use and power consumption.

Local Transportation: We've reduced the number of cars and motorcycles coming into our campuses by offering bus services to over 80% of associates. We've optimized travel routes to reduce the number of buses by 20% to minimize traffic congestion and pollution.

- **Computing:** We have instituted a PC power management program to put our desktop PCs in hibernation mode after-hours, saving an estimated 18.75 million kWhs of electricity annually, resulting in $2.5M annual cost savings and an estimated 17,500 metric ton annual reduction of Scope 2 carbon emissions.[1] We've virtualized over 100 servers in our data centers to reduce server energy consumption. We've initiated a data center consolidation project that will reduce overall data center energy consumption. We've implemented print management solutions to reduce print paper consumption by 30% with print quotas and two-sided printing automation.

- **Business Travel:** We are working to reduce our travel by encouraging the use of collaborative meeting tools, video conferencing and, soon, telepresence, which we plan to deploy later this year. Achieving a 10% reduction in our travel would lower our Scope 3 carbon emissions by 2,800 metric tons annually.[2] For example, I normally conduct an offsite meeting in India with my management team each fall to formalize plans for the coming year. This year, we conducted a "Virtual Offsite Meeting" instead, using Microsoft Live Meeting and some creative facilitation techniques to virtually bring together 25 of my managers from around the globe.   This is a small step, but we hope to innovate on the concept and document our approach and the facilitation techniques employed so other Cognizant teams might benefit.

Most of our current focus is on reducing the demand for energy through conservation efforts, which according to many published reports, yields the highest immediate environmental benefit and return-on-green-investments for both individuals and corporations. In the future, however, we may begin examining the supply side of the equation by investing in alternative energy sources. At a recent green technology conference, I spoke with one company that installs solar panels for businesses at no charge and then sells back the energy generated at guaranteed rates through Power Purchase Agreements (PPAs). This vendor sees rooftops as valuable energy-generating pieces of real estate. Cognizant has significant rooftop real estate across its many campuses in India and around the globe, representing a tremendous opportunity for clean energy generation. We are in the early planning stages of a pilot project to put solar panels on one of our facilities in Chennai, India.

How can you help us?

Some of the steps we hope to take require support from our clients. For example, we'd like to continue moving more and more of our customer development servers to virtual machines to further reduce electric consumption. And in some cases, we can cycle off development servers for several hours a day when they are not in use. This may sound trivial, but these savings can add up. Depending on which report you read, data centers in the U.S. account for between 1.5% and 3% of all electricity consumption. A recent McKinsey report claims that companies can double the efficiency of their data centers through disciplined management.[3] Virtualization and server power management of our customer computing environment could yield a measurable reduction in our carbon footprint, but these steps require support and approval from our clients. Some clients are concerned about the security risks of sharing hardware resources through virtualization. We believe we can demonstrate that virtualization can be done in a highly secure manner.

We've discussed potentially moving some servers into the "cloud," a style of computing in which resources are provided as a service over the Internet. One of the proposed benefits of cloud computing is that data centers can be designed to be ultra-energy efficient and located in parts of the world where clean, cheap energy is available. And because they sell computing capacity, not servers and storage, cloud providers can optimize server utilization across many businesses, not just one, resulting in more efficient use of energy in the aggregate. In order to consider such a move, we'd need the support of our clients, who may express security concerns similar to those raised around virtualization.

As we work to reduce travel, Cognizant is encouraging our associates to challenge the need for discretionary business travel, for example, client meetings.   Establishing an initial relationship in a face-to-face meeting is often necessary, but subsequent sit-downs can often occur virtually. Much of our travel is to accompany our clients on visits to our facilities in India. Perhaps every other visit could be done via telepresence. And when a client decides to invest in a site visit, both client and Cognizant teams can work together to minimize the number of people who travel.

Additionally, we recognize that many of our clients may be further ahead of us in their journey to become green. We'd appreciate hearing about the lessons you've learned, successes and case studies as your companies work to conserve energy and move to renewable clean energy sources. Have you had success in reducing your energy costs? Have you installed solar panel or wind turbines at one of your facilities? (Please email your experiences to me; you will find my address at the conclusion of this article.)

Finally, we encourage you to push us to be as green as possible. We are asking the vendors in our supply chain about their sustainability programs. You should do the same with Cognizant. We want to be your preferred global services provider, not only because we have passion for making your business stronger, but also because we have passion for making the planet cleaner.

How can we help you?

Cognizant has tremendous depth and breadth in the capabilities we bring to clients, which includes experience with projects that reduce energy consumption and generate energy-related cost savings. Here are a few examples of the types of projects in which we can partner with clients to reduce their carbon emissions:

- Assisting with the design and implementation of technology to support a more efficient supply chain, using frameworks such as GreenSCOR from the Supply Chain Council.

- Identifying opportunities to reduce paper generation through business process management (BPM) or imaging technologies. Cognizant implemented a Green BPM solution for a large pharmaceutical company, helping it save 1.2 million pages annually and resulting in a CO_2 emissions reduction of approximately 20 metric tons annually.

- Implementing server virtualization to increase server utilization and reduce the number of servers consuming energy. Cognizant was able to help a major PC peripherals manufacturer reduce its number of servers by more than 50% through server virtualization, resulting in comparable energy savings and a reduction in carbon emissions.

- Assisting with data center design to optimize cooling and reduce power consumption. Cognizant was able to help a major publisher reduce its data center energy consumption by 40%, resulting in comparable energy savings and a reduction in carbon emissions.

- Instituting tools for PC power management and print management.

- Identifying, evaluating and implementing software tools for efficient facilities management.

- Designing and building executive dashboards and business intelligence tools that help executives manage performance against energy consumption targets.

- Identifying, evaluating and implementing software to manage corporate sustainability programs, carbon inventory capture and carbon offset and trading programs.

By working together, we can conserve energy, reduce energy costs, reduce greenhouse gases and help mitigate the impact of global warming.

As Thomas Friedman states in his new book, *Hot, Flat, and Crowded*, "It is much more important to change your leaders than your light bulbs." Friedman, I think, is referring to our elected officials, but this statement can and should be applied to business and IT leaders. (See some of Friedman's more harrowing observations below.) We desperately need to change ourselves to bring about the radical change necessary to reverse global warming and avert a crisis that could potentially be more devastating than anything mankind has ever faced.

Friedman's Forecast

In Hot, Flat, and Crowded, author Thomas Friedman creates a truly compelling case for action and reveals how investment in clean energy technologies could potentially solve many of today's problems. A green revolution will help reduce carbon emissions, reduce our dependence on foreign oil and create new opportunities for economic growth that are sorely needed to contend with the deep global recession.

Here are some of the particularly harrowing data points:

- Global population will rise nearly 40% from 6.7 billion people today to well over 9 billion in 2050. We will add nearly 1 billion people in the next 12 years alone. Much of the population growth will occur in developing nations.

- The economies of developing nations, particularly China and India, are growing extremely fast as a result of the global economy. China is growing the fastest and already has 1.3 billion people, four times the U.S. population. Millions of people are moving into the middle class and consuming at rates similar to the U.S.

- Per capita, the U.S. consumes somewhere between nine and 30 times the energy that China and India consume. If China and India reach the U.S. level of energy consumption, annual oil consumption will soar from 85 million barrels to 200 million barrels per year.

- According to the Intergovernmental Panel on Climate Change (IPCC), CO_2 emissions in the atmosphere have grown from 280 parts per million (ppm) prior to the industrial revolution to 384 ppm today. This can be attributed to both burning fossil fuels and deforestation. At the current rate, we will reach 550 ppm by 2050.

- If we reach 550 ppm CO_2 in the atmosphere, the cumulative warming by 2100 will be between 3 and 5 degrees Celsius, which "could trigger sea level rises, droughts and floods of a biblical scale that will affect the livability of a range of human settlements," Friedman says. And this is based on projections in the mid-range, not the upper estimates.

Mark Greenlaw is Vice President and CIO at Cognizant. He can be reached at mark.greenlaw@cognizant.com.

Footnotes:

[1] Under the Greenhouse Gas Protocol Corporate Accounting and Reporting Standards, Scope 2 "Electricity indirect" emissions are emissions from the generation of purchased electricity.

[2] Under the Greenhouse Gas Protocol Corporate Accounting and Reporting Standards, Scope 3 "Indirect and Other" emissions are emissions generated from activities such as employee business travel, leased assets, outsourced activities, use of solid products and services and waste disposal.

[3] McKinsey report: *Data Centers: How to Cut Carbon Emissions and Costs*, by William Forrest, James M. Kaplan and Noah Kindler.

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