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Expert Analysis

Green Tech: Can IT Outsourcing Help Cure Our Energy Blues?

By **Robert M. Finkel**

Green has certainly become a fashionable color of late. At times, it seems as if almost every aspect of our daily lives can be viewed through a green prism. Some green initiatives have become familiar parts of our everyday landscape—efforts to make more energy efficient automobiles and planes come to mind. Other examples of green alternatives may not be as readily apparent—green nuclear power and coal, for instance. There are even groups of lawyers trying to live in a more green manner.

This rising green tide is, not surprisingly, quickly becoming an increasingly important factor in the area of IT services and software.

Although over the past year, the focus of governments, financial institutions and other businesses has rightly shifted to addressing the severe economic downturn, the issues of energy independence, efficiency, and clean, renewable alternatives to carbon-based fuels remain very much in the forefront of policy makers and industry leaders, both here and abroad.

Indeed, as the economy begins to stabilize, and the recovery gradually takes hold, in all likelihood attention will be focused even more than it has been on energy efficiency, conservation and environmental protection, not to mention the geopolitical issues associated with our current level of dependency on potentially unreliable providers of finite sources of energy. Much of the increased focus on energy conservation will no doubt be market driven. The political and diplomatic issues associated with our current energy policies also cannot be overlooked. As the recent events in Iran have highlighted once again, petrodollar financed regimes that do not share our democratic ideals can produce some very undesirable results.

What will fuel continued green-related initiatives going forward? Rising oil and other energy prices will create incentives for individuals and businesses to conserve and seek alternatives. In addition, governments will almost certainly play an increasingly active role in this arena. The current administration has made clear the priority it has placed on environmental and other related concerns; increased regulation is all but inevitable in areas such as cap and trade for carbon emissions, among others. Spending for research and various initiatives to promote energy alternatives, efficiency and conservation has accelerated. The recently passed stimulus package has a number of green related provisions and incentives with a price tag close to $100 billion, including projects for energy modernization, infrastructure and transportation.[1]

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What is also becoming clear in the green revolution is that IT services, software and outsourcing solutions will play an important role. In some ways, the IT contributions will be small; in others, IT will play a large, transformational role. Indeed, we are beginning to see a convergence of energy and information technology and a greater reliance on IT in environmental and energy initiatives generally.

At the Forefront

How will IT help us become green? Well, to begin with, IT services and service providers themselves will inevitably have to become more energy efficient. Data centers and other IT infrastructure facilities consume an enormous amount of energy—around 2 percent of our energy use in the case of data centers.[2] With computer usage increasing generally, and the world becoming ever more connected digitally, IT related energy consumption will no doubt comprise an ever increasing percentage of total energy use. This trend will in all likelihood accelerate when the global economy emerges from the current recession.

Major IT service and hardware providers have recognized that they must increase their energy efficiency. More significantly, customers are demanding that their service providers perform in an ever more efficient manner. All this no doubt means that data centers and other operations will operate in a greener fashion.[3] Recent technological innovations such as virtualization and cloud computing will, it is believed, result in greater energy savings.

Efficiency on the delivery side is only part of the story—and probably in the long term not the most significant contribution IT will make. What is more compelling in the long run is the transformational role that IT

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services, software and outsourcing will play in making everything else greener: to help make governments, businesses and other institutions operate in a leaner, smarter and cleaner manner. Many of the leading IT service providers have recognized this and devoted substantial resources over the past few years to develop their green consulting and service provider capabilities to meet the growing demand.

How has IT been at the forefront to date? The transportation arena is a pretty good place to start. A number of cities in Europe and Asia have instituted congestion pricing systems to reduce smog, lower consumption and raise revenue. These systems are run by software and services designed and operated by some of the leading technology companies, such as IBM. The company Better Place, which is developing cars and battery charging solutions that are heavily dependant on software, is one of a growing number of companies applying technology to operate efficiently.[4]

There are numerous public sector examples, too, where IT has been used to reduce energy consumption. In some cases, this has been in response to legislation, such as directives mandating that buildings comply with the LEED ratings system. Technology solutions have been introduced in the past few years to monitor and maintain heating and air conditioning systems, operate elevators, and regulate water usage, to name just a few. Companies that have or are considering outsourcing their facilities management to providers are increasingly insistent that their providers achieve target levels of energy savings.

Another area where we will see green IT services and software is in electricity generation and transmission. Energy savings, reliability and safety can be enhanced, for example, through smart grid technology, smart meters and similar technologies, much of which rely on specially designed software.[5] The Obama administration has made the updating of the nation's grid a legislative priority.[6]

Measuring Success

What is the overall significance of all of the above to the IT industry?

To begin with, we could well see, in the near to mid term, a proliferation of energy solutions enabled by IT systems and services. This growth, in my view, will be spurred by the combined effects of market forces (that is, rising energy prices) and increased government regulation. Certain types of outsourcing services will also likely grow significantly in the near term, such as facilities management transactions designed to improve energy efficiency.[7]

As market forces evolve and IT becomes an integral part of the solution to energy and environmental-related concerns, the IT industry will have to adjust. New ways of measuring the success of IT initiatives will need to be developed. As an example, IT service levels in outsourcing agreements that in the past might have tracked IT related measures, such as processing times and the like, may not have much applicability to systems designed to increase energy efficiency. Instead, end results such as maintenance of constant temperatures, reduction in energy utilization, reduced cost, balancing of electricity supply and demand, decline in greenhouse gases or improved traffic patterns will be measured and tested. In other words, the real measure of success will shift to the end result of the IT solution, instead of intermediate measures. We are also likely to see an even greater level of convergence of technology and energy policies.

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While the ultimate direction of many energy and environmental matters remains somewhat unknown, one thing seems pretty clear: Energy prices will rise. It also seems pretty clear that preservation of natural resources and the environment will remain paramount. By helping to find technology-driven solutions to these concerns, the IT and outsourcing industry is poised to make a real contribution to improving our national welfare by supplying services and software to power a greener, cooler and, ultimately, safer planet.

1. An outline of the plan is available at: http://appropriations.house.gov/pdf/PressSummary02-13-09.pdf. The plan includes: $30 billion for energy modernization, $5 billion to weatherize low-income households, $16.5 billion to modernize public infrastructure, $18.8 billion for environmental investment, and $17.7 billion for public transit and rail. On top of that, $15 billion is slated for science facilities, research, and instrumentation, which will likely have a green aspect as well. Some recent DOE examples are available at: http://www.energy.gov/recovery/documents/DOE_Major_Communications_06162009.xls ($786.5 million for biofuels research; $93 million for specific wind energy projects; $2.4 billion for the production of energy efficient vehicles).

2. An EPA report found that datacenters used 1.5 percent of total U.S. energy consumption in 2006 (page 4): http://www.energystar.gov/ia/partners/prod_development/downloads/EPA_Report_Exec_Summary_Final.pdf; Gartner has noted that the IT industry account for 2 percent of worldwide energy consumption: Gartner Press Release, 2007, http://www.gartner.com/it/page.jsp?id=503867; see also http://www.nytimes.com/2009/06/14/magazine/14search-t.html?pagewanted=all.

3. See The Green Grid, http://www.thegreengrid.org/ (and http://www.thegreengrid.org/~/media/WhitePapers/TGG_White_Paper_8_Data_Center_Baseline_Study_Report.ashx?lang=en, 2008, see summary on page 19), and specific efficiency metrics by which to measure datacenter efficiency (http://www.thegreengrid.org/~/media/WhitePapers/White_Paper_6_-_PUE_and_DCiE_Eff_Metrics_30_December_2008.ashx?lang=en.

4. See http://www.wired.com/autopia/2009/05/better-place/).

5. See http://gadgets.tmcnet.com/topics/gadgets/articles/50128-future-green-implications-software-solutions.htm.

6. The stimulus package provided "[O]ver $30 billion to transform the nation's energy transmission, distribution, and production systems by allowing for a smarter and better grid and focusing investment in renewable technology." http://appropriations.house.gov/pdf/PressSummary02-13-09.pdf (page 2 of the link). See footnote 3, supra page 2, for some specific Dept. of Energy projects.

7. Note the $16.5 billion in the stimulus package to modernize federal buildings.