

The Eco IT Solution

by Hugo Trepant, Gavin Chow, and Edward H. Baker

from **strategy+business** issue 53, Winter 2008

buyers of local shares.

Perhaps the greatest reason for optimism is the Vietnamese government's efforts to put the country on the fast track to asset price correction. Without an international bailout, but learning from the experience of countries that survived the 1997 debacle, Vietnamese authorities have raised interest rates three times this year to tame inflation; projects funded by government bonds, state-owned enterprise activities, and government overhead have all been reduced; and the State Bank has provided more U.S. dollars to local banks to stabilize illicit exchange rates, a move that has lowered black-market dong-dollar exchange rates from their June 2008 peak of 20,500 to 16,800 in September. With the rise in interest rates and the consequent decrease in liquidity, consumer spending and property prices have begun to fall significantly. Hence, it is believed that inflation has already begun to cool down.

Manufacturers producing for the local market and dependent on imported components will suffer the most now. As the dong weakens, these companies' profits will fall because of both the increasing costs of materials and the decreasing purchasing power of their revenues. In the short term, multinationals should instead focus on exporting higher-value-added products from Vietnam and developing a skilled labor pool that will eventually be able to manufacture products for local as well as foreign markets. Talent is a scarce resource in Vietnam, and without it a company will be unable to take advantage of the country's imminent future economic growth.

Service industries that are de-

pendent on local market demand or that have relatively high exposure to the real estate sector will also pay a steep price during this downturn. Architecture and engineering firms, advertising agencies that specialize in financial services and real estate, and the real estate and financial-services industries themselves will be the hardest hit. By contrast, companies that can export their services or that begin to develop such operations, including the software development and design and engineering companies that are clustered

around Ho Chi Minh City, are in the best position to weather this period and look forward to a lucrative future.

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Let's face it: Few large companies doing business in a highly competitive world are willing to invest in reducing environmental impact without short-term competitive benefits. But consumers are forcing them to pay more attention to the planet. People are more eco-conscious than ever, and are demanding that the products they buy be more environmentally friendly. Indeed, according to a 2008 survey conducted by market researchers Information Resources Inc., more than half of U.S. consumers take into account at least one sustainability factor, such as whether a product is organic or packaged in an environmentally friendly way, when shopping for their household. And it's not just less-wasteful packaging that people are looking for. They want to know whether a product is manufactured using sustainable or recycled materials, and are eager to learn the effect on the environment of the manufac-

turing process itself. In response, corporations have tried to cast themselves as being sensitive to the environment. Many are working to lower their energy use and to find sources of raw materials that follow sustainable resources practices. And at least a few companies are participating in global campaigns intended to mitigate adverse effects on the environment, such as carbon trading. Much of this response, however, has been limited to activities that can rapidly cut costs, a somewhat narrow way of viewing the problem.

Case in point: the corporate IT department. Over the past five years or so, environmental awareness on the part of IT executives has risen dramatically. Corporate buyers demand energy-efficient hardware, and manufacturers are responding with chips and servers that require far less power to operate. The level of toxic materials in equipment has been drastically reduced, and recycling of old computer equipment has increased significantly among cor-

porations. The corporate data center, an enormous consumer of power, is being rethought. This is happening both on the demand side, where companies (most notably, Google) are using alternative sources of energy to power their centers, and on the technology front, where concepts such as virtualization (the use of software that lets hardware perform more than one task at a time) have dramatically increased the utilization of servers and thus opened the door for further gains in energy savings. This approach isn't a bad idea, given that U.S. companies spend close to US\$6 billion on the power needed to run data centers and another \$3.5 billion to air-condition them, according to technology industry watcher IDC.

The goal of dramatically minimizing power consumption is laudable, and it looks great on the balance sheet; nonetheless, if corporate IT really wants to have a significant effect on how companies respond to environmental concerns, it must go beyond thinking merely about the cost side of the equation. Instead, it must focus the combined power of information and technology on promoting a green agenda while boosting top-line growth. By providing more data both to their own organizations and to their customers about the environmental costs and benefits of the products and services they sell, IT departments can, in turn, help generate a more complete understanding of the impact that their products — and the methods of producing them — have on the environment.

Consider, for instance, the information available to consumers to help them make choices about “green” products. Many large appli-

ances now come with energy ratings that are designed to let consumers know how energy efficient they are. Yet those numbers provide just a fraction of the information necessary to understand the appliance's total impact on the environment. One refrigerator might have a lower energy rating than another, but it may be made in an inefficient factory that emits more CO₂, is an energy hog, and uses environmentally harmful materials. The net impact of the first refrigerator's

mental impact across the entire value chain — from the sourcing of the materials and components that go into the product, to the product's actual manufacture, its delivery to the consumer, and finally, to the disposal of the product and its packaging. Today, we can measure a great number of inputs and outputs at various points along that value chain. We already use technologies such as smart metering, heat sensors, and input sensors to calculate consumption and output on our

IT departments can generate understanding of the impact of products on the environment.

lower energy cost could easily be outweighed by the environmental toll of its production.

Even choosing a soft drink can be fraught with environmentally sensitive questions. For instance, brand A comes in aluminum cans from a plant that is 20 miles away, whereas brand B comes in plastic bottles from a plant 50 miles away. Are the cans more environmentally harmful to manufacture than the bottles? Are they cheaper to recycle, or more likely to be recycled? How do the environmental costs of transporting the soft drink over longer or shorter distances enter into the equation? And how do these two factors balance out? Only when consumers can see the total environmental cost of the goods and services they buy, not just the cash cost, will they be able to make truly informed decisions.

For IT to help us understand that total environmental cost, it must be able to deliver a complete overview of a product's environ-

production lines. Those same sensors can also be used to gauge degrees of environmental efficiency — the heat that is currently wasted in the production line, for instance, or the production line's overall energy efficiency.

Unfortunately, the measurements of the production cycle that we typically make are incomplete and static. We need to assess efficiency on a continuous basis if we want to develop true environmental impact pricing. Was the energy used in smelting the aluminum for that soda can generated from sustainable sources or was it from fossil fuel sources? How much energy was needed to produce the batch of aluminum at the point of manufacture? How much energy was wasted during manufacture? And what other environmental by-products have resulted from the process — the water used, the heat and noise generated, the nonrecyclable waste created? By answering these types of questions, we can

begin to understand the true environmental impact.

Today's enterprise resource planning (ERP) systems capture product information, pricing, and stock levels dynamically. But they provide no information about the environmental impact of our business activities. We need information systems that can add up the environmental cost of the product. And we need to do this inside and outside the company, gathering data upstream from suppliers and downstream from customers.

Call it an "environmental impact planning" (EIP) system, which goes beyond just monitoring and measuring. Much as ERP and business performance management networks attempt to keep track of numerous aspects of the financial lives of companies, an EIP system would gauge both the inputs and the outputs that make up a company's environmental footprint. That would require it to partake of some aspects of supply chain management, tracking not just the location of the materials and components that go into a finished product, but their environmental costs as well. Even procurement systems could play a part, offering pricing information on the supplies and materials that companies use and, alongside it, data on the environmental price of one supplier's materials versus another's.

Similar to many cutting-edge supply chain and performance management systems, an EIP system might present the information that it collects in the form of a dashboard, showing the current impact and costs of a particular product line, and how supply and distribution alternatives might affect those criteria. The more complete that

information is, the better the EIP system would be at recommending realistic trade-offs in production that would help the corporation to reduce its environmental footprint. We are starting to see early forms of such systems today, but only in limited applications — power companies, for instance, are beginning to install environmental impact monitoring equipment at their power plants, which help them to balance the trade-offs between fuel sources, energy production, and CO₂ output.

EIP data could be fed into sales systems next to traditional cost information to enable holistic product pricing — extending pricing beyond a dollar amount to something that tells the consumer what the environmental impact of the product is, and thus allowing the consumer to compare products accurately. Companies that differentiate their products not just by price, branding, and features but also by their environmental impact can have a greater impact on consumer choices. With 50 percent of consumers today considering the environment in their product selec-

tion, a company that can compete on a complete environmental impact basis could rapidly capture market share. This is where green IT moves from being a cost play to a revenue play.

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The Metric behind the Slogan

by Michael Schrage

Although history celebrates James Watt as the mechanical genius whose steam engines launched the Industrial Revolution, Watt's most enduring innovation reflects an even greater penchant for marketing. He invented horsepower — the metric

and meme that effectively defined his industry. Most important, Watt's neologism has outlived every engine he designed or built.

The term *horsepower* represented clever rhetorical engineering by Watt and partner Matthew Boulton, whose business had prospered by charging mine owners only one-third of the cost savings achieved by

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is published by Booz & Company Inc.
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