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Green IT: A Cost-cutting Strategy Beyond Switching Off the Screensaver

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In 2010 international activist group Greenpeace slammed social networking site Facebook's use of coal-fired electricity to power its massive information technology (IT) data centre in the US in Prineville, Oregon. Facebook management had announced earlier in the year that it would double the size of its 147,000 square foot (13,657 square metres) data centre and argued that centralising it in Oregon would make it more environmentally friendly. But it wasn't enough for Greenpeace. The environmentalists protested that the data centre's electricity provider used a disproportionate amount of coal, the largest source of global warming pollution.

The issue highlights the growing importance of "green" IT to organisations' reputations. But companies – particularly in Australia – are still lagging when it comes to making their IT operations more environmentally sustainable. That's despite evidence that greening their operations produces not only environmental and reputational benefits, but also significant savings for businesses. "It's surprising. The logic of it seems obvious," says Chris Seale, director of sustainability at IT products and services provider Fujitsu Australia. "There's a huge amount of potential here for Australian businesses – a lot of money is being wasted right now."

While paying lip service to green IT, businesses often treat it simply as a compliance issue. They are not implementing internal structures to fully exploit the benefits of sustainable information systems. Many have also failed to introduce appropriate reporting and metrics to measure performance in the area. To maximise the benefits of green IT to the bottom line, senior managers need to take it back from being the sole responsibility of technology specialists and get more involved.

Green IT is a broad field. But it generally falls into two categories. First up is making IT itself more green and sustainable – this includes focusing on the "lifecycle" of equipment (including procurement, recycling, reuse and disposal), making PCs, mobiles and printers more energy-efficient and environmentally friendly, and managing IT data centres with the aim of lowering energy use and environmental impact. The second category, which has been the focus of much hype and hope, is "enablement" – that is, using IT to help make energy-intensive sectors including buildings, transport, power and industry more efficient and sustainable.

The *SMART 2020 Report*, released in 2008 by independent not-for-profit The Climate Group, found that IT would be key in the fight against climate change and could cut emissions by 15% by 2020. But a report released by Fujitsu last year, *Green IT: The Global Benchmark Report*, which looked at green IT in the US, UK, Australia and India, warned that before focussing on the massive potential of "enablement", there is still significant work to be done by companies in making the actual IT itself greener. "Getting really good at enabling organisations at the micro-level to reduce their energy consumption and carbon footprint through green IT is a precondition for getting really good at it at the macro-level," the report said.

The Fujitsu report found a lack of maturity of green IT policies, practices and technologies in every industry sector in every country. The report ranked the globe's "Green IT index" at just 56.4 out of 100. Australia did particularly poorly. It lagged the US and UK in all areas, including lifecycle, end user (use of PCs and printers), and enterprise (data centres), and was bad at enablement and metrics. Australia's Green IT Index of 53.9 significantly lagged the US on 58.6 and the UK on 61, and put it just ahead of India on 52.

Incentive to Act

There is growing pressure to take action, and this includes the Australian federal government's plans to introduce a carbon tax in Australia. The Fujitsu report cited the UK's more stringent carbon reduction and reporting regime as a factor in its lead position in green IT. Mehreen Faruqi, academic director of the Master of Business and Technology Program at the Australian School of Business, says a price on carbon could accelerate awareness and implementation of green IT for a number of reasons. First, it will act as an incentive for those directly impacted by the scheme, such as energy producers, to invest in technology that is cleaner and less polluting. But a carbon tax – as proposed by the federal government for the medium term – will also raise electricity prices, which is likely to result in managers paying closer attention to their electricity bills and looking for opportunities to reduce them. "IT does consume a lot of energy," Faruqi says. "If the price of electricity goes up it will lead companies to think more about how they use their equipment."

IT is estimated to represent about 2% to 3% of global emissions. But that's expected to increase to about 6% by 2020, according to the *SMART 2020 Report*. "It's not big in the scale of things," said Simon Mingay, a research vice-president at global technology research house Gartner. "Our estimate is that 2% of global emissions come from IT. There are certainly bigger fish to fry. But it's steadily growing and that's part of the problem … It's our ever-increasing dependence on technology and our technology-enabled society. It's clearly important to drive efficiencies there."

There are also accelerating pressures from supply chains, customers and, increasingly, from investors, for companies to demonstrate that they are mitigating risks, Mingay notes. "There's a need to be showing some commitment (to making IT greener)," he says. "If IT is a material aspect of the business – and you don't have a good sustainable story to tell investors and customers – you're running reputational risk."

But a compelling reason for businesses to pursue environmentally sustainable information technology is that it saves money. "If they don't do it, they're leaving money on the table and limiting opportunity. The practical reality for business managers is that there are significant efficiencies to be gained in the business from investing in sustainable IT," Mingay says.

However, Faruqi supports the lifecycle approach – from the sourcing of material used to manufacture equipment to how it is used and then reused, recycled or disposed. In many organisations the primary driver is still around energy efficiencies to cut costs. "They address it from a cost point of view," she says. "From what we know of companies, their focus is on things like turning off monitors and computers when not in use. There are programs in almost every company to try and reduce energy consumption."

Mingay claims most organisations can cut energy use of devices such as PCs and printers by 50% by implementing green IT solutions and practices, such as buying energy-efficient equipment, and putting equipment into a lower power state – such as standby, hibernate or shut down – out of hours. For example, for an organisation with 2500 PCs, the energy cost is about US$70,000 a year (assuming the rate charged is US10c per kilowatt hour). But, by applying best green IT practice, that cost can be halved to US$35,000. Data centres can also improve energy efficiency by 50%, Mingay asserts.

The National Australia Bank (NAB), one of Australia's big four banks, has become a frontrunner, implementing green IT measures to cut emissions and generate cost savings. "NAB is serious about its environmental commitments," says Gavin Slater, group executive for business services at the bank. "We recognise that sustainability is not only important for the environment, but for the long-term growth and resilience of our business."

Some 43% of NAB's greenhouse gas emissions relate to its IT infrastructure. Implementing green IT formed an important part of its drive to become carbon neutral, which it reached in September 2010, helped by cutting energy consumption by 25%. Its biggest emissions generators are from IT hardware in data centre sites (about 50%) and its IT network devices, which are spread through its branches and offices (about 30%). The bank has introduced a gas-fired generator for its data centre, which supplies the site with lower carbon energy than the grid. The facility is expected to save about 20,000 tonnes of carbon emissions per year – equivalent to 1400 households – and reduce carbon emissions by 10%. Energy cost savings are estimated at about A$2 million annually.

NAB has also activated power management across 30,000 PCs, which has helped cut greenhouse emissions by about 10,000 tonnes, and replaced end-of-life devices along with swapping old cathode ray tube monitors for energy-efficient screens.

Who's Got the Power?

Despite such success stories, there is significant evidence that progress towards green IT in companies is slow. Fujitu's Seale says that take up is less than 20% of what Gartner calls "Green IT Phase One". "That's the low-hanging fruit: the easy things companies can do, such as turning off screensavers, which reduces electricity and saves the organisation money," he says. Gartner's Mingay says just one in six organisations in Australia have completed the basics of green IT and are asking "what next?" "But the rest still have a lot of opportunity remaining or are struggling to even get started," he notes.

What's causing the delays? One of the major problems is that IT doesn't have visibility in the power bill. Many companies' IT departments don't know what share of the electricity bill information technology represents, Seale says. "Without a true understanding of the cost there is less incentive to take action. Also, when projects are completed, if there isn't visibility of the cost savings, it's difficult for the IT department to communicate this success to the rest of the business and get the credit they deserve."

When energy consumption is invisible, there's an operational dysfunction because people who invest in capital assets are not paying the electricity bill, according to Mingay. "Why would they spend extra on more sustainable hardware and software when it's not their problem and they don't derive the benefit?" he asks. "Facilities management guys are paying the electricity bill. As long as you have that budget disconnect and you don't have visibility there, action can be substantially delayed. That problem has been recognised for four to five years and yet, in so many organisations, it's perpetuated."

Another weakness is metrics, which consistently scored the lowest in the Fujitsu report. "Few organisations are good at measuring the effectiveness of green IT," it claimed. Australia's Metrics Index was just 40.6 out of 100, well below the US (51.2), UK (50.2) and even India (44.7). The report found that more than two-thirds of Australian IT departments knew the details of their power consumption.

Benchmarking green IT performance is vital because it lets managers know what their organisation is doing well and where they need to improve, states Edward Curry, a research leader at Ireland's international Digital Enterprise Research Institute. Curry co-authored a paper, *A Capability Maturity Framework for Sustainable Information and Communication Technology*, which outlines a benchmark developed by the Innovation Value Institute, a consortium of industry, consulting, not-for-profit and academic organisations.

The Sustainable ICT-Capability Maturity Framework (SICT-CMF) seeks to benchmark green IT efforts within the context of organisations' overall sustainability objectives. "It determines how sustainable IT capabilities are contributing to a business's overall sustainability goals and objectives," Curry says. This gap analysis – between what the business wants and what sustainable IT is actually achieving – provides a management tool for aligning sustainable IT capabilities with business sustainability objectives. Broad participation is needed in organisations seeking to develop significant capabilities (potentially for competitive advantage) and a reputation for green IT leadership – and the initiative must be driven by senior management, Curry insists.

Sustainability Leadership

"Management buy-in is incredibly important," Seale says. "Typically the chief information officer (CIO) owns the sustainable IT policy for the company. They may be actively working on sustainability projects or may not. But, typically, when it is happening, it is happening in isolation from the rest of the company. They (CIOs) haven't necessarily reached out to other areas of the business, such as the sustainability team, facilities or finance to communicate what they have saved and to ask what these teams would like IT to prioritise."

Faruqi says green IT needs to be integrated across all of a company's sustainable practices. "Leadership is really crucial in this issue and so is integration," she argues. "Many organisations work as silos. The IT department is doing its thing, the procurement department is doing its thing. Business functions need to be integrated so linkages between those things can to be transparent to everyone and addressed in an

integrated manner."

Seale advises that businesses looking to implement sustainable IT should build a portfolio of projects that balance quick wins with long-term strategic projects. "We recommend starting with achieving strategic alignment: this covers the intent behind the sustainable IT strategy and how this links with the overall business sustainability strategy. It also means identifying stakeholders," he says. "We then recommend formulating, not just a plan of projects, but the means to baseline and measure those. Sustainable IT is something that should be integrated into existing plans and strategies. This is a great opportunity for IT departments to show leadership within an organisation, as well as demonstrating good fiscal discipline by delivering cost savings and a commitment to the organisation's brand and reputation."

Green IT may well form the basis of strategic advantages and the production of new sustainable products, which could revolutionise businesses and industries in the future. But most businesses are yet to jump the first hurdle of making their own IT infrastructure more green and sustainable. If they get that right, through senior leadership, integration and benchmarking, there's a win-win for the environment and their bottom lines.