

ThinkTank

GETTING CLARITY INTO YOUR BUSINESS IT

ISSUE 2 THE BENEFITS OF GOING GREEN

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BIG BLUE GOES BIG GREEN

IBM is to invest £500 million a year to increase energy efficiency through project Big Green. The initiative will target corporate data centres, and includes a new global 'green team' which is made up of more than 850 'energy efficiency architects' from across IBM.

The plan includes new products and services to reduce data centre energy consumption by an average of 42 percent.

Energy costs have now reached 50 percent of the amount that companies spend on IT hardware, according to analyst IDC, and this is expected to increase to 70 percent over the next four years.

Internally, IBM plans to double the computing capacity of its data centres within the next three years without increasing power consumption, making a saving of more than five billion kilowatt hours of energy a year.

WORK smarter

Smart electricity meters from green advisory group The Carbon Trust could save businesses more than £300 million a year and cut annual carbon emissions by 2.5 million tonnes.

These striking statistics stem from a three-year trial by The Carbon Trust, which funded the installation and maintenance of smart meters at 580 businesses across the UK to monitor their effects. Results show that by switching to advanced metering, on average businesses can identify potential carbon savings of over 12 percent and successfully achieve savings in excess of five percent.

Cutting carbon not only creates a greener business, but also results in major financial savings. On average, the companies that took part in the trial reduced their energy bills by more than £1,000 a year. The largest financial benefits were seen by multi-site businesses, such as retail chains, and for high energy users, such as small manufacturing companies.

THE ZODIAC GOES GREEN

IBM has expanded its Big Green initiative with an addition to the Zodiac consultancy service, which provides customers with tools to measure carbon footprints, improve data centre efficiency and offset carbon emissions. Zodiac uses a comprehensive IBM database to establish the power consumption and carbon footprint of a customer's server banks across all platforms.

Organisations tend to under-utilise hardware, according to IBM, as servers are often run at between 10 and 12 percent of capacity and needlessly waste energy. IBM uses the data provided by the carbon footprint evaluation to determine the best strategy for reducing power consumption and the resulting impact on the environment.

WELCOME

Welcome to the second edition of Think Tank, the newsletter that takes a fresh and pragmatic approach to real business debates. In this issue, we look at the true cost of not being green.

Average commercial electricity prices rose by 48 percent in the first quarter of 2006*. So cutting energy consumption as part of a policy to reduce your carbon footprint can directly affect your bottom line.

In addition, over the next few months you'll start to hear about IBM Express Advantage offerings. We listened to your business and technology issues, took into account challenges and opportunities, and developed Express Advantage expressly for you.

To talk about creating a green policy and cutting energy costs, or to discuss other technology-related business problems, please contact your IBM Client Manager.

Marcus Austin

Editor

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* DTI Quarterly Energy Prices

 **express advantage™**

How green is good for business

Moving your company over to a more environmentally friendly way of working doesn't mean you have to reduce your bottom line or add bottlenecks to your IT system. By going green, your business can save revenue and improve its throughput. What's more, you may even be able to generate some income from your old IT equipment

The move to a greener way of working is gaining pace, but perhaps it would happen a little faster if more businesses realised that going green doesn't necessarily mean more costs. Switching to a greener IT solution, for instance, can actually produce cost savings, and could mean a reduction in your overall running costs.

In addition, if you don't act now, you may soon be forced to by legislation that may penalise businesses that can't show they are energy efficient. In the US, for example, the Environmental Protection Agency (EPA) can analyse the growth of energy use in data centres, while Australia requires all companies using more than 150,000 megawatt hours of electricity a year to prepare an assessment and action plan. The European Union's (EU's) Action Plan for Energy Efficiency sets an energy-saving target of 20 percent by 2020, and perhaps penalties will be introduced for those companies that do not reduce their

carbon footprint sufficiently. The message is clear: energy costs are rising, supply is limited and your ability to meet business demands is at stake. Anyone who wants to solve these problems will need to focus on going green.

Start with the data centre

There has been an over trivialisation and simplification on greening the IT enterprise. It's not just about hardware and software, but rather the complex intersection of hardware, software, functional architecture, operational architecture, people, culture, regulation, ethics and corporate responsibility. In view of this complexity, it can be hard to know where to start. However, a simple and manageable starting point, which can also offer measurable returns on investment, is your data centre, because it's geographically centralised, controlled by your IT manager, and a major area of power use.

Over the years, the physical size of servers has been reduced, leading to data centres packed full of servers costing huge amounts to maintain, as each one uses power and generates heat, which then uses more power to cool. But there are a number of ways to reduce your data centre's cost. First, you need to examine its energy efficiency by carrying out the following tests on your data centre:

- Take a hardware audit
- Carry out a power audit
- Calculate which devices use the most energy
- Find the hotspots in your data centre

“Energy costs are rising, supply is limited and your ability to meet business demands is at stake”

The average price of electricity has risen by 19 per cent in real terms since 1996, but has increased by 58 per cent since 2001. The prices paid for all fuel and light has risen by 26.4 per cent in real terms between Q4 2005 and Q4 2006

Source: DTI Office National Statistics – Quarterly Energy Prices
www.dti.gov.uk/energy/statistics/publications/index.html – March 2007

VOX
POP

Carrying out a hardware audit will tell you exactly what you have in your data centre. But don't just limit the audit to servers. Find out what processors you have and how much disk space you have available, along with their levels of utilisation. You should also look at your storage devices, printers, uninterruptible power supplies (UPS) and cooling devices, as they all contribute to the costs of running the data centre.

Improving energy efficiency

If you haven't already looked at your data centre, it's likely that you'll find many opportunities to improve energy efficiency. These can range from major infrastructure upgrade projects, such as improving cooling systems or UPS to simple and inexpensive measures, including:

- Removing under-floor cable blockages that impede airflow
- Turning off servers that are not doing any work
- Switching off computer room air conditioning (CRAC) units in areas that are over-provisioned for cooling

Of course, any analysis of your current situation needs to recognise the likelihood that business needs will change. For example, it would be wise to employ a modular approach to the design of future power and cooling capacity, allowing for easy expansion or modification.

Once you've found where your inefficiencies lie, you can start to see what you can do to deal with the worst offenders in your data centre, and look at how you can reduce the hotspots.

Software and services

Moving over to a greener IT infrastructure will not be achieved by simply looking at your

ECONOMIC BENEFITS OF GOING GREEN

the
business
view

Moving to a greener way of working in your business need not mean extra costs. In fact, it can save money in the long-run and can improve the speed at which your business works.

Replacing old IT technology for newer technology has an initial capital cost, but the long-term total cost of ownership over the life of the product is much reduced. In addition, you also gain in performance, reduce air-conditioning/cooling costs, increase reliability and gain the ability to move to save even further through virtualisation.

What's more, by using techniques such as virtualisation, you can reduce the number of servers you need within your business.

hardware. You also need to look at software and services. Another way of reducing costs and your carbon footprint is to look at virtualisation. By making a single server do the work of several, through virtualisation software, you can reduce your hardware costs, cut your management costs, and by data replication and virtualising your storage, you can also build in disaster recovery.

Virtualisation can be a tremendously ally in reducing heat and expense – simply because it means you will need fewer servers. Servers use energy and give off heat whether they're in use 100 percent of the time or 15 percent of the time, and the actual difference in electricity consumed and heat produced between a machine idling and one working flat out is quite small. This means a server that is only operating at 15 percent capacity will cost as much to run as a server that is being fully utilised.

“Virtualisation can be a tremendous ally in reducing heat and expense – as it means you use fewer servers”



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“Good IT products can be disposed of without causing too much damage to the environment”

The advantages of virtualisation are not limited to servers. Storage virtualisation can be used to combine storage capacity into a single device that can be managed from a central point. Just as server virtualisation reduces the number of servers needed, storage virtualisation cuts the number of disks required, increasing the total amount of available disk space for any server on the network, and optimising utilisation rates.

Other areas to consider

While the data centre is the first place to look for reductions, there are other areas of your business that can also benefit from a green audit. By looking at the way you use printers and copiers in your business, you should be able to reduce the number of machines by moving to workgroup multi-function devices, lower the amount spent on consumables, cut paper use and save on maintenance costs.

Finally, the last area to consider when reducing your carbon footprint is IT equipment disposal. Good IT products can be disposed of without causing too much damage to the environment. Ideally, IT equipment should be easy to dismantle into its component parts, which should then be labelled so that they can be disposed of correctly. In

addition, good green IT suppliers will help you with this process.

IBM began offering product take-back schemes in Europe in 1989 through its Global Asset Recovery Service (GARS). A bonus of the GARS programme is that, if the assets are still useful, it will remunerate you for any assets sold. In 2006, Global Financing sold more than £800 million (\$1.6 billion) in pre-owned equipment, and a portion of this money was returned to the asset owners.

Globally, the GARS programme receives almost 40,000 machines each week weighing nearly 1.8 million pounds, most of which is recycled (47.8 percent in 2005), resold (37.3 percent) or reused (8.7 percent), with very little sent to land-fill (1.6 percent).

So, reducing your carbon footprint can also shrink your cost base. Greening your business won't happen overnight, it will also take quite a lot of effort to do it properly and you are likely to face some short-term costs. However, the long-term benefits for both your company and the environment are worth more than the initial time, expense and effort put together.

CUT ENERGY USE WITH BLADECENTER

IBM express advantage™

IBM has recognised the environmental effects of IT since at least the early 1970s and continually aims to achieve energy savings while still innovating. This means that you not only get the latest IT equipment, improving your profitability and growth, but also reduce your carbon footprint.

IBM's blade servers are one of the most efficient ways of reducing your energy requirements and improving productivity. The IBM BladeCenter HS21 Intel Xeon blade is a prime example of our commitment to develop industry-first technology –

while reducing power requirements and environmental impact.

- Lower total cost of ownership
- Up to 50 percent less floor space
- Up to 82 percent fewer cables



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