

The future is bright. The future is green.

Information technology (IT) is part of the solution to tackle climate change. For example, video conferencing can save countless air-miles and, thanks to the internet, millions of employees now work from home, saving on car, bus and train journeys. But let us face the fact: IT is also a big part of the problem. A recent study from Gartner, an analyst firm, found that the IT industry's carbon footprint is as great as the airline industries; and that is a conservative estimate.

According to researchers at the Lawrence Berkeley National Laboratory, data centres now account for some 1.2% of US electricity consumption--more than double what it was in 2000. With the increase in popularity of applications like streamed video (think YouTube), which require bigger than ever data centres to cope, we can expect IT's energy bills to keep soaring, along with its carbon footprint.

While IT chiefs may accept this as the cost of doing business, new legislation may compel them to clean up their act in other ways. The Waste Electrical and Electronic Equipment (WEEE) directive, which came into force in the UK this month, requires importers, manufacturers and retailers to responsibly recycle equipment at the end of its life. Given that in recent times most equipment has ended up in landfill without as much as a second thought, this is a significant measure. The revision of the Companies Act to include environmental reporting by 2008, and the threat of a CO₂ levy should shake things up further. Going green is no longer a "lifestyle choice", but is increasingly a regulatory imperative.

Tangible financial benefits

So what are green-fingered CIOs doing to help save the planet and what is in it for them? Many companies have already taken basic green initiatives on board. A think-before-you-print policy, setting computers to automatically switch off at night and sending electronic Christmas cards to reduce waste, are increasingly common practice.

Probably the biggest issue facing today's CIO, however, is power consumption. According to Gartner, companies spend as much as 10% of their technology budgets on energy. With the rising cost of energy, this is now a central business issue. For a company like BT, which is believed to account for some 0.7% of the UK's total electricity consumption, reducing this could translate into tangible financial benefits.

BT's green agenda is fairly advanced. That is because it is being driven from the top; a special environmental task force has been established with high-level representatives from each of BT's lines of business. The result is that between 1996 and 2006 BT cut carbon emissions by 60% and the plan is to take that to 80% within the next ten years. "To get to this level I needed to speak to all parts of the business and agree programmes that would make reducing our carbon footprint a reality," says BT's head of climate change, Donna Young.

Let us be clear though. For companies, reducing their carbon footprint is as much a green agenda as it is a growth agenda. For a start, customers are becoming far more aware: some 64% of consumers, as opposed to just 20% two years ago, are more likely to buy from an ethical company. "If nothing else, people's buying power will force companies to go in this direction," says Ms Young.

Capitalising on this heightened consumer interest is a PR dream, and good publicity usually translates into a healthier bottom line. Having a green agenda can be the difference between winning and losing a competitive tender. This is already a requirement when bidding for public sector tenders, but is increasingly a trend in the private sector too, according to Ms Young.

The spotlight on power

Technological innovation to reduce power consumption is already happening and the area where real differences can be achieved is in the data centre. Multi-core processors, which use less electricity and therefore generate less heat, are one development. Another is software that analyses how heat moves around a data-centre to create opportunities for dynamic cooling. Finally, using more efficient equipment

and power supplies could help matters, although issues remain around standards.

It is still early days, though, and a question hangs over whether technological change is happening fast enough. Most companies do not want to be on the bleeding edge of IT. They prefer to learn from other's costly mistakes.

However, Ian Osborne, project director for a DTI-funded initiative -- Grid Computing Now! -- says that grid computing, which can help to harness computing power across one or more organisations, along with virtualisation technologies, are beginning to enter the mainstream.

AutoTrader.com, for example, now uses 64-bit grids to harness the power of all its servers at peak times, which happens to be when people come home from work. The car sales website receives 200 million hits and 50 million searches a month, and is experiencing 40% annual growth in use. A server upgrade would have meant a substantial capital investment of £1m, but with grids it can now add capacity incrementally without over-investing in more boxes. Given that servers are only used for 15 to 20% of the time, harnessing unused clock-cycles makes a lot of sense, both environmentally and financially.

Last year Baring Asset Management, a global investment management firm, completed a proof of concept test for the virtualisation of its desktop infrastructure as part of a new business continuity plan. The virtualisation of 29 business-critical applications went live recently. The result is that in the event of disaster, Baring's desktop configuration switches between its production server and disaster recovery site infrastructure which is not only faster but also saves resources—cutting energy consumption, for example.

Change is never easy. Revising budget allocations and historical procurement agreements, not to mention training and change management, are among the challenges going forward. Early results from an Economist Intelligence Unit survey of senior IT staff, sponsored by IBM and due for publication in September, suggests that few CIOs have green issues very high on their radars as yet. But if all IT shops are given carbon allocations in the future, however, change will be essential. "Grids, and particularly virtualisation, will soon be something that everybody is doing," says Mr Osborne. "They can't afford not to."