Digital Business

If you can't measure your footprint, you can't shrink it

GREEN IT

Most CO_2 emissions are not from IT and it is hard to monitor them effectively, writes **Stephen Pritchard**

So far, IT's highest profile green efforts have been in areas such as collaboration and video conferencing.

Far less attention has been paid to processing, manufacturing and distribution of the goods companies produce, which usually make the biggest contribution to their carbon footprints and energy bills.

Although estimates vary, it is thought that between 95 and 98 per cent of business's CO_2 emissions are from non-IT activities. Just 0.4 per cent of global human emissions, according to McKinsey, the management consultants, come directly from data centres.

So while being laudable, green

IT initiatives can have only a limited impact on companies' total carbon footprints.

The challenge for most enterprises is measurement: IBM, for example, estimates that only 19 per cent of organisations measure their footprints more often than once a month.

"Green IT is important to organisations with large data centres, but the real value is in looking at that other 95 to 98 per cent of the organisation," says Eric Riddleberger, global leader for corporate social responsibility at IBM Consulting.

Tackling carbon footprints across an enterprise involves first monitoring and measurement, and then taking steps to improve business processes so they are greener. IT is, of course, very good at processing large amounts of data quickly. It might also be that the CIO, with his or her knowledge of data management and processing, can drive such monitoring activity at the board level.

"We think of this as 'resource efficient activity'," says Joe

Muscat, leader of the clean technology practice in North America at Ernst & Young, the professional services firm. "Clients are looking at energy usage and materials consumption and tying that back to fossil fuel [use] and other forms of waste.

"There is a tremendous amount of effort going into how you measure that, and to business decisions you need to make, based on it. Vendors, for their part, are developing carbon management systems that form a bridge between systems, energy consumption, and financial decision making," he says.

IT could go further still, providing "green" data to enterprise resource planning (ERP) and business intelligence systems. Increasingly, process and manufacturing systems have built-in sensors that can monitor efficiency, energy use and even temperature in real time.

That data can be combined with information on the company's pricing, stock levels and environmental policies to give management a view of whether

they are meeting CO_2 targets. Potentially, managers could even be advised not to produce an item, if doing so caused the business to operate outside its environmental parameters.

There are significant barriers to achieving this. General purpose ERP systems are not yet geared up to handle CO_2 emissions data or any other environmental variable as

Green 'not priority'

How is TAL Apparel, a clothing manufacturer with 10 factories in east Asia employing 33,000 people, and lengthy supply chains throughout the US, tackling environmental issues?

"Green IT is not top of the list for us," says Delman Lee, director of operations and technology. "It's not our top contribution to CO_2. The bigger problem to tackle is people."

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part of their core business logic.

This might come, but extending such systems via specific monitoring applications or even general purpose middleware might be a quicker and more flexible route. Businesses will also need to overcome the often deliberate separation between production management systems and general, back office IT.

Production managers will need to be convinced that such connections will not put day-to-day operations at risk, although manufacturing and process equipment makers have already moved some way towards providing safe and reliable links to back office IT systems, and there is no reason these links cannot be used for CO_2 monitoring as well.

Unless these links are made, however, the best most organisations will be able to do is to estimate their operational carbon footprints; exact calculation could be impossible without sophisticated means of assessment across the bill of materials, the manufacturing

process, and distribution.

"If you take into account the carbon footprint of transportation, is it still worth producing in different locations? The implications can be huge," warns Peter Graf, chief sustainability officer at SAP, the business software company.

"Companies also need to compare how their plants are doing, so they can improve best practice ... the point is not to understand energy consumption on one machine, but the aggregate consumption across that production line, and bringing that back to energy consumption or another benchmark. Then you can start to ask questions."

Observers suggest that, initially at least, businesses will introduce detailed carbon monitoring because of government mandates. This could happen within a few years. Carbon trading systems are already set to be mandatory for larger businesses in the UK and a number of other countries.

Companies might also be forced to analyse their energy

use according to the footprint of their supplies – renewables and fossil fuels – and account for the use of toxic or precious materials, and even water, in their processes.

In other cases, though, a recovery in global oil prices, and rising electricity bills generally, will force a rethink.

"If you cannot measure your carbon footprint, you cannot change it," cautions Steve Nunn, head of global infrastructure consulting at Accenture, the IT consultants. "Organisations need to become more surgical about measuring energy consumption and their CO_2 emissions."

In time, initiatives such as smarter manufacturing and newer building management systems will help companies reduce their footprints, Mr Nunn says.

But in the short term, measuring energy use will be the easiest way for companies to reduce their carbon footprints, with the added advantage of energy conservation lowering bills.