

# INFORMATION TECHNOLOGY EXECUTIVES CAN LEAD THE WAY TO SUSTAINABILITY



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It's estimated that some 100,000 tweets are sent and two million Google search requests are made every minute of the day, and these numbers are on the rise. Indeed, 90 per cent of the world's data has been created since 2010 and, it is this exponential growth in data that underpins almost every technological innovation today.

However, this digital revolution comes at a cost. All the world's data – most of which is stored on servers, usually in data centres – requires a tremendous amount of uninterrupted power to support it. If the majority of energy required to support this boom continues to be drawn from fossil fuel-powered grids, much as it is today, not only will there be environmental consequences, but we could also reach a situation where power supplies simply can't match demand.

Any uncertainty around power availability will inevitably exert considerable and systematic pressure on how business processes are carried out, and how they will be maintained in the future. This is particularly the case for organisations that store and process vast amounts of data (increasingly referred to as 'Big Data') or rely on power-hungry applications, such as Computer Aided Design (CAD) programmes. A failure in the delivery of energy supplies to a data centre facility could force websites, services and hosted apps offline, as well as cancel or damage transactions while in transit or in storage. Moreover, the cost of data centre downtime can be considerable and difficult to recuperate. A report from the Aberdeen Group in 2012 found that organisations lose an average of \$138,000 for every hour their data centres

are down. For companies with more than 1,000 employees, that amounts to \$1.1 million per year.

## ADVANCING DATA CENTRE EFFICIENCY

Unfortunately, many data centres, which were originally built in metropolitan areas and by proxy powered by coal-based energy, have now become a significant contributor to global carbon emissions. Although advances in processor design means that data centre systems are becoming more efficient, modern designs still draw megawatts of power. Now, if you consider that the amount of electricity generated from coal is rising at annualised rates of as much as 50 per cent in some European countries, and that it is the most polluting source of electricity by far (producing more greenhouse gas per kilowatt hour than any other fossil fuel), it is clear that organisations relying on coal-powered data centres are damaging the environment as well as their bottom line. Indeed, the International Energy Agency (IEA) recently deemed the average unit of energy produced today as 'as dirty as it was 20 years ago'.

On the other side of the coin, many private companies that emit carbon as a by-product of their operations have reported that rising costs are damaging their market competitiveness. The prevailing economic situation, of course, is not making things any easier. While there appears to be little appetite for tough, coordinated decisions about energy provision and pricing at international level, some countries have introduced bold measures to ensure they have sustainable and affordable power supplies well into the



future. Germany, for one, has made significant commitments to boosting its access to sustainable power resources, planning to move away from nuclear power entirely by 2022. As one of Europe's biggest economies, weaning its various industries off nuclear and fossil fuels is an ambitious (and commendable) step towards long-term sustainability. That said, there are many unanswered questions about the reliability of the grid and the economic ripples that nuclear phase-out might have. Of course, if successful, it may indeed set the blueprint for the rest of the world to follow suit.

Equally, another interesting development in the sector comes from the UK in the form of the Labour party promising to freeze gas and electricity bills for all householders and businesses for 20 months if it wins the 2015 election. Whether this is feasible is open to debate, especially considering the grave concerns about the UK grid's long term viability. Just recently the country's energy regulator, Ofgem, warned that with ever increasing demand will inevitably mean a higher risk of blackouts.

### **ENVIRONMENTAL LEGISLATION**

In the interim, faced with rising prices, growing carbon footprints and environmental legislation, it is unsurprising that many businesses are proactively taking matters into their own hands and investigating the energy-efficient alternatives available to them. From the data centre perspective, these legislative and social pressures in Europe mean that an urgent re-think of business strategy is needed.

Organisations looking to address these challenges can turn to alternative data centre models, powered by clean energy sources. A critical benefit is that by choosing a data centre that operates from certain renewable power sources, the risks associated with fluctuations in power costs are severely mitigated – renewable supplies of power are far more constant and reliable. It's worthwhile to remember that power prices vary significantly between world regions and that fossil fuel prices are the main driver of electricity prices in most markets. So, in moving applications to a facility that draws the power it needs from renewable energy sources ensures that organisations avoid finding themselves on the sharp edge of volatile energy negotiations. In putting natural resources to maximum effect, switching to such a green way of working can furthermore reduce an organisation's carbon footprint and avoid any punishing levies that come with not meeting environmental targets.

All too often, adopting green practices is linked with rising operating costs, but in the data centre industry, quite the opposite is true. By looking at different power models, firms can make strategic decisions that tend to the current needs of their business, while at the same time positioning themselves to more quickly adapt to the uncertain outcomes of ongoing government policy reviews. A long-term renewable plan should be the shortest step in the quest to reduce power expenditure, however, the question remains, are businesses willing to show this kind of leadership? ■