Data centre revolution

Green data centre strategies may mean a reduction in power consumption, and a smaller data centre footprint but many Middle Eastern companies are overlooking 'green' when it comes to building or refurbishing their data centres, writes Piers Ford.

The case for greener data centres has moved way beyond the quest to reduce power consumption in an environment of fluctuating supply. The efficiency benefits and cost-effectiveness of advanced technologies such as virtualisation and cloud computing have helped to highlight the fact that in a world of escalating data traffic, the data centre itself can actually be a vehicle for increasing revenues through cost-savings – if it is managed proactively.

However, while the need for the efficient management of 'big data' is driving the build-up of data centres across the Middle East, there are still signs that green and sustainability issues are being overlooked as drivers when it comes to construction and implementation.

Tariff Consultancy expects Middle Eastern data centres to grow by 40% in terms of floor space and revenues by 2017. Oracle's recent Next Generation Data Centre Index (NGDI) report suggested that over one third of Middle Eastern businesses believe they need to build a

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new data centre in the next five years, while 31% said they will need one within two years.

One fifth of businesses in the region said virtualisation has already helped them to better hardware utilisation, and 42% believe consolidation has had a positive impact on their data centres. But a surprising 68% do not know the energy usage of their data centre environment.

"A green data centre strategy is not just about managing power consumption," says Marc Heger, senior director – hardware, at Oracle MENA. "It ensures Middle East organisations are able to accommodate and manage growing amounts of data, while remaining compliant with regional legislation regarding sustainability. As a result, green data centre strategies allow organisations to increase revenues by managing more data while reducing space, which is simply an opportunity they cannot afford to miss.

"As data centres across the Middle East grow in scope and power, their energy and power consumption has also increased. However, to achieve sustainability and green data centres, Middle East organisations need to ensure their IT teams are monitoring server and storage utilisation and considering ways to raise utilisation levels so that IT hardware does not sit idle, while consuming power and driving up ventilation and cooling costs."

LAGGING BEHIND

The region is, however, proving slow to rise to the challenge, and lags behind initiatives like the European Union's Emission Trading Scheme, which has focused attention on the monitoring and reporting of CO_2 emissions.

"Some of the leading countries in the Middle East are pressing on with deploying green initiatives," says Sufian Dweik, regional manager, MENA at data centre specialist Brocade Communications. "For example, a long-term national initiative

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Sufian Dweik, regional manager, MENA, Brocade Communications.

to build a green economy under the theme, 'A green economy for sustainable development' was recently launched in Dubai.

This shows the direction in the UAW. GCC countries are also pushing for these initiatives. But we still have a lot of work ahead to bring awareness to the region to see the benefits in going green. The Middle East needs to

seriously consider implementing regulations like in Europe."

Dweik says the Dubai Carbon Centre of Excellence is another move in the right direction. He does not think that a focus on managing power consumption will necessarily detract from an organisation's ability to build data centres economically.

"The two are not mutually

Virtualisation has a very important role to play in making data centres green, according to Brocade's Sufian Dweik.

exclusive objectives," he says. "One is a means to achieving the other. According to research

to reduce operational expenditure," Dweik adds.

"It facilitates higher utilisation rates, which means greater return from less IT infrastructure

ability officer at data storage specialist EMC, agrees that an approach combining financial and environmental responsibility is perfectly possible and says that as long as these twin objectives are aligned, it probably isn't too critical which one is the primary motivator.

Energy consumption is as important a consideration as virtualisation when it comes to building a more resource-efficient data centre. And cloud computing is rapidly emerging as a means of making the best use of more economical hardware strategies.

"The most obvious approach to 'greening' the data centre is to reduce wasted energy through inefficient power and cooling," she says.

"There are many technologies and best practices available, some as cheap and simple as cleaning up the cable mess under a floor or blocking windows, and some much more sophisticated and capital-intensive."

Winkler says that 'rightsizing' the IT infrastructure is an often-

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across EMEA by Brocade, senior IT decision makers acknowledge that energy efficiency is a key issue in their organisations, believing that their companies spend a significant portion of their overall operations expenditures on energy.

"So obviously, the region has begun to realise the importance of controlling power consumption in order to not only make the data centre greener but also

VIRTUALISATION
Vendors like Oracle, Cisco, Brocade and EMC advocate various approaches to server, storage and application consolidation, most of which are based on a high degree of virtualisation and offer a significant reduction in the size of the data centre footprint as an incentive.

"Virtualisation has a very important role to play in greening the data centre," says Dweik.

and reduced energy consumption. It also frees up server and storage devices which can then be redeployed in areas where additional capacity is required, thus preventing the need for additional hardware purchases. Excess devices can be decommissioned, thereby reducing the volume of hardware that needs to be powered, maintained and cooled," he adds.

Kathrin Winkler, chief sustain-

overlooked aspect of green data centre strategy: ferreting out unused servers, consolidating servers and storage and tiering data and data centres to match the required service level.

"Managing ongoing demand is critical. Leveraging technologies such as virtual provisioning, automated tiering, data deduplication, self-service virtualisation to avoid the unnecessary proliferation of hardware.

"Being green is more than reducing energy consumption. It includes the thoughtful building of the physical container (for example, building design and material choices); considerations for the use of water – a huge issue in the Middle East, with more variable weather patterns continuing to reduce the predictability of water resources; minimising waste from building, package and obsolete equipment; and holding vendors accountable for the proper handling of obsolete equipment at the end of its use."

POWER AND COOLING EFFICIENCY

Scott Manson, Cisco's regional director, emerging markets, agrees that power and cooling efficiency and design innovation are essential drivers in green data centre strategies.

But he says process optimisation through streamlined management should also be a key consideration. In common with other vendors, Cisco provides automation tools to facilitate what Manson calls 'the industrialisation of business-as-usual tasks'. Cloud computing, with its positive impact on the data centre, is a logical goal for this kind of strategy.

"Most companies have an awareness to move toward virtualisation and become cloud-enabled," says Manson. "The challenge becomes how to optimise this journey and get the most out of the impending change. This is where green IT initiatives should be factored in to business cases as an integrated part of the justification for change.

"Whether your company is consolidating physical data centres, implementing a cloud agenda for additional services and computing resources or to address resilience and high availability, or integrating a failover site, the green agenda is a common denominator and we are driving this agenda with our customers," Manson says.

BUSINESS VALUE

Manson says that in the future, the IT industry should be able to measure energy usage against the productivity of the data centre, helping companies to determine the business value against resources consumed.

"This is where virtualisation and cloud computing excel," he adds. "Cloud computing has received a lot of attention for its efficiencies and overall cost savings, but a great metric to use is the highly positive impact on reducing energy consumption. Cloud computing is forecast to cut worldwide data centre energy usage by 38% in 2020, according to analysts at Pike Research. This could also cut greenhouse gases by 28% in 2020, compared with 2010."

These benefits are packing more of a punch among local companies, even if the emphasis in the region continues to be on economic construction.

"Utility costs are increasing and with variable fuel surcharge costs in the billing, utility costs become unpredictable," says Atul Kamat, Head of technology service delivery at colocation, hosting and data centre service provider eHosting Datafort.

"The cooling costs are typically 50% of the total energy consumption due to the ambient temperatures in this part of the world, which do not permit free air cooling technologies to be used, as is done elsewhere, where ambient temperature is used to provide free cooling to data centres for a large period in the year.

"Virtualisation and cloud technologies reduce overall

Scott Manson of Cisco says the company is driving a green agenda with its customers.

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IT equipment electrical load through the consolidation of systems. The energy savings can be further maximised if IT or facilities managers adjust the power and cooling infrastructure to accommodate the reduced loads.

"Planning for this cycle of initial reduced load followed by load growth with IT equipment running at much higher overall utilisation levels can result in the capture of a significant, supplemental energy savings entitlement.

"Therefore, data centre professionals can maximise power and cooling equipment electrical savings in a virtualised, consolidated data centre environment."

The simple truth is that a green data centre can have a profound effect on any organisation's sustainability strategy, because it underlies every level of the business.

"Companies across the Middle East are now paying more attention to green IT as a direct result of the cost savings which can be realised from implementing such a strategy," says Brocade's Sufian Dweik. "Companies can double the energy efficiency of their data centres through more disciplined management, reducing both costs and greenhouse gas emissions."