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Powerful opportunities

AS AN OPPORTUNITY FOR NEW PRODUCTS AND SERVICES, POWER MANAGEMENT IS ABOUT TO EXPLODE. **MATTHEW SAINSBURY** DISCOVERS WHY.

Power is a major concern in Australia. During the recent election campaign, the Prime Minister, Julia Gillard, ran in part on the promise that the Labor Government would try to keep power costs down.

For instance, Gillard promised Labor would spend $1 billion to connect renewable energy sources up to the main power grids, which would boost electricity supply.

It would also impose tough emissions standards on any new coal-fired power stations and encourage existing generators to reduce pollution levels.

While the promise was that those measures would not inflate the cost of power unnecessarily, the reality is that power is getting more expensive, and organisations are feeling the squeeze.

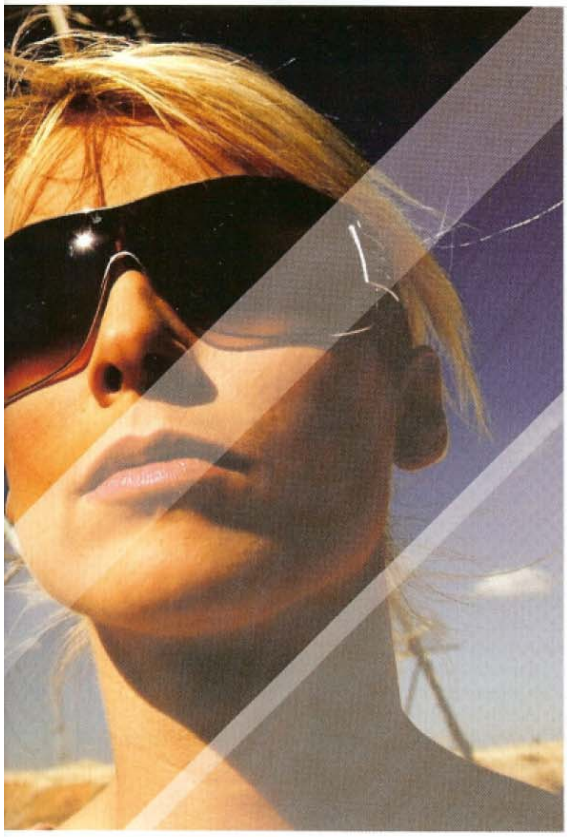
That squeeze is starting to tick in the back of the mind when it comes to acquiring IT assets, according to Emerson Network Power national product manager, Mark Deguara.

"When it comes to the actual equipment, people are saying 'ok, I'm going to put one server against another, and look at what are the benefits of that from an operational perspective and also from an IT perspective'."

It's part of a more holistic approach organisations are taking to building datacentres. Emerson, which recently opened up a new, working datacentre in North Ryde in Sydney, has had first-hand experience of the kinds of roadblocks and energy pitfalls currently facing organisations in the datacentre space.

"They're not looking at the equipment in isolation," Deguara said. "They're thinking: 'what impact is this going to have on our power, our cooling requirements', and so on. I think that's what we're starting to see a lot more of – people are looking at what is the overall impact of doing something.

"Energy is getting dearer and dearer and dearer, so it's starting to gain traction, in our own business, too. It's



not the main driver, but it is an underlying driver – the question of 'will we get energy efficiency doing this?'"

BABY STEPS

There are plenty of steps an organisation can take to improve its power efficiency, from a management perspective right up to internal generators, solar panels and smart grid technologies.

For most, the first stage will be with something relatively simple, such as at the UPS. The big brother to the humble battery is an object of rising popularity amongst IT departments, as it helps soothe symptoms of heavy power demands on organisations.

"It's not so much the power savings that you're going to get from products such as ours, but the value is more from managing the limited supply for a lot of demand," PowerShield sales and marketing director, Malcolm Levin, said.

"That's the main thing; that the most important machinery in your organisation gets the longest backup time, and one of the things that we've incorporated in one of our ranges called the Centurion range, is that we've got manageable sockets at the back of the UPS so it can limit the amount of power that you're giving to some machines and extend the amount of power that you're giving to the more critical machines."

In Australia, that's important. Power supplies, as a consequence of heavy load, are prone to dropping out. For the same reason that it's difficult to construct a tier-4 datacentre in Australia, organisations need to take steps to manage the infrastructure and measure power out in the right directions – in other words, load shedding.

"Power is probably accountable for up to 80 per cent of all disruptions because of insufficient power or power outages, surges or spikes," Levin said.

UPS vendors have, over time, added in features to assist in the management of these devices.

PowerShield, for instance, has built in remote management capabilities. If you become aware of a problem in the field as a manager, you won't need to jump in a car to drive to the location to resolve the problem (an energy saving in itself, albeit of a different kind of energy).

Ultimately, Levin said a UPS solution can show a ROI of as little as three months if it protects the organisation's IT system from being spiked.

"Especially when you're talking about server room, you need to manage your power properly," he said. "You've got a lot of people trusting you with their businesses and lives. As server rooms become more prominent we see a lot more modular and scalable UPS' that are able to grow with people's needs."

FURTHER MANAGEMENT

Once an organisation has a solid foundation for power management, and has protected its hardware assets with a UPS solution, there's still plenty more that can be done to further understand and address its power usage.

One area that's gaining a lot of air time is management tools. Working on the philosophy that reams of data will help an organisation understand the power lifeblood flowing through the building, and then be able to use that data to minimise wastage, is providing the IT industry with a whole new topic of discussion.

"We're starting to see a lot more in terms of detailed measurements right down to individual sockets in each rack," Eaton marketing manager of distributed power solutions, Michael Mallia, said.

"Measuring every point and using that measurement to formulate strategies for energy consumption and reduction. It's a high priority – they're tackling the big things first, cooling for instance, which is probably the biggest headache for most people – particularly because

loads are becoming more dense. It's the one that has the most low-hanging fruit attached to it."

That data can then lead organisations to properly implement high isle/ cold isle containment systems and run more efficient air conditioners. Being able to measure individual server power consumption also allows organisations to figure out whether they're using the servers properly in the first place.

CONSIDER THIS

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PowerShield's Malcolm Levin

SMART GRIDS AND IT

Which leads us to smart grids – a relatively new energy delivery system that will open up a wealth of new opportunities as smart grid networks start to be rolled out. It is a system that will prove immeasurably beneficial to organisations struggling with paying the power bill.

The best way to think of smart grids (or at least, IT's involvement in smart grids) is this: a smart grid delivers electricity, where digital technology such as smart meters transmit energy usage information to utilities via wireless networks.

The advantages of this are two fold – organisations can track their own energy use hour by hour over the Internet, but even more importantly, the smart grid will be able to adjust prices based on the availability of energy sources. Where solar power is plentiful, prices will be cheaper. Theoretically, this means there will be less pressure on the grid during times of limited availability, and power supply will be cheaper and more stable for everyone.

And, if you have your own generator (solar power being a possible candidate), and generate more power than you use, a smart grid will allow you to sell that power back into the grid – potentially even profiting from the investment.

Although Australia is lagging behind the US and Europe when it comes to the deployment of these grids, we've nonetheless taken definite steps. In Newcastle, a consortium led by Energy Australia will deploy a commercial-scale smart grid.

It'll cost the Australian Government some $100 million to develop the project in partnership with the energy sector – and it is the kind of project that IT has a role to play within.

Logica is without a doubt a leader in the space. The IT services provider recently participated at a National Smart Grids forum hosted in Sydney, and is actively working with vendors such as Cisco to pull together overall solutions.

Paul King was brought into the Logica fold in July as its principal management consultant to provide clients with strategic guidance on smart grids.

He is convinced the emerging field is ripe with IT opportunity.

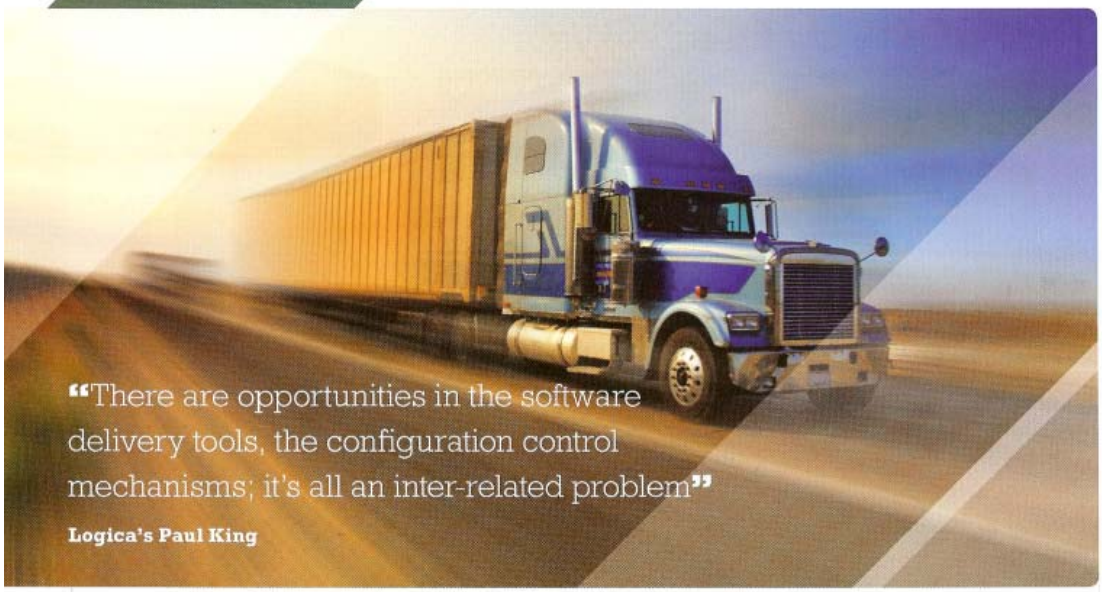
"Logica's view is very much that of the whole of the electricity network, including the devices in the home," he said. "It's going to be a whole interconnected infrastructure with software running in lots of different places, so there's going to be the need for communications infrastructure, systems that monitor the infrastructure, the services that are provided to support that infrastructure.

"There are opportunities in the software delivery tools, the configuration control mechanisms; it's all an inter related problem.

"It's a whole new business place, because there's nothing really on that scale, you're almost drawing up a power-centric Internet ecosystem from scratch."

Smart grids are still very much an emerging industry, and as such it's still in its formative stages. For instance, the National Smart Metering Program is not expected to deliver its policies until the middle of 2012 in King's estimation, and metering, which could be considered the first step, is only three years along in smart grid homeland Victoria.

"This is a 10-15 year journey," King said. "The next big lift will be around 2013, and at this stage it's still a maturity model. People need to understand what it means first, and then they've got to play with it to start to build the trust and confidence to do more with it."



"There are opportunities in the software delivery tools, the configuration control mechanisms; it's all an inter-related problem"

Logica's Paul King

Part of the process is, of course, consumer education. According to King, the first step is to get users understanding the time-of-use policy."

"Time-of-use means basically that you put a 'transportation scarcity price' on electricity – so by having a congestion charge on the roads," he said.

Essentially this boils down to 'off-peak' and 'on-peak' energy costs, which anyone who has home broadband connections will already know how to take advantage of.

"The studies show that the price will over time stimulate changing consumer behaviours. It'll be facilitated by new technologies in the home that will help that," King said.

EVERYBODY'S INTERESTED

Although not every power management vendor is as far along as Logica in engaging with smart grids, it is something that appears to be a logical extension for everyone.

"Absolutely it's of interest," PowerShield's Levin said.

"I haven't been a part of it, but I've been reading and hearing stories about people able to take their electrical bill and put it down to next to nothing because of the power they are putting back into the grid through generators and the like."

Eaton, meanwhile, has a smart grid play overseas, and although that hasn't translated to the local environment yet, it too is something that Mallia said the vendor was keeping a close eye on.

"In our business we have a big play in the solar market, although that's not really related to datacentres as such," he said.

"While I haven't seen any interaction between the two at this stage, it could potentially happen in the future, especially if people continue to move into modular datacentres and look at co-generation.

"That has been done overseas, we've seen people bring in gas and have their own gas turbines. They can produce energy more efficiently than buying it from the utility, so in those applications where you might have excess capacity in your little co-generation plant, you can sell that power back to the grid."

On the Telco side of things, Eaton has been involved with some of the larger players, such as Optus, in setting up remote sites (such as its famous Nullarbor Plain site) with solar generators and complete systems.

At this stage, this is not an IT channel play – but there could be collaborative opportunities in the future, according to Mallia.

"On the domestic side of things it is a channel play, but it's the electrical trades channel rather than the IT channel," he said.

"When it comes to bringing higher level, overarching energy management systems into the IT channel, I think there is a potential for that, especially if an IT partner, whether it be a high-level integrator or so on is already in the datacentre, putting racks and PDUs and everything else together, then they should be able to get involved in proposing or submitting a proposal for an overall energy management system that looks at the whole electrical infrastructure as well as the IT. There is a play in there for the channel." ■