DCIM and Energy Management
Underappreciated and invisible?

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IT OPTIMISATION FOR MAXIMUM BUSINESS EFFICIENCY

Over several decades IT management has focussed almost exclusively on keeping servers running. It is only in the last few years that much attention has been paid even to critical areas such as storage and network management except when new systems are installed, or when things go wrong. Now though things are changing and the emphasis is slowly being shifted to the dynamic management of systems to optimise resource utilisation, improve service quality and keep a better handle on costs. In some organisations this is bringing the management of energy into sharper focus, a trend that is likely to spread across many more businesses in years to come. Freeform Dynamics has a paper looking at IT energy management and how identified 5 imperatives to make things better.

Some of the other factors exerting pressure on organisations to pay more attention to energy consumption are illustrated in the figure below.
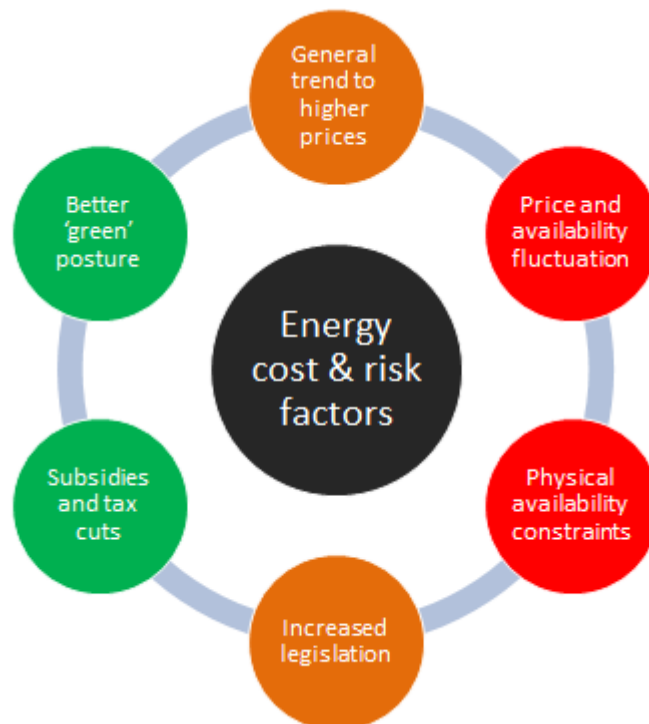
Several of the issues highlighted can have a clear and immediate impact on how much effort organisations put into energy management. In particular the rising cost of energy, and its visibility in terms of IT consumption of electricity, is now influencing an increasing number of operational decisions. Meanwhile, concerns over energy availability and potential legislation are also likely to be matters to be addressed in the very near future. Unlike several of the other factors mentioned, enabling a better green posture via effective energy management is still regarded as a collateral benefit rather than an initiator of change in and of itself.

Given the drivers now influencing energy management, why has the area been overlooked in the past by IT? The table below summarises the factors our research has highlighted over the course of many studies combined with our own first hand experiences of working in IT.

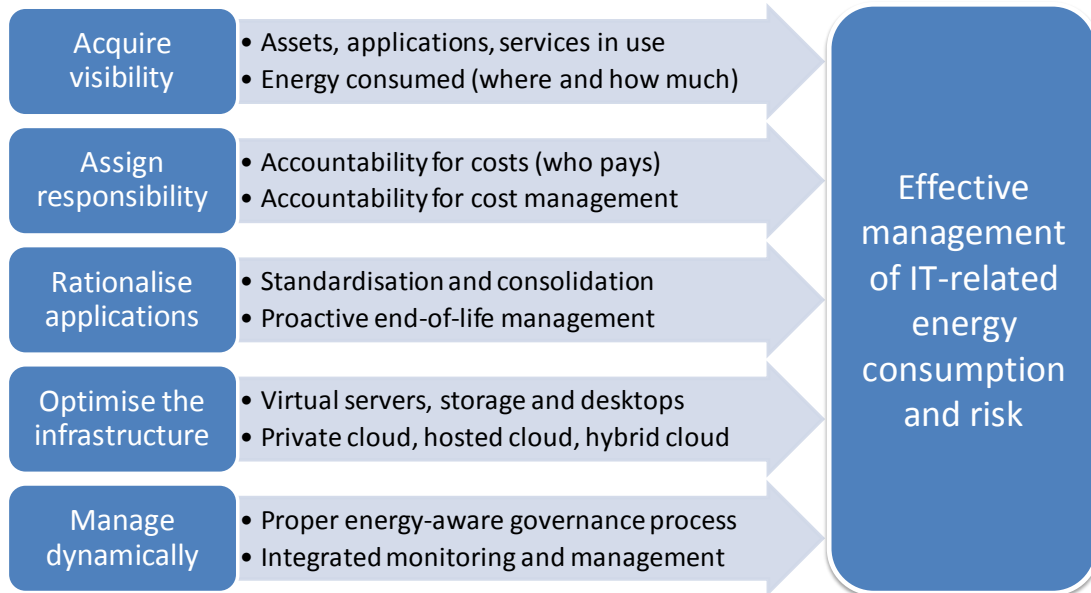| Problem	Comment
Lack of visibility	As the old adage goes: "You can't manage what you don't measure", so if there is limited or no visibility of how much energy is being consumed by different parts of the IT and facilities infrastructure, then it's hard to know how to prioritise and focus efforts to improve things, or to know when results have been achieved or objectives have been met.
Lack of management ownership	Where energy accounting takes place at all, it is often based on allocation of costs to departments according to parameters like headcount or square-footage of office space. With no direct accountability or mandate to control, business managers have no incentive to work together with the IT function to optimise IT-related energy use.
Inherently inefficient IT equipment	IT assets accumulate over time, and you can often find several generations of kit coexisting in the data centre or computer room. Older servers, storage devices and network switches are generally more power hungry and harder to manage, so the more of them there are, the less power efficient the overall infrastructure.
Poorly utilised IT equipment	While virtualisation has been used to consolidate portions of x86 server estates, the truth is that the vast majority of servers and storage devices on the planet have not been virtualised. A great deal of equipment is therefore still sitting there consuming power continuously but doing little real work for most of the time.
Over-stretched capacity	After years of continually adding IT equipment into the infrastructure with little concern for space, power and cooling, many data centres are now operating at or near capacity. Provisioning new systems therefore is often now a challenge, creating delays responding to new business requests, along with conflicts and 'max out' events that cause unexpected service interruption.
Poorly utilised applications	Organisations tend to have a continual stream of project work to deliver new applications, but pay much less attention to identifying candidates for application consolidation, rationalisation or end of life. Many old applications therefore exist that deliver little value but still consume IT resources, and therefore power.
Parochial attitude to IT efficiency	When local interest overrides the greater good because of politics, convention or lack of awareness, opportunities to rationalise, consolidate and share can meet significant resistance. Problems with parochialism also occur when IT is unwilling to spend a little more internally to enable bigger savings across the business.

Common causes of poor (or non-existent) IT-related energy management

Of the areas discussed in the table, the lack of monitoring tools providing information on electricity consumption is a major inhibitor holding back better energy management. The saying: "if you don't know what's going on how you expect to change things for the better" applies equally well to energy management as it does to every other aspect of IT.

But better energy monitoring capabilities alone are unlikely to change things positively unless the second point in the table is also addressed. Until someone in the enterprise is charged with tackling energy management, there is little prospect that things will change. And the person handed the

mandate of energy management also requires the backing of business managers and IT to change things, together with the budget and 'incentives' to make things happen.

In order to address energy management properly, there are five key steps that can be taken, each of which delivers benefits in and of itself, but when combined together improvements can be dramatic.

Acquire visibility	• Assets, applications, services in use • Energy consumed (where and how much)	
Assign responsibility	• Accountability for costs (who pays) • Accountability for cost management	Effective management of IT-related energy consumption and risk
Rationalise applications	• Standardisation and consolidation • Proactive end-of-life management	
Optimise the infrastructure	• Virtual servers, storage and desktops • Private cloud, hosted cloud, hybrid cloud	
Manage dynamically	• Proper energy-aware governance process • Integrated monitoring and management	

Five imperatives for effective energy management in relation to IT

Nearly all of the factors listed in the chart above, and the table that preceded it, underpin inefficiency and ineffectiveness within IT in general. In fact, any effort to improve energy management in IT is almost certain to positively impact mainstream initiatives to enhance IT service delivery. Indeed, adding energy management considerations into solutions and approaches being discussed holds the potential to enhance business cases as they are being constructed. Are you ready to make a change for the better?

About Freeform Dynamics

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As part of this, we use an innovative research methodology to gather feedback directly from those involved in IT strategy, planning, procurement and implementation. Our output is therefore grounded in real-world practicality for use by mainstream business and IT professionals.

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