

Consider Secure Power as a Key Enabler of the Modern Data Centre



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Consider Secure Power as a Key Enabler of the Modern Data Centre

Reliable and operationally efficient facilities are fundamental to delivering pre-determined critical data centre outcomes.

According to ADAPT research organisations in Australia and New Zealand accelerated cloud adoption in the past twelve months. While we anticipate even greater uptake of cloud, we still expect many organisations to retain some critical workloads in-house for the foreseeable future.

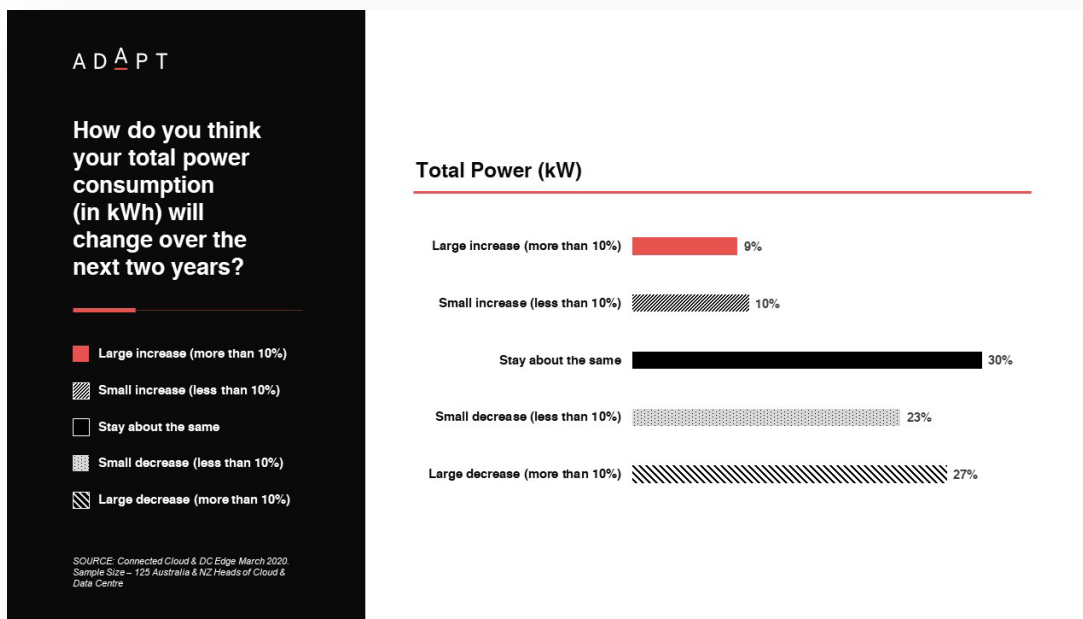
This race to the cloud, a renewed focus on sustainability and corporate social responsibility and more are driven by the imperative to deliver aligned business outcomes. Infrastructure leaders, increasingly frustrated with being weighed down by legacy centric lifecycle management practices are examining alternatives, such as managed, secure power solutions.

Infrastructure leaders managing an ageing fleet of backup power solutions should first evaluate the impetus, roadmap, and financial implications of secure power as a service by:

- Installing telemetry to measure and evaluate the operational risk posed by legacy assets in adverse environments and assessing the inertia behind maintaining sunken investments.
- Evaluating alternatives to traditional procurement models, investigating options for modernisation, and managing the environmental impact of discarding assets at end of life.
- Articulating business value in resilience and innovation terms. Engage operations teams early and often to develop a practical roadmap, architecture, and baseline commitment.
- Assess and perhaps capitalise on the organisation's appetite to shift from CapEx to OpEx style infrastructure investments.

Market Context: Three Forces Driving the Impetus for Power as a Service

Cloud Adoption Influences Total Power Consumption

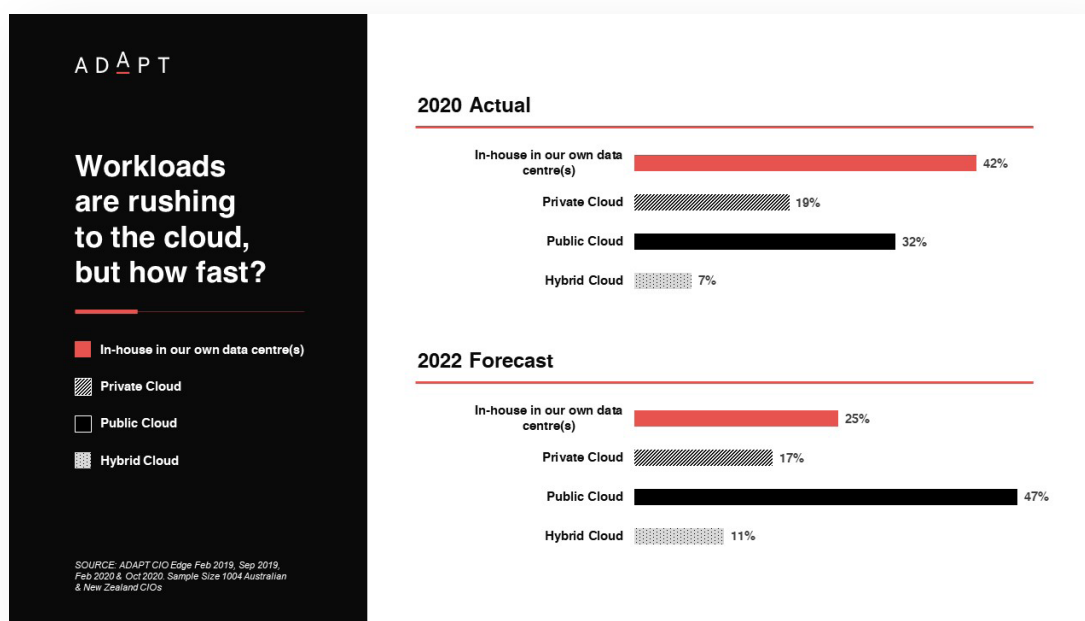


Infrastructure leaders evaluating data centre modernisation are increasingly examining the business case for software-defined technologies and approaches that promise greater flexibility and agility. Flexible facilities can foster agility, reduce resourcing overhead, and allow businesses to focus on commercial outcomes, rather than legacy centric approaches such as lifecycle management.

Managing power outcomes, rather than assets, helps technology executives to focus on improving operational effectiveness, the number one priority for ANZ CIO's according to ADAPT's CIO Edge Survey from October 2020.

Many in-house data centre environments have adopted cloud like features such as flexible provisioning, managed by software, and billed on consumption.

The next logical step is for these same businesses to seek flexible facilities that can support these dynamic infrastructure requirements. The desire to embed cloud type behaviours into the data centre stems from the benefits of accelerating cloud adoption: ADAPT data shows that organisations expect to increase workloads hosted on public cloud from 32% in October 2020 to 47% by 2022.



According to ADAPT, most businesses expect their owned infrastructure to continue shouldering the burden of critical systems.

In March 2020, ANZ organisations told ADAPT they were running most of what they considered critical workloads in house. By contrast, IT leaders plan to retain 25% of the organisation's overall processing power on owned infrastructure by 2022.

ADAPT's COVID-19 study illustrates this trend: 57% expect to devote more effort to legacy modernisation, while 39% plan to allocate more resources to move critical workloads onto cloud environments.

A further 53% are actively deferring action on these crucial pathways; instead, migrating the low-hanging fruit, or refactoring systems to take advantage of modern microservices architectures.

The need to ensure operational resilience with secure power led to 19% of local businesses predicting that they will increase their total power consumption by 2022.

Green Credentials are a Key Selection Criteria

Local organisations tell us that green credentials are key components of their modernisation efforts.

Whilst 57% of ANZ businesses prioritise sustainable operations, 55% focus on minimising the cost to supply adequate power and cooling facilities for the data centre. And although 31% have a direct line of sight into these expenses, just 11% say that they can mitigate the carbon footprint of powering the data centre against certified sustainability returns.

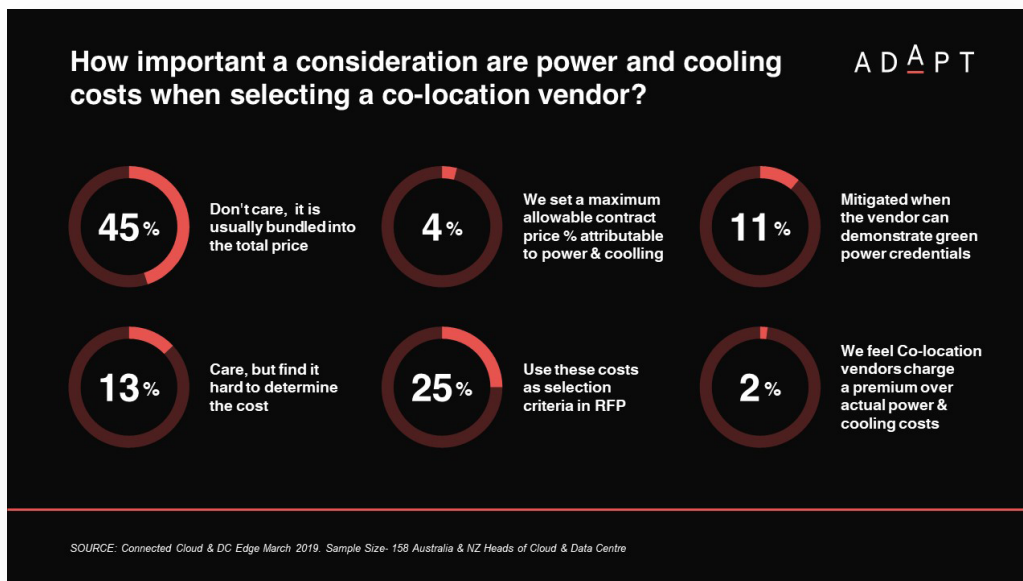
Infrastructure leaders grasp the imperative to improve data centre sustainability. ADAPT's COVID-19 Survey from September 2020 shows 57% of employees will remain physically present in the office on any given day as business return to post pandemic "normality".

The new Hybrid workplace and workforce will place non-trivial demands on local IT, as the remaining 43% of the workforce connect into the operating core from a variety of environments and locations.

The shift to hybrid experiences means that even as businesses redesign the purpose of physical workspaces, the imperative to improve data centre sustainability remains.

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Traditional Power Solutions Inhibit Resiliency

Time and resources spent managing traditional power assets without alignment to specific outcomes reduce focus and the ability to secure additional investments for change. Deploying resources to provision, maintain, and decommission units incurs lifecycle management overheads and diverts scarce resources from modernisation initiatives.

In the absence of adequate tolerances, the failure of even a single UPS can bring down an entire site.

To prepare for this, organisations often over-engineer backup and failover capacity well in excess of what they will ever need.

Infrastructure leaders tasked with maintaining a fleet of legacy power assets are hungry for alternatives.

Adopting secure power as a service may well assist organisations in reducing business risk, increasing their facilities' resilience, and enabling the redeployment of resources to transformation initiatives.

In the following section, we examine how infrastructure leaders can build a framework to support secure power as a service. We then articulate the constraints that organisations need to address towards making secure power as a service a functional alternative.

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Secure Power as a Service to Sustain In-House Environments

Infrastructure leaders in Australia and New Zealand should consider the following three steps as they consider secure power whilst also aligning the cost of sustaining residual workloads with operating revenue and the key business outcomes associated with sustainability.

Install Telemetry to Inspect Operational Risk

First, install systems telemetry to identify operational risk and inefficiencies. Baseload and backup power tend to be distributed at relatively undifferentiated levels.

In other words, power is often supplied evenly to infrastructure without regard for the dynamic nature of the workloads running across those servers, switches, and storage.

Factors like the ambient environment, physical confinement, and power utilisation contribute to the physical stress endured by the bare metal.

Managing fluctuating airflow, excess humidity, and electrical harmonics also add to the engineering burden typically associated with owned power assets.

Capturing real-time data on each of these risk factors can help infrastructure leaders to rebalance workloads, predict equipment failure, and prepare maintenance activities accordingly.

Evaluate Alternatives to Traditional Procurement Models

Second, evaluate agile power provisioning alongside traditional procurement methods. Infrastructure leaders chasing data centre excellence often face lengthy contracting cycles to maintain, replace, and expand existing backup power facilities.

Environmental concerns are another complication: disposing of assets according to outdated “best practice” consumes focus and funding that infrastructure leaders could otherwise deploy to manage technology outcomes.

An alternative approach can involve flexing consumption according to predicted need.

Agile power provisioning options allow organisations to contract for an agreed minimum viable backup facility whilst also securing future growth at competitive rates.

Adopting a managed, secure power service can suit businesses with a large fleet of legacy backup assets where power is a critical asset to run IT infrastructure but is not a core revenue-generating requirement.

Secure power as a service offers businesses a pathway to shift towards a wholly as a service model in the future.

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Justify the Funding Case in Resilience and Innovation Terms

Third, build the business case for secure power as a service based on time and resiliency gains.

The break-fix effort associated with a traditional asset-based model consumes engineering muscle power, increases the risk of outages, and depletes focus and funding for change.

Infrastructure leaders can articulate the business value in terms of the time created to innovate, reinvestment into legacy modernisation, and uptime facilitated by applying a service-oriented approach to backup power.

Organisations can evaluate the opportunity of secure power as a service against the sunken cost of legacy assets: including the resources required to procure, provision, and retire units as they degrade, resulting in power volatility and potential downtime.

Overcome Sunken Investment by Evaluating the Do-Nothing Cost

Adopting secure power requires infrastructure leaders to overcome three core constraints.

Assess the Inertia Related to Sunken Investments

First, evaluate the implication of sunken investment in legacy power assets. Although the write-offs associated with disposing of these critical assets are hardly trivial, the continuing time and materials costs of running and repairing owned backup infrastructure carries a similarly heavy financial burden, which can often prove more costly over time.

An incremental rollout by site, segment, or scenario can often prove the most effective. Infrastructure leaders should seek a flexible solution that offers a gradual transition to secure power as a service as and when legacy assets reach their pre-determined end of life.

Investigate Alternative Pathways to Modernisation

Second, investigate the ideal path to modernisation. Whereas prevailing asset ownership, resource utilisation, and other operational imperatives may call for switching an entire site to secure power as a service, financial concerns may inhibit this.

Identify a range of scenarios that include the optimum financial and operational timings and evaluate whether to maximise financial return by part replacement or mitigate the risk of outages by cutting over the entire site.

Engage Operations Early and Often

Third, involve operations in presales engagements to right-size initial deployments. Engaging engineering early and often helps to accurately identify minimum contract levels, existing and ideal load factors, and suitable power architecture per environment.

Partnering in this way can help organisations to identify options for dealing with stranded power.

Although businesses typically allocate buffer and failover capacity to deliver near-constant uptime, these pools of resilience are thoroughly underutilised.

These contingencies can account for up to half of a data centre's power and cooling facilities, while on average, they tend to be active for less than 15 minutes in every day.

In evaluating managed power services, organisations should be mindful to ensure contractual language and SLA's are as flexible as the workloads they seek to deploy.

For example, although infrastructure leaders will want to specify criteria that allow for the necessary fault tolerances, the option to redeploy underutilised power dynamically will flatten the cost of scaling power requirements closer to a linear curve.

By adopting fungible secure power as a service, organisations can reduce total ownership costs and reallocate engineering resources to improving business outcomes.

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For more information visit adapt.com.au

hello@adapt.com.au

+61 (2) 9435 3535

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