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Smarter Data Centre Outsourcing
Considerations for CFOs

This paper originated with a question Australian business has increasingly been asking: "Is it more cost effective to outsource data centre infrastructure, than to build and manage it internally?"

To provide an independent perspective on this question, NEXTDC asked Deloitte to explore the business and finance implications associated with managing data centres. This paper outlines the options available to structure an organisations data centre and complementary IT services and provides the key considerations that need to be reviewed when determining which option works best for them.

Kind regards,

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Data centre challenges

For years organisations have faced increasing investment in IT and associated support costs. A large proportion of these costs include the internal provision and support of data centres that house the organisation's IT systems.

In the past, this demand for IT and data centre capacity may have increased in a relatively predictable manner, increasing as new services are launched or new markets are entered. Organisations now face combined challenges of dealing with fluctuating demand combined with an expectation that the organisation's IT department can provide these services in a rapid and cost-effective manner.

The long lead-times to increase IT capacity are often compounded by the capacity or flexibility constraints of the data centre facility itself. To manage these constraints, organisations often invest upfront in additional capacity at a level of demand which is above their current needs.

New technologies, support services and commercial options are now available to organisations allowing them to choose between owning, leasing, outsourcing or even leveraging a combination of externally provided services.

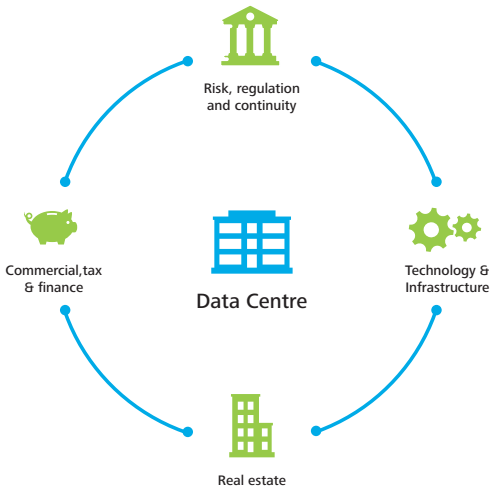
An informed investment in the right combination of internally and externally provided data centre services can deliver excellent value for money while providing the necessary service, flexibility and security to meet your business needs.

Selecting the best approach involves taking into consideration a range of factors whose impacts will be felt beyond the IT department.

> "An informed investment in the right combination of internally and externally provided data centre services can deliver excellent value for money"

In order to make an informed investment in data centre capacity and services, organisations should consider the following key areas:

- Commercial, tax and finance
- Real estate
- Risk, regulation and continuity
- Technology and infrastructure.



We will start by reviewing the high-level data centre options available to organisations, before discussing how each of the four areas outlined above may shape an organisation's data centre investment decisions.

What are the options?

"IT and data centre services can be delivered through different service models. Multiple factors come into play when deciding the optimal mix of purchased and leased technology capability."

Data centres are facilities housing the systems that provide technology services to an organisation. They have specific building infrastructure requirements such as reliable power supplies, air conditioning, fire suppression and centralised monitoring equipment. Importantly, data centres are designed to support IT business continuity and are therefore managed by teams of specialist staff.

There are several options available for organisations to provide data centre and complementary IT services:
1. In-house provision
2. A data centre provider
3. A cloud service provider

Option 1: In-house provision
This has been the traditional approach to providing data centre facilities and entails corporate ownership of data centre facilities and the in-house management of technology services. This option may still be preferred by some large organisations with specific requirements, including a high degree of control over IT assets and corporate facilities.

The provision of services is constrained by the capacity constraints of the data centre facility and the capability of the in-house resources to meet changing business demand.

Maintaining a sufficient level of power and cooling is often a significant challenge for businesses running their own data centre in-house. Unless the facility is purpose-built, the organisation may be reliant on mains power and office air-conditioning; both of which create a higher-risk operating environment.

The majority of organisations that manage an internal data centre in this manner are expected to have access to a range of external third party providers who can provide similar services at competitive cost and service levels.

Option 2: Data centre provider
This option entails the leasing of data centre space from a specialist data centre provider. Organisations are typically provided with either an entire data centre or space within a shared or "co-located" facility. When a single facility is occupied by multiple tenants at one time this is commonly referred to as "co-location".

A co-location service provider will typically offer flexible packages of server racks or dedicated areas within the facility. In either case, the customer installs IT equipment into the data centre facility which is operated by the provider.

The leasing of a co-location service package may reduce the upfront capital expenditure (CAPEX) investment required to provide a new facility or expand an existing one.

Leasing often also provides greater cost transparency through predictable, regular service charges which are based on an agreed set of service levels. The ability to more accurately forecast future operational costs helps to improve IT cost forecasting and budget accuracy.

As we have noted, as an organisation's demand for technology services grows, so does the required amount of IT equipment and data centre capacity. To help organisations cater for future growth, most co-location providers can offer a contractual guarantee of additional capacity should it be required. This capacity is often immediately ready for use and reserved for the contract term.

Co-location providers typically remove the need for organisations to recruit staff with specialist data centre facilities management skills. Organisations will still need to retain IT infrastructure specialists to manage the hardware within the co-located facility (although this function can also be outsourced). Outsourcing these functions can help to avoid the need to quickly recruit and train additional specialist staff to meet an unforeseen increase or decrease in business demand.

Option 3: Cloud Services

Cloud providers now offer a range of immediately available services over the Internet. These include software which can be accessed securely via a web browser or, alternatively, a technology platform for organisations to install and operate their own applications.

This option also does not require a separate contract for data centre capacity for the services provided. Further more, this also eliminates the need for organisations to employ specialist IT resources to install, configure and maintain the software and/or hardware, as this is the responsibility of the cloud provider.

This option is a maturing service which will be suitable for some of the organisation's IT services. Currently, organisations are leveraging mature cloud services offerings while they assess the potential migration of other suitable IT services. Data sovereignty, IT security and enterprise risk need to be reviewed when considering this option.

Figure 1 - Privately owned, leasing and cloud provider options

"As an organisation leases more of its technology, progressively more capital is freed up for reinvestment in core business activities and it becomes easier to cope with fluctuating demand for resources."

Commercial, tax and finance requirements

It is essential that organisations view decisions relating to their data centre options holistically. In doing so, they will need to understand current industry trends, available technology and supplier options and the commercial and operational impacts of their sourcing decisions.

Commercial, tax and finance requirements

To determine a realistic view of the total cost of ownership over the life of any data centre investment, the organisation's commercial, real estate and technological service level requirements must be taken into consideration.

Organisations that have data centres within their premises, have typically absorbed data centre costs into their budgets for office costs. This usually results in low transparency of the real costs (i.e. of providing floor space, power, cooling and specialist support specifically for the purpose of running corporate IT).

Perhaps the most prominent impact when moving from an in-house to a co-located or even cloud-hosted service is the impact on the organisations CAPEX and operational expenditure (OPEX) commitments.

Organisations that support an in-house data centre invest upfront CAPEX to establish a fit-for-purpose internal building infrastructure. A combination of the Maintenance and IT departments typically invest in the building's infrastructure and then provide the specialist resources needed to support this on an ongoing basis.

Any arrangement with a third-party provider would be expected to replace some or all of the upfront CAPEX requirement and shift these costs towards regular OPEX costs for the provision of services provided by third- parties. Depending on the commercial arrangement, investment in technology assets may also reduce and will result in lower accountable asset depreciation over time as the organisation will no longer own the same level of assets.

"An informed investment in the right combination of facilities, IT infrastructure, applications and services can save money while providing an appropriate level of service, flexibility and security for the future."

"Pay-as-You go" services such as cloud and co-located server rack space, will result in monthly service costs. In a cloud service, in which an application is provided over the Internet, the supplier provides and supports all of the underlying facility and technology infrastructure. The customer does not need to worry about how this is provided as long as the agreed service levels outlined in the contract are met with a co-located server rack space service, the supplier normally provides a combination of physical racking, resilient power supplies, remote monitoring, cabling and security infrastructure.

The typically monthly OPEX costs will usually include a small premium to provide access to additional capacity. For an organisation, the flexibility to quickly make available capacity when needed is a significant advantage. In this instance organisations purchase the capacity they need rather than investing upfront in excess capacity to meet a predicted future demand. This flexibility can vastly improve the responsiveness of the organisation, reduce deployment times of new business applications and significantly improve the scalability (both up and down) of the business to meet fluctuating demand.

From a tax perspective, a noted benefit of using a third-party provider includes the shift from expenditure on capital account (deductible over time) to expenditure on revenue account. Expenditure on revenue account should be immediately deductible for tax purposes.

However, when considering cloud services, and specifically where an organisation's data is being delivered via the Internet, consumption-based taxes from that region (such as GST or VAT) may apply from the region in which the provider's data centre is located. Organisations therefore need to understand whether the supplier will provide these cloud services locally from within Australia via a local entity or outside Australia by a foreign entity.

Further more, double tax agreements were not drafted with the use of technology like the cloud in mind. As such, further consideration may be required to determine the appropriate application of double tax agreements to cloud services.

Finally, research and development incentives and other tax concessions may be available where an organisation develops novel products. In some cases the reduction in recorded electricity consumption of the organisation will free up cash and potentially attract incentives under the Government's clean energy future program.

Real estate

Often, the criteria used to select a company's office location have also, mistakenly, been used to decide the location of its data centre. This can result in leasing premium office space for your data centre which is not fit for purpose for supporting an organisation's IT equipment.

The space a company occupies is typically driven by a number of factors including operational needs, brand/status opportunities, flexibility requirements, and staffing/customer locations.

Regardless of the size of an in-house data centre, infrastructure will be required to support its effective operation and mitigate the risk of fire, overheating, theft, etc. The physical infrastructure will typically include additional cabling, cooling, reinforced flooring and the provision of sufficient power to meet growing demands, while providing the necessary degree of physical separation to meet relevant security and regulatory standards.

Data centre infrastructure is also evolving as technology advances. The operational criticality of the equipment housed in the data centre and the significant capital investment it represents, means that data centres typically require ongoing investment at regular intervals to maintain state-of-the-art protection for these vital corporate resources. An important consideration for companies to make is in whether they will continue to invest capital in upgrades as and when needed.

Data centres can occupy a considerable amount of space within an organisation's building. Whether the building is leased or owned, this space can often be used for a number of alternate purposes in the business and should be evaluated in this context.

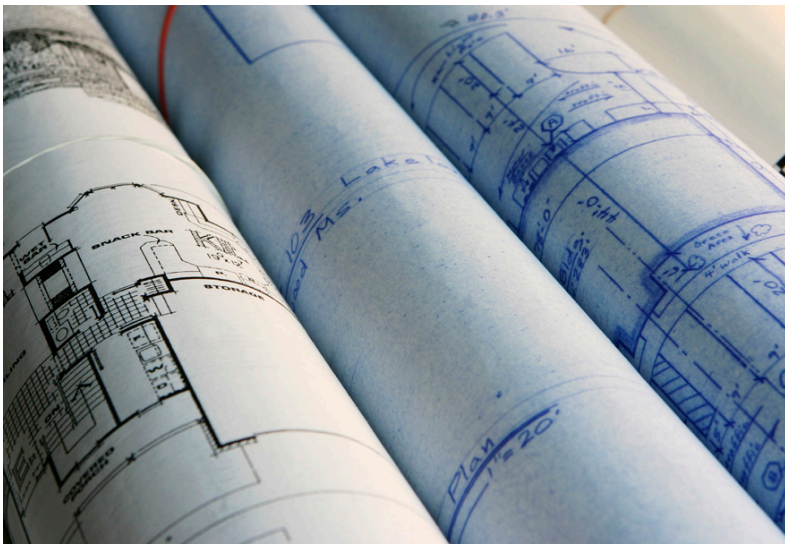
Regardless of its size, the space used by an in-house data centre becomes highly specialised and unsuitable for other uses. This specialised use can often limit an organisation's ability to easily and inexpensively reconfigure its entire tenancy to suit future corporate real estate operational, design and growth requirements. When an organisation's space requirements change, this specialised space may not be easily altered to cater for changing demands and uses. Although potentially intangible, this is certainly an opportunity cost which must be considered.

In addition to the considerations of physical space there is a direct cost attributed to the space, whether in rental payments, financing, or building outgoings. The additional infrastructure will undoubtedly affect building costs including excess water, electricity and air conditioning– oftentimes, these increases can be multiplied by a landlord's overhead charges.

Lastly, there's an important point that often goes unappreciated. If office space is currently leased, having an in-house data centre may reduce the negotiating leverage an organisation has with its landlord. This is due to the logistical and financial costs required to either relocate a data centre to another premises.

The operation of an in-house data centre contains a number of costs which pertain to real estate. Companies should therefore identify and consider all direct and indirect real estate costs apportioned to the data centre which will include not only the initial capital expenditure, but its operational expenses, general maintenance and upkeep, and removal costs at the end of useful its life or end of lease (whichever comes first). These costs can then be compared to outsourcing to arrive at an appropriate cost comparison.

"Does your technology infrastructure need to be in the same expensive location as your staff?"



Risk and regulation requirements

It is important to recognise that moving to a co-located data centre or to cloud-based service alters an organisation's IT delivery risk profile.

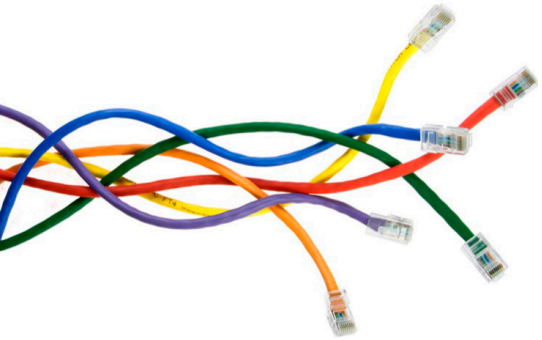
The reputation of service providers relies on their ability to protect client assets and respond quickly and effectively to data and security breaches and provide IT technical service levels to support business requirements. Significant investment by data centre providers is typically made in IT and facility infrastructure. This can include state-of-the-art security, authentication, cyber-protection, cyber-forensics and resilience in order to provide a higher level of service than the customer could otherwise cost-effectively access.

There is typically an extensive amount of high-value corporate, client and personal data stored within a data centre environment. The range of compliance and regulatory obligations facing the organisation will also need to be considered when deciding on the most appropriate data centre option. Furthermore, while a data centre may be physically located in Australia, there may also be implications for the organisation should data need to flow outside of Australia, particularly when a third-party data centre provider or cloud service provider is involved. For example, financial services companies that wish to transfer data offshore must first notify APRA and be able to show that an appropriate risk management framework is in place to protect the data.

As service providers often make use of subcontractors, rigorous vendor management is also required to ensure security and compliance requirements are met along the way.

In addition to data privacy and sovereignty concerns, there may be industry-specific compliance requirements that have knock-on implications for the hosting of infrastructure and the delivery of service.

Some examples of standards which may need to be considered when reviewing data-centre hosting options include Australian Privacy Acts, ISO 27001 & 27002 , ISAE 3402 (formerly SA 70), PCI-DSS, ITIL and ASIO T4 PSPF/ISM. Depending on your organisation, a number of these will be important or relevant when assessing your needs.



"Data centres require increasingly costly resources to operate, in terms of energy, technology and skilled personnel."

Technology and infrastructure cost

The maintenance and operations of the data centre requires intensive ongoing activities. In addition to managing the building's facilities, specialised teams are required to: run power and cooling, manage cabling, install and maintain servers and network equipment, monitor hardware and software, manage databases, track and plan capacity and to manage change requests and outages.

Although recent improvements in data centre Infrastructure Management (DCIM) and data centre Automation (DCA) applications have promised to reduce the amount of manual effort involved in planning and running a facility, these packages remain complex and costly to install and are often outside the reach of organisations not specialising in the delivery of data centre services.

Worldwide spending on enterprise applications is currently estimated to exceed $120billion per annum and is growing. In addition to the cost of procuring, building and configuring these applications, the current rate of technology change means that a large proportion of solutions are very quickly becoming difficult and expensive to manage due to software and hardware becoming out-dated, obsolete and unsupported.

In addition, data storage requirements are also expected to continue to have an accelerated rate of growth. It is expected that data storage and processing requirements in 2020 will be 50 times greater than that of 2010. Although the relative price of infrastructure will continue to fall, the overall spending on IT hardware, software, services, telecommunications and staff is expected to increase by 40percent in real terms by 2020.

All of these challenges have direct impacts for planning and managing IT infrastructure. Furthermore, as complexity in the organisation's vendor landscape increases, managing vendor contracts also becomes more challenging. Existing enterprise level agreements may not be well suited to changing organisational demand, usage patterns and updated infrastructure. A mixture of sourcing models also requires more flexibility around licensing agreement terms and conditions.

Conclusion

There are a range of providers and services available when considering how best to meet your organisation's data centre needs. It is essential that, the full range of organisational factors are considered and that an appropriate mix of capacity, complementary services, risk and service levels are established.

The decision on whether to consolidate existing facilities or move to a co-located data centre or cloud service provider will vary between organisations and must take into account each organisation's unique circumstances. Contact us for more information or for an evaluation of your individual requirements and how best to tailor a solution that meets them.

"Technology service delivery today is likely to involve the use of a blend of leased and owned assets. Selecting the right mix of solutions for an organisation is an iterative, holistic exercise which must balance multiple intertwined considerations from disparate parts of the business."

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