



Perspective: the growing importance of the Data Centre for Service Management

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It was not too long ago that the lack of Data Centre space was for many at a critical level preventing us from implementing new IT services. Today, with the growing take up of new server technology such as blade servers and, in addition to that, the stabilisation and value realisation of virtualisation technologies, our Data Centre landscape has taken major leaps in just a few years. This leap in IT technology has not however been consistently matched by investments in environmental (cooling and power) systems. This has resulted in many organisations having to take tactical and sometimes expensive short-term solutions to provide much needed cooling for their new IT systems.

Also, there is a growing awareness of the need to be more economical with the use of power, not just through environmental awareness programmes (Green Initiatives) but also through growing power costs.

So why have organisations found themselves in this predicament?

For many years now we have had Data Centres in place supporting our IT systems, with very few problems for most. Today, our whole lifestyle is dominated by IT. There are very few activities we perform today where IT does not play some part. We have all become part of the IT 'snowball' where bigger, better, faster, more complex systems are feeding our insatiable information technology appetite.

We are part of the IT information age

To support these advances we require powerful yet efficient systems to support them. These systems require more complex software which requires more processing power and information stored in bigger databases. The result is that these systems consume more power to run. Increased power in the Data Centre, leads to an increase in cooling system capacity.

Within many organisations the Data Centre and its supporting infrastructure is the responsibility of the Facilities / Estates departments. Typically they do not understand IT and likewise the IT department does not understand the mechanical or electrical systems that make up the Data Centre infrastructure. This has resulted in arms length discussions in trying to align the two technologies. Today though there is a growing need to draw the two disparate technologies under one authority to ensure they are closely aligned, with IT taking the overall authority for the development and support of the entire Data Centre including its mechanical and electrical infrastructure.

Best Practice Alignment

So how do we re-align the exponential growth of IT demands and systems and ensure the environment they occupy is neither over nor under-engineered?



Through the use of a Service Management Framework such as ITIL, we can effectively manage the entire Data Centre including its mechanical and electrical infrastructure as part of a single IT service, aligning the delivery and support for power, cooling and space with those of the IT infrastructure and systems.

ITIL v3 was released in 2007 and promotes the need for organisations to develop IT services as part of a Service Lifecycle, where IT services and their supporting constituent parts are managed from 'cradle to grave'. Through the implementation of supporting processes, services can be implemented and supported, with the services becoming predictable with little or no surprises. In providing the IT services to our Clients, we need to consider the requirements for the provision of our basic commodities that make our systems work (power and cooling).

Development of a Strategy

The Service Lifecycle process starts with laying out the vision for our services, this we do through the development of a strategy.

ITIL states that we should start by developing a strategy where we take a snapshot of our present situation and capture a list of business demands from our customers. With the information available, we develop the vision for our service, through development of a gap analysis and planning the alignment of our services to the needs of our customers. The aim is to ensure we have sufficient capacity to deliver our services without wasting valuable resources. The strategy will state what we are trying to achieve and how we will develop our services.

The IT strategy should align with the vision and direction set out in the overarching business strategy. Feeding into the IT Strategy we may have more detailed service specific strategies such as the IT services strategy and Data Centre strategy, all of which, should support and feed into the broader service strategy higher up the tree. The core output from the strategies will feed into the development of the department's financial budget for the forthcoming year.

Future changes in the implementation of new technologies planned to be implemented into the Data Centre will drive a Data Centre requirement for space, power and/or cooling. If these are defined in the services strategies, the Data Centre strategy will plan and provide the provision for supporting the new services. All too often I have found organisations who have run into trouble within their IT service delivery, who have not laid down the foundations of a basic strategy and have effectively lost their way in delivering their services.

The Importance of Data Centre and Service Design

With our Data Centre strategy in place and visibility of all of the organisational strategies, we are now able to develop a design and plan of activities to meet the forthcoming needs of the organisation.

Our activity moves into the development of the Data Centre design. With the typical lifespan of a Data Centre being 10 to 15 years, it does not surprise me when I visit a Data Centre hanging on by its fingertips and learn that it is 35 years old and has had only sporadic investment since its inception! It seems organisations are

The typical lifespan of a Data Centre is now between 10-15 years.

now waking up to the importance of the Data Centre and the critical role it plays in the success of their core business. What comes as a shock in many cases is the cost to address historical lack of investment. Effective planning and integration of flexible designs can greatly alleviate the need for major unplanned investments.



Taking our Clients' needs to implement new systems, we are able to take these requirements and move into our Service Design stage. Here the Data Centre is designed to address the future needs of the Client. We assess the capability of the Data Centre infrastructure (power, cooling, security etc.) and develop the plans for upgrading or replacing aged equipment.

One of the biggest changes in Data Centre practices has been the development and use of cold or warm aisle containment. This was brought about by the growing needs of server hardware requiring fast dissipation of warm air. This concentration of warm air has put a strain on aged cooling equipment and has caused several organisations to close down systems as a result of an air conditioning unit failure.

In addition to the above, external factors based on rising power costs and the need to reduce power consumption to align with an organisation's Green Initiatives, leads to the design of the Data Centre becoming more prominent. In a recent government publication, Data Centres in the UK are said to consume approximately 5% of the UK's energy.

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Once we have our Data Centre designs confirmed, we can now move to our Service Transition phase, where we will plan and develop our staged implementation and deployment. This will be managed through to live operations using the Change, Release and Deployment Management processes.

Service Transition and Ongoing Support

It is important that we set control stage points through our processes. This enables activities to be approved and ensures that expectations are effectively met and that any unexpected changes that have been found on the way can be assessed and approved before progressing.

The final stage of the Service Transition is the deployment of the service. Even the implementation of a new air conditioning unit should still be treated as if it was a new customer service, since its potential failure can have a serious impact on the overall efficiency of the Data Centre and the systems it supports. Therefore, the timing, testing, acceptance of the unit into production is all important on the overall service levels offered.

Just like an IT system suitable documentation and training needs to be provided before the unit is accepted into the live operation. This should be the same for all Data Centre equipment, whether it's a new generator, fire suppression system or air conditioning unit, all support staff expected to interface with the system need to be aware of their role in using and supporting the system (all new staff need to be trained and all staff should attend a refresher session run on a regular basis).

Once the Data Centre infrastructure has been accepted into live operation, ongoing support will be provided using the standard IT Service Operations processes, event, incident and problem management processes.

Managing the Data Centre Lifecycle

In closing the lifecycle loop managing the ability to address minor changes and to pick-up ongoing issues, we use our Continual Service Improvement processes. These include our measurement processes for: tracking service



performance and developing service performance trends; service reporting for providing management visibility on performance against expectations; and from a financial basis, the ability to track the business returns on our financial investments.

Therefore through alignment of our Data Centre infrastructure into our IT service management processes using a common best practice framework such as ITIL, we are able to deliver an efficient and effective IT service to our Clients while maintaining a comfortable control on addressing ongoing external influencing factors such as increasing power costs and the need to address Green Initiatives.

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