



Build versus Buy

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Biography

Darren began his career as a graduate Military Officer in the RAF before moving into the commercial sector. He brings over 20 years experience in telecommunications and managed services gained at BT, MFS Worldcom, Level3 Communications, Attenda and COLT. He joined the VIRTUS (<https://virtusdatacentres.com>) team from euNetworks where he was Head of Sales for the UK, leading market changing deals with a number of large financial institutions and media agencies, and growing the company's expertise in low latency trading.

Additionally, he sits on the board of one of the industry's most innovative Mobile Media Advertising companies, Odyssey Mobile Interaction, and is interested in all new developments in this sector. Darren has an honours degree in Electronic and Electrical Engineering from University of Wales, College Swansea.

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Abstract

To build or buy your next data centre is an age-old question for many business executives. Building your own data centre is resource-intensive and requires considerable experience. With high-energy costs and complicated management for inexperienced companies, the task of building your own data centre can be an overwhelming one. As organizations re-evaluate the need to build, own and operate their own data centres, there is an emerging trend which is growing rapidly toward outsourcing the data centre to a dedicated data centre provider. Not only do companies gain many of the benefits of having a scalable and flexible data centre, but the data centre provider takes on the risks, compliance and security issues, therefore eliminating the need for companies to take on the massive resource investment necessary to build their own data centres.

Introduction

With the ever-changing enhancements taking place in today's technological landscape, in-house data centres are continually met with the challenge of providing enough space, power and cooling. As companies grow and scale, it is a forgone conclusion that they are going to need more data centre capacity. Businesses across a variety of industries – from healthcare, to financial services, to retail, and everything in between – are all amassing large quantities of data and evolving capabilities that need serious computing power. Not all workloads are suited to the cloud, so they must decide whether to “build” a new in-house data centre or “buy” space in a colocation facility.



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The question brings about the classic build versus buy conundrum that raises its head whenever it's time to provision for additional capacity, IT infrastructure and operations. Does it make more sense to build a new data centre, or buy (lease, or outsource IT needs to a colocation provider)?

To help make a decision, businesses need to evaluate current and future infrastructure requirements. If they are variable, cloud could be an attractive option, but if there is a need for fixed or steady growth, or for owning hardware for other reasons, a data centre build or lease is worth considering. There are, of course, several advantages and disadvantages to all approaches. In building, companies have complete and total control over all aspects of the data centre. In buying, companies get many of the benefits of having a data centre without taking on the massive resource investment necessary to build their own.

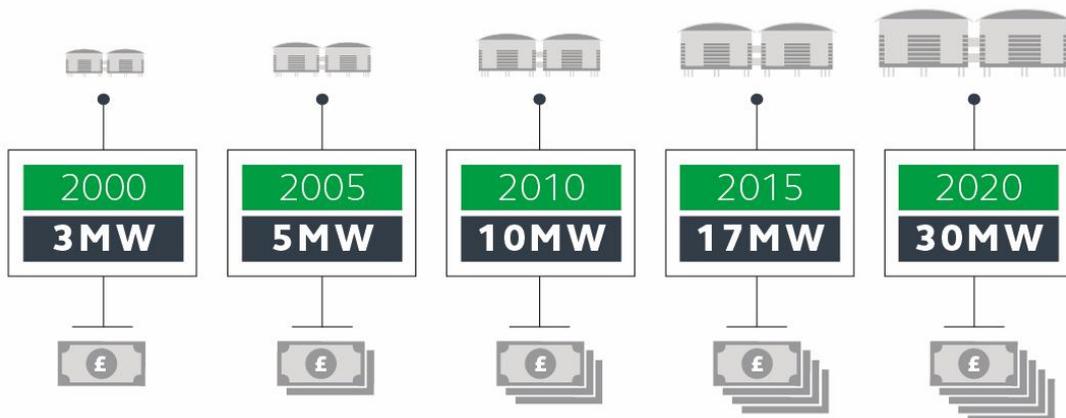
Today, the tendency is toward outsourcing the data centre in whole or in part, in an effort to concentrate resources on core business. As a result, the data centre market has grown exponentially and become more sophisticated. All current market trends including cloud adoption, virtualization and the internet-of-things (or internet-of-everything as it has been called) only point to this growth continuing at a rapid pace. Traditionally, building a fully owned data centre for the larger enterprise has been the obvious choice as it made sense financially and was often the only option. But over the years the scale at which you need to build a data centre to ensure its financial viability has become increasing larger; recent independent industry reports indicate it is only feasible if you have requirements of more than approximately 15-17MW of capacity.

For example, to illustrate the scale at which a data centre needs to be built to be financially and economically efficient, VIRTUS Data Centre's first data centre in Enfield has a total IT load of 4.2 MW.





In summary, you need to build to huge scale in order to make a data centre financially efficient. This scale has grown over five times in the past 15 years, and looks likely to continue to increase over the next 10 years and beyond.



Let's explore the pros and cons of build vs buy...

Bespoke specification

The main benefit of owning a data centre is control, including access, maintenance and future improvements. But it can also be a drawback; hardware refreshes are



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required every three to five years and data centre operation may not be a primary competency of the IT department requiring additional staff or at least additional OpEx.

Should an organization choose to build their own data centre, there is of course the advantage that they can do so to their exact specification and potentially in their ideal location. This may often appear to be an advantage over buying third party owned colocation space. However, many data centre providers now build their data centres in a modular fashion, and most are in highly optimized locations. The modular approach allows customers to be involved in the design specification and fit out of their space. This level of customer input enables a bought colocation data centre to be flexibly customised almost to the same level as building their own environment, whilst harnessing the expertise of the operator.

Financial flexibility

Financial flexibility is an extremely important consideration for any data centre deployment, whether it is an internal corporate investment, or outsourced to a third-party provider. Setting up data centres is hugely capital intensive and demanding on CapEx. But there are other often overlooked costs that add up quickly for example, fire suppression and detection and facility staffing. Beyond this, building out the facility will often necessitate a provision for growth which in the short-term will make the facility inefficient – and sometimes this leads to investing money in space which may never be used.

Even beyond raw costs, the expense of daily operation of a highly-available data centre must be taken into consideration. Does the in-house team have the experience and qualifications to keep infrastructure available 99% or more of the year? Is someone available at all hours to tackle emergencies? What about maintaining and updating the facility and equipment? Maintenance costs can add up to as much as five per cent of initial building expenses annually.

Even if it is decided that building a data centre will provide a return on investment in an acceptable time frame, colocation can still be advantageous. A company dedicated to data centre design and operation can arguably run IT equipment more efficiently (at a lower PUE) and in a more controlled environment, extending hardware life.

When buying colocation space, most providers will give their customers flexible contracts, with terms that allow for:

- i) the amount of space contracted to shrink or grow depending upon your actual requirements over time;
- ii) the amount of time the contract runs for, providing ramp up periods for installation, without having to pay full rent until everything is successfully deployed;
- iii) the amount of power consumed, billing only for power used on a 'pay as you go' plan, which maximizes budget during times of low or peak usage. These things all help to develop a more predictable expenditure model with costs that increase consistently over the life of the data centre.



Location

One other significant factor is the commitment which is made to a location when investing in your own facility, which obviously cannot change once this has been decided without significant cost. If there is any reason to want to move location, due to market or geographic changes, this is very difficult within the organization's own built facility. However, if you outsource to a colocation provider, they will often have more than one data centre and this will therefore give you far more flexibility to move your deployment to another facility – either by physically or virtually moving the servers.

Security

Five to ten years ago, it could certainly have been argued building an owned data centre was more secure, but physical, cloud and cyber security have evolved to the point where providers typically have far greater resources to invest in security than an individual company.

Availability of data centre space

Looking globally, there may be some markets that have a shortage of available colocation space, and in these instances an organization may be forced to build. In the early 2000s, this was often a likely scenario, but in 2017, there is generally a good supply of data centre space globally, with most data centre providers offering facilities in multiple countries in several continents. Today, data centre providers are building large hyper-scale data centres which allow many customers to house their equipment and enjoy shared economies of scale within a colocation environment

In the London market, availability of data centre space has been good in the past few years, with more new space being built every year. Representing around 80% of the total UK data centre capacity, CBRE says that London has 384MW of total data centre supply (at Q3 2016), which represents 44% of the total across the major European markets, which also includes Frankfurt, Amsterdam and Paris. This provides healthy competition within the market, enabling organizations to find high quality facilities at very competitive prices. It also enables organizations to deploy their servers in readily built facilities in short timeframes, which is often critical to the business and scale up with additional capacity as needed without wasted capacity or build-outs needed.

Keeping pace with the technological landscape

As the IT industry is one of the most rapidly evolving sectors in the world, the data centre colocation market needs to emulate this, as it provides the foundation to this growth industry. Data centre providers commit huge resources to R&D to ensure they their facilities are built to the highest level of efficiency and invest in experienced and certified professionals. These benefit is passed to customers, enabling them to maintain a competitive edge on their competitors. This is an advantage to organizations that choose to buy outsourced colocation space, where they can be assured that the space and power they are purchasing today is future proofed technology and efficiency for several years into the future. This alleviates



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the headache and expense of huge data centre upgrades which would need to be made on a regular basis by the organization to their own facilities, or risk becoming increasingly inefficient over the years ahead.

Cloud

More and more enterprises are now adopting a hybrid cloud model for their IT infrastructure and being able to easily reach cloud services is essential. By choosing to colocate in a third-party data centre, customers are naturally in an environment with an abundance of other customers, many of whom will be offering cloud platforms and applications. This creates a natural ecosystem where customers can benefit from the services that other customers supply. Cloud solutions from providers like Google Cloud, Microsoft or AWS may be just a cross connect away within a premium data centre that provides a cloud access solution, and this ease of access to public cloud platforms makes for a very reliable environment.

To support this, most data centres have a good selection of carriers within their facilities who have provisioned extremely dense high quality fibre networks giving customers a wide choice of connections to cloud platforms and beyond. These connections are often 100% reliable, as fail-safe options can be aligned to support any potential outages. For an organization's own build data centre, this option is generally considered too costly and so they are often made to work with one or two service providers only, limiting their reliability and potentially increasing the risk should an issue arise.

The debate about build versus buy has raged for years. Building an in-house data centre is resource-intensive and requires a good bit of experience. Once a data centre is built, it also has to be managed, updated and administered – all of which can be incredibly complicated throughout its life. The “buy” option provides the best protection against increasing data centre complexity, cost and risk, and eliminates the need to worry about uptime, technology obsolescence and future requirements. It also preserves valuable capital that can be invested in core business initiatives.

Not only is outsourcing more cost-effective, it is more scalable and flexible. It also provides nearly all of the upside of having an in-house data centre without the resource drain. More and more organizations have made the decision to move from their old and often expensive and inefficient facilities into high quality, third party owned and managed data centres. They are no longer looking to build their own data centres and many that did are seeking options to revert to a colocation/cloud solution and remove the considerable real estate costs from their businesses. The evidence shows that total cost of owning a data centre far outweighs the perceived benefits, and it looks like the argument in favour of “buy” has gained the upper hand once and for all.