

## **Data Centre – Make or Buy**

One question is asked again and again: Make or Buy? With this article, we would like to shed some light on this question and show you the options you have as a company when choosing the right decision on one of the most important topics when it comes to data centres.

### **Global development of data centres**

With the ever-changing improvements in today's technology landscape, corporate-owned data centres are always faced with the challenge of providing enough space, power and cooling. As businesses grow and scale, it's almost a foregone conclusion that they will need more data centre capacity.

Businesses across a wide range of industries – from healthcare to financial services to retail and everything in between – are accumulating large amounts of data and developing applications that require high computing power.

Not all workloads are suitable for the cloud, so they must decide whether to “Make” a new in-house data centre or “Buy” space in a colocation facility.

The question brings up the classic “Make vs. Buy” question that always comes up when it comes to providing additional capacity, IT infrastructure and operations. Does it make more sense to build a new data centre or to buy (rent or outsource the IT needs to a colocation provider)?

In order to make a decision, companies need to assess current and future infrastructure requirements. If these are variable, the cloud might be an attractive option, but if there is a need for fixed or steady growth, or if in-house hardware is needed for other reasons, building or renting a data centre is worth considering. And of course, there are various pros and cons to all approaches.

When building, companies have complete and total control over all aspects of the data centre. With purchase, companies get many of the benefits of a data centre without incurring the massive resource investment required to build their own.

Today, the trend is to outsource all or part of the data centre in order to focus resources on the core business. As a result, the data centre market has grown and evolved exponentially.

### **Market trends Make or Buy**

All current market trends such as cloud adoption, virtualisation and the Internet of Things indicate that this growth will continue at a rapid pace. Traditionally, building your own data centre was the obvious choice for larger companies, as it made sense from a financial perspective and was often the only option.

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However, over the years, the scale at which a data centre needs to be built to ensure its financial viability has increased. Recent independent industry reports show that this is only feasible if the capacity requirement is greater than about 15 MW.

In summary, you need to build a huge facility to make a data centre financially efficient. This scale has increased more than fivefold in the last 15 years and is expected to continue to increase over the next 10 years and beyond.

### **Advantages and disadvantages of “make or buy”**

Let's take a closer look together and objectively at the pros and cons of a “make or buy” approach.

#### **Location**

Another important factor is the commitment to a location that is made when investing in an own-built facility and which, once decided, cannot of course be changed without significant cost. If there is a reason to relocate due to market or geographical changes, it is very difficult to do so within your own built facility.

However, when you outsource to a colocation provider, they often have more than one data centre and therefore offer far more flexibility to move your operation to another facility – either by physically or virtually relocating the servers.

Here you should also look at the costs with a colocation provider. Because due to the new CO2 requirement (since Jan, 2021) and Germany's phase-out of nuclear energy, the operation of powerful data centres is becoming increasingly expensive over time. As a result of this change, some data centre projects have even been put on “on-hold”.

#### **Availability of data centre space**

Globally, there are some markets that have a shortage of available colocation space and in these cases a company may be forced to build. In the early 2000s this was often a likely scenario, but in 2021 there is generally a good supply of data centre space globally, with most data centre providers offering facilities in multiple countries on multiple continents.

Today, data centre providers are building large hyper-scale data centres that allow many customers to house their equipment and benefit from shared economies of scale within a colocation environment.

In the London market, for example, data centre space availability has been good in recent years, with more new space being built every year. With around 80 per cent of total data centre capacity in the UK, London has a total data centre supply of over 420 MW, which is almost half of the total supply in the main European markets, which also include Frankfurt, Amsterdam and Paris.

This provides healthy competition in the market, enabling businesses to find high quality facilities at very competitive prices. In addition, companies can deploy their servers in ready-built facilities in a very short time, which is often business-critical, and set up additional capacity when needed without wasting capacity or requiring expansion.

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## **Customised specification**

The main advantage of owning a data centre is control, including access, maintenance and future improvements. But it can also be a disadvantage. Hardware replacements are required every three to five years, and running the data centre may not be one of the IT department's primary competencies, requiring additional staff or at least additional OpEx.

Should a company choose to build its own data centre, it obviously has the advantage of being able to do so to its exact specifications and possibly in its ideal location. This may often seem like an advantage over buying colocation space from a third-party provider.

At least in Germany, there are many planners (dc-ce, TTSP) and also contractors (Mercury, SPIE) to help their customers build for this.

However, many data centre providers now build their data centres in a modular fashion and most are located in highly optimised sites. The modular approach allows customers to be involved in the design specification and fit-out of their space.

This level of customer input allows the flexibility to customise a purchased colocation data centre to almost the same level as building your own environment, while leveraging the expertise of the operator.

## **Financial flexibility**

Financial flexibility is an extremely important aspect of setting up a data centre. Whether it is an in-house investment or outsourced to a third-party provider. Setting up data centres is very capital intensive and requires high capital expenditure.

But there are other, often overlooked costs that add up quickly, such as fire suppression and detection, and facility staff. In addition, when the facility is expanded, provisions often need to be made for growth, making the facility inefficient in the short term – and sometimes resulting in money being invested in spaces that may never be used.

Even beyond the sheer cost, the effort required to run a high-availability data centre on a daily basis must be considered. Does the in-house team have the experience and skills to keep the infrastructure available 99 per cent or more of the year? Is someone available around the clock to deal with emergencies?

What about maintenance and updating of the plant and equipment? Maintenance costs can add up to five per cent of the original building costs each year.

Even if it is decided that building a data centre will pay for itself in an acceptable time frame, colocation can still be beneficial. A company that specialises in data centre design and operation can run IT equipment more efficiently at a higher power usage effectiveness (PUE) and in a more controlled environment, extending the life of the hardware.

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When purchasing or leasing colocation space, most providers offer their customers flexible contracts with terms that allow

- to reduce or increase the contracted space over time depending on actual requirements
- Specify the contract term, allowing for start-up periods for installation without having to pay the full rent until everything is successfully installed
- determine the amount of electricity used, charging only for the electricity used on a pay-you-go schedule, maximising the budget during periods of low or high usage.

All of these things help to create a more predictable spending model with costs that increase consistently over the life of the data centre. Find out more about data centre pricing [here](#).

### **Data centre security**

Five to ten years ago, you could certainly have argued that having your own data centre was more secure, but physical, cloud and cyber security has evolved to the point where providers typically have many more resources to invest in security than an individual company.

### **Technological landscape**

As the IT industry is one of the fastest developing sectors in the world, the data centre colocation market needs to emulate this as it is the foundation for this growth industry. Data centre providers devote enormous resources to research and development to ensure their facilities are built to the highest levels of efficiency, and invest in experienced and certified professionals. This advantage is passed on to customers, giving them a competitive edge over their rivals.

This is an advantage for businesses that choose to purchase outsourced colocation space, as they can be assured that the space and power they purchase today is future-proofed technology and efficiency for several years into the future.

This saves the headache and cost of major data centre upgrades that the company would have to make to its own facilities on a regular basis, or risk becoming increasingly inefficient over the years.

### **Cloud solutions**

More and more businesses are turning to a hybrid cloud model for their IT infrastructure, and easy accessibility to cloud services is critical. By choosing to collocate in a third-party data centre, customers naturally find themselves in an environment with a plethora of other customers, many of whom will offer cloud platforms and applications.

This creates a natural ecosystem where customers can benefit from the services that other customers provide. Cloud solutions from providers such as Google Cloud, Microsoft Azure or AWS can be just a cross-connect away in a premium data centre that provides a cloud access solution. This easy access to public cloud platforms makes for a very reliable environment.

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To support this, most data centres have a good selection of carriers within their facilities that have deployed extremely dense, high-quality fibre networks that provide customers with a wide range of connectivity to cloud platforms and beyond.

These connections are often 100 per cent reliable, as fail-safe options can be designed to address potential outages. For an organisation's home-grown data centre, this option is usually deemed too costly, so they often only work with one or two service providers, limiting their reliability and potentially increasing risk in the event of a problem.

### **Conclusion Make or Buy**

The “make or buy” debate has been raging for years. Building your own data centre is resource-intensive and requires a fair amount of experience. And that's not all: once a data centre is built, it also needs to be managed, upgraded and administered – all of which can be incredibly complicated, costly and time-consuming throughout its lifetime.

The ‘buy’ option offers the best protection against increasing data centre complexity, cost and risk, and eliminates the need to worry about uptime, outdated technology and future requirements. It also preserves valuable capital that can be invested in core business initiatives.

Outsourcing is not only more cost-effective, but also more scalable and flexible. It also offers almost all the benefits of an in-house data centre without the resource drain. More and more companies have made the decision to move from their old and often expensive and inefficient facilities to high-quality, third-party operated and managed data centres.

They no longer want to build their own data centres and many who have done so are looking for options to move to a colocation/cloud solution and remove the significant real estate costs from their business.

The elaboration shows that the total cost of owning a data centre far outweighs the perceived benefits, and it looks like the argument in favour of ‘buy’ has prevailed once and for all.