hyperscale in action

implementation and beyond

As a provider of hyperscale cloud services, you may be considering partners to deliver hyperscale data centre space in markets across the world. Once your company has identified the need for a hyperscale partner in a particular geography, the next stage of your journey is a highly complex implementation. This guide will examine the major phases of this process, from preparation to implementation and operation. It will provide an understanding of what the best choices and actions are at each stage, to ensure you get the most out your investment.

colt
Data Centre Services

Introduction:
Making the most of hyperscale data centre partners

The need for dedicated computing capacity with room to scale over many years is pushing the requirement for largescale new-build projects that involve an immense number of stakeholders.

Increasingly, hyperscale cloud service providers are seeking data centre capacity that's not available from traditional colocation. The need for dedicated computing capacity in a target market, with room to grow and scale over many years, is pushing the need for largescale new-build projects that involve an immense number of stakeholders in procurement, design, bid management, construction and service management.

Managing this process can be very difficult, with shifting priorities and interests that need to be aligned. Mistakes here can be magnified the further into the project you proceed.

The stakes are high, and it's important to collaborate closely from the very beginning – both as a team internally and with the hyperscale data centre provider.

Following many years of implementation experience, Colt DCS understands the common pitfalls and the optimisation opportunities available during implementation. Utilising and mitigating against these can help to streamline the process, stay within budget, and support customising the deployment to your exact needs.

Stage 1:
Preparation

Hyperscale is a big commitment. Whether increasing capacity at an existing site or partnering to build a new data centre from scratch, who you embark with doesn't just impact your ability to service customers and compete: it says something about your brand. Contracts can run into the hundreds of millions and last anywhere between five to 20 years, meaning choosing the best partner for your business, computing and technical needs couldn't be more critical.
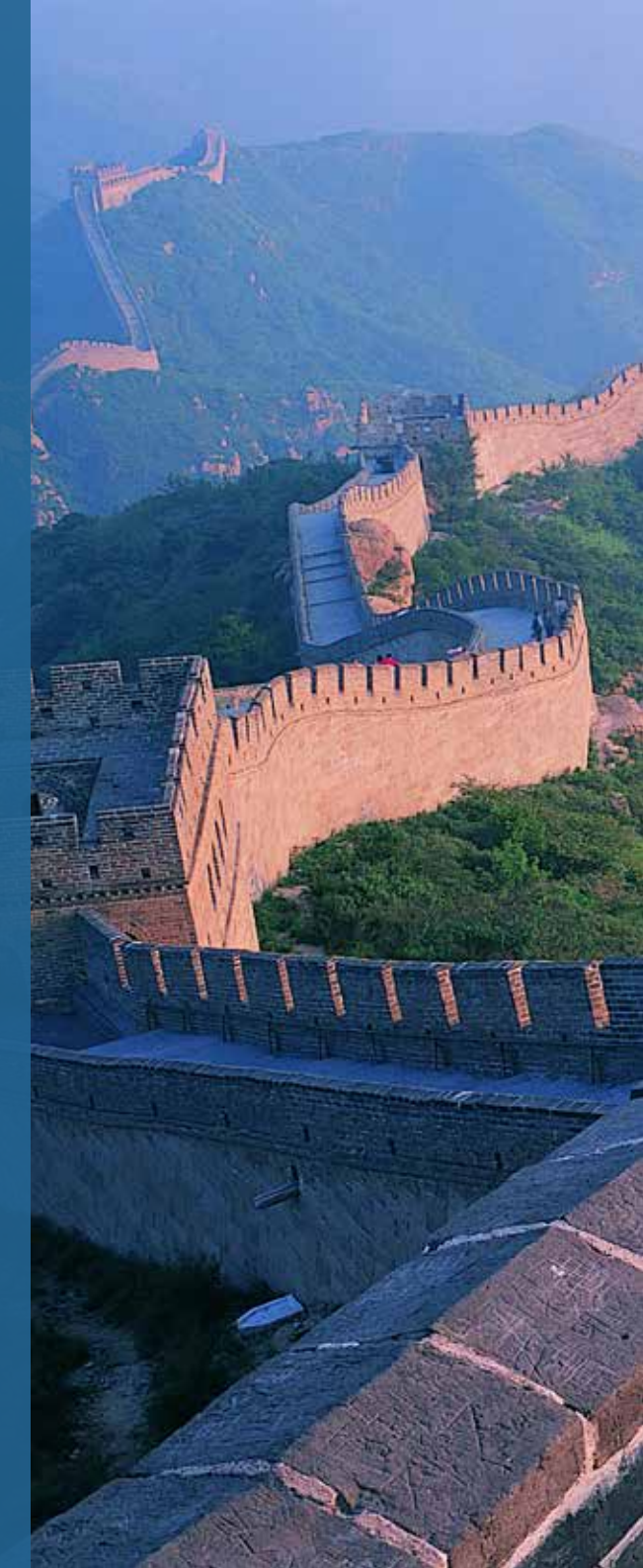
Selecting your hyperscale data centre provider involves far more than simply finding a partner in the right geography who can deliver your specification for the right price and within the set timeline.

The base technical requirements – including rack space and quality of power capacity – are the bare minimum that a hyperscale data centre provider must deliver.

As hyperscale data centre capacity gains prominence and popularity among hyperscale cloud service providers, new factors are emerging to differentiate between providers. Increasingly important points to consider are:

Flexibility

No data centre will match your specification perfectly, so the provider's ability to scale and adapt to your needs is critical.

Even if a site is pre-built, the provider should be able to change conditions like temperature levels or battery monitoring to achieve your requirements. Having backup sites in the same geography should also be considered a major benefit. If your strategy for that market needs to expand in the future, the provider will have the local capacity to help you achieve that.

Safety

Establishing common standards across your data centres is very important, especially when it comes to safety during construction. Consider the supplier's track record very carefully, enquire about previous on-site accidents during the construction phase.

Does your provider have the calibre of personnel who understand construction processes and the importance of safety? Any suggestion that a supplier may have cut corners in the past impacts your brand and potentially endangers your people.

Local expertise

Complexity and risk increases the further you are from your home jurisdiction. Planning and procurement laws, design and build practices and the complexities of the local ecosystem can cause real headaches if you lack local knowledge. The supplier has to be able to take on these risks and responsibilities, so local market experience should be evaluated and prioritised.

Stage 2:
Implementation

Once you have chosen your hyperscale partner, the implementation process begins properly. This stage is likely to be the longest and most complex part of the hyperscale deployment, made up of multiple, distinct phases.

Phase 1: **Contracting**

Phase 2: **Design**

Phase 3: **Construction**

Phase 4: **Commissioning and testing**

Phase 5: **Installation**

Phase 1:
Contracting

This is the crucial stage where reporting requirements and Service Level Agreements (SLAs) are agreed, with penalties imposed for failure. Transparency from the provider on what it has the ability to deliver is crucial.

Yet the customer should also be clear about their requirements from the beginning – anything not agreed at this stage will be more difficult to deliver down the line.

Phase 2:
Design

Regardless if the site is existing or a new-build, no design specification is ever complete until construction is finished. Needs and requirements will change over the course of the project, so it's important for both parties to work together to ensure the site starts delivering value from day one. Be open to changes and recommendations during this process; a great design team will think of efficiencies no one else has considered.

However, site limitations can impose themselves and workarounds will need to be found to keep on-schedule and within budget. Sometimes power densities will be required that the hall wasn't designed for. The provider and customer could consider hot aisle containment, compensation space or even in-row cooling to mitigate this.

Other times there may not be enough physical space or Mechanical and Engineering (M&E) capacity for the customer, leading to discussions on replacing or adding components like Uninterruptible Power Supply (UPS) or Remote Control Units (RCUs).

Teamwork is essential

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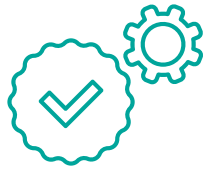
Phase 3:
Construction

Many hyperscale cloud service providers are choosing to contract through partners to build their data centres. This offers an enhanced level of customisation over the design, and reduced risk compared to undertaking the construction themselves.

Direct customer participation can be difficult to achieve in a market where you don't already have a presence. Yet, customer participation is still crucial during the construction stage of any new-build project.

Delays and timeline challenges can raise tensions in the relationship, but they can be easily resolved by requesting a customer ramp up. Not everything will be delivered on day one, but will follow the requested ramp up schedule.

Phase 4: Commissioning and testing

One of the most important stages from a quality and safety perspective is the commissioning stage. It's key to ensure the hyperscale data centre partner is adhering to best practices throughout the commissioning and testing process. Collate manufacturer guidelines for all equipment on site and make sure the provider is carrying out proper testing on everything – from batteries loading to discharging times and safety exit lights working when the power is cut.

Experienced commissioning professionals should be present at the manufacturing facility when the final equipment is tested. There should then be another round of testing once infrastructure is delivered and hall-ready.

These tests should stress the equipment at 100% (and more) capacity for both electrical and cooling load to test the entire system.

Better safe than sorry

Ensure guidelines are being followed throughout and testing is taking place - from batteries loading to discharging times and safety exit lights working when the power is cut.

Phase 5:
Installation

Once all planning, preparation and potential construction stages are complete, the actual installation begins for you as a customer. It lasts as long as it takes to install all racks, cabling and associated hall infrastructure at the new site, in order to provide your cloud services. However, it's in the interest of both sides to keep the process open-ended in case unexpected changes or delays arise.

It is likely that a phased implementation works best for you. Instead of waiting for all the capacity agreed under the contract to be installed, the capacity can go live bit by bit as the data halls are built. You can access your target market sooner and scale up over a period of time. The phased model is becoming the standard approach in the hyperscale market.

However, it can mean the implementation period turns into a consistent rolling process that can last a number of years. While it may only take 6-9 months for the first data hall to become operational, it may take 2-3 years for the full capacity to be fulfilled, with further extensions possible as more space becomes available at the site.

The complexity of a project increases with time, so a consistent, rolling process requires a greater degree of supervision and collaboration. Constant contact is essential throughout the process to ensure SLAs are being met. Where possible, the provider should also establish a transition manager to be the focal point of client requests and to ease this process.

Stage 3:
Operations

Even while the implementation period is ongoing, the operations stage begins as soon as any live services are being delivered on site. While both processes are concurrent, maintaining separate teams for project and operations is beneficial to reduce complexity.

The provider's service manager should be responsible for delivering service reports and dealing with customer requests for live operations. Make sure they are holding regular service meetings, reviewing operations and updating you on any changes to the preventative maintenance plan.

As always, holding regular audits and drills are key to ensuring the provider is upholding their SLAs and responding to issues in good time. However, a balance with the provider needs to be achieved. Fair notice should be given and a set number of instances should be agreed before a drill is held.

When a security incident is reported in the wider data centre market, you should also ensure your provider has acted swiftly to assess the vulnerability on the site.

Conclusion:
A relationship is built on trust

No matter how skilled your and your partner's implementation team are, there are steps available at every stage of the process – from choosing your provider to operations – that will streamline the process, lowering costs, shortening time to delivery, and ensuring reliability.

With the rise of the Internet of Things (IoT) and connected Building Management Systems (BMSs), the wall between customer and provider has broken down. Everything the data centre provider knows about the site, you know too.

This has improved efficiency and transparency, but there is still the need to respect boundaries and allow the provider to operate the site effectively. The key is to choose a hyperscale data centre partner you can trust and collaborate closely with for years into the future.

Our Hyperscale Data Centre Locations

EUROPE
Frankfurt West
London North
London West
Paris South West
Rotterdam

ASIA
Mumbai
Osaka
Tokyo Inzai Campus
(Inzai 1, 2, & 3)

When it comes to data centres, scale matters.

At Colt Data Centre Services we are experts in hyperscale. With over 20 years' experience, we have been designing, building and operating data centres since 1992.

Considered both global and local, we have multiple sites located across Europe and Asia Pacific.

From 24/7 manned environments to intelligent security monitoring systems, we ensure the security of our client's infrastructure is paramount.

100% carrier neutral, our connectivity solutions offer access to global and multi-cloud platforms on demand.

We are hyperscale.

Accreditations
ISO 27001, ISO 14001

Contact Us

📞 **0800 358 3598**

✉️ **dcsinfo@colt.net**

🌐 **www.coltdcs.com**

▶️ **Colt Data Centre Services**

🐦 **@ColtDataCentres**

in **Colt Data Centre Services**

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