

Selecting the right Data Centre Co-Location Partner

A guide for IT Professionals

wanstor

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Introduction

For many businesses, a co-location data centre is the way forward for hosting, securing and connecting IT infrastructure as data storage and management demands increase. With the data centre co-location market seeing accelerated growth over the past 2 years, Wanstor believes customers should understand that not all data centre co-location providers are created equal.

Quite often, the difference between what businesses sign up for from a partner and what they actually receive has significant gaps between perception and reality. By ensuring that the basics are agreed in terms of service expectations and what the co-location data centre will provide, the difference between a successful partnership and a stressful one can be dictated from the outset.

As the data centre co-location market has grown, prices from some providers have dropped significantly. This may lead businesses to believe that all co-location providers offer the same level of service. We have found that this assumption may prove catastrophic for businesses, resulting in low system availability and ongoing disputes over unnecessary issues. This paper provides guidelines and areas of consideration for those within a business actively considering options on data centre co-location facilities.



At a high level, Wanstor recommends that IT Managers consider the following points before deciding on a co-location provider:

- Co-location is not just about facility; it is about the relationship with your provider. Co-location contracts often extend over a long period of time.
- Location of the facility must account for both security and resilience - layered internal and external security, resilience to disruption such as weather, cooling, or power.
- Ensuring your chosen co-location partner has acceptable levels of service management and offers the support that your business requires. Do not agree to standard terms without vetting these first, and always ensure that a dedicated service manager is available for advice and help.
- Prospectors should see co-location as a partnership. We suggest that buyers prepare their required terms and conditions with great care and attention, so as to circumvent prospective issues or pitfalls in advance. A 'Penalties-First' financial approach is not ideal.
- Keep in mind that once up and running in one co-location facility, moving equipment to another is never simple.
- Any move will require business workflows be switched off while the IT equipment is transported. A parallel system may be built at the new facility with new equipment, but even with this option in place, careful consideration must be given to logistics when considering any move to co-location.
- The wrong buying decision can be highly detrimental to an IT team's reputation. If data is not accessible to both users and the business in a timely, secure and relevant fashion, blame may quickly fall on those responsible for choosing any co-location facility.
- Not all co-location providers own the facility from which they provide services. An IT Manager may actually be signing a contract with a third party who has little or no control over how the facility is managed, and who may prove powerless in rectifying or even addressing issues that may occur.

**A 2016 survey revealed 20%
of all IT assets are housed in
colocation data centres**

The decision to move from in-house data centres to a co-location facility should not be a difficult one. With increasing demands for computing power, additional complexity in data storage and operational costs rising, a data centre solution which is safe, secure, reliable and scalable for a business is paramount.

The good news is that the right co-location partner can provide all of these things. We believe that the key to success lies in building a relationship with a trusted co-location provider who will work with you to support your business, both now and into the future.

Thinking about the move

For many IT teams, the incentives for co-locating data are growing as demand on existing IT infrastructures increases. Reasons for this include the advance costs in building a private data centre (which can be prohibitive), as well as the cost of maintaining it to meet the changing needs of the business and new technical architectures.
















As we've noted, choosing a co-location partner can and will mean the difference between success and failure.

In theory, an IT Manager can simply relocate if they are unsatisfied with a provider. In practice, it is not that simple; the initial decision to co-locate has long-term implications. Many providers may offer a great deal at the outset but deliver diminishing returns as time passes, with issues only surfacing after contracts are signed and platforms are installed.

As with any business partnership, it is vital to truly understand the implications of any agreement and the impact that this may have on a businesses future development. Due diligence is crucial to ensuring that selected providers will meet all IT requirements of both the facility and the platform therein.

At Wanstor, we believe that co-location data centre providers can only deliver on their promises when communication points between all parties are seamless, and a relationship can be built on trust.

figure 1 : Comparison of Colocation, Managed Hosting and Cloud

| HOSTING TYPE | VARIANCE | MAINTENANCE & SUPPORT | FLEXIBILITY | SERVER CONFIGURATION | COST |
|-----------------|---|--|---|--|--|
| COLOCATION |  DIY Environment with clients managing applications, hardware & server configurations |  24-7 onsite monitoring identifies issues and notifies clients on discovery |  Offers more flexibility than managed hosting as client has complete control over their data |  Customers can install bespoke hardware, software and custom server configurations |  Initial outlay can be expensive as clients must procure both hardware and software |
| MANAGED HOSTING |  Offers all components & services required by clients to manage their online activity |  Data Centre has single clients with tailored access to hardware & bandwidth capacity |  Non-generic solution with flexible service matching each clients budget limitations |  Specialist teams check each individual server configuration matches client expectations |  Costing based on client usage without need for investment in costly infrastructure |
| CLOUD |  Service provider owns all equipment & will maintain & upgrade managed infrastructure |  Service Provider is responsible for all Infrastructure support & maintenance |  Least flexible as certain Providers must also comply with specific standards / regulations |  Client cannot dictate either tools or method used for data handling or data backup |  Greater savings with Cloud hosting due to minimal hardware & software expenditure |

By asking the right questions of any prospective provider, it may prove possible to circumvent nasty surprises further down the line or identify an incapable prospect in advance.

Where technology solutions and a relationship built on trust converge, businesses enjoy stronger foundations in this technology and can focus more effectively on long term strategic goals.

Understanding the importance of a full co-location service

At Wanstor we find it to be very common across data co-location sales cycles that quality of pre-sales is better than service delivered post-sales. Given the long term nature of a partnership, it is generally more desirable to deal with providers that offer access to their full Sales, Service Management and Technical teams.

This will enable testing in areas such as high availability, security, equipment used within the co-location facility and underlying design of data centres. We believe buyers should be wary of third parties selling data centre co-location space.

Quite often, an owner of large facilities may desire greater levels of occupancy but cannot source smaller clients in numbers that will achieve this aim. It may sell off or lease the facility to third parties who rent smaller areas to their clients. You now face a three-tiered chain of ownership, comprising facility owner, third party sales engine and you, the customer.

In this case you may find yourself signing a contract with an intermediary - someone who does not have any control over how the facility is managed or over strategy pertaining to its future.

The result of this may be that if issues should arise during a contract period, they can quickly escalate into business critical problems. Management of the supplier may thus prove difficult, as you will be dealing with a third party sales engine and not the facility owner. Will your voice be heard in this chain?

We suggest that buyers ask the ownership question well in advance so that they have a clear idea of position within any prospective management chain before procurement.

The role of Service Management

A direct relationship between you and those responsible for addressing any issues within a co-location facility is essential.

This requires a cohesive service management team and a healthy working relationship with partners. Trust between partner and customer is of paramount importance. For effective service management, Wanstor recommends that buyers make sure prospective providers will meet the following criteria:

Dedicated or Named Service Manager : always ensure that you deal with the same people moving forward. If a major issue should present itself, it is preferable to be dealing with a trusted representative having intimate knowledge of the relationship. Service managers should also keep IT counterparts within the business abreast of events at any co-location facility, and be sure to flag prospective issues well in advance.

Regular reviews : Although it is your data being stored in any co-location facility, not all responsibility for this data should fall upon your internal IT team. Any good co-location provider will schedule regular reviews so that you may review facility performance, discuss possible improvements and address any ongoing issues.

At Wanstor, we believe regular review meetings should have one clear purpose – improving the service you receive as a customer.

Information & Communication : ensure that the service manager keeps relevant stakeholders aware of changes, service updates and potential opportunities in order to improve the service offering. Here at Wanstor, we find that maintaining strong communication with stakeholders represented by both client and provider eliminates fragmented discussion and support. Only someone with full visibility can ensure that the platform is performing optimally.

Additionally, log all interaction with partners so that trends and events can be identified and addressed accordingly.

Response Rate : There are two aspects to how fast an IT Manager can expect a response to an issue. One is the service level agreement (SLA) - if the defined response time is not met, a formal complaint can be raised. This is a reactive approach to issues - better to ensure that your provider consistently employs proactive staff. Interrogate their tool set, problem resolution process and pre-emptive investigation procedure. Dealing with a provider who focuses on avoiding major issues is more valuable than dealing with one handling service interruptions on a regular basis.

Disaster Planning : Following any failure, ensure that the provider has appropriate plans for repair within timescales beyond agreed terms within your SLA. Service Managers should detail outage provisioning in advance of agreeing any contractual obligation. Each minute that your IT platform is inoperative is a minute closer to losing both customers and revenue.

In short, make sure that your IT team are fully aware of and understand any disaster recovery plan for your co-location facility.

Advice and Proactive Work : Both during and outside of planned customer interactions, service managers should provide useful information such as proposed changes to the facility.

Reporting : Performance reports can be too generic for a business' needs. Work with providers to develop meaningful reports covering information planning, service levels, resources and managing physical or intellectual property risks.

Location and security

The physical location of data centres is often overlooked. Preparation against flooding or natural disasters is one thing, but even facilities apparently well positioned may face issues - particularly security. Although the facility itself may meet basic security requirements, ensure that the location enhances security.

Facilities within larger environments such as controlled business parks (featuring layered security such as CCTV, patrols, enhanced personnel vetting and active perimeter security) are ideal, offering greater peace of mind when considering data security. Dedicated co-location environments will provide 24-hour security as standard.

The value-added ecosystem

Data centre ecosystems can help businesses connect within the facility, accelerating their journey to hybrid cloud. Advanced co-location providers understand the role they play in using IT to support their customers businesses. By investing in ecosystems that connect customers, these providers encourage mutually beneficial communities covering key sectors such as finance and media.

IT Managers will find they can connect directly to others within the ecosystem, improving performance and efficiency through the digital supply chain, and supporting hybrid infrastructure strategies via the ability to trial and flex into cloud services with unrivalled speed and security.

At Wanstor, we provide a number of such opportunities for customers in co-location facilities. This helps to quickly and safely expand business by leveraging these communities in order to connect directly with target markets.

Putting the basics in place

How does a business ensure the right co-location partner for their business? Technical aspects often dominate this discussion. Consider how a facility performs against its selection criteria. These criteria should include:

Good Basic location : Is the facility built in an area which could cause shutdown due to external forces? Could a major incident outside of the facility inhibit your staff or owners in travelling there? Is the location easily accessible to at all times?

Relevant layered security : Is CCTV in operation? Are anti-crash devices (such as bollards) in place? Is there a secure internal wall between any windows and the main facility itself? An insecure data centre means your content is open to security threats.

Entrance & Internal security : Is reception manned by professionally trained personnel with regular credit vetting and thorough personnel logging? Is access to client data tailored to only named people? How is unauthorised access handled?

Energy : Is there capacity in distribution systems to meet power density needs? How are additional power requirements met?

Are there sufficient energy provision capabilities, uninterruptable power supplies (UPS) and auxiliary generators to maintain data centres at all times, even with 100% occupancy?

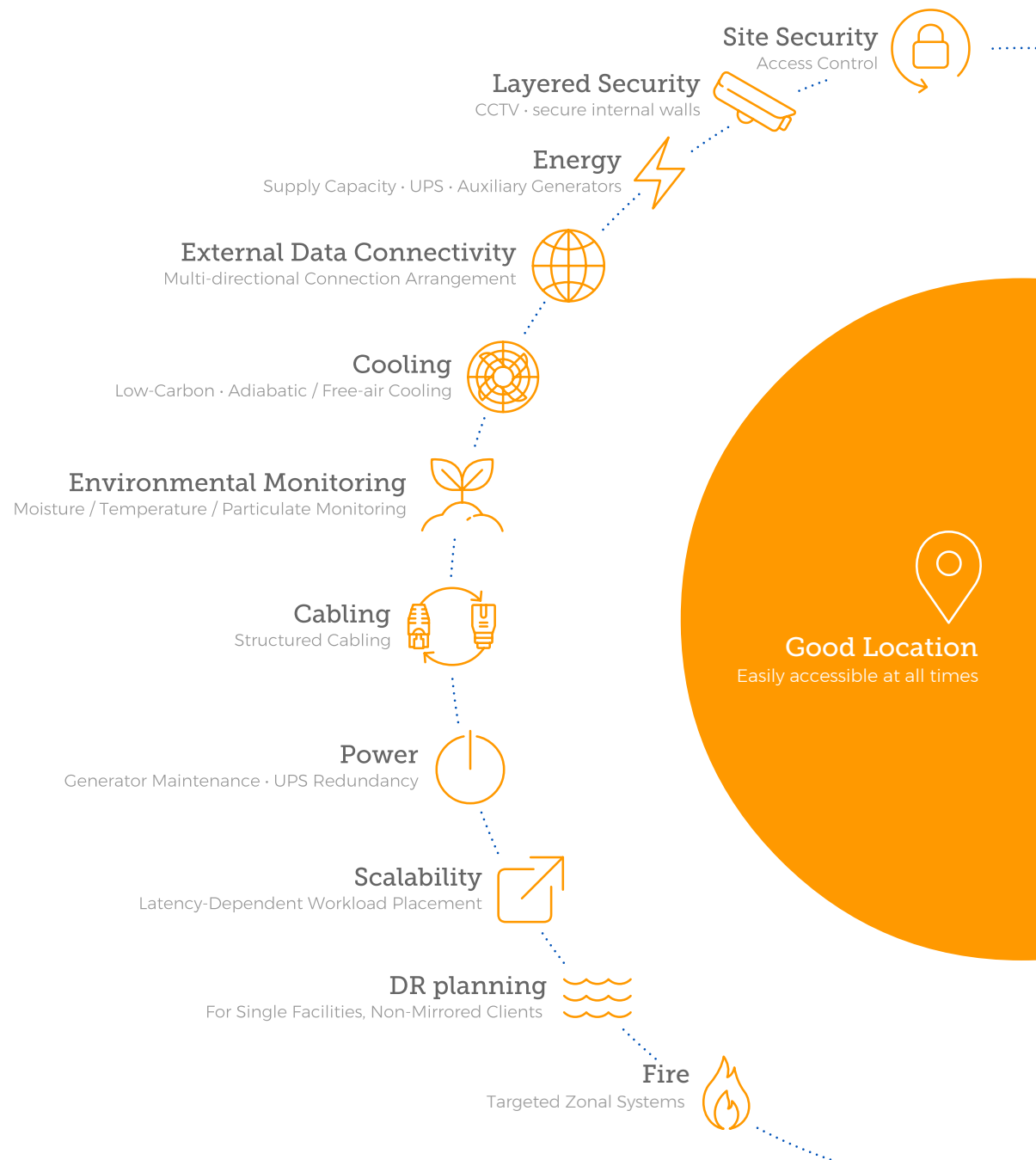
External data connectivity : Which providers are available for network connectivity? Are the main connections provisioned through one set of cables and fibre with a single point of failure, or are they distributed in a multi-directional arrangement?

Choosing providers with multiple connection points ensures higher levels of availability at all times.

Cooling : What type of cooling is available? Is it capable of meeting expected equipment densities and heat profiles? Is it low-carbon emissive? Is a targeted low-energy cooling system such as adiabatic or free-air cooling in place?

How is the provider driving down the environmental impact of cooling? If costs are reduced, do you as the customer see any benefits in terms of price for services paid?

figure 2 : Basic considerations for Facility Selection Criteria



Environmental monitoring : Are aspects such as moisture, temperature and particulates all monitored? What are the trigger points for intervention? What types of intervention will be undertaken? It is far better for a co-location provider to monitor and intervene long before equipment shutdown is required.

Cabling : Is structured cabling mandated across the facility? Poor cabling can lead to many problems, such as blocking of cooling airflows from wiring in sub-floor spaces and hotspots caused by looped mains cables.

Co-location providers should advise upon and exhibit suitable knowledge of structured cabling.

Power : How are supporting generators provisioned? The important question is whether they will actually provide enough resilience to meet demand in case of outage.

To minimise the risk of damage through unplanned downtime, check that a facility's generators are tested regularly and appropriately, that the UPS is truly redundant and that all the supporting systems are checked and maintained.

Scalability : The majority of co-location data centres currently run at less than full capacity. However, this does not necessarily mean that space will be available when required; the actual location of available space may vary, as well.

Workloads dependent on latency must be located physically adjacent to new space in the facility - this may be entirely dependent on how flexible the facility provider proves to be.

It's important to fully understand your co-location provider's Disaster Recovery plan, and how long it may take them to restore order

Disaster and recovery planning : Co-location providers with multiple facilities can offer enhanced business continuity via mirroring. However, for those with a single facility or where clients choose not to use mirroring, any major issue may require a disaster recovery (DR) plan.

Fire : Even with early-stage monitoring, electrical faults can result in fire. Providers should have a targeted zonal system in place; water mist and other preventatives should be safe to deploy and use, and easy to replace.

Differentiating your co-location partner

Having covered the basics requirements of a co-location partner, it's important to stress that in this highly competitive market, any provider should be expected to go the extra mile. We recommend in light of this that prospective or existing co-location providers are polled extensively concerning the following requirements:

Contract flexibility : Some co-location contracts force customers to assume all risk. The key to any agreement is both flexibility and ensuring that host and client are involved in decision making and planning for the future.

Pricing : Price should not be a decider when entering into an agreement - selection on price alone may result in unexpected costs over the long term. A low startup price can mean higher operational costs in the long run if the basics are not covered.

We suggest that buyers list requirements beforehand, then demand itemised pricing to ensure that these requirements are going to be met. Initial CAPEX and ongoing OPEX expenditure can be calculated based on this feedback.

Goal Alignment : It should go without saying that any prospective or existing co-location provider should support a business's goals - particularly when considering pricing and service levels.

Enhanced and neutral connectivity : Whilst multiple connections may be a necessity, neutrality of connectivity around choice of carrier or cloud provider gives users the most flexibility and competitive terms. As availability of IT systems is based directly on availability within the facility, using multiple providers of your own choosing should be non-negotiable.

Enhanced security : With any co-location facility, security has to be a major concern. Ensuring a business's intellectual property is adequately secured means granular monitoring at multiple levels, along with full auditing and reports on activity.

We recommend identity checks as a first line of defence, followed by the use of multi-level authentication including biometric tracking and RFID tagging of equipment where appropriate.

Location : Governance and performance are key here. Where minimum latency is required, distance between a facility and the end user may incur unacceptable delays in response time.

Relevant accreditations : Independently awarded accreditations provide businesses with assurance that best practice has been followed. ISO 27001 outlines processes designed to meet specific security requirements, while Visa processing accreditation and PCI DSS supports robust payment card data security.

Any co-location partner should have ISO 27001 and a business impact level three facility (according to government standards) as a minimum.

Power densities : Ensure that there will be sufficient real estate for higher equipment densities in future, and that the facility owner plans to stay ahead of power densities by way of updating distribution systems regularly.

Effective IT ecosystem : Advanced co-location providers understand their supporting role by investing in ecosystems around key areas such as cloud, analytics and operating systems. Promoting availability of co-located service providers not only accelerates their business with new partners and clients, but also enables businesses to connect directly to various service platforms.

Management systems : Not only should service providers be able to demonstrate adequate visibility of key elements within any facility, they should be able to supply information for integration into existing systems management tools ensuring the platform is designed and running optimally.

Maintenance : A data centre's capability and performance can be seen as a snapshot in time. What may now be considered a bleeding edge facility will be considered average in the near future. Changes to the supply of energy and management mean that entire facilities require regular review.

Is 100% uptime standard operating procedure? Are equipment maintenance and replacement schedules are in place to minimise the risk of failure at key times?

Check the PUE rating : Standard co-location facilities may have PUE ratings of around 2.0 and above - efficient infrastructure design found in purpose-built data centres means that energy demands (cooling in particular) can be reduced. The lower your PUE, the lower your daily costs.

$$PUE = \frac{\text{Total Facility Energy}}{\text{IT Equipment Energy}} = 1 + \frac{\text{Non-IT Facility Energy}}{\text{IT Equipment Energy}}$$

Space Management : Upscaling racks or rows in a facility may be one thing, but growing your co-location presence optimally is a different proposition - especially with latency dependent applications.

A good co-location provider should ensure growth right out of the starting gate. The physical location and ownership of any facility may also have implications on governance; buyers should ensure that governing laws meet their businesses governance, risk and compliance policy, and obligations.

Customer-centric approach : A client-first approach to your relationship is critical - minor details make all the difference to any service that you receive. A good co-location provider should be proactive in helping a customer get the most out of any contractual agreement, suggesting where improvements could be made on security, cost, environment and risk on a regular basis.

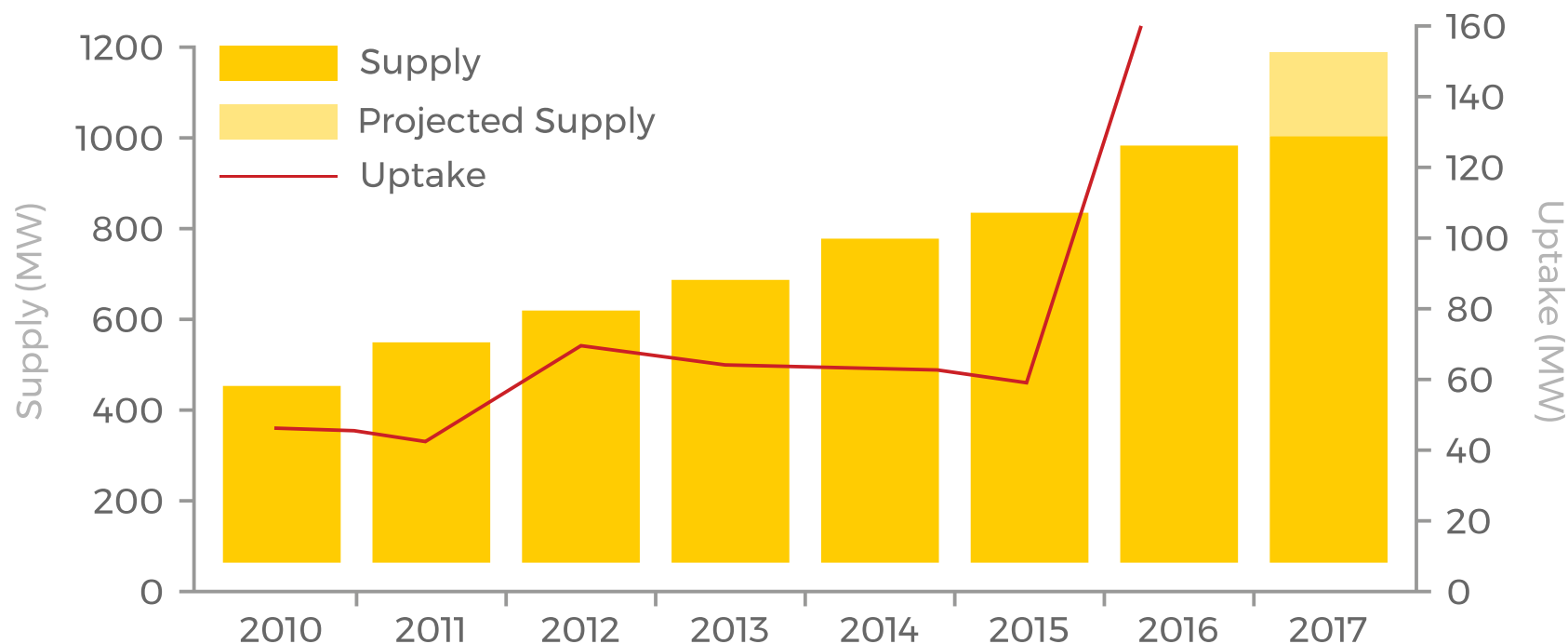


figure 3 : European Colocation Power Supply, Projected Supply and Uptake (Q2 2017)

Final Thoughts

It should be clearer now that, although the co-location market presents an attractive proposition to businesses wanting to host IT externally, not all providers are created equal.

A buyer's decision cannot be based singularly on price, standardised terms, security, or environmental factors. IT Managers should ensure that they examine co-location providers thoroughly, and consider criteria outlined within this documentation as basis for their decision.

Selecting an agile co-location partner is paramount. Get this wrong and a raft of problems such as poor platform availability, substandard performance of applications and a lack of IT scalability await you. Get it right, and co-location facility partnership offers your business a gateway to uninterrupted IT service delivery.

Wanstor can help at every step of this journey. We employ experienced architects, engineers and service managers who can advise on, design, deploy and manage a business's co-location data centre, from service strategy to delivery and into the future.

