

Demand for Data Centers and Advantages of Colocation in Hong Kong

数据中心需求与主机 托管服务在香港的优势

The lack of data center capacity in Hong Kong has long been a key issue of concern in the industry. Although data centers and the telecommunications industry have already communicated the issue to the Government three years ago, the Government has paid little attention to the voices. On the contrary, a report of industry-related policies commissioned by the Government pointed out that the supply of data center capacity in Hong Kong has well met its demand. The report was quite a surprise to the industry as it went into a total different direction of what the industry is experiencing.

It is essential to understand the high requirements of meeting international standards in selecting data centre locations. The target location has to necessitate the supply of a high capacity of electricity, and will need to be connected with the network of all major telecom carriers; sufficient space will have to be allocated within the buildings for optical fibers and at the rooftop for installing satellite communications equipment. Structurally, high ceiling, heavy floor and elevator loading are essential. Even the extent of vibration of the building caused by traffic has to be considered. Constructing data centers is a heavy capex and long term investment which often requires a long-term lease of more than 20 years. The ownership of industrial premises in Hong Kong is mostly scattered, making it difficult to consolidate into long-term lease terms. Furthermore, other tenants which operate different types of business may not make suitable neighbors with data centers.

In face of limited land supply and constraints of land use in Hong Kong, finding suitable locations to build data centers becomes an even more daunting task. With a strained supply of Hong Kong data center services, the mounting cost has forced major international clients, especially those in the financial industry, to relocate part of their data centers to Singapore or Shanghai.

Having realized the limitations of establishing data centers in Hong Kong, the Hong Kong Stock Exchange (HKEx), for example, will further consolidate the existing data center and develop modern facilities in order to meet the market's development and its business expansion in the future. The HKEx has planned that its next-generation data center, to be built in Tseung Kwan O Industrial Estate, will have its total floor area expanded from the originally planned 13,300 sqm to 31,400 sqm, which is more than double of the initially planned figure, lifting the investment from about 700 million to about 1,000 million. HKEx has even taken the initiative to investigate colocation and rental services to enable the placement of brokers' servers in its data center, allowing resources to then be allocated according to its own needs and connect to its own trading system for enhancing the stability and transaction speed of brokerage transactions in the future.

In view of the constraints and supply shortage of land in Hong Kong, the rise of colocation services has provided an alternative to building data centers to the industry.

With the growing popularity of colocation services in recent years, many enterprises have gradually recognized the benefits of colocation. In addition to the gigantic costs of constructing data centers, daily management of center operations also involves huge expenses, including equipment installation costs, electricity expenses, maintenance costs, management fees, transportation costs and so on. The emergence of colocation services has offered a handy solution that can remove all such troubles for businesses at one go. Colocation service providers focus on offering services to enterprises on demand and utilizing 24x7 monitoring services conducted by professionals to ensure smooth operations of all equipment. As the equipment is entrusted to colocation service providers, enterprises can spare themselves from developing expertise and training IT talents, and concentrate instead on investing resources in products or services, for them to achieve improved business results with minimal costs.

To cater to different customer needs, colocation service providers will customize solutions to provide comprehensive support services for customers, such as data backup and network monitoring. Colocation is a way to help companies to manage their growth. For those enterprises which are undergoing rapid growth especially, colocation is a very suitable means of reducing risks and investment errors.

All in all, the most important thing is to choose a high quality and professional colocation service provider which can provide top tier infrastructure and 24x7 professional technical support services, allowing enterprises to enjoy the most stable and secure operating environment at all times, and most importantly, 100% uninterrupted services.

香港兴建数据中心的空间不足一直都是业界所关注的重点问题。虽然早于三年前数据中心及电讯业已向政府反映兴建数据中心空间不足的问题，但政府却忽略问题的严重性，更于业界相关政策咨询委员会的报告中指出香港数据中心空间的供求已达致平衡，这明显与业界所见所历的完全两样。

需知道顶级国际水平的数据中心对选址要求很高，地点要有足够电网供应大量电力，以及与各主要电讯商接驳电讯网络；楼宇内部需有空间配置大量光纤，天台需有足够的空间安装卫星通讯仪器；楼底要高，电梯要能够运送大型机器；建筑上，楼层要能承受大型机器的重量，地面震荡要轻微等等。建设数据中心是大规模的投资，租约期往往要求长达二十年以上，而香港工厂大厦的业权大多分散，难以统一长期租用，其它租户经营的业务又有可能不适合与数据中心为邻。

面对香港的土地供应有限和用地限制，要找到合适的位置兴建数据中心只会难上加难。香港数据中心服务供应紧张，价格上升，已迫使主要的国际性用户尤其金融业把部分数据中心搬到新加坡甚至上海。

以港交所为例，由于意识到在香港兴建数据中心的限制，为了应付未来市场发展及业务扩充，港交所将再进一步整合现时的数据中心及发展现代化设施。港交所计划于将军澳工业邨兴建的新一代数据中心将会增加其总楼面面积，由原本约13,300平方米，增至31,400平方米，增幅超过一倍，比原本所计划的大一倍多，所涉及的成本由原来约7亿元，增至约10亿元。港交所现在更积极研究提供主机托管 (co-location) 及租用服务，使经纪的服务商可以放进港交所的数据中心，然后按自己的需要投放资源，再接取入个别的交易系统，以增加经纪日后交易的稳定性和交易速度。

针对香港的土地限制和供应不足，主机托管服务 (co-location service) 的掘起为业界提供了兴建数据中心以外的另一选择。

近年来，主机托管服务逐渐普及，很多企业都逐渐认识到主机托管及租用服务的好处。兴建数据中心的费用高昂，管理数据中心的日常运作更是一项长远而庞大的开支，包括设备装置费用、电费、保养费用、管理费用和交通费用等等。但主机托管服务的出现便为企业们一次过解决这些烦恼。负责提供主机托管服务的公司由于经营独立，故能较专注地为企业提供主机托管服务，并由专业人士提供24小时的监察服务以确保设备24小时运作顺畅，不会因任何外来因素而影响企业的日常运作。将设备交给了给主机托管服务提供商后，企业便可节省发展专门技术和培训IT人才的费用，专心投放资源于产品或服务上，让企业以最低的成本达到显著的效益。

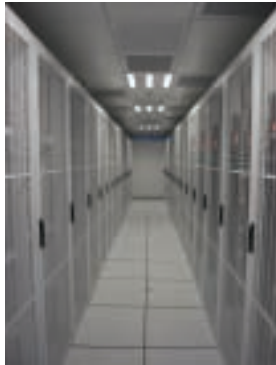
托管服务提供商由于需要照顾不同客户的需求，都会量身订造解决方案为客户建立完善的配套服务，如数据备份和网络监控等。托管方案是一种有助于企业管理成长的方法，特别是对那些正处于快速增长阶段的企业，他们都非常适用这种方案以降低风险及减少投资的错误。

总而言之，最重要的便是能够选择一家高素质及专业的主机托管服务提供商，提供优质的基础设施和 24x7 的专业技术支持服务，让企业可以无时无刻都享受到最稳定及安全的作业环境。即使遇到任何系统上的问题，服务商都能主动监测并在指定的时间内修复，让企业享受100%不间断服务。



Cold Aisle Containment

冷通道控制



According to the Green Grid, cooling equipment consumes approximately 63% of the power in a data center, followed by IT load. Presently, power is very expensive, and as power consumption increases, it results in more heat generation in data center and increased carbon emissions. Any energy savings would result in substantial monetary savings for the organization and reduction in carbon footprint.

At the recent Data Center Energy Summit in San Francisco, engineers and data center professionals convened to share case studies on energy efficiency. Data center studies varied, but one green data center tactic stood out: hot-aisle/cold-aisle containment.

CRAC cools a limited area/pocket in the data centre. Since the Cold Aisle is isolated from the rest of the data centre, cool air in the aisle remains cooler for longer. Thus, the power consumption of the CRAC decreases.

Advantages of Cold Aisle Containment:

- Uniform temperature across cabinet height
- Improve ventilation
- OPEX goes down
- Increase in MTBF of equipment

Other than the high density of heat load, cooling problems are commonly a result of the cold air in the room being used ineffectively. It is agreed by most specialists that the introduction of cold aisle containment is a simple and yet a very effective solution.

根据 Green Grid 联盟的统计, 空调设备占数据中心能源消耗的 63%, 其次是计算机负荷。现在, 能源价格非常昂贵; 当能源使用量增加、释放出来的热能亦会增加, 最后导致二氧化碳排放量增加。任何节能方法都可以帮助各机构减少支出以及碳排放。

最近于三藩市举行的数据中心能源峰会 (Data Center Energy Summit) 中, 工程师及数据中心的专家齐集会议, 分享节省能源的成功个案。他们于众多个案中得出一个结论: 热通道/冷通道控制。

计算机室空调系统 (CRAC) 可以令数据中心部分地方的温度减低。这是因为冷通道将数据中心的其它地方隔离, 通道中的冷空气令冷却器延长减温时间, 所以CRAC的能源使用量便能够大幅减少。

冷通道控制的优点:

- 令通道内不同高度的温度更均衡
- 改善散热
- 营运成本减少
- 延长设备寿命

数据中心内的冷却问题除了因高密度的热负荷造成外, 往往亦由於未能有效地使用空调机提供的冷空气。因此, 大多数专家都认为引进冷通道控制是一个既简单又非常有效的解决方案。



newTECH 创建集团
GROUP

亚太区总部 Asia Pacific Head Office

香港九龙湾常悦道3号企业广场二期15楼

15/F Enterprise Square Two, 3 Sheung Yuet Road, Kowloon Bay, Hong Kong

Tel: (852) 2993 5816 Fax: (852) 2993 5916 Email: info@newtechapac.com

香港 Hong Kong

北京 Beijing

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