



451 Research®

SPECIAL REPORT

Thailand

MULTI-TENANT DATACENTER MARKET ASSESSMENT

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As a Research Director for 451 Research, Dan Thompson provides insight into the Multi-Tenant Datacenter (MTDC) market space. Dan is particularly focused on MTDCs that are trying to move up the stack to offer additional services beyond colocation and connectivity. These services may include disaster recovery, security, various forms of cloud and other managed services. He also assists the 451 Research Information Security group when their interests overlap.

1. Background & Thailand Multi-tenant Datacenter Market Drivers

Cloud Growth and Adoption in Asia

As the US and China continue enjoying their status as the world's largest economies, the Association of Southeast Asian Nations (ASEAN) has clearly emerged as one of the fast-growing economic destinations in the world – annualized growth rate stood at 5.1% in 2018.

Economic resurgence in markets such as Thailand and Indonesia has stimulated investment activity and opened new windows of opportunity, with foreign direct investment (FDI) inflows growing year-over-year to reach \$10.49bn in 2018. Information and communications was one of the economic sectors that experienced a healthy growth in inward FDI, up 26% to \$2.7bn in 2018. Intra-Asia investments continue to grow, with Japan, China and Hong Kong being the top source economies of inward FDI to ASEAN. If the signs of digital initiatives, a thriving startup ecosystem and the changing competitive landscape are anything to go by, the ICT sector may serve as one of the key economic pillars for ASEAN to become the fourth-largest economy in the world by 2030, as some economists predict.

Local businesses in Southeast Asia are starting to respond favorably to a fundamental shift in business models and technologies that can help in reaching better business outcomes. In addition to seasonal activities like marketing campaigns, production workloads such as enterprise applications are now moving to the cloud. As business organizations are opting for IT-centric offerings beyond their traditional services channel, telecom incumbents in the ASEAN region – which have long been in an advantageous position with direct market access – are now under tremendous pressure to innovate for transformational change. How do they step up to the leadership challenge?

When compared with business organizations in developed Asia, companies in Southeast Asia are catching up fast in terms of cloud usage. There are early adopters in key vertical segments – the manufacturing (e.g., automotive industry) and financial services (e.g., fintech) sectors in particular – taking a more encompassing approach in which the cloud construct is viewed as a technology foundation for service delivery. Some companies are focused on innovating their business models, driving the use of cloud platforms to provide on-demand services. Others are managing customer experience via a hybrid alternative. Nevertheless, local businesses have cast a unanimous vote for a hybrid or multi-cloud strategy. From a technology standpoint, platforms provided by the likes of VMware and Microsoft haven't lost their luster yet; however, cloud platforms that are based on open source technologies are building mindshare, if not market share, in the ASEAN region. With that said, local businesses admit that lack of talent and domain expertise create major roadblocks to companywide digital transformation.

For the most part, businesses are still taking a ‘wait and see’ approach as the new competitive landscape takes shape. But for companies turning to external providers for digital initiatives, cost efficiency is not always the best single attribute impacting their choice of a partner. Instead, trust appears to be the overriding factor that determines whether a company will work with a particular service provider.

In Southeast Asia, telecom incumbents, which have already developed long-standing relationships with local businesses for their communications needs, continue to enjoy the most mindshare in the local business community as companies look to cloudify their IT operations. As shown in 451 Research survey results, network-centric and telecom operators topped the priority list (38% of respondents), followed by datacenter providers (34%) and managed IT providers (33%), when enterprise respondents were asked if any external specialist partners will be used to develop or manage a single, multi- or hybrid cloud environment.

Current Buyer Segment Drivers

The datacenter providers in Thailand seem to be heavily leveraged, from a customer perspective, in two main industries: BFSI (banking, finance, securities and insurance) and the telecom industry. Every provider in Thailand points to these two segments as being key customer verticals. Additionally, providers in Thailand are primarily focused on Thai-local enterprises, with multinational firms representing less than half of any given provider’s customer list. The multinational firms that do exist as customers seem to be using those providers to offer IT infrastructure to in-country offices or consumers. In contrast with regional powerhouse Singapore, which serves as a gateway to much of Southeast Asia, Thailand is a very locally focused market.

That said, there does seem to be a change taking place in the Thai market. Tech companies and IT service providers have been springing up over the last several years as important buyers of colocation space, as have e-commerce companies and over-the-top (OTT) media companies. And most recently, the international cloud providers have gotten the attention of multi-tenant datacenter (MTDC*) providers. Of the international cloud providers, Tencent entered the market first, but did so quietly and without much fanfare. In Q3 of 2018, Huawei took the opposite approach by officially launching its cloud platform in the country with lots of press coverage. Tencent followed this with an announcement that it would be building out its full cloud platform in-country in Q1 2019.

Conversely, AWS opened regional offices in Thailand back in 2016 and has been amassing a workforce there ever since to support its Thailand operations. As yet the company has not officially announced any Region, Edge Network or Direct Connect deployments inside Thailand, although multiple providers there mentioned that AWS had been shopping the market. In Q2 of 2018, Alibaba announced that it was setting up a ‘digital hub’ in Thailand to help facilitate better cross-border trade with the company’s e-commerce platform. While Alibaba has yet to make any announcements for its cloud platform in the country, the digital hub illustrates the Chinese provider’s interest in the country.

Beyond these moves, there have also been rumors of Microsoft and Google reviewing the Thai market, though here again, no formal announcements have been made by either company. This all highlights a trend we've seen elsewhere in APAC, and now in Latin America, where the US and Chinese cloud providers are squaring off in these developing countries with a solid attempt at winning mindshare and eventually market share as cloud usage and digital transformation continue to penetrate these countries.

Potential Future Drivers, Regulations and Regional Influences

Even though a number of the providers in Thailand's colocation landscape have been in business for over a decade, it's fair to say that colocation has yet to reach mass adoption status with the country's enterprises. As we have seen in other parts of the world, however, and specifically other countries in Asia, any number of factors can influence rapid change for the industry. Perhaps one of the more interesting of these potential drivers is the Thailand 4.0 initiative.

Announced in May of 2016 by Thailand's current military government, Thailand 4.0 seeks to move the country forward in terms of economic and business make-up, as well as the earning potential and social well-being of its citizens. Like every other major economy in the world, Thailand started as agriculturally driven, then moved into light industry and now heavy industry (Thailand 1.0, 2.0 and 3.0, respectively). The country's government vision for a 'new engine of growth' is that of a technology-centric economy focused on smart farming, smart cities and smart industries rather than traditional ones, and on highly skilled workers rather than unskilled ones. The Thai government wants to further develop five existing industries (automotive, smart electronics, affluent medical tourism, biotech and food innovation) as well as establish five new sectors – robotics, aerospace, logistics, biofuel and biochemical, and medical services and healthcare – all of which is good news for datacenter providers since these are industries that tend to favor colocation.

Furthermore, skilled and technical workers tend to attract tech companies and foreign investment, which again can fuel the datacenter industry. For its part, the Thai government seems to be serious about the initiative, creating multiple legislative measures to support it, such as extending corporate income tax exemption programs and expanding land ownership options for outside investors. The government has also set up a fund to help seed startups and research-and-development initiatives for qualified industries. Finally, the Thai government has made plans to establish the Eastern Economic Corridor (EEC), a 13,000-square-kilometer special economic zone where companies can gain further incentives, including land lease extensions and tax deductions – both corporate and personal – for locating businesses, factories and investments. If everything is on track, the government expects to have the EEC completed by 2021. The government is working to improve the major supporting infrastructure of the EEC, which should help further attract business interest there, and, indeed, a few datacenters have sprung up in the zone already. Providers in the zone seek to service Bangkok businesses today but are eyeing potential business from other companies that might locate within the EEC.

Beyond Thailand 4.0, the Thai government has just passed two laws, the Personal Data Protection Act (PDPA) and the Cybersecurity Act, both of which bear future implications for the service provider, and potentially the datacenter, sectors. At this stage, the PDPA has just defined personal data and how it should be handled, and has established penalties for missteps. The much-criticized Cybersecurity Act has defined what to do in case of a cyberattack and what must be disclosed; alarming is the vague language that states that all data and equipment affected by a cyberattack deemed a national threat can be searched and seized by the government – without warrant – and can include private data, internet traffic, etc.

In neither law does the Thai government establish that data must be kept inside the country's borders; however, both laws contain language that they can be further expanded in future, and these are exactly the types of laws we've seen other countries in the region expand to include data localization requirements. In fact, given the laws we've seen implemented throughout the APAC region over the last few years, it's surprising that the language isn't in these Thai statutes already. Both of these laws do, however, represent an opportunity for providers to specialize in compliance to the technical aspects – an area we've seen providers elsewhere in the world take advantage of. Given the skills shortage in the IT industry as a whole, and specifically in Thailand, helping companies navigate these new standards seems like a smart play.

For a regional example of how data localization and sovereignty laws can affect the datacenter industry, one need look no further than Indonesia. At the beginning of 2018, law GR82 came into effect, which, among other things, dictated that all data pertaining to Indonesian citizens be kept inside Indonesia's borders. In the buildup to the law's effective date, the Indonesian datacenter market saw a number of investments to satisfy new demand from cloud providers and enterprises alike. Prior to the implementation of the law, Singapore was seen as the optimal location for servicing Indonesia, from a cloud and datacenter perspective, since Indonesia's datacenter inventory is generally lower quality, its power infrastructure more unreliable, its geography more disaster-prone, and its networking services more expensive. GR82, however, left providers with no choice but to move within Indonesia's borders, and figure out how to either mitigate or accept these various risks.

For Thailand, a similar situation exists where cloud providers today generally service Thai businesses from Singapore. If Thailand were to extend the laws mentioned above, or pass new ones that include data localization requirements, a similar increase in demand could be seen in Thailand.

2. Thailand MTDC Market Trends and Growth Indicators

In other geographic markets, providers can generally be divided into two main categories: wholesale and retail. Wholesale providers typically offer relatively large amounts of space, and clients are expected to provide their own racks and often do their own cabling. Wholesale datacenters usually do not offer services other than security and maintenance, though sometimes they will provide remote hands and/or connectivity services. Additionally, it is not that uncommon for wholesale providers to step into colocation services as well to accommodate smaller deal sizes.

Retail providers, on the other hand, are increasingly trying to differentiate themselves by offering services in addition to basic remote hands. Some are providing managed hosting services, web hosting, application hosting and/or IaaS. Many retail providers, and now even some wholesale providers, offer connectivity-based services for connections between network providers at their facility, and/or to a variety of network providers accessed via the provider's fiber connection to carrier hotels located in the market.

In Thailand specifically, wholesale as a product exists in a limited capacity, and none of the providers, save one, see themselves as being pure-play wholesale – at least not in the sense that we view it for the rest of the world. Interlink Telecom bills itself as a pure-play wholesale provider, but is also a network provider as its name implies. However, it is admittedly small (it typically builds out data halls of less than 500 square meters); it doesn't build out space before it's sold (which always creates challenges in the rest of the world); and its prices are based on a per-rack model rather than the power-based pricing models we see used in wholesale elsewhere. Interlink Telecom counts wholesale as anything 60 racks and above (roughly 180–240kW), which we could categorize as still very much in the range of retail, albeit at the higher side at 240kW. Some providers in the US and elsewhere are now counting 250kW as a wholesale-sized deal, but admittedly at the low end of the market.

Beyond Interlink, NTT and True IDC have facilities in Bangna that could accommodate wholesale deals. That said, neither provider sees themselves as exclusively wholesale, nor do they generally price on a per-kilowatt basis, though NTT certainly is able to do so. Finally, SuperNAP also has the floor space to do wholesale-sized deals, and has done large deals in the past. However, its product is a very fixed, hot-aisle containment setup, which may or may not be attractive to some wholesale buyers. SuperNAP's facility is also a long distance from Bangkok proper (2.5 hours by car with good traffic conditions), which again, may or may not be attractive to some wholesale buyers.

In this respect, change is in the wind for Thailand. ST Telemedia Global Data Centres (STT GDC) announced that it was entering the Thai market through a partnership with Frasers Property (Thailand) Public Company Limited or 'FPT' (formerly known as TICON). The provider has built substantial wholesale capacity in Singapore and elsewhere in Asia, and looks to be bringing the model to Thailand with a sizeable build. Construction of the project is still in its early days, so what it will look like when it hits the market remains to be seen, but the announced plans mark a certain maturation of the Thailand datacenter market. To be fair, though, while STT GDC is primarily a wholesale provider, it will also typically build out some amount of retail capacity in its facilities as well.

Supply and Demand Current Trends and Forecast

Thailand's datacenter growth is in the midst of an interesting split. Datacenter builds are still happening in the city of Bangkok, but areas outside the city are seeing explosive growth. Also, to be clear, while there is activity happening further south in Thailand, this 'rest of Thailand' growth is mostly happening just outside the Bangkok province, and is – for the most part – being built to service a Bangkok audience. It's worth noting here that outside of Bangkok is essentially starting from zero, so any amount of datacenter growth is going to seem statistically substantial. All of this growth can be largely attributed to two things: land is cheaper outside of Bangkok, and outside of Bangkok is where the industrial estates are situated that carry new incentives packages for businesses.

Taken as a whole, Thailand's datacenter market is growing at 16% CAGR (2016-2022) in terms of operational square feet, as illustrated in Figure 1 below. In terms of demand, the market grows consistently at 14% CAGR (2016-2022, Figure 2 below). All of this added space and growth has Thailand trailing Taiwan and Indonesia presently, although it's feasible that Thailand could pass Taiwan in 2020 or 2021 (Figure 3).

INET (Internet Thailand) has been building out in phases a large, four-building campus to the north of Bangkok, while the Eastern Economic Corridor to Bangkok's east has seen a flurry of activity as well from providers like CAT Telecom, CS Loxinfo, NTT, SuperNAP Thailand, True IDC and others. As with anywhere, there is a question of 'how far is too far,' and providers will quickly point out the fact that facilities further out have higher latencies to the businesses based in Bangkok, but this is of course a workload-specific conversation. Capacity downtown, or close to the center of Bangkok, will perhaps always be preferred for primary workload placement, especially in cases where latency to the end user is a concern, while disaster recovery and failover workloads can easily be placed outside the city, as can workloads without latency sensitivity, or whose end users are not necessarily in the center of Bangkok.

Figure 1: Thailand Total MTDC Supply (Operational Space)

Source: 451 Research's Datacenter KnowledgeBase, Q3 2019

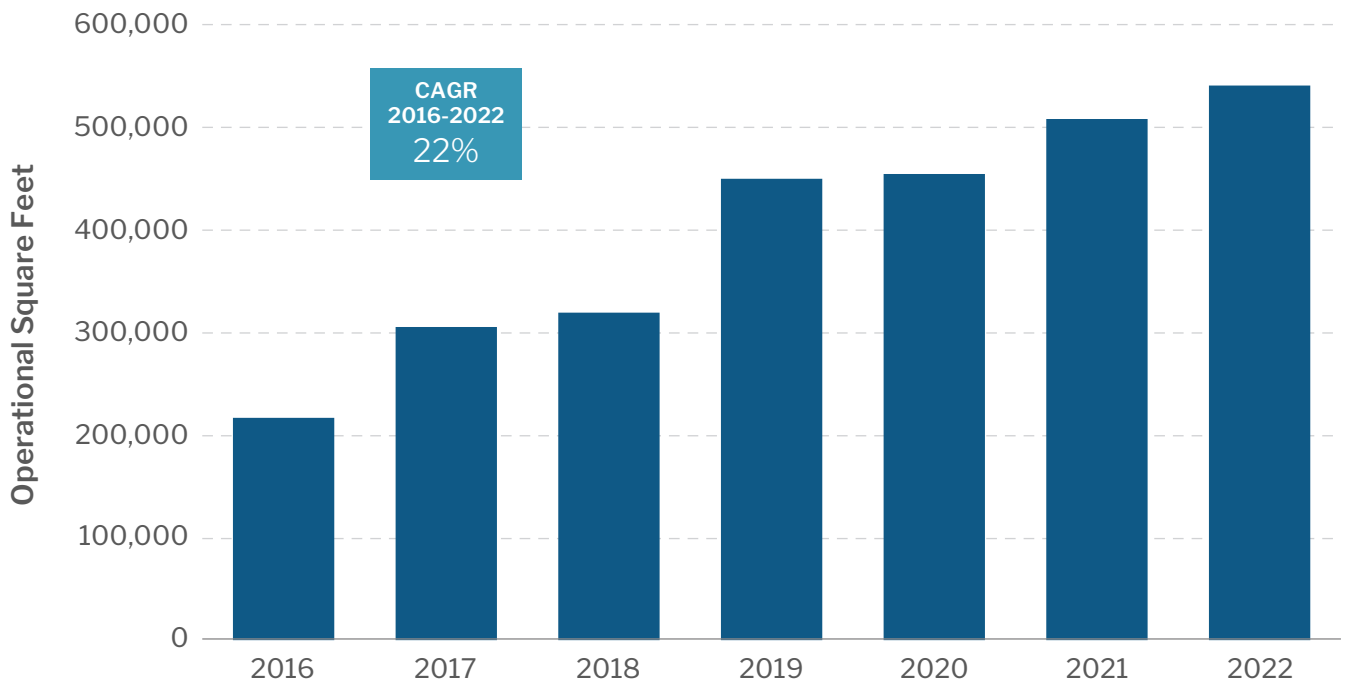
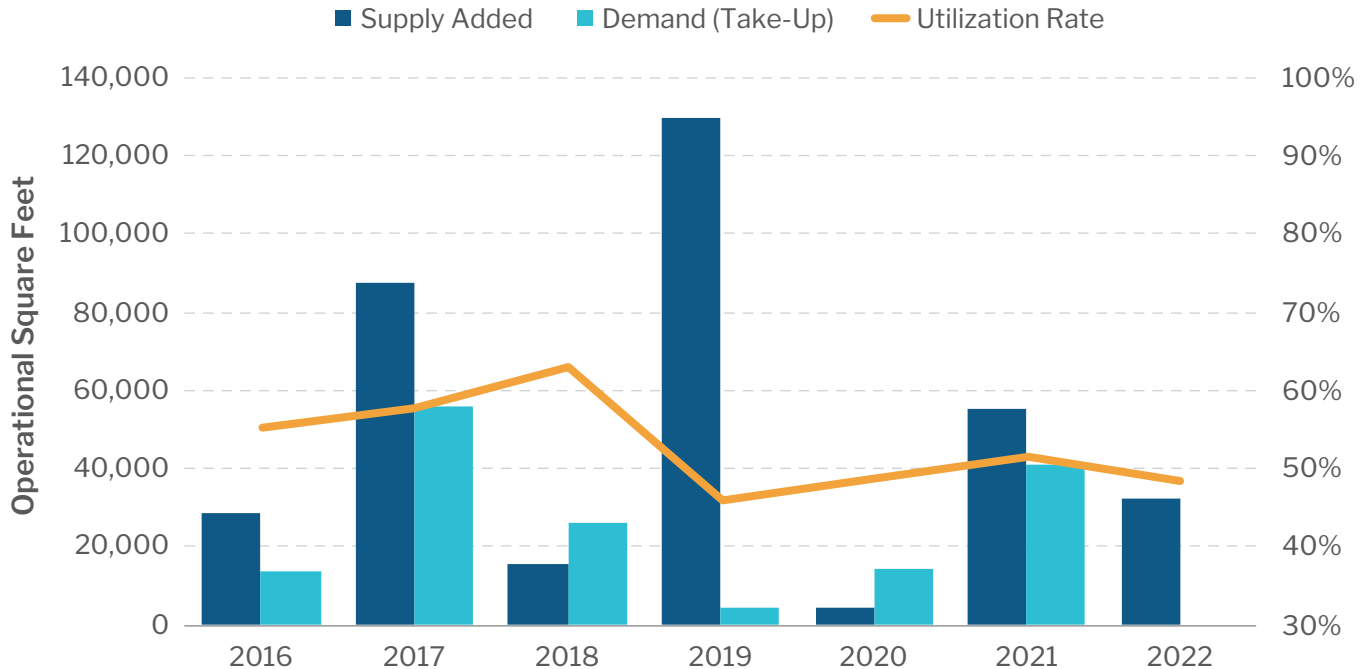


Figure 2: Thailand MTDC Supply, Demand and Utilization

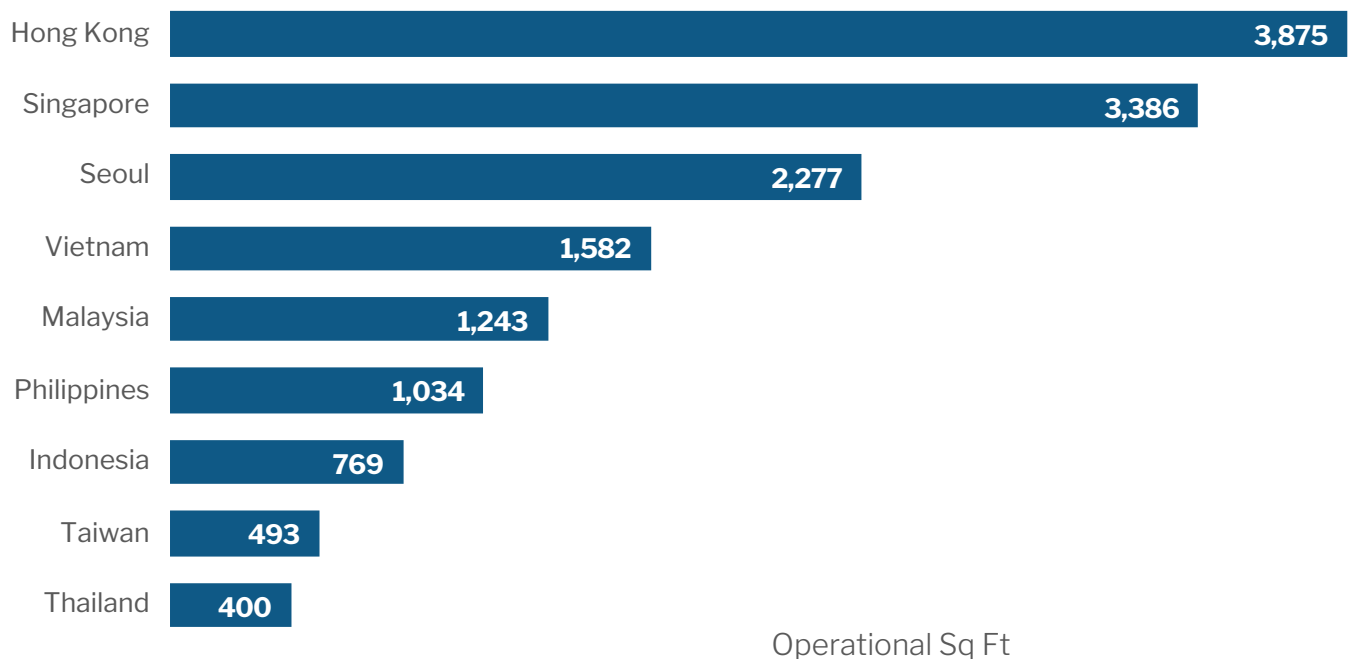
Source: 451 Research's Datacenter KnowledgeBase, Q3 2019



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Figure 3: Estimated MTDC Operational Space: Comparison of Key Countries Across Asia-Pacific Region

Source: 451 Research's Datacenter KnowledgeBase, Q3 2019



Services Beyond Colocation Represented in Thailand

Thailand's datacenter market looks quite consistent with other smaller datacenter markets around the world, in that the landscape is highly services-rich. In fact, none of the major players in the market offer only colocation. The services, however, can be quite varied. The telco providers understandably offer networking services in addition to colocation, and generally leverage colocation as a way to sweeten the deal, so to speak, for area businesses. Many of these telcos also offer some sort of cloud environment, whether it be a public cloud or hosted private cloud.

For colocation providers that are not telcos, the services mix looks fairly similar. To differentiate from the telcos, the other colocation providers underscore the fact that they are carrier-neutral, and can provide access to any of the carriers in Thailand that a business might want access to. Some of these providers offer a blended internet solution as well, such that failures from a particular provider won't be felt by the customer. Furthermore, many of these providers offer cloud services – either public or private, or some combination thereof – as well as managed services, which seek to help area IT departments scale better. The largest colocation providers also offer services on top of the major hyperscale cloud providers such that they can help area businesses with their IT workloads, no matter the venue of choice.

By and large, these services all seek to help area businesses alleviate some burden, whether it be acquiring network services or actually helping with the day-to-day operations of the IT stack. As mentioned previously, this practice is very common in smaller markets around the world, or in markets where IT skillsets are in particularly short supply. Both of these seem to be a factor in the service's popularity in Thailand.

Key Challenges and Innovations

- With a good amount of the new datacenter capacity coming online in Thailand being situated well outside the city limits of Bangkok, providers have a new challenge to address, and that is latency to the end user. Some providers have positioned their datacenters as close to Bangkok as possible, but still within the EEC so they can take advantage of the lower build and operation costs, and then built out connectivity to the facilities in the heart of the city. Others have built further out and seem to be clamoring only for disaster-recovery workloads, or workloads that aren't latency-sensitive. Finally, others such as FPT, in partnership with STT GDC, are building out space within the city to help service primary-workload-type demand.
- Much of the business for area MTDC providers comes from the financial sector. Admittedly, this sector has been a great starting point, although the amount of business is finite. Providers have adopted a 'colocation plus' strategy, whereby they offer services beyond just colocation, as a means to attract business from other verticals, and to make their existing relationships stronger and more valuable.
- As we have seen elsewhere in APAC, banks and foreign companies, which may be unfamiliar with building standards in Thailand, are asking area datacenter providers to adhere to the Uptime Institute's Tier Certification standards to verify the resiliency of the facilities. (Uptime Institute is a division of The 451 Group). Many providers in Thailand have responded by getting Tier Certified, and now there has been a working group created among the datacenter operators to try to establish a build standardization process.

3. What it Means - The 451 Take

The Thailand datacenter market is currently undergoing an interesting period of growth. The whole country has a five-year CAGR (2016-2022) of 16% – double the global average. In the last three years, eight local providers and two foreign providers have built new datacenters or expanded existing ones, illustrating the diversity of what is playing out, and a third foreign provider, STT GDC, is currently building what looks to be Bangkok's first truly wholesale facility. With wholesale available, and a landscape not dominated by incumbent telcos, Thailand's datacenter market is progressing nicely along the maturity curve.

However, much of the demand in the market today comes from the local financial sector (inclusive of banking, securities and insurance), meaning the market still has some growing up to do, particularly from the enterprise buyer segment in the country. That said, Bangkok looks like it will finish the year at a 67% occupancy rate, while the rest of Thailand will round out the year at 55%, suggesting that providers aren't building out to satisfy current demand, but rather are anticipating demand coming. This could play out in one of two ways: either all the providers are right, and there is a wave of demand coming from newly interested verticals and perhaps from foreign entities, or the country is about to deal with an oversupply situation, likely signaling a price war.

Looking ahead, there are several factors in Thailand that could lend itself to new sources of demand, whether it be from international cloud providers setting up shop, the Thailand 4.0 initiative, or even data sovereignty laws. Also, almost all of the providers in the market offer services beyond colocation, and generally colocation is just one part of their overall approach to the market, so even in an oversupply situation, perhaps providers will still be able to find differentiation apart from lowering their prices.

Key Findings

- Local businesses in Thailand continue to respond favorably to the cloud in its various forms; however, currently only Huawei and Tencent have built out cloud nodes in Thailand, leaving businesses to access resources from other cloud providers such as Microsoft Azure or AWS located in Singapore. Given the distance between the two countries, this implies some amount of latency between the end users and the workloads.
- There are rumors that more cloud providers are shopping the Thailand market, and as we've seen in other parts of the world, when one cloud provider sets up shop, generally others follow. Although this is speculative for now, this could mean an influx of foreign cloud providers is in Thailand's future.
- Beyond the potential of foreign cloud demand, a number of other factors exist that could drive future datacenter demand in Thailand. The government's Thailand 4.0 initiative is a great example, as is the business potential from other business verticals, not heavily present in the MTDC market today.
- While there are some datacenter providers in Thailand that could accommodate a 1MW deployment, all of them are well outside the city of Bangkok, and most have limited capacity to grow beyond that. Lots of area providers are in the process of adding capacity currently, though, so perhaps this situation will change in the near future.



ST Telemedia Global Data Centres (Thailand) is a joint venture between Frasers Property (Thailand) Public Company Limited ("FPT"), a leading integrated real estate platform in Thailand, and ST Telemedia Global Data Centres, a leading data centre service provider headquartered in Singapore. To support the digital growth and expansion of enterprises in Thailand, STT GDC Thailand is developing its flagship hyperscale data centre on a 75,000sqm (15-rai) land that is strategically located in central of Bangkok. Bangkok's largest hyperscale data centre will be built and operated to global standards and is expected to be completed in 2021.

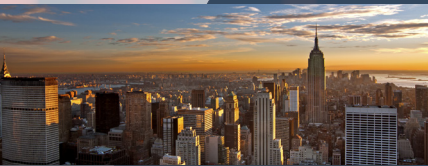
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