

Myint & Associates

Telecommunications Ltd.

CORPORATE
PROFILE

myintassociatetelecom.com



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Where digital technologies converge





■ M&A Telecoms



About Us

Myint & Associates Telecommunications Ltd. (M&A Telecoms) is the information technology arm of the MPRL E&P Group of Companies. Within the information technology infrastructure space, M&A Telecoms is currently the leader in terms of data center design, development, commissioning, and operations in Myanmar. M&A Telecoms provides data center colocation services along with other enterprise IT services to customers seeking the highest standards of information technology solutions and services.

Build through Excellence –Lead with Integrity

M&A Telecoms owns and operates Myint & Associates Data Center (M&A Data Center), the first high-end data center in Myanmar which has also achieved Tier III design certification from the Uptime Institute (USA). With the fast-paced advancement of information technology, and as the trend in technology changes in the industry, M&A Telecoms plans to advance its capabilities and services such as virtualization and cloud computing services to benefit customers in delivering efficient automated on-demand services with information technology services that are more reliable, suitable, and optimized towards business needs.

Our Vision

To be a leader in creating value by providing information technology solutions in a rapidly developing and globalizing environment.

Our Mission

M&A Telecoms will create value by:

- Being a regional market leader in providing reliable, secure, and sustainable data center facilities and the highest level of quality and services to best address the needs of government and customers.
- Developing and offering innovative solutions that deliver measurable improvements towards the information technology needs of our clients.
- Maintaining the highest levels of professionalism, integrity, and ethics in all our dealings with our stakeholders, partners, and clients.



The first high-end
data center in Myanmar
with world-class reliability



■ Executive Director's Message



Sithu Moe Myint
Executive Director

Myanmar is recognized as a frontier nation that has embarked on the path of rapid economic growth and development underpinned by much needed reforms that have been implemented across various sectors. As we aim to realize a vision of becoming a developed nation, the information technology sector offers clear opportunities necessary to be pursued that will enable us to leap frog forward into the future. Like the rest of the modern world, businesses and individuals in Myanmar have also embraced the usage of information and communications technology which have provided the ability to be more connected than ever before. There is a clear need for the establishment of the right information and communications technology infrastructure as well as the adoption of shared hardware virtualization services to efficiently, reliably, and affordably store the significant volume of digital data projected to grow at unprecedented rates as Myanmar embarks towards the future.

Since 2015, Myint & Associates Telecommunications is the leader in providing unparalleled information technology solutions and services in a rapidly evolving digital landscape. Developing and offering innovative solutions that deliver measurable improvements towards the information technology needs of our clients while maintaining the highest levels of professionalism, integrity, and ethics in all our dealings underpins our organizational mission.

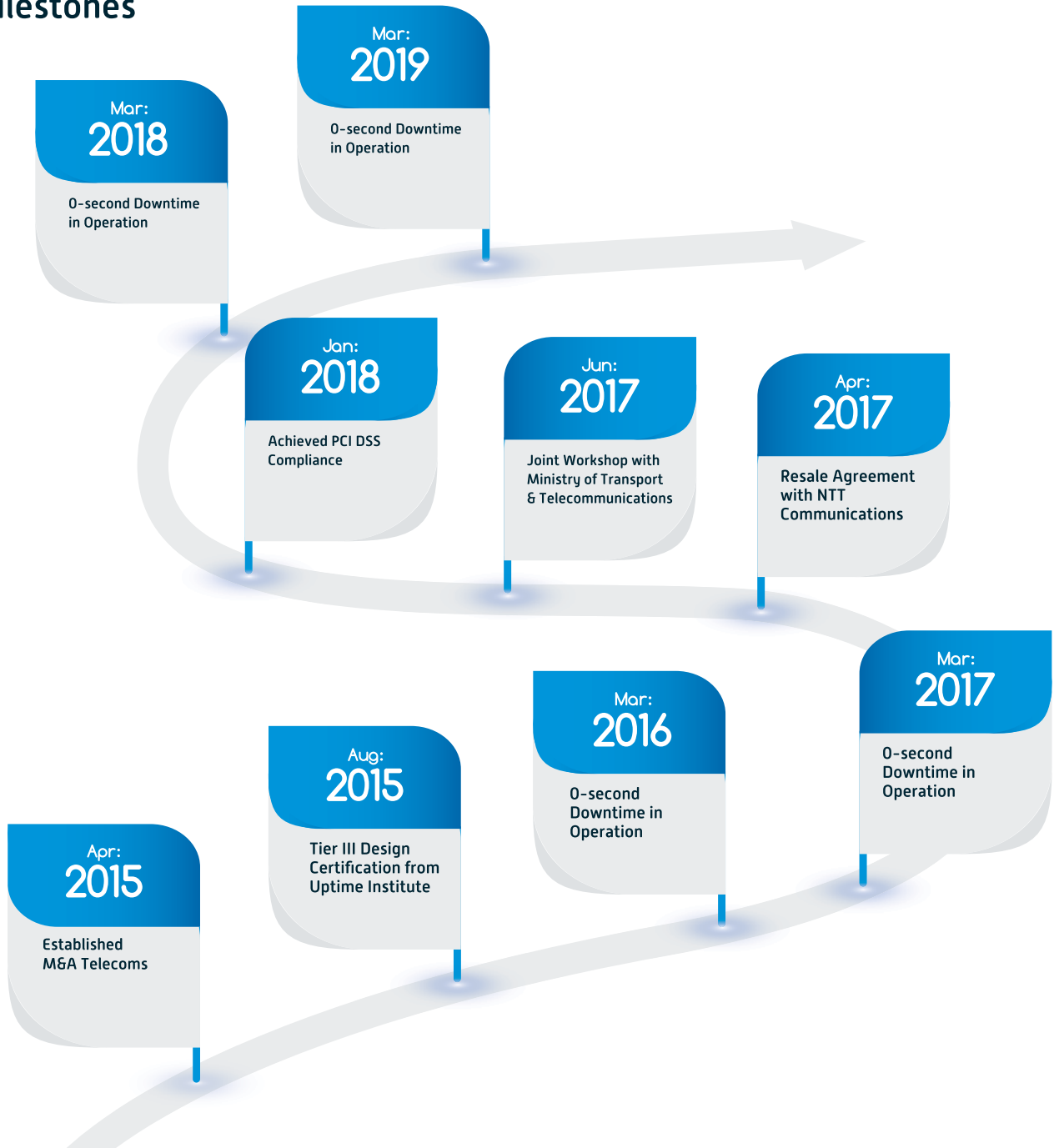
A source of great pride for us, Myint & Associates Telecommunications owns and operates the first and only Uptime Institute Tier III design certified ICT (Information Communications Technology) Data Center in Myanmar. Myint & Associates Data Center is also the first and only Data Center in the nation that has successfully received Payment Card Industry Data Security Standard (PCI DSS) compliance certification.

Partnerships and strategic alliances with leading world-class ICT companies are a core part of growing our capacity, brand, and business reach. Since 2017, Myint & Associates Telecommunications established a strategic alliance with NTT Communications through entering into a resale agreement. NTT Communications is one of the largest and most recognized ICT companies in the world and provides a wide range of innovative global ICT solutions. Our alliance enables NTT Communications to resell colocation space, available from Myint & Associates Data Center, directly to their international as well as local clients and customers, further enhancing our business reach and our brand.

Now in operations for over three years, Myint & Associates Data Center maintains the highest reliability standards and continues to boast zero operational downtime performance to date since commencement of operations. With multiple layers of security access, physical security is one key feature that our Myint & Associates Data Center guarantees as well. In the coming years, as trends in information technology continue to evolve, Myint & Associates Data Center plans to advance its services through further advancing its shared hardware virtualization and cloud computing capabilities to benefit customers by delivering efficient automated on-demand IT services that are even more reliable, responsive, and suitable towards future business needs.

I am proud of what we have already achieved in just the last five years and I look forward to continuing to play an active part of creating a digital future in the nation; a future where Myint & Associates Telecoms can be of even more service to our clients and to the Republic of the Union of Myanmar in the rapidly evolving information technology sector.

■ Milestones



■ Data Center: How Our Journey Began

Some of the cutting edge highlights of M&A Data Center include being hosted in an earthquake resistant facility in one of the most earthquake prone regions in the world, world-class reliability by offering 99.98% annual operational uptime guarantee, and concurrently maintainable components and systems that enables both preventive and reactive maintenance even while the facility is in operation. Such standards of safety and reliability, backed by our independent Tier III certification, enables our facility to offer colocation and data storage services to private enterprise, financial institutions, government ministries, and even the stock market. Furthermore, as Myanmar makes material advancements in the information technology sector, M&A Data Center anticipates to deliver hardware virtualization and cloud services to support the local industry. As a carrier neutral facility, M&A Data Centers also hopes to host the country's first government supported national internet exchange that will optimize internet usage and reduce costs across the nation.



■ Accreditation and Certification

Uptime Institute Tier III Certification



In 2015, M&A Data Center received Tier III Design Certification from the Uptime Institute, the global data center authority based in the United States. Uptime Institute is the information technology industry's most trusted independent organization that establishes world-wide industry standards for the design, development and operation of data centers.

Being a Tier III Design certified data center, M&A Data Center guarantees Tier III's performance which is clearly reflected in our service level agreements (SLA) that are executed with all our clients and customers. This independent third-party certification from the global data center authority reinforces our intent and capabilities to offer a high end data center that meets world class standards of reliability, safety, and security.

"M&A Data Center was accredited with design certification from the Uptime Institute in 2015 and built according to its standards within the validity of the certification. We had to build the data center within the period Uptime has given in accordance with the design documentation we had submitted to the Uptime Institute. We are fully confident with the facility we have achieved and being in operation for 5 years with the zero second downtime an achievement thing we are proud of our data center."

Thein Soe Htaik
General Manager

PCI DSS



M&A Data Center has also achieved independent third party compliance certification making the facility compliant with the Payment Card Industry Data Security Standard (PCI DSS). Administered and managed by a consortium of major payment/credit card brands such as Visa, MasterCard, Discover, American Express and JCB, PCI DSS is a stringent set of security requirements and protocols established to protect cardholder information from credit card fraud. Qualified Security Assessors (QSA) have audited and assessed M&A Data Center according to the PCI DSS's established standards and guidelines. The assessment by QSA also includes a review and audit of company policies and procedures, data center facility physical access controls, closed circuit security monitoring, as well as employee/visitor access procedures.

M&A Data Center have received proven and verifiable PCI compliance in the form of assessment results indicated in the Attestation of Compliance (AOC) and Report on Compliance (ROC). By being compliant with the world-class standards set forth by PCI DSS, financial institutions and enterprises that involve the use of payment cards are assured that their IT infrastructure hosted within M&A Data Center is physically secure.

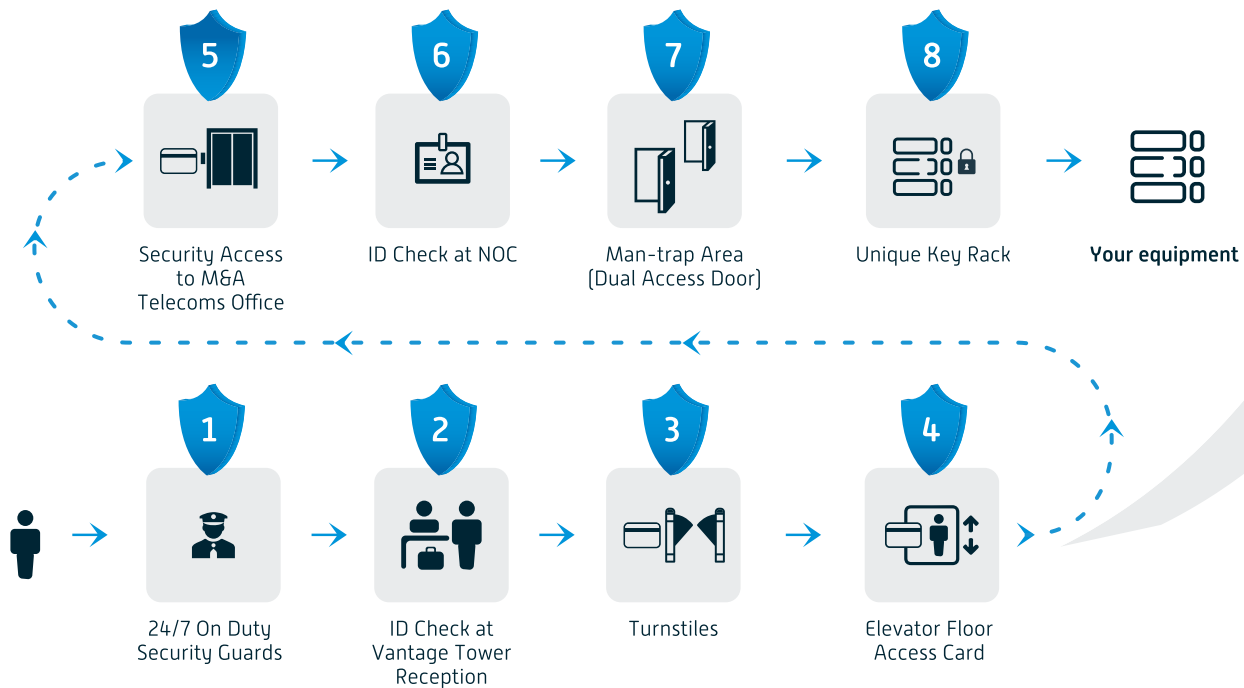
■ Our Facilities and Key Features

Our Facilities and Key Features

Security

8-layer Security: With multiple layers of security control, physical security is a key feature that M&A Data Center guarantees. An optional additional 9th layer of security can also be provided to clients who require caged colocation rack access.

Any authorized representative who requests to physically access their hosted devices and equipment must pass through eight stringent layers of security for proper authentication.





Our Facilities and Key Features

Reliability

M&A Data Center is designed to be concurrently maintainable. Concurrent maintainability with redundant capacity components offers M&A Data Center the ability to undertake preventative or reactive maintenance on any piece of equipment whilst the facility remains fully operational.

Multiple independent power distribution paths

(I) Power facility with backup system (power density / per rack KVA)

2N Configuration to maintain stability of power supply

- Purified dual source utility with redundant distribution paths
- Fully double redundant back-up generators and UPS system for assured uninterrupted power supply
- Back-up generators with capacity to run at least 72 hour continuously
- Optimized fuel supply chain

(II) Computer Room Air Conditioning (CRAC) with fully redundant back-up availability

2N Configuration

- Redundant cooling distribution paths for every customer's rack
- Raised floor enables optimized air flow distribution and temperature control

(III) Environmental monitoring system

Detection of smoke and water with state-of-the-art equipment

- Very Early Smoke Detection Apparatus (VESDA)
- Early Leakage System Apparatus (ELSA)
- Multiple temperature & humidity sensors
- 38 Closed Circuit Television (CCTV) units for optimized facility monitoring

Our Facilities and Key Features

Safety

(I) M&A Data Center facility natural disaster resistance

- Earthquake resistant up to **7.2 magnitude on Richter Scale**
- Wind speed resistant up to **120 miles per hour winds**

(II) Fire suppression systems

FM200 fire suppression system

- For the protection of sensitive electronic equipment, the FM-200 fire suppression system stands above conventional agents. Unlike dry chemicals, FM-200 is a colorless and odorless gas that leaves no residue to clean up after it is deployed
- Deployed multi-zone smoke detection sensors

(III) 24/7 facility monitoring

M&A Data Center operations are actively overseen and managed 24/7 by facility engineers and monitoring systems located in the network operations center (NOC)

- Network traffic status
- Power consumption and management
- Back-up power systems
- Facility cooling systems
- Environmental monitoring and early warning systems
- Fire suppression systems
- Physical security access
- CCTV storage record (90 days in critical areas and 30 days for non-critical areas)
- Administration and adherence to standard operation procedures
- 24/7 standby support customers through on-call service and remote hands/smart hands services





"With all the state-of-the-art facilities installed, M&A Data Center offers international standard Service Level Agreements (SLAs) which include penalties that the data center will incur should the agreed service expectations not be met. Being a Tier III design certified data center, the facility offers 99.98% operational uptime service guarantee (uptime) per year meaning the facility total annual downtime is not more than 1.6 hours. Now in operation for over 5 years, I am proud to indicate that over this period, M&A Data Center has maintained a performance track record of zero downtime."

Aye Ko Ko
Lead Engineer

■ Maintaining a Carrier Neutral Status

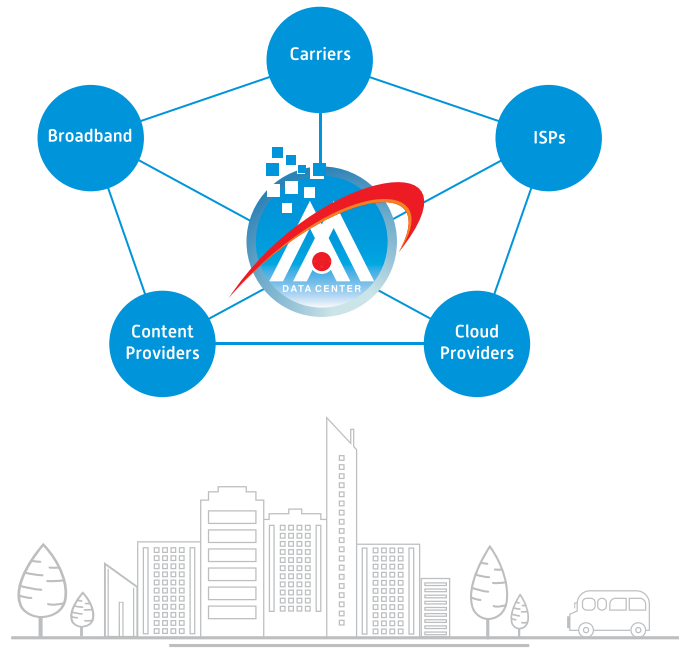
Carrier neutral data center with multiple carrier providers options

A carrier-neutral data center is a data center which allows interconnection between multiple telecommunication carriers and internet service providers. In contrast, in a non-carrier-neutral environment, a customer normally only has very limited options (normally one or two options) for connectivity and colocation. Customers in a data center tied to one or two specific telecommunications carriers or internet service providers can easily fall victim to non-competitive prices and limited connectivity/bandwidth. The lack of availability of other connectivity options results in the customer being at the mercy of whatever provider the non-carrier neutral data center is tied to.

Carrier-neutral data centers, on the other hand, offer many advantages, not the least of which are cost-efficiency and optimized connectivity. Because a carrier-neutral data center is not limited to one or two telecommunication carriers or internet service providers, all carriers and providers are constantly required to offer competitive pricing and improved connectivity.

Being a carrier-neutral data center, M&A Data Center offers our clients and customers the ability to choose and connect to a diverse and flexible range of telecommunication carriers or internet service providers. This ensures that clients and customers can select a telecommunication carrier or internet service provider that is most suitable for optimizing their business needs.

M&A Data Center offers multiple Point-of-Presence (P-o-P) connections to both local and international telecommunications carriers as well as internet service providers.



Letting you choose who you want to directly connect with to better suit your business operations.

■ Strategic Alliances: NTT Communications



In April 2017, M&A Telecoms entered into a resale agreement together with NTT Communications Thailand (NTTCT). The agreement enables NTTCT to resell colocation space, available from M&A Data Center to their clients and customers, under a new brand name referred to as Yangon Kamayut Data Center. NTTCT is a subsidiary of NTT Communications, an organization which is recognized as one of the global industry leaders in information technology infrastructure. This initiative enhances M&A Data Center's services to extend outside of Myanmar, leveraging NTTCT's reputable brand name and international clientele.

"NTT Communications is a global industry leader in telecommunications and information technology infrastructure. We are proud to have established such a strategic alliance with NTTCT after months of discussions and performing due diligence on M&A Data Center's facilities and operations. We believe together we can continue to lead technology advancement that have a significant impact towards driving new development in Myanmar"

Zune Min Latt
Assistant Marketing Manager





■ Data Center Services

The finest colocation
experience and the best
connectivity

Colocation Services

Colocation services are provided when customers place servers or other networking devices into a rack at a data center facility. When data availability is important and downtime is not an option for a core business, M&A Data Center is the perfect place to collocate and host business' critical servers and related hardware. M&A Data Center offers a variety of different space options for a full range of client collocation service needs together with cutting edge facilities for power, air conditioning, and physical security. The facility also offers the ability to utilize remote hands services. With the capacity to provide over 90 racks of server collocation space, M&A Data Center offers 3 types of collocation services.

(I) Rack Colocation:



M&A Data Center provides the rack collocation for customers with collocation facilities starting from 4U up to a suitable number of racks required by customers. Half-rack cabinets (approx. 21U) as well as full-rack cabinets (47U) are available in rack sizes of 600mm x 1000mm with unique keys for each rack made available only to the customer.

(II) Open Space Colocation:

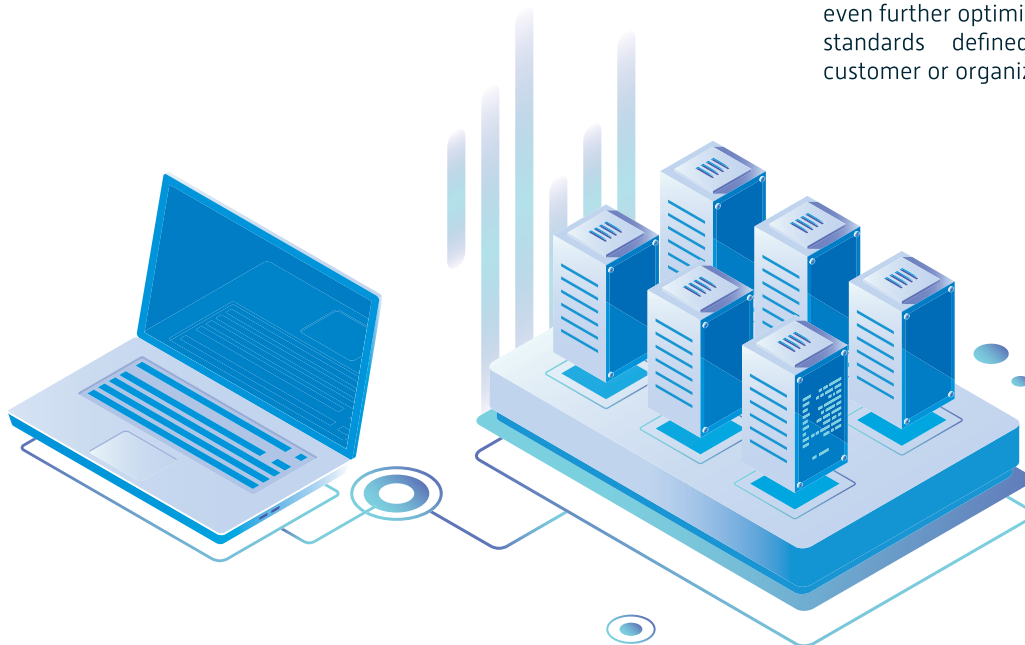


M&A Data Center offers open space collocation for customers whom require installation of racks specifically purchased externally by the customers whereby the same support and services are still provided as rack collocation.

(III) Cage Unit Colocation:



For customers who require the highest levels of security for collocation services, M&A Data Center offers cage unit collocation with separately partitioned and lockable floor space. In addition to offering the same support and services as standard rack and open space collocation, an extra layer of security is established whereby a unique access card system is used to access the cages. Based on customer requirements, cage unit installation services can also be even further optimized to meet the security standards defined by the respective customer or organization.



Support Services

M&A Data Center offers a variety of support services tailored to the preference and business needs of our customers and clients. Our support services consists of (1) remote hands services; (2) smart hands services; and (3) cross connect services.

Our remote and smart hands services provide our customers with the ability to delegate IT management and maintenance tasks within M&A Data Center to our in-house technicians. Such services ensures that our customers do not have to constantly send their own IT staff to the facility whenever an issue arises, enabling the customer to better and more effectively manage their own internal resources. Leveraging M&A Data Centers remote hands services results in benefits to our customers consisting of improved colocation installation operations, availability of around the clock 24/7 services whenever needed, faster preventative/reactive maintenance works, and further server downtime minimization. Remote hands services involve support that can be completed without physically accessing any of our customers equipment. Smart hands services generally involve more complex tasks than remote hands services and requires physical access to our customers equipment.

(I) M&A Data Center **remote hands services** include adjusting/securing network cabling, network router/switch configuration, server reboots, power cycling, and monitoring/reporting of equipment performance.

(II) M&A Data Center **smart hands services** include more complex tasks which vary depending on the customer's specific needs and generally includes management of colocation equipment, setting up firewalls, supply chain management, complex cable configurations, equipment testing/ troubleshooting, interface module management, power supply/equipment replacement and configurations.

(III) M&A Data Center also offers **cross-connect services**. Cross-connect is a connection between separate units and equipment within a data center. Our cross-connect service enables opportunities for cost optimization, improved performance/reliability and lower latency. M&A Data Center offers cross-connect options with the ability to connect to a variety of mobile carriers, internet service providers, cable providers, and other businesses. Options for cross-connect services available at Myint & Associates Data Center include:

- Single Mode and Multimode Fiber Connections
- Cat5 and Cat6 Copper Cable Connections



"Remote Hands and Smart Hands Services in the data center are very helpful when customers do not have anyone available to manage the task at hand. M&A Data Center is ready to help 24/7, 365 days a year with our highly skilled NOC Team for these services."

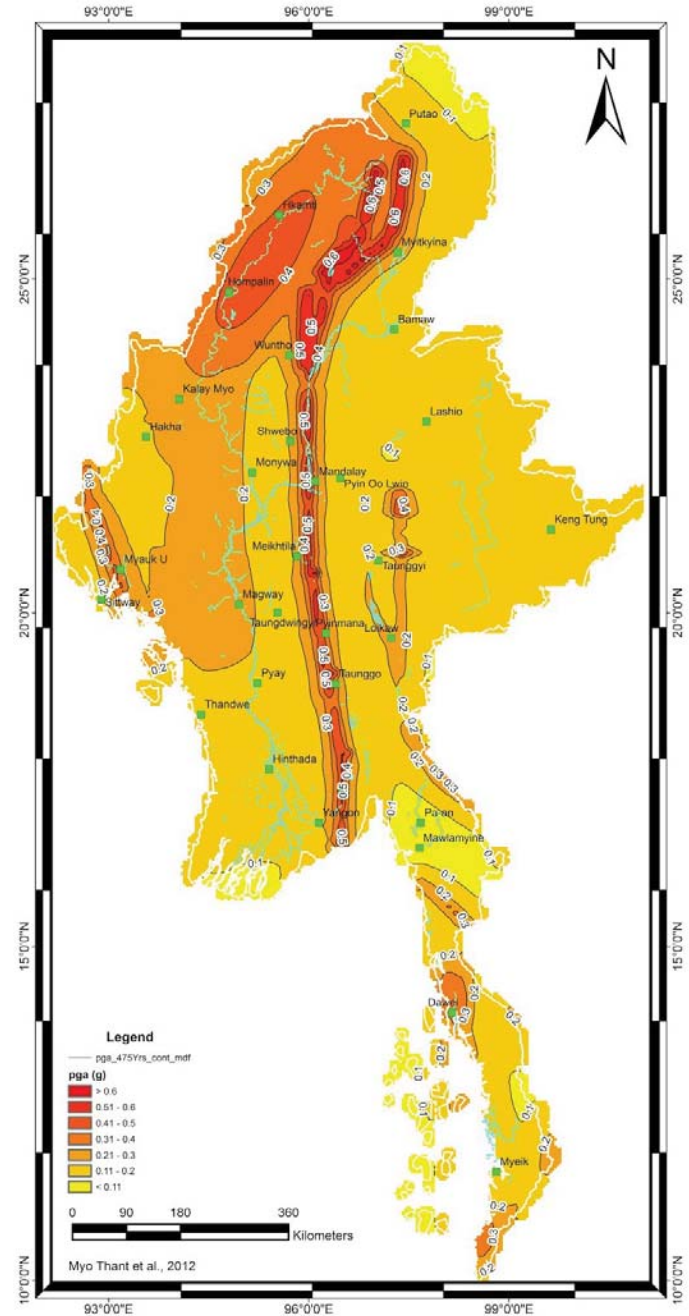
Nyein Ei Ei Hlaing
Assistant Sales Manager

Backup & Disaster Recovery Site

In the modern world, the value of digital data is significant. Constant access to this data is a key element that ensures business continuity where any amount of down-time will result in material loss of value for any organization or enterprise. Catastrophic events can also result in the permanent loss of data. The best way to mitigate this risk is through ensuring that digital data is stored at both a primary storage location as well as an external back-up/disaster recovery location or facility.

Myanmar is located in a region of the world which is highly prone to earthquakes. During the 2018 year alone, there were close to 90 earthquakes* that were recorded within Myanmar with 3 earthquakes physically felt in the Yangon region alone. Myanmar is also prone to tropical cyclones that take place on an annual basis during the monsoon season that runs from June-November of every year. There have been instances where such storms have caused catastrophic damage. In 2008, cyclone Nargis was a category 4 cyclone which made landfall in the Yangon region. With registered peak windspeeds of 105 miles per hour, Nargis caused catastrophic damage to the city as well as the region whereby the cost of damages was estimated to be over US\$4 billion. **

For customers seeking a back-up/disaster recovery site for digital data, M&A Data Center is the ideal facility to cater for such needs. M&A Data Center is located in a facility that has been designed to withstand earthquakes incurred to a magnitude of up to 7.2 on the Richter Scale. Additionally, this facility is also designed to withstand windspeeds of up to 120 miles per hour. Such safety standards coupled with our world-class reliability underpinned by zero operational downtime over the course of the last five year (since start-up of operations), leveraging M&A Data Center for your digital data back-up and disaster recovery needs ensures robust business continuity and minimizes risks of losing mission critical data.



Seismicity risk map of Myanmar
[Reference: Myo Thant et al. 2012]

*United States Geological Survey Website, www.usgs.gov

**United Nations estimate as quoted from the Guardian, www.theguardian.com/world/2008/jul/21/cyclonenargis.burma

Dedicated Bandwidth Service

M&A Data Center offers dedicated bandwidth services with multiple international and domestic internet service providers and telecommunication carriers to our customers. Connections are available from the following internet service providers, telecommunication carriers and cable providers:

- **MPT**
- **Mytel**
- **Eager Communications**
- **China Unicom**
- **Fortune Broadband**
- **Myanmar Information Highway (MIH)**
- **UniLink Myanmar**
- **Telenor**
- **Yatanarpon Teleport**
- **Singtel**
- **Campana**
- **AGB Communications**
- **Myanmar Broadband Telecom (MBT)**
- **Ooredoo**
- **Global Technology**
- **NTT Communications**
- **Frontiir**
- **Golden TMH Telecom**
- **Horizon Telecom**

"With M&A Data Center, provisioning rack to rack cross-connections are fast and easy, allowing our customers to scale as quickly as their business grows. Upon receiving a cross-connect service request, our team of experts will process and execute the request rapidly and to meet all expectations of our customers."

Zaw Win Maung
Senior Network Engineer



■ Enterprise and Business Level Services



Implementing, managing and delivering IT services to meet the needs of an organization

Enterprise/Office IT Design, Installation, Commissioning, and Management

When setting up a new office facility or expanding an existing business, designing and establishing the right IT physical, systems and network infrastructure is of significant importance. The right IT solution will provide businesses and organizations with benefits in terms of cost efficiencies, business assurance, optimized management, and seamless communications. M&A Telecoms offers IT service management solutions to clients whom seek to implement new IT solutions or enhance existing IT infrastructure in order to maximize business efficiency. Our approach involves precisely identifying the specific needs of our clients, whether this be individuals, small-medium sized business, or large corporations, and tailoring fit-for-purpose and cost effective IT solutions that are sustainable and scalable.

Web Design & Development

With the onset of the digital revolution around the world and in Myanmar, universal access to information has become more pronounced than ever before. Such an environment creates tremendous opportunities for businesses and organizations to build and promote their brand as well as market their services in the digital and on-line space. Having a website that portrays the identity of an organization or business is an absolute necessity offering the ability to showcase key company information and offerings to their customers with the ability to rapidly update this information in real time.

M&A Telecoms offers website design and development solutions that are customized to represent our clients' identity and achieve the desired digital advertising and marketing goals. Our services include:

- **UI/UX and Web Design/Re-Design**
- **HTML/CSS Development**
- **Blog Design and RSS Integration**



We are highly capable of managing projects with precision and turning them around on time and target.

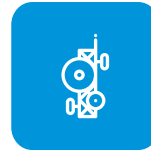
■ Clients Across a Range of Key Sectors



Government



Energy



Telecommunications



Internet Service Providers



Financial Services



Stock Market



Media & Entertainment



Education



Gaming



Trading & Logistics



Retail



Health Care



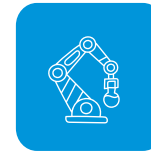
Advertising



Content Delivery



Real Estate



Manufacturing



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