

Choice Case Study

Design, Supply, Installation, Relocation and Commissioning of Data Center for MediaTek India

Project Background

Inside This Case Study

Project Background	1
Project Challenges or Requirement	1
Project Scope	2
Choice Role and Solution Offered	2
Client Benefits	4
Benefit to Choice Solutions	5
Client Testimonials	5
About Choice Solutions	6

Choice Solutions Limited won the project of designing, supplying, installation, relocation and commissioning of data center for MediaTek India despite competing with other leading data center companies like Emerson Network Power Pvt. Ltd., IBM, and Progressive. Choice Solutions Ltd. with its strong base in technical & commercial, was able to convince the customer, that it's the only most well suited vendor who can do the job for Mediatek Data Center.

The existing data and network was supported by a basic legacy, Tier I server room for hosting the core switch, servers, and storage systems. Nobody was ready to renovate the existing Data Center without a shutdown, but Choice Solutions was the only company who were ready to build & renovate the existing server room without a shutdown.

Initially Choice Solutions Ltd. got the order for renovating the existing server room on the first floor, later on the customer considering the future plan & growth got a big place on the 3rd floor in same property to setup a bigger data center. Choice was very glad to get the fresh order for the 3rd floor data center for the entire IT infrastructure of MediaTek India.

About the Client

MediaTek Inc. is a leading fabless semiconductor company for wireless communications and digital multimedia solutions. The company is a market leader and pioneer in cutting-edge SOC system solutions for wireless communications, high-definition TV, optical storage, DVD and Blu-ray products. Founded in 1997 and listed on Taiwan Stock Exchange under the code "2454", MediaTek is headquartered in Taiwan and has sales or research subsidiaries in Mainland China, Singapore, India, U.S., Japan, Korea, Denmark, England, Sweden and Dubai.

Project Challenges or Requirements

At the time of interaction with MediaTek technical team of Taiwan, we identified all the relevant issues and constraints. When MediaTek reported of a total current IT load of 200 KW, Choice Solutions Ltd. checked out each equipment that was installed and figured out that power load was just 104 KW. Choice Solutions was able to successfully cut 50% of excess power load for the data center. Mediatek was very happy to know that they were going on the wrong track, and Choice Solutions Ltd helped them to correct it.

Executing the project without obstructing the client business was a key concern

As services and beam structure above the gypsum false ceiling could not be identified till the gypsum false ceiling was removed. It may have affected the height needed for building the data center.

At the time of execution of the project Choice Solutions Ltd was given the floor layouts and plan, it allowed us to figure out how to achieve the projected time lines. Only problem was to figure out how 20 TR Precision AC Units can be brought up the 3rd floor, as the stairs were very narrow. Choice Solutions Ltd. took permission from the builder, broke the window on the 3rd floor and made it according to the Precision AC size. After that we tried 3 to 4 times to lift the Precision AC Units by hydraulic crane to the 3rd floor, and succeeded after lot of struggle.

Choice Solutions Ltd. managed to build a state-of-the-art Tier III data center room along with a UPS and HUB Room for MediaTek. It was also identified that the air conditioning ducts, sprinkler pipings and beams could limit the total height available for building a proper data center, so we had to redesign the false ceiling to meet the updated requirements.

Project Scope

I. As Is” Analysis of existing DC design, with special focus on space constraints.

II. Design and Implement the Tier II solution for:

- a. Physical Layout of the DC, Electrical/UPS room and NOC
- b. Shell with minimum 120 minutes of fire rating, and provide the required raised access floor and false ceiling.
- c. Low Tension (LT) Electrical system tapping power from the existing main panel.
- d. Precision cooling solution for Data Center and Comfort cooling for other areas.
- e. Biometric Access Control system
- f. Fire/Smoke detection with regular and VESDA systems.
- g. Fire Suppression system with FM200
- h. Rodent Repellent system
- i. Water Leak detection system
- j. Server & Network Racks
- k. UPS Symmetra & MGE UPS for facility

III. Operate and maintain the Data Center for 1 year on 24/7 basis

Choice Role and Solution Offered

Choice Solution Ltd. carried out a thorough investigation of the DC space as per client requirements. The internal risk assessment workshop had identified ways to build the Data Center around the IT equipment. However the risk to MediaTek business operations was high and a strong mitigation strategy or alternate solution was identified as the need.

A further detailed evaluation was carried out by Choice Solution Ltd. on the feasibility of relocating the IT network thereby mitigating the above risk. The feasibility study included identifying suitable alternate space. A significant challenge anticipated during execution of the project was that the work had to be carried out in a live & business critical environment which was not fault tolerant.

Thorough investigation of the space and client requirement was carried out

Feasibility of relocating the IT equipment & network was also worked out

Solution Offered

The key activities undertaken by Choice Solutions Ltd. include:

1. Mapping the existing layout, services plan. Special attention was paid to the services above false ceiling. The floor sprinkler and AC duct headers were found as impediments to achieving the required height and had to be shifted to allow introduction of raised access floor.

2. The IT equipment, fibre network and existing comfort ACs were relocated within a 24 hours window to the alternate space identified.

3. The overall space was carved out into a separate Data Center, UPS cum Electrical Room and HUB. The Data Center structure was prepared with a 2 Hours Fire Rating.

4. The Power and Cooling structure from the tapping point onwards was implemented as per Tier III data center architecture. This provided an easy road map for improving reliability and uptime as and when Mediatek requires, without involving any rework in the Data Center space.

5. Full consideration was given to further expansion of the data center space and system design so as to enable Mediatek to grow beyond the immediate plan. The modularity of the Choice design ensures that there is no expensive retrofit or rework of the structure required.

6. Once the Data Center was completed within the scheduled time limit, the IT equipments were relocated back into the new state-of-the-art Data Center and made operational again within a 24 Hours period.

The execution strategy adopted by Choice Solutions Ltd. allows the client to take advantage of the numerous benefits with regards to the architecture of this project.



Picture 1

The data center was setup within a specified timeframe as required by the client without leading to business loss for the client and option for future expansion.



Picture 2

The data center was prepared with all necessary infrastructure including false ceiling and raised floor and ventilation

Client Benefits

The client would be able to take advantages of the following benefits from the proposed architecture of this project.

- i. **Scalability and Modular Design:** The design allows for growth much beyond the initial plan
 - ii. **High Power Efficiency:** Relevant equipment was selected for use in the Data Center with full consideration to power efficiency. The designed PUE for the Data Center (including the UPS / Electrical Room and HUB) at the planned IT load is 1.85 as against the average rating of 1.80-1.89 as identified by Uptime Institute study.
 - iii. **High Service Uptime:** The Data Center infrastructure standard was massive upgradation from Tier 1 to Tier 3. Dual power paths were introduced to enhance reliability and a static switch was introduced for dual power paths for single corded equipment. TIA 942 standards were applied to minimize the risk of interference between power and data and also for ensuring a full scale power network architecture within the Data Centre.
- The Data Center tier rating is presently limited to Tier III only in terms of the base building infrastructure (Transformer and DG).
- iv. **Protection from Equipment Failure:** There is complete redundancy for UPS, PACs and the power delivery path from the tapping point onwards.
 - v. **Investment Protection:** A modular approach ensures a future potential for growth much beyond the initial vision – as a matter of fact for next 10 years,
 - vi. **Client Satisfaction on Delivery Date:** A detailed project plan was agreed upon with the client alongside the risk and the risk mitigation strategy. All contributing and potentially affected parties were kept informed well in advance of all critical activities. This ensured that the entire project work was completed within the stipulated timeline.

The detailed planning, follow-up and communication ensured that Choice Solutions Ltd. could complete all the activities as per plan and without any obstructive event therefore ensuring project success.



Picture 3

The overhead network cabling rails for Rack to rack in the data center

Benefits to Choice Solutions & MediaTek

1. The MediaTek project has provided a prestigious project reference for Choice Solutions Limited.
2. The number of constraints, potential issues, unknown factors above the false ceiling and a high potential business loss to the client tested the planning, risk identification & mitigation strategy adopted by the Choice family as well as the execution capabilities.
3. The project was executed without any glitch as even a single incidence could have spelt major loss for the clients business.
4. A miscalculation or improper risk assessment could make the project unviable in a lump sum scenario.
5. Adding any high buffer is always unviable in a competitive bid scenario. In the end, the fact is that the project went off successfully and accolades from the client speak of effort put in by Choice Solutions Ltd.
6. If we take up the case of the customer, they were able to leverage the skills of the Choice consulting and delivery teams.
7. Right technology was introduced that best met the project requirements of modularity, scalability and addressed all site specific constraints while at same time prevented waste of any existing equipment.
8. What was being considered as an ongoing 90 days of very serious business risk was completely mitigated by relocation done within a specified time.
9. The project execution worked for the best interests of both the customer (Mediatek) and Choice Solutions Ltd.



Picture 4

The data center flooring with active floor grills for more CFM and cooling



Picture 4

Inauguration

The new state-of-the-art data center was inaugurated and the MediaTek plaque was placed in front of the room

About Choice Solutions

Established in 1991 Choice Solutions Ltd. is a leading IT and Facilities solutions provider. Choice Solutions Ltd. business comprises of Six different practices, namely

IMS

- Desktop, Server, Network, Storage, Support, OS, Assets, Apps, Non IT
- Hardware - A-Add, M-Modify, I-Install, C-Change, R-Repair
- Assets, Security, Software Distribution, Upgrades

Networking

- Packaged Services Monitoring & Management
- Products, Security, Design, Deploy, Maintain
- Auditing & Compliance, SOC

Datacenter

- DC Audit, Monitor & Manage, Training
- Assess, Design, Built, Deploy, Disaster Recovery

Consulting

- Business Consulting, CIO & Technology Services, Physical Security, Power Devices, IT Consulting
- DC Consulting, ERP, CRM & Custom Apps

Cloud Computing

- Cold Site – Backup, Disaster Recovery
- Hot Site – HaaS, Software, Manage
- Public Cloud, Private Cloud, Hybrid Cloud
- CaaS, License Software, IaaS
- Disaster Recovery

Power

- Power Audit, Equipment Management
- Physical Security, Power Devices
- Power Saving Devices
- Design & Audit
- Renewable Energy Products