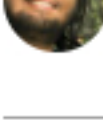# Innovations and Investments: The Unfolding Story of India's Data Center Industry
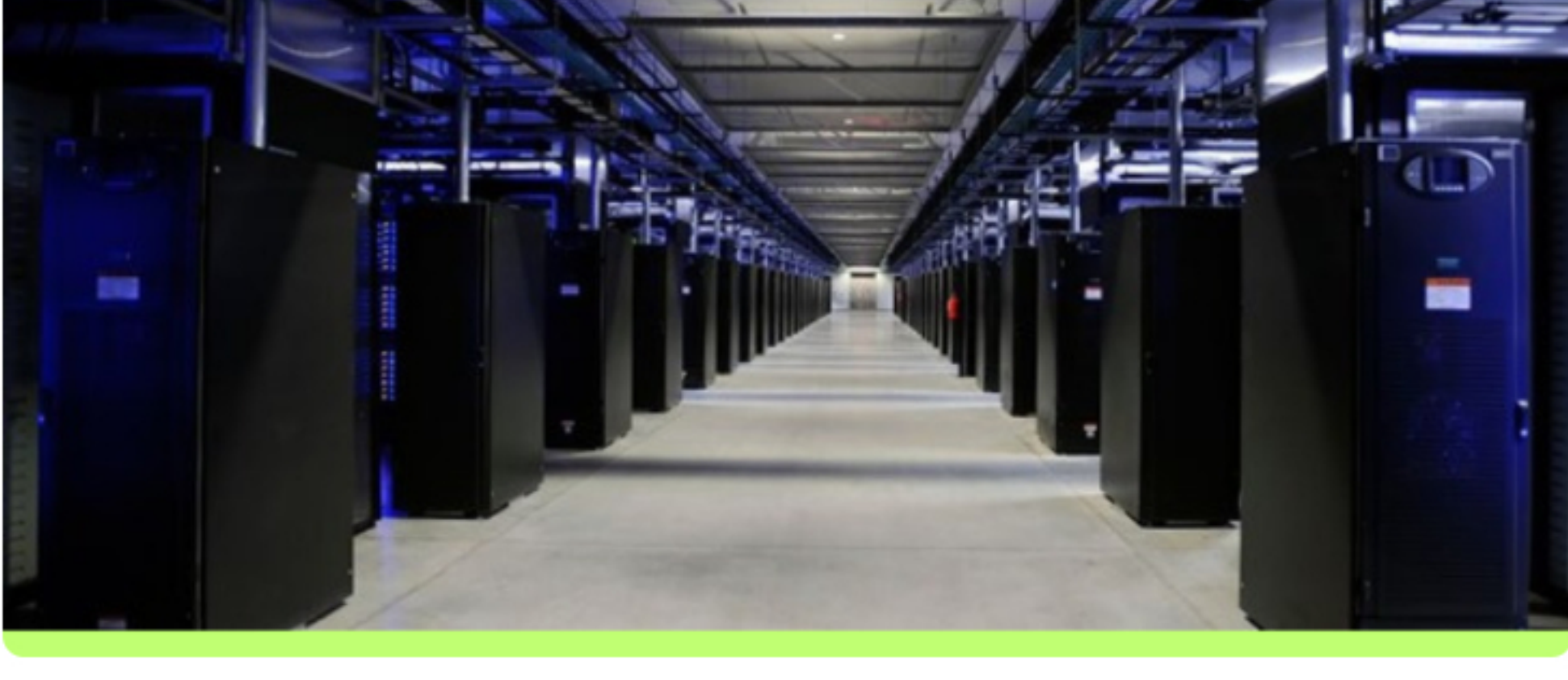
♡ 1

Mohul Ghosh
Dec 02, 2023

This is an Exclusive Guest Blog by **Mr. Rajesh Kaushal, Vice President, Delta Electronics India**

The outlook for India's data center industry is highly promising, with sustained growth expected. There has been a substantial surge in data center investments and expansion in India in recent times, driven by several key factors. Firstly, the rapid growth of India's digital economy is fueling the demand for data center infrastructure to support the burgeoning online activities, including e-commerce, digital services, and data-driven decision-making.

Furthermore, the presence of hyperscale cloud providers such as Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP) in India is contributing significantly to the growth of data centers. These providers are expanding their operations and investing heavily in data center infrastructure to meet the increasing demand for cloud services.

Mr. Rajesh Kaushal, Vice President, Delta Electronics India

The adoption of cloud computing services among Indian businesses is on the rise, further boosting the need for data center capacity to host and manage cloud infrastructure. Additionally, the growing utilization of artificial intelligence (AI) technologies, which require substantial computing power and data processing capabilities, is driving further investments in data centers.

One noteworthy development in this space is the proposed Data Protection Bill (DPDP) in India, which could have a significant impact on data center operations. The DPDP, currently under consideration in the Indian Parliament, is expected to introduce stricter regulations regarding the collection, storage, and use of personal data. This could result in increased operational costs for data centers and potentially lead to industry consolidation.

According to ASSOCHAM-EY report, the Indian data center market is projected to reach $23.3 billion by 2026, a substantial increase from $10.6 billion in 2021. This growth is attributed to the factors mentioned above, as well as government initiatives aimed at promoting digitization and data utilization.

Data centers are currently grappling with a myriad of challenges, driven by the ever-increasing demand for data center capacity and the imperative to bolster energy efficiency while mitigating environmental impacts. These challenges encompass infrastructure, cooling, and power dynamics.

Infrastructure challenges are manifested through spatial constraints, making the establishment and expansion of data centers challenging. The surging equipment density exacerbates issues like overheating, thereby impeding equipment maintenance and repair. Moreover, the reliance on aging infrastructure in some data centers introduces concerns regarding reliability, efficiency, and the ability to meet the requirements of modern applications.

Cooling hurdles are significant, given the substantial heat generated by data centers, which can be difficult to dissipate. The utilization of water for cooling is affected by water scarcity in many regions, escalating cooling expenses and hampering the identification of new data center locations. In response to the environmental repercussions of water-based cooling, there's a shift toward more sustainable cooling methods like air and liquid cooling.

Power dynamics introduce their set of challenges as data centers consume ever-mounting energy, straining power grids and contributing to climate change. Escalating energy costs amplify the operational expenses of data centers, necessitating a focus on improved energy efficiency. Simultaneously, the call for renewable energy sources to power data centers rises, reducing environmental impacts and enhancing resilience during power outages.

Cybersecurity concerns remain paramount, as data centers are prime targets for cyberattacks. The scarcity of skilled workers in the industry exacerbates recruitment and retention challenges, rendering the task of finding qualified professionals more arduous. Additionally, data centers must navigate the intricate landscape of complying with numerous national and international regulations.

Despite these formidable challenges, data centers play a pivotal role in the contemporary economy. They underpin the expansion of the digital economy and offer critical infrastructure to various sectors, including healthcare, finance, and manufacturing. To address these challenges, data center operators are investing in innovative technologies such as cloud computing and artificial intelligence to augment efficiency and reduce operational costs. Sustainability initiatives are concurrently pursued to curb environmental impacts.

The data center industry is poised for continued growth in the forthcoming years, necessitating innovative solutions to effectively address the challenges stemming from surging demand for data center capacity while upholding efficiency and sustainability.

India's data center industry is rapidly growing and evolving, driven by the country's booming digital economy and increasing demand for data storage and processing power. Here are some noteworthy aspects of data centers in India:

Rapid Growth and Expansion: India's data center market is projected to reach $23.3 billion by 2026, up from $10.6 billion in 2021. This growth is being fueled by factors such as rising internet penetration, cloud adoption, and the proliferation of mobile devices.

Tier 2 and Tier 3 Cities Gaining Importance: While Tier 1 cities like Mumbai, Delhi, and Bangalore have traditionally been the hubs for data centers, Tier 2 and Tier 3 cities are now gaining traction. This shift is driven by lower land costs, better infrastructure, and growing IT demand from these regions.

Edge Data Centers on the Rise: Edge data centers, which are located closer to end users, are becoming increasingly popular in India. These edge data centers offer lower latency and faster response times, making them ideal for applications like real-time analytics and IoT.

Government Initiatives and Support: The Indian government is actively promoting the growth of the data center industry through various initiatives, including tax incentives, subsidies, and streamlined licensing processes. This support is crucial for attracting investments and accelerating the development of data centers in India.

Sustainability and Environmental Focus: Data center operators in India are increasingly focusing on sustainability and environmental considerations. This includes initiatives like using renewable energy sources, adopting energy-efficient technologies, and implementing water conservation measures.

Emerging Technologies and Innovation: Data center operators are embracing emerging technologies such as cloud computing, artificial intelligence, and machine learning to enhance their operations and services. These technologies are driving innovation and efficiency in the data center industry.

Skilled Workforce and Talent Development: India boasts a vast reservoir of proficient IT professionals, presenting a significant advantage for the data center industry. Nevertheless, the industry faces the imperative need for continuous talent development and upskilling to align with its dynamic demands. Delta Electronics India actively engages in the Make in India initiative, exemplified by endeavors like setting up the krishnagiri factory in Tamilnadu, embodying the company's dedication to enhancing skills and fostering employment. The krishnagiri factory stands as a testament to Delta's strategic vision, contributing to the establishment of a robust and skilled workforce in India. Through investments in talent development, Delta not only addresses immediate employment needs but also champions the country's long-term goals. This aligns seamlessly with the core objective of job creation, and skill development. Delta's commitment to skill enhancement and job creation through initiatives like the KG factory underscores its role in advancing India's workforce and contributing to the nation's economic growth.

Overall, India's data center industry is poised for continued growth and transformation. With supportive government policies, a growing demand for data services, and a focus on innovation and sustainability, India is well-positioned to become a global hub for data centers.