

Digital Realty Recognized for

2021

Competitive Strategy Leadership

Singapore Data Center Services Industry

Excellence in Best Practices



DIGITAL REALTY®

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. Digital Realty excels in many of the criteria in the data center services sector.

AWARD CRITERIA	
<i>Strategy Innovation</i>	<i>Customer Impact</i>
Strategy Effectiveness	Price/Performance Value
Strategy Execution	Customer Purchase Experience
Competitive Differentiation	Customer Ownership Experience
Executive Team Alignment	Customer Service Experience
Stakeholder Integration	Brand Equity

Streamlined Digital Transformation

Headquartered in Austin, Texas, Digital Realty is a prominent global hyperscale and colocation provider with a broad portfolio offering data centers, colocation, and interconnection solutions to customers. Many enterprises and service providers struggle with the architectural challenges associated with the

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- Samantha Fisher, Best Practices Research Analyst

shift to always-on digital business, including increasing data volumes created in multiple locations, regulatory and security concerns, and required data exchanges with new business partner communities. Frost & Sullivan’s research also points to a growing need for a combination of open interconnection and next-generation colocation to reduce digital transformation complexity. To help enterprises achieve an optimized information technology (IT) infrastructure for the digital workplace, Digital Realty offers a twofold approach with its PlatformDIGITAL® and Pervasive Data Center Architecture (PDx™).

The PDx™ streamlines digital transformation by helping customers understand digital workplaces and distributed workflows for customers, partners, and employees. Digital Realty provides a comprehensive guide to understanding areas such as identifying users, applications, data, and devices to participate in distributed workflows, as well as mapping workflow types to maintain a high quality of experience. PlatformDIGITAL® is the physical incarnation of the PDx™ strategy that hosts critical infrastructure and interconnects digital ecosystems. The platform's decentralized IT architecture unifies users, networks, clouds, controls, systems, and devices, removing data barriers, such as data gravity, accommodating distributed workflows through data exchange while also scaling digital business.

Furthermore, Digital Realty outfitted its PlatformDIGITAL® with four additional enterprise-level IT solutions: Network Hub (network rewiring), Control Hub (hybrid IT control), Data Hub (data exchange optimization), and SX Fabric (global workflow interconnection). Frost & Sullivan finds Digital Realty's PlatformDIGITAL® delivers a vast ecosystem that empowers customers to grow their global digital footprints cost efficiently. The company also leverages key partnerships with technology firms, such as Cisco Systems and IBM, enabling it to address edge computing, networking, and cloud and artificial intelligence.

A Head Start

Digital Realty offers an impressive global footprint, enabling its customers to deploy at any scale with optimal proximity to carriers, networks, and cloud service providers. Digitalization areas, such as the public cloud, drive the need for hyperscale colocation services in various global regions, including Asia Pacific. Frost & Sullivan identifies Singapore as a digital frontier and primitive geographical opportunity for the data center services market, with exponential growth expected in the near future. However, data center services providers looking to expand in the country face challenges concerning real estate availability to meet supply and expansion requirements. The government's moratorium on new data center builds and the significant restrictions COVID-19 levied on construction activities further limit data center power capacity expansion in Singapore.

Despite the challenges, Digital Realty possesses a firm footing in Singapore with three operational data centers that deliver more than 400,000 square feet of total raised floor space combined, bringing the company's total investment in Singapore to more than \$1 billion. The data centers, located in Jurong East (SIN10) and Loyang (SIN11, SIN12), enable customers to link their operating environments while also growing their footprint from Digital Realty's colocation internet gateways. Frost & Sullivan finds SIN12, the most recent launch in 2020, strengthens Digital Realty's competitive positioning in Singapore. The SIN12 offers an impressive 50 megawatts (MW) and the deployment of PlatformDIGITAL®, the first Singapore data center to offer the platform. SIN12 is also the first facility in Singapore to offer full retail colocation services, ranging from a few racks to multi-MW critical IT space. Various entities pre-leased the project, such as a major Singaporean multinational banking and financial services corporation, a leading consumer internet company in South East Asia, and a global cloud services provider, demonstrating the reliability of Digital Realty's data center services.

Sustainable Best Practices

Concerns regarding climate change and its impact on the environment continue to influence industries to create energy-efficient, green solutions. Digital Realty views sustainability as a global mandate, which it demonstrates through its frequent purchases of renewable energy technologies, and its data centers possess significantly more Energy Star certifications than many of its competitors. The company set new ambitious climate impact reduction targets to reduce its carbon emissions in line with a 1.25-degree climate change scenario by 2030. This sustainability focus is particularly evident in the 2020 opening of SIN12, which Digital Realty designed to be one of the most sustainable data centers in Singapore with a power usage effectiveness of 1.25 and the Green Mark Platinum certification by the Building and Construction Authority of Singapore. Additional features of the SIN12 include:

- On-floor, water-cooled chiller system
- Outside air treatment via a plate heat exchanger to reduce the energy requirement
- Light-emitting diode lighting with motion activation sensors throughout all internal and external areas
- Minimized evaporation losses at the cooling towers for low water usage efficiency when compared to the Singapore data center average
- Resource efficiency through standard steel structural components and prefabricated electric and mechanical skid-mounted equipment
- Turbine generators reduce the space footprint by 40%, compared to diesel generators

Defying Data Gravity

Digital Realty finds that the more data grows, the more services and applications use it, resulting in an increasing problem called data gravity: how large data accumulation attracts applications and services, similar to planetary gravity drawing in objects. Data gravity is a byproduct of digitalization that requires consideration as global enterprises move forward with digital transformation. To this end, Digital Realty developed its Data Gravity Index (DGx™), an annual report that measures the creation, aggregation, and private exchange of enterprise data and examines its impact.

Within DGx™, Digital Realty offers the DGx™ Score, which measures data mass (accumulated data, stored or held), data activity (data in motion), bandwidth (total aggregate bandwidth), and latency (average latency). The score also considers more than 1,000 attributes from 13 sources on Global 2000 Enterprises, which includes firmographic data (e.g., industry segments, employee data), technographic data (e.g., IT spending, preferred vendors), and industry benchmarks (e.g., growth rates, cloud usage).

Digital Realty conducted its research between August 2019 and August 2020 to construct the index. It also published an update to the DGx™ in December 2020, expanding the scope of the study and gravitational force of enterprise data growth on 23 distinct global industries. Moreover, the study looks at the five macro trends amplifying data gravity for the Global 2000 Enterprises and industry-specific insight: enterprise stewardship, mergers and acquisitions, digitally-enabled interactions, data localization, and cyber and physical integration. Frost & Sullivan finds Digital Realty's DGx™

differentiates it from competitors as the report enables a comprehensive understanding of data gravity and its impact on IT infrastructure. By understanding what Digital Realty identifies as a new, significant megatrend, enterprises and service providers well-position themselves to discover key opportunities in their respective markets. Through the DGx™, Digital Realty highlighted the Asia Pacific area as a key region for increased data gravity, specifically Indonesia, Jakarta, Hong Kong, and Singapore.

Added Value

Supporting around-the-clock availability of essential services in a decentralized environment demands well-designed, planned, and coordinated implementation operations management, supported by best-in-class tools and automation. Digital Realty understands the complexity of operating mission-critical facilities, such as hyperscale data centers. As a result, the company prioritizes consistent and seamless user experiences across multiple geographies, regions, and facilities. Digital Realty offers best-in-class scalable data centers with service-oriented operations, including consistent designs and operational environments, standardized data storage approach, which aligns with data protection requirements.

Digital Realty incorporates specifications into the design and management of its security systems that meet the strict standards in the most relevant data center compliance programs. These standards comprise three security areas: interconnected work, data center location, and infrastructure. This includes robust, multi-factor authentication protocols combined with proven authorization processes, ensuring only authorized persons access to data center facilities. Each data center offers around-the-clock security staff with multiple systems, equipment, and controls to monitor and record access in facilities. Digital Realty provides comprehensive infrastructure security features, such as remote camera monitoring backed by digital recording, closed-circuit television integrated with access controls, smart card readers, and mandatory security checks for all visitors.

Conclusion

Despite the prevalence of hyperscale colocation data center services, existing challenges affect various aspects of the market, including customer sustainability demands and the increasing capacity in Singapore with expansion challenges put forth by the government's moratorium, Digital Realty continues to prove its excellence by addressing these challenges. The company's PlatformDIGITAL® solution will provide regional and global enterprises with a way to overcome the challenge of data gravity and future-proof their businesses. They also continue to adopt sustainability practices to address the growing concerns of sustainability in the industry. More importantly, the company has a strong presence in Singapore, with three data centers in Jurong and Loyang, the most recent launched in 2020 despite the COVID-19-related challenges.

With its impressive global footprint, strategic excellence, best-in-class sustainability practices, and a strong overall performance, Digital Realty earns Frost & Sullivan's 2021 Singapore Competitive Strategy Leadership Award in the data center services market.

What You Need to Know about the Competitive Strategy Leadership Recognition

Frost & Sullivan's Competitive Strategy Leadership Award recognizes the company with a stand-out approach to achieving top-line growth and a superior customer experience.

Best Practices Award Analysis

For the Competitive Strategy Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Strategy Innovation

Strategy Effectiveness: Effective strategy balances short-term performance needs with long-term aspirations and overall company vision

Strategy Execution: Company strategy utilizes Best Practices to support consistent and efficient processes

Competitive Differentiation: Solutions or products articulate and display unique competitive advantages

Executive Team Alignment: Executive team focuses on staying ahead of key competitors via a unified execution of its organization's mission, vision, and strategy

Stakeholder Integration: Company strategy reflects the needs or circumstances of all industry stakeholders, including competitors, customers, investors, and employees

Customer Impact

Price/Performance Value: Products or services provide the best value for the price compared to similar market offerings

Customer Purchase Experience: Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

Customer Ownership Experience: Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

Customer Service Experience: Customer service is accessible, fast, stress-free, and high quality

Brand Equity: Customers perceive the brand positively and exhibit high brand loyalty

