

Digital Realty Trust, Inc.

Equity Research



DIGITAL REALTY

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Business Summary

Digital Realty Trust, Inc. (Nyse: DLR) is a leader in the intersection of real estate and technology. It generates revenue through leasing data center space and related services. The company's corporate strategy is based on a multifaceted approach that reflects a commitment to innovation, sustainability, and meeting the evolving needs of the digital landscape.

Sector/Industry

Sector	REITS
Industry	Datacenters

Stock data

Price (17/11/2023)	\$ 134.53
Bloomberg code	DLR
Market cap.	\$ 40,742,679,560
Shares outstanding	302,852,000
52-week range	\$ 86.33 – 139.35
Daily volume	\$ 1,748,000

Main Metrics (\$M)

	2021	2022
Revenue	4,428	4,692
EBITDA	2,181	2,168
NI	1,663.	336.9

Multiples

	2022	2023E
EV/EBITDA	22.28	13.10
P/E	89.94	89.00

Remuneration

Dividend yield	3.64%
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General Overview

Established in 2004 by GI Partners, an American private equity firm, Digital Realty Trust has undergone remarkable growth since its inception.

Its customer-centric approach offers flexibility, scalability, and security, catering to a diverse client base.

The data center industry is evolving, with increasing demand for data storage and management solutions, driven by the growth in cloud services, e-commerce, and the need for large-scale data processing.

AI and edge computing are significant trends impacting the industry and Digital Realty is positioned to benefit from these trends by providing efficient infrastructure for AI applications and by investing in edge data center solutions.

Digital Realty's financials show a solid performance with consistent revenue growth. The company's expansion strategy and focus on innovation and sustainability position it well for future growth.

Digital Realty Trust is a leader in the data center industry, with a strong global presence and a strategy focused on customer-centric solutions, innovation, and sustainability. Despite challenges, its market position and commitment to adapting to technological and environmental changes make it a strong player in the evolving digital infrastructure landscape.

Company Overview

Digital Realty Trust, Inc. (Nyse: DLR) is a leader in the intersection of real estate and technology. The core services offered by Digital Realty regard the creation and management of secure, cutting-edge environments specific to the unique demands of enterprises, cloud service providers, and telecommunications companies: these data centers serve as the backbone for the digital operations of businesses worldwide.

The firm operates in various regions, mainly North America, Europe, and Asia-Pacific. The firm's commitment lies in providing not just physical spaces but dynamic ecosystems, fostering innovation and technological resilience. The company's headquarters are in Austin, Texas, USA.

History of Digital Realty Trust

Digital Realty Trust, established in 2004 by GI Partners, an American private equity firm, has undergone remarkable growth since its inception. Initially founded in the United States, the company quickly expanded its footprint to surround a vast network of over 280 data centres situated across various countries, including locations in Asia such as Singapore and Australia.

The company's expansion narrative is bonded with strategic mergers and acquisitions. In 2007, Digital Realty Trust executed a significant merger with Telx, a formidable rival in the industry. This strategic amalgamation was a pivotal move aimed at fortifying Digital Realty's standing in the highly competitive data center and colocation services market. The integration of Telx's resources and client base into Digital Realty's ecosystem not only expanded its market reach but also contributed to the enrichment of its service offerings.

Digital Realty's commitment to global dominance is further evidenced by its series of acquisitions. In 2017, the company finalized the acquisition of DuPont Fabros Technology, a move that significantly boosted its position as a premier provider of comprehensive data center solutions. This strategic alignment with DuPont Fabros Technology added valuable assets to Digital Realty's portfolio, enhancing its capacity to meet the evolving needs of businesses in an increasingly digitalized world. The transformative journey continued in 2020 with Digital Realty's merger with Interxion, a pivotal moment that solidified its position as a key player in the global digital infrastructure landscape. This strategic union brought together complementary strengths, expanding the company's reach across Europe and reinforcing its capabilities in delivering cutting-edge data center solutions on a global scale. As a result, Digital Realty Trust has not only become a cornerstone in the evolution of digital infrastructure but also exemplifies the power of strategic mergers and acquisitions in shaping its formidable presence in the industry.

Corporate Strategy

The company's corporate strategy is based on a multifaceted approach that reflects a commitment to innovation, sustainability, and meeting the evolving needs of the digital landscape.

At the core of Digital Realty's strategy is a focus on global expansion and market leadership. The company, as mentioned before, has pursued a deliberate path of acquisitions and mergers to fortify its position. Notable instances include the merger with Telx in 2007 and the acquisition of DuPont Fabros Technology in 2017, each contributing to the augmentation of its global data center footprint. This expansion strategy aligns with the increasing demand for secure and technologically advanced data infrastructure on a global scale.

A distinctive aspect of Digital Realty's corporate strategy lies in its commitment to sustainability. Recognizing the environmental impact of data centers, the company has implemented innovative approaches to enhance energy efficiency. Digital Realty strategically invests in renewable energy sources and incorporates eco-friendly design principles in its facilities. This not only aligns with global sustainability goals but also positions the company as a responsible steward of the environment in the technology-driven real estate sector. Digital Realty's history is also characterized by a strong commitment to sustainability, with a significant focus on energy-efficient practices and green initiatives. The company's dedication to environmental responsibility is evident through its impressive track record of achieving high energy efficiency ratings for its data centers.

Moreover, Digital Realty's strategy encompasses a customer-centric approach. The company recognizes the diverse needs of its clients, ranging from enterprises to cloud service providers. Digital Realty tailors its solutions to meet specific industry requirements, ensuring flexibility, scalability, and security. This customer-focused strategy strengthens long-term partnerships and enhances the overall value proposition for clients navigating the complexities of the digital age. Furthermore, Digital Realty places a strong emphasis on cultivating a culture of continuous innovation within its organization. This commitment to innovation is not limited to technological advancements but extends to operational processes, service delivery, and customer experience. The company fosters a dynamic work environment that encourages employees to explore new ideas, experiment with emerging technologies, and contribute to the evolution of the digital infrastructure landscape. In tandem with its innovation-centric approach, Digital Realty actively engages in partnerships and collaborations with industry leaders, startups, and research institutions. By participating in collaborative initiatives, the company gains insights into emerging trends, fosters knowledge exchange, and positions itself at the forefront of industry developments. This collaborative aspect of the corporate strategy ensures that Digital Realty remains adaptive to the ever-changing dynamics of the digital ecosystem.

Business Model

Cost structure

Digital Realty Trust manages a comprehensive cost structure reflective of its position as a global leader in data center solutions. This structure includes property acquisition and development costs, covering investments in real estate and the construction of cutting-edge data centers. Operational and maintenance expenses play a vital role, addressing ongoing facility management, security, and regular maintenance. Personnel costs encompass salaries and benefits for a skilled workforce managing various aspects of the business. Energy costs are substantial due to the power-intensive nature of data centers, and investments in sustainable practices align with the company's commitment to environmental responsibility. Additionally, financing costs, depreciation, and amortization are considered in the cost structure, highlighting the long-term financial considerations associated with managing a robust global portfolio.

Revenue

Digital Realty Trust generates revenue primarily through leasing data center space and offering related services. Revenue recognition is typically spread over the lease term, reflecting the stable and long-term nature of client contracts. Additional revenue streams may arise from services such as interconnection solutions and cloud offerings. The company's diverse client base, including enterprises, cloud service providers, and telecommunications companies, contributes to a resilient revenue model. Digital Realty's strategic global positioning ensures a steady inflow of revenue, driven by the increasing demand for secure and technologically advanced data infrastructure on an international scale.

Customer

Digital Realty Trust adopts a customer-centric approach, recognizing the diverse needs of its clients. The company tailors solutions to provide flexibility, scalability, and secure environments for enterprises navigating the complexities of the digital landscape. By offering a range of services, including colocation, interconnection, and cloud solutions, Digital Realty ensures that its offerings align with the unique requirements of its clientele. This commitment to customer satisfaction, coupled with a global network of strategically located data centers, establishes Digital Realty as a trusted partner for businesses seeking reliable and innovative data center solutions.

Risk Management

In addition to its meticulous cost structure and revenue generation strategies, Digital Realty Trust places a strong emphasis on robust risk management practices. The company recognizes the dynamic and unpredictable nature of the digital landscape and, as such, conducts comprehensive risk assessments. This includes evaluating potential threats such as cybersecurity vulnerabilities, market fluctuations, and geopolitical uncertainties. By proactively identifying and addressing these risks, Digital Realty safeguards its financial stability and operational continuity. This vigilant approach to risk management not only ensures the resilience of the company in the face of challenges but also fosters a sense of confidence among stakeholders, including investors, clients, and employees.

Global Expansion and Market Presence

Digital Realty's commitment to global expansion and market leadership remains a cornerstone of its corporate strategy. The company's proactive approach to property acquisition and development, coupled with strategic partnerships and collaborations, facilitates its expansion into key markets worldwide. This global presence not only diversifies the company's revenue streams but also positions Digital Realty as a reliable partner for international enterprises seeking secure and scalable data infrastructure solutions. The strategic placement of data centers in key geographic locations ensures proximity to major business hubs, meeting the specific needs of clients operating in diverse industries and regions.

MARKET OVERVIEW

A data center is a physical facility that houses IT infrastructure for managing and storing data associated with building, running, and delivering specific applications and/or services. During the last few decades the nature and core structure of these data centers evolved from facilities apt for private use, to remote facilities or tenworks owned by cloud service providing housing virtualized IT infrastructures. The latter can advantageously be used by multiple companies and customers.

Having groups of data centers all close to one another is a valuable feature in itself. Proximity allows for faster communication, networking effects, access to the cloud and to cheap power. This is why, in the last couple of years, many new data center warehouses have spread from big markets, like New York or the Silicon Valley, to more rural locations.

An overview of advantages that are incurred when using data centers, include:

- Optimal utilization of compute, storage , and networking resources
- Rapid deployment of application and services, thanks to the SDI automation
- Scalability of virtualized IT infrastructures
- Variety of services and data center solutions (private cloud, public cloud, hybrid cloud, or multi cloud environments)

According to a 2023 Gartner Report, the large data center category will face a compound annual growth rate of 2.7%. The number of infrastructures and sites will increase to 3.6 million by 2027, despite short-term challenges of 2023. In fact, “some trends toward infrastructure density will slow, and in some cases even reverse, resulting in greater levels of racks per data.”

Post covid

Prior to the COVID-19 pandemic, data centers started gaining importance in the REITs market. Especially in Asia, the only data-center backed firm Keppel DC REIT, was considered the top performer in its home market, with a total of 38% return for 2020.

According to the digitalization trend, the rise of Data Centers has also been fuelled by the increase in e-commerce trading, and therefore, the development of internet data and big industries. Data Center REITs were the highest-performing real estate investment trusts during the first year of the

pandemic, according to a CBRE report. However, a cut in the companies' budget caused a temporary 11% decrease in demand.

COVID also compelled many companies to seek acceleration of digital transformation, and therefore increased demand for comprehensive data center, cloud access and interconnection solutions.

The post-Covid time marked an exponential rise in popularity of data centers, due to high increases in demand for large-scale data computed over internet-based transactions. Moreover, the need for effective remote operations and communication activities became one of the focal outcomes of this occurrence.

Post-Covid the quick economic recovery and the expansion in e-commerce marked kicked warehouse and logistic facility operation, causing rentals to grow moderately. Some short-term falls may occur, however, the general expectancy is for rents to stabilize and then begin a process of increase.

AI impact on data server providers

In 2023, artificial intelligence has become one of the most discussed topics in the world. The introduction of popular AI chatbots like ChatGPT or Bard has brought AI into the hands of hundreds of millions of end-consumers and has given a glimpse of these tools' countless useful applications in everyday life. Almost every company in the world is currently exploring ways of implementing AI in its operations and process to streamline workloads and boost productivity. In this context, data centers are strategically positioned to both provide and profit from AI solutions. Firstly, data center owners can implement AI and machine learning algorithms capable of understanding and predictive complex patterns to increase the operational efficiency of their infrastructure. In particular, predictive analysis systems can be implemented to make real-time improvements in hardware cooling, energy allocation, and rack space utilization. The results are lowered operational costs, improved performances and more informed operational decision making. Moreover, the fundamental architecture of AI application puts the data center market in the spotlight of future expansion and innovation. At its core, AI is an extremely complex data algorithm that tries to predict future outcomes and gradually improves on its accuracy. To do so, this software must be trained on vast data sets and requires enormous computing power to run. Data centers can provide both key factors thanks to their extensive data storage capabilities and specialized hardware able to sustain heavy workload for a continuous period of time. To summarize, AI is reshaping the data center industry by automating routine operations, improving resource allocation and requiring more computing and data storage locations to match the increased demand from business across multiple sectors.

Edge computing

An edge data center is a facility designed to process and store data closer to the location where it is generated or consumed, reducing latency and improving performance. Unlike traditional centralized data centers, edge data centers are strategically positioned at the network's edge, enabling faster response times for applications and services. Edge data centers enhance efficiency by minimizing the distance data must travel, leading to quicker decision-making and improved user experiences. According to a PWC article titled "Edge data centers: how to participate in the coming boom", the market for edge data centers is expected to grow in 2024 reaching \$13.5 B thanks to their numerous potential applications. The five main trends driving edge data center's growth are: the wide-spread of 5G networks, the proliferation of IoT devices in home and industrial environments, the increasing gap between the amount of data created (close to 120 zettabyte in 2023) and the overall data center traffic, and video streaming and mixed-reality, which require low latency to provide high quality and uninterrupted visuals to consumers.

ESG

The respect of ESG criteria and the implementation of sustainable practices are fundamental in the data center industry to mitigate their negative impact on the environment and positively manage

crucial resources shared by our society. By embracing sustainable alternatives and collaborating on solutions, data centers owners can promote a greener and more sustainable digital future.

Environmental

From an environmental perspective, data centers have a great impact on the surrounding ecosystem. All data centers require to cool down their infrastructure to maintain optimal operating performance and even the most advanced and efficient cooling systems require a vast amount of power to properly operate. For this reason, they have a steep energy consumptions and all together data centers worldwide contribute for approximately 2.5-3.7% of the global greenhouse gas emissions. The newest data centers have implemented liquid or water-cooling solutions that are more efficient in terms of electricity usage compared to conventional air-cooling, but also require large quantities of fresh water, putting a strain on local water resources. This is a major issue, considering that one fifth of tall data centers draw water from distressed water sources. In general, data storage facilities' high dependance on water and electricity poses a weakness to their operations as they can more easily be subject to interruption in their operations due to environmental regulations, climate events and public pressure.

Social

Among the social initiatives that data center providers might consider there is increased concern over employees' safety and health. Ensuring personnel safety in the workplace is fundamental, especially in complex and delicate environments like data centers, where numerous technologies with different risks and operational procedures are implemented. Worker's mental and physical health is a key factor to ensure high performance standards. Data center employees are usually highly skilled and specialized individuals and in order to attract the best talents in the industry companies must also invest in wellness programs such as providing access to healthcare, mental health resources, and programs that promote work-life balance. Furthermore, data center operators must be mindful of the social background where they decide to build new plants and infrastructure and plan appropriate insertion programs with local communities. Keeping each stakeholder's interests under control during planning, construction and operation of data centers is fundamental since, although they virtually connect business all over the world, they still physically operate in a finite space and framework which deserves to be respected to enable growth and profitability.

Governance

The key governance indicators of any company include transparency, accountability, political stability, and regulatory compliance. These keys represent the core factors that distinguish thriving data center providers from troubled ones. Transparency and compliance with legislation concerning data privacy and cyber security are among the essential features that clients look for in cloud or storage providers. Moreover, accountability for operations and corporate decisions is essential in the industry as numerous opposing forces make it harder for businesses to find a trust-worthy and stable enterprise capable of ensuring data protection and security. Lastly, political stability and good ties with local governmental authorities help data center owners navigate new regulations and preventively address political issues that might rise as the geopolitical backdrop becomes more tense and superpowers like the U.S. and China dispute over data supremacy and dominance over the tech industry.

In conclusion, in the years to come, the data center industry must face business-defining choices to embrace ESG principles aimed at guaranteeing sustainable digital future. Mitigating environmental impact through energy-efficient practices, prioritizing employee well-being, and promotion transparent governance are essential steps toward a greener and socially responsible data infrastructure. As explained, these measures will allow data centers to enhance their profitability but also contribute positively to the broader global community and the longevity of their own industry.

Technological improvement

Renewable energy sources

In 2023, leading data center companies are committed to renewable alternatives to fuel their infrastructures and abandon fossil fuels, like diesel or gas, once and for all. This shift was recently accelerated by the conflict in Eastern Europe that caused a threat to energy security during the last year. Energy is still a great challenge for many more hubs like London, Singapore, or Virginia, that are waiting to be exploited. Ultimately, the best way to power these facilities is by adopting hybrid models.

Innovative cooling methods

AI, as a demanding technology, requires a lot of power and high-power density racks to function properly. High power racks consequently require high-power effective cooling.

Digital Realty adopts, just like many others, modular components to efficiently react to specific scenarios and adapt to different power densities. However, new technologies include liquid cooling, as well as phase-change cooling. Some are also considering moving the location of their data centers to higher altitudes, but there's no evidence of that yet.

SWOT ANALYSES

Strengths

Global Footprint

Digital Realty Trust operates data centers across North America, Europe, Asia-Pacific, and other regions, enabling them to offer services to a diverse range of clients with diverse business needs. As of 2023, Digital Realty manages 300 data centers in 50 global metro areas and services over half of Fortune 500 companies. The strategic locations chosen by the firm are key business and technological hubs that enable the company to provide increased connectivity and accessibility for their clients. Digital Realty's reach in all major markets ensures the firm's competitive advantage in serving multinational corporations and organizations with global operations that need to access their data and infrastructure from numerous entry points. Moreover, Digital Realty offers interconnected data center structures that allow companies that store data within the firm's ecosystem to seamlessly share data and simultaneously contribute to virtual storage suits. Moreover, D.R.T. has continuously expanded its operations through a consistent M&A activity of specific data center locations or sector-related real estate investment trusts (REITs). For example, in August 2022, Digital Realty Trust made a heavy bet on the development of the Information Technology service industry in Africa with the acquisition of Teraco Data Environments for \$1.7 B, the leading carrier-neutral colocation provider on the continent. Previously, the company had expanded its European market share with the 2020 acquisition of Interxion Holding for \$8,816 B resulting in the company offering the world's largest global data center platform. These acquisitions allow Digital Realty Trust to sustain its competitive advantage in the main markets (Europe, America, and Asia) and gain a strategic position in emerging economies, where potential returns are uncharted.

Customer diversification

In 2022, almost the totality of Digital Realty Trust's \$4,69 B revenue came from renting its facilities and providing connection services among them. Over the years, the company has achieved a diversified customer base providing solutions to thousands of businesses among countless sectors of the economy. Digital Realty Trust has established itself as a key partner for cloud service providers, telecommunication companies, financial services providers, retail and e-commerce operators, and healthcare companies. The firm's top tenants include some of the biggest corporations globally such as Oracle Corporation, IBM, Microsoft Corporation, Meta Platforms, JP Morgan Chase & Co., AT&T, Apollo Global Management, and Comcast Corporation. The diversity in the firm's customer base is a strength that helps mitigate risks associated with dependence on a specific industry or company. By providing data storage and IT support to clients across various sectors, the company can adapt to changing market dynamics and capitalize on opportunities arising from different industries' evolving technology needs.

Customer-oriented approach

Digital Realty Trust's ability to provide customized Solutions sets the company apart from its competitors and similar data storage providers. The firm's approach is to understand the unique requirements of each customer in order to tailor its offerings to meet the specific needs and preferences of individual clients. In addition, Digital Realty operates with a proactive consultative engagement method that aims at collaborating with clients to analyze future needs, challenges, and growth plans to strategically develop future solutions. This helps Digital Realty craft solutions that are effective in the short term and scalable for future requirements, creating long-lasting partnerships with every client. Furthermore, the firm establishes clear and robust Service Level Agreements (SLAs) with its customers that outline the levels of service and performance that clients can expect, providing transparency and accountability, which both drive customer satisfaction and retention. In addition, Digital Realty Trust has a clear focus on providing reliable and redundant infrastructure, on which businesses can consistently rely for their operations. The firm's redundant technologies ensure minimal downtimes and interruptions that can be harmful to the client's profitability and Digital Realty's brand reputation. Lastly, to address its customers growing concerns about environmental sustainability and help reduce their environmental footprint, Digital Realty Trust has incorporated green initiatives and energy-efficient technologies in its operations. In 2015, the company also became the first data center REIT to issue a green bond, a standard bond that supports projects that positively impact the environment. Over the past eight years, the company has continued to issue green bonds to ensure that sustainability remains integral to the business growth, raising over \$ 6 B. In 2023, Digital Realty was ranked 8th on the U.S. Environmental Protection Agency's Top 30 Tech & Telecom List and 21st on the National Top 100 List.

Weaknesses

Dependency on technology trends and adaptation speed

Most of the companies operating in the data center industry are heavily influenced by technological advancements and innovation. This sector is characterized by rapid technological obsolescence and increasing capex. Every year, new hardware and software products are developed by external suppliers or internally within the companies, and being able to acquire or implement them into existing infrastructure is fundamental to profitability and market share growth. The need for perpetual innovation constitutes a major weakness in Digital Realty business model as heavy investments must be recurrently made in order to update older technologies or replace them with more recent ones. Furthermore, technological advancements often bring new challenges in harmonization with previous architecture and cybersecurity, as it is vital to ensure that clients' data are kept safe and private throughout all technological changes. Moreover, lagging behind competition in updating infrastructure might also weaken Digital Realty's customer base, as current customers might discontinue their lease contracts to take advantage of cost discounts or improved services.

Capital-intensive operations and heavy reliance on debt financing

The need for continued investments in R&D and innovation to keep up with competition and sector advancements highlights another important weakness of Digital Realty Trust, the high level of capital intensiveness of the data center industry. The company's operating expenses have risen notably in the past years, from \$1,20 B in 2019 to over \$2 B in 2022. This increase, particularly in rental property operating and maintenance costs, could squeeze margins if not managed effectively. Therefore, Digital Realty must focus on cost control measures to maintain profitability. Moreover, expanding and building new data centers is an extremely capital-intensive activity, often requiring debt financing, which puts pressure on careful debt-to-equity ratio management and macroeconomic analysis. However, the company's funding from operations per share (FFO per share) has been consistent in 2022 and 2021 at \$6.70 and \$6.53 respectively, signaling consistent internal revenue to sustain growth levels.

Susceptibility to natural disasters

One unique weakness of Digital Realty Trust lies in its sensitivity to natural disasters and climate-related events. In fact, the company's facilities are often concentrated in specific geographic regions

to satisfy customer demand in specific business hubs. However, this geographical concentration can become a vulnerability when facing the increasing frequency and intensity of natural disasters such as hurricanes, earthquakes, or wildfires. While data centers themselves are usually built to withstand extreme events and are equipped with numerous redundant safety mechanisms to preserve customer data under any condition, as extreme natural events become more frequent there might be a rise in unforeseen disruption and downtimes due to damages to power and communication grids linking data centers to commercial hubs. The incidence of climate-related events is on the rise globally, and despite the internal preventative measures that Digital Realty Trust can take as an individual company, increased service disruption might be inevitable unless communal efforts by governments and firms are made to address the broader climate crisis.

Opportunities

Growth in Cloud Services Market

The constant growth of the cloud services market presents a significant opportunity for Digital Realty Trust. The increasing adoption of cloud computing by businesses across industries creates a demand for data centers to support cloud infrastructure and software-related products. To fully exploit the market's growth, Digital Realty Trust could form strategic partnerships or joint ventures with cloud providers such as AWS, Microsoft's Azure, and Google Cloud. These business opportunities can lead to increased demand for Digital Realty Trust's data center services and even new data center construction contracts to provide further data storage ability. Moreover, Digital Realty's customer-oriented approach could prove successful as companies increase demand for tailor-made hybrid cloud solutions that provide a combination of on-premises and off-site storage and computing power architectures. In addition, the frenzy in artificial intelligence and machine learning applications has opened new profitability frontiers for data center providers. These technologies are extremely data-intensive and require vast computing power to be trained. The majority of businesses are now adopting these solutions, as they can bring increased value to their operations, but most of them cannot afford to internally develop the necessary IT infrastructure required to run these models. Therefore, in the future year, more and more businesses are going to rely on data center providers, like DLR, for their AI solutions, greatly boosting the company's consumer base, client diversification, and profitability.

Emerging markets

Digital Realty Trust may also consider entering and expanding into emerging to tap into new customer bases and capitalize on the increasing demand for data center services in regions with growing digital economies. This expansion can be achieved through strategic acquisitions of existing data center providers in emerging markets that enable quick entry and a stable foothold. Likewise, the firm can customize its current offerings to the needs of local enterprises by offering quickly scalable and cost-effective solutions as new corporations develop in each emerging economy.

Edge Computing

The rise of edge computing represents a diversifying opportunity for Digital Realty Trust. Edge computing involves processing data closer to the source of generation, reducing latency, and improving real-time processing capabilities. The main sectors where edge computing is being applied are 5G, big data, and the Internet of Things (IoT). With the rollout of 5G networks, there is an increased need for edge computing solutions that allow low-latency applications. Digital Realty Trust can exploit the opportunity by further improving its connectivity and data transmission speed to attract telecommunication companies expanding their 5G portfolio. Big data processing represents another rapidly expanding market and the demand for data centers optimized for big data analytics at the edge, closer to where the data is being generated, is quickly increasing. This is crucial for industries such as healthcare or energy, where real-time analytics can impact patient care or optimal resource utilization. Lastly, edge computing is vital for the IoT ecosystem, enabling faster data processing and reducing the strain on centralized cloud servers. Digital Realty Trust can position itself as a key player in supporting the IoT infrastructure by providing smaller, energy-efficient, and less costly edge data centres.

Threats

Market competition

Intense competition within the data center industry poses a threat to Digital Realty Trust. Existing competitors and the entry of new players could lead to price pressures, reduced profit margins, and a need for increased investments to sustain the firm's strategic advantage. The biggest competitive threat to Digital Realty business is Big Tech companies expanding their proprietary data center structures and decreasing their reliance on specialized constructors and landlords. Many tech corporations, such as Microsoft, Amazon, Google, and Oracle already use wholly owned data storage plants, however, their data storage necessities are so vast that they often require renting further storage at facilities such as those operated by Digital Realty Trust. Nevertheless, these companies possess the know-how and financial resources to expand their internal data collection systems and offer similar services to other companies, potentially harming Digital Realty business. Furthermore, new players and start-ups might venture into data center services as there is the possibility to disrupt current market equilibria and attract consistent customer bases by providing better-performing and less expensive solutions. The threat posed by emerging and growing competitors reinforces the need for perpetual advancements and novelties that were previously discussed in the analysis.

Security and privacy concerns

The increasing frequency and sophistication of cyber threats pose a significant risk to Digital Realty Trust. Security breaches or data privacy incidents can damage the company's reputation, lead to legal consequences, and result in the loss of customer trust. Cybersecurity attacks, ransomware, data breaches, or distributed denial-of-service (DDoS) attacks can compromise the security of Digital Realty Trust's data centers and lead to service disruption and major financial losses. Moreover, data privacy regulations, such as the General Data Protection Regulation in Europe (GDPR) and California Consumer Privacy Act in California (CCPA) require legal measures and possible software changes to ensure compliance. Failure to meet these standards may result in legal consequences and impact the company's operations and profitability.

Geopolitical Tensions

As geopolitical tensions between China and the USA escalate due to fears of economic supremacy and war, concern over the future of the broader tech industry rises. Recently, the U.S. prohibited the export of certain microchips to China, which led to China imposing export restrictions on minerals essential in the production of micro conductors. With President Biden signing an executive order that makes it harder for US firms to invest in Chinese companies and prohibits investment in AI and quantum computing in China, many global corporations operating across the continents are caught in the middle of a geopolitical tug-of-war. Since Digital Realty Trust spreads its operations mainly across China and the U.S. which account respectively for 10,4% and 58,8 of total revenues as of December 2022, it will be greatly impacted by any future political development. The main threat comes from the risk of new regulations, trade restrictions, or a complete embargo of software and hardware products between the two superpowers being imposed. These laws could limit Digital Realty's ability to connect its customers and leverage its widespread data center ecosystem to enhance communication and data exchange. Furthermore, data sovereignty concerns might lead to increased scrutiny over where data are stored and processed, creating inefficiencies in the firm's business. Lastly, market access limitations could slow down companies' expansions in certain regions, consequently diminishing the forecasted need for data storage and management solutions in those areas.

PORTER FIVE FORCES ANALYSES

Threat of New Entrants

The company first penetrated the market in 2004 and it has since established its presence on the market. It can rely on a strong base of experience, that differentiates it from all other companies trying to emerge.

The constant creation of new joint ventures, especially in developing countries, allows the company to always be one step ahead of its competitors, as in the case of 2023: Digital Realty previously announced plans to expand its joint venture in India with Brookfield Infrastructure through the addition of Jio, a Reliance Industries, Ltd. company. Upon closing, the new joint venture, 'Digital Connexion: A Brookfield, Jio and Digital Realty Company', will succeed BAM Digital Realty.

Additionally, competition with possible new entrants is often overcome by peering in the hunt and appliance for new technologies. In fact, the reliability of the brand's core operation allows the company to be credible when presenting new offers on the market. For example, the new Lumen product provides On-Demand Internet, which allows to reduce Capex expenses.

Threat of Substitutes

The company's ability to offer partner services, allows to succeed in the sector they specialize in, the data centre supply, whilst building strong relationships with companies that operate just outside their scope, but may be appealed by the idea of expanding. This was particularly effective at the rise of cloud computing, which could have been a relevant threat to DLR, but ended up being not. In fact, DLR implemented value-adding services: connectivity solutions, security, and compliance services, to increase its market relevance.

Some of its most renowned partners include Aws by Amazon, Google Cloud, IBM, Oracle, Nvidia, Hewlett Packard Enterprise, and Microsoft Azure.

Bargaining Power of Suppliers

As suppliers for Digital Realty Trust, we consider hardware manufacturers for data centres, power suppliers and providers of backup power systems (Diesel implemented during recent crisis due to wars in Eastern Europe), network and Internet service providers (Telecom), constructors and engineers for data centres facilities.

As mentioned, the recent War initiated between 2021 and 2022 represented the greatest challenge to the Data Centre industry after COVID. The ability of Digital Realty, and of its competitors, to overcome the challenge of power supply shortage, increasingly made the company independent from supplier's bargaining power. However, this shift did not correspond to a sole bargain relief, but it also meant that the holders of such bargain changed subject.

Higher bargaining power can also be related to switching costs particularly when it comes to operating on a scale equivalent to Digital Realty's.

Overall, DLR has a stronger bargaining power with respect to suppliers, due to its competitiveness and size on the market.

Bargaining Power of Buyers

It's high degree specialization allows the company's services to be fundamental for a customer niche. As technological innovation is the main driver of DLR's market, the company can (partially) avoid price competitiveness and other basic discrimination points.

The main industries it serves area: AI, networks, clouds, digital media, mobile, but also financial services, healthcare, gaming, and real estate. With over 300+ data centres worldwide, local experts work with customers to enable new data workflows and unlock trapped value.

The global data centre platform is trusted by over 5,000+ customers including over 1,500+ enterprises, 1,300+ network service providers and over 1,100+ cloud and IT-providers which form our global connected data community to support our customers' hybrid IT needs.

The company is surely well governed when it comes to ESG, social responsibility, as it is an increasingly important trend for firm evaluation. In fact, it was named America's Most Responsible Company of 2023, it commits to a very strict environmental policy, aiming to reduce emissions by 68% by 2030. It also supports 12 philanthropic associations. This ESG component is increasingly important when it comes to company's positioning in the eyes of customers, therefore it will be further discussed below.

Intensity of Competitive Rivalry

Digital Realty Trust is well positioned with respect to competitors, for its local presence all over the world. Having so many support centres across the continents grants them an advantage when it comes to positioning on the market. Learning about the Peer Competitors of Digital Realty Trust, allows to identify the scale and impact of these companies, and get a broader overview of the market's landscape.

Moreover, the data centre industry is a capital-dense market, which means that it requires very high amounts of capital investments to launch and maintain the business. Even complying to all the regulations of the market, may hinder market penetration.

DLR's main competitor is Equinix, another well-established data centre, that managed to excel in data centre services, interconnection services, and in digital services, securing it a relevant share of the market. This company can rely on the same bargaining power of Digital Realty Trust when it comes to unexpected occurrences.

PEERS

Competitors Analysis



Switch is a technology infrastructure ecosystem founded in 2000 by Rob Roy. Its core business is the construction and design of the most advanced data centres. It provides colocation, telecommunication, cloud service and content ecosystem. The data centre operates in 5 main venues that encompass 16 facilities with an aggregate of up to 5.1 million gross square feet of space. The company owns patents for the Switch CONNECTION, Switch CLOUD, Switch SAFE, and Switch SUPERLOOP solutions. The company is listed on the NYSE, and it has a market cap of \$ 5.41 Bio.



Headquartered in Boca Raton, **Digital Bridge** has key offices in Los Angeles, New York, London, and Singapore. It's a global asset manager dedicated to investing in leading companies that provide AI and next-generation digital infrastructures such as cell towers, data centres, fiber, and small cells. As part of its digital infrastructure, it also owns data centre REITs. It manages assets for a total amount of \$ 75 Billion.



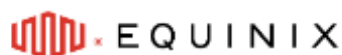
Iron Mountain is an American enterprise information management services company founded in 1951 and headquartered in Boston, Massachusetts. The company specializes in the retrieval and management of paper- and computer-based documentation. Its business divides into two main segments: the Global Records and information Management (RIM) and the Global Data Centre Business. The latter provides data centre facilities and the capacity to protect mission-critical assets and ensure the continued operation of its customers' information technology (IT) infrastructure with data centre options. The market cap for this company amounts to \$ 17.36 Billion.



With its total market cap of \$ 84 Bio. **American Tower Corporation** is one of the leading holding companies operating as REIT. Its primary form of business is leasing multitenant communication sites across U.S. & Canada, Europe, Asia-Pacific, Africa, and Latin America, to wireless service and data providers, broadcast companies, government agencies, and other tenants. However, American Tower is also devoted to its Data Centre segment, which relates to data centre facilities and other related assets on U.S. territory.



Keppel DC REIT is a real estate investment trust company founded in March 2011 and headquartered in Singapore. The company was first listed on Singapore Exchange on the 12th of December 2014 as the first pure-play data center REIT in Asia. As a pure-play REIT, it invests in income-producing real estate assets which are used primarily for data center purposes, such as data storage, interconnection, and cloud services. Keppel DC REIT's investments comprise an optimal mix of fully fitted and shell and core assets, as well as debt securities issued by NetCo which holds M1 Singapore's network assets, therefore reinforcing the diversity and resiliency of its portfolio within the digital sector. Keppel DC REIT is managed by Keppel DC REIT Management Pte. Ltd. and is sponsored by Keppel Corporation, a global asset manager and operator with more than \$US 35B under management as of 2023. The Manager's key objectives are to provide Keppel DC REIT's Unitholders with regular and stable distributions, as well as achieve long-term growth through at least 90% of its AUM in data centers investments.



Equinix Inc. is an American internet company, which offers data center services to businesses. The company was founded in 1998 in Silicon Valley and quickly expanded to Asia-Pacific, Europe, Latin America, and The Middle East thanks to numerous mergers and acquisitions. Equinix is involved in the creation and operation of International Business Exchange (IBX) data centers, which allow companies to come together and realize new opportunities and accelerate their

business, IT and cloud strategies. It provides its services across the world, making it possible to interconnect industry-leading organizations in the areas of healthcare, government, e-commerce, advertising, cloud service providers, mobile, financial services, gaming, networks and digital media, content delivery systems, and entertainment. Equinix is one of the biggest datacenter owners and operators around the world with more than 250 datacenters worldwide, 12,000 employees and a revenue of \$US 7,948.49 billion as of September 2023.



Digital Core REIT is the only pure-play data center Singapore REIT sponsored by a global pure-play listed data center owner and operator, Digital Realty. Digital Core REIT was established with the principal investment strategy of investing, directly or indirectly, in a diversified portfolio of stabilized income-producing real estate assets located globally which are used primarily for data center purposes, as well as assets necessary to support the digital economy. Digital Core REIT seeks to create long-term, sustainable value for all stakeholders through ownership and operation of a stabilized and diversified portfolio of mission-critical data center facilities concentrated in select global markets. The REIT own 11 datacenters and 1,2 million net rentable square feet for a total AUM of \$US 1.59 B and has a stable and resilient portfolio with 26 customers, which include leading global cloud providers, global colocation and interconnection providers, social media platforms and IT solutions providers.



Cyrus One Inc. incorporated on July 31, 2012, is a data center real estate investment trust (REIT). The Company owns and operates multi-tenant and single-tenant data center properties and is a leading global data center developer and operator specializing in delivering state-of-the-art digital infrastructure solutions across the globe. With more than 50 high-performance mission-critical facilities worldwide, the company ensures the continued operation of digital infrastructure for nearly 800 customers, including approximately 200 Fortune 1000 companies. Its data centers are purpose-built facilities with redundant power and cooling, and they are spread across Europe, Asia, and the United States. The Company's customers operate in various industries, including information technology, financial services, energy, oil and gas, mining, medical, research and consulting services, and consumer goods and services. In 2022 Cyrus One was privatized by the investment firm KKR and Global Infrastructure Partners with a \$US 15B buyout.

VALUATION

Historical stock performance



DCF MODEL

	Average	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Revenues		3.046.478	3.209.241	3.903.609	4.427.882	4.691.834	5.389.502	6.190.912	7.111.491	8.168.957	9.383.668	
CAGR Revenues	14,87%		5%	22%	13%	6%	15%	15%	15%	15%	15%	
COGS		1.097.983	1.192.761	1.514.116	1.778.320	2.017.562	2.349.009	2.734.907	3.184.200	3.707.304	4.316.343	
		36,04%	37,17%	38,79%	40,16%	43,00%	43,58%	44,18%	44,78%	45,38%	46,00%	
Free Cash Flows to the Firm												
EBIT		549.787	594.215	557.526	694.009	589.968	852.540	979.312	1.124.934	1.292.210	1.484.359	
EBIT Margin:	15,82%	18,05%	18,52%	14,28%	15,67%	12,57%	15,82%	15,82%	15,82%	15,82%	15,82%	
Tax		-2.084,00	-11.995,00	-38.047,00	-72.799,00	-31.550,00	-42.728,17	-49.081,77	-56.380,15	-64.763,79	-74.394,06	
Tax as % of Ebit:	-5,0%	-0,4%	-2,0%	-6,8%	-10,5%	-5,3%	-5,0%	-5,0%	-5,0%	-5,0%	-5,0%	
D&A		1.186.896	1.163.774	1.366.379	1.486.632	1.577.933	956.268	2.196.927	2.523.606	2.898.863	3.329.919	
D&A as % of Revenues:	35%	39%	36%	35%	34%	34%	18%	35%	35%	35%	35%	
Capex (lorde)		-1.261.615	-1.350.180	-1.963.253	-2.396.118	-2.489.547	-2.597.231	-2.983.435	-3.427.066	-3.936.665	-4.522.041	
Capex as % of Revenues:	-48%	-41%	-42%	-50%	-54%	-53%	-48%	-48%	-48%	-48%	-48%	
Change in NWC		130.507	30.502	-11.467	326.664	230.338	185.693	213.306	245.024	281.459	323.311	
Change in NWC as % of Revenues	3,45%	4,28%	0,95%	-0,29%	7,38%	4,91%	3,45%	3,45%	3,45%	3,45%	3,45%	
FCFF		603.491,00	426.316,00	-88.862,00	38.388,00	-122.858,00	-645.457,06	357.028,02	410.117,50	471.101,29	541.153,28	

Main Comments

- **REVENUES:** we considered the sum of **Rental and other services** and **Fee income and other** from all the financial statements of the FY taken into account.

- **COGS:** we considered both Rental property operating and maintenance and property tax and insurance. The forecasted values of 2023 is obtained by multiplying the value of 2022 for (1+CAGR of COGS between 2018 and 2022); then proceeding with the same method for 2024 and so on.
- **D&A:** we considered the **Depreciation and amortization** from all the financial statements of the FY taken into account
- **TAX:** We estimated the corporate tax to stay constant over time and equal to the average of the tax rates from 2018 to 2022.
- **CAPEX:** The Capex is considered to as a % of Revenues. From past data we can observe how CAPEX generally increased from 2018 to 2023. Given the company prospects to continue to invest we assume a moderate constant CAPEX/revenue ratio over time that is the average of the 2018-2022 period, and is slightly lower than the 2022 ratio, so that the forecast can incorporate any possible adverse future event preventing investments.
- **CHANGE IN NWC:** The Change in NWC is considered as a % of Revenues, and is projected to be constant over time and equal to the average of ChangeNWC/Revenues ratios of the 2018-2022 period.

Results

Terminal Value											
EBITDA											4,814,278
Exit multiple											21
TV											99,212,631
Terminal Value											
Terminal EV											99,212,631
Discount Factor											47.24%
TV											46,865,442
Discounting											
Discount Factor	1.00	0.92	0.85	0.78	0.72	0.66	0.61	0.56	0.51	0.47	0.43
PV of FCFF	603,491	392,230	-75,220	29,897	-88,032	-425,515	216,551	228,863	241,875	255,627	1,379,765
PV of TV											46,865,442
Enterprise Value											48,245,207
Implied EV/EBITDA Multiple											22.25x
										5% multiple	21.14x
										5% EV	45,832,947
										5% Equity Val	41,013,786
										5% share price	135.43
											143.39
											151.36
EV to Equity Value											
EV											48,245,207
Net debt											4,819,161
Equity Value											43,426,046
Shares Outstanding											
Shares Outstanding											302,852
Implied Shares Price											143.39
Last close price											134.53
Implied premium											8.86
											6.59%

WACC

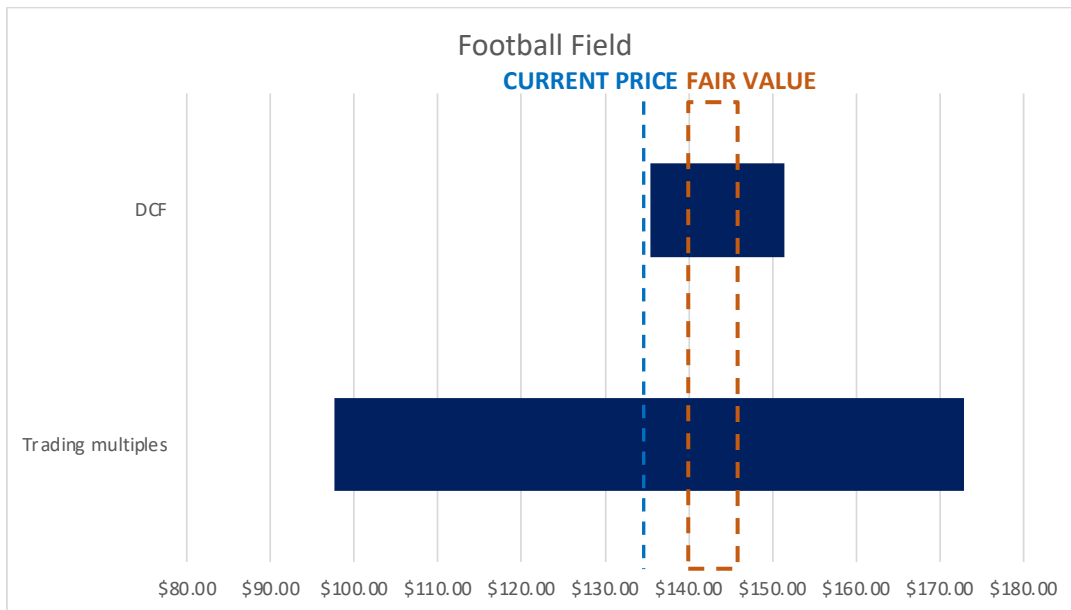
From the unlevered beta (0.61) taken from Factset, we retrieved the levered beta of 1.14. For the levered beta formula, we considered a target Debt-to-Equity ratio for the analyzed REIT, which has been assumed to be equal to the mean of the peers' Unlevered Beta for a 3-year horizon, that is 0.908.

To compute the Cost of Equity we used as is Risk Free Rate the current yield on the 5 USA year bond (Source: Charts). As Tax Rate we took the average Corporate Tax Rate from Factset. For the Average Market Risk Premium, we considered 5% as reported on Damodaran Equity Risk Free. By applying the *Capital Asset Pricing Model* formula, we obtained a 14.10% Cost of Equity.

To compute the Cost of Debt we considered an Interest Coverage Ratio of 2.08 (taken from Factset), and a Spread on Debt equal to 0% that is taken from Damodaran Equity Risk Free. Since the Spread on Debt is equal to 0%, the Cost of Debt is equivalent to the Risk-Free Rate that is 4.42%, for which we consider the current yield on the 5 USA year bond (Source: Ycharts).

We then used the usual formula considering 0.523 as the weight for Equity and 0.477 as a weight for Debt, obtaining a WACC of 8.69%.

Football Field Analysis



The football field chart give an overview about the range of values that we found by using the fundamental approach (*Discounted Cash Flows*) and the comparable multiples analysis.

The value retrieved with the DCF is considered to be more accurate (even though the underlying assumptions were not too in-depth) because it was run through the use of the REIT specific financial information, while the multiple (besides giving a broader range of value, which is not too useful when searching for a target price) are based on how the peers are generally performing.

Moreover, using the multiple approach may distort the real intrinsic value because competitors may have different sizes and could also have different business activities within their own group (besides the one that make them compete against *Digital Realty Trust*).

Also, if the purpose of a potential investor would be to acquire the control of *Digital Realty Trust*, the multiple analysis does not give a realistic target share price because its outcome is the share price that could be obtained when acquiring a *minority stake* of the REIT.

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