

The Current Opportunity in Infrastructure

Part 3: Digital Connectivity

Starlight Global Infrastructure Fund



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Digital infrastructure may be invisible but it is everywhere

Digital infrastructure consists of the equipment that transmits, processes and stores data, the facilities that house that equipment, and the networks that connect them all. It includes but is not limited to cellular towers, small cells, fiber-to-the-node, fiber-to-the-home, coaxial cable, twisted pair, satellite, subsea cables, data centres and cloud service providers.

This “plumbing” for data is an enormous system that hides in plain sight. There were 142,100 cell towers and 452,200 outdoor small cell nodes across the U.S. at the end of 2022.¹ Cellular equipment mounted atop multi-story buildings and on cellular communication towers collect data transmitted in the form of radio waves and translate them into pulses of light, which are then transmitted through over five billion kilometers of fibre-optic cable across the globe. Eventually most data inevitably passes through one of the more than 8,000 data centres globally. Data centres are optimally built to run high-performance computing equipment and keep them powered, connected, cool and secure. Post-processing, data is relayed back to the edge user. This entire process occurs almost seamlessly with every swipe of a screen or press of a key.

Is it Infrastructure?

For most people in developed economies, a world without an internet connection is unimaginable. We use the internet all day, every day, in our places of work, for communicating via email or video communication and online research, and at home, for navigating household responsibilities and entertainment. It is ubiquitous to every aspect of our daily lives.

Consider what would have been our collective economic and social reality if the pandemic hit in the late 1990s or early 2000s. It is indisputable that digital connectivity enabled us to ward off a worst-case scenario. The negative impacts of COVID-19 were mitigated by allowing us to continue work, study, socialize and access vital health information remotely.

And yet, companies that provide digital connectivity are not universally accepted as core infrastructure. For example, the S&P Global Infrastructure index,

Did You Know?

RURAL CONNECTIVITY

Even in advanced economies, not everyone is digitally connected. In Canada, a priority of the federal government is to close the digital divide and to leave no one behind. Approximately 62% of people in rural communities are unable to subscribe to a service offering with speeds of at least 50 megabits per second (Mbps) download and 10 Mbps upload. To address this deficit, the CRTC has established the Broadband Fund to invest up to \$675 million over the next five years in digital infrastructure projects to enable the delivery of internet access services to underserved areas across Canada.²

THE NEWEST HUMAN RIGHT

The Syrian civil war forcibly displaced 12 million people. It was one of the largest mass migrations in modern history, and certainly the largest since the advent of the smartphone. The media reports of refugees with no more than a backpack and a smartphone in hand confounded many observers.

The refugee experience has dramatically changed in the era of digital connectivity. The smartphone is the source of everything from basic survival info when living in a war zone to travel directions to sourcing living arrangements upon arrival in a safe country. Digital connectivity is now quintessential, irrespective of circumstance. Aid groups now setup wi-fi access at refugee camps just as quickly as they distribute food.

¹WIA Wireless Infrastructure Association. Wireless Infrastructure By the Numbers: 2022 Key Statistics. Mar 15, 2023.

²Canadian Radio-television and Telecommunications Commission. BROADBAND FUND Closing the digital divide in Canada. Date modified: Dec 20, 2023.

which is the bellwether for the asset class, is limited to the Energy, Transportation, and Utilities sectors. Whereas other fund managers may begin with the index and construct a portfolio by selecting companies from holdings in the index, Starlight is index-agnostic. We start with the underlying characteristics of infrastructure and rely on our own internally developed inclusion criteria to determine whether a company is suitable for the infrastructure mandate. This process not only permits greater control of the investment decision-making process, but also allows allocation to unconventional sectors to drive incremental return. The first inclusion criteria in our process is:

Is the service provided essential and foundational for societal well-being and the functioning of the economy?

Nearly all aspects of business have now been digitized, with layers of redundancy and business continuity planning built-in to maintain connectivity. Combined with the examples presented in the sidebar, we believe it is unquestionable that digital connectivity is essential to the functioning of modern society. Further, we find that companies in the sector meet our other inclusion criteria as well as elaborated in the table below.

Criteria	Digital Connectivity
Low Correlation to the Economic Cycle	<ul style="list-style-type: none"> The sector beta is less than one. Companies in the sector are generally resilient to economic weakness. Consumers and businesses generally do not change their consumption patterns during recessionary periods. Network providers are in continual growth mode and do not scale back their network footprint when the growth outlook is weakened.
High Operating Leverage	<ul style="list-style-type: none"> Capital is invested upfront to build towers and data centres before cash inflows can be realized. Assets are operated passively with minimal labour or other forms of overhead. Maintenance capital is a small proportion of total invested capital.
High Visibility of Future Cash Flows	<ul style="list-style-type: none"> The average lease term for a cell tower tenancy is ten years plus the option of two five-year extensions. Inflation protection is built into contracts. Annual lease escalators in the U.S. are typically fixed at an average of approximately 3%.
Stable and Recurring Free Cash Flow: Businesses with Low Demand Elasticity	<ul style="list-style-type: none"> The majority of revenue generated by cloud services and data centre providers is recurring with low churn. Demand is uncorrelated with the economic cycle. Companies and users maintain connectivity despite weaker economic conditions.
Irreplaceable Assets	<ul style="list-style-type: none"> Tower companies have a large national installed base that provides network coverage covering a significant population. Cloud providers are functional oligopolies. The leading players are able to provide cloud hosting services globally.
Ample Reinvestment Opportunities	<ul style="list-style-type: none"> Ericsson forecasts that global mobile data traffic will increase by a factor of 3.5 by the end of 2028. Global data centre capacity is expected to grow at a 15% compounded annual growth rate through 2027.

Cell Towers

Outside of Canada, cellular network operators do not own the towers that house their network equipment. Towers are shared infrastructure in most of the world. Dedicated tower owners lease space on their towers to mobile network operators. The business model allows wireless network operators to co-locate their equipment and thereby reduce costs, because leasing space on a shared tower is cheaper than operating one that is independently owned. While co-location reduces costs for customers, the tremendous operating leverage in the

business model results in it being a goldmine for tower operators. As shown in **Exhibit 1**, increasing tenancy on a tower from one to three results in return on invested capital increasing from just over break-even to 24%. These attractive economics on a per tower basis can be scaled up with no dilution of returns. American Tower is the largest player in the industry with nearly 225,000 towers across the world. Besides the potential for high returns, the business enjoys other attractive characteristics: a high percentage of recurring/contracted revenues, high visibility of earnings, scalability, a sticky customer base, high switching costs of customers and durable barriers to entry, just to name a few.

Despite being the largest player in a relatively mature industry, American Tower has increased revenue at an average annual rate of 14% over the last 10 years. Growth has been driven by the 5G investment cycle which began in 2019, as shown in **Exhibit 2**. We are still in the first phase of the 5G deployment and over the next five years, two additional phases are expected to play out that represent discrete business cases for cellular network operators. Ultimately, greater investment to drive up network densification will bring down costs on a per gigabyte basis and unlock better network quality, higher speeds and lower latency. More devices will be connected, and digital connectivity will become more integral to our daily lives. As this proliferation unfolds, tower operators will be beneficiaries of investment spending as it allows them to sell more tenancies to network operators across a broader and denser footprint of tower sites.

Data Centres

If we think of digital connectivity as a stack with networks (fiber, broadband and cellular) at the bottom, hardware in the middle and applications at the top, the data centres that facilitate cloud computing is one layer up from the bottom (network layer). Data centre infrastructure is the provisioning of space and power to run the computing hardware stack that facilitates the cloud.

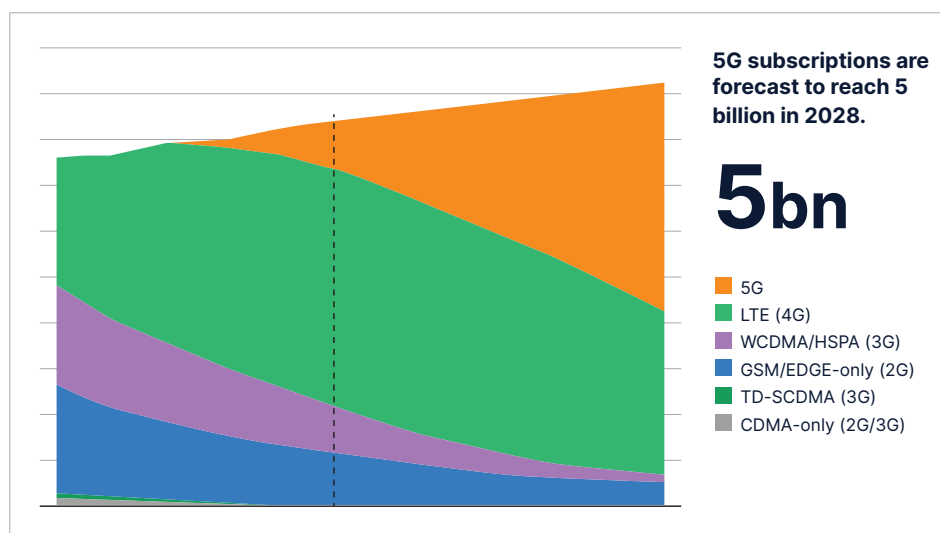
Before the cloud existed as it does today, users and companies had to manage physical servers themselves or run software applications on their own machines, housed on their own premises. The cloud eased that burden by

Exhibit 1: U.S. new macro tower build economics drive strong ROI

	One Tenant	Two Tenants	Three Tenants
Construction / Upgrade Costs (\$ in USD)	\$275,000	-	-
Tenant Revenue	\$20,000	\$50,000	\$80,000
Operating Expenses (including ground rent, utility, monitor)	\$12,000	\$13,000	\$14,000
Gross Margin	\$8,000	\$37,000	\$66,000
Gross Margin (%)	40%	74%	83%
Gross Margin Conversion Rate (%)	-	97%	97%
Return on Investment	3%	13%	24%

Source: American Tower. Introduction to the Tower Industry and American Tower. As of June 30, 2023.

Exhibit 2: Mobile subscription by technology (billion)



Source: Ericsson Group. Mobile Data Traffic Outlook. 2023.

centralizing the administration of information systems. Companies and their users now access the files and applications remotely, from almost any device, because the computing and storage takes place on servers in a data centre, instead of locally on the user device or a server managed on company premises.

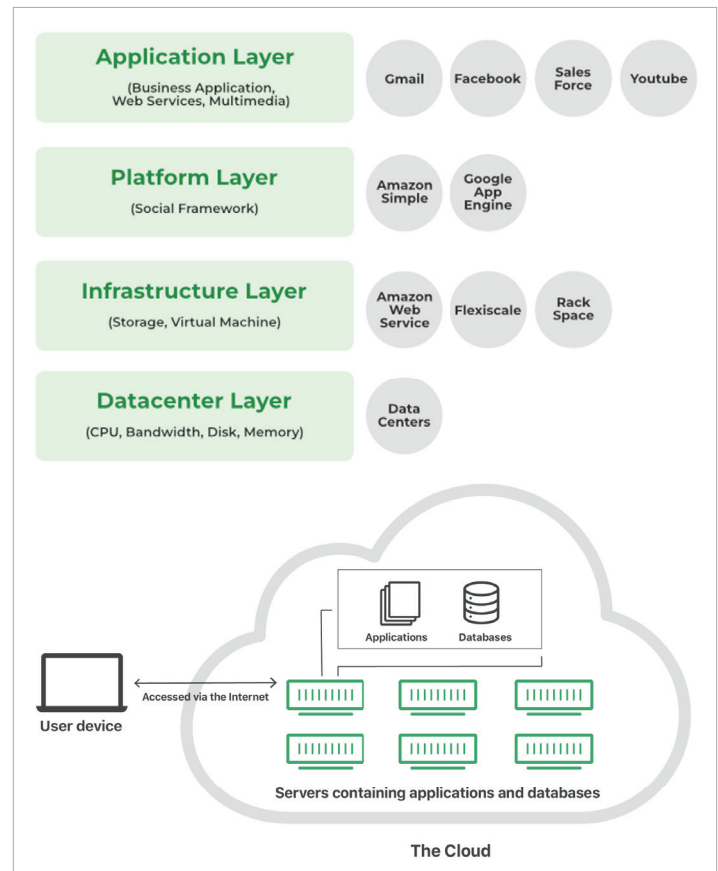
The cloud is now ubiquitous - we use it throughout our daily lives without even realizing it. Users log into their work environments or social media accounts from anywhere, and from any device. The cloud stores and backs up all documents, photos, videos, and conversation history.

Cloud computing significantly reduces operating costs and administrative workload for companies and users. Companies no longer need to purchase, administer, update and maintain their own servers, as the cloud vendors now do all of that. IT departments are now unconstrained by the burden of administering computing environments and can focus on making tangible contributions to the mission of their respective enterprises.

The cloud is shared infrastructure that turns what was previously capital expenditure for individual companies into an operating expense, not dissimilar to a transnational railroad network or any other form of physical infrastructure. The cloud fits our definition of infrastructure because it provides an essential service to a large portion of the population in a supply-constrained manner.

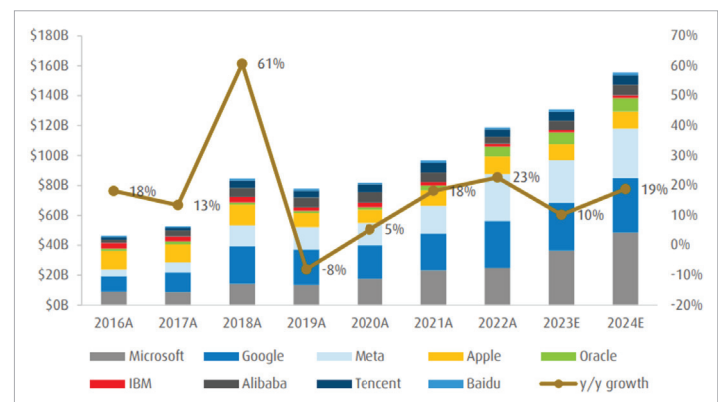
Building out a global cloud platform is exorbitantly expensive. There are only a few technology companies (Amazon, Microsoft, Google, Meta Platforms, Alibaba and Tencent) with the combination of balance sheet capacity and operational expertise, to build out a global data centre footprint to host a reliable cloud service. These companies are collectively known as the hyperscalers and collectively they account for more than half of all the data centres in the world. Spending across the industry is expected to exceed \$140 billion next year and grow 19% year-over-year. Microsoft, a holding in the Starlight Global Infrastructure Fund, has disclosed that it plans to spend \$50 billion every year for the foreseeable future to build out its global data centre platform. This is an astounding amount of money by any standard. Compared to other megaprojects, it ranks among the largest buildouts of infrastructure ever.³ Microsoft has taken this on not only to facilitate the commercial cloud, but also to drive forward the next paradigm shift in computing. ChatGPT is just the beginning. Artificial intelligence will soon be pervasive across every facet of life, spanning everything from productivity applications to leisure.

Exhibit 3: Cloud Architecture



Source: Amplework Software Pvt. Ltd. Full-Stack Development and the Impact of Cloud Computing. 2023.

Exhibit 4: Hyperscale Capex poised for ~\$25B increase in 2024

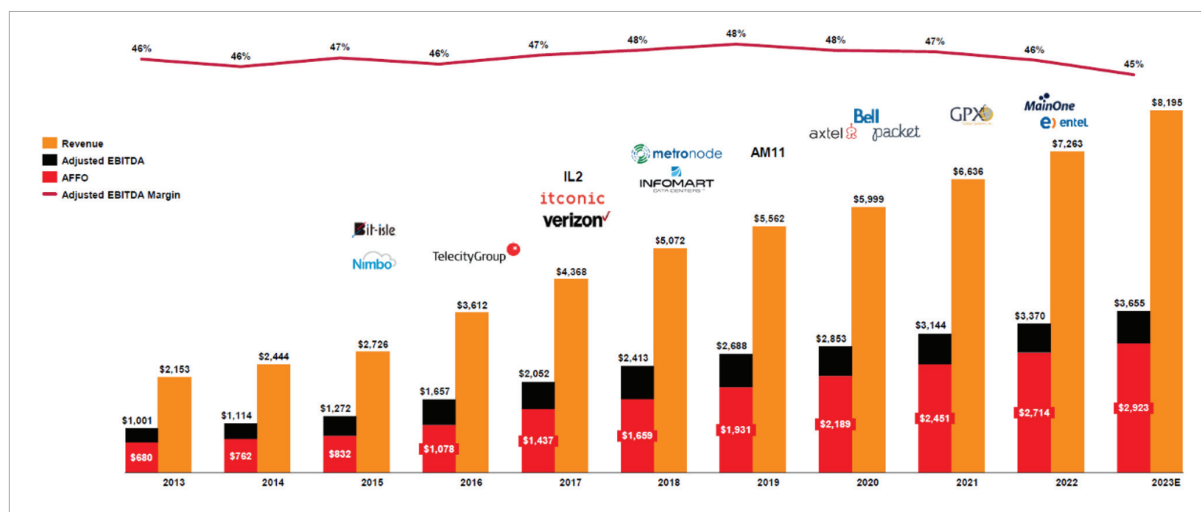


Source: FactSet, BMO Capital Markets.

³Statista. The World's Megaprojects. April 4, 2023.

The data centre business has exhibited incredibly resilient growth and profitability. The track record below belongs to Equinix, a provider of multi-tenant data centres with 248 locations across 32 countries. The company was founded in 1998 and has grown through acquisition. The logos on each bar from 2015 to 2022 denote data centre portfolios acquired from the respective sellers. Equinix has raised its dividend every year since it was initiated in 2015 and delivered 80 consecutive quarters of revenue growth, which is longer than any other company in the S&P 500. With migration from on-premise environments to the cloud continuing unabated, the rollout of AI and the increased requirements for data processing, growth is expected to continue unabated for the foreseeable future. Equinix expects \$3 billion of capital expenditures per year to drive revenue growth of 8-10% per year through 2027.

Exhibit 5: Equinix - Proven Track Record of Growth and Profitability



Source: Equinix 2023 Investor Presentation.

Data Growth is Exponential

Digital connectivity trends have grown rapidly over the last seven years, as shown in **Exhibit 6**. With the shift to the cloud well underway and with technology now on the precipice of artificial intelligence (AI), expectations for future data transmission capacity are more optimistic than ever before. Ericsson forecasts that mobile data traffic globally will increase by a factor of 3.5 by the end of 2028. Global data centre capacity is expected to grow from 1.58 billion square feet in 2022 to 2.13 billion square feet in 2027 as large-scale service providers grow at a 15% compounded annual growth rate, while on-premise deployments decline. In addition to square footage growth, many data centres will be rebuilt in the coming years as companies look to refurbish their infrastructure with more up-to-date technology.

Exhibit 6: Global trends in digital and energy indicators, 2015-2022

	2015	2022	Change
Internet users	3 billion	5.3 billion	+78%
Internet traffic	0.6 ZB	4.4 ZB	+600%
Data centre workloads	180 million	800 million	+340%
Data centre energy use (excluding crypto)	200 TWh	240-340 TWh	+20-70%
Crypto mining energy use	4 TWh	100-150 TWh	+2300-3500%
Data transmission network energy use	220 TWh	260-360 TWh	+18-64%

Source: IEA. Data Centres and Data Transmission Networks. 2023.

Errors of Omission are Often Worse Than Errors of Commission

The best businesses can sustain high growth rates and high returns on invested capital over a long period of time. Their growth is value accretive and returns on incremental invested capital remain attractive with the passage of time. Investment opportunities bearing these characteristics are rare. Driven by capital inflows, competition, price pressure, business disruption or some other natural force at play in markets, returns tend to regress toward the average over time.

The same holds true in investing. Track records of sustained outperformance are rare. Unforced errors that deliver poor returns account for some underperformance, but pales in comparison to the underperformance resulting from foregone opportunities. Despite his incredibly long track record of outperformance, Warren Buffett has expressed regret about his errors of omission. He has said on more than a few occasions that Berkshire shareholders would have been much better off had he pulled the trigger on opportunities that were within his circle of competence and identified as attractive. Although opportunity cost does not show up in the profit/loss figures, errors of omission are costlier than errors of commission.

Within the infrastructure category, funds that mimic the index and ignore digital connectivity do so at their own peril. Driven by the secular tailwind of exponential data growth, cell tower and data centre operators can grow at above-market rates while sustaining high returns on invested capital.

The **Starlight Global Infrastructure Fund** is a concentrated portfolio of companies that provides essential and foundational services in a supply-constrained manner for the basic functioning of society. We see the fundamental characteristics of infrastructure assets in companies that operate in the digital connectivity space: capital intensive assets with low correlation to the economic cycle and high operating leverage that produce stable and consistent cash flows over a long period of time. Although these companies may trade at higher valuation multiples than core infrastructure, we believe the premium is more than justified by attractive return profiles and highly certain future growth. We plan to remain patient and rely on the underlying fundamentals to drive returns as the secular growth tailwinds play out.

The Starlight Global Infrastructure Fund targets a 5.0% distribution paid to unitholders on a monthly basis. The distribution is supported by strong dividend growth from the underlying portfolio holdings. Over the last twelve months through the end of November 2023, the fund experienced 26 dividend increases with an average increase of +10.7%. Since inception through the end of November 2023, the fund experienced 155 dividend increases with an average increase of +9.5%.

We invite you to partner with us.

Real Assets

Starlight Global Infrastructure Fund

Inception – 2018

Investment Objective

To provide regular current income by investing globally in companies with either direct or indirect exposure to infrastructure.

Fund Codes:

Series ETF (SCGI)
Series A (SLC102)
Series T6 (SLC152)
Series F (SLC202)
Series FT6 (SLC252)
Series O (SLC402)
Series O6 (SLC452)
Series I (SLC902)

Distribution Frequency

Fixed Monthly

About Starlight Capital

Starlight Capital is an independent Canadian asset management firm with over \$1 billion in assets under management. We manage Global and North American diversified private and public equity investments across traditional and alternative asset classes, including real estate, infrastructure and private equity. Our goal is to deliver superior risk-adjusted, total returns to investors through a disciplined investment approach: Focused Business Investing. Starlight Capital is a wholly-owned subsidiary of Starlight Investments. Starlight Investments is a leading global real estate investment and asset management firm with over 360 employees and \$25B in AUM. A privately held owner, developer and asset manager of over 77,000 multi-residential suites and over 9 million square feet of commercial property space. Learn more at www.starlightcapital.com and connect with us on LinkedIn at www.linkedin.com/company/starlightcapital/

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