Executive Summary

- **COVID-19 has opened up opportunities for investors; in some cases, by amplifying trends that were already in place.**
- **Not all sectors within infrastructure have been impacted by the global drop in GDP.**
- **The global stay-at-home orders have created a moment for clean and sustainable energy to become more relevant than before and surpass previously projected growth.**
- **Digital infrastructure continues on a growth trajectory, becoming even more essential to daily life and global commerce.**

Where do we go from here…? Building infrastructure for the future

Private investors are reevaluating their portfolios as they attempt to understand the implications of the COVID-19 crisis on all aspects of the global economy. With some perspective gained from prior cycles (and crises), combined with thoughtful consideration of the macro trends accelerating today, active investors will be able to participate in opportunistic returns being seeded by the crisis.

In the coming years, several macro themes will have emerged from the crisis as winners. Distressed and special situations strategies will drive what has the potential to be historic returns in the buyout world. While infrastructure investing, geared toward investors with very long-term investment horizons, will be fed by shifts in behaviors.

Infrastructure

With an estimated need for $94 trillion of global infrastructure investment between 2016 and 2040, representing an average of $3.7 trillion per year[1] (about 4.6% of Global World Product as of 2017[2]), it is no wonder infrastructure fund managers raised over $153 billion across 130 private funds during the last 15 months.[3] In the historically low interest rate environment of the past decade, infrastructure investing has found a home with investors attracted to the downside protection and cash flow generated by the strategy. Depending on where an investor invests along the risk spectrum (from core, to value-add, to opportunistic) there is potential for additional upside return as well. For equity investors in private funds, typical return characteristics range from 5-8% net current yield (with core assets on the low-end) with potential for an additional 4-6% in capital appreciation associated with operational improvements or greenfield investing.

Infrastructure – Equity Risk Spectrum		
Core / Core-plus	**Value-add**	**Opportunistic**
Existing assets - stable cash flow	Existing assets – cash flow, which can be reinvested in assets, with upside potential from physical and operational improvements	Greenfield - no initial cash flow until asset is developed and ready to deliver service

[1] Oxford Economics, Global Infrastructure Hub, Global Infrastructure Outlook 2017.
[2] Wikipedia, Global World Product.
[3] Preqin.

It's unlikely anyone factored in the impact a global pandemic would have on the returns of essential infrastructure assets, such as bridges, tunnels or airports. For many long-term investors, this means they will find out how well managers stress-tested downside scenarios given their respective positions in the capital structures. While global travel remains at a near standstill, and is unlikely to return to pre-crisis levels for the foreseeable future, infrastructure investors will need to work through the distress seen in their traditional GDP-linked assets. The distress will come from the decline in revenue generated through the use of assets such as airports, seaports and toll roads.

When considering new infrastructure investments, investors should be considering what will drive sustainable cash flow opportunities of the future. For those interested in the space, the following two sectors should be kept at the top of investor pipelines, as they are likely to benefit the most from the long-term impact of the crisis.

Clean Energy

Clean energy innovation has been underway for decades. However, investing in the space has been hit or miss as governments tested policies allowing the technology an opportunity to develop and become competitive against traditional carbon-based generation.

Similar to the frog that stays in a pot slowly heated to a boil, prior to the pandemic, global warming seemed to have little impact on how people viewed the reality of the situation. Since the crisis began, things may have changed. Almost immediately after countries began enacting stay-at-home guidelines, people have seen the dramatic change in air quality in cities across the globe.

Source:www.theguardian.com/environment/2020/apr/11/positively-alpine-disbelief-air-pollution-falls-lockdown-coronavirus. New Delhi, India

Images such as the one above of New Delhi, India (admittedly an unlikely candidate to implement rapid change, but a striking visual nonetheless), offer a window into the positive impact reducing carbon-based emissions can have on the planet. I am not suggesting that we are going to eliminate the combustible engine, that is a long way off. However, many hope the crisis will serve as a catalyst for countries to employ an aggressive shift away from fossil fuels and exceed the goals established by the framework of the 2016 Paris Climate Agreement.

As investors demand opportunities to invest in sustainable energy production, asset managers and energy producers are listening. Renewable energy is the fastest-growing energy source in the United States, increasing 100% from 2000 to 2018. In 2018, 17.1% of U.S electricity generation came from renewables. That compares to renewables accounting for 26.2% of global electricity generation in 2018, which is expected to rise to 45% by 2040. Most of the increase will likely come from solar, wind, and hydropower.[4]

The current crisis has provided an opportunity to actually see the potential we have to effect change on the climate. Now is the time investors should commit to managers with a deep understanding of renewable energy policies as well as the operational capabilities of the technologies involved. These include wind farms, AI-powered solar fields, and small modular reactors (SMRs) (hoping to be online by the mid-to-late 2020s), as well as existing hydro and geothermal plants.

The age of more efficient clean and renewable energy is here to stay and demand for these assets is anticipated to grow significantly for years to come. As investors look for long-term sustainable cash yield, the value of these assets will grow as well, which would represent a win, win, win for everyone, including the planet.

Digital Infrastructure

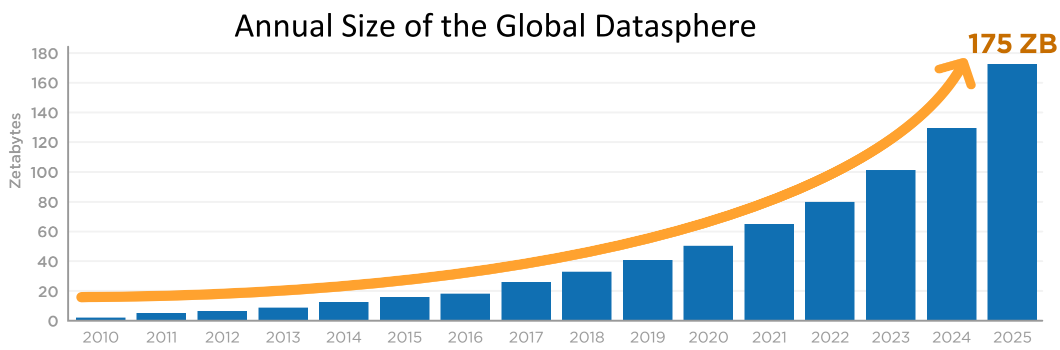
Over the last several years, "digital" infrastructure has been creeping from the private equity and real estate worlds into the more conservative traditional infrastructure space. Digital assets that fit within the scope of traditional infrastructure include network towers, data centers, and long-haul, last-mile fiber optic cable. Much as traditional "infrastructure is about moving people and goods around the world"[5]; digital infrastructure is critical to moving data around the world.

As investors consider this timely opportunity within their infrastructure allocations, they should be diligent to focus on characteristics expected from infrastructure investments. Traditionally, infrastructure assets are monopolistic, capital-intensive, with a focus on downside protection and low-volatility associated with long-term contractually-guaranteed cash flows. When considering infrastructure investment, the main question an investor should be asking is, where are the anticipated returns coming from? Growth or yield? The more the returns come from growth, the more the risk looks like private equity and should probably be allocated as such.

It is estimated at least 50% of global GDP will be digitized by 2021, with growth in every industry driven by digitally enhanced offerings, operations and relationships.[6] Given the exponential growth in data consumption (Chart A) and expectation everything should be faster, investment in the essential pipes and storage facilities enabling our daily lives should be a no-brainer. When combined with the current crisis, highlighting the real potential that working remotely, even part-time, may become a reality for many, we should consider the implications.

[4] https://www.c2es.org/content/renewable-energy/.
[5] Boe Pahari, AMP Capital's head of infrastructure equity, Private Equity International, "10 takeaways from industry on the impact of COVID-19".
[6] Equinix – GXI, Vol. 3. IDC FutureScape: Worldwide IT Industry 2018.

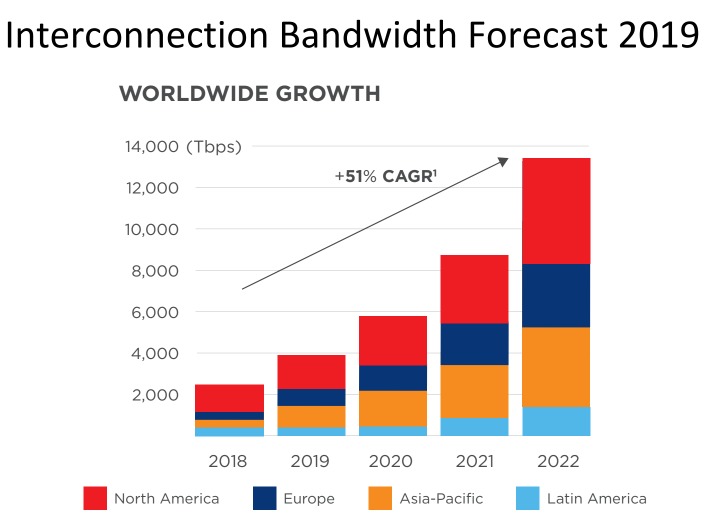
Chart A



Source: Data Age 2025, sponsored by Seagate with data fro IDC Global Datasphere, Nov 2018.

Driven by the exponential growth of the Internet of Things (IoT) and transition to 5G networks, digital assets should remain in favor far beyond the current investment cycle. Demand for these assets will be amplified by the growth of remote work habits developed during the current crisis. Video technologies will become commonplace, driving even greater global demand for bandwidth (Chart B) and data storage than previously estimated.

Chart B



Source: Equinix. Global Interconnection Index Vol. 3. Interconnection is the exchange of data between businesses.

The inevitability of growth in data transmission and data storage, combined with the ability to attach long-term contractual cash flows to the use of the assets providing the services, offers investors an opportunity that shouldn't be ignored. Investors have recently committed heavily to several high profile vehicles in the space, but the opportunity is still in its collective infancy. It is almost assured those managers that closed funds in 2019 will be returning to market much sooner than anticipated. Now is the time to begin diligence to ensure finding the manager that best fits your mandate when they return to market.

Building the bridge

When looking for infrastructure opportunities, a good place to start would be large global platforms with deep industry and geopolitical networks, as well as operational and contractual expertise.

Managers that consider themselves "infrastructure" should be focused on value and downside income protection, rather than anticipated upside. Remember, you are here for the income first, upside will come from operational value-add, well negotiated contractual terms, and owning the assets being pursued by others.

It can't be overstated enough that infrastructure involves operating companies to make sure assets are run efficiently and generate the services providing the investors current income. In such a capital-intensive space, the ability to underwrite and allocate simply isn't enough. When investments face headwinds, it is the manager's operational expertise, to assess risk and produce value from the assets, that will be relied upon.

Now is the time to cross

The COVID-19 crisis has provided all investors an opportunity to re-evaluate strategies from a new perspective, re-examine current portfolios, and to look ahead to where we are going. While the direction is still generally the same, how we get there may be a bit different than we previously anticipated. Trends of globalization and GDP growth still hold true, but for the time being they are muted as we will simply rely a bit less on in-person interaction. The longer this lasts, the more likely the behaviors and norms established during this period will become part of business as usual going forward. This has the potential to ignite the growth of clean energy and digital services beyond prior estimates.

Long-term investors should be looking at infrastructure investing now. There are high quality managers that will be returning to market in the next 12-24 months, if not sooner. The sooner an investor can map out the market and identify the managers to target, the better situated they will be to make decisions on funds that may close quickly. All things being equal, both sectors will see significant growth and come out ahead after the economic downturn as being well-positioned for a sustainable future.