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Dear Clients and Friends,

On the off chance you're planning to post a "dance challenge" on TikTok, social media gurus are dispensing invaluable advice to help you make it go viral, such as: be extremely attractive, feature a cute animal or feature a cute kid. Though if gaming the TikTok recommendation algorithm were so simple, perhaps Presidents Xi and Trump wouldn't be engaged in geopolitical M&A over its fate.

Uncertainty over treatment of TikTok's algorithm could still scuttle the latest deal to fend off a ban of the popular app in the U.S. It calls for parent company ByteDance to spin off the U.S. operations and for Oracle to assume minority ownership with Walmart, while securing the privacy of Americans' user data on U.S. soil. But China is tightening export control scrutiny and saying it will exclude TikTok's algorithm – the "secret sauce" that has engaged 800 million users globally – from the deal.

It occurs to us that these generals may be fighting the last war. Data is not really the new oil, as the maxim goes. Yes, it's a valuable commodity, but as the Center for Data Innovation points out, the analogy is flawed and leading to misguided public policy. "When one party uses a barrel of oil, it is no longer available for anyone else. Data, on the other hand, is non-rivalrous: multiple companies can collect, share, and use the same data simultaneously," and users who "pay" with their data still have as much left after a transaction as before.

TikTok's valuable data is not static personal information like a social security number, but rather a continuous data stream of user interactions that constantly update and "train" its learning algorithm, such as which video a user "liked," watched the longest, or shared. Addiction concerns aside, consumers benefit from the personalized experience this produces and from the intermingling of their data with others'. Data is rarely a zero-sum game and exchanging it tends to generate multiplicative value for all involved, often in proportion to the network effects unleashed by how a company uniquely processes that data.

The intermingling of data streams across borders has been growing at a staggering rate, contributing more in recent years to the growth of world GDP than the trade of physical goods, according to the McKinsey Global Institute.[i] While the social media face of the data economy dominates headlines, we have been quietly assessing how data is transforming corporate environmental performance across all sectors and in ways that bear materially on their financial performance. In this letter we provide a brief tour of several themes in this revolution and what we believe to be their largely positive implications for the resilience and growth of your Environment Portfolio. We then conclude with a performance update on another strong quarter, providing encouraging reinforcement for our investment thesis. Note that throughout the letter, Douglass Winthrop holdings are highlighted in ***bold***.

We begin with our latest addition to the portfolio, ***Equinix***, the world's dominant provider of datacenter co-location and interconnection services. Put simply, it owns a network of strategically placed ports on the expanding sea of global data. The company operates 210 datacenters serving 8,500 customers in 26 countries around the world. Its business model features high quality recurring revenues and mostly accretive acquisition-led growth, and in the second quarter it reported its 70th consecutive quarter of revenue growth, longer than any company in the S&P 500.

We find Equinix's competitive moat more impressive the more we unpack it. Like other co-location datacenters, it enables customers to gain operational flexibility and cost efficiencies by moving from a centralized IT infrastructure to an outsourced cloud or hybrid on-site/cloud format. But Equinix has differentiated itself with an advantaged footprint in high density urban locations and at strategic nodes on the Internet backbone, such as the landing stations of next-gen subsea fiber cable systems. This allows it to provide an enterprise client, for example, with "edge" computing solutions that distribute the client's digital services closer to its own customers, discernibly enhancing the performance they experience – in other words, Equinix supports the core value proposition driving that client's top line, not just its cost objectives.

What really widens its moat is Equinix's leadership among an elite class of co-location providers optimized for "interconnection:" it generates multiplicative value by facilitating direct interconnections between enterprises – from one company to another, or from that company to the dedicated on-ramps to the major cloud providers. As these interconnections grow, the network effects compound and the switching costs facing any Equinix client considering a move to a new datacenter become prohibitive.

Equinix has projected that "private interconnection capacity" will grow by over 50% between 2018 and 2022 to more than 13 times the volume of global internet traffic. This is not intuitive: more of the action -- by far -- will be inside these buzzing hubs of data exchange than out on the "public" Internet. As a result, among the company's multiple revenue streams, our investment thesis focused most on its fee per "cross-connect," which we see rising as a proportion of its revenues due to volume and the pricing power afforded by its moat.

In our view, Equinix meets the fundamental criteria that Douglass Winthrop requires of all its portfolio companies: a durable moat, ample opportunities to invest in growth, balance sheet strength, shareholder-oriented management and a compelling intrinsic valuation based on its long-term earnings prospects. Why did we see it as a fit for the DWA Environment Strategy in particular?

First, we see it as a "best-in-class" environmental leader in its sector: Equinix was the first data center company to publicly commit to a goal of 100 percent renewable energy use across its portfolio (in 2015), and it hit 92% in 2019. Equinix's leadership in driving wider corporate adoption of renewables also impressed us: it was a founding member, and is a continuing board member, of the Renewable Energy Buyer's Alliance.

Its scale enables it to invest in machine learning innovation to boost energy efficiency and it is setting aggressive design targets for Power Usage Effectiveness (PUE) at new and expansion sites. Equinix ranked #4 on the U.S. EPA's Green Power Partnership National Top 100 (portfolio companies ***Alphabet*** and ***Microsoft*** were #1 and #2, respectively). Equinix is also beginning to deploy onsite solar photovoltaics at its datacenters, a burgeoning class of "behind the meter" distributed renewables that our other new portfolio addition this quarter, ***Hannon Armstrong***, is financing.

As data flows have grown, so have concerns about the estimated 2% share of global greenhouse gas emissions coming from datacenters, approximating that from pre-COVID air travel. Yet recent models have favorably revised these estimates, finding that datacenter electricity usage and emissions have not grown nearly as fast as the demand they're serving, due to more efficient devices, server virtualization and migration of IT workloads to the cloud, which Equinix facilitates on a global scale.

We regard Equinix not just as a best-in-class player, but also as a "solution provider." It is an infrastructural cornerstone of the data economy that, in turn, is enabling a revolution in corporate environmental performance. Let's "follow the data" through a tour of several themes in this revolution, which we refer to as Dematerialization, Modeling, Transparency and Embedded Intelligence.

1. **Data enables Dematerialization:** This refers to substituting bits for atoms and lowering the environmental footprint in the process, such as when we videoconference ourselves to that meeting in London or Beijing rather than hurling our atoms across the sea in a high emitting jet. It includes dematerializing physical products into virtual services, such as when we stream music instead of buying physical CDs (see ***Spotify***, a holding in Douglass Winthrop's Flagship Strategy). Or when we swap newsprint for digital news: the ***New York Times Company*** has rapidly gained subscribers by digitizing its distribution model, while sustaining a paywall that has overcome the "information is free" ethos of the internet. In industrial settings, dematerialization refers to material innovations that that make things smaller and lighter, for example transmitting a digital blueprint for an automotive component on a just-in-time basis to the point of demand and then 3D printing it out of a novel, light, strong and printable alloy.

2. **Data enables Modeling**: Data enables us to measure more than twice and cut once. ***Autodesk*** is a dominant provider of design tools for products, buildings, media and entire cities. Buildings emit almost 40% of global carbon dioxide. From now to 2060, Autodesk projects that worldwide global floor space will double, amounting to a New York City every month for the next 40 years. Half the carbon footprint of these new buildings will be from "embodied carbon," i.e., the carbon associated with extracting, manufacturing and transporting the materials to construct them, rather than from their lighting, heating and cooling after they're built. Autodesk helped create the Embodied Carbon in Construction Calculator (EC3) and integrated it into its BIM 360 tool so that architects and engineers can differentiate between materials that look the same but contain different amounts of embodied carbon (e.g., a fully recycled steel beam from a renewably-powered electric arc furnace versus a virgin steel beam from a coal-fired furnace).[ii] ***Trimble***'s Irrigate IQ integrates high-resolution modeling of farmland topography into its workflows to reduce the amount of water and fertilizer a farmer applies, while boosting yields. ***Ecolab***'s Water Risk Monetizer (built in partnership with ***S&P Global*** and ***Microsoft***) helps customers such as food & beverage manufacturers to dollarize the their facility-specific exposure to water stresses, anticipating a decade ahead in which freshwater costs are projected to double and become more material to the bottom line.

3. **Data enables Transparency:** Datasets are being integrated and accessed by stakeholders in ways that are radically boosting environmental transparency. Companies that get out ahead of this by improving the sustainability performance of their supply chains should be advantaged in building customer loyalty, rather than seeing it erode as potentially embarrassing disclosures come to light. ***Alphabet's*** Google teamed up this past quarter with ***Unilever*** to support more sustainable sourcing of commodities, beginning with palm oil. They will create a centralized command center harnessing Google Earth Engine, Google Cloud and Google's AI-powered BigQuery platform to build a holistic view of the forests, water cycles, and biodiversity that intersect Unilever's supply chain. This will enable Unilever to detect and cure supplier violations of its sustainability guidelines in real time, supporting its June commitment to eliminate deforestation from its supply chain by 2023. ***Moody's*** acquired climate risk intelligence firm *Four Twenty Seven* last year, and now uses its data to adjust the firm's ratings on issuers' based on exposure of their facilities and supply chains to extreme weather from floods, heat stress, hurricanes, sea level rise, water stress, and wildfires such as those that are ravaging the West Coast as this letter goes to print.

4. **Data embeds Intelligence:** Data is at the heart of the emerging Internet of Things (IoT), which is powering a step-change improvement in industrial automation, asset efficiency and utilization across nearly every industrial vertical, a trend that the World Economic Forum valued as a $100 trillion opportunity. ***Schneider Electric's*** Smart Factory in Batan, Indonesia is paving the way for digital transformation in Asia, with smart sensors feeding machine learning algorithms that have reduced machine downtime by 44% in just one year. The factory uses augmented reality to give its workforce real-time visibility into operations, maintenance, and energy use, boosting on-time delivery by 40%.[iii] Schneider Electric subsidiary Aveva announced an agreement last month to acquire OSI Soft, a venture capital-backed company we have monitored for a decade. OSI Soft is a leader in the industrial IoT market that boasts 65% of the Industrial Fortune 500 as customers.

Deployed at roughly 19,000 sites, it is processing 1.5 billion operational data streams and boosting asset efficiency.

While many others have covered these themes in general terms, as bottom-up investors we seek instances where their implications are underappreciated in relation to a specific company's prospects over the coming decade. This is how Douglass Winthrop's Environment Strategy affords us a lens for finding value in a rapidly changing world.

The corporate transparency theme bears directly on our research work as investors. We often perform our own review of primary and secondary data, rather than relying on ratings by ESG data aggregators. We see a trend toward increased, though still uneven, corporate disclosure of many data points that interest us, due to changing regulatory guidance, consumer expectations and voluntary corporate action (such as Unilever's pioneering move referenced earlier). We are following the Task Force on climate-related Financial Disclosures (TCFD), the Sustainability Accounting Standards Board (SASB), the controversial pending ERISA rule that seeks to regulate how 401Ks can invest in ESG funds, and the EU's new Taxonomy Regulation – all of which speak to a fast-changing and still inefficient data landscape that affords us opportunities to form a differentiated view as active managers in pursuit of alpha for our clients. Environmentally aware investing is a process not an answer, and our daily work on your behalf is to study this data as an additional basis for competitive advantage along with other, more traditional fundamentals.

As for alpha, we are pleased to share our updated results below, which show continued outperformance this quarter and cumulatively in the nearly four years since inception of the DWA Environment Strategy. We are quick to add, as always, that this is a long game and a long-term strategy. Past performance is no guarantee of future results and we expect periods of pullback along the way.

Performance All figures (except Q3) through 09/30/2020	Cumulative Inception to Date	Annualized Inception to Date	3 year Cumulative	3 year Annualized	1 year	Q3 - 2020	YTD
DWA Environment Strategy -- Net of Fees	106.35	21.32	69.68	19.27	30.70	15.56	22.25
DWA Environment Strategy -- Gross	112.95	22.34	73.99	20.27	31.81	15.78	23.01
MSCI World SRI Index	59.73	13.31	37.16	11.11	16.19	8.57	6.74
S&P 500 Total Return Index	61.71	13.68	41.55	12.28	15.15	8.93	5.57

Inception: January 1, 2017

To our clients, thank you for your continued trust in us to protect and grow your capital. To our friends, we would welcome the opportunity to discuss the Environment Strategy with you if this is of interest. Please contact Josh Huffard (josh@douglasswinthrop.com), Bowdy Train (bowdy@douglasswinthrop.com) or Dan Abbasi (dan@douglasswinthrop.com) to schedule a conversation. We can all be reached at 212-557-7680.

Sincerely,

Douglass Winthrop Advisors LLC

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The DWA Environment Composite (the "Composite") contains all fee-paying, discretionary accounts that are managed according to the Strategy. DWA also manages accounts outside of the Strategy. A composite of all DWA accounts would have higher or lower performance over different time periods, with increased dispersion among accounts due to meaningful differences in holdings.

Reference Index Disclosure: The Strategy is not managed to a benchmark. The benchmarks most commonly chosen by our clients based on the Strategy are the MSCI World SRI Index and the S&P 500 Total Return Index. The MSCI World SRI Index is a capitalization weighted index that provides exposure to companies with outstanding Environmental, Social and Governance (ESG) ratings and excludes companies whose products have negative social or environmental impacts. The S&P 500 Total Return Index includes reinvested dividends. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization. Index figures do not reflect the deduction of any fees, expenses, or taxes. Investors cannot invest directly in an index. The indices' performance results are intended to illustrate the general trend of the equity market for the Strategy's investable universe and are not intended as a benchmark for the Composite.

Risk Disclosure: Investing involves risk, including the possible loss of principal. There may be market, economic, or other conditions that affect client account performance, or the performance of the referenced market indexes. The Strategy may invest in small-and medium-capitalization companies. Investments in these companies, especially smaller companies, may carry greater risk than is customarily associated with larger companies. A client account invested in the Strategy will hold fewer securities and have less diversification across industries and sectors than a diversified portfolio, such as a portfolio based on an index. Consequently, a client account and/or the composite performance may diverge significantly from the referenced market index, positively or negatively.

Net Performance: Net returns are calculated net of actual management fees incurred and transaction costs. Fees for accounts in a composite may differ at the firm's sole discretion from the stated fee schedule for new accounts. Performance is calculated on an asset weighted, time weighted return basis. Valuations and performance are reported in U.S. dollars. Returns are not audited.

GIPS Documentation: Douglass Winthrop Advisors claims compliance with the Global Investment Performance Standards (GIPS®).

A compliant presentation is available at www.douglasswinthrop.net/gips (password: DWAGIPS2020). A list of the composite descriptions and/or our DWA

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[i] https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/digital-globalization-the-new-era-of-global-flows

[ii] https://adsknews.autodesk.com/news/embodied-carbon-in-construction-calculator

[iii] https://www.se.com/ww/en/about-us/press/news/corporate-2019/batam-smart-factory.jsp