PART 1: POWER, CAPITAL, AND THE RACE TO SCALE

Carolina Millan 00:00

Thank you. Thank you once more to the Milken Institute for having us for this incredible day of very thought-provoking conversations about deploying capital around the world and in Latin America. We're so thrilled to be chatting today with Lee Wittlinger from Silver Lake. We know that Silver Lake has a lot of fans in the room, so I'm sure you'll be very excited to chat further about one of the hottest topics of the moment, which is AI. Lee has been with Silver Lake since 2007, and Silver Lake has $125 billion in assets under management and $1 trillion in portfolio value. So, Lee, why don't we start at 50,000 feet? We heard from Bill Ackman this morning about the importance AI is playing in capital deployment. But when we look at the big picture about the biggest wave of infrastructure spending in history, how are you looking at the size of the opportunity?

Lee Wittlinger 00:57

Yeah. Well, I think profound is probably the right term. I'll ground us in what has happened, and then we can prognosticate around what might happen. But if you just go back two years ago, total hyperscaler CapEx, so the big four hyperscalers, was about $226 billion, which is an enormous amount of money, a quarter trillion dollars. But if you just fast-forward for the last two years, this year, that's expected to be, and it's highly likely it will be, around $800 billion. So, we went from $226 to $800 billion in the span of two years. So, it's just a staggering amount of capital. Obviously, the big question is where to from here, and there's lots of different perspectives on that, so I'll give you a couple. NVIDIA's on record of predicting that there will be $3 to $4 trillion, with a T, of annual CapEx and other AI spend by 2030, okay? Which is an unbelievable amount of money. If you go with a more conservative estimate from, say, Brookings, and they go over a longer period of time, say seven years from 2025 to 2032, they're predicting over $10 trillion of aggregate spend. So, to try and contextualize that, because I think we all get lost in billions and trillions, and it's really big numbers, if you think about it as a percentage of US GDP—that amount of spend, the Brookings statistics I cited—is about 3.5 percent of GDP annually. So, if you analogize that to the next closest big infrastructure spend, which a lot of people talk about these days, the railroad boom of the late 1800s, that was just over 2 percent. And the interstate highway system in the United States, which if you've been to the States, there are a lot of highways and a lot of states, that was only 1 percent of GDP. So, it's anywhere from 60 percent more than the biggest heretofore infrastructure build in human history, or three times plus the next closest one. And I missed Bill's speech, unfortunately, or chat, but I'm sure he alluded to some of these statistics. No surprise it's driving the market and it's driving the US economy. So, something like, this was a great piece in the Journal the other day, something like 70 percent of earnings growth in the US market this year will be driven by 10 companies, overwhelmingly AI- and power-related companies. If you extrapolate that to broader US GDP, depending upon how you account for import and export of chips, it's anywhere from a third to half of US GDP growth will be directly tied to AI

infrastructure spending. So, it's a truly staggering amount of capital, and the multitrillion-dollar question is how long does it last and where to from here, et cetera. So, we're tracking it all very closely.

Carolina Millan 03:47

And you have a really unique perspective because you've been investing in data centers for such a long time. You guys were in the sector from even before AI infrastructure was a phrase. In 2010, you guys were already investing in Vantage Data Centers. So, what can you tell us about what the industry looked like then and how it's evolved to present day?

Lee Wittlinger 04:06

Yes, totally. So, I joke, we've been investing in data centers not only before they were sexy and then very controversial, but before anyone knew what a data center was. My then-girlfriend, now wife, back in 2008, 2009, when I was looking at these things, was like, "What is a data center? Is it a big computer? Is it a real estate project? What are you doing with your time?" And at the time, I would explain to people what a picks-and-shovels investment was and why we liked that in the context of data center investments. And what the play then was, was the biggest technology trend we had thus seen, which was the cloud. And so, data centers then were a picks-and-shovels play on the cloud. AI was not a thing. And it was a big opportunity, a very big market opportunity, and we ended up doing very well on the Vantage investment. But to give you a sense, again, for relative scale, I remember the first deal we did at Vantage Data Centers, which, by the way, was a purpose-built data center company to actually serve, they weren't called hyperscalers then, but the biggest and most important technology companies, mostly in the United States. Our first customer was then Facebook, now Meta, of course, and we signed a six-megawatt lease. And that was a huge lease, and we were dancing on the table like, "Oh my gosh, we're a real business." When we eventually sold the business in 2017, the first time, Microsoft was our biggest customer, and we had just south of 100 megawatts of capacity. And we were one of the largest players in the space. We got a huge multiple. We made really compelling returns. That same company, Vantage, which we've now reinvested in to support the picks-and-shovels play on AI, signed two and a half gigawatts of leasing in the last 12 months. So, six megawatts initially, which was a huge, big deal, and the CFO of Facebook was literally signing the lease, to two and a half gigawatts here 15 years later. So again, it's like nothing we've ever seen before.

Carolina Millan 05:57

And speaking of some of the big commitments that you've made in the space, one of them was to a data center build-out just a month before ChatGPT was released. So, what were you seeing then, and how has that thesis played out?

Lee Wittlinger 06:10

Yeah. So, the current CEO of the business I hired back in 2013, of Vantage Data Centers, and he actually called us, and I was meaning to call him, but he called us first and said, "Hey, guys, how would you think about getting the band back together and doing this again?" And his perspective was, what we are seeing from our hyperscaler customers in anticipation of this AI thing—and oh, by the way, cloud has grown into a massive business, and it's growing very rapidly at huge scale. We forget about it because of all this AI activity, but the cloud business was going great, and they had a ton of conviction in this thing called AI. And when we sat with Cyril, our CEO, and we went through the pipeline, when we talked through with each of our friends at all of the hyperscalers their actual needs and sort of future demand curves, it was apparent for us that we were in another sort of cloud-like moment where you could make scale investments in this space, support a picks-and-shovels play against AI now as opposed to just cloud. You still were supporting cloud, but you got AI too, and we were very bullish on the AI opportunity. We talked about it as a many hundreds of billions of dollars style opportunity, and we were completely wrong in that the extent to which it has grown and become the type of scaled opportunity I described earlier dramatically exceeded even our expectations, and we were some of the most bullish on the category and the opportunity back in 2022.

Carolina Millan 07:44

I think we know right now that this is an opportunity that is going to play out over many years, but the challenges have also become more apparent over time. And of course, they may depend on the specific location and ranging everything from access to energy, permits, local opposition. So, what are you seeing as the biggest constraints to growth these days?

Lee Wittlinger 08:05

Yeah. It's a great question and very topical. For a number of years and certainly early on in this AI boom that we're all living through, chips were the big constraint, right? You couldn't get the NVIDIA GPUs, and Google was building their own TPUs, and Broadcom, where we have a very long history, one of my partners on the board was sort of leaning into this opportunity all at the same time. And even to this day, it's still very hard to get sort of the quantity of semiconductor chips that you want and need. But that is no longer the limiter. The limiter on this category is fundamentally the ability to actually power these physical facilities. And so, power is number one, number two, number three biggest constraint to this category growing. And then more recently, but I'd say maybe as important, arguably more important than actually getting the power to actually turn the chips on and cool the chips and protect them, et cetera, is getting the ability to actually build. And I think if you're in the United States, maybe less so here in Mexico today, but this is no surprise to you. You read about it every single day. In fact, the number of groups opposing data centers in the United States in the last couple of years, I think it went from a couple of hundred a couple of years ago to now over 850 local groups and organizations throughout the United States of America, basically trying to prevent these things from being built or get moratoriums in place. So much that even the great state of Texas, which has been one of the most aggressive in terms of courting data centers and this type of development, very publicly implemented a moratorium on new data center power allocations. And so eventually, we think that will digest, and there will be push and pull and give and take amongst all the relevant constituencies. But that is by far sort of the biggest blocker today. And by the way, we'll probably talk about AI bubble, no AI bubble, et cetera. I think the power constraints and the local opposition will fundamentally cap how much of this infrastructure can be built and will create its own natural limiter in terms of how big and how quickly this thing can actually grow to.

Carolina Millan 10:13

Yeah. And within Silver Lake, you guys have invested in the whole value chain from the actual data centers and power to including the hardware and chips. So, these days, where are you seeing the best risk and reward?

Lee Wittlinger 10:28

Yeah. It's become an overused phrase, but we love the picks-and-shovels opportunities. So, data centers is obviously a huge part of our overall investment allocation. We have about $6 billion of capital at our basis, so it's worth much more than that now because these investments have done very well across all the different components that you just described. So, everything from power to powered land, to data centers, to semiconductor chips, to the hardware and the servers and storage in Dell Computer and semiconductor chips in Altera, et cetera, that sell into this infrastructure. And we love that because it's essentially a diversified play on this AI theme. You're not making a bet on which LLM is going to win or which new startup is going to best utilize AI technology to disrupt an industry or which existing software players are going to most effectively take advantage of AI or not, which is obviously a real risk. We're simply betting that AI will be a thing and will be a thing for many years to come. But even within that, you have to be very intelligent about how you place those bets because clearly there's a tremendous ramp and growth period that we're experiencing right now. But I think it's inevitable we have a consolidation period, an air pocket moment, a retrenchment. We've been investing in the technology space for 27-plus years now, and we've seen that across almost every technology cycle in every instance, and this is the biggest of them all. And so, while we love the picks-and-shovels plays, even with that, you need to be very risk-aware and judicious about the companies you're backing, how you're financing those businesses, the commitments you're making commercially, and how all of this is capitalized.

Carolina Millan 12:09

And when we think about the where of deploying that capital, it's not just about the value chain itself, but also the geographic location. And something that you mentioned to me earlier that caught my eye was this idea that the Middle

East continues to be an attractive space for investing, even with all the geopolitical conflict that we're seeing. So how are you assessing that situation?

Lee Wittlinger 12:30

Yeah. It's a great question. So, the US remains the biggest market by far. I think everyone knows that, understands that. It's where these primary customers are located physically. It's where a lot of, if not most of their customers exist. And so if you can build in the United States, that remains the number one favorite spot to be. And if you have available capacity right now, it is being leased or sold at two to four X what it was just a couple years ago. So, the US remains number one in that regard. The problem is, as I said, there's a tremendous amount of political opposition. There isn't enough power. So, the United States is not going to be able to satisfy the aggregate demand. It just can't. So, we have investments not only in the United States and in Europe, but also in the Middle East. And I think the Middle East has been a fascinating case study in what can happen when you have extremely supportive governments. The UAE in particular, around data center investments, where we have two scale investments, has leaned into this opportunity almost unlike any other nation-state in the world. And as a result, they are building faster than anybody else. They're building at a greater scale relative to anybody else, and they're willing to deliver capacity at a rate and at a cost that is sort of unprecedented elsewhere in the world. Now, what's obviously happened since we made our first investment is geopolitical conflict in that region has become a major issue, and a massive amount of uncertainty has been injected. But what's remarkable to me, Carolina, is some of our businesses are still signing data center leases post-war, in-country, and I think that with hyperscalers, and I think that's illustrative how acute the demand, the supply shortage is, and how significant the demand pipeline is. And so, I think hopefully when this conflict gets resolved, I don't think the Middle East is going anywhere. I think it will remain an incredibly attractive place to build this infrastructure and house this infrastructure. I think there'll be precautions that will need to be put in place and greater security considerations that will need to be factored. But it also creates an opportunity for other regions, other countries to do something similar. And not all regions and countries will want to. They may have the same reservations that many states and counties in the United States have. But if countries are willing to lean in and make the permitting and the building of these things readily achievable, and then most importantly, they're willing to lean in around building the power infrastructure that supports it, I think there's a massive opportunity, at least over the next number of years.

Carolina Millan 15:01

And I think that's really interesting how the power of incentives can even outweigh geopolitical conflict.

Lee Wittlinger 15:05

Correct.

Carolina Millan 15:06

That is quite something. So, I guess continuing on the topic of location, and when we turn to think about Latin America, for a lot of industries, something we hear a lot about is how the importance of proximity to the US is key. For example, for some of the nearshoring plays. So how much of a difference does that actually make when it comes to AI?

Lee Wittlinger 15:25

Yeah. It's a nuanced answer. It's a good question. It's a nuanced answer. I would say that in the past, proximity was very highly valued, and I think it was in part instinctual and people's gut. They wanted to be near their—we used to call them back in the early 2010s—server huggers. They want to be really close to their physical infrastructure. They want to get in a car, drive to the server. As bandwidth and technology has improved, the actual need to be that close is quite limited. There are some instances where proximity is really important. So, we're big investors in Waymo, the autonomous vehicle business that Google controls. And something like that, there will be a lot more AI continuously injected into those business models. You need instant reaction. And so, proximity, when your car's driving down the street, you can't wait for a data center halfway across the world to tell you to turn left or not. That needs to be more either on-device or proximate. If you're a

high-frequency trading firm like a Jane Street or a Citadel or one of those, microseconds matter. So, proximity is really important. If you think about AI broadly, and you think about things like training, that's not so important that it be that close. In fact, one of the reasons why you have multi-gigawatt data centers in fields in West Texas where there's nothing for miles to see is because proximity isn't that important. What's more important is you can build there, you have the power, it's relatively low cost. And so as I think about regions that are maybe farther afield from kind of the end user and the core customer, there are a lot of AI use cases and applications that can go into those regions. And increasingly, all of this model training and even some inference doesn't need to be that rapid. And so, I'll give you an example. Professionally, we use AI throughout everything we do from a diligence standpoint and managing our companies. And if I want to produce an investment memo on a public company as a starting point before I even talk to any of the teams we work with, I'll usually set that up. I'll go grab a cup of coffee, I'll talk to someone in the hallway, I'll come back, and the memo's done. I don't care if that took an extra 10 seconds or five seconds or 30 seconds. It's really useful to me. It's still an incredible time-saving, awesome thing in my business. And I think a lot of AI applications are like that. A lot of these process improvement, workflow management applications, they're not so time-sensitive. And so again, I kind of go back to the fundamentals. If regions, nation-states are willing to lean in to building this infrastructure, to powering this infrastructure, I think there will be a really meaningful bid on it from all of the big hyperscalers.

Carolina Millan 17:59

The Silver Lake investments, as you said, have focused on EMEA and the US, not quite on Latin America on this particular topic. So, what would it take for you to look at Latin America more closely, and what can the governments learn from some of these success cases?

Lee Wittlinger 18:15

Yeah. Look, we would love to have more exposure to Latin America. We'd love to have more exposure to Mexico. We have wonderful partnerships with many folks in the room here who are investors in our funds, who have exposure to all of these AI picks-and-shovels plays already. So, in some ways, Mexico and Latin America is already participating in all of this. If they have private market exposure, certainly if they're working with Silver Lake, they are benefiting from this tremendous growth and this amazing technology. However, in terms of the physical infrastructure being in the country, there isn't a lot of that, to be frank. And I think what would need to happen, Carolina, is you would need both the federal and the local authorities to have a thoughtful program around here's how we're going to first solve the power problem. Who's going to fund it? How is it not going to hurt ratepayers? How it's going to hopefully help ratepayers. I know power tends to be subsidized in-country. How do we make it a feature for every Mexican citizen, number one. And then number two, how do we attract all of these dollars into the country and all this development, which then spurs not only construction spend, which is enormous for these things, but ongoing tax payments, which is a huge and recurring payment into an ecosystem. It's why data centers were so popular before the sort of AI pushback and the local community angst, that the extent of tax revenues that it brought into local communities that had no other mechanism to generate hundreds of millions of dollars in property taxes in many instances was extremely compelling. And so, I think that is a big opportunity for Mexico and other countries in Latin America, as long as they're willing to lean in and clear some of those hurdles and be creative around solving the ratepayer and power problems. And also, the physical security piece is really important. So, I gave the example around the Middle East, which is probably the most stark you could come up with. But the Middle East is deploying all of their resources to protect this infrastructure. And so, it will change, and the war has not been good for that dynamic. But if you can guarantee security and you can do the two prior things that I mentioned, I think you're going to have customers who are very interested.

Carolina Millan 20:27

I think it becomes clear from what you're saying that Latin America is lagging some of these other early adopters that are allowing for policy to really jumpstart these technologies. Is there a risk that Latin America and Mexico are late to this party?

Lee Wittlinger 20:42

Good question. I think on the capital side, there's a lot of capital already that's being allocated into these categories. And so, I think fortunately on that side of the equation, all of you are benefiting from this already, which is great. And I think and hope, not just in a self-serving way, that that continues, number one. Number two, I think there is a moment right now where, because it takes so long to build a power plant or extensive multiple power plants, it takes so long to physically build this infrastructure. You also need to make sure you have the right export licensing with the chip manufacturers to get the chips in-country. And so, there's so much that needs to happen. I do think to capture this moment, folks would need to start working on it now is my strong sense. Now, as you and I have speculated, there will probably be a digestion period, an air pocket period, a consolidation around winners and losers with the end customers and the LLMs. Between now and then, that's the immediate opportunity. But in the fullness of time, do I think, do we think that the need for compute capacity in the world is going to be higher or lower in 30 years? It's absolutely going to be higher. I don't think any sort of reasonable person, if they sit in a room for 20 minutes and they think about it, they're going to come to the opposite conclusion. Just more and more of work is being digitized. As you think about physical AI, eventually robotics, advanced manufacturing, all of that needs to be powered with compute and data centers and electricity. And so, in the long, long term, I don't think they're missing a window at all. It just depends on the time horizon. I think if you want to capture this moment of time and this amount of spend, time is of the essence. If you want to be strategic to this infrastructure over a 30-year period, then I think there's plenty of time.

Carolina Millan 22:32

So then, and you've partly answered, but I'm still curious to hear what you think of whether we're in an AI bubble.

Lee Wittlinger 22:40

Yes. Topic du jour. I would say that what we know from our lived experience is the demand profile right now is enormous. And so, it's sort of hard to say that you're in a bubble when right this very second, there's not enough supply for the existing demand. If you have the capacity right now, you can sell it at two to four X what it used to cost a year or two ago. So, in the moment, it doesn't feel like there's a bubble in a sense that it's about to burst because there's more supply than demand. People are building it and hoping they'll come. We're not seeing that in any of our businesses. Quite the opposite. We don't have enough capacity to sell, lease, or depending upon business model, deploy. So, in the moment, we see tremendously strong demand. However, having lived these cycles before and having lived in the data center industry before, we're of the view that there will inevitably be a digestion period. These numbers are too big. The hyperscalers are already spending more than their annual cash flow on these expenditures. They're using their balance sheets. They're having to now issue equity, as you saw recently with Meta, which I'm not saying is a good or a bad thing. It's just those are the facts on the ground. The numbers are so big that I think it is likely that there will be a pause for any number of reasons at some point in the medium term. It could be that the financial commitments are so vast that boards and investors demand that folks see an ROI on that more immediately before they deploy more. It could be that a lot of these end customers for these data center projects have a consolidation around who's going to really win, who's going to lose. It's rare in technology to have six or seven winners. Usually, it's a smaller number than that, two, three, maybe four. And so, as that all gets determined, I could see an air pocket, I could see a retrenchment, I could see a digestion, whatever term you want to use. And that will definitely cause demand to pause, stop, decline, whatever phrase you want to use. And I think in that context, this is where Silver Lake's approach is really important. We fundamentally believe that we need to have the financing for every deal we sign up. So, when we sign a data center lease, we have the equity, we have the debt. We also have a guaranteed maximum price construction contract. We're not signing deals and then going and raising money. We are signing deals because we have the money to go do it. Same for selling the hardware equipment if you're Dell, or selling the semiconductor equipment if you're Altera. We believe how you play this commercially is really important, such that when we have that inevitable air pocket, our companies are operating from a position of strength and hopefully can actually take advantage of it and make really smart investments and maybe make some acquisitions and help our customers out who maybe have some stuck projects. We see that as an opportunity, and it's important that we position ourselves to be responsible counterparties in that inevitable market environment. So that's how we're approaching it and handling it.

Carolina Millan 25:38

Before we wrap up, I wanted to ask you about the role of Latin America funds in these kinds of investments. We're here in Mexico, where the AFORE system has grown tremendously. In Chile as well, the system is very large. So even if some of these investments are not happening in the countries, as we discussed earlier, we're seeing Latin America position itself from an investor standpoint. How are you seeing this evolution?

Lee Wittlinger 26:01

Yeah. It's really exciting. One of the reasons we're here is we have some wonderful partners in the room. We hope we have more over time. But with the AFORE system, given the asset growth that is occurring and given the relatively low allocation to private investments, where so much of this value creation happens before it's actually available in the public markets, we think that's an enormous opportunity. Now, at the same time, I will tell you, I'll go back to what I just said, how you do that from a risk management standpoint is incredibly important. There are a lot of folks who are much more aggressive, who are taking big risks, and it may pay off, and it may be great. But that's not what we do. That's not our orientation. We'd rather have really great returns but wonderful loss ratios. And so, I like to say, we like to look down before we look up. If you don't lose money, the alternatives are pretty good. You make a little bit of money, or you make a lot of money. That's a paradigm we like. And so, I think it's a massive opportunity for Latin America to continue to invest behind these initiatives, behind this infrastructure, behind this technology. But I do think the partners are really important, and I think the risk orientation of those partners is paramount because there will inevitably be a shakeout, and there will be folks who were operating too aggressively from a capital structure standpoint or from a financing standpoint. And you want to make sure that those aren't your partners, that you have folks who have been handling it in a responsible manner.

Carolina Millan 27:25

Yeah. Lee, thank you. I think the takeaway here is that the moment is now, but we'll have to see how the AI story plays out.

Lee Wittlinger 27:34

No doubt.

Carolina Millan 27:35

Yeah. Awesome. Thank you.

Lee Wittlinger 27:36

Thank you, Carolina.

Carolina Millan 27:36

Please join me in thanking Lee Wittlinger.

Lee Wittlinger 27:37

Appreciate it. Thank you, everyone.

Disclaimer: This transcript was reviewed by individuals for accuracy and serves as a reference. However, it may still contain errors or omissions. Please verify any critical information independently.