Speaker 1 (<u>00:00</u>):

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Jaret Davis (00:20):

Hello, everyone. Welcome to this podcast series: Building the Blueprint: The Foundation of South Florida's Tech Ecosystem, a miniseries that's going to explore the growth of the tech ecosystem within Miami and South Florida and its impact on the world. And today, we'll be focused on a particular subsection of data centers and IT infrastructure, something that's been near and dear to South Florida since 2000. 2000, we saw the company Terremark, a formerly real estate development company that transformed into an IT infrastructure company through data centers, and then managed services providers, until it culminated in being one of the top cloud providers, resulting it to sell to Verizon for \$2 billion. That transaction had significant impact on the market, both locally in Miami, it sparked a wave of technology companies that still go on to this day. And then of course nationally, it sparked significant consolidation in the IT infrastructure space, which has been very interesting.

(<u>01:29</u>):

So today, we're going to be joined by one of our top leaders in this industry, Josh Forman. Josh is a shareholder in the corporate practice in Greenberg Traurig, and he leads our team focused on digital infrastructure, data centers, cloud computing, and terrestrial and subsea fiber optics. He's a veteran in the industry, where he was the general counsel at Netrality Data Centers, and he was also the general counsel and Chief Compliance Officer at GlobeNet Telecom. Welcome aboard, Josh. I think we're going to have an interesting dialogue.

Josh Forman (01:59):

I'm happy to be here.

Jaret Davis (<u>02:00</u>):

So as I mentioned, the tech industry in Miami has come a long way, and I'd very much like to delve into your section of that. Right now, Miami is number four in tech job growth, number two in best city in US to start a business, number six in the startup ecosystem in North America. And I would say that data centers have had a disproportionate role, in terms of driving that evolution. Would you agree with that statement? Why or why not? And share some insights on the evolution through the lens of data centers and IT infrastructure.

Josh Forman (02:29):

Yeah, I agree with you 100%, Jaret. I think when you think about the story of Miami and what we've seen over the last couple of years with population growth. What does that mean for this city? It means our infrastructure needs to catch up and I think we've seen the investment, we've seen the interest, and we've seen the actual execution in that. And what that means is that data centers, fiber optic, satellite, tower, we're starting to see a lot of that development catch up with the population growth. So, I don't know how much of it is because we've been at the forefront so much as it is just the demand is there, and I think the city has done a great job. I think the entrepreneurial spirit of our new entrance into the market have done a great job of making sure that the infrastructure keeps up.

(<u>03:21</u>):

And I think we can look kind of at the last five years and kind of look at that time period to see the growth we've seen here. I think we can go back to some of the earlier entrants, and you're a great person to lead this because of your involvement. I think with Terremark and being one of the original people that had a chance to put their hand on the pulse and see the growth here.

(<u>03:42</u>):

So, early as 2018, we've seen EdgeConnex expand its Miami data center to meet the growing demand for edge compute. We've talked a little bit about NAP of the Americas, that underwent significant expansions because there was a need to enhance the capacity in the infrastructure to support the increasing data demands. We've seen the data center operators understand the importance of bringing the connectivity of bringing the data closer to the end user, bringing it to the edge. And Miami with its population growth has had that data center growth follow.

(<u>04:44</u>):

And then I think another thing to consider is when we think about how as a society we've become more reliant on connected technologies, that also has been an increase in the growth. So when we look at Miami in particular, we see a region that has 39 data centers, okay? Including one of the largest in the region, the NAP of the Americas, which by the way, happens to be a major hub for traffic that passes through Latin America. If you were to go into space and look down and be able to look at the bottom of the ocean, you would see a significant amount of submarine cables that connect Latin America, and the most logical landing point has been over the years, Miami.

(<u>05:27</u>):

So, because of its geographic location, because of where we sit in the country, we have naturally become a landing hub for these cables. And the data that's carried on these cables need to land somewhere, and that's where the data centers have really played an important role. That's how I see Miami fitting into the equation. That's how I see South Florida fitting into the equation. Now, obviously there's natural constraints on the market and we'll get into that I think a little bit, but as far as user demand, as far as infrastructure and the ability to grow, there's no better place I think in the region than for us to focus on.

(<u>06:06</u>):

I'm going to talk a little bit kind of what we're seeing nationally, because I think global law firm, we operate not just in South Florida, and obviously a lot of the deals we work on aren't just in the region. And when people think about data centers, obviously Loudoun County comes to mind. Virginia, data center alley. There is a huge, huge, huge presence of data centers in the region.

(<u>06:28</u>):

And I talked a little bit about separate cables landing here in Florida, but because of the capacity and because of the availability for data centers, and because of the location, when you think about connectivity from the US to Europe, Virginia has also been a natural spot for cable landings. And because of the grid and the resiliency and the access to land, data centers have popped up. And now people refer to that part of Virginia as data center alley. And there are figures out there as to how much of the world's internet traffic flows through Virginia. I've heard 70%, I've heard 60%. I think it's north of 70%, but there's just so much traffic and again, that traffic has to be housed somewhere. So, that's why we see Virginia as an emerging market.

(<u>07:18</u>):

But Virginia isn't the only place that there's data centers, we're seeing a ton of growth in your secondary markets. And we call these secondary markets, to most people they'd be seen as first tier markets. But

in the data center viewpoint, these were secondary markets, such as Atlanta, Dallas, Phoenix, Chicago. A lot of their positioning in the market has been their access to land, their access to power, which we're seeing a rich strength on the entire country, but also, having a friendly regulatory permitting process, because these data center developments are not just something that you can piece together. It's not a piece of land that you acquire and then just go ahead and construct an office building or a hotel. You have to worry about permitting issues, environmental issues. When you look and think about a feasibility study based on if a land is able to act as a housing place for a data center, we're talking about utilities, water, electricity, we're talking about fiber connectivity. So, we're seeing a requirement to grow into secondary markets.

Jaret Davis (<u>08:31</u>):

And what would you say is driving the demand for this? I mean, we're looking at tier one markets like Virginia, Miami, secondary markets like you mentioned. I think it's important for our listeners to understand almost the progression of how this industry evolved. Understanding that in the very beginning, as I've always looked at, in the beginning it was more of a collocation model, that you have these data centers which are essentially large floors with that access. And people would co-locate, i.e. locate their server farms or server racks there to get access. And then eventually, that evolved where smart business people say, "Well, wait a minute, if we have your infrastructure here, why don't you let us maintain it for you?" That led to managed services, rather than have your techies come in and have to get access cards, etc, let us do it for you.

(<u>09:20</u>):

And then of course, virtualization came about, meaning you can now slice off computing capacity. And that's where the cloud came from, where you can use a computer to simulate the expanded amount of computing capacity, slice that off so you're using it just what you need, similar to taking meter power off a power grid as opposed to having an entire generator at home. And that's really where cloud took off. And in each of these evolutions, you're seeing more and more demand, more and more taxing on data centers. And it seems like then of course remote work kicks in and that was even more of a demand because of the bandwidth and the throughput.

(<u>09:57</u>):

And then of course, AI. Let's talk a little bit about how that's all evolved so that data centers are becoming even more ubiquitous, more in demand, and maybe a little bit about how that demand is being satisfied. I mean, my understanding is, Miami's about to double its entire data center capacity. Let's really think about that stat. Miami already has a significant amount of capacity as it is and we're looking to double it because the demand is so extreme. I'd love to get your thoughts on that progression of demand and how it's being satisfied.

Josh Forman (<u>10:26</u>):

This is why I was excited to be having the conversation with you because not only in this space, but I think each of those verticals that you've discussed, you've been active, which is nice. So, it's easy to kind of have this conversation.

(<u>10:38</u>):

And I think the first thing you touched on is when servers, networks went from being on-prem to offprem. And that was where people really started to pay attention in the data center space. So what I'm talking about is, rather than having valuable real estate at your headquarters taking up space to host intense equipment that not only draws on your power but takes up space, which we all know what it's like when you need to find an office for someone. I mean, why is that server rack in there? Can we move that? So, you had the folks on the IT side thinking about ways that they could show that they're impacting the bottom line, which being pushing off some of the operational costs of having your own network on your facility, and that's where we started to see the cloud really grow. I think today, you'd be hard-pressed to find many IT people who are not either actively going off-prem or considering going off-prem into a data center, and that's your co-location business that you kind of discussed.

(<u>11:45</u>):

The other thing on the collocation side is just disaster recovery. I mean, it's not enough to just have this information stored on one server. You need to have multiple contingency plans in case that your network goes down or there's an issue where you lose your data. You need to have that backup, and that's traditionally how we looked at data centers.

(<u>12:08</u>):

Then you talked about the next vertical, which is cloud services. How we're talking today, right? I mean, you and I are on Zoom right now. I mean, how is that working? I mean, that's working because we have the infrastructure in place and we're able to talk real time because we don't have latency issues because the compute and the servers, everything is close to us. So, making sure that after the terrible event we suffered with COVID, seeing that the network needed to be more resilient for where we were heading as a society, which is into the digital age, right? So, that was an accelerant.

(<u>12:51</u>):

Now, and this is a great segue into the third vertical, which I see as your HPC, your high performance compute, your AI data centers that you're seeing being built, and that's kind of where we are today. You need to be able to make sure that you have the right environment for these HPCs and these AI workloads to be running from. And you talked about virtualization. What we are doing, where we are seeing our clients moving is following the investment thesis and to making sure that this is available to all. I mean, if we're going to really build the connected society, that means entrants to the market need to be able to have access to that infrastructure as well. And we're seeing that and we're just at the beginning stages, and it's I think, thinking of us as a law firm, thinking of Greenberg Traurig, having that platform to really support our clients and understanding how the ecosystem works, I think is something that I think every day how lucky we are to be here and to be a part of this.

Jaret Davis (<u>13:58</u>):

You mentioned entry into the market. Let's talk private equity because that's become a major player, which is kind of funny because initially private equity was hesitant to enter into because of some of the tenant risk, and I'd love to get your thoughts on that too. But now, it's the exact opposite, they are absolutely in full-blown. What is it that they're seeing that they find so attractive? And talk a little bit about the dynamic shift that that's caused.

Josh Forman (<u>14:25</u>):

Yeah, so that's a great point and I think when you consider this asset class, private equity has really much come into play. And now we see other traditional funds like real estate trying to kind of wrap their hands around the asset class, and we're seeing everyone kind of want to get into this asset class.

(<u>14:45</u>):

But I think you're right to start with private equity, and I think what you had there is you had the ability of these sponsors to really understand the asset. And while you're, and we'll talk about your larger data

centers, your single tenant data centers, where you have someone who will enter into a long-term commitment to be at that data center. I think private equity understood the credit that was coming along with those end users, and we're talking about some of the largest companies that are operating and those balance sheets are very attractive on the credit side. So, I think they understood that.

(<u>15:21</u>):

I think what has taken some time, and I think through some of their platforms, they kind of understand the operational risk a little bit better than some of the funds who aren't active in this space. They understand the operational risks and they understand that there aren't that many operators who can really pull it off. So, I think partnering with the right operator has been the right approach on the private equity side. And we're seeing them understand that while yes, if you were to read a lease on its face and look at the service level commitments that these data center operators are committing to provide for their end users, they understand that having the right team in place allows them to mitigate that risk. And they also understand the importance of the asset, it's not going anywhere. So I think that's how we've seen the market evolve, that's how we've seen private equity take advantage of this space.

(<u>16:15</u>):

And I think what'll be really interesting to see is how other shops and other groups, maybe not so much focused on the PE side, start to get comfortable with this space. And we're seeing that, but I think we're still in the beginning stages.

Jaret Davis (<u>16:29</u>):

So we talked about strategies and we've talked about investment. I'd kind of like to combine the two. The new administration has announced an initiative, Stargate AI, I love the name. As a geek, I love the name at least. There was a great TV show named that. Talk to our listeners about what Stargate AI is and how it's changed the playing field for the industry.

Josh Forman (<u>16:50</u>):

I think less so much about the administration, as it is just about where we are today, which is that the demand for data centers, the demand for access, these heavy AI workload models has completely outstripped supply. I mean, we can talk about vacancy rates, we can talk about all those things, but we're at a time where there really needs to be concentrated effort and growth. So, I'm happy to see the announcements that are being made. I'm happy to see the continued investment, and I'm happy to see a full commitment both this administration and just in general from those in the space.

(<u>17:30</u>):

So, Stargate's exciting because what we're talking about is really entering into a partnership, and these partnerships have been around. I mean, there have been data center developments have been either owner-operator/hyperscaler tenant, to JVs, to owner-developers. We've seen the partnerships out there. What's unique about this is that now you have an effort between a group, more data centers affect their bottom line. Their bottom line is impacted by lack of capacity. So, while they may not all, sometimes some of these players could be considered competitors, they all see the common good in having infrastructure available. And of course, they benefit, there has to be a business case. But I do think what ultimately is going to happen from these announcements is we're going to see other partnerships spring up. And I think it's nice to know that we're in an environment where those are encouraged. I think that's the most important thing we're seeing from this message and I think that crosses both administrations, it crosses both sides of the aisle, because you see the importance of infrastructure. Very much similar to how we saw the importance of the creation of highways.

Jaret Davis (<u>18:47</u>):

How is it anticipated to look? Are we talking joint ownership of data centers or co-investments? Curious as to, what have you seen out there? If this is sort of at the beginning stages, so it's probably, what's just being contemplated?

Josh Forman (<u>19:00</u>):

We're seeing all different kinds of models, right? I mean, first you need to have the land and the access of the power. So I think if you can have that, you're bringing something to the table. It's another thing to be able to develop that land and to make use of that power. So, that's where you see your traditional developers/operators come in. And then I think there's a lot of risk that comes with building these data centers. There is risk of our deliveries, there's supply chain issue risk. So, it'll be interesting to see if these partnerships really provide a greater spread and a greater share of the allocation of those risks. And if they do, then I think we're going to see something really special.

Jaret Davis (<u>19:47</u>):

And what about the power players themselves? I mean, you often hear people say that this industry evolved from being a real estate industry, to being a computing capacity industry, to being frankly, an energy industry. What role have the utilities played, in terms of just some of these other players like a SoftBank, Oracle, OpenAI, etc, playing? What are the providers of power playing in this? Realizing that they play arguably the most important function, in terms of making sure we really have this capacity available to us as a country?

Josh Forman (20:18):

We can talk about your traditional utility provider and then we can talk about power such as LNG. I think it really depends on where we're starting from. I think you're seeing a lot of creativity on the power delivery side. We're seeing behind the meter solutions that I think we wouldn't have contemplated three or four years ago. There's talk now with nuclear again, which I think if you would've told our young yourselves 10 or 20 years ago that people were thinking of setting up small modular racks. I mean, we'd all be against it.

Jaret Davis (<u>20:53</u>):

We would've said you were crazy.

Josh Forman (20:55):

But, so I think the power providers play a critical role and I think they know that, and I think they also see the opportunity to get in at the ground level, and we're seeing that. I think we're still some time away from the power providers also operating data centers because I do think that requires still a unique skill set and with talent so hard to find in the market. I do think that we're going to see the power providers kind of stay a little bit more in their lane. But no, I mean, data centers are squarely in their crosshairs and they're getting really creative and making sure these projects can take off, which is nice to see.

Jaret Davis (<u>21:37</u>):

And aside from energy, what other constraints do you see? I think it's wonderful that the will of the market is all coalesced around we need to build as much capacity as possible, and energy is probably the

primary constraint. But where are the other constraints that this consortium is going to face as they try to provide that solution?

Josh Forman (21:57):

We're going to see expansion into these secondary markets because you just have to, because there's just not much, there's just too much stress on the power availability and land availability in these primary markets. So to have a robust secondary market, I think you need to see additional fiber built out.

(<u>22:15</u>):

And we have to look at this as an ecosystem. Data center is not just sitting alone on an island. The facilities have to be connected. So I think we're going to see in line with a lot of the data center growth, continued fiber growth. And we saw some subsidies and we won't really dive in, that's a whole other podcast just to where we see that going. But I do think the market understands that there's a need for continued fiber deployment, and I think will probably be the easiest problem to fix when you think about, is this site available for a data center? Is there fiber? It's still an important consideration.

Jaret Davis (22:54):

And I have to ask the question, not to be controversial, but I need to put it out there, DeepSeek. Real or not real? I hear so many things from my different contacts in the industry. So, curious to get your thoughts on it and if you conclude real, what's the impact?

Josh Forman (23:12):

Yeah, so I think-

Jaret Davis (23:12):

And explain to our listeners what DeepSeek is. I'm making an assumption that they all know, so.

Josh Forman (23:16):

What DeepSeek has done and what they've presented to the market that they've done is that they have created a much more efficient model on the AI side. So, when you think about running these large language models and running these AI applications, we all know about NVIDIA. I think when earnings are released. I was listening to another podcast the other day and I was listening about NVIDIA's earnings release, and that has become the Super Bowl for earnings period because everyone is just waiting to see what's going to happen. And NVIDIA is doing so well because their chips are in demand and their chips are in demand because as of up until the DeepSeek announcement, it was only thought that you could run these programs on these chips. Now, the proposition DeepSeek is making is that for a fraction of the cost, they can run the same, maybe not the same, but almost at the same level on the compute side. Now-

Jaret Davis (24:15):

Even though it's now been uncovered that supposedly they have, I don't want a butcher the stat, like 50,000 chips and series to run their model, which obviously would be a little bit more than the relatively minor costs they're claiming. But sorry, I couldn't resist.

Josh Forman (24:29):

No, I'm glad you said that. And the truth is listen, I mean they're running on an open source model so it's not like they're starting from zero, right? So they're working off the higher [inaudible 00:24:41] that we've seen. So, whether or not it's real or not, I do think it brings an important topic for us to discuss, which is, efficiencies that we're going to see. I mean, this is the most talked about vertical in the data center space. These high workload facilities that that can provide the right ecosystem for these HPC deployments.

(<u>25:02</u>):

And I think what is fact is that AI efficiencies are here and they're going to continue to be here and we're going to see a lot more in the future, whether it's in new advancements in chips, whether it's cooling efficiencies. What we're going to see, AI just become more efficient. And what I will say is that there is a strong case and people who spend every hour of their day thinking about ways their investments could go wrong in this space, all seem to be pretty unanimous on the fact that any efficiency that we're going to see is going to come back two fold, in the sense that we're going to see more entrance into the market. And this goes to what we talked about earlier with just accessibility. We can make this more accessible, there's only going to be more demand for more compute. So, that's how I see this playing.

Jaret Davis (25:58):

It's interesting you mentioned about the impact on a number of other industries, cooling, power, etc. It almost reminds me of when space exploration was considered one of the top areas for innovation. It was really space exploration and the military, those were the two areas you get the biggest spike and the quickest route towards innovation. And that's always because necessity is the mother of invention. In the case of space exploration, we were in a race, a space race, we're back into one, apparently. And military, for obvious reasons. And now it seems like with the race for AI, the race for other uses of data, data centers have been scooped up and today, now you're seeing a similar front. Data centers are being the driving force for innovation within a number of industries that normally would never even, you would even think were related.

(<u>26:43</u>):

A lot of the discussion we've had is more on the software side with human beings involved. Obviously with AI, you do have technology interacting with humans, but we need to accept the reality that another major driver of bandwidth is device-to-device, IoT, internet things. There's a lot of activity there, whether it be aviation, healthcare, IV pump talks to a central EMR system, EMR system talks to some other system. But there's a number of industries where you're seeing a lot of device-to-device and many people believe human interaction will no longer be the primary driver and demand for data, it's going to be that device-to-device interaction. Do you agree with that and what are your thoughts on how that impacts this whole dynamic we've been talking about?

Josh Forman (27:33):

One of the things that you and I have in common is that if something can fly, if it's a machine, if it can talk to us or if we can get our hands on it, you and I are going to mess around with it.

Jaret Davis (<u>27:42</u>):

Absolutely.

Josh Forman (<u>27:42</u>):

So I think we're really in tune to the tech side of things. But think about it this way, think about a pacemaker or a medical implant, right? That right now the primary way that those devices are connected are just to provide real-time data. I mean, you can talk about something that's implanted, we can talk about our smartwatch, we can talk about these devices which track. Okay?

Jaret Davis (<u>28:07</u>):

And it's a constant stream of data, unlike where when you have a human being interacting, it is always on, it is always a data flow. There's no stopping it.

Josh Forman (28:17):

100%. Now, think about all that data that now we have our hands on, and think about throwing AI into all that. Okay, so if we have a medical device which is recognizing that something's wrong, that something might not be going right, what more can AI do than just read that data house that data? It can make changes so that your system can react. Think about your watch. I mean, it senses your temperature, I mean, it senses you overheating.

(<u>28:50</u>):

Think about all the devices that can then automatically go into play and that can now interact with all this data. And because you have an AI platform in the background, which is using this information to make real-time changes, and you trust, and I think that's a big thing we didn't talk about, which is how does trust come into all this? As Americans I think just in general, we trust our technology, which I think is why we see such growth here. But just think about all the amazing things that these things can really do once we start to put a smart person, a smart AI assistant behind all this data. And I think we're just starting to see that.

Jaret Davis (29:30):

And each major industry is starting to make use of it. I mentioned aviation before. You have bots that are tracking aircraft, talking to central diagnostic centers. I mentioned the healthcare paradigm. Financial services. You're starting to see a trail in logistics, the tracking of individual containers. I'm frankly awed by the amount of data and the fact that with each iteration we always make the arrogant statement of, okay, we have finally exhausted use cases for data, and then another one comes up. And frankly, I very much believe and remember, the IOT paradigm, it's going to be IOT combined with AI. And so you went from cloud, which was a major data suck, to AI, to remote work. This I think will be the ultimate culmination and I think you are just going to see an unbelievable demand. We're already talking about the need for 6G as a consequence, in terms of bandwidth.

(<u>30:21</u>):

It's going to be very interesting and that's why this area is exciting to me. I envy, knowing what I know now, I would've crafted myself to become exactly the type of lawyer you are. But that's why we're so thrilled that you're at Greenberg Traurig, because the work you're doing is absolutely amazing.

Josh Forman (<u>30:36</u>):

I get to learn from giants in the field like you and get to work on new and novel ideas with some of the best in the business. And that's why there was no other place for me to join when I decided to go to private practice. We practice law here, but we also are thinking outside the box a lot when it comes to our clients' needs. And this is another example of why GT is such a special place, that we can take the

time out of our day to have these conversations and share with our clients. So yeah, so thanks for having me on, Jaret, it's been great.

Jaret Davis (<u>31:06</u>):

Absolutely, thank you for being on, Josh. And I hope this was helpful to our listeners and I hope you realize that demand for data is real, nearly infinite, and gleaned a little bit about the strategies and innovation that's going on, and realized a lot of this innovation in this field's going on right here in South Florida. And if you're listening to this outside of South Florida, we welcome you and we're thrilled, and just know that this miniseries is going to continue to discuss and update you as all the interesting things going on in tech in South Florida right now. Thanks everyone for listening. I hope you have a wonderful day.