

## Space Capital Podcast S2E08

Speakers: Chad Anderson and James Slifierz of SkyWatch

This is the Space Capital Podcast. And today, we're speaking with James Slifierz, Founder and CEO of SkyWatch; a company that is enabling a new era in geospatial intelligence by providing developers the tools they need to efficiently and cost-effectively integrate earth observation data into their applications and work streams.

### **Chad Anderson:**

We first invested in SkyWatch in their seed round back in 2018 and have invested several more times in the company, in the year since. James, it's great to have you back on the show. Thanks for joining us.

### **James Slifierz:**

For sure, Chad, thanks for having me.

### **Chad Anderson:**

Okay. So, a lot has happened since we last had you on the pod, back in 2018. So, welcome back. I am excited to get into this. So, for those who may not be familiar, can you introduce the company SkyWatch, what's your value proposition, and how are you introducing yourselves these days?

### **James Slifierz:**

Certainly, so we like to think of ourselves as the world-leading provider or distributor of satellite data, particularly in earth observation. We see our responsibility as making it easy for any organization in the world who currently has difficulty accessing satellite data - our mission is to make it easy for them to do so. We think about making earth observation data accessible, affordable, and standardized. Those are sort of the three principles by which we approach this. And we do it through two very seamless simple products that sit in the value chain of earth observation.

### **James Slifierz:**

So, our first product is EarthCache, and EarthCache was a product that we were talking about in the market when we last spoke in, I believe it was 2019. And EarthCache to put it simply is an API for accessing satellite data. So, with EarthCache, we have a very Blue Ocean Strategy. Our goal is to enable new applications, new customers. We sort of leave the existing market, as we would largely define as being government and defense alone and try to grow what we think is the largest untapped potential of the market. Billions and billions of dollars of commercial opportunity. That's what we would call pent-up demand. We then have on the backside of that, a product that we've launched since we last spoke. And it's a product that we service to what we call the supply side of the earth observation market, and that is Terrastream. And Terrastream, as an analogy we call it Shopify for space companies. And the

goal is, it's a turnkey downstream data management and distribution solution for any entity in the world that needs to launch a satellite and get that data from that satellite to market.

**James Slifierz:**

So, we're working with I would say majority actually of the world satellite companies in some various form, enabling them to more easily reach the growing and expanding commercial markets. And I think what's unique about our business, particularly in earth observation, I would say the stat that usually surprises people is when you dig into most earth observation businesses, you will probably see a revenue profile that definitely skews majority government. But in many cases, northwards of 90 plus percent of revenue coming from government sources.

We have the inverse revenue profile in our business. In fact, it is probably less than 5% of our revenue comes from government sources. So, I think just a true indicator of SkyWatch being a strictly commercial focused business and looking to expand the use and the democratization of satellite imagery and hopefully towards an end goal where the power and the impact of this data can be synonymous with the impact that we've seen GPS have, over the last two decades.

**Chad Anderson:**

Okay. And so, traditional earth observation companies were vertically integrated by design, by government, for government. And government continues to be a large purchaser of this type of data. And the traditional systems that were built, these geospatial intelligence systems, they were never really intended to be interoperable. They were designed to be closed experiences, controlled economies, and they optimized them to service a very specific type of government customer, very sophisticated customer.

Your approach has really turned this on its head. And so, I'm curious how you think about that split of government versus commercial. Government has been the key source of revenue for these types of companies in the past. They continue to be a large purchaser today. But where are we going? Clearly, you think that the opportunity is in commercial?

**James Slifierz:**

Yeah, a hundred percent. I should say, we would characterize the difficulty that earth observation has had in going into the commercial markets as being one in which I would say the customer or the user behavior of commercial markets is actually completely inverse from what we're used to in government and in particular, serving data to government. And it really gets at the foundation of how we serve data. So, with government customers, we have a customer base that purchases large volumes of data. You can imagine the needs of governments being imagery of cities, counties, states, countries even, and they need these less frequently. Sometimes, they need a base map created on an annual basis.

But oftentimes, you don't see needs for imagery, except in the instances of natural disasters and war time being the exception. You don't see the imagery needs being very frequent. Commercial customers, particularly commercial use cases are the complete inverse of that. So, commercial customers, they require imagery of very small areas at very high frequencies. So, you can think about construction, you need to monitor a construction site on a weekly basis. A farm, you may need to monitor every three days, every four days. And these user

behaviors matter to how we serve them simply because how data is priced in earth observation is directly correlated with the size of area that you're monitoring. So, we price data on a per square kilometer basis.

So, if you're a government customer and you need let's just say an image of a city, let's just say it's roughly a hundred square kilometers, which might even be slightly small, and you're paying \$20 per square kilometer, you're probably doing a \$2,000 transaction on the side of the supplier or the satellite operator. You can inject some humans in the loop there and still have a decent margin on selling that product or distributing that product out to market. Now, when we think about a construction project or we think about an agriculture field, we're talking about areas that are smaller than one square kilometer.

**James Slifierz:**

So, again, if I use the same price point of \$20 for a square kilometer, we now have a transaction size that is less than \$20, but still requires the data to be serving through the exact same mechanisms or the exact same infrastructure. And they need that multiple times a week. And so, if you're interjecting people into the distribution of that data, your marginal cost is going up hundreds and hundreds of dollars. And so, the economic story I'm trying to lay out here, the financial one, is that the way we've traditionally served earth observation data into the market, particularly, the government market, those cost structures have not supported us or not allowed us to efficiently serve the commercial markets at the price points that they can be or are willing to be served at.

And so, the whole thesis of SkyWatch was how do we automate this entire process from both the ordering of the imagery, all the way to the delivery of the imagery? We think about the opportunity very simply. We think about it simply in the way that the internet should work, or simply in the way that you would watch a movie on Netflix or listen to some songs on Spotify. There's a digital good, it needs to move from one computer to the next - how can we enable that programmatically, and without the needs for humans. It just so happens to be that earth observation, where we're pulling data from happens to be on an asset that's in orbit going close to eight kilometers a second, in orbit and moving quickly around the earth which logistically makes it a bit of a challenge, but also, makes the problem technically interesting and certainly worth solving so that we can unlock that massive value for the market.

**James Slifierz:**

And what we do know just to go back your original question is that there's massive pent-up demand for this. We, today, serve nearly a thousand organizations on our platform growing at 3x the rate year over year. Just last year, we were serving 350, the year before that, a little bit less than 150 customers. And again, all 95% commercial, if not more. And so, we know that demand is there. I think what we're trying to get to as an industry is how to remove those cost barriers, so we can continue to meet customers at a price point that allows them to adopt it at scale inside their organizations.

**Chad Anderson:**

Got it, and marketplaces, aggregation platforms like this are incredibly valuable. But the opportunity to build one, they really come around quite rarely when the market is in some sort of a state of transition. Then it's kind of a winner take all or winner take most. And I'm thinking, you've mentioned Netflix and Spotify in this conversation already, Twilio.

SkyWatch was one of the first to push for this abstraction layer and this approach to earth observation. What did you see back when you founded the company, that made you think that now was the right time to build a company like this?

**James Slifierz:**

So, just to give everyone background, we as a founding team here at SkyWatch, actually worked on software and astrophysics prior to earth observation. And what we did was we allowed astrophysicists to easily access data from NASA space observatories in almost real time. We're talking about a delay of anywhere from 30 to 60 seconds, from the moment that the observatory was able to capture data to the moment we were able to get that data to a researcher here on the ground. And we certainly knew and understood that there's not really much a business to be built in astrophysics, but we were paying attention to the emergence of the commercial markets in space and commercial space more broadly. Venture capital at this time, we're talking between 2014 and 2016 is really starting to pick up steam in terms of their investments into hardware assets that would go into space, particularly earth observation constellations. And what was apparent to us was that nobody was really talking about how that increased complexity - I would define complexity as being like thousands of assets in space; how we were going to make those assets actually valuable to people here on earth.

**James Slifierz:**

And we, in retrospect, naively thought the problem was going to be as simple as astrophysics. And it turned out to be just massively more complex. But I joke and tell entrepreneurs, you always need to be slightly naive to start any company. But it was evidently clear as people that worked on the downstream side, in the space industry, just in a different vertical, that we hadn't quite figured out yet how people were going to easily access this data. And also, mid-decade, we're talking about a time in which the API business model was starting to become prevalent. And we were also looking around our own tooling inside of our company and just realizing how many services we were accessing and utilizing via API of which on the back end, we really knew nothing about, nor did we really care to know about.

**James Slifierz:**

You mentioned Twilio, for example. Twilio was just going public around the time that we were transitioning to an API-first model here in the satellite industry. That's an API first company that abstracts the complexity of the telecom industry and allows any software developer in the world with the ability to easily integrate messaging services and video capabilities into their applications. Stripe was becoming a multi-billion-dollar private company and growing at an extremely fast rate, a darling of Silicon Valley. And what do they do? Well, an API-first company that allows people to easily embed payment processing into their software. And we thought about 10 years out - we're in the year 2016 at this point. So, we're thinking in the year 2026, how is the modern application developer inside of the average enterprise going to access earth observation data? And I couldn't think of a reason why it wouldn't be through an API.

And so, we just thought, like we had to be the company to build that infrastructure layer. We had to be the company that abstract the complexity of thousands of assets in orbit, so that any person in the world did not have to be an expert in satellites, in satellite orbits, or in the earth observation data to utilize the value of that data inside of the organization. And that was sort

of what led to the API-first model. Probably, I should actually mention, it was the first commercial satellite data API ever released in industry.

**Chad Anderson:**

Your model is now helping to create an entirely new customer segment on the commercial side that a lot of people have talked about, thought about, imagined, hoped for. But your model seems to be the one that is helping that vision be realized. You're helping these customers purchase highly targeted imagery across the broad swath of use cases, smaller areas of interest more frequently, machine to machine, removing the humans from the loop - much of this, which was largely unserved by existing providers. You mentioned earlier talking about GPS and likening what's happening here to what happened with GPS. When you abstract away the complexity of that data, you really start to see all the different ways in which this data can be used, this hands-off approach where you make it easy to access, and then you can kind of let this infinite number of potential use cases manifest themselves by people who know the customers and are looking for ways to improve their products.

I'm curious, the last time that we talked, you had already had several Fortune 500 companies looking to use earth observation data across agriculture and oil and gas. How has that grown? How have things changed in terms of market adoption? Has that gone the way that you'd expected or are there any surprises?

**James Slifierz:**

Well, I wish I could say everything went according to plan. I would probably be the first entrepreneur to say such a thing. But it's largely, following track with the challenges that arise and we knock down along the way. What I will say is like all the value propositions that you mentioned are absolutely true; smaller AOIs, better price points, better user interface, better user experience. I think like one of the most important things that I think we did that still rings true when we listen to sales calls today is sort of the evolution on the business model. And I would define that as having gone from a requiring customers to pay a large contract upfront to get access to data, to moving to a pay as you use model. Where you can come onto the platform at zero cost and almost immediately, and use the amount of data that you need and only be charged for the amount of data you need, and only after you've acquired it and not upfront.

We often get this cited as being one of the top reasons among many others why customers come to us and see value in what we do. It's just really understanding that pay as you use is the way forward. And particularly when you're targeting the developer or commercial markets. It is a business model that I think is proven and very popular in that domain. And so, I think that's never existed even when we raise our capital. Early on, our very first capital, our very first seed capital, satellite operators wouldn't talk to us unless we were able to bring 100K upfront at minimum. And our goal was to just bring those barriers down. And I think that's part of the reason why we're seeing really good traction and really good experimentation from these companies who have never used this type of data before.

**James Slifierz:**

The other thing I want to give credit to, in our customer growth, as I mentioned earlier, it's growing 3x year over year, is I'm really proud of the team we have here. I think we have built the most impressive go-to market team and motion in our industry. We've hired go-to market

experts from all sorts of other industries to come into earth observation in particular, and think about how we build, again, a go-to market motion that allows us to bring commercial companies onto the platform, seamlessly and at a very high velocity. And so, not only do we spend a lot of time thinking about where our customers are and the kind of content they think about that is useful, but we also ensure that we've placed people along the customer journey, knowing that we're targeting companies who don't have earth observation experience.

We've been very good at understanding when our people, our success people, our enablement people, when they can jump into a customer journey to help those customers either further build out their integration or to fully leverage the data, or even to just understand the data that they're getting and the value that it's providing inside the organization.

**James Slifierz:**

And because of that, sort of that little hands-on touch that we provided to the segment that needs it, again, we sort of ... just to give you a little bit of insight into our customer base, we have like two buckets of customers that we like to sort of generalize inside of our customer base. The first bucket is what we call the YEO crowd, Y earth observation, and those are the customers that come to SkyWatch needing to solve a problem inside of their business. And they're trying to determine if earth observation is the right fit for doing that. And I think what's interesting about that crowd, and one of the myths that I think we've knocked off from our industry is that people believe or have historically believed that people are coming to satellite data, and they're trying to figure out how to apply a solution to a problem. And the truth couldn't be farther from that.

What we're actually finding is customers coming to us and having a very well-defined business problem. And what they're trying to ascertain as quickly as possible is whether or not satellite data, particularly earth observation data can solve that problem. And we see it as our job to get them to do a conclusion on that as fast as possible. Not every problem can be solved with earth observation. Most can eventually, some can't today given certain supply side constraints, but our job is to get them there as fast as possible.

**James Slifierz:**

And then the second bucket, we call them the “Why SkyWatch?” crowd. And these are companies and organizations that already do use earth observation inside of their ecosystem, but they're trying to find a better widget for doing so. They're either fed up or sick of the existing ways of accessing data, and they're looking to remove friction so that more of their time and more of their money can be spent on the core competency of their business and less on acquiring and procuring satellite data. So, we just did a really good job, I think, of understanding our market, segmenting our market, and then building, both a go-to market motion and a customer success program that knows when to target those specific groups and how to help them grow their usage of earth observation inside their platform.

And I think what it shows is that we're able to get customers on and we're able to make them successful. We're enabling them to grow their usage of earth observation, either by showing how there's other business problems that can be solved in their organization, through the use of the data, or through enabling them to solve similar problems with different data types, whether it's introducing synthetic-aperture radar or hyperspectral, et cetera. So, yeah, hopefully that's a good overview of where we're at customer-wise. Again, by the end of this

year, I think we'll be pretty close to a thousand customers that we're serving. I should say, that's active customers, not total customers today. Those are active customers using earth observation data through SkyWatch, which we're really excited about. I'm really proud of.

**Chad Anderson:**

And agriculture and insurance were the two really, your early movers in this space. Is that still the case? Are they still a significant portion of your revenue? How has that diversified?

**James Slifierz:**

So, I would classify agriculture and insurance as being important industries, particularly large industries as represented by our customer base, but not necessarily as represented by our revenue. So, agriculture is our largest segment of market. But it's less than 18% of all of our customers. And it's even less than 8% of all revenue. So, it's an interesting industry. It was a definitely a first adopter of satellite data, particularly earth observation. But I think as an industry, we have a lot of work to do to serve that industry well, and at scale. I believe it presents the largest opportunity for earth observation over the long-term, but it's going to require, I think, more dramatic reductions in price, accessibility. These are obviously price-sensitive industries.

And if SkyWatch can be successful in removing a lot of the cost structures of getting this data to market, we believe that we can bring the prices down and thus, expand the market opportunity within agriculture. On the insurance front, it's a similar story. But I would say not as big of a customer base in terms of total number of customers, but pretty significant in terms of revenue. I would say, like it's about pretty close to 7% of our revenue, but only about 2% of our total customer base.

Similar challenges there, where in order for them to do it at scale, there has to be cost reductions because they serve ... similar to agriculture, they have customer bases in which there's large geographic dispersion among where they need data and you need systems and processes that can collect that data efficiently. And we're getting there. And I would say like within two to three years, I wouldn't be surprised if insurance was in the top three of both customer bases in terms of number of customers, as well as in terms of total revenue.

**Chad Anderson:**

Got it. One of the benefits that we haven't talked about yet is the power of data aggregation. You mentioned that your customers, your typical customers come to you with a well defined business issue that they're wondering if earth observation, geospatial data can help them solve. And typically, one type of sensor, one type of satellite data isn't enough to answer those business questions. Like optical imagery is great during the day, but it's pretty useless at night when it's dark or when there's cloud cover. Radar can see through clouds in the night, but also, is like very complicated. It requires sophisticated tools. Government data might be free, but it might be infrequent and low resolution.

So, anyway, one of the things that you do is bring all of this together and make it really easy for your customers to essentially have a one-stop shop. But it was difficult in the early days to get established data providers onto the platform, both incumbents and early new entrants, those that had already invested in these platforms on their own back when it was a

verticalized business model, or they were moving away slowly from that model, and they had made all these CapEx investments themselves.

But now slowly but surely, more and more of them are coming onto the platform and selling their data through EarthCache. I'm curious, what has caused that shift and helped them change their mind?

**James Slifierz:**

It's a good question, and I think probably one of the more revealing results of having executed on this business over the last couple years. In the early days when we were sort of small amount of customers, less than a hundred and still figuring out what the scalable use cases were, we positioned ourselves to the satellite operators as a partner in accessing and growing the commercial markets. And the truth is that, in order to do that successfully, we needed them to make a level of investment in order for their systems to adequately serve this new type of customer.

As we said before, to serve the commercial market, you need pretty low marginal costs, which means you need a lot of automated systems. And just there was no satellite operating in the world who had that capability yet. And so, A, we'd offered to build a lot of those capabilities for the partners that we were working with. And we did our best to augment their systems with our own software and with our own processing. And what happened over time was, as we were able to prove like through the excellent go-to market execution that I mentioned earlier, that we were able to grow our customer base and our revenue base in the commercial markets at a rate that has never been seen in our industry.

We were able to take this data back to them and prove that we are not only a reasonable, but probably their best option in expanding revenue into the commercial markets and capitalizing on what is a very fast-growing segment of earth observation. What I've just broadly defined as the non-government, non-defense sector of earth observation.

**James Slifierz:**

And so, we position ourselves now as go-to market partners with these providers, with these satellite operators. Whether they're an incumbent or a company that is in the midst of launching their first few satellites, we see our role as being a go-to market partner to help them build a profitable commercial business. And so, yes, we do that by enabling them as easily as possible to access our EarthCache customer base. But what we've been talking to the market about more recently over the last year, what we sort of began talking about a little bit more openly was the Terrastream and what we're building on the supply side of the market.

And what we're trying to do there is we're trying to say, like look, you don't have to build your own data distribution capabilities. The verticalized companies that were first to market in the early days, the planets of the world, the Maxars of the world, they had to build their own distribution capabilities because distribution capabilities weren't a thing when they started in an earth observation business, they didn't exist. But now, as the ecosystem and the market is maturing, I think we all agree it is table stakes. Now, if you're going to build a modern earth observation company, that your data needs to reach market efficiently, everybody has to do it. It's not an option anymore. It is a must, it is required.

**James Slifierz:**



And so, our job is to take away that heavy lifting of needing to have that service and provide a capability that is built by a company, SkyWatch, that knows the space better than any other, and can take away that heavy-lifting and those heavy upfront costs away from companies, so that they can focus their money and their resources on the core competencies of their business. And ultimately, the thing in their business that will actually drive real differentiation and real competitive advantage, which is the quality of their products and the differentiation of their data products. So, we've had a tremendous amount of traction here over the last year. And in today's current ecosystem and environment, two things are happening. One, our customer base, its growth is actually accelerating still, even on top of a 3x year over year.

As well as, I think the current market conditions are forcing satellite operators to reflect on what costs in their business are important and which ones should they look to either outsource or reduce. And our job is to provide the market with the ability, again, like our value proposition to the satellite operators, we're a go-to market partner. But when we think about it a little bit more holistically, we see our responsibility is enabling these satellite companies to build profitable businesses. And yes, part of that is reaching revenue faster and growing it faster. But the other part of that is helping them reduce costs inside their business which is ultimately, the simple equation of how you get to profitability, increased revenue, reduced costs.

So, we today, have access to more than 90% of all earth observation satellites in the world, I should say, in orbit around the world. And today, we have relationships with more than like close monthly conversations with more than 50% of all companies that plan to launch a satellite over the next couple of years, and an actual contractual relationship with about 25% of all companies launching an earth observation satellite over the next couple of years. And all of that is growing as we continue to make more and more investments and that side of the business. And what we should be proving in a couple years when you and I speak again, is we'll have data on how we're enabling companies, particularly satellite operators to get to revenue faster, to grow their revenue faster, and to get the profitability faster than ever before. And what I hope that means is, they're less constrained by capital. They're able to use their capital more effectively. They're able to raise the capital that they deem more efficiently. And ultimately, they can build healthier, more sustainable businesses.

**Chad Anderson:**

Wow, that's really impressive. Okay. So, you are making it very easy for the data providers to get access to customers and make more money. You're making it easier for the customer base to grow. You're enabling them to experiment and adopt earth observation, and once they do that, they want more as demonstrated by your net retention numbers. So, this is an interesting area and new players are entering. Since we last talked, one of the big developments is the big tech cloud providers have gotten into the game, AWS and Microsoft in particular. Are these competitors or partners?

**James Slifierz:**

They are partners by definition. And we've proudly made announcements as such over the last year. They're doing something really important on the ground side, which is they recognize the amount of data that's going to be downlinked in the current bottlenecks we face in the industry and getting data down to the ground and out to customers. And obviously, selfishly, they understand how much revenue that that will lead too. And I think they're doing

something interesting in building downlinking stations at their data centers. And this is important and helpful because if you have never worked in data before, you might not appreciate this, but one of the most expensive aspects of working with data is actually moving data around. Bandwidth costs can be extremely expensive, especially when you're talking about terabytes or petabytes of data.

And so, they're making it easier for satellite companies to get data into the data centers or into the compute centers where the processing is going to happen and ultimately, be delivered out to customers. So, they're just closing a lot of bottlenecks there. We've announced Terrastream partnerships with both of those organizations, so that the satellite operators that launch using Terrastream as their primary distribution capability will be able to use either AWS Ground Station or Microsoft Azure orbital to downlink their data directly into their Terrastream instance and get it out to their customers as fast as possible.

**Chad Anderson:**

Great. And Esri is the granddaddy of geospatial information systems. It all kind of starts with them founded in 1969, first company to digitize mapping information for commercial use still in the game, still going strong. And you have an integration with them now.

**James Slifierz:**

Yes, yeah. So, we're running a beta program at the moment with a number of enterprises, large, large companies that already use Esri inside their organization. And we're running a beta program that will enable them to easily order and retrieve and like basically accept imagery directly through the Esri interface without actually ever having to come to SkyWatch and EarthCache directly. And this is a great thing for us. As an API first company, we actually think, like what success looks like for us is our customers accessing and utilizing data in their existing workflows. We don't want them to actually come to SkyWatch and have a separate workflow for how they get satellite data and go to another organization to access drone or aerial data in a different manner.

We believe in a world where every organization is a geospatial organization in some sense. And they have geospatial requirements or needs inside their organization. And we believe through the GIS software that they use in their organization, that they should be able to easily access and pull the data that they need right there, without having to go elsewhere. And as an API-first company, we just want to be the pipes that enable that. We want to be the company on the backend, the tooling on the backend, that is making all that possible. And we think it's a requirement for seeing through to the world that we envision one day.

**James Slifierz:**

And so, we're excited about like taking this first step with Esri, which I think our ability to actually have a partnership with Esri and sort of gain the traction that we have with them, I think is, again, another credit to just how much we've been able to prove and show validation that we understand commercial markets and how to grow and serve that customer base. So, our goal there is to build a seamless, very seamless user experience where any Esri customer can easily access imagery, whether that's ordering archive imagery, or actually tasking a satellite that they can do so right there inside of Esri for almost any satellite in the world, which will be quite an exciting feat once accomplished.

So, we're working on a beta program right now, we're working towards a B1 release by the end of this calendar year. And that B1 release will include the things that I just said. A customer will be able to order and receive archive imagery from all of our providers through that interface. They'll also be able to task any satellite that we have access to, which is more than 300 satellites through that interface as well. So, very excited about that, and we're very excited to roll that out beyond our beta program over the next 6 to 12 months.

But I would encourage anybody who's listening to this and are big time ESRI users inside of your organization to reach out to us, we are adding people to the program. So, it's not like we have like a fixed number and everybody else will have to wait until the end of the year. We're continuing to add customers who are heavy users of Esri into our program on a weekly basis.

**Chad Anderson:**

That's great. So, even in addition to growing the market to new users, you're also now getting access to the existing geospatial customer set. That's fantastic news.

**James Slifierz:**

Just on that point though Chad, so yes, the existing customer base, but also there's a very large subset of Esri users who do not access earth observation data today because it's either prohibitively expensive to order or it's too complicated. And so, the fact that they can now do it through Esri - I think while we are going to attract existing customers, I think there's a large untapped potential in that customer base, where when they find out they can just order and they can have a pay as you use order, right there through the Esri interface, I think it's going to open up a lot of eyes.

**Chad Anderson:**

James, this is fascinating. You are right in the middle of a really and interesting rapidly growing market. I'm really looking forward to checking in with you in another couple of years to see how things are going, but thanks very much for coming back on the show with us today.

**James Slifierz:**

Yeah, pleasure. This is my favorite topic to talk about, and please don't wait a couple years.