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TECHSavvy

Deloitte TECHTalks | EPISODE 28 | The Innovation Paradox: Enterprise and Startups

With Brett Loubert, Deloitte Space Leader, and Caite Brumme, MassChallenge CEO

Raquel Buscaino: Welcome to Deloitte TECHTalks. I'm your host, Raquel Buscaino, and I lead Deloitte's Novel and Exponential Technologies team, where we sense and make sense of emerging tech. On today's episode, we're going to be talking about tech from a slightly different angle, as we discuss a common innovation paradox that both enterprises and startups face. And that paradox is that large organizations often chase the agility of startups, while startups, on the other hand, often seek out the structure and scale of big organizations.

This is a special edition episode of TECHTalks, as we're welcoming two guests to the podcast. Our first guest is Cait Brumme, who is the CEO of MassChallenge, a nonprofit that empowers high-impact startups across industries through programs, startup accelerators, and partnerships. And our second guest is Brett Loubert, Deloitte's space leader.

Now, you might be asking: "Why have a startup innovation CEO and a space leader on the same podcast episode?" Well, MassChallenge and Deloitte have launched a commercial space challenge that seeks to address this innovation paradox and we figured there's no better way to discuss this than to use a real example to bring it to life.

So, Brett, Cait, welcome to the pod. Really couldn't be more excited to have you both here today.

Cait Brumme: So happy to be here, Raquel.

Brett Loubert: Raquel, this is my second time on the pod, so clearly I didn't mess up the first one.

Raquel Buscaino: Awesome. Well, Brett, Cait, you've both spent so much time working in your given fields and addressing this innovation paradox, as we're calling it, from your respective vantage points. So, as we kick things off, I'd love to just hear your perspective on why now is the right time to be having the conversation that we're having? Could you just set the stage for us?

Brett Loubert: Let's start by sizing the space industry. The World Economic Forum projects that today, it's more than $600 billion, and it's projected to grow to almost $2 trillion by 2035. This is different than when I started in the industry almost 25 years ago. Government was the overwhelming majority of spend and investment in space. According to the Space Foundation, 78% of the space economy is driven by commercial.

So… What's possibly even more interesting than the numbers is what's driving that growth and scale. Typically, when people think about space, they picture what they see or what they hear about. It's rockets,

it's billionaires, it's astronauts, but so much of space happens here on Earth and impacts how our life and how businesses on Earth run. Data and services from space, I'm going to talk a ton about that today, underpins so much of our lives. My standard go-to example is always GPS (Global Positioning Systems) which powers entire industries, like ridesharing, and helps us find a cup of coffee. So, both extremes of business and personal and the amount and scale of data from space is increasing at an exponential rate.

A lot of this is kind of underpinned by the fact that launch costs, so the ability to get to space, that cost has dropped more than 400x over the past few decades, according to NASA and commercially available pricing by major launch providers. So this, and many other factors, including smaller satellite components, more satellites, have all accelerated the pace at which companies can get satellites and other capabilities on orbit.

So now for the commercial, in fact, Deloitte, we even are in on the satellite game ourselves. We've launched our first satellite called Deloitte One in March, to test an on-orbit cyber intrusion detection system for space systems such as satellites. And this is a great example, and it all kind of creates significant opportunities for companies in non-space industries to leverage space-based capabilities to improve operations, unlock new business models, and provide more value to their customers.

However, the challenge remains, space is complex, and companies need our help in understanding and prioritizing use cases for space-based data and services, and that is exactly what we're here to talk today about, and it forms the basis for our collaboration with MassChallenge.

Raquel Buscaino: That's great to hear, and I love how you mentioned that space is benefiting life on Earth. Cait, I'd like to turn to you. From your seat in the startup community, why does this moment matter for innovation and innovators more broadly?

Cait Brumme: I think starting with Brett is just awesome, because space commercialization is an area we're so excited about, also because I think it encapsulates this broader innovation paradox which brings us here today. To zoom out past space, I think we're in a moment of just extraordinary acceleration in technology writ large. Obviously, AI is in the headlines, but alongside that, you have biotechnology, you have advanced materials, advanced manufacturing, et cetera, et cetera, and those are creating sort of extraordinary moments of opportunity for breakthroughs in areas that have historically been hard, and yet where we see massive opportunity from an economic and a societal level.

And so, you know, startups are our heartbeat at MassChallenge but are really a unique force to bring invention and insight through to economic and societal impact.

But when we look at the categories that we're most excited about, most hopeful about, space commercialization being a massive one, the playbooks, the buildouts are not only hard, but are not well-trodden areas.

The other side of the paradox is at the same time, you have industry partners with unbelievable legacy knowledge and capabilities, and teams, and talent who also feel the existential threat of extinction if they don't find ways to innovate faster, and that's put us in this moment where you have, you know, technology acceleration, startups as a unique capability, and industry hungry to participate in what's next, and I think that has created opportunities for these collaborations. And we know this is why we're so thrilled that MassChallenge, through our collaboration with Deloitte, is that we have to find new ways for co-innovation to happen, to realize the full potential.

Raquel Buscaino: I love how you walked through how emerging technologies are really driving this force, and how startups and large organizations alike are facing these unique challenges. I'd love to take a double click into some of the things you just mentioned, because you work with startups across industries, so you really see this huge range of breadth. So, specifically on the startup front, what are some of the challenges that you're seeing startups face when trying to scale in these emerging sectors? And what kinds of ecosystem alliances, relationships, do you think make a difference for them specifically?

Cait Brumme: For context for your listeners, MassChallenge, we're focused on 5 sectors that broadly touch on emerging technology, healthcare & life science, sustainable food systems, global finance, security and resiliency, which includes our space commercialization portfolio, and all of these areas are, deep, complex, differentiated, but for startups, you know, share the characteristics of being regulated, often requiring a unique skill set of technical talent and really perseverant go-to-markets, often require interaction with industry regulators and others, and have typically longer gestation periods and, and even more higher capital needs.

So, with that context, I think what we can say from the startup side is there's really two sides of the challenge. One is when we're talking about emerging sectors broadly, using space commercialization as an example, the industry itself is still coming into focus, if you would. And so that includes the build-out of the ecosystem of actors, who's at the table, including talent, capital partners, experts, SMEs, suppliers, providers, like that ecosystem is still coming together, and is often sort of thin and pocketed and what that means for startups is, A, an opportunity but also access to the resources they need to get from A to B to C is much harder to come by, and often the knowledge system, the networks are less trodden.

So when you pair the challenges of a sector coming into focus with then the challenges that just a startup building an emerging technology company has, it's significant, and so, again, I like to say innovation is invention plus commercialization plus capital.

And startups face challenges on all three of those.

The invention piece, if we use some of the examples of companies in our portfolio with Deloitte, you know, Astrolux, for example, is looking to enable the future of semiconductor manufacturing with roots in space. They have meaningful technical challenges to bring their idea to a commercial scale. So, they need to continue to build that technical roadmap while they overlay a commercial roadmap and that challenge, Brett alluded to earlier, which is, like, what are the actual use cases? Not the macro-opportunity or the macro challenge, but, like, who cares about this enough to pay? How do they pay? On what terms? How quickly? What does that look like? What needs to be proven for them to build a business? Each of those business models is actually still sort of under development in these areas.

The last thing I'll note is that these companies that are building in emerging technology categories often have layered capital stack, meaning that they're not just taking on venture capital, they also need Grants or other forms of capital, and grant funding is hard to come by alongside venture capital.

Raquel Buscaino: To your point at who's at the table, it very much feels like, in your exposition, that the dinner party guest list is still being formed. So how do you even navigate something where you don't even know who's sitting where? Especially if the topic, to your point, is something like semiconductor manufacturing in space? It's not an easy challenge to solve by any means.

Cait Brumme: Exactly right, and you sort of say, like, who needs to be part of this then? And what I'll say is, these types of programs that we've been a part of in the past are really critical because what it's doing is giving early-stage startups a couple critical things.

One is faster feedback cycles from experts around what end-users actually care about. It gives them access to technical talent as those pools of talent are still being built out in ways that are really meaningful, and, hopefully it also provides a pathway to actual use cases that create those proof points to go out and raise capital, or bring on secondary customers, or what have you.

Raquel Buscaino: Love it, because at the end of the day, it's the actual use cases and not the theory that really matters and drives innovation forward. Brett, I'll turn to you, maybe taking the large organization lens a bit more now, but why do you think large organizations turn to startups to help drive that innovation?

Brett Loubert: Well, Cait couldn't have teed me up any better for what I was thinking about in this question. I mean, I've covered that the space market's growing and maturing, but generally, this is going to create opportunities for both large and small companies to collaborate, but specifically, you know, the market momentum really is toward the startup community, and it's pretty clear. I mean, the money tells the story well. According to Seraph and Space Index, in Q2 of 2025 alone, it was the second largest

quarter ever for private space tech, with $3.1 billion deployed. We're also seeing venture capital shift towards startups with revenue visibility, with late-stage rounds being a focus for deals, demonstrating increasing maturity in the market. But, to the question, how does that all translate to tangible value to end customers?

One way we've been diving into this problem is related to Earth observation, or EO. At a high level, this is essentially any way we gather data about the planet, which is increasingly happening from space. And we've been working with the World Economic Forum for the past couple years now on how to unlock the value of EO data, and in our initial report, we estimated the potential value-add from Earth data to reach $700 billion in 2030, with a cumulative $3.8 trillion of contribution to GDP between 2023 and 2030. That's obviously an impressive and huge number, and there's tangible impacts to industries, including agriculture, energy, supply chains, insurance. But the real work comes in connecting a satellite data provider with an end user. Where does the money happen? Where is the value generated? And making sense of how all the emerging technologies and sensor types that are coming online, how do those tangibly impact businesses of companies that are in these industries, and that's where the real value gets unlocked?

But one of the texts that we're really tracking that's emerging that's going to help drive part of this value is around hyperspectral sensors and data. So, at a high level, hyperspectral sensors gather hundreds of narrow color bands that allow you to detect materials, gases, or conditions that are invisible to the eye. So a normal photo would see something like a green field. Where a hyperspectral image would show parts of that field that are healthy crops, weeds, stress plants, and that's all by their spectral signature.

So, this next one is a really extreme example but I used to live in Maryland, and we would drive out to Delaware to go to the beach with my family, and we would pass by a lot of cornfields. And I don't know that it's immediately apparent to that row crop farmer, what the return on investment is for hyperspectral data from a Low Earth Orbit satellite to help optimize fertilizer use, reduce costs, and increase yield consistency. You know, Raquel, you can kind of see real-quick, like, this is a highly complex problem, how do we simplify it?

So, now let's take it up to a macro level. If you're a massive ag company, how do you do the same? And how can they anticipate, like any other tech, the new tech and sensors that are coming online, and how it is going to impact their business? So, this is really the crux and one of the key benefits of our collaboration with MassChallenge and the commercial space challenge that we've set off in the direction of hyperspectral technology is an EO capability where we're collaborating and prototyping on with one of our Challenge participants, Wyvern.

And then back to your second question, the commercial space challenge is a great example of how we're working, I'd say, really at the hands-on level to connect big enterprise with startups, and using space data

and technology as a platform for that. I mean, the startups in the challenge have the level of agility and sort of forward-leaning tech that can help unlock all the potential we've been talking about. And then, here at Deloitte, we really understand the avenues to bring this bleeding-edge tech and solutions to the massive scale problems that we see in these industries.

Raquel Buscaino: Brett, I think it's so fascinating what you just said on hyperspectral imagery, because I personally think most people would be shocked to see the amount of data that we can collect, and at what levels, and what granularity, so I'm glad that you brought that example to life. And I also think it's really important what you talked about is… if you're a corn farmer, how would you even know that you could use this? And so I think that's part of the value we're talking about here, is connecting the capabilities of emerging players in space to the real problems that matter and making those connections where we can.

Brett Loubert: That's right.

Raquel Buscaino: So Cait, building off what Brett just mentioned a little bit, too. I want to share one of the ways I'm thinking about this, and you can tell me if I'm wrong here, too, but the first advantage that I see is something that accelerates innovation. So, making the upside bigger, which I think you've both talked a decent bit about so far. But the second advantage that I see is the process of de-risking innovation itself or minimizing the downside. One, do you think that's a fair way to think about this? And if so, what are some ways programs like those from MassChallenge are actually de-risking innovation for some of these large organizations?

Cait Brumme: Love that, because one of the goals of working relentlessly at connecting innovators in the field with the knowledge networks and use cases of large companies is to accelerate that pull-through, to connect invention to the commercial opportunity faster with less windy roads, ideally with less capital, but it's also to do it in a more structured way so that the time investment of large companies in these endeavors also has an ROI.

And I think it's largely built around the matching of interests, the matching of readiness, and then most obviously, the matching of relevance. I think there are times when you're at the earlier stages of technology development, the de-risking process for a large company may actually be engaging earlier to influence the trajectory of a certain emerging technology or even solution, so that it is, you know, better fit for use from an earlier stage.

The second is to help provide scaffolding to validate, and test, and begin to move a solution through a framework. From a startup perspective, hugely valuable to begin to get the reps in early commercial customer pilot collaborations, and for the large company, again, to validate their business thesis within a

certain technology or industry area, to validate the collaboration with an early startup, and then, you know, also to validate the underlying model around that.

Raquel Buscaino: I think the validation of key assumptions and hypotheses is probably the most critical thing that you can do. Many people can put together an excellent business case, and when you look through the 20-page slide deck, it says, “say: wonderful, take all my money”. But the question underneath it is, what are the critical assumptions that this proposal is based on, because that's where the cracks and the concrete are more often than not, so having a partner that can help you quickly validate, not just validate, but *quickly* validate, I think is so crucial.

Cait Brumme: Yeah, so well said. I think it's validate whether the technology is ready for it, validate whether there's a business model underlying it, whether your customers are ready, or whether they're still in, sort of, learning and discovery. That's, you know, the other thing we talk a lot about with our industry partners and our startups is that, particularly on these emerging categories, there may be large companies who are still pretty early in what their thesis is, and they’re in learning mode, and there's still huge mutual value to engaging with startups, but they're at a different place than when they're ready to deploy, and so, as you begin to build these relationships, that's another area where you want to mutually de-risk by establishing shared goals up front.

Raquel Buscaino: Well, we've just chatted about the challenges and the opportunities when startups and enterprises collaborate, a lot of that upside, what do you think enterprises and startups need to do to make these types of collaborations truly successful? Brett, I'll look to you on this one first.

Brett Loubert: I would say step one is defining the problem, so I'm a classic idea guy and engineer at my core, so I can dream up a thousand ways that emerging tech can be used to solve problems, but it doesn't really mean that those ideas are market-relevant or urgent enough for a company to immediately see value or market in.

One of the companies that we're working with, Hubble Networks, is working on some really mind-bending technology to track Bluetooth signals from satellites. And so, is the promise of global tracking of my Bluetooth device means that the days of me stressing out about where my luggage is, and whether it made a tight connection on my family vacation overseas? Are those over? Obviously, that's a great use case, but one that I bet is probably more urgent than making sure my pants are, in fact, traveling over the Atlantic Ocean is around cold storage. Much of fresh food and medicine spoils in transit. Now if you were able to apply satellite-enabled asset tracking technologies and some information about what's in those supply chains, you can start to see how global shipping companies could use this to track and protect shipments all around the world. And this is just one example, but you can start to see how global organizations that have tangible issues and incentives like these can directly align with startup capabilities.

Raquel Buscaino: Cait, what about you? What do you think it takes for some of these collaborations to be successful?

Cait Brumme: I think I want to share more some conceptual or lessons learned over time between the startup and enterprise collaborations that we've seen because this is really hard. I think it's just worth saying that. We believe it's existential for large companies, and it's definitely existential for small companies to be able to do this well, particularly in areas like space commercialization, which have so much promise in where this will be a requirement and it's not easy, and it's because there's very different skills and capabilities.

Small companies, startups are known for their agility, their urgency, seeing the world radically different, pulling in inspired teams and getting them to do extraordinary things. Big companies are known for building distribution, scale, risk management, knowing their customers through and through, having years and years of experience, and very different time horizons. So when you bring these two together. This gets me to what we have seen is critical. I think, one, to our industry partners, we encourage a deep amount of thought on not only what are our innovation objectives, but specifically where do we want to turn to the startup ecosystem to access new and emerging capabilities, to learn faster, to exploit opportunities, to grow faster, whatever the objectives may be, but to bring as much intention as possible to that. So that when you go out into the world, you have real business backup for, what am I doing engaging with these small businesses?

That helps do a couple things. One is, from the startup side, it will help you say “yes” or “no” with more intention, so you can align on, you know, mutual goals. The second is, it allows you, with the startup, to really set shared goals and milestones. What are we trying to do together over what time period? The third is you absolutely need open communication. Big companies and small companies talk different language so there's an element of translation also. But translation and transparent communication are super critical for these collaborations to happen. And part of that is just also recognizing on both sides the differences.

We often see, our startups are deeply frustrated with the timescale and the pace of large companies, and they just need to be prepared for that. But then, I think for the big companies, they have to recognize that the startups, depending on their level of maturity, may not be yet enterprise-grade, and part of their job in engaging is to roadmap that out, and encourage them to move faster so those collaborations can go.

So, you know, just maybe to revisit, I think, you know, aligning around what the goals and objectives are to the extent possible with intention on both sides, practicing communication, stage gating the work can really help for, both progress but also breakups where that's necessary, that expect that translation of culture, as well.

Raquel Buscaino: I think there's an element to this. The word that kept coming into my mind as you were speaking is humility. Where there's this almost sense of humility you need to say, okay, the reason we're engaging in this type of collaboration is because this other party is bringing something to the table that we might not have or might not have naturally or as easily. And I also love the point you mentioned on the differences, you know, that is the reason why you are doing this type of collaboration, is because you are different. Now, does that mean there's challenges? Yes, but ultimately, at the end of the day, if you were the same, you wouldn't want the collaboration. It's the differences for why you're engaging us in the first place.

Cait Brumme: Exactly right. Really well said.

Raquel Buscaino: So it sounds like there's so many things to consider as enterprises and startups get started in order to make these types of collaborations just so successful. I think there's also probably an element of this that is simply learning by doing. And so, Brett, having kicked off this Commercial Space Challenge with MassChallenge, what are some of the interesting learnings you and your team have had so far? What are some of the things you've seen in the space sector as you've moved from idea to execution, and just said, let's start doing it, let's start walking the walk and not just talking the talk?

Brett Loubert: So personally, this is an invaluable way for me and many folks at Deloitte to learn and keep sharp in a space community that's highly technical and working at a pace that rivals almost any other fast-moving industry. So, one of our challenge participants, Astralux, develops extreme ultraviolet light lithography materials to improve semiconductor manufacturing at approximately 7 nanometers or below. And although I'm not an expert, I do have an EE degree, and I've read enough to know that this could be a massive breakthrough for the AI industry, as an example. So, this challenge not only keeps us sharp in terms of having to learn new tech, but also potentially well ahead of the curve in markets that are clearly of huge importance to all facets of our life and business.

But back to your question on moving from idea to execution, for years, I've kind of had a talking point around how accessible the space industry is becoming, and that's everything from physically easier and cheaper to get to than ever, as we covered earlier around launch costs but also in the disciplines it requires and the industries that it impacts.

So in this context, one area of potential growth that we're seeing is in the transition from government platforms, like the International Space Station to private space stations. So, according to NASA, in 2024 alone, more than 100 payloads were delivered to the ISS. Tons and tons of experimentation and breakthroughs that impact us here on Earth and have really long been the hallmark of Space.

But if you're a semiconductor company or a biotech company, how do you access these breakthroughs? Well, when you have multiple commercial LEO destinations, or lower orbit destinations, that infrastructure

is going to be there for you. It's even potentially starting this year or early next. And I kind of equate this emerging industry to what I've seen in IT, so if you were to start a company right now, you'd be crazy to build your own data center. You'd just go to a cloud provider and get that service. And you can kind of think of these as the same thing for these private space stations. You can lease physical space, and as a biotech company, you can focus on what you do--creating pharmaceuticals that save lives, and not trying to figure out orbital dynamics, and how to keep humans or machinery alive and working in low Earth orbit.

And then for Deloitte, you know, we see a role in facilitating this dialogue and really helping close the gap from these really big ideas and use cases to execution in these exciting markets, and this commercial space challenge with MassChallenge is really the crux of that, and it provides us an incredible platform to get hands-on in even these most complex dialogues.

Raquel Buscaino: I love the point on infrastructure because I think the two things in my mind it enables is this level of specialization, which you mentioned, which is you don't need to launch the commercial LEO destination yourself, the infrastructure's already there for you to be a part of. And it's also the speed, which is, you don't have to go through the process and lengthy time, the infrastructure's already there for you to use, which I think is really exciting.

Cait and Brett, as we wrap up here and even look back on our discussion today. What's the single most important takeaway you'd like listeners to remember and walk away with? Cait?

Cait Brumme: So, I just strongly believe that co-innovation and collaboration is the force multiplier for these emerging sectors. As we've chatted about today, the opportunity is enormous, it's also really difficult, but if you're in industry, this is the type of effort that doesn't just advance your Q4 roadmap, which you know how to do, this is about sort of advancing your industry perspective, your next major opportunity on the horizon. And if you're a startup, it's necessary for you to build this real capability in partnership and collaboration.

And so, as we think about what will get the space commercialization industry off the ground, what will help synthetic biology change the world, it is absolutely going to be at the intersection of large companies, small companies coming together to accelerate time horizons, de-risk, and you know, co-create new sectors together.

Raquel Buscaino: I love it. Brett, any final thoughts?

Brett Loubert: Really almost impossible to top what Cait just said. I would say, my standard get-off-the-stage is: Look, this is an exciting time to be a part of this industry. I think Space is one of those things that

really is just a unique combination of capturing the human imagination, but also tangible market impact and value for not just this industry, but how it enables many, many industries today and into the future.

Raquel Buscaino: Well, Brett, Cait, thank you both for such a thoughtful discussion. I certainly learned a lot throughout. To all our tech-savvy listeners out there, if you enjoyed this episode, please share and subscribe, and if you'd like to learn more about MassChallenge and Deloitte's work in commercial space, you can follow myself, Brett, and Cait to stay up to date. Our socials are listed in the episode description. Well, thank you both so much, and folks, thanks for tuning in. I'll see you on our next episode. Until then, stay savvy.