Simon Mainwaring:

It's one thing to address the many problems business creates for the planet after the fact, and another to prevent them altogether in the first place. And this shift in approach is increasingly becoming an innovation driver for industries from energy to fashion to food. Most often the starting point is nature, for by mimicking the natural world, we can not only prevent damage to the planet, but also leverage the inherent wisdom found in the countless biological blueprints scattered across the earth. The challenge then becomes to create these innovations and take them to scale cost-effectively so that their full value can be unlocked by transforming industries in ways that provide what people need, but also serve our future. This is clearly a win-win situation, but what does that look like in real life? Where is it under way and how is it being put into practice? Let's find out.

From We First and Goal17Media, welcome to Lead with We. I'm Simon Mainwaring, and each week I talk with purposeful business and thought leaders about the revolutionary mindsets and methods you can use to build your bottom line and a better future for all of us. And today I'm joined by Catherine Roggero-Lovisi, chief executive officer of Modern Meadow, a purpose-driven biotechnology company positioned at the intersection of material science and biology with a mission to be a catalyst for the wellness of people on the planet. And we'll discuss how biofabrication can create materials and ingredients that can transform industries to make them of service to the planet and how biotechnology more broadly will unlock enormous marketplace opportunities through rapidly evolving and widely applicable innovation. So Catherine, welcome to Lead with We.

Catherine Roggero-Lovisi:

Thank you for welcoming me, Simon. It's a real pleasure to be able to speak to you today.

Simon Mainwaring:

So I have a question to start with, which is, I know that you had leadership roles in beauty and in fashion before. How on earth did you end up in the biofabrication materiality space? Give us a bit of a sense of that journey.

Catherine Roggero-Lovisi:

Well, I think that, like a lot of people during and post COVID, a lot of us asked ourselves, "What is really important to us and what do we want to spend our energy, time, and to some extent if we have skills, what do we want to use them for?" For something that is a little bit more meaningful than just instant gratification associated with exposure or money or anything else, right? To be honest, also I have to say my husband is a doctor. So during COVID, that was a moment, let's put it that way, specifically at the beginning where we didn't know where this was going. So while I was an executive in the beauty industry and in the fashion industry before that, I think that there was a reckoning that was also associated, maybe because of maturity, maybe getting older has some positive, right?

And my intent at that point was, "I know what I know and I know what I don't know. I'm okay with it." That's the beauty, again, of being a little older. And I realized that my strengths matter, what I can bring to the table is building business, but I wanted to build business just to make others people richer, matter of speaking, or just have fun solving problems, which has been my career, I had tremendous amount of learning. It was really about, "Okay, we have a problem, we have to face it." The reason why we have COVID and those type of disease also associated with the [inaudible 00:03:20] of the planet. And I was like, "I'm not a scientist per se, but I know that the solution will be and will most likely come from

science." But I decided to go to a company that was focused on bringing solution to basically the people on the planet for science.

Simon Mainwaring:

And you said two things I want to call out there. One, there was a moment of reckoning during COVID. And I think so many of us now working inside purposeful business at large, we have those moments where we wake up or we have a renewed sense of responsibility to use our skills in the most impactful way possible. And then you also said that you saw that there are problems that need to be solved. And I think what a lot of entrepreneurs might fail to realize is that every challenge out there is a marketplace opportunity in disguise. So the type of materials that are being used too often that come at the cost of people on the planet, solving for that is actually a marketplace opportunity. And I want to ask you about that for a second. What's so interesting about the purpose of Modern Meadow is you sit at the intersection of material science and biology. So it's like the natural world, but also the best of human ingenuity. Can you give us a sense of what the company does and how it really better serves people on the planet?

Catherine Roggero-Lovisi:

So as you say, we are in the intersection of biology and material science. Biology is what really the nature of what inspires us. And we're specialized in protein, but we know that we need to go beyond the inspiration, we need to go through the application. And that's what material science, and that's the use of it, that's why it makes it possible. So proteins are an amazing molecule, and in our case we either engineer and produce them through fermentation or we take them from the plant kingdom. But it is also the knowledge on how to use them with other ingredients or other processes which allow us to be very efficient and very impactful in the real world. And that's why we already are bringing solution to market in the textile industry but also in the beauty industry. So this is where I would say pragmatism is important, is bringing the what and the how together. And that's what we do.

Simon Mainwaring:

And one of the interesting characteristics of this moment in time is that you don't have to choose between purpose and profit in a business. In fact, your purpose drives your profit if it's fully baked in. In the same way Modern Meadow prides itself on allowing customers to have both performance and sustainability. Can you tease out that opposition? Because it sounds like typically or traditionally it's seen as an either/or.

Catherine Roggero-Lovisi:

Well, I think historically it was either/or because of few things. Because obviously our economy today is really based on an economy and a chemistry that was invented about 100 years ago. So the level of efficiency and the technical economics are just amazing, because 100 to 125 years later, that's where we are. So of course when you take biotech, which is basically using biology and organism for purposes such as the one that we have, we are not there yet. We're 10, 20 years depending on where we are. So of course there are some areas where there is no technical solution today, and some areas that are better than the existing but not perfect. And that's why we, in our case of Modern Meadow, what we say is, "Is it a bio replacement, is it a bio better, or is it a bio best?" And that's what we're striving for, bio best, which is not only is it bio, but on top of it's doing better than incumbent.

The reason why we believe there is like a trifecta, it's the sustainability, it's the performance, and it's at scale. Because also we want to make sure we are not providing a solution for only few. To have a real

impact we need to make sure that what we're providing is applicable worldwide with the industrial part that we have today. Otherwise it's going to take decades before people reinvest in equipment, in training, et cetera, et cetera. And we don't have the time, to be honest. I don't want to be an alarmist, that's not the point.

Simon Mainwaring:

No.

Catherine Roggero-Lovisi:

But we may as well use the equipment that exists, which is a constraint on the innovation. So why performance and sustainability? Well, performance because we know today that people are not going to compromise. They're not going to buy skin care or a jacket if it's performing less than what than they have today and at a higher price. They will not. So it is important for us to come to market with solution that will both provide the performance or the efficiency, or basically whatever the product was designed for, at least as good as the one existing today, but also sustainably.

And for us sustainably is multifaceted. In some cases it's the use of input. And again, we use protein [inaudible 00:07:43] health. It's also the process, reducing process, make production process more efficient. We have a technology that allows to dye textile 10 times faster, which means a reduction of water by 95% and energy by 65%, for example. Or it's the output, and the output being more durable or basically performing better, or lighter, requiring less input certainly becomes more sustainable. So this is why we tackle the problem different ways depending what it can bring to the table.

Simon Mainwaring:

And for those who are not science based, give us a sense of the life cycle of biofabrication, the science behind it. Is it early days? Is this truly disruptive times? Are we starting to unpack all its potential and it's really about going to scale through customers? Where are we in that cycle of developing but also deploying this science?

Catherine Roggero-Lovisi:

Well, I think it depends on the industry. In beauty, where we are, for example, with bioactive, I think this is a journey that started 20+ years ago. So already a good chunk of the industry is, at least in the formulation, is already there. Packaging is way behind in the textile industry. There is a lot of effort basically deployed in the last five to seven years, but we're not 100% there yet. But it really depends on the industry. What people don't realize is that the bio economy is the current economy in all its faceted that needs to be transformed. It's not just a single industry or a single part of industry. It's reinventing the economy as we know it today. That is why it's not going to happen in five or 10 years, and that's why all of us need to bring something to the table to accelerate it.

Simon Mainwaring:

And let me ask you where that pressure's coming from. Because sometimes consumers demand it, sometimes it's a response to incoming regulatory pressure, sometimes it's a function of the science leapfrogging forward and just being able to go to market. What's driving it right now, or is it all of the above?

Catherine Roggero-Lovisi:

I think it's all of the above, again, depending on where you are geographically. There is a big push happening in Europe coming from the regulatory framework. I think the European community is really going in that direction with a green deal and putting very specific milestone in every industry, including what they're supposed to do, how they're supposed to do it, what they're supposed to deliver, and how to communicate for the protection of consumer. So in this environment it's really that. In the US it's more coming from consumer, and brands therefore and basically anybody serving consumers directly. And in Asia it depends on the country. But no matter what, I think that now there is no question we need to do something and we need to do it relatively fast.

Simon Mainwaring:

And what's the ambition of Modern Meadow? It's one thing to, in the broader sustainability context you hear, "Do less bad and more good." But we're not talking about just making products or their materials or their fabrics or ingredients more responsible. We're talking about a wholesale shift in the mindset about how we produce products.

Catherine Roggero-Lovisi:

Yeah, and this is where, when you are the R&D level you have a certain level of, I would say, versatility, which makes things extremely exciting. And at the same time, that's when you can have a real impact. And we want to remain at the science level. Science doesn't mean having fun in a lab with a Petri dish. It means really troubleshooting, if you want. But we are bringing an entire ecosystem with us because we are enablers. We bring solution to market, but we are not going to produce them or distribute them. We are partnering with world-class business partner like we have today, and we have some in Italy with Limonta, some in Taiwan with Singtex, some in global like Evonik. The mission is to get together, be the best at what we are good at, and bringing together innovation, as I said, both performance and sustainable. And sustainability, again, means different things. And I think that your listeners should really dig into what sustainability means for every one of them. I know it's a bit cumbersome and it's sometimes boring, but look at the fine print.

Simon Mainwaring:

What does it mean for Modern Meadow? What's the standard or bar you are setting for yourself as to what is sustainable? Because that's going to inform obviously what consumers see in the products they buy through your customers.

Catherine Roggero-Lovisi:

So first of all, we don't have any animal input. So that's the number one. Number two is, we want to reduce at minimum virgin petrochemicals that we need to use. Because today, again, the technology may not be 100% bio. When we use input, we try to use as much recycle and we think about circularity. Why? Because I think that there are certain aspect of the industries or certain industry, we need to realize that durability is a key component. And therefore durability, it's not a simple task. And unless people compromise, it's not going to happen overnight. But the way to make things sustainable is by thinking circular. So we are developing a material which we call Biovera, which is a vegan engineer renewable alternative material, which is going to be 100% renewable. Why? Because the fabric itself is 100% recycled and it's certified.

So it is a material that is extremely durable, it's extremely strong, it takes color super well, et cetera, to the point that we will be using in the automotive industry. So what is important is a material that when you put in your car, you don't want it to fall apart after one or two years. You want this to be at least 10

or 15 years, something in a plane or something, and it's going to be exposed to the sun and to many things. So again, durability, the fact it doesn't go in flame if something happens, are important elements. And therefore thinking biodegradability is not an option, but what we are thinking of is using, and that's what we're going to be doing, is using a material that comes from 100% and certified, again, because it's important to know the origin of everything we use, that is 100% recycled.

And once the car is "dismantled," you are going to be able to rip this material out and recycle it again. So suddenly you don't have to compromise on all those things, that you want to have a seat that is beautiful so that if you want to resell your car or you want to give it or whatever it is, it is still usable. But at the same time you want to be able to say once this car goes to die, there's going to be a way to use the material and reuse it. And that's what we're doing.

Simon Mainwaring:

You've touched on some of the applications of your technology platforms, like leather in the auto industry. But can you give us a sense of the full breadth of what's in your future facing ambitions right now, the different industries and the different applications?

Catherine Roggero-Lovisi:

Sure. The textile industry, leather is one component or alternative to leather is one component, but it's not the only one. The textile industry, as we know, is a big consumer of resources, may it be through natural resources like cotton to petrochemical and everything in between. And it's a huge consumer of water as well, because every time you dye a material that is a blend, let's say cotton, polyester, or whatever it is, it's about 15 hours of processing to get the color to be at its vibrancy. So the way we look at the industry is to say, "Okay, what are the resources we need to minimize basically while maintaining this, again, this performance?" So yes, we have material that may look like leather. We have material that looks like canvas, that looks like textile, but the way they're dyed and the abrasion level and the resistant level is extremely high.

We also have materials that allow us to have breathable jackets. So your jacket, when you wear outdoor, when you go climbing, hiking, everything else, you don't want to feel like you're in a sauna. You don't want it sticky inside. But also you want to be protected against the wind and the water and the rain. So you want this breathable material. And we have material that we have developed with a high bio content without PFAS, which is a chemical that is now known to be problematic because it basically remains in the environment, and if it's absorbed, it's problematic for human health.

So suddenly that is all the type of solution that we bring to market. It's not just one, it's not just the look and feel of leather. It's yes, the look and feel of leather if you want it, but also a material that is beautiful, that consumes less energy or input, and that doesn't use a solvent process, doesn't use a certain chemical that may appear to be toxic. So there is many ways that we can have a positive impact in such a diverse industry that is in every single part of our lives.

Simon Mainwaring:

And help us understand how it actually works. Because I know that Modern Meadow has proprietary application platforms. I think there's bioalloy, there's biopharm.

Catherine Roggero-Lovisi:

Correct.

Simon Mainwaring:

So they actually leverage the power of proteins to create these material equivalents that have the properties you're talking about, correct?

Catherine Roggero-Lovisi:

Yes, correct. You're completely right. So we have two platforms indeed, and biopharm is our ability to design and engineer protein, recombinant protein. Those proteins are produced by a fermentation. And these are the type of protein that we use in product that are, for example, beauty, supplements, and eventually biomedical. But we also have acquired through the years the knowledge associated with plant-based protein. And these are very important, because when you think about large industries like textile industry and else, you want a byproduct that is obviously plant-based but is readily available, doesn't compete with food, because you want the techno economics, you don't want something that costs a fortune.

To produce by a fermentation is rather expensive. So you want to make sure something is affordable so you can impact the most. So this is our biopharm platform. And then we have the bioalloy, which is the ability to combine any type of protein that we select and purify and whatever it is with polymer, which are basically big molecules that do stuff. And that's what we do in the textile industry. We have all of our technologies powered by the bioalloy. It's used differently. It can be a film, it can be a foam, it can be a spray. It takes many, many forms. It's kind of a Lego system. You play with the percentage of each ingredient, when you put it, which machine you use it with, and suddenly it gives a vast range of solution that basically at the end, again, provides the industry, the fashion industry but also anybody using textile, solutions that are affordable and practical.

Simon Mainwaring:

Well, if you think about it in terms of biology, it seems like you've got infinite options available to you on the strength of how those proteins are applied. Because you see out in the natural world so many different properties of different textures and so on. Is that fair to say? Is it limitless?

Catherine Roggero-Lovisi:

It is, there is such a vast amount of possibilities. And every type of protein can give you a little bit more of this or a little bit more of that. So depending on which protein you use, pea, soy, whatever it is, we use, again, byproducts, we use those type of protein after the oil or the main ingredient is taken away from the food industry. There is a vast range of solutions. We are just at the beginning. And that's what I say to people, is, "Be impatient, but be reasonable." Meaning, continue to ask, to learn, to understand what it is and what it's not and what it can do and what it cannot do. But know that this is the journey we are in, and we have to change every single aspect of everything we touch and use on a daily basis.

Simon Mainwaring:

It's insane when you think about all the different materials that go into all of these things we don't even see any more. We just take them for granted, but they're compiled of all these different materials. There is such a marketplace opportunity obviously. I also think about the story supply chain. You are biofabricating these materials and ingredients and so on, but then you've got to go at your customer with a story that, A, makes them want to partner with you. But B, you equip them with a story that they can then go to market with. And how does it affect traceability in terms of them using your materials? Does it give them a story to tell? How does it equip them to succeed in today's marketplace?

Catherine Roggero-Lovisi:

So yes, it give them a real story backed up with facts and figures, manner of speaking. So when we go to business partners, the people producing the fabric, the textile, whatever it is, first of all, we select them carefully in the same way they select us. It's an interesting process of vetting to make sure that we have the right technology, we have the right mind frame of innovation and sustainability, and the pursuit of excellence. So it's not that easy to find, trust me. That's why we're very, very lucky and happy with the partner we have today. But those guys are already looking for alternative. They know that 100% petro is not an option, the same way 100% animal is not an option any more. And what they are requesting as well is traceability.

And this is why we can say lab to brand, because every step of the way our partners are playing the game of giving us the information and the data. And that's why we are doing report and analysis, providing clear KPIs, key performance indicators on what our material consume in terms of resources or not. So that's why we do what we call LCA, which is life cycle analysis. It allows us to understand for which material what type of impact we have in terms of water consumption, impact on deforestation, land use, et cetera, et cetera. And this is what our partners want because this is what brands want because this is what consumer demands, which is real fact versus just greenwashing. So we are giving our partner the ability to live above greenwashing and greenhushing, because now everybody's afraid of talking, which is another problem, but we are providing them the data so people know what is and what is not.

Simon Mainwaring:

You mentioned those, greenwashing, greenhushing, the expectations of consumers. There's so many high bars for any brand today. What would you say are some of the obstacles in terms of getting to your ambitions? Is it the education process with your customers to then understand what's so uniquely different about what you're doing? Is it the systems, the legacy systems have been so deeply ingrained in terms of the materials they use and the harm that causes, that it's very hard to change them? Is it supplier education? Where are the barriers that you're working to overcome?

Catherine Roggero-Lovisi:

Well, all of the above. So first of all, consumers have been promised or are expecting things that are unreal. And this is where all the expectation, again, needs to be reset. And it doesn't mean that we have to settle. It just means that we need to understand what is possible and what is not. And people also have to realize that what they believe is natural today, in fact, it's not. Nothing that we wear or use is natural, because it would putrefy on us. If you bring something home and it's natural, you'd better consume it within days, otherwise it's going to rot. So people have to realize that even what they think is natural today, unless it's food, probably it's not.

So that's the first step, understanding what you're using and understand what exists. The other thing is, the industry has to make sure that we cross our T's and our I's. Like everywhere, there's a lot of people claiming certain things. I'm positive, so I'm trying to say it's wishful thinking versus open lies. But all of us have to be honest and basically challenge each other in saying what is and what it's not.

Simon Mainwaring:

How do you recommend we all navigate that? Because there's a lot of folks listening to this podcast that are standing up or building disruptive companies with new technologies and innovations, yet as you say, they're meeting a sea of sameness out there or people hijacking the same language or making hollow

claims. How do you empower your customers or how do you ultimately help consumers understand that what you're doing is truly different to a lot of these sort of claims that have been made? 'Cause I know that in Europe especially there's a lot of legal pushback against some of these claims that people have been making. So I feel like a lot of brands are pulling back right now as well.

Catherine Roggero-Lovisi:

The situation is very different. So the fake news and the fake claims are basically, they have been declared as consumer deception and therefore they are against consumer interest. So now everybody's held responsible for everything they say, which is good. That's what it should be. And there is beyond Europe, there is in Australia and New Zealand regulation that is being passed as well, in Japan as well. US is a little bit behind, but we're going to get there. And we have certification in the US, certain certification, some of our materials are, Bluesign and et cetera, et cetera, Ecotex, et cetera. So it helps providing some level of comfort and confidence on what is there. But fundamentally brands have to ask what is the material about and relay that to the consumer, and consumer do the same thing. Sustainability is today what safety was 75 years ago.

Simon Mainwaring:

Right.

Catherine Roggero-Lovisi:

75 years ago everybody was up and on about safety, about product not killing consumer or being more thoughtful about it, and it was kind of a plus. Same thing is for sustainability. Sustainability today is a plus, but tomorrow it's going to be granted, it's going to be a given. It's going to be about, how are you better today than you were last year and the year before? And I think that's why when you say you can make profit and do good, I think that today there is definitely an advantage to be sustainable. Tomorrow it's going to be a requirement, so everybody better come up to the party.

Simon Mainwaring:

Yeah, I absolutely agree. I think those companies that are working with partners like you give themselves not only a defensible position in public, but done the right way, you can tell a story that gives you a competitive advantage now rather than wait until there's climate based targets and everything's regulated and it's all about compliance. There will be those brands that have already carved out that reputation beforehand. So what are the challenges for Modern Meadow in terms of scaling? Because there's nothing but opportunity out there. So how do you scale technology like this?

Catherine Roggero-Lovisi:

I think that we are going fast, and the good thing is that there is a lot of people that want to go very fast. In our case it's work, matter of speaking. That's what it is. We have two technologies that are out and we are industrializing four more. We are aligning with different partners as we speak. The only thing is, as we know, these are difficult times. Everybody is a little bit more careful economically and try to ... A lot of people are slowing down when in fact we should accelerate. But we are lucky. I think the products that we are developing talk for ourselves. So we're going full steam.

Simon Mainwaring:

Right, right. And are you noticing, like with any disruptive technology, with the marketplace opportunity that you have, is there a lot of competition? Are you seeing a lot of different players come into the space? I can't help but think of AI right now and how iterative it is and how quickly it's changing. Any technology must be the same. Do you find that now that we've unlocked this alternative that it's taking off?

Catherine Roggero-Lovisi:

So first of all, we welcome on competition. Because again, if we take the textile, think about carpet, wall treatment, chairs, everything you wear, your vehicles. Your accessories, your shoes. Think about all the different material. It's huge. We have to transform everything. It's not like there is no room for progress. There is a huge market. We're talking few hundred billions of market in front of us, so we welcome competition. The only thing is, sometimes what sounds sexy may not be real. So I'm just a little bit worried when I see that innovations are proclaimed to be scalable and to be radiant and to be fantastic and to be 100% plastic free and 100% petrol free and 100% biodegradable. I would say just be careful. That's my only fear.

Simon Mainwaring:

And let me ask you, one of the challenges that any company faces, especially if they're science-based, is really to translate what they're doing to their customers and ultimately to consumers. Biomateriality and biofabrication, much like ESG and even sustainability to some degree, can be lost on a lot of people. So how do you translate what you are doing to drive adoption of your products?

Catherine Roggero-Lovisi:

The way we talk is slightly different from one partner to the next. So when we talk about the partners that we have literally making the material, because we're basically the power inside, we power in most cases. In some cases we do produce the textile, but in many cases we are the power inside. What we look for is a partner that again, as I said, invests in people, in equipment, and wants performance and sustainability. And at that point they just want to invest to see if it works. And once it works, they go for it.

The brands on their side take a little longer because I think some of them have been burned. Some of them are looking and comparing us to the cheapest form of material that exists out there sometimes. And this is where I would say green premium is one question, but when you look at the bottom of the price scale, you have to be careful as well. And this is where we say you guys need to also make a little effort there. And again, we're cost competitive with medium priced material. It's just that if you want to go for the cheapest, we may not be your solution.

Simon Mainwaring:

You have to be cost competitive, no doubt about it.

Catherine Roggero-Lovisi:

Yeah, and we are the cost competitive. That's why we are there. Otherwise we wouldn't be. This is also one of the real scalability factors in our case. So I think that there are different things that we're bringing to the table. I think that it's about educating everyone, or informing, because we are a small company, we are a very small company. So it's not about big speeches, it's just being in front of them and showing them what we do and who we do that with and how we can reassure them. Because I think that a lot of

groups also are a little scared because they get tackled because their solution is not 100% perfect, and sometimes they don't know how to answer. And this is where we give them tools, information, conversation, we are even present if they want to so that they can answer those editors and they can answer the groups on what we can do and why we're better or not.

Simon Mainwaring:

Yeah. And talking about scalability, you talk about scalable adoption and it's a function of input and processes. Can you explain what that means?

Catherine Roggero-Lovisi:

I think that's a basic business function, right? Anybody who's been in business, you have to have that scalability to be adopted. And basically it's making sure that you have input that are readily available around the world so that you're not landlocked to a specific location and that you are less price sensitive when price goes up in one side versus the other. And if it's readily available, chances are they're pretty affordable, which is what we go after. It's also making sure that the processes that you are tailoring to the industry are as efficient as possible. So thinking about the equipment that exists and try to eliminate steps, try to remove them. And not change machine, but try to eliminate them or cut them so suddenly you have less input as well. And again, when you think about innovation, we bring from the get-go what are the equipment and how do they use it today? So that our partners don't have to invest in new machine or we don't have to design new machine, which would take years.

So this is really about bringing the knowledge ahead of time, putting the constraint ahead of time. I've been in CPG, I've been in consumer goods most of my life, and that was one of the reasons why I left that part of the industry. Not because the company I was working for were not making efforts, they were doing tremendous effort. They were putting plans into places, but the plans were taking a long time. Why? Because on the supply chain they were a little bit later, and sometimes they were not provided the proper technology to produce differently. So this is also why I migrate a little bit earlier in the value chain if you want to try to impact from the start.

Simon Mainwaring:

It's preventative rather than remedial.

Catherine Roggero-Lovisi:

Correct.

Simon Mainwaring:

That's what's so tough about it.

Catherine Roggero-Lovisi:

Correct.

Simon Mainwaring:

And to make it tangible and real for listeners, I know you've worked with Tory Burch and you mentioned Evonik. Can you give us an example of what those products actually were?

Catherine Roggero-Lovisi:

So in the case of Tory Burch, we were very proud and very thankful to have contributed to the launch of the spring collection, the Ella Bio, which is, Ella is the iconic bag from Tory Burch, the one everybody knows. And basically the material that we've developed is 64% bio content and it's certified USDA. So this material is, if you touch and feel it, you will never know it's not animal. The second is in terms of abrasion. You can go with nails, I've tried, you can go with nails, it's not going to scratch. So therefore durability is there.

What is also interesting in our technology versus other bio innovators is that we have no color limitations. So you have a beautiful pale green, you have a beige, you have dark black, and that's where we talk about the lightness, making sure you give the designer the creativity and keep them free designing what they want to do, but making sure the choices are a little friendlier to the planet. And I think basically the consumers have voted, because a lot of new consumers came to Tory Burch with that and we are extending this partnership later on to this year and next year as well.

Simon Mainwaring:

And you mentioned something very important there, which is the sensitivity of consumers to the integrity of a product and the brand selling that product. I read that you were very wary of overpromising and then under-delivering because that can actually stall the whole industry. So what are you doing to do that calibration? Because I think a lot of different industries face the same challenge now.

Catherine Roggero-Lovisi:

So first of all, we explain to our partners every detail of the process. We actually bring them to our labs and we show them and we explain our choices and what we can and cannot do and how they can make better choices as well. Because it's a combination of what they want to do with the material and how they want to use it and therefore selection on different elements. And this is where we get to the best possible solution and basically saying what it is. And this is where we are not pretending to have a perfect solution, not yet. We're going to get there.

Simon Mainwaring:

And it's got to be confusing for some industries or brands out there as well. They're so set in the ways they've always done things. The whole biomateriality and so on, is that a challenge in the industry? Are they confused by it?

Catherine Roggero-Lovisi:

I think there's a big desire to do better. So that's step number one. Some of them don't really know how to go about. I think that what Tory Burch did, which was fantastic, is that she didn't go by the back door. She didn't try with a small collection and she didn't try with a few hundred pieces. She took the iconic bag, she went for it. And as the vote is out and it's positive, now we are trickling down to other categories. So it's about also showing that you're genuine, that you are really trying to have a positive impact and ready to convert your business in that way. And this is also what we're doing with other partners. We're working, again, with Evonik, who's an amazing supplier of ingredients and many other things.

So with our bioactive we're providing a collagen, a biocollagen, that will provide efficacy, safety, and biocompatibility and has anti-aging property which is backed up by clinicals. So this is the other thing, is

we do testing. And of course we encourage anybody to do their own testing, so that everything is clear between us and we can share that with everyone that wants to partner with us.

Simon Mainwaring:

You must have done so much pitching as to the potential of this technology. Any insights you'd share for us listeners in terms of how you get suppliers or customers to suspend traditional methods of production or distribution and to really commit to technology that's going to be part of the future? Because there's that gap in the transition, there's capital expenditure or there's opex, there's challenges that come with that transition. So how do you frame that opportunity?

Catherine Roggero-Lovisi:

So I think that first of all it's a bit of homework. I would say encourage anybody in business, if you want to bring something new to the market, you have to know what exists today, how it's done, how much it costs, why they like it, why they don't like it, what's the limitation, and who is the best in class in this business. Do a bunch of homework, because once you go to have the conversation, you need to know their business as well as they know their own business. Otherwise they're going to look at you like, "Oh, you're friendly, that's nice, let's have a coffee and move on." So if you want to be taken seriously, you have to know not only what you do but what they do and what is their problem, and today and tomorrow.

So today the problem is, again, having a material that is clear and honest on what it does and doesn't do and that is price competitive. Tomorrow everybody, and already tomorrow is in some countries today, they're going to want a material that requires less energy and less water. And we know what's going to happen. We know that in the future it's, again, less input, lighter, et cetera, et cetera. So you need to bring to the table solution of their existing and future problems so that they have time to adapt. Now, in the business like everywhere, you have different mentalities. Some business partners are extremely amazing operators and they make their money on their efficiency. They don't want to adopt, they don't want to be front runner, they're not even fast follower, they're just the people who make things well and they're well known, and they go fast and that's how they make money. Those are not the guys you want to go for, because your technology is too new to get there.

So you want to go with the disruptor, the one that want to bring, to create, as you mentioned, the mod, that want to keep the leadership in innovation, bringing to market things that are unique. They may not be the cheapest, but they're certainly the most recognized in the market as innovator, and these are the guys you want to partner with. And then as the second wave, you want to go for the fast follower that basically your technology has been de-risked and proven and you got the seal of approval of those amazing partners, and those guys are going to want to adopt it as fast as possible. You just need to know your audience and you need to know what their concerns are and what solution you bring.

Simon Mainwaring:

You've got such a unique line of sight on the future across so many industries, Catherine, because you see the technology. So what do you think the future of consumer goods will be like? Whether it's the leather seats in a car, whether it's the handbag on their shoulder, whether it's the type of materials in their jackets or apparel, 10 years down the track from where we are now, how is it going to be different?

Catherine Roggero-Lovisi:

I think that 10 years is not much in science, I just want to say. But let's assume 10 years we're super smart and super efficient and we all are going in the right direction. Let's be positive in that sense. I think that the conversation is going to move in, today everybody's going for bio content because that's the easiest. "Okay, how much?" And people don't even know what it means, or is it good or bad? Because I'm telling you, the beauty industry moved away from extraction because it wiped out entire species on a yearly basis. We're 8 billion on the planet, a billion of us are consuming tremendously. If anything was supposed to come from extraction and land usage, biodiversity would be worse than it is today. So that's step number one. Bio content is interesting, but one, has its technical limits, and has limit in terms of merit.

I think that going forward we're going to talk about either longevity or circularity. There are going to be some items, luxury items or items that you want to have for a lifetime, that are going to bet on that. And then the others, if they have a short life or medium life cycle, you want to be able to do circularity, which is, you are going to use material that exists today, even if they're petrol, but not virgin. A little bit like paper, right? Only 60% of the paper today is recycled, is coming from recycling. 40% is virgin every year. We want to reduce those 40% of course, and I think that in every other material that's what's going to happen, is trying to use what exists today, recycle it through specific and contained process, use them, and then when it's over, one way or another having not only the network to collect them, but again, to recycle them to give them a second, third, fourth, or multiple lives.

Simon Mainwaring:

Is there any one particular application of your protein enabling technologies that you are really excited about? Completely unrelated to what we've talked about, is there anything you'll put out there that, you heard it here first?

Catherine Roggero-Lovisi:

Well, Biovera, you hear it first. It's really the material that we're going to get to go to market in six to nine months. And it's a material that, again, that really is going to be about traceability to the end level, performance are just better than the incumbent material. And we will have the ability to use recycling and to recycle it eventually. So circularity is going to be at the forefront.

Simon Mainwaring:

Tell me this. Fast fashion or the footwear and apparel industry, and so many of these industries are well known for being some of the most wasteful industries on the planet, and it's easy to get disheartened when you look at the scale of what we've got to solve for. What gives you optimism about the future? Why do you think we'll get there? What fuels your passion for what Modern Meadow is doing?

Catherine Roggero-Lovisi:

So I think that first of all, yes, today the fashion industry is an over-consumer, but I think that everybody is aware and everybody wants to change. So the moment that everybody is clearly wanting to evolve, there's going to be things happening. Because they're going to invest, they're going to take bets, they're going to try, they're going to move, they're going to challenge, they're going to accept certain things that was unacceptable in the past because suddenly now the vision is very different. And again, I talk to brands today again, I'll talked to brands tomorrow, those guys want to move in the right direction and move the industry with them.

I think that there's also, we see that the fashion industry is not well known to do great forecasting. You talk about AI, they are now investing in equipment and intelligence to have better forecasting. And there is a part of fashion that is amazing and surprising every year, but there are certain behaviors that are recurrent. Black is your best color, you're not going to sell yellow except certain part of the year in certain location in the world. The cosmetic industry already does it. So the fashion industry is adopting so that you have less production and more targeted production.

The other thing is, technology like ours allows for minimal pre-consumer waste. Because we are in a role, if you basically produce and basically use computers to lay out your patterns in the most efficient way, suddenly your pre-consumer waste is minimal. And also, again, it's a material that you can order on a weekly basis. So I think that this is also the type of flexibility that you bring to the market versus other materials that are a little bit more complex, if you want.

Simon Mainwaring:

I have to say thank you so much, Catherine, for your leadership and also for the inspiration that Modern Meadows' innovation is providing not just to one industry but to multiple industries. And I also really respect the passion that you're bringing to it to accelerate that change, because we are out of time. So thank you for the insights today, and here's to the success of Modern Meadow.

Catherine Roggero-Lovisi:

Oh, thank you, Simon, for inviting us. Thank you.

Simon Mainwaring:

Thanks for joining us for another episode of Lead with We. And you can always find out more information about today's guest in the show notes of each episode. Our show is made possible by a partnership between We First, a strategic consultancy driving growth and impact for purpose-led brands, and Goal17Media that's building greater awareness of and financing for purpose-led companies. Make sure you follow Lead with We on Apple, Google, or Spotify, and do share it with your friends and colleagues. And if you'd like to dive even deeper into the world of purposeful business, check out my new book and Wall Street Journal bestseller Lead with We, which is now available at Amazon, Barnes and Noble, and Google Books. See you on the next episode. And until then, let's all Lead with We.