MH EP. 1 Script: BIOTECanada, The Canadian biotech landscape

THIERRY HARRIS

As our population continues to grow, our impact on the environment is increasing. From food consumption to energy production, human activity is re-shaping our planet for generations to come.

ANDREW CASEY

We fundamentally have to learn how to live our lives differently, we have to manufacture differently, we have to grow differently, we have to be more effective in the way we do these things, we can't keep going the way we have.

THIERRY HARRIS

On this episode of Market Hunt, we dive into the field of biotechnologies.
What are companies doing to help us stay healthy? Feed us? And power our planes, trains, and automobiles? And how can they achieve this in a sustainable way? What government policies come into play to foster innovation and growth?
And what does the biotech ecosystem look like in Canada?
That's all coming up right now, on Market Hunt.

(Intro music)

NICK QUAIN (over intro music)

Entrepreneurship is hard, you need to have support there.

ANDREW CASEY (over intro music)

We fundamentally have to learn how to live our lives differently, we can't keep going the way we have.

MARIE-EVE DUCHARME (over intro music)

Actually we were wrong, That's an incredible market.

HASEEB AWAN (over intro music)

Obviously Facebook has too much money.

RUNE KONGSHAUG (over intro music)

So, I fall in love easily.

THIERRY HARRIS (over intro music)

We are coming up with some pretty interesting ideas here.

ANDREW CASEY (over intro music)

We've solved it, solved everything.

THIERRY HARRIS (over intro music)

Solved it. Solved it all.

(End intro music)

THIERRY HARRIS

Hi everyone, I'm Thierry Harris, and welcome to Market Hunt. In this episode, we interview Andrew Casey. President and CEO of BIOTECanada.

BIOTECanada is a national association, representing Canada's biotech ecosystem. The association has over 200 members across Canada in different categories. Including life sciences, agricultural, industrial and environmental industries.

I sat down with Andrew in 2019. Since then, everything has changed. The impact of COVID-19 has been nothing short of dramatic.The biotechnology sector is leading the way towards finding a vaccine with unprecedented collaboration on three fronts:

Diagnostic, therapeutic, and the hunt for the vaccine. Diagnostic, creating tests, to check if people have the disease. Therapeutic creating drugs, to help people who have been infected with the virus. And then, the hunt for the vaccine itself. The challenge is enormous, the outcome, unpredictable.

We'll hear more from Andrew in future episodes. But for now, let's dive into the foundational aspects of the biotech sector in Canada.

Andrew and I discuss the state of affairs of the industry, the challenges and opportunities for Canadian biotech companies, the innovation cycle, foreign direct investment and the future outlook for the industry.

Let's listen in.

(Music transition)

THIERRY HARRIS

Andrew Casey, welcome to Market Hunt. Good to speak with you.

ANDREW CASEY

Good to see you again.

THIERRY HARRIS

Absolutely. Give us a brief overview of BIOTECanada's activities.

ANDREW CASEY

We are trying to essentially do a couple of things. One is to make for a very competitive industry in this country. We have a lot of assets in Canada, we have a proud history of innovation, certainly in the biotech sector.

We now have a number of companies across the country that are growing and are accelerating into the commercial space. And so one of the primary roles for BIOTECanada is to support that growth.

To get ourselves as a country to a place where we have got anchor companies where we really have companies that are out there in the commercial space that can compete, quite competitively in the global marketplace, and bring forward innovation to the planet.

(Music transition)

ANDREW CASEY

When you think of the world right now, we are sitting at seven, seven and a half billion people. We are going to about 10 by 2050 by different sorts of prognostications.

But let's assume that's pretty much where the track is. We fundamentally have to learn how to live our lives differently. We have to manufacture differently. We have to grow differently, we have to be more effective in the way we do these things. We can't keep going the way we have.If anything, that we have been shown in the past, and the dinosaurs probably stand as a testament to that, the planet is going to be just fine.

It's us, as humans, that are really at risk here. And so we have to figure out a way, if we are going to continue to live on this planet, and live prosperously, to do things differently. We can no longer use the same types of energy, the same types of

growing mechanisms. There is going to be, well we know that the climate has changed.

That it will continue to change, so we have to adapt to an already changed climate, and we have to mitigate for future climate change. So all of those challenges require solutions.

And biotechnology is a huge space for developing those solutions. So the companies in Canada and others around the world are really developing those solutions. So when you think about the types of members that we have at BIOTECanada, they really capture all those different categories.

So you have life sciences and health companies, and they are really looking at innovations that are going to help heal, cure people of diseases and ailments that have been sort of around for a long time. But also ones that are emerging, new ones, epidemics, those types of things. You also have industrial companies that are really changing the way we manufacture and produce our goods.

We have companies that are good in the agricultural space, changing the way we grow. The way we sort of use our environment to create food.

And then there are environmental ones which we are helping to either remediate against the environment to sort of protecting against future impact on the climate. But also helping to adjust to existing climate change.

So all of those companies are bringing forward solutions for those big challenges and in Canada, we've got them in every kind right across the country.

And in fact, when you look at the Canadian biotech ecosystem, what you will often see is their clusters in each of the provinces and each of the clusters kind of has a focus of specialty that really sort of you can see where it comes out of if you're in the western provinces. It's really got more of an agricultural focus. Montreal Toronto Vancouver has got more of a life sciences health focus.

Quebec City's got a bit of a mix. So you sort of see this sort of mix across the country, but with some Specialties in certain areas.

THIERRY HARRIS

What is the typical life cycle in terms of the development of technologies for these companies?

ANDREW CASEY

The interesting thing about it, is there's probably nothing really typical about any of the companies. They're all unique in their own way. They're unique and what they're working on what they're trying to solve for. But also in terms of their development, some come out of universities some come out of research institutes, some come out of clinical trials. Others by accident and they're all at various stages of development and development can take form and number of different ways. You can have companies that have a fantastic science and a fantastic Innovation, but they're looking for investment Capital.

Other companies could be actually quite well-off from investment. They have Angel Investors or they have venture capital, but they may be looking for talent.

And then others are really trying to sort of fine-tune their science with they've got something that maybe is a bit broad and they're actually trying to refine it. So it gets to a more finite kind of solution.

So they're all at different phases. They're all attracted to different kinds of interests, whether it be investors or talent and they're all trying to get to the same place.

So, which is commercialization ultimately. And commercialization can take many different forms and we can probably get into that later on.

THIERRY HARRIS

Sure.

ANDREW CASEY

They're different business models for each of them. But when you look across the country what we see are probably well in excess of eight or nine hundred companies in this country and they're all at different stages of development. Some are very early. They've got one or two people and they've just come out of the lab and they're really trying to sort of establish themselves.

Whereas the other ones are a little bit further down the path and even have some that are much later where they've got a hundred thirty hundred forty people that are under that are employed in the organization.

They've got labs they've got other sorts of mechanisms that they're using so they're much more mature and they're closer to being commercial and then in between those two poles you have every single variation you can think of in terms of where they are from a development standpoint.

(Music transition)

THIERRY HARRIS

If we break it down by industry, what challenges do you identify that biotech companies have in terms of finding their markets in various sectors?

ANDREW CASEY

You know, when you think when you look at the agricultural sector, it's interesting. One of the things for most biotechnology, in fact, there's more of a market pull that there is a push from the companies.

And so there's obvious opportunities out there when you look around the world where you see what are we challenged by?

Well, in the agricultural space, we're getting into places where there are places you cannot grow traditional product anymore because it's too dry. There's not enough sunlight or there's not enough moisture in the soil and it doesn't have enough nutrients. So when you think about technology, one of the things we're seeing is an ability to adjust the plants so that they can grow in those places.

There's a company that takes a version of genetically modified mustard seed and the genetic modification allows you to grow that seed in places where you can't normally grow product.

So it's the not enough nutrients in the soil, no sunlight and enough moisture. You can now grow that mustard Seed. They grow the plant, they take the plant, they take the seed, they crush it, they extract the oil from the seed and they've turned the oil into jet fuel.

They put the jet fuel into airplanes. The planes have actually flown, they flew it sort of an experimental way first, but then now Qantas and United Airlines has used that fuel in their mix on planes going from Australia to the US and us to Europe.

If you go back to that mustard seed, so you've grown in a place where you can traditionally grow it, you've crushed it. You've taken the oil out now, you've got

meal that's left over. That meal goes back into the food chain, so you can sort of avoid that sort of food versus fuel thing.

You're using land that can't be used for other produce because it's just not suitable for other kind of product. And so that kind of solution space is out there and I don't think it took a lot of imagination. Once you figured out you could grow this seed. You didn't have to find a market for it. The market now is clamoring for that.

And I think you'll see that right across every single sort of slice of biotechnology whether you're in the health, life sciences or whether you're in the agricultural. There's this massive need out there for these products. If you're looking for ways to cure people from diabetes. These were rare diseases. There's an absolute paramount that we find those solutions. And so that everyone knows that. Now can you develop, can you harness the science to get those solutions? And that's the bigger challenge.

You can, you can sort of take a gene and sort of figure it out, tweak it. Is it going to work? Is it going to work outside of the lab? Is it going to work in humans? What are the side effects of that? Whether it be in the drug field or whether it's even the agricultural space. You know, are there side effects to sort of tweaking plants and what happens to them and understanding that. Using the science to sort of make sure that you're doing things in both the safe and efficacious way.

(Music transition)

THIERRY HARRIS

Canadian companies have been able to pursue international markets and developing biotechnology such as canola oil. How have trade wars affected companies doing business internationally?

ANDREW CASEY

Well, if you're saying trade Wars being code for not allowing certain products into certain countries, I'm not so sure it's a trade war as it is a market restriction or artificial barrier.

THIERRY HARRIS

Yeah. Correct. Thank you for that clarification Andrew.

ANDREW CASEY

I mean there's other things you can get in legitimate fights about. But I think when you get into biotechnology, there's clearly. I think one of the challenges we have as a Canadian economy is we've got lots of innovation here, lots of great ideas, great science, the canola example you just used is a fantastic example of our history of innovation and how it's changed the world in a much better way.

But, you know all that opportunity when you look at that planet again going to 10 billion people while we've kind of figured that out, so have a number of other countries. And so they've got their biotech ecosystems that they want to have flourish. They want to grow. Create companies, create jobs, bring investment. All the same things that we want, they want as well. So they're being very aggressive and how they go about doing that. They're putting in place Blueprints and strategies to support their ecosystem.

But in some countries, they are putting up barriers to protect them, so that we're not able to go in there. And I think that's always going to be a bit of a challenge where you're sort of trying to outdo each other for what is an obvious massive global economic opportunity, but also social benefit.

When you think about developing those things in your own country, there's going to be return from a social and health standpoint as well as the economic benefit. So there is a challenge there. I suspect though that the need for those innovations is going to overcome ultimately the artificial barriers that are being put in place.

(Music transition)

THIERRY HARRIS

For an ecosystem to work properly each component needs to understand what they bring to the table and what others can as well. I asked Andrew how networked the Canadian biotechnology ecosystem was.

ANDREW CASEY

The really interesting thing about our ecosystem and I was quite surprised about it. I came to BIOTECanada just about seven and a half years ago and I came from another industry that was very competitive that they would sort of walk across the street to beat each other up.

THIERRY HARRIS

(laughing) Atypical. Unless it's Montreal/Toronto.

ANDREW CASEY

Exactly. It was very un-canadian, that's right. In the biotech space what I found interesting is there is a community and a willingness of many of the leaders to sort of say look. I know I've got a company now that's close to being commercial. I've been able to attract venture capital. I've been able to sort of grow the company. Be successful. If I could teach myself then what I know now, I would love to have done that because I made so many mistakes along that path and I really like to sort of give that back. I can't do it for myself, but I can do it for others and I've seen it time and time again, where the leaders have always made themselves available to others that are coming up behind them that are very early stage passing along what they've learned. Lessons they've learned, things to do things not to do where they should be going?

Do you public at this point? If you're going to go public what to think about? It's a very community-oriented industry and that is you know, doesn't make a difference whether you're talking to two companies in B.C. or a company of B.C. and a company in Quebec.

It really does stretch across and I think it's one of the interesting aspects of a national association like BIOTECanada. Because we create those tables where those individuals come to them. And you see that interaction take place. And I think it's very encouraging because I think it's what makes us a stronger ecosystem.

Traditionally, Canada has been really good at putting a little piece of chicken in every pot. This is not to biotech in Canada, but this is to our economic sort of policy generally speaking. So we've always sort of politically sort of taken that approach

of let's put a little piece and everybody's pot across the country and you end up with sort of an insipid broth sometimes that way.

I think if we could redo the industry, we would all sort of like to jam it all into downtown Toronto or make sure it's concentrated and we take every single bit of expertise and put it right there. That's not going to happen anymore. We're not going to rewind the clock and then go back to that.

So I think we have to take the ecosystem that we have, understand that it's working pretty well. We're seeing lots of innovation come out and it is contributing back to itself and it is a very highly functioning community and I'm pretty proud of that. Not that I have had any real role to play in driving it. It's just that it's something I get to brag about.

(Music transition)

THIERRY HARRIS

Network effects in a Canadian Biotech Industry helps shape Partnerships between universities small and medium-sized Enterprises and larger multinationals to bring new technologies to Market. Andrew elaborates on the Canadian model.

ANDREW CASEY

You know, it really depends on what space you're in it. If you're in industrial Agricultural and environmental biotechnology the turnaround can be actually a little bit faster. You can get out into the commercial marketplace a little bit more quickly because you're not putting stuff into people's bodies and ring both side effects.

And so you can actually quite quickly have something being sold and getting some revenue back. And so there's certainly an element of government support programs, that you can drive those kinds of companies forward and get them to a place where revenue comes in pretty readily.

On the health side, when you're dealing with the development of drugs, you're talking about very long time lines, you're in the sort of 10 to 15 year timeline before something can actually be sold. And you're also in the place of somewhere in the area of billion dollars over the 10 to 15 years, in terms of the kind of capital that

is required, to go through clinical trials and do all the research and scientific development there. And it's very binary. You can have something that works quite nicely in the lab could work very well in rats or other animals and then when you actually go to put it in people, it doesn't doesn't work. And you see that time and time again at Phase 3 clinical trials. So you have to be out there looking for a very special kind of investor. Governments can't do it. a) Their pockets aren't deep enough and they don't have the expertise. It really requires deep scientific knowledge to understand the innovation and the biology and the sort of what's going on in the molecule and it's not up to the governments to figure that out. You really need the marketplace to figure that out.

And the challenge that we've got again if I go back again to that recognition that there's a huge opportunity here. And other countries are looking to attract biotechnology. They too are looking for investors and talent to drive forward their innovation. So they're putting out welcome mats. To bring those investors and talent to their countries.

If you think of investment and talent like a tourist. It's kind of a global tourist. It's going around the world. It's looking for the best place to sort of reside and if you're going to look at it that way then think of a country like a hotel would. And if you're a hotel and you want to track the tourist here to your hotel, you give them free Wi-Fi, breakfast, the comfy pillow, the fancy bathrobes, whatever they sort of the points.

So what is it that countries if they're going to think of themselves as hotels, what kind of, what's their free wi-fi that's going to attract the investor in the talent that's out there, as a global tourist? Well, that's where you get into public policy, tax policy. How are you managing the tax system? How are you rewarding companies?

The programs that support the early stage companies that are going to give them their grants, get them off the ground. Get them up and running. That's an important part of it. How are you treating the individuals? Your immigration policy? All those things factor into whether or not the investor the talent is going to come and stay in your hotel.

And we have to be as competitive as possible because if we're not, one of the biggest challenges we've got as an industry is, unlike forestry mining oil and gas, they have to attract investors and talent as well to keep growing, and keep innovating. But if they don't attract them and they've got to attract them from around the world as well. They can't take what they have and move it toward the

investors and the talent is. You can't take a forest and move it to Brazil because that's where the investor is.

In biotechnology what you are really dealing with, the core asset, is an idea. And the idea can go anywhere in the world. And be commercialized anywhere else in the world. And that's our challenge. So if we are not attracting investment and talent to Canada, we're not doing a good enough job and the Brazil's are taking the investment talent to where it is.

Our ideas are going to go to where the investment and talent is. We'll ultimately get the finished product back to Canada, of course, but we will have missed out on all the benefits of developing it commercially here in this country. And so we have to be as competitive as possible to actually pull that off.

THIERRY HARRIS

Yeah. Absolutely. I think is a very important point Andrew you're making here is because if we own that IP and we have it developed in house, so to speak in country, in Canada, that's a real asset to develop spin-off companies, to develop, you know, all those sort of lawyer accounting professional services that go along when a company becomes, you know becomes a major commercial player. And those are good jobs. Those are service jobs. Those are value-added jobs and something to Canada should be definitely focusing more on. What are some Innovative policies that you've seen, you know, I mean not to go too much into the details here, but what kind of, what would be a good policy in your mind that would help foster innovation in a biotech company in Canada in your ideal scenario?

ANDREW CASEY

If you were to look out there, what's your biggest challenge? Well, it's probably attracting investment. And if we get enough investment in Canada, then all the other problems kind of melt away. Because if you got enough money, you can get any talent you want. If you've got enough money you can make a lot of the other issues go, you can get your lab. you can do all sorts of things. So getting money, getting investment capital is probably the biggest challenge for the companies.

And in Canada there is a very very strong venture capital market, we've got a number of really good venture capitalists here, both in Toronto Montreal and Vancouver. But the companies still need more money.

If you take one example: It's a billion dollars for one drug. So if you got 900 companies you can do the math, right? So yeah, that's a lot of capital. You got to go out and see got to get it from elsewhere. Can we do a better job of attracting investment capital?

That would be where I would sort of say if I had my wish can we create a unique Life sciences fund in Canada? That would be unique to the Life Sciences sector? That would do a number things to support the venture capital Market, but also some very early stage company growth. Support some of the incubator organizations. The organizations that are accelerating the development of companies and growing the next wave of companies. And maybe even creating some sort of mechanism that would help secure some companies. Allow them to go right through to become commercial and stay in Canada.

And become sort of growth companies, anchor companies. Because once you do that back to your earlier point, there's a lot of spin-offs that come out of that. You can get some good jobs. And then other people that have gone along on the ride to create that company then sort of looking at it go: I've done it with another company. I want to do it by myself. And they go off and start their own company. So there's a lot of that that would come out of it. And I think it would all start if we were able to secure a fund that would be large enough to really make a difference. To really move the yardsticks and I think in that one it would be helpful if the government were able to sort of step in. If we could enlist the large pension funds, the Omers and Teachers, those types of funds that are not currently investing in the industry.

Bring them to the table and then create some really significant momentum around an investment capital mechanism that would really drive the ecosystem in its entirety for not just a select portion of it.

THIERRY HARRIS

Yeah, so sort of like an infrastructure bank that they've been talking about at the federal level but something very specific towards the life science, towards the biotech Industries...

ANDREW CASEY

Yeah, and recognizes the unique challenges of the industry. That you need these long-term horizons. You're not going to get quick turnarounds. I mean, I did some research the other day and my kid who's 14 plays this game Fortnite. And I thought okay, what did Fortnite take? And I went online and by my research, it looks to me it took about seven years to develop and 250 million dollars. And in its first year, it's a quote unquote free game, in its first year it made a billion dollars.

THIERRY HARRIS

Wow.

ANDREW CASEY

So you can sort of see how that kind of competition you're up against. Your much quicker turnaround. Much lower upfront initial investment. And then the payback is huge. So how do you get to compete against that? And that's the place where, if we create a unique fund for life sciences, that recognizes that we need to park the money for a little bit. You got to be patient. You got to go through some ups and downs. There's going to be some failures. But the payback has been remarkable in this industry as well. We just saw a company called Clementia sold for one point four billion dollars to a large multinational and that's a company out of Montreal.

THIERRY HARRIS

Yeah, absolutely. And I mean a bit closer to, well, in Montreal and also another company Montreal didn't sell for that much but Prevtech Microbia was bought up by Elanco this last summer. So that was a 78 million dollar all cash deal there. So there are nice exits that you can get from developing technologies.

ANDREW CASEY

Absolutely. And you look at Prevtech, and talk about in that solution space, for what we need to do from an agricultural standpoint, raising our protein. And when you think about where China is going and India, were there is this massive appetite for more protein. And we're going to have to do things differently and Prevtech in terms of protecting our protein supply like that. It's just a phenomenal Innovation. Yeah.

THIERRY HARRIS

Yeah and they were, you know, becoming experts at the de-risking those technologies as Michel Fortin their CEO was saying, that essentially their job and their role as a business was to de-risk that technology by getting the proper approvals process in the different markets where it made sense for them to get it. And you know, Canada is not the United States. It's not the European Union. So there is a restrained market over here. So by de facto we have to go international in order to reach that level of you know, the billion-dollar companies.

(Music interlude)

THIERRY HARRIS

In terms of the investment that's going to come in. Where is that investment going to go? Should that go in at the stage of the company that's in the ideation stage? Or where do you see the biggest point where companies kind of just throw their hands up in the air and I say, okay. Well, this is too tough. We can't do it anymore. What's the cutoff point you see before they're able to, to skyrocket and something?

ANDREW CASEY

There's a number of points at which they reach that require a graduation, if you will. To another level or another kind of investment. So you've got quite often at the very early stage. You can reach out to friends and family and say let's see if I cobble together 50 thousand dollars, I can sort of take this idea that I have that I found in the lab that my University or whatever it is and I can start to get it going. I can maybe go to a couple of investor conferences and float it with investors to see if there's any reaction. And then, you know, if they start to develop it more in their lab. They get some support from the University maybe through the National Research Council. They've got some grants. And all the sudden it starts to take a bit of shape. And then you have to move out and get a little bit more capital and maybe there the angel investor market can sort of take over. Because they can come in at a slightly larger size. They got a bit more appetite. They've pulled together some funds or the family trusts come into play there. Where you've got families that have developed significant capital reserves that they can invest in these things.

And then you advance that idea a little bit further and then you start to hit the venture capital market and they become attractive where you're raising rounds of capital. You're sort of in the 5 to 10 to 30 million dollars depending on the kind of company or the space that you're moving into. And then maybe I have to make a decision at that point. Do you stay and try to develop privately? Or do you take it to the public marketplace? Do you list a NASDAQ? Do you go to the TSX, do you list there, do you raise, become a public company and that takes you down a different path. But then you do get to a point where especially in the health space where you're starting to go into clinical trials. And they can be extraordinarily expensive. And you have to sort of take a look at that and go do I have the appetite for that risk?

Do my investors? Now because you've now taken along the ride with you a number of different kinds of investors. By the time you get to a phase II clinical trial you either have a combination of angel and friends and family and venture capital.

And you're now going to make a decision. Do I spend another four or five hundred six hundred million dollars and it's pretty binary right? It's going to tell you one thing or another it's either going to not work or it's going to work. And so, obviously that tells you it requires a very special individual to want to do this.

So that's another discussion. But you do have to make a decision and I think what we've seen with some companies is they've decided look, the risk is not worth it. I've got an offer on the table from a large multinational company that says that will give you a billion dollars for that. My investors are saying maybe you should take that and go and we'll start another one. We'll take whatever we've got out of that. We pay back our investors and we can start another one.

Obviously you've shown that you can do it. And then there's others to say, I'd really like to take it to the end of the line. I want to turn it into a company and there's still a number of there.

So I think there's different kinds of business models and you will make a decision at a certain point as to where you want to go. And I think it always depends on what types of investors you have, what the pressures are. If you're a public company, you are going to make different decisions.

(Music interlude)

THIERRY HARRIS

You're trying to build an ecosystem here. It's also important to build that culture of sustainable success and oftentimes entrepreneurs, you know won't necessarily be the scientist, they will be paired with a scientist. And that entrepreneur often, they are going to be interested in building and growing companies, but they won't be interested, once the company is a big company, to manage those companies. They're probably the last kind of personality to have an appetite in order to do that and manage the day-to-day operations. You know, you can take a look at Google. Back in 2002. They hired Eric Schmidt in order to be their president and CEO because that's just not what the two Founders wanted to do. They stayed on and the holding company format.

But in Canada, we don't really have that kind of size in terms of those companies and that's something that you and I discussed back in our first discussion. I guess now is three or four years ago. But why do you think it is the Canadian companies and I guess we should qualify per sector in terms of what we're discussing.

But there is a trade-off though, if that company is sold for a billion dollars, there's a bigger fish out there that now owns that IP. All of a sudden becomes extra Canadian. And then you know, we could invest a whole bunch of money into developing this company, public funds that you stated, that you might look for. And then all of a sudden it's just swept away and so what are we left with, you know, what are your thoughts on that?

ANDREW CASEY

I mean, I think there's a number of different business models and we have to accept the fact that they're different business models. So if you think about the company that, that grew to a certain point then sold itself for a billion dollars. In the health space the drug business quite often what you're dealing with is you're developing a drug for a global population. To try and reach that global population out of Montreal as an individual as you point out, that that's a person that may be more of a scientist and an entrepreneur than an actual drug manufacturer and distributor.

And when you look at the world, there's companies out there that have global reach. The large multinationals are maybe headquartered in the U.S. or Switzerland or whatever they are, but they have sales and marketing distribution agents across the world. They know how to get into doctors offices.

They know how to get the patients. The person out of Montreal who's developed a small company from, from scratch, that's not their expertise. And at some point in time you recognize that I'm probably better off handing this over to a company because I'm not going to set up a marketing and sales distribution for it. It's just not going to be what I can do.

And then I can take the proceeds from whatever in and turn it back in and grow another company. There are still others though that said I really do want to develop a company. And you can start to see some of them emerge.

And your right, to date, we really haven't had huge successes. There are a couple that you could look at QLT out in Vancouver is a good one. They grew to a certain point but ran into some commercial problems. Oddly enough, one of the weird things was they are based, founded in Vancouver, based in Vancouver. Produced a global product. They were globally successful, but you couldn't get that product listed in British Columbia for patients, which is just mind-boggling to me. So they, I mean, sometimes you run into some roadblocks from a business perspective, but I think your point is fundamentally right which is, we do need to get to a place where we grow some what we will call anchor companies. Companies that are big enough, commercial enough, that then start to attract more talent. attract more investment. They grow, create more opportunity, they are not just one drug, one sort of piece of pipeline.

They develop multiple pipelines. They grow the experience and if you think about a great example if you look at RIM down in Kitchener-Waterloo. There is a company that started out of from, you know, basement type of thing.

THIERRY HARRIS

Absolutely right.

ANDREW CASEY

And now, Kitchener-Waterloo is a hub for all the universities that are all plugged in. They are developing more IT. So I think we do need to have that. And then once we get some success, I think we're going to see more success.

It's one of those snowball type of things, but we do need to get a couple across the company across the finish line. We do need to scale them up and have them become globally commercial.

I don't think we need 40, but it would be great if we could have two or three.

(Musical interlude)

THIERRY HARRIS

We are becoming specialists in taking, you know, ideas out of University PhD students going ahead and de-risking the technology by testing it out and depending on what level of tests you will need some additional funding, you know, exponentially so, in the life sciences. But what happens when it comes to global distribution, you know in my mind, this is something that could become commodified because it really is a distribution that is just an access to a market. You know, again, Market Hunt, but to be able to hunt the market, you have to have the right tools.

And not every company is equipped to go into that Global supply chain. And why don't we, you know in Canada, go ahead and attempt to create that sort of structure that even, you know, if it becomes something that could access those markets it could then really pull in a lot of different types of companies. And companies at different levels in their stage of development knowing that once they have a specific goal to aim for, they're going to be taken care of.

In a sense that, and then that all stays in Canada. And you know a marketing job is not an engineering job. But there are still jobs to be done there and distribution and product management and supply chain management.

All those things are stuff that Canadian, Canadians can do. You know there's, there's, there's things there. But it doesn't seem that we have that in Canada and you've pointed out that as for example, I think the last big one was RIM, Research, Research In Motion. We've got a Shopify right now that's becoming a unicorn here in Ottawa. With a lot of benefits that are, that are streaming down downstream for that specific type of technology company.

And so yeah, but I just I just think it's an interesting point there that why don't we have that in Canada. And maybe some of our listeners ...

ANDREW CASEY

Well I think the Shopify is an interesting one. If you look in the Cannabis space as well. Because I think that there's some lessons there which I think some of it has to happen by accident. You know, for Canada, we are two percent of the global marketplace. However, you kind of look at different things. If I understand the Shopify history, Shopify of course could be located anywhere. But I think that's the beauty of that company. It's a virtual company in many respects, even though it's got whatever it is how many hundreds of thousands of employees here.

But if I understand correctly, the founder of the company fell in love with an Ottawa person. And so they went to the early stage, came here, and to be here with her and her family. And so it grew from there and you get to a point where, why go anywhere else? We've already established, the city loves them and they're darling. They're the Unicorn as you say.

Canopy I think is another good example, you know, they're growing in a place where I think if the U.S. Marketplace were free and open and everything was legal down there. They'd probably be down there. But they can't be right now. So they're going to grow here. Now they're whatever here, thirty five hundred employees. They continue to grow.

At some point in time the markets are going to open up in the U.S. even more, and they're going to be well positioned to just sort of flood that marketplace. I don't think they're going to pack up and move. So what they've got now, the infrastructure they're going to keep it here. And you see, you almost sometimes need those kinds of accidents.

But then I also go back to the idea of that life science and the dedicated Life Sciences fund. If it's large enough and profitable enough, part of that would be dedicated to actually allowing some companies, at certain inflection points, where they can make that decision do they go public? Sell themselves off?

Is there some mechanism that we can build that would actually allow them to sort of say, you know, what I can ride this out. You could de-risk some of the clinical trials somehow some way provide some sort of insurance concept.

THIERRY HARRIS

Yeah.

ANDREW CASEY

And allow them to get through that really difficult phase where then, now they're commercial. They've gone through that and they've proved, their drug is proven. Now they can take on the world.

And then once that happens, you're right it sort of becomes like a magnet it starts to bring people. Otherwise, once we every time we send one away, it brings with it people. It brings with it more investment dollars that are harder to get back here. And I think we've got a sort of reverse that flow a little bit.

(music interlude)

THIERRY HARRIS

If you take a look at basic trade 101, you know the Economic Development Bank of Canada, provides you insurance when you ship your goods overseas. They are the insurer of that shipment and they will pay you if that company, if that country or that country company in that country will not pay you. They will guarantee that payment. And a lot of companies couldn't do business without that. So I don't see why in terms of that distribution and development globally why Canada or something, that's a collaboration, you know with a public-private partnership couldn't have the same thing. So we're coming up with some pretty interesting ideas.

ANDREW CASEY

We solve it. Solved everything.

THIERRY HARRIS

We solved it all. Okay. That's great. I want to get just back into the need and a job to be solved. You know, we have given a bit of context in terms of how things are changing and what the utility of biotechnology is. Biotechnology as you had stated

when we first met has been around for thousands of years like we've been genetically engineering things for thousands of years.

ANDREW CASEY

Beer, wine and bread.

THIERRY HARRIS

Exactly. And you know take a look at the Romans. I was just watching something recently. The first sort of oil massive agricultural operation was the olive oil out of Seville that was being in Northern Spain and then it was being managed by the Romans and eventually, you know, Spanish took over and grew an Empire out of that.

But what has to change for the companies to be able to provide that solution? Like, do you think, we're sort of in a mindset where okay, everybody has accepted that climate change is a real thing.

ANDREW CASEY

Have they?

THIERRY HARRIS

Well...

ANDREW CASEY

I think a case could be made that there's a certain faction of society that has not accepted that but yeah.

THIERRY HARRIS

Ok so...

ANDREW CASEY

I think generally speaking anybody with an education and science background understands that the climate has changed and will continue to change. I agree with that.

THIERRY HARRIS

Yeah, and even if they believe it or not, maybe the ones who don't believe it if they see that they can make money off of it, maybe that will help them believe it.

ANDREW CASEY

Good point.

THIERRY HARRIS

You know what I mean? And like I just, I'm just trying to picture a like the Europeans. I was just reading something talking about the circular economy. And about that sort of notion of nothing gets kind of wasted and put away everything is, and they think of that as a new way of thinking of things. And I see the bio-sciences, the biotechnology field, is really being like a torch bearer for that. Because you're taking something natural and you're modifying it and then you're outputting it, you know, it's not a plastics production, so to speak.

Although you could argue that that's also taken out of the ground and then modified and then put out. But you cannot recycle that you can't reuse it. It isn't anything that's lost its use.

ANDREW CASEY

In fact some of the biotechnology Innovations are replacing the Plastics, right you're able to take corn and turn that into bottles.

THIERRY HARRIS

Yeah, exactly. And so, are you, are you worried about a stage where food scarcity, you know it is an issue in certain countries. You know, all of our farmers are

growing. Well, there's a market in energy. Why do we need to grow crops anymore? Because we can, we can just focus on the market.

Like how does that all play out? And in the global stage? Like how are we approaching these problems? And and and what kind of, what do we need to seize those opportunities that are out there?

ANDREW CASEY

Yeah, there's a number of different pieces to it, right? There's one as how do we meet the growing demand? As we know that the world is changing that way. When you look at the economies of China and India, they are growing in leaps and bounds. So as a result your middle class is growing. The middle class then consumes more. They want all the things that we've had for, you know 10, 20, 30 years, decades we've had here. They want to have the presents, and everything gift-wrapped, at all the sort of same catchments that we have here. But I think more importantly, when you look at for instance, the Chinese diet, one of the things I've seen is quite interesting is the Chinese diet was traditionally a vegetarian diet and then the protein was a, almost like a condiment. You'd have a little piece of protein whether it be chicken or beef on the plate, but it was a very small portion compared to the rest of the plate. As their middle class has grown and their economy has grown, what they'd seen as a change in the diet where the protein now is becoming more like the North American version of protein, which is the biggest piece of the plate.
So you now have vegetables being replaced by a piece of beef or chicken. If you just think about how to meet that growing demand in this world. It's almost incomprehensible how we're going to sort of produce. and without getting in the debate as to whether it's even effective to derive your protein from animals. But let's assume that we're going to keep doing that. There's not enough land there's not enough water and then the disease that comes with it, you know, the Prevtech example is protecting against that.

But I mean once you move into that scale, it's almost insurmountable. So we have to find new ways to address that. There's also huge health concerns that come out of that. So as you see their diet change and if you look at the rate of diabetes and obesity. In China, it's skyrocketing.

THIERRY HARRIS

Definitely.

ANDREW CASEY

So that's the type of stuff that, you know, once we, once we've addressed the protein part. Well, then now we have a health problem because now they're just getting fatter and they're having all the same issues that we've had from a health standpoint.

So we got to figure that out. I actually think what's more interesting though is the opportunity it creates to create new places to grow things, you haven't normally been able to grow them. So if you're struggling in an Africa, where it's quite arid, not enough nutrients, not enough soil. If you're able to now genetically modify things where you can grow it there. Well, you don't need to grow in the Prairies in Canada.

So you don't need to grow your wheat and then ship it all the way over. Let's grow it over there by genetically modifying it. Other areas where you have other pests or drought or other sort of spikes that create and cut in supply, are you able to now grow plants that avoid those two.

So you have drought resistant crop, you have pest resistant crops. So those types of advancements are now going to allow us to avoid some of the peaks and valleys that we've sort of traditionally gone, well tough year. We had a bit of a flood or tough year, it was too dry. I guess we'll get them next year.

Well, we don't really have that luxury anymore. So we've got to figure out a way to sort of flatten that out. And I think that that's where some of the biotechnology can come into play. And then back in the industrial space you get into this place where you're using the the solutions to really change the way industries are fundamentally operating.

The company out of Quebec City called CO2 Solutions which is using an enzyme to gobble up CO2 emissions. And turned it into something productive. So back to that plastic bottle example you used. Where you're really changing an industry and turning it on its head a little bit. So I think it's more about what's what is the opportunity than what is the risk, and I think if we can take advantage of the opportunity and we're well positioned to do it. Then it's kind of limitless where we can go.

(Musical interlude)

THIERRY HARRIS

Yeah and Canada really is a wealthy country, we are an educated country, and we have people who are passionate about solving big problems in the world. You know Greenpeace was founded over here. We've had UN secretary Chief Justice's. You know, we've got great cultural assets that are globally recognized. And kind of Biotech is really an interesting ecosystem in a sense that it kind of captures good ideas, strong university system, strong Federal government system. Strong provincial, also as well.

Because we have to also note that there is competition between the provinces...

ANDREW CASEY

Absolutely.

THIERRY HARRIS

For foreign direct investment. And for, you know, for the workforce that accompanies it. So what in your mind makes for a healthy ecosystem for biotech?

ANDREW CASEY

Great question because it is an ecosystem. And it's, imagine if you're a coral reef, you need all components of the reef to be a healthy coral reef. You can't just have a fish and lobsters, crustaceans and then take out the plankton. You need it all, right? To make for a healthy ecosystem. And I think that it's no different when you look at the biotech ecosystem.

So if you look across the country and you really break down the membership of BIOTECanada, which is a mirror of the entire ecosystem. You have of course the small early-stage companies that are out there looking for investors and partners and all the rest of it. But then there's a whole bunch of other critical components. There's the venture capital. There's the law firms, the universities that contribute to all that to create the talent.

But the one other piece that people kind of overlook often, and it's easy to, because you can get into this whole world of pricing of drugs and that. But the large multinational Pharma, certainly on the health side, are huge partners. They are big investors. They are drivers of innovation in the really a very important part of the overall ecosystem. So when you look at our ecosystem, we have to make sure that we're taking care of all parts of it. And public policy needs to be equally holistic.

So when it's looking at the ecosystem, you cannot just sort of look at one little part. I call it the cute cuddly puppy. Which are the small companies that are really innovative. And it's very neat to pick them up and hold them because they're so cute and cuddly. You have to understand that are all sorts of things that go along with having a cute cuddly puppy. And you have to handle all of it.

And you have to grow it also. Public policy has to be as holistic as possible. It's got to address all elements. It has to understand that if you do something in one part, it's going to have an impact on the other. Just like if you put something into the coral reef that impacts the Plankton it's going to have an impact on the coral reef. So understanding that and really being strategic about it.

As they say other countries have figured out that this is an Economic Opportunity. They're doing, putting in place strategies to address this. We have to keep pace with them. Otherwise, we're going to lose their innovation and our ideas and our people. And we're going to sort of suffer because we don't get the economic benefits of developing it here.

THIERRY HARRIS

So who's job is it to tell the government? Or request to make some...

ANDREW CASEY

Sounds like a job for BIOTECanada. And it certainly is one of our fundamental objectives. Is to sort of really have that conversation, that dialogue with the government. But both at the federal level. But as you correctly point out, there's provinces here too because there's provincial jurisdiction. There are ecosystems and hubs in every single province and every province says, hey, we love this.

We love our Mars Innovation and Mars in Toronto. And Montreal got an equal. And every province is going to brag about their own ecosystem. So, how do we bring it

all together? I think that's an important part, certainly what the voice of BIOTECanada is trying to do with the government both at the federal level would also work with our partners in the provinces.

(Music interlude)

We're out there trying to find investors. Match our companies up with investors and get everybody together and really create a public policy environment that's really healthy and conducive to sort of grow in the ecosystem in this country.

THIERRY HARRIS

Well, thank you for all the work that you're doing. You know, I am sure Canadians are thankful for that and the companies that you're working for very hard as well at BIOTECanada in order to make sure that you stay on the map in terms of getting your piece of cake as well.

ANDREW CASEY

It's easy to do. It's an industry that's really exciting, it's easy to get excited about. When you listen to the stories. They capture your imagination. So you sort of think wow, enormous potential, Climate change, or all the other things that come into play. It really does give you reason for hope to understand that we can come up with solutions for what's challenging the world and we gotta get there because as I say if we don't find some way to do it differently, we're in trouble.

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You can check out the IE knowledge Hub case study on BIOTECanada as well other Cases at IE-knowledgehub.ca.

For Market Hunt, I'm Thierry Harris. Thanks for listening.