

KEYNOTE ADDRESS

Speaker: Liam Condon

October 18, 2018 - 3:00 p.m.

Introduction

Dr. Robb Fraley

2013 World Food Prize Laureate

Ambassador, I appreciate the opportunity to make those comments, and now I have the special honor of introducing one of the champions of our industry, who is completely dedicated to feeding the world and doing it in a more sustainable way, President of Bayer Crop Science, Liam Condon.

Now, I've had the opportunity now to know Liam for a number of years, but I can tell you, if you have a chance to have a dialog with him, it only takes a few minutes to understand his passion and his commitment to agriculture, to innovation and to science. And he's a guy who is going to make a huge difference in terms of his impact for farmers and consumers.

He's been a great advocate and a great partner as we've gone through our business transformation. And he'll be the first one to tell you that we can't waste any time. We've got to get going, and we've got help farmers tackle those challenges.

So, Liam, if you'd come up on the stage, I'm going to hand you not only the baton but more importantly the clicker if you need one. So good job. Take care. Bye-bye.

Liam Condon

Member of the Board of Management, Bayer AG & President of the Crop Science Division, Bayer

So thanks a lot, Robb, for the very, very kind introduction. And on a personal note, thanks to you for all your support for helping bring Bayer and Monsanto together. Without your support, this would not have happened, so a huge thank you for that. And thank you also, Ambassador Quinn, and your team again for the perfect organization for this wonderful event. It's always a great, great pleasure to be here.

And ladies and gentlemen, I'd like to start the topic of my presentation is really about innovation, but to set the scene I'd like to share a somewhat strange experience that I had yesterday. And yesterday I was in Canada, and when I woke up and the strange experience was not the fact that cannabis had been legalized in Canada and everybody was talking about this and they were calling it day one. The strange experience was I'd been previously visiting ag growers on the days before in Ontario and was on a panel discussion yesterday. And one of the participants from a very big food company, U.S.-based food company, and said, "You know,

something is not working with farming, and the solution is we've got to go back to the good old days and go back to how we used to do farming." And I got to tell you, I was shocked to death, and I said, "You clearly have never been on a farm in the old days, because life was not better, things were not good then." There were tremendous challenges. And if we look at the challenges going forward, they've gotten bigger, and you can't go backwards to go forward.

So I think a key part of the discussion sometimes that we're having and that we need to have with many societal stakeholders beyond this group here who's highly interested in agriculture. We've got to acknowledge there's a big bunch of people out there who don't really know and understand how important agriculture is. And we've got to explain to them constantly why this is so important, and more importantly also, why innovation is important and why we've got to keep moving forward.

And overall, we're facing a multitude of challenges. And again if I go back to the old days, the way things used to be in the '50s, we had a population of 3 billion – now it's 7½ billion. In a very short space of time, we've got way more people to feed. And look at the climate situation that we have today – way more volatility than back then, and it's actually increasing. And we have less arable land per capita than we had back then. So if we just go back to the way things used to be, we are not going to be able to rise up to the challenge, which has been articulated so many times in previous presentations, of feeding the world in a sustainable manner.

So we firmly believe that we do need more innovation to help us rise up to this challenge, and if we get it right, we will also be able to contribute to the U.N. Sustainable Development Goals, because almost all of them at some level have actually got something to do with agriculture, some more and some less, but basically if you're progressing in agriculture, we will be progressing on the U.N. Sustainable Development Goals, and that will be good for the development of society.

Now, we ask ourselves as a company coming together, Bayer and Monsanto – so what's our "why"? What's the ambition level of this company? And you could easily say – Well, let's be the leader in agriculture and say very honestly that's not an ambitious level of aspiration, and you bring two big companies together. The real question is – What are we going to do? What's going to make a difference? And what is our purpose? What do we really aspire to?

And we've only been together... It feels like forever, because this thing has been going on for a couple of years, but actually we've only been together since the end of August, so only two months, so we haven't had that much time to discuss what we're going to do. But I can tell you at least a couple things to give a direction and tell you what we will be working on, what we will be focusing on. Our "why," the way we defined it was we said we want to shape agriculture for the benefit of farmers, consumers and the environment. And I think this is really important, because this is basically, for us, this is the strategic lens for every decision we make in the company. We ask ourselves – *Is this really going to help shape agriculture and benefit farmers, consumers and the environment, the planet?* And if it's not, then just leave it to somebody else. But if it is, then we should be working on it. This for us is our filter for decision-making within the company. So it's not just a nice slogan, it's something that we need to find what we want to do, what the aspiration level is.

The "what" – and when we bring these two things together, initially of course, we simply have a big portfolio and a lot of people who come together with world-class seeds and traits. We've got a super innovative crop protection portfolio, and we've got a fantastic digital ag platform.

The real secret sauce that's in here is actually being able to bring this together in a manner that really allows us to give tailored solutions to growers, to farmers, and do that in a way that they can get their balance of productivity and sustainability for their farm in the best possible manner. And this is something that we're working on intensely.

And we have over 8,000 scientists in this new company. We've got a big R&D budget, but it's very clear to us with the size of challenges that we're facing that we need a lot more innovation than just the innovation that we're capable of generating in our company alone. So we have got to reach out and look beyond our own labs and fields, and we've got to partner with others to accelerate the pace of innovation.

And I'd just like to give you three brief examples of what we would call collaborative innovation to give you a sense of the direction that we're going and acknowledging that we won't have all of the answers. But there are so many bright minds and great ideas out there, if we collaborate, we will make a lot of progress from an innovation point of view. So three different approaches apart from what we're doing just purely in-house and with our own resources in the area of breakthrough innovation, open innovation, and social innovation. I'll just share with you a couple of examples.

So one is on the digital ag side. And here we have within Bayer we've now got the subsidiary climate corporation acquired from Monsanto, and there's a fantastic platform in here called "Field View," but the true value of the platform is not because it's just our company – there's actually over 40 other companies involved on this platform, and they all bring different data into the platform. And all of this data is aggregated, analyzed, assessed, put into algorithms, and at the end of the day gives a recommendation then to growers about how they can optimize at their work on the farm and basically help farmers make smarter, more informed decisions. And the real and breakthrough part in there, I believe is... – and this is the power of digitalization and data sciences – for a long time we've classified ourselves often as an input-based industry, sell bags of seed and jugs of herbicides or different crop protection products.

But with this technology, we can actually, because of the predictive capabilities, we can actually work towards an outcomes-based business model and actually, rather be selling to a grower, for example, a disease-free field or a weed-free field or a guaranteed yield. And these are things – if you're making a guarantee to a grower in a very volatile, very risky world, making guarantees is a dangerous thing unless you've got extremely good predictive capabilities, and you can only get that with an extremely strong data platform. So this is where we see the breakthrough element in here. And again this is not possible only because one company is involved, it's possible because there's 40+, and with that there's this critical mass to get the data required to be able to work towards an outcomes-based business model.

This is fantastic for big farms, and in North America like I was on the farm and now in Canada and Ontario and I was sitting in the cab and watching field view, and literally going down the field you could see in real time. We were harvesting beans at the time, and you could see in real time what is the yield on which part of the field and also different hybrids from different companies and which ones were producing which yield on which part of the field – tremendously valuable information, particularly then for the following season, because it allows you to make much more specific decisions going forward.

Again, great for big farms, but a lot of the topic and discussion that we've been having here, and rightly so, has been about smallholders. And smallholders, we often talk about the digital

divide as well, and I mentioned the need for tailored solutions. And so we also have and are working on digital solutions for smallholders that are tailored to their needs. This is very different than the field view and module and the platform that I showed, very different module—a digital platform for smallholders, in this specific case in India and in multiple languages in multiple states, something that's being constantly refined. And the key thing here is it's scalable. Because our challenge, I think, has always been with smallholders. There's no lack of great ideas, but they always stay very localized, and you never really get traction on a big level. This is where digitalization can really make a huge leap forward, and this is something that we would like to try, together with others, partners, to Pioneer and make sure that we don't just have digital solutions for bigger farmers but also and especially for smallholder farmers.

A second or another example from breakthrough innovation... And it was funny, on the same panel yesterday there was another representative of a different company who was clearly a producer of legumes and lentils in Canada and was explaining or had the hypothesis that to kind of feed the world in the most sustainably manner, basically we should only be planting legumes and lentils because of the great protein content and because they can fixate nitrogen from the soil and you avoid fertilizer and it would be the best thing from the sustainability point of view. Well, I mean, if you think about it, I don't think any one company has the right to be defining what people should or should not eat—that's a consumer choice, and we need to give options to consumers. And I think personally I think it would be a little bit boring if all we had to eat was lentils and peas and beans.

But one thing that we are working on because the idea is a nice one, we know there are certain microbes that do allow plants to fixate nitrogen basically from the atmosphere and with that avoid or minimize the use and requirement of fertilizer. The problem with that approach has been—and you can identify these microbes—but how do you scale it? And we found that a partner called Ginkgo Bioworks... They work in the area of synthetic biology—and a couple of years ago I didn't even know that this discipline existed—but in the area of synthetic biology they basically engineer microbes but at scale and apply these microbes into seeds. And we're basically in a pilot phase now with multiple crops to see if this can work. And if it does work, what's clear from initial tests, there is a yield benefit, but there's a tremendous sustainability benefit; because if you can do this, you require way less fertilizer than we currently require today. And that's not only good for the wallet of the farmer, that's of course very good from a sustainability point of view. So another example of what I would call breakthrough innovation that would not be possible only with the resources we have in-house. We need to partner for stuff like this with companies that are doing world-class research. We team up, and then we can tackle these types of issues.

Another example of different approaches to innovation—open innovation. And this one, it's a very special one. It's one where we actually collaborate with quite a few of our competitors. And even though the Department of Justice did not believe me, competition in the agricultural space is really intensive and in the field and our reps and the Corteva reps or the Syngenta reps, of course everyone's fighting for the farmer's business. But there are some topics and areas that are so big and at a different level, we should actually be collaborating to try and help find the solution.

And one of them here is, and we're working with again multiple competitors and also with organizations, for example, like the Bill & Melinda Gates Foundation. I'm working on an initiative called ZERO by 40 with the bold goal to eradicate malaria by 2040—eradicate, not

reduce, eradicate, get it down to zero. And the ones who will benefit most from this are of course the smallholders, because the ones who suffer most from malaria today are very clearly smallholders. So this is a big, bold consortium for the Innovative Vector Control Consortium, multiple companies, organizations, all working together to try and solve a very big problem. So I think again just an example of how through collaboration we can actually tackle really big and bold challenges.

And the last one I share with you, I think there is a strong... If you're in a science-based company like us... And we define ourselves often through technological innovation, and there is a source of innovation beyond purely technology. And there's also an element of social innovation, which I believe is more and more as we do try it and empower more and more smallholders, this element becomes more and more important. And we realize that of course the smallholders, and that has been articulated again on many panels, probably best by Ruth in the former panel, that the real basic needs of smallholders are not necessarily getting addressed by just having the best technology in the world. You've got to start in a different place, make sure they've got access to microfinance and make sure they've got the at least basic agricultural know-how practices, know-how, and then access to good quality inputs. But you've got to start in a different place. And companies like ours and a single company cannot really address this on their own at scale. We need to work in ecosystems. And we have an approach here where we try and work in an ecosystem of social entrepreneurs who are dealing with different issues of smallholders, again, be it financing, microfinancing, be it insurance, be it agricultural training, and working at different levels with different partners who are sometimes NGOs, sometimes for-profit, but they classify themselves as social entrepreneurs. And first and foremost they're addressing the more basic needs of smallholders before we start talking about technological innovation. So I think this is another part of the puzzle that we can amplify and should amplify as we go forward.

I leave you with a final thought after going through the why and the what, but the how we want to do things. And I can say this specifically for our company, but I think there's a relevance in there for everybody in the industry, because all the companies are basically working to rise up to the challenge of feeding the world in a more sustainable manner. And I think a key thing is – whatever we do, we've got to do it in the most responsible manner possible.

There is in some parts of society a lack of trust often in what we do, and the only way – the currency of trust is really transparency – and the only way that we can really gain this trust is by walking the talk and showing that we are really making a difference in a positive manner. Just making statements won't work. We're going to be judged by how we behave, so the way we behave has got to be extremely responsible.

Three things, final thoughts to leave you with:

Again, what I think for our company, Bayer, what we want to be working on, but which I think is relevant for the entire industry, we need more innovation. Clearly we need more innovation, and we've got to get it out there faster. The challenges are getting bigger, and innovation can help; but it won't only be technological innovation, it will also be social innovation.

Robb has addressed this – sustainability is a huge issue. It's also a huge opportunity. We can help turn agriculture from being a part of the problem to a part of the solution – a huge opportunity in there for all of us.

And the last one I personally believe – and with advances with the data sciences – what’s possible now from the digital farming point of view, that we will be able to basically transform agriculture one more time. Robb Fraley was one of the leaders if not the key leader in transforming agriculture last time around through biotechnology. I believe the next transformation will actually come through digital technology.

So I believe in final words, it’s probably never been a more, possibly, a tougher time to be in agriculture, and we’re definitely not going to go back to the good old days. But there’s also never been a more exciting time, and there’s never been a time when we needed more innovation than right now. I think we all have a tremendous opportunity to step up the game and help growers achieve what they need to achieve so that ultimately we can rise to the challenge and help feed the world in a sustainable manner.

Thank you very much.