On the Record

Podcast: CBA's Dr Andrew McMullan and Dan Jermyn

Thursday, 02 December 2021:

Sam DOWNING: Hi, my name's Sam Downing, I'm from CBA newsroom. Today I'm joined by Dr Andrew McMullan, the Chief Data and Analytics Officer at Commonwealth Bank, and Dan Jermyn, the Chief Decision Scientist. Andrew, Dan, thanks for your time today.

Dr Andrew McMULLAN: Thank you very much for talking to us, Sam.

Dan JERMYN: Pleasure to be here.

Sam DOWNING: So I want to talk a little bit about your job titles and what they mean. Andrew, as I said, you are the Chief Data and Analytics Officer which is a job title that people might not expect to come at a bank. Can you tell me a bit about what your role involves and what your teams do?

Dr Andrew McMULLAN: Yeah, sure. I look after the community of data professionals at CBA and what we do is simply look after the data platforms and technology that we need to help serve our customers and we use those to provide insights to the business teams that we support as well.

Sam DOWNING: And Dan, what about you, tell us a bit about your job and what it involves?

Dan JERMYN: Well within Andrew's area, we have a bunch of specialists looking at the application of science to customer problems, be that data science, AI and machine learning, experimental science, behavioural economics and we try to bring these people together to produce better outcomes for our customers.

Sam DOWNING: And at Commonwealth Bank, data and analytics sit together in the one team, which isn't always the way, what's the benefit of bringing them together as we do here?

Dr Andrew McMULLAN: We find that when you've got the experienced analysts who support the business teams working with the people who build the technology and the platforms, then we can tailor the solutions much more uniquely to that particular business area or the customer experience.

Sam DOWNING: Andrew, today you gave a keynote at our prestigious AI conference. Can you give me a recap of some of the main points that you shared there?

Dr Andrew McMULLAN: Yes, sure Sam. One of the things we talked about this morning was the customer engagement engine and how we use that to support our customers and communities. And the customer engagement engine is effectively the collection and organisation of the data and interactions we have with our customers, and we use that to inform what the next best conversation would be with our customers across all of the different channels that they use to interact with us.

So if you think about on a daily basis, as customers engage with the mobile banking app or Netbank or if they call us or go into a branch, for each of those interactions, we try to have the most relevant personal experience available for customers based on what we know about them and how they're interacting with us. And every day, as we've seen through the last couple of years with COVID, the app becomes even more important to our customers, they're using it even more. And across all of our channels, every single day, we make 35 million decisions on what the next best conversation or experiences to share with our customers.

Sam DOWNING: Can you give me some more specific examples of how the Bank has used the customer engagement this year to support customers and community during COVID?

Dr Andrew McMULLAN: Yeah, a couple of examples that I shared at the presentation this morning, which are really timely, we've been using the customer engagement engine to support customers, businesses and communities throughout COVID over the last 24 months, almost now. And what we do there is we really understand the current situation of customers, those who need more help, maybe they need connected with our benefits finder as an example.

So businesses who can get access to some refunds or rebates and even thinking of a really timely example, the New South Wales Dine and Discover voucher, we share those experiences with the customers and make it really simple for them to get access to the benefits and rebates that they're eligible for. And in addition to that, over the last week with the weather and some of the flooding that we've seen across Australia, we've been using the customer engagement engine to let customers know that, (a) they're going to be potentially impacted by floods; and (b) if they are in an area that is impacted by floods, we share with the customers our emergency assistance package and what support is available to their particular need.

Sam DOWNING: Dan, the customer engagement engine is now a case study that Harvard is using for their MBA course that you were recently a guest lecturer at. Can you tell me a little bit more about that?

Dan JERMYN: Yeah, sure, Sam. I mean, we were very excited to be partnering with Harvard on the case study, which tells the story of how the customer engagement engine came to being. At the outset, it was an idea around, we think, by putting the customer at the centre of everything that we do, we can create an experience for them that really exceeds what banking looks like today.

This is a really complicated challenge, which means involving a lot of cutting edge technology, huge data sets and things like AI to coordinate. And that really was the angle that they were interested in. How can you use artificial intelligence to create a really customer-centric way of running an organisation.

Sam DOWNING: Dan, when you were speaking at Harvard, what kinds of topics were the people you were talking to, you interested in? Did they have any surprising questions for you?

Dan JERMYN: I think one of the fascinating things about that was this was a group of people who came from all walks of life, a lot of them with big kind of corporate experience in America, but others from across the globe too. But all of them, I think, found it difficult at first to rationalise or understand how I could be so customer-focused in everything that I was describing. You know, they were asking questions about, how did you drive profit margin and what were you thinking about cost reduction.

And as I explained through the story, really the customer engagement engine was all about creating better outcomes for customers and trusting that that in the long term is great for everybody's benefit, including the Bank's. And as they start to talk about the examples that we had, things like benefits finder, things like fee avoidance, things about payment reminders, things like if your bill at the gym suddenly goes up one month, do we let our customers know about that so they can say, "Hey, yes, this is expected", or actually, "no, I didn't know that happened". And through those sorts of examples, they started to see that what a bank could become or should become if it truly existed to serve the customer and their best needs rather than thinking about individual products and channels.

Sam DOWNING: I want to ask you both about the customer engagement engine and the impacts that you think it's had in the last couple of years. Andrew, what do you think are the biggest impacts?

Dr Andrew McMULLAN: There are so many wonderful examples of how we're using the customer engagement engine to deliver experiences and moments of delight for our customers. You know, unfortunately, we've had to use it a lot in the support of natural disasters across Australia, whether that's bushfires, floods, storms, et cetera. And it always inspires me when I work with the team and we get the opportunity to help customers in those moments and how quickly we can respond.

As an example, in some of the recent floods, within 90 minutes of a severe flood in an area, we were able to have tailored support to customers who were impacted by that particular event. And then another example which really comes to mind, in terms of the scale as we've been supporting customers throughout COVID, we've been using the customer engagement engine to help customers understand what benefits or rebates would be available to them through our benefits finder. And that supports personal customers, business customers, communities across Australia who during COVID really needed access to additional funds or government support or whatever was available to them.

And we estimate that already over half a billion dollars has been put back into the accounts of customers and businesses across Australia using the benefit finder.

Sam DOWNING: And Dan, what about you? What do you think are the customer engagement engine's significant achievements?

Dan JERMYN: Well, I think the example of the global pandemic is really kind of – it's been a tough time for everybody, but it's shown the power of what a customer engagement engine allows us to do by responding incredibly quickly to a very rapidly evolving situation. Andrew talked about some of the benefits that have been available over that time period. If you think back to the early days of the pandemic, there was a lack of certainty of what was going to happen. Things moved fast. States were going into lockdown. Things like JobKeeper were being made available very, very quickly. Things like payment holidays for customers who had a home loan with us were suddenly being introduced. And in every single one of those instances, we were able to have a next best conversation in market incredibly rapidly that spoke to that specific emerging need in the right channel to the right customers who were affected, not a mass market blanket piece of

coverage where customers were already getting confused about what was in the news and what was happening elsewhere.

We were able to be incredibly targeted, clear, precise and timely, and that really, I think, gave our customers a degree of comfort that we were there on their side in the moments that really mattered. And there were lots of examples of that throughout the COVID pandemic and still to this day, of course.

Dr Andrew McMULLAN: And adding to that, Sam, another one, I was actually just looking at my app as you were asking that question to kind of see some of the experiences that we've delivered in there. I would urge our customers to go into the app and look at something called CommBank Rewards if you don't use it. That's where we get to link some of our merchants who provide offers to our customers. And I'm looking in there and already seeing $10 cashback if I shop at Coles. We've had offers for customers to shop with Menulog et cetera. So it's a really great service to be able to give customers cashback for shopping at some of the big companies across Australia.

Sam DOWNING: And Dan, would you like to add to that at all?

Dan JERMYN: Yes, I think one of the things that is really kind of fascinating about the way that we use AI to service our customers these days is that it allows us to do more than we'd ever thought possible. Andrew's talked about a few examples there. You take the benefits finder piece, which has put half a billion dollars' worth of value back into our customers' pockets.

We're also thinking now about other aspects of financial well-being, prediction of bills, things like the best offers that are available to a customer at a particular point in time.
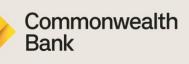
One of the things that the Harvard case study looked the application of AI to new value added prospects for our customers.

Sam DOWNING: Dan, another thing that I wanted to ask you about was CBA's collaboration with the Australian Government to test out the national framework that surrounds the use of AI to ensure its adoption is done in an ethical and responsible way. Can you just start by telling me why did the government approach the Bank in the first place to explore this area?

Dan JERMYN: Well, Sam, we've been really active in the space of artificial intelligence and machine learning for at least four years. The customer engagement engine that we've talked about today is powered by 400 machine learning models that are calculating results in real time, over 157 billion data points.

So as we've been very progressed in the application of AI and machine learning, we want to think about how we can do that responsibly and safely at scale. And so we were delighted to work with the government on developing a framework of 8 AI ethics principles, which make sure that as we develop this technology and grow it and think of more applications that can be helpful to customers, we do so in a responsible, fair and transparent fashion. And so really, as we thought about developing this framework, we were advising on how we think about things like the explainability of the models that we have. How do you understand how the machine is generating the results that it comes up with and how can you be transparent and fair in the outputs that it produces?

Sam DOWNING: In this field the accuracy and biases in the data, is obviously a very topical and controversial area. What are you doing to mitigate these issues?

Dan JERMYN: Well, I think there are two very important ways that we deal with this problem. One is to think about the technology that we create and making sure that the tools are available to be able to explain the model outputs and to check for disparity in model distributions. So as we create more and more outputs for our customers that are based on machine learning models, we need to be able to ensure that across customer groups we're not introducing any unintended bias into the way the model is created.

And the second really important part of this is to make sure that we have humans in the loop at all stages. So we have a large number of people across the team, people who work with the front line, people who work with customers to check and monitor the output of the models to make sure that we're not only having good intentions, but that the outputs produced are compatible with our purpose and with customer and community expectations in this space.

Sam DOWNING: Dan, a phrase that I wanted to ask you about is predictive analytics, which I understand that the Bank is using to provide the best services and experience, and improve people's financial wellbeing, and this is a space that your team is working on. Can you talk to me a little bit more about this, and how it's being used?

Dan JERMYN: Well, one of the very exciting things about the explosion in capability in AI is that we're able to get much more accurate now about forecasting what may happen in the future. So if you think about this in the financial wellbeing context, previously our analytics has been very good at telling us what has happened, or what is true today. And what AI is allowing us to do now is say what may happen in the future with a much greater degree of accuracy than was previously possible.

From a customer perspective, this can be incredibly powerful. Look at our example of the Bills Hub that we have within the CommBank app, for example. Now, based on 20 machine-learning models running over 18 billion data points every day, we're able to predict the bill patterns for our customers. So how often are you going to be hit with bills? What's the likely impact? What's that going to do to your overall balance? And how do you adapt your behaviour to accommodate to make sure that there's no bill shock, and that you're on top of your finances at all times?

So really, it allows us to kind of empower our customers, give them more control and awareness over their financial wellbeing, not just now, but into the future. So they can plan better with the hope being that produces better financial wellbeing outcomes for everybody.

Sam DOWNING: Andrew, the Bank has announced a number of partnerships this year, including Different, Amber, More, Karta, Little Birdie, Klarna. Can you talk to me a little bit about how the customer engagement engine is going to be used to help with these partnerships?

Andrew MCMULLAN: The customer engagement engine is central to the experience that we provide to customers. So we will use that to better understand all of the different services and experiences we would want to deliver for every one of our customers.

And you've kind of hit upon a really important part of our strategy there, with the partnerships and experiences that we want to deliver for our customers and the communities we serve. We really believe that customers want more than they

traditionally did from their financial services partner. So yes, we still need to provide some lending or access to credit for businesses or somewhere to save your money. All of those products and services that you would expect from a bank. But our customers are demanding more. They want to be able to get access to cheaper energy. They want us to be helping them understand their impact on the environment. They want us to give them much better deals.

So we've got an opportunity to link our merchants with our customers, as an example, so that the merchants can give discounts and offers to customers that help their business, but then also reward customers for coming to shop with them.

Sam DOWNING: And the recent partnership with H2O, can you talk a little bit about how that will help us get more out of our data and personalised customer experiences, and how quickly we'll see the benefits?

Andrew MCMULLAN: Yes, and look, linking to the previous conversation around additional partnerships and more companies that we're supporting; we realise that that means we're going to have more information available that we need to connect and understand, provide even better experiences for customers, and make better decisions for our customers.

One of the things that we've been thinking about, and we've been driven to kind of do across the organisation is, in every instance that we've got the opportunity to make a decision for our customers, we want to make a better decision. And if you think about even a simple example, which is every payment you make as a customer, we make a decision on that. Is it definitely Sam making that? Is it a safe transaction? And we need to be able to understand that in real time and create safety for you as a customer, protect your money to make sure that you're not being scammed or it's not fraud. And those are the types of things that working with H2O, we believe we will get better and better and better at.

Sam DOWNING: And Dan, still on the H2O partnership, would you like to add anything to Andrew's answer?

Dan JERMYN: Yes. I mean, it's a very exciting time for us Sam, not just for us, but for our customers. H2O are a company that we've worked with for a while and admire greatly. They share a very similar value basis to us. We're both equally committed to using AI for social good.

And the great thing about H2O is they have some incredible talent, the best in the world; data scientists, machine-learning engineers. And they're right at the cutting edge of what's being created right now, and looking into the future, creating opportunities and platforms, applications with AI that nobody's even thought of yet. That's exciting to us. And we want to partner with them, and provide our customers with opportunities that they haven't thought of yet. How are we going to be the absolute best AI-driven bank is critical to our strategy. And we partnership with the best talent in the world, such as H2O, is really a crucial part of that.

Sam DOWNING: Andrew, I know that you're a big advocate about the power of people's mindset, and the importance of turning up with the right attitude, and having the right people in the room. Why is this something you're so passionate about?

Andrew MCMULLAN: We really believe that if your people come to work determined every day to make a difference in the lives of the customers that we serve, then you stand a really good chance of being able to do just that; to make a difference for Australia, and for the customers and the communities that we serve.

The positive mindset that we ask the team to come to work with is that we can literally, we can do anything, if we're committed enough to making a difference in the lives of our customers. And it's a really powerful thing to be part of, when you see that kind of play every day, across the departments as the teams come together and connect on customer outcomes or experiences that we want to deliver.

Sam DOWNING: And Dan, when your lecturing at Harvard to some of the brightest minds in the world, how do you get yourself in the mindset to present to these people?

Dan JERMYN: I think it's an incredible opportunity that we have at this Bank. You think about the ability to speak at perhaps the world's most prestigious business school, and they want to know what we're doing and how we did it. You have to be incredibly enthusiastic about that.

But also, what I love about the culture that we have is we're very open. The fact that we will speak to institutions, technical partners about the work that we do, and look for their perspectives as a really key part of how we're able to do a better job.

And that goes to the way that we deal with our stakeholders as well. I think it's the same kind of mindset, one of confidence in the work that we do, but also humility and openness to get other points of view, learn from people who are experts in their particular area, and come together and produce outcomes that are better than what you would get if you were working in individual silos. I mean, that's a very exciting place to be, and that's why I love my job so much.

Sam DOWNING: Andrew, would you like to add to that? What is it about Dan's mindset that you think gets him invited to lecture at places like Harvard?

Andrew MCMULLAN: Yes, look, Dan and the team have been doing an incredible job over the last three or four years, I'd say, in terms of the mindset, but also the partnership and the way that we work with different parts of the organisation.

One of the things that Harvard have recognised is it's not just about the technology or the investment. It's about culture, and it's about the way the organisation works together to deliver customer outcomes. And I think for me, that's probably the standard of my experience working here at CommBank. It's that when people genuinely believe that we can make a difference for the lives or the experiences of the customers that we serve, the different parts of the organisation come together, and we'll bust through walls to make that happen.

Sam DOWNING: And Andrew, I know something else that you're passionate about is people who want to learn new skills. Data and analytics is obviously a very fast growing area. So what advice do you have for people trying to get into this field, and make the move or expand into it?

Andrew MCMULLAN: One of the things that we have, we like to talk about a learning culture. There's nothing more exciting than coming to work every day and feeling that you're learning new things, you're developing, you're challenging yourself, almost at times to feel uncomfortable.

Dan and I, we spend quite a lot of time trying to understand what's the trends in the industry, what's going on, and machine-learning, AI, what companies are doing. Thinking about the H2O partnership as an example, we've been

scouring the world literally to just understand who's doing what, and how do we then challenge ourselves to bring some of the best things that exist globally to our customers here in Australia.

Sam DOWNING: And Dan, would you like to add to that answer about the importance of learning new skills, and what people who want to crack into this field should bring?

Dan JERMYN: Yes, I mean, I think it's a great question to ask me, because my job didn't exist not all that long ago. The idea that there would be big teams of people looking at AI and machine-learning in an institution like Commonwealth Bank, 10 years ago, was probably unthinkable.

And so to get there, you have to adapt, learn as you go, and be open and inclusive, and try to add new skills to your arsenal, but also be able to work with others who are experts in fields that you are not, and be willing to learn from them, and open and humble to know when to call on the expertise of others.

But also be confident about the value that you can bring into any given situation. If you think about the composition of our team, I think there's around 10% of people who started their careers in CommBank on the front line, serving customers in branch, on call centres. And they've got a unique perspective about what it is to serve a customer, different types of customers, and how some of the technological solutions that we bring might be presented by our staff, or interpreted by a customer. And that allows us to produce better outcomes than would otherwise be the case.

So everybody's got their own unique skill set and experience to bring into a situation. Harness those, and be open about the things that are perhaps missing on your development path, and there are lots of opportunities to learn and grow there as well.

Sam DOWNING: And to wrap up, I wanted to ask you both for a bit of a look ahead. Obviously, 2021 has been a big year. What do you think 2022 holds, and how that year is going to look?

Andrew MCMULLAN: Sam, one of the things that were super excited about, if we look forward even over the next 12 months, the partnership with H2O, how we really bring that partnership to life for our customers. I mean, you mentioned earlier a lot of the partners that we've announced in the last 12 months, which is like Klarna, Little Birdie, Karta, More, Different, et cetera, Amber. if you think about the different offerings we can now provide to our customers, we just want to make sure that at a personal level we give you the best recommendations and the best experiences for you as an individual.

And if that's some discounts for shopping, we want to make sure that they're relevant to you based on where you like to shop, and that you feel you get a really great value exchange from the organisation because of the relationship you have with us. That's going to be a big focus for myself, Dan, and the team, to work with H2O to be really personal and improve the experiences that we deliver for our customers.

Sam DOWNING: And Dan?

Dan JERMYN: Yes, I think for me, the really incredibly exciting thing is the conditions that we have here now. So we've talked about access to genuinely world class talent. We have a world class data asset. We have an unbelievable unique position within Australia in terms of the number of customers who choose to bank with us, and the proportion of what's

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going on in Australia that we are able to analyse and understand. And when that's driven by a really great purpose, to create a brighter future for everybody, you can bring something incredible from bringing those assets together.

So if you think about it, we have an opportunity to change the game in things like climate, sustainability, financial wellbeing for all. And we have an opportunity to do that at scale through the customer engagement engine that has not been possible until now. And these are the things that are going to be incredibly exciting as we start to deliver those for our customers and communities, and the nation at large over the next year or so.

Sam DOWNING: Dan, Andrew, I think that data and analytics is such a compelling area for the Bank. So I thank you both for your time today to talk about it with me. '

Andrew MCMULLAN: Thank you very much for having us, Sam.

Dan JERMYN: Thanks Sam. It's been a pleasure.

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