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TRANSCRIPT OF PROCEEDINGS

Maximising Value from Data: Navigating the Opportunities and Challenges

Half-Day Conference

Gandel Hall, National Gallery of Australia

17 OCTOBER 2019

Transcript 3: Session Two

Jill Charker: I'm going to join the panel as before at the table, and I'm going to ask each panellist, give each of you an opportunity to introduce your point of view from a private sector perspective on these matters. David, can I start with you?

David Masters: Sure. Thanks, Jill. Look, as Jill introduced my role, I head up our public policy team here in Australia and engage quite heavily with a number of you. The key thing for us, I guess, we're seeing a lot happening from a public policy point of view around data. Obviously, as we move towards AI being more readily adopted around economies in the world, there's only consideration of the societal and economic impacts of that, and so that's a core consideration for us. For us as a company, in particular, data is really critical to what we do at a variety of levels. We use data as part of our decision making, we build tools and services that others use to manage data and to drive insights from that.

David Masters: It's very critical to what we do, so we see it as a very core component of our engagement with government, our engagement with regulators, and decision makers. The key thing that happens, I guess, around data over the last probably five to 10 years is the economics have shifted. Prior, managing large datasets was expensive, it was complicated, there wasn't a lot of off-the-shelf served technology to enable you to do that. What you tended to find was the data set within silos. Increasingly because that those economics have shifted because of utility computing, because of cloud services, we've seen this massive shift to be able to have these huge data structures that you can then drive pretty massive insights from. The challenge that comes from that is there's a need for transparency about where the data has come from, who has given the data, what consent's been driven from that.

David Masters: There's a whole bunch of regulatory considerations that do come around that. I think there's also some challenges that flow from that because if you're relying on large datasets to make decisions, you can kind of buy into the fact that those decisions must be more accurate because the data in essence is more accurate. That tends to miss that, that sometimes there are biases inherent in datasets. To give you an example of where we've seen that play out for Microsoft itself. When we rolled out Windows 10, it was the first, I guess, crowdsourced operating system that we'd developed. We had about seven million insiders who were providing us direct feedback on early releases. One of the things that we learned through that process is those seven million users, while a large number, tended to be biased in a certain direction. They tended to represent a certain part of the community, not surprisingly when you think about it.

David Masters: But because we were getting all that feedback, all that telemetry data, it tended to create this perception bias, I guess, that we were getting amazing feedback from our users, and therefore, we were heading in the right direction. When we launched Windows 10, we did find some issues as a consequence by not listening to the broadest possible communion. I think as Jill mentioned, I do all of our accessibility work and we had some significant issues around accessibility, which I'm pleased to say we've rectified, and we've gone a long way past that. But when you do have those feedback mechanisms in place, unless you inherently

recognise the biases that are there and associated with those datasets, you can drive decision making that may not be appropriate or may not be correct.

David Masters: The other one that's really, I guess, a key point of debate globally is around things like facial recognition and AI systems. One of the things that's been acknowledged by the technology sectors is that potentially all of the AI models that have been developed on databases around facial recognition may not necessarily be as good at recognising faces of different races and ethnicities, which does cause challenges. We have certainly raised some concerns around using facial recognition in real-time law enforcement, for example, because there are challenges that come from false positives. Because the datasets for certain minorities may not be as accurate as they are for white males, for example. I guess, there's a complex set of issues that are emerging around data.

David Masters: There's a significant amount of opportunities. We certainly see that data is allowing us to make faster, better decisions because we can get greater insight in real-time. But there are also things that need to be considered both by corporations, societies, and governments in terms of how that data is being used and the decisions that are being driven from that.

Jill Charker: Thanks a lot, David. Adam, over to you.

Adam Gregory: Thank you and thank you for having me here this morning. I suppose just to provide a bit of context about maybe why me being here is relevant is just to give you a backdrop to what LinkedIn actually does. Because whilst we have many millions of members here in Australia, it's not to say that everyone in this room understands the full aspects of what we do. I see ourselves in this context as really the curators of the data that governments, policymakers, companies, such as David and Alex's could actually use. As the world's largest professional network, we have a vision to create economic opportunity for the workforce, every member of the global workforce. To do that, we need the activity on our site, and with that comes really the landscape under which we operate, which is we currently have 654 million members around the world.

Adam Gregory: We have a representation digitally of all the companies that it worked for. We have a digital representation of all the jobs that are available at those companies. We have a digital representation of the skills that are required to do the jobs at those companies, and we have the educational and vocational training establishments where you can acquire those skills. With that in mind, what that gives us is billions and billions of data points as people forge their career pathways, the skills they've acquired, how they've acquired them, how that's enabled them to move through their career into certain companies. There's a huge amount of rich data that that gives us, which we believe can be utilised in the public and private sector to make better decisions. That's where we really see that the opportunity lies. That's where we believe that with the data doesn't come the answers but with the insight that the data can provide, you can make a quicker, better, and more longer-term decisions.

Adam Gregory: I see that there's a tremendous opportunity here in Australia. We've been doing some very interesting projects around the world with policymakers and with companies that I think, as I say, a great opportunity for us to do here. As the custodians of the data, it's upon us to make sure that the integrity of the data is absolute and that we can provide as many data points and access points for our members to continue to provide that rich data platform for use in both the public and the private sector.

Jill Charker: Thanks a lot, Adam, and Alex over to you.

Alex Burton: Thank you. it feels like my resume was read out, so I probably should have said a bit of brief. I'll tell you a little bit about what I do, and my team does. I run the retail data office, which has data, analytics, strategy in it, it has data governance, it has data transformation for how we change our practitioners across the retail bank and what they do, and I also have data delivery and a BI team. I've got a reasonably large team, and from this morning's effort, I would be here and because I've seen that that's one of the things a lot of the audience lacks. I think in having the investment in the analytics community that can use data and analytics really well.

Alex Burton: I was at a recent all hands for data practitioners across the whole of CBA and they were over 3000 of us that were in some way in the data and analytics chain. CBA a long time ago realised the benefit we could be making from our data and how we can actually turn that into a benefit for both the bank and our customers. It was just a little bit of a contrast from this morning's effort and some of the questions around how do you turn the value or see the value and make that business case? I think you can look to the private sector for how you can make some of those conversations happen. As I was driving down this morning, and it was quite a nice drive, I must say when the dawn comes up and you're driving through the country, it's really nice.

Alex Burton: I was thinking about a story I could tell, and something dawned on me that happened to me a few years ago when I was trying to upgrade my internet. It was with one of the telcos, I won't say which one, but I rang them up and I was basically saying, "I want to get a faster link, can I get one?" They're like, "Yep, sure, identify yourself." I did, I gave them my name, my address, my date of birth, etc., etc. and they said, "We can't verify." I'm like, "What do you mean?" I'm like so I gave it again and they were like, "No, it doesn't match our data, sorry." I went through about 20 calls trying to do this with them. Each time it was like, "No, no, can't verify you." They couldn't see on the other end what was wrong, and they weren't allowed to give it to me because of the privacy legislation.

Alex Burton: Eventually, I found a bill and on my bill, it actually had street spelled with three Es, that's why I couldn't actually identify myself. Eventually, it's like, yes, spell street with three Es and see if it matches. Great, got my faster internet. Some of the privacy legislation and things that we encounter every day and we have to meet can also be this barrier to customer experience and also innovation. As we move through some of the things it's always mindful about what are we creating and what did we really mean to happen with these things? I thought I'd talk

about a couple of the ways we're using data and analytics inside CBA as well. The area I work in is generally looking at how we can use data and analytics to work on the financial well-being of our customers and communities.

Alex Burton: We've got a number of things that, well, first of all, we got a lot of data and we got a lot of people to work on it. But the ways we use that is things like we've got in the mobile app where we've got a thing called Benefits Finder. I don't know whether anyone in the room has been involved with the Benefits Finder with CBA, but what it is, is something that looks across a whole bunch of the government agencies looking for what benefits, rebates, refunds, and unclaimed money, etc., etc., that we can find. We've had over 800,000 customers already opt in to use this and they can go into their app, basically, go, "Yep, I'm consenting to look for benefits," and then it will list over 170 benefits across all the different jurisdictions and there are over 20 of them that are national benefits.

Alex Burton: So over 190 benefits that they can help our customers get back out to your agencies to retrieve. That's one of our ways that we can use both our customer data, some of the transactional data to see what they've been doing but also we take some of the feeds from some of your agencies as well and bring that in with consent to do it. We also do alerts, so I don't know, again, there's probably about a third of you who are customers of CBA in the room. If you've ever used the app and you've got your alerts telling you that your credit card fee is due, or that you've got an upcoming bill coming or you've been overdrawn, all those things are data and analytics behind the scenes running and then being actionable and alerting to the customer. That we can actually help them save some money and, again, help them save on fees.

Alex Burton: This year alone we've saved over $60 million in fees by doing that for our customers. Shameless plug, if you are our customer, you can open up the app now. You can go into the menu and you can see Benefit Finder down there and then the alerts are under security settings, under notifications. Thanks for that. One of the other things we do is we work for a lot of the agencies, a lot of the not-for-profits and government agencies out there with no hell and volunteering. Actually, we just recently worked with the Red Cross on a hackathon on how we can get people to turn up to appointments in the first instance, and then also, how can we actually work out how do we get a first time donor to come back a second time or a third time, etc., etc. Some of our data scientists and business intelligence people went out and actually worked on that and I think we had some reasonably good results out of it.

Alex Burton: We've done that with some other not-for-profit agencies as well. If you're interested in that, give us a call afterwards. We've also got a couple of other things, and hopefully, I'm not talking for too long. We also use those alerts for when there are things like natural disasters. If there's a flood, a fire, or something like that, we can look at where a customer is, their location, and we can actually like... if they walk into a branch or call a call centre, we can make sure that the staff member that's serving them is just mindful that they're going through this problem in a natural disaster. In some instances, we can also have a conversation with them about do they need to have some kind of relief on their homeland

payments, or something else like that. We use it for quite a few things, the data and analytics, and we've been using it and turning into actions for quite some time.

Alex Burton: But these kinds of services aren't always easy to do. There's definitely some challenges in how we do them. Unlike what we've heard a little bit earlier, it's really about investment, it's really about do we have the data, or do we have the skill. It's almost always about do we have the legislation, can we do it, and also should we do it? What's the ethical nature of what we're doing? We've seen, both in Australia and other parts of worlds, things like the GDPR's coming in, the general data rights. All the legislation is lifting up to make sure that we protect our customer's data and any individual's as well. It's not just customers, so its staff, it's everyone else. While that's been happening, AI's has been coming up as well. It's like there's almost this, not quite an arms race, but it's like all these new techniques that we can apply and all these harder rules about can we apply them or not?

Alex Burton: We always have these almost moral debates, which we spoke about a little earlier about whether we can do it or not. We actually have a pub test, I would call it, which is basically, can we do something? Does the legislation allow it? Then we have the should we do it piece as well. Because, particularly, in banking at the moment, it's all about trust and with what's been happening over the last couple of years, meeting community expectations is super important as well. We look at something and say as we apply data and analytics to it, if we told somebody in a pub that we were doing this, would they be okay with it? If we don't think they'd be okay with it, we won't do it. I know Marion's spoke about that a little earlier as well.

Alex Burton: I'm going to talk about a live example we've got right now. We're doing some integrations with a government agency right now around deceased customers. We're trying to work out whether we can find a service that allows us to see whether a customers is deceased or not, because that's one of the issues we have with the bank. Is getting the information in a timely manner and acting appropriately off the back of that. We've been working through them and usually these things work by either washing a customer list with the agency in question or they send us a feed, and we wash it against our customers. Now, the privacy concerns around that mean that although deceased customers aren't covered under the Privacy Act, we have real life customers. If we match one with them or something else that goes a bit wrong, there are privacy implications with that.

Alex Burton: It's quite a tricky place to be. We're trying to do something that helps us do the right thing but is quite a tricky place to deal with. There are techniques where we can hash customer details and not actually expose the personal information directly and do a comparison. But if I was in a system called Alex and, in another system, called Alexander and we try and put those two things together with a hash, you won't get a match. Whereas, we would probably want something a bit more like a score that says it's probably him. I would just say as we work through today, or not today, but in general as you're working through providing services to each other and to other organisations, that you think about how are we going

to apply those services and how we going to make them useful with the privacy and legislation context around it. That's probably enough from me.

Jill Charker: Thanks Alex, that's really helpful background. I wonder if it might be helpful, we have a few minutes, of course, as you know of panel discussion, about 15 minutes or so, and then we'll open it up again as per earlier today to audience questions. Again, if you've got things that are bubbling away, make a note of them and we'll come back soon. Just to start, I guess, really high level really broadly, each of you clearly interacts with government. Your companies and you personally, probably, interact with government in different ways. Some of those interactions, as Alex has just spoken about, are literally in the content of the data, trying to arrange access or washing it with government data sets, etc.

Jill Charker: Others may be in Microsoft land might be around providing applications, hosting information, which is likely to be really important, and certainly in the LinkedIn space, many of us in this room are probably very active users and consumers of LinkedIn. But also, the data LinkedIn holds may offer enormous potential for some government programmes, and I'm thinking around employment services, education, etc. Interesting to get your perspective on what you feel is the state of engagement between, as a general whole, the private sector and government on all things data? Managing regulations related to data access and privacy that has been touched on, whether you think there's opportunities for stronger engagement or areas which would lend themselves to more engagement between the private sector and government? I'm not sure who'd like to kick us off with general perceptions on some of those issues in the abroad. David, did you want to...

David Masters: I'll have to start, and we'll move down the-

Jill Charker: We'll work down the row.

David Masters: That's fine. Look, I think there's actually generally pretty good engagement. I think there's some challenges just, I think, it's a language thing. I think quite often what you'll find the federal government operates in certain rules and requirements and that has certain language around it, and we operate as a global organisation at a global level, which again, we have certain ways of talking about things. Sometimes it's actually just a really simple point of actually getting in a room and understanding that both sides talking about the same thing. Just in very different ways and coming in from a different perspective. I think there's often a tendency in the federal public service to think that it's a fairly unique organisation, and that the challenges they're facing are also quite unique and there's unique circumstances.

David Masters: Generally, we find because we operate globally that most of the challenges that exist here are elsewhere. I think it's being open to that discussion to say, "Well, look, if there's certain rules here that apply around how data is managed and supported, there's certain requirements around how data is managed from depending on which classification it sits at." What we have to do to operate as a global organisation, we tend to basically operate as meta set of standards.

Whatever the gold standard is operating globally, and Alex mentioned GDPR, that's kind of what we have to do to operate in that global environment.

David Masters: In some respects, it's basically taking some of those global requirements that we have and those global controls that we build into our systems and then interpreting them into a way that demonstrate how they comply with certain information security manual or whatever requirement it might be within the federal jurisdiction. I think a lot of where we see the best outcomes is just sitting down and having very honest frank conversations, usually, behind closed doors, and you can usually work those things through.

Jill Charker: Thanks, David. Do you have any-

Adam Gregory: I think, as I said before, as a custodian of data then, we are ultimately responsible to make sure that we're complying in every possible way with local law, state law, government law, whatever it may be. But I think where the opportunity really lies and where we work with governments, I think, that there's a great deal more we could probably do. An example of where we've done it outside of Australia as pertains particularly to human capital because that's really where the data set lies. Is where in Singapore, for example, we shared some data, based on the hypothesis that the ministry of manpower had that managers and above in the top one or 2000 companies in Singapore, those roles were populated almost exclusively by people that were educated overseas.

Adam Gregory: As the government thinks about the future state, as it thinks about how it's going to provide employment for the people that are educated in Singapore, there was a big concern that the businesses were all being run by international individuals and that there wasn't going to be an obvious career pathway within Singapore. They use that data to provide a subsidy to have people from Singapore educated overseas and come back and hopefully thinking about future proofing their business. Another example is in the United States, in Detroit, the automotive industries almost non-existent now but there's a huge population with a certain set of skills. Again, overlaying our data about where opportunity exists, where skills shortages are, the state governments and the federal government in the US is able to redeploy huge chunks of population into other states where there is a skill shortage. Rather than investing in reskilling people within that state.

Adam Gregory: There's lots and lots of other examples of that, how I think that if we think about the relatively granular challenges that a state or any public organisation or private organisation as well, what their objectives are and what they're looking to achieve with data and our ability to look at reskilling through our learning platform, for example, that population into those areas. Then I think there's a tremendous amount we could do. We also have a global map. As industries emerge, as technology disrupts, we've all heard about automation, artificial intelligence, etc, which is displacing jobs to a great extent. We need to think more about what are the emerging technologies, what are the emerging industries that Australia is going to be reliant on for growth in years to come? What are the career pathways and the education pathways that we need to start thinking about now so that we

can actually provide local talent into those industries and Australia can thrive rather than needing to import it?

Adam Gregory: I spent two years recently in Hong Kong with LinkedIn, and the traditional fin services industries in Hong Kong, which are still very strong, but the fintech and healthcare tech and InsureTech, all those industries, they rely on a completely different set of skills. They're having to import hundreds and hundreds and thousands of people every year to enable Hong Kong as an economy to continue to thrive into the future. That's just a small example I think of a number of ways where we could work a lot better with the Australian government, to give it a broad umbrella, to start solving challenges that we face today as pertains to human capital and then looking much longer term.

Jill Charker: That's great. Thanks, Adam. Alex, did you want to add anything? No?

Alex Burton: Yeah, sure. Obviously, I spoke about the Benefits Finder earlier and how we've been working with some of the government agencies on that. But, obviously, CBA has a very rich data asset around transactions where people are spending, where are they living? What are they spending it on? Where do they work? What are they doing? What are their habits? All these sorts of thing. That can be pretty useful for working out where do you want to put services? What are people going to be doing in those things? Do you need a shopping centre there? Do you not need a shopping centre there? Those sorts of things. Now, I'm in the retail bank, so I don't really handle those conversations with the government areas.

Alex Burton: But the data assets and the assets and the asks we get from some of our other areas within our own bank to start working with agencies is usually centred around how do we aggregate some of this information up into a level where it's shareable with different organisations and what we can do with that data.

Jill Charker: Great. Thanks a lot, Alex. Just I wanted to also pick up actually where you left off, Alex, earlier. You were talking about this really interesting problem about can we versus should we. Often data, and particularly, new analytic technologies gives the capacity, at least, in the can we to do a whole lot of a stuff with a whole lot of data that we haven't been able to do before. Draw potentially very different insights or create observations about groups of people, groups of consumers that just haven't been possible before. And yet you noted that just being able to do something is not necessarily the same as saying we should do it. We've been talking a bit this morning about trying to balance this up against ethics around social licence. I'd be really interested to get a sense from you as private sector colleagues here this morning on your take on social/Community licence?

Jill Charker: We clearly have a view in a government environment about what we interpret that to mean in this application around data and use of data. It'll be really interested to get a sense of how you think about that term, how you factor it into decision making about new products, new directions in your service delivery, etc. I wonder if I might go back down this end the table again, David? If you've got a view on that, and we'll work our way back to Alex, I think.

David Masters: I think the first point to make is that this is a very fluid environment and so I think if you're looking at trying to have hard and fast rules, they're less likely to fit every situation that emerges. A little bit back to Alex's point about the pub test, the sniff test. We have governance structures around, particularly around use of AI. As we do research and development, as we work with customers about those use case scenarios, we have a set of principles that generally apply across those. But we often find things that just sit outside of those. You need to have frameworks that allow for that consideration and allow for really quite robust internal debates that become quite philosophical, to be honest with you. We are in the world of Asimov, and it sounds trite to say that, but it's actually quite true.

David Masters: The conversations that are happening inside of our organisation are philosophical. You need to have that ability to have, I guess, get a set of guiding principles that allow you to know what's the right behaviour that we're trying to foster here? What are the types of behaviours that we're not comfortable with? Then be flexible enough to deal with the things that sit outside of those.

Jill Charker: Thanks, David. Adam, did you want to add on to that?

Adam Gregory: Yeah, I think the pub test is valid for us as anything else. We talk about it as members first. If something isn't in the best interest of our member, then we would never do it. Without our member, we have nothing. I should also point out that our data is actually owned by the member. Everything that is on LinkedIn, as the member you own it, you can remove it, it doesn't stay there if you don't put it there and keep it there. What we use in terms of a lot of our data is inferred data. We're aggregating groups of people by geography, by industry, by education, by propensity to read certain articles. It's not about the individual. It's absolutely critical because without the member we have nothing, and so we have to keep that at the front of mind for everything that we do. Yeah, our version of the pub test is in the best interest of the individual member. If it's not, then we'd never even consider doing it.

Jill Charker: Thanks, Adam. This pub is getting better use this morning, isn't it? I'm wondering which pub we're talking about but, Alex, over to you.

Alex Burton: Yeah, look, I'll take it past the pub test because once you've made the decision that you should or shouldn't be doing something, if you are going to do it. There's a lot of different techniques out there now that you've got AI, you've got machine learning, some of it is effectively explainable and some of its much less explainable. Whenever we deal with a customer decision, we make sure that we use the explainable version of AI so that we can, A, check that if a customer asks why was this decision made about me? Why was this score, why, you know, etc., etc., why did I get this credit things? And also coming in GDPR as well to be able to explain this. We can actually do that. We can actually explain the decision, we can stand up and say this happened because of that.

Alex Burton: That also allows us to make sure that there's no bias creeping into the models because we can actually see it. We can make sure that we're not starting to make a decision that is biasing a certain ethnic group or something else or is actually

starting to disadvantage a customer in some way. So that transparency into what's happening in that model is what we make sure we do whenever we're touching round the customer area. Over on the other side, you've got the deep learning, you've got the opaque models coming up that are way more sophisticated and they're not being used that much yet, but they're getting there, they're getting more and more there. Where you might use them for other purposes that you don't have to explain as much. An example might be how much cash do we keep in a branch across our network?

Alex Burton: Just trying to work out how to optimise something or our actual computer networks. Have we got hotspots in one area or something and can we monitor that with some more sophisticated AI that just says, "Hey, look at that." It doesn't tell me why to look at that, but it tells me just go and look at that. I think once you get past the can we, should we pub test piece, it's then, "Okay, I've got an implemented something now, how do I make sure it's doing what was expected as well?" And continuing that onwards. I would say that's the next step after that.

Jill Charker: I wonder too if we could just look at this theme around capability just to move there for a minute. There's been, through discussions this morning, really a lot of commentary about trying to build capability in data analytics, particularly, trying to keep abreast of new techniques etc. and technology as it enables some new techniques to be applied with larger and larger scale of data. Whilst we have acknowledged, I think, this morning the important role of a bunch of disciplines to be brought together, there is unquestionably that piece of that core capability in interrogating, manipulating, and getting insights from data, which is fundamental.

Jill Charker: I might start with Adam, I'm really interested in each of your views about what do you do within your organisations to build, to maintain that high end capability? Do you grow it? Do you buy it? How do you maintain, especially, that translation pace between pure data analytics capability and the deep understanding of the business to which those skills need to be applied?

Adam Gregory: Yeah, it's the build borrow or buy type of decision that we make and is it going to be a long term part of our business, and therefore, we're going to build the capabilities. It's something that we need that's going to help move the needle or accelerate something, and you make the decisions based on that. I think that the big thing that we focus on is around resource allocation. As I said, we have as... of course, these guys' companies do billions and billions of data points, but a lot of the data is really unstructured and not really worth working with or applying any resources to. Because the outcome's not necessarily going to justify it. We look to scale our business in the right areas, in the right way, but we start with resource allocation rather than just growing for the sake of growing.

Adam Gregory: Because you can get bogged down in data and trying to structure data that is really never going to glean any material benefit. I was at an event yesterday, and an independent consultant who's been working with a lot of other companies, and I'd be keen to hear your guys opinion on this, is he was talking about that, typically, companies that are very, very strong in terms of data, data analytics, and

using it, use about 20% of the data that's available to them. Because the rest is just unstructured and you can get down into a quagmire of trying to make it valuable when ultimately it won't ever be. For us, it's about resource allocation, it's about is it going to provide long term benefit to our members? Obviously, from a commercial standpoint, long term benefit for us as a business. If we're prioritising, then we're trying to allocate with the resources we have rather than just simply growth for the sake of growth.

Jill Charker: Thanks, Adam. Alex, did you want to comment on that one?

Alex Burton: I want to start with resources and how we grow it. I'm not sure whether LinkedIn is a help or a hindrance in this area. Because we're constantly trying to hang on to our... tick up the high end of our data scientists. Sydney's a small market for data people at the moment and finding resources and keeping them is quite a struggle. We do a lot of partnerships with universities as well to try and make sure that we have the stream of people coming through. It's one way that we try and keep the talent fresh and keep it coming through. But, yeah, otherwise the buy rent kind of thing. It is there as well, so coming back to your question however about how much data do we have versus do we use? On our big data platform, we've probably got something like around, I don't know, 100,000, 150,000 fields, columns of unstructured data from all our systems. That's not counting the truly unstructured data.

Alex Burton: If I look at what something like customer engagement engine that we use to engage with all our customers, it's using about 1500 pieces of data on each customer. You don't use everything in the data swamp, so to speak of, absolutely. It gets used for other purposes, absolutely, but I would say there's that subset of data that is super important to what you're using and the rest is almost trivial.

Jill Charker: Thank Alex. David, did you want to add to that as well?

David Masters: Yeah, sure. Look, I think to both Adam and Alex's points, there is a real global arms race for the data specialists, and particularly, high end data scientists, they're just very much in short supply, and unfortunately, I guess the universities system, particularly, Australia will only produce so many. A lot of those skill sets, Australia is going to have to rely on skills from elsewhere or rely on international expertise, in some respects. Then when you extend that to say, artificial intelligence, machine learning, engineers and scientists, that's an even smaller pool. Increasingly, it's organisations like ourselves that are finding that we've got the critical mass in those skill sets. A lot of focus from the industry is about trying to democratise these tools to make it more accessible.

David Masters: Our CEO talks about democratising AI, making it as accessible so that the tool sets to drive insights are available to people that can be trained relatively quickly. Because I think that's the only way we're going to meet the coming growing insatiable need to analyse and manage datasets. Increasingly, we're looking at using things like LinkedIn learning and our own vendor certifications to train people up on our platforms. I also sit on the Industry Reference Committee, which looks after the VET qualifications in the IT space. So we're increasingly looking at

how to use the VET system to drive that competency as well. Just because it can be a bit more responsive to industry requirements and the growing need.

Jill Charker: Thanks, David. We've got an opportunity, again, for Q&A from the audience here. If you do have a question, please raise your hand as per before, and if it is your turn to ask a question, really helpful if you could state again, your name, where you're from. If there's a particular panel member you wanted to direct your question to. Is there anyone who's got a question or comment? You got a wonderful opportunity. Yep, right down the back and then I'll come to the gentleman in the middle second.

Speaker 5: Thank you very much. My name is Shay, and I'm with the Department of Prime Minister and Cabinet. I work in behavioural economics and I was just wondering against the backdrop of the consumer data right, do you think there's potential in enabling customers to learn more about themselves through their interaction with your products? And if so, how?

David Masters: I can start. I think everyone's looking at me, so I'll start. I think, look, regulation has an impact because regulation drives awareness. I think it's interesting to see... I think the jury's still out in terms of the impact of say, the GDPR and some of those data rights that sit underneath that and the impact that's had on consumer behaviour. Certainly, had a lot of impact on governmental behaviour in Europe but probably less so. I think it's really been quite interesting because I think people have been waiting for this tipping point in privacy and a lot of people thought the Cambridge Analytica was that big tipping point and that we would see consumer behaviour change quite dramatically in the use of social media. Really the evidence doesn't point to that.

David Masters: I think there's a growing comfort amongst probably a younger generation of the use of their data in certain things, if there's a benefit they can see from their transaction. But, increasingly, also, there's a tension in the system where there's a requirement, both from a governmental perspective. But I think also consumers are becoming more savvy in that they look for how is that data being used? Who is it being shared with? And wanting to know and understand that with a little more detail. I don't think that was a very clear answer to the question, but I think there's a bit of both.

Alex Burton: Yeah, I just kind of add to that. We're obviously looking at our customer's data to try and coach them into being better financially literacy sort of thing. Part of those alerts telling you you've got to build, telling you've got a repayment coming up, all those sorts of things are around trying to coach the customer into being better with their money. I would say that we were doing a lot of work in there and we've done some work with one of the universities around having a financial well being index as well. Where we can look across a number of different metrics, both from what the data tells us, but also the customer can answer in a survey on that. We can actually compare the two together and actually give that back to the customer to say, "Well, come on, you said you were really good but actually the data says, you're not."

Alex Burton: It's obviously an interesting topic because some people don't like being told that they're not very good at things but it is one of the things we're doing to try and help our customers be better with their money.

Adam Gregory: We have a specific example of that, I think, that when, if you go to LinkedIn and you apply for a job, we can immediately tell you what percentile you're in, in terms of your likelihood to be in that sort of job category. We then can immediately use a recommendation engine to say, "Well, people in this job typically have run these courses, have these qualifications, and we can recommend courses for them to go and do. In terms of like data just creating awareness of maybe where someone is in their career and their expectations, I think we can give a really positive experience based on data as to helping them take that next step in a material way rather than just hoping.

Alex Burton: Thank you. Now we had a question in the middle. We'll just get you a mic and if you could just stand and introduce yourself that would be great. Thank you.

Simon Knapp: Simon Knapp from Data61. At the moment, DEP's personally penning up some legislation about data sharing and it's excluding interactions on sharing arrangements between the private sector and the public sector as I understand it, or that's what's in the discussion paper anyway. I'd be interested, firstly, in what sharing do you guys see could happen between the public and the government? You've talked about examples of where services could be but it could go beyond that. The records that you have wouldn't allow people to be observed between transitions from education or all the unemployment systems into the workforce and all that. Yeah, so what are your feelings about the extent of that software sharing which could go on? Secondly, what are the implications of being excluded from that sharing in the first case?

Adam Gregory: Was that directed at me? I can't see where you're looking, I just want to make sure.

Alex Burton: I think you're referring to open data. Obviously, the banks are going first in the open data piece and we're looking to share or being told with customer consent that we can share our data with other providers that are in the sharing regime. Where that ends up, I believe telcos are coming next and a few other industries are being targeted for where we go with data sharing, with data rights further down. What we can do with it, I guess, is start putting together some of those datasets and offer services that we couldn't do before. We start putting together telco data with banking data, what can we do with that? Can we look at better habits? Can we help you out more?

Alex Burton: There's obviously the competition part of it as well, which I think is one of the reasons that it was brought it. So that people's data is more portable, and they can take it to another institution that has a similar kind of data sharing.

Jill Charker: The data sharing and release legislation.

Alex Burton: I don't know all of the details on all the access, unfortunately.

David Masters: Look, you got to start from premise that the data sharing between governments and the private sector has been going on for a long time. If you look at most people would have Google Maps on their phones and that's a consequence of public data being shared with the private sector entity. I think where we're going is a little bit deeper in terms of somewhere where they're sharing and there obviously needs to be clear guidelines and rules. Which obviously having legislation around that is important, and then having governance over the top of that because there are certain circumstances where we'll be quite comfortable with that data being shared and that we have the circumstances where we might have some concerns. I think if you look at the sharing of data between the welfare system and the financial services system, there's already some rules around that.

David Masters: Again, that will be defined as we go forward. I think also there needs to be clear consent in the process as well. People need to understand where that data might be used and who it might be given to and where appropriate should be identified if that consent hasn't been given so that there can be aggregation. Because I think we still want to drive insights and we still want to drive value from that data, but as long as the rules around it, the governance around it is appropriate, then I don't see it being a messy problem.

Jill Charker: Questions. Philip's got one and was there someone else? No, I'm imagining things. Philip, over to you.

Phillip: Hello, it's actually just a follow on from that question. I just wanted to make a point of clarification. The data sharing and release legislation will actually allow for sharing between the commercial sector and the government provided that a purpose test has been met. So then quite deliberate not to roll out particular sectors from involvement with this legislation. We've had people from universities talking to us today about the value of the research sector, but often the research sector is working hand in hand with the commercial sector and sometimes with the government sector. We've actually taken quite a deliberate approach not to delineate who can participate in our legislation based on which sector they belong to, rather based on the purpose that they're using the data for.

Jill Charker: That's really helpful. Thanks a lot, Philip. Other questions or comments? From the floor, just over to my left. Yep, mic's coming behind you.

Speaker 8: Good morning, my name is Tegan McNaulty from the Department of Industry, Innovation and Science. Could you comment, I guess each of you in turn, perhaps, on the state of the data culture in your organisations, and whether you're doing anything to say, boost data culture outside of your specialist areas, which obviously are quite well developed?

Jill Charker: Who'd like to kick off? Alex, did you want to give us one?

Alex Burton: Yeah, I'll start with that one. We've obviously been using data for a long time. It's almost become the drug of choice in some areas, where if you've got a report with some figures on it, you can justify almost any business case. We've gone

from that area to, "Okay, actually, now we need to concentrate a bit more on the data governance side of things and get things right as well." We paired back a little bit from everyone's got a report, therefore, I've got an answer to, "Okay, how do we get back to does the data really tell the right story? Was it built on the right foundations?" We're rebuilding a culture around looking after your data a lot more at the moment as well. Making sure we have all the controls in place to make sure that we can get the right answers out of the data as well, which we go back to the question from this morning how do you know your data is right? We're spending a lot of time and changing our culture to be able to make sure that's embedded across the entire bank.

Adam Gregory: Everyone at LinkedIn is in some way much better at using data and thinking about data than they were when they joined LinkedIn because that's how we have to manage our relationships. We're looking to have our partners make all the decisions based on data. We work very closely with our internal insights team to bring that data to life because a lot of our customers are in a very early part of their journey in terms of applying data to their businesses and how they're making decisions. We invest a lot of time in terms of training internally, understanding the power of data, the application of data, working with our insights team as well. It's relatively straightforward and high level. We're not talking about what these guys could do, but it's an important start for us because, yeah, as we advocate the application of data to make decisions, we need to be doing that ourselves.

David Masters: Yeah, and I think we're at a similar stage, I think it's evolving. We're certainly embedding data into every function that we do. Even within the function that I operate in Corporate External Legal Affairs globally, we have a data scientist team that sits within that tries to drive insights around what's happening from a regulatory policy, public policy perspective with relationships to Microsoft. We have a chief economist inside of Microsoft now, which we haven't had in the past so increasingly, we've got a very strong data culture that's on Microsoft's own use of data is in addition to the work that we do to develop tools and services and software that others used to manage data.

Jill Charker: Other questions? More perspectives, yep, we'll just try and get a microphone to you.

Ben Brady: Good morning, Ben Brady from Human Services. Probably a question directed more to Alex. I was interested in the extent to which data is being used to manage individual staff performance, and whether that's increased over time and any tensions it may have caused and how you may have worked through those?

Alex Burton: I don't think it's increased I would say. Do we use data to look at all of our business? Yes, we do. It's just a natural piece of process improvement. It's one of the key uses of data. I don't necessarily think that we... it's not the be all and end all. Certainly, we've seen times where the data has said something but you go and actually step into that space and you go, "Oh, okay, that data doesn't make sense." There's a reason why something was happening, so I would say we always take it with a grain of salt where, particularly, we have staff and people are involved with. But I would say do we look at workforce optimization of how

do we get the right number of people for call volumes into our call centres? Absolutely, that is one of the key things that we can use the deeper learning on as well to make sure that we have enough people to satisfy our customer needs at any given point in time.

Jill Charker: Maybe taking that interesting question one step further. Would any of you use some of the advanced analytics capabilities that you have or are developing on looking at your own workforce data in the broad? For example, trying to model retention turnover of particular staff, groups of capabilities? Trying to look at return on investment in, for example, L&D programmes and how that translates to promotion or performance improvement in staff. It's that whole people analytics piece, is that something that you've engaged in, in your respective organisations?

David Masters: Yeah, it's a big thing for us. I think probably more where we've seen advancement recently has been on helping people to improve their personal performance themselves. Less about, I guess, the traditional HR management style, so looking at the data and then if someone is underperforming and performance managing them and all of that. It's this certain culture and certain behaviours that we like to see from our staff. I think we had a question from the behavioural economics team, it's that kind of prompting that the data drives. Because, obviously, within Microsoft, we have everyone's within our tools working away. We can see the activity they're doing, we can see how full their calendar is. One of the things we've been trying to drive is encouraging people to take time to just think. For example, I've got a pop in my diary saying, "Look, your diary is very full this week, do you want to set aside some time for planning or for thinking?"

David Masters: It's just that prompt to encourage people to do the right thing or prompting people to take time for learning. We have a constant learning process again because we can see how people's agendas are looking. We can have those prompts and those pings that suggest, "We're going to have you set aside a couple of hours for training this week? You have some deadlines around training matching you." So less about that traditional HR performance model and more the prompts that help people to think about doing their job more effectively.

Jill Charker: Adam, what about in LinkedIn? Because I understand from having read something that one of the best predictors of someone contemplating leaving, i.e. turning over, is updating their LinkedIn profile apparently. I'm not sure if your organisation looks at some of these issues.

Adam Gregory: In terms of we recently acquired an employee engagement technology, so it's a big thing for us because it's part of that journey from our business. We plan their growth using human capital to acquire it and then to understand engagement, and then to develop it using the learning platform. We run a publisher report recently, the future of skills, and that identified that 29% of people left a job in Australia and New Zealand last year because there weren't sufficient learning and development opportunities. That's great as a retrospective stat but something that an employee engagement tool and data behind that can really get you in front of. So what are the learning pathways that they want? What are the growth

opportunities? At a company like LinkedIn, and I'm sure it's no different for people in the room here or anywhere else, people aspire to do another job, they aspire to have variety, they aspire to grow, earn more whatever it might be.

Adam Gregory: That on the job learning and having an engagement tool that can give us data behind what are the things that people are actually learning, what are the jobs that they go on and apply for? Whether it's inside LinkedIn or out of it, then that can just help us provide career pathways and growth and transformation of an individual from whatever they were doing when they joined LinkedIn to whatever they're doing today at LinkedIn or when they've left and moved on. Yeah, it's a big factor for us and, yeah, you're quite right. I think a lot of people do go to the LinkedIn profile a little bit more when they're looking. When people start adding photos, that's when you know they're really serious about looking because-

Jill Charker: Good to know.

Adam Gregory: ... if you have a photo on your profile, you're like six times more likely to have a connection request accepted or have a response from a job application. A little tip for you out there if you're job hunting.

Jill Charker: Hot Tip. Thanks a lot, Adam,. Any other questions, comments? There's one here and I'll come to you second, if that's okay, just over to my left.

Speaker 10: Thank you very much. I'm Phil Crawford from the ACT government. I'm just going back to I guess the title, which is maximising value from data for this session this morning. I'm in government, and sure it's no surprise to everyone here, I said we got more good data sitting in lots of silos, not initially being managed appropriately. Just interesting from you all three members today how you value your data assets within your organisations and how you go about actually putting a value on those data assets?

Jill Charker: Who'd like to kick off?

Adam Gregory: I can give you one example from us, we've productized it so we evaluate quite a lot because we sell it. We believe it's the way the world is going, like data is a huge resource now. As David said, the arms race for data scientists, data analytics people. We're in a fairly niche kind of part of that, a subset of that in terms of like people analytics, HR analytics. But it's just everything for us because the platform, as I said, at the beginning, the people, the jobs, the companies, the skills, that dataset and its application, whether you are an individual... my conversation with my son, say if he wants to be a vet, then well I can look at all the vets on LinkedIn, what course did they go to? What was their career pathway?

Adam Gregory: If he wants to be a CFO of an oil company, whatever it might be. For me right through to companies, right through policy makers, that data is really important, and so us using it, as I said we productized it, so we value it above all else.

Jill Charker: David, did you have a comment on that?

David Masters: Look, I think it's about knowing what data you have, and again, can we get the silos point of view. We know we have found, over time, we do have data sitting in silos that we weren't managing appropriately and weren't making the best use of. Probably the best example of that we've made a big transition on is around security and around cyber security, in particular. We've managed about 1.2 billion devices around the world, so that's Windows devices but also we have mobile management software that manages Android and iOS devices. From those devices, we get about seven trillion signals per day. Which tell us a whole bunch of stuff around how those devices are being used, but also, more importantly, threats that are emerging within those devices.

David Masters: So increasingly within our office products, we can identify what a scam email looks like and we can see that and that's popped up across a number of our users and therefore we can then add additional protections that support all of our user base. We weren't using that effectively in the past, we are more effectively using it now. That's then a valuable service that we can then provide back to our customers. It really is just thinking through what data do you have? Where are you collecting it from? Then actually having a very honest conversation about it within the company to, or within the organisation, to say how can we use that better?

Jill Charker: We just had a last question I think for time, just in the middle, we'll just grab, again, a microphone to you.

Speaker 11: Thank you, Colin Brown from the Parliamentary Budget Office. One thing that came up earlier was whether better data leads to better decisions? I think there was a question or a discussion there about biases in data. One of the things that that triggered in my mind was how we use the data and the issue of the algorithms that actually get used to process data and to provide information and make decisions. Really, it's the question of how do you QA? So quality assure the algorithms because it would seem to me that how you better use data actually depends on that pretty heavily. How do we QA the algorithms that we use for the data? Is there any benefit in greater transparency of those algorithms so that they can be open to scrutiny?

Jill Charker: Great question.

David Masters: I think that's a really challenging thing. It's a debate that's going on inside of Microsoft, and actually Alex, used the term explainable AI. There is actually a stream of discussion about explainable AI because there are some AI systems that do things which are very hard to explain. The challenge with algorithmic transparency is one where even if we were to expose the code, for example, who on, say there's regulation around our algorithmic transparency, who on the government side has the necessary skill sets to be able to interrogate that algorithm to determine what's happening there? For me, I think it comes more back to the data itself because the algorithm could only drive insights and learn from the data that it sits on top of. Increasingly, where we focus is less on the algorithm and more on the data.

David Masters: Because the data you can interrogate that, you can see whether or not there are biases inherent in that data set, whether it's representative of the community, for example, whether it skews towards a certain direction. Because then the algorithm is really only driving an outcome based on the data that's feeding into it. If it's an AI system, it's learning from that data. What we try to do is recognise those biases and then design systems that are more inclusive, that recognise that. So the decisions that are driven at the back end, which should always have a human, I should mind you. If it's in affecting a human, I think Mike has spoken about the golden rule.

David Masters: If you're making a decision based on, there should be a human making that decision not necessarily we're left to rely on the machine. Which adds that layer of governance over the top. I think the algorithmic transparency debate is a challenging one.

Alex Burton: I just I'd add to that. I think Model monitoring is something that's super important as we move into this. Again, watching the statistics to see where it heads over time because it is usually the data that changes that not the algorithm. Also, having multiple models predicting something or doing something where you can actually see where two different algorithms might actually start deviating off and comparing them and having a second way of effectively coming up with the right answer.

David Masters: One point I was going to add, just the human intuition factor, we've talked about this the pub test a lot here. Machines aren't very good at doing that sniff test. Sometimes you get a response and there's something about it that doesn't feel right, which then causes you to interrogate what happened within the system or within the data. That's actually really, really important in the current environment because machines just aren't good at doing that.

Jill Charker: Adam, did you want to add anything further to that?

David Masters: I think those guys have summed it up perfectly.

Jill Charker: Covered it. Yep, great question. In fact, great panel discussion. Thank you all three of you very much for your insights. We couldn't let the first panel go earlier today without giving them Canberra made chocolate. We would like to do the same thing for you, to give you a small gift of thanks from Jasper + Myrtle here in Canberra. Could you join with me in thanking the panel?