

Actuaries Institute Podcast

Title: RMPC takes proactive approach to tackle industry challenges - Practice Update Podcast

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Interviewer: Amanda Aitken

Speakers: Bartosz Piwcewicz

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Introduction

Amanda:

Hello, and welcome to the Actuaries Institute podcast. This episode is part of the practice update series, and we'll bring you the latest news and developments from the Institute's Data Analytics Practice Committee, also known as the DAPC. I'm Amanda Aitken, member of the DAPC. I'm joined today by Bartosz Piwcewicz, Convenor of the DAPC. In this podcast, Bartosz and I have a conversation about current trends impacting the data analytics landscape. We also talk about the many exciting ways that you can become involved in the data analytics actuarial community. So, let's get started. Hi, Bartosz!

Bartosz: Hi, Amanda.

Amanda: **Why don't you start by telling us about what's going on in the world of data analytics?**

Bartosz: There are a few themes I think really impacting the data analytic space, but really the key one is around data privacy and ethical use of data and artificial intelligence. We've seen this theme becoming stronger over the past probably 12 to 24 months, and it's certainly the outlook that the discussions are going to become more serious going forward. Some of this has probably come through the different scandals that we have seen.

Amanda: **Ah yes, the scandals.**

Bartosz: That's right. We talked about some of them a year ago, when we did do an update, a video update for the members. We talked about Facebook and Cambridge Analytica, and I guess the fallout from that scandal. Well, this time around, we have another high-profile scandal, and this one is a lot closer home, it relates to Centrelink robo-debt advice.

Amanda: That's the one where debt notices were going out, and telling people they had a debt to Centrelink?

Bartosz: That's right. In some cases, ending up in courts, and the whole program got stopped. There's certainly a lot of conversation on the back of this. And I think there are some consequences that we'll still see flowing through, wider than just the robo-debt piece.

Amanda: Right, and I imagine that companies and governments around the world must be looking for ways to try to stop these scandals from happening going forward. So, what are some of the measures that governments are taking, to try to reduce the risk of these scandals occurring again?

Bartosz: So, the measures are different between different countries, and it's also government sector versus the private sector, the conversations have a different level of advancement in that sense. But locally, on the back of the robo-debt scandal, we've seen the Australian Human Rights Commission issuing a discussion paper on human rights and technology a few months ago. The Institute has responded to that, and our response was led by Chris Dolman, a member of the Data Analytics Practice Committee, with really good paper, good arguments and discussion and also some suggestions for the commission to consider.

Amanda: Chris had the suggestion within that submission that we really need to think carefully about how do we measure whether indirect discrimination is occurring if we're not actually allowed to collect data about discriminatory factors so, really interesting question that he raises.

Bartosz: That's right, and none of this is easy as well because there are just different ways to look at this. I think it's

really good for us to be part of that discussion, given all the history that actuaries have in dealing with all those complex situations and considering different interests, I think we can actually add a lot to that conversation. And apart from this particular discussion paper, there's also more happening on the consumer data rights site, and it's just going to continue.

Bartosz: Overall, we're seeing that there's a lot a more happening in the space locally, but then overseas as well. If we look into the UK, statisticians and actuaries came together and they issued a guide for ethical data science, which again, very good contribution to the conversation. Some of the points touched on the resonated as well in the response that we have submitted, which was really good. And also, some of the regulators and some of the governing bodies already putting bills or piece of legislation to tackle the issues of ethics in the data and artificial intelligence use. For example, in California, there was a bill on automated decision systems accountability introduced. So, we can only see more and more those things happening from the practice committee perspective, we're very conscious of the role of actuaries across different businesses, industries and also government agencies. We are currently working on an information note on automated decision making and that hopefully will help inform our members in the roles and the functions that they play in the business and the wider community.

Amanda: **That's great. And so basically provide guidance for them when they're up against some of these situations in the workplace?**

Bartosz: That's right.

Amanda: **Yeah. Well, it's not surprising then with some of those scandals that there is a continued focus on ethical use of data and artificial intelligence, but what else is going on in the world of data analytics?**

Bartosz: Beyond this particular area, and on the back of the digital revolution that's been taking place for a number of years now, there's continued digitisation of business processes in some cases. We can look at some of the accounting functions where some processes, around reconciliation, et

cetera, being replaced with either technology solutions or just extensions to existing systems. We see ongoing automation of analytics, something that previously would take a lot of time to produce. Well now it's the press the button, right, and what is just a dashboard or is it something else? It becomes a lot easier and accessible.

Amanda: **I'm actually watching a show at the moment called *Years and Years* on SBS On Demand, and the accountants in five years' time have no jobs left because all their processes have been automated. Do you think that that's a risk for actuaries?**

Bartosz: I think certain aspects of actuarial role probably will get automated away and that's just the nature of it. And I think that probably the activities that are lower value or more manual, which really don't require the actuarial qualification and all the study that we need to do to become an actuary. That has the potential to be automated. However, whenever you're looking at a judgment and more complex thinking and interpretation of the results, or even dealing with some exceptions that the automated process can spit out, that's where I think actuaries still will play quite important role. So, I think the role will change a lot.

Amanda: **As it always has.**

Bartosz: That's right. It's just the nature of it. I think 20 years ago, Excel was the tool that was automating things. Now they'll have something else, so we just adapt.

Amanda: **So, you're saying there will still be a role of actuaries for many years to come?**

Bartosz: Yes. I think so. Apart from that I think what's also been seen in the market is that some of the industrial solutions around data analytics are becoming cheaper to acquire. So, businesses can actually use those without necessarily developing those in house which I think again, just accelerates digital transformation. And finally, we have a lot of regulatory changes going on. We've had the Royal Commission and we spoke about that last year in our update. There is IFRS17, which will create opportunities for data analytics. So, I think that every year we're getting

some new requirements that require that data analytics response.

Amanda: **Yes. No wonder we're all so busy at the moment.**

Bartosz: That's right. So, Amanda, the back of all of this we as members of the Data Analytics Practice Committee, but also the YDAWG, been quite busy in 2019 and now in 2020. Could you take us through some of the things that we worked on, but also what we're going to work on in 2020?

Amanda: **Yeah, sure. So obviously under the Institute's current strategic plan, we have a goal to foster the profession's drive into the emerging area of data analytics. And to achieve that goal, we have our own data analytics strategy. The strategic intent under that strategy is to create sustainable and successful data analytics career paths for all of our members. And we aim to achieve that through three strategic pillars; brand, capability and community, and I think it's fair to say that in 2019 at least a lot of the focus of DAPC was on the capability piece.**

Amanda: **It had a big focus on education and CPD offerings for members. Moving into 2020 we'll be broadening our focus. So, there's still a lot of activity going on in education and CPD, but we want to expand into particularly the brand of actuaries within the data analytics professional field. So, there are a number of public policy pieces focusing on international collaborations so that we can learn what's going on overseas and how can we work together with other associations to offer the best for our members.**

Bartosz: Which is very important, and-I would say over the past year and a half, we've probably seen the dollar going both ways and there'd be some learnings from overseas, but also other partners overseas with some learnings from us, which is great.

Amanda: **Yeah, absolutely. Because I think as the actuarial profession evolves, we're all working out what our place is within the area of data analytics and it's**

been good to be able to go on that journey with our international counterparts.

Bartosz: So clearly, we've been very busy in the education and CPD area. Can you tell us about the recent changes to the actuarial program and how that relates to data analytics?

Amanda: **Yeah, sure. So, in 2019 we developed a new curriculum for the data analytics principle subject, which is a brand-new subject that starts this year. It sits in the Actuary Program, which is the old Part II. That's right. And it covers the whole data analytics process. So, it starts with understanding the business and why it's important to know the business environment that you're working in. How do you understand the data that you're working with and preparing that data for modelling? It covers a range of different modelling techniques that students may or may not have come across before, and also looks at how do you actually evaluate different models, both from a statistical point of view, but also taking into account the business context and the actual problem you're trying to solve.**

Amanda: **And finally, it looks at how you communicate the results of your analysis. Particularly if you're using a very complex model, how do you actually communicate those results in a simple way that an audience is able to understand? So that's the data analytics principle subject, but in 2020 we're also working on the new Fellowship subject. The 'Data Analytics Applications' will be launched in 2021. So, the plan for that subject is that it will teach students even more techniques like neural networks and natural language processing, optimisation and supervised learning. And the focus will be on teaching these techniques using a range of different applications. So that it's really practical hands on teaching.**

Bartosz: Different business contexts, yeah?

Amanda: **Yeah, exactly. Different business contexts and different fields of work, not necessarily traditional actuarial fields, but also different applications of**

these techniques. So, for example, we might look at image analysis and using neural networks in that area or using unsupervised learning to help with fraud detection.

Bartosz: So those are courses that we're developing, and we have worked particularly part two is very closely with universities to restrict the right balance and they really fill the gap that we had in the education in terms of data analytics. And that's really important that we're catching up with this one, right?

Amanda: That's right. So that covers the education of new Actuaries coming through. But then of course, there are a lot of us who are already qualified, but we'd still like to increase our knowledge in this area. So, there are a number of different things that we're looking at in terms of CPD. Rob Daly has recently come on board to develop a strategy for data analytics CPD offerings. We've already looked at things like providing a curated list of Data Camp courses that members could take. And last year in November we launched a data analytics masterclass. So that was a very popular event, and we plan to run a number of them again this year and look at a few different topics that we might potentially include.

Bartosz: And I think it's important just to recognise that we are trying different things. So, it's not just one solution that solves all the problems because we do recognize that different members have different needs and both learning-wise, but also, they like to learn in different ways. So, we're trying a multi-stream approach to actually address progressive learning.

Amanda: Yeah, we have been trying to offer a range of different things that might appeal to different audiences, but also recognising that you can't just take one single course and then know everything that there is to know. So individual members might want to take up different options within this suite as well.

Bartosz: That's right. And then there's also international, because we also said of looking at that.

Amanda: That's right. Yeah. So, we've been looking at what other organisations are offering in either the qualification program, or in their CPD offerings. So, for example, we know that the IFoA has just launched the certificate in data science and the ICAS has their own certificate course in data analytics.

Bartosz: That's right. So, I think there's a lot happening, and we've been really active and pushing forward the education. What other ways can Australian actuaries become involved in the actuarial data analytics community?

Amanda: Yeah, it's a great question because I think a lot of actuaries would like to learn a bit more about data analytics or become involved in the community but probably feel a little bit overwhelmed and not really sure where to start. So, in 2019, the DAPC ran a number of events. We had the Data Forum which looked at topics such as cutting-edge pricing systems and obtaining maximum business value from data. The Young Actuaries Program and the Young Data Analytics working group, which is affectionately known as 'YDAWG', they ran a hands-on case study, which included topics like data transformation and exploratory analysis and model visualization and machine learning. That was a very popular course. I think that was sold out pretty soon after it was launched.

Bartosz: Really well received. And I think it was great feedback afterwards as well.

Amanda: Yeah, exactly. On *Actuaries Digital*, there's always a range of different interesting articles about data analytics, including the data analytics column, which is written by Hugh Miller. And we've recently resurrected the monthly data analytics newsletter. Jacky Poon is doing a great job at sourcing a whole range of really interesting and diverse articles, and he summarises them in the newsletter so you don't have to spend hours and hours reading through the articles. He pulls out the key messages, which is fantastic.

Bartosz: And it's really, really popular. I mean, we've been looking at some of the stats, right, it was like, more than 2,000 members clicking through those different articles. So that certainly looks like it's making its way and members appreciate that. But it's like with any of those initiatives we always look for feedback and we always look for more materials to be also added to what we already publish and bringing to our members.

Amanda: Oh, exactly. I think Jacky is always very keen to find out from others about interesting articles that they can publish in the newsletter and share. So, they were some of the things that have happened in 2019 and then in 2020, we'll run some more Insights sessions including a mini forum potentially on topics like the ethical use of data and AI.

Bartosz: That's right. And I think that one is an interesting topic to have actually a forum on, because there'll be different views. So we're still working through the ideas how to actually implement it and how to run it, but we would like to do an element day of just education of different speakers providing their perspective, but then also ideally providing members or participants in the forum in some practical exercise to see how that actually can apply and what are the implications and so on.

Amanda: Yeah, that'd be a really interesting session to go along to. We're also recording a video series at the moment on the 'Superstars of Data Analytics', that'll be showcasing young actuaries in data analytics roles, talking about the sorts of things they are involved in at work and also how they got into those roles in the first place, which I imagine will be really interesting for actuaries wanting to transition into a data analytics role. We'll be recording more data analytics podcasts, including one by the YDAWG, so they can give an update on all of their activities.

Amanda: And speaking of YDAWG, they are planning a number of activities actually over this year. they're working with Data Science Sydney, to build the connection with that meetup group and potentially run some sessions together. They are working on university tours to go and talk about actuaries in

data analytics to university students. And they've actually just started a really interesting research project on the health impacts of bushfire smoke. So obviously quite a topical issue and I really look forward to looking at the outcomes from that research. So, there are plenty of ways for actuaries to get involved in the data analytics community. There's really no excuse not to come along and join us.

Bartosz: That's right. Well, thank you Amanda for this interesting discussion.

Amanda: Thanks, Bartosz.

Bartosz: Thank you so much, and thank you to our audience for listening. The work obviously wouldn't be possible without the commitment from the members of the Data Analytics Practice Committee and YDAWG, who have been really busy throughout 2019 but also now into 2020, making data analytics more accessible for our members. There are different ways to get in touch with us, definitely through the Institute of Actuaries, but also through the newsletter, there is a feedback email attached to it. So, thank you so much, and don't hesitate to get in touch with us. We're looking forward to hearing from you. Thanks so much.

