

### Transcript – Managing a Data Analytics Team

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**Interviewer:** Hugh Miller

**Guest:** Aaron Cutter

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**Hugh:** Hello and welcome to the Actuaries Institute's CareerView podcast. I'm Hugh Miller. Today's episode is about managing analytics teams. Unless you've been living under a very large rock, you'll know that the huge growth in data analytics work has created many opportunities for actuaries, but for senior managers this opportunity also creates a challenge. How do you manage teams and projects if they're very different to your own technical expertise? How much relearning and upskilling do you need to do?

To discuss this topic today we're delighted to be joined by Aaron Cutter a Principal at Finity Consulting. Aaron has long experience in the accident and CTP practices at Finity, but increasingly has also been a core part of the company's push into broader analytics. This includes the launch of their Defin'd brand last year. He is also a Member of the Actuaries Institute Data Analytics Working Group, which aims to promote analytics in the profession and support those employed in the area. Thanks so much for joining us today Aaron.

**Aaron:** It's great to be here Hugh.

**Hugh:** Fantastic, so this is a CareerView podcast so why don't you start off Aaron by giving us a bit of background on your career journey so far?

**Aaron:** Thank you Hugh. Well, you said it was about senior managers so I've got a long list of career highlights but just to be very brief about it. I started off as a physicist way back when in the 80's and then worked my way up the career chain into internal audit and from that point in time on then I saw the light. So, I was an actuary, an analyst really at a private insurance company and then worked at the TAC in Victoria as an analyst and then an actuary and then most recently in consulting at Deloitte the Finity and have been doing that for well over a decade now.

**Hugh:** Fantastic and so you've done both the corporate actuarial work and the consulting work. Have you found the balance between the two?

**Aaron:** A long time ago now, it was the corporate work but I still do find it sort of helps me in my career as a consulting actuary and thinking about problems in through the lens of the actual owner of the business problem but through consulting I've been able to do a lot of varied things so as you said in accident compensation and CTP but not only that in mortgage insurance and in you know personalised insurance as well as broader fields now.

**Hugh:** Fantastic and so what type of analytics projects do you typically manage now?

**Aaron:** Well I guess it sort of falls into a few different categories but in some sense, the work that I'm doing in the accident compensation and CTP and workers compensation space have morphed into analytics projects, so whether it be a triage opportunity or portfolio management or portfolio optimization.

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Each of those types of work uses analytics techniques and broader data sources these days so that's one aspect of the analytics projects that I'm managing. Secondly I suppose is broader industry so working in the property sector or not-for-profits for sporting associations doing a whole number of very different bits and pieces and mainly focused on marketing and media outcomes and starting to do a little bit of that in the insurance sector as well.

**Hugh:** Very good and so when you manage those projects, what are the technical skills that you need in your team to be able to do those effectively and how are they different to the skills that you learned when you were a young actuary and or physicist?

**Aaron:** Younger, no young is the right word Hugh, I classify myself as being in my very, very, very late 30s now. I guess when I was a young actuary, you know the techniques you learned were things like counting things and averaging things and so clearly the world's moved on from that. My expertise as an analyst was with Excel and SAS and essentially, they were the two tools that you had in your tool bag to tackle any sort of analytical problem and they were all things from data manipulation and transformation and merging etc through to some of the statistical techniques like GLM's which came a little bit later I suppose but mainly it was Excel models so Excel was the thing that you used respective of what the problem was.

You'd put your triangles together or you put your projections together, it didn't matter if it was ten thousand rows and thousand columns and fifty tabs then, Excel was the way to go but these days there's more and more need for coding in different languages so for example some of the projects I'm working on have required that the advice be delivered not in a report but as an application, a monitoring application. So how do you make sure that all the information underlying those monitoring are appropriate.

The way I guess you go about it, the principles are still the same because in the old days where you were reviewing an analyst spreadsheet that had lots and lots of tabs and lots and lots of rows and lots and lots of indirect lookups and pivot tables etc, they were very difficult to review as well, so getting the sense check is the most important thing that I do is making sure that I ask the right questions about what data is used, the right questions about how it's been manipulated and transformed. What was dropped, what was added on and then going through some pretty pointed examples about what you expect to see coming out and making sure that all of those linkages that you expect to look the same as expected.

There are of course some stats and the likes that come out of it as well, where if it's a machine learning technique that's being used you can look at some partial dependencies or other such nice little graphical representations of the model and how it's fitting to make sure that things are going well as well, but broadly speaking ask the right questions, make sure you understand the problem and what you're expecting to get out at the end and that generally gets you 80% of the way.

**Hugh:** So I guess what you're saying there is that some of the skills in terms of managing the inputs and outputs of a project are quite similar even though the technology underneath has changed. Is that right?

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**Aaron:** I think yeah when you get to kind of my level, although what I will say is that the technology is different and there is a gap between what I've learned as an actuary and what my projects are requiring of the skills now. I'm always learning on the job so it's not as if I'm not suggesting that you shouldn't continue to upskill and retrain yourself but what I will say is that actuaries by training and my view I suppose is the value that an actuary will bring to a project is the insights, the business insights that come from the analytics that goes underneath it, so that part of it hasn't really changed. Making sure that what is going on underneath the hood is delivering the right outputs for those insights to be delivered is still pretty much core to the profession.

**Hugh:** So let me ask you a slightly different question about strategy then so as a Principal at Finity, you have a role in setting the company's strategy and some of those will be big investments in whether it's hardware or software or capability so how has that strategy changed over time now that you sort of have to deal with technologies that maybe you're not as familiar with and who other people in your team might be more familiar with?

**Aaron:** That's a good question I mean back in the day I guess the strategies the only question you need to ask yourself was do I go with Microsoft or Lotus and I guess Microsoft won out in the end in that battle, but these days there are a whole bunch of other technologies that need to be thought about whether they be programming languages like R and Python, whether they be technology infrastructure on-premises and on the cloud that the data governance and privacy comes into it as well these days because that landscape is changing so there are a whole bunch of more sophisticated questions we need to be asking of ourselves when we're setting the strategy and most of the time actuaries haven't had the formal training to be able to answer those appropriately, so we turn to two sources.

One is the young people because they know the cloud they have been involved in more recent training although I think that there's probably room to improve the actuarial training in terms of the statistical and machine learning elements that are in the courses, but the other place to turn is external expertise and that's where we've kind of looked as well as a firm to ask the question of those that are in the know in the IT sector about what is the right type of infrastructure that's suitable for this particular purpose

**Hugh:** And so what will that advice be hiring those types of people or will it be sort of partnering with people is it better both?

**Aaron:** It's a bit of both yeah absolutely, so there's short term hires that you can do. There are consultancies, so we've probably used more consultants in a consulting firm in the last year or so than what we had in the previous ten to help us navigate some of these very quickly changing areas.

**Hugh:** Alright fantastic. So, another question I wanted to ask you and you've sort of touched on this before is that when you present to clients. The type of results you present are now a little bit different so instead of a report it might be something interactive or something that's more like an application, but when you do present your work to clients, how has that sort of presentation changed? Do you need to have a broader team to show different elements of the work or has that evolved a lot or is it still very similar?

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**Aaron:** In the essence it's similar Hugh, but in practice I suppose it has changed a little because I'm now taking with me either industry experts with me that might know something about for example the health sector that I don't. I might be taking with me stats, PhDs that know a lot more about machine learning than I ever will because some of the underlying and the pre-existing knowledge that's needed to explain some of the results is not necessarily with me. So, I'm finding that I'm being a little bit more removed, still providing the advice and as I said before the business insights and the actionable insights to the clients, but where there's deeper delving required, then I tend to sort of look to my left or to my right for those questions to be answered. So, I do think that it's changing in that respect and that there's a lot more reliance on the expertise that's around me, rather than taking it on myself.

**Hugh:** Thinking about project management then perhaps, so, one of the things we've seen various industries is that some of the ideas and software developments where maybe you sort of moved to agile structures where you sort of do stuff in very decentralized ways and in small parcels has started infiltrating into various businesses. Is that something that has influenced your management style is as you've pushed towards more coding?

**Aaron:** I think it's the agile style. The kind of sprint and assess and reset and re-go has sort of been part of the way in which we've worked for quite a while now. Although having said that, it's a bit of a hybrid between the waterfall where you set it up from the start and then kind of iterate on the way through. Those sorts of project management styles haven't really influenced the day-to-day, what they have influenced is the way that we've set up our IT infrastructure and the way that we've set up the strategy more so. So, we've been using more external providers of IT more recently and certainly that's the way in which we've built out those solutions.

**Hugh:** So, I guess what you're saying then is your IT is designed to be a bit more flexible and responsive to projects that come up?

**Aaron:** Well we're using more cloud-based solutions for those high-powered projects that we're doing now so it's certainly more flexible in that respect. I wouldn't say that IT by that's very nature is that flexible but we try and make it as appropriate to the problem that we can.

**Hugh:** I'd also been quite interested in your thoughts on career advice, so I guess if you're a junior or mid-tier actuarial analyst in an organization. Do you think career progression has changed in the world of analytics so are there new traps that we can fall into that didn't previously exist?

**Aaron:** I think in terms of career progression, when I come across somebody that has advanced analytics capabilities as well as other skills that we're required and that's certainly a positive so I think that having a background in say machine learning or artificial intelligence and coding is going to be a sought-after skill in the future.

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For us as a consulting business, I guess career progression is all about the communication side of things are still very important. The way in which those analytical capabilities are translated into descriptions of problems and solutions to those problems is what is really, still going to advance those careers in a consulting environment. I guess that's a similar thing you know in a corporate environment as well, I mean those that can communicate to the business, they're going to do, you know still going to have those same opportunities as I previously did, but the underlying expectation of actuaries I think is changing and those coding and analytical and more data science type skill sets are going to become the new normal. That's my view anyway.

**Hugh:** I guess in some ways that makes it harder for a young actuary because in a sense there are more options they can choose for what they upskill in so they could sort of do lots of coding courses and become a computer scientist or become a statistician or sort of can complete the actuarial exams, so I guess what you're saying is that those sort of core technical skills are very important and you do have to sort of choose what's going to be right but at the end of the day if you do aspire to management, there is a key communication and business understanding component that has to come in one way or another is that fair?

**Aaron:** I think so I mean at the end of the day the actual profession and actuaries more specifically are good at business insights and we use a whole bunch of different resources where they bear their own technical skills, people around us, the business themselves to come to those business insights and so I guess what I'm saying is that the own skill set in the future needs to incorporate some of the new techniques in terms of the analytical capabilities but broadly speaking if you want to be an actuary you're in the business of providing advice where its internal advice or external advice but it's in taking all that information and turning it into something that is digestible by the business and that that's where our real value add is.

**Hugh:** Yeah, that makes a lot of sense. One other question I was keen to ask is how have you enjoyed the opportunity to move into different industries so if it is marketing or if it is supporting organizations has that been sort of fun to learn about new areas do you have to do a lot of background reading or do you feel a bit naked because you don't have quite the same depth of subject-matter expertise as insurance or accidental compensation?

**Aaron:** Nice leading question there, thanks Hugh. So A. It's been fun but B. It's been hard, it's been hard work and I think that you know how it's my experience and finishes experience and that is just kind of a microcosm of the broader actuarial profession that we're trying to broaden the reach into other industry verticals and finding it difficult to have that brand cut through so our brand is Finity and actuaries and the actual professions obviously actuaries, there's a lot of background primary research that needs to get done before you can have a credible conversation with you know marketing type people. We speak a different language and they have lots of different acronyms and so there's essentially a whole bunch of new stuff you need to be on board with and that's where sort of taking along people that are actually working in that industry or have worked in that industry is a shortcut to do that so yes fun and hard I guess I'd summarize it as.

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**Hugh:** Very good. Well, I think that brings us to the end of today's podcast so thank you so much for your time Aaron and sharing your thoughts about managing analytics team.

**Aaron:** Welcome, thanks Hugh.

**Hugh:** We hope you've enjoyed this discussion today. Look out for other career articles and podcasts on Actuaries digital.

I'm Hugh Miller, bye for now.