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# TRANSCRIPT OF EVENT

GRADUATE DATA WEEK

## DATA AND DECISION MAKING AT THE ACCC

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IMMA CHIPPENDALE: My name's Imma Chippendale, and I lead the data and analytics area at the ACCC. Thank you to the Graduate Data Network for inviting me to speak today. I'm going to cover four topics. So, I'm going to cover, first of all, what the ACCC does. Second of all, I'm going to jump into an example which is the Trivago case, which is a real life example of how we're using data and analytics at the ACCC. Thirdly, I'm going to cover a number of global issues that competition regulators are grappling with right now, to do with the data and algorithm driven economy. And then fourthly, I'll go to the Takata airbag recall, which is another real example of how we're using data and analytics in our work.

IMMA CHIPPENDALE: So, let's start with what the ACCC does. So, I have a bunch of images here. The first one is airbags. So, that's the airbags, it represents our product safety work. The second one is our gas work, so we do a lot of work monitoring the gas market. There's petrol prices there, just note that we monitor petrol prices, we don't actually set petrol prices. The next one is milk, which shows our work in the dairy industry, but also in agriculture more broadly. At the NBN, so I work in telecommunications. Then I have more pictures.

IMMA CHIPPENDALE: So, the next one is scams, we have quite a lot of work devoted to Scamwatch and actually preventing scams for the Australian community. We, like every other agency, have devoted a lot to a COVID response and recovery, associated with the effects of the COVID health crisis, but also the economic effects. We work on digital platforms related issues. We're also doing some work on the Murray-Darling basin water inquiry, and electricity markets.

IMMA CHIPPENDALE: Now that's quite a range. And what I haven't shown you is our work on mergers and enforcement. It's actually a bit hard to put up images of those sorts of confidential topics so just take it as read that we also do a lot of work on mergers, enforcements, and other things like that.

IMMA CHIPPENDALE: So, the ACCCs role is to make markets work and our remit is economy-wide. So we focus on competition, fair trade, markets, and regulate national infrastructure services. And that's all done using our Act, which is the Competition and Consumer Act. So, it's a huge breadth of work and data is involved in all parts of that work.

IMMA CHIPPENDALE: It may be a truism for this audience to say, " Well why does the ACCC need data and analytics capability?" Well it's because the economy is data and algorithm driven. The companies that we regulate are using all the modern tools. They're using big data, they're using analytics, they're using algorithms, machine learning, AI, all of these things. That's what they're using to run their businesses, but also crucially to make their decisions. So, for us to do our jobs, we must be able to both investigate the conduct of these companies, including how they use data and analytics. So to do that then we need a data literate workforce and also specialised expertise.

IMMA CHIPPENDALE: I'm going to tell you now about the Trivago case. So, Trivago is an online meta search engine for hotel rooms. So, that means it collates and compares hotel offers from online sources. And then it highlights one rate for each hotel. So, you can go to the site and type in, "Hotel in Adelaide for these dates." And you'll get one hotel, and one rate for each hotel, and that's called the top position offer. And the business model is a cost per click model, so each time a consumer clicks on a room rate, the advertiser, so the hotel, or the aggregator, pays a small fee to Trivago.

IMMA CHIPPENDALE: The company uses an algorithm to work out which advertiser is going to get that top position for each hotel. And the algorithm takes into account a number of factors. So, the room price, the cost per click, sorry, the room price and the cost per click from the advertiser. So, from 2016 to 2018, Trivago did a lot of marketing in Australia, and they used a common tagline of, "Your ideal hotel at the best price." The ACCC alleged that this advertising was misleading or deceptive, because in reality, the rates that had that top position were not necessarily the cheapest. An advertiser could actually secure that top position by placing a higher cost per click, even if their price was not actually the cheapest. So, in 2018 Trivago stopped that advertising campaign and replaced them with ads that didn't talk about price. That case was actually under appeal until the end of last year, and then that was dismissed by the court at the end of last year.

IMMA CHIPPENDALE: So, to do the work for this case, Trivago was asked to provide details of how its algorithms assigned the top position offer for a hotel, and how that sorting order for hotels was implemented. So, they were asked to provide the plain English description of the code, the actual source code, the pseudocode description, and then the inputs and outputs of the algorithm for certain cities for certain days.

IMMA CHIPPENDALE: Now, that may sound like the worst sort of jargon so let me show you what it looks like. So this is what code looks like, but it's not Trivago code, it's just code. So, code is a series of words using the syntax of the coding language, and when you execute that code, it carries out instructions. So, that's what code is. Pseudocode is a guide to the code. So, it's a map to show what the different sections of the code are intended to do.

IMMA CHIPPENDALE: So, the analytical approach that the ACCC took in this case was twofold. Firstly, analysing the algorithm, and then secondly, analysing the data of those inputs and outputs of the algorithm. So there were actual searches done by Australian consumers. So that was part of the investigation stage of determining whether the cheapest price representation, and that implicit top position representation, were misleading. One of the things we looked at was how frequently that top position offer was in fact not the cheapest offer.

IMMA CHIPPENDALE: Okay. So, the court made three key findings in relation to the analytics evidence. So firstly, that in 56% of listings, the top position offer actually had the highest cost per click. The second key finding was that in two thirds of listings, the top position offer wasn't actually the cheapest price available. And then for those listings where that top position offer was not the cheapest, almost 96% had a higher cost per click than the cheapest offer.

IMMA CHIPPENDALE: So I'd encourage you, if you're interested, to read the judgment, it's publicly available to see how that expert evidence, so the court appointed experts, presented the evidence associated with that. To my knowledge, this is actually the first case worldwide that's relied on directly analysing an algorithm, and then getting that evidence into court. iSelect was another one the ACCC did, and that was settled at the end of last year.

IMMA CHIPPENDALE: Our international counterparts are very interested in how we approach this case, from an analytical perspective, and I've been speaking to them over the course of that, at various occasions, and that some of them are adopting a similar approach based on our approach.

- IMMA CHIPPENDALE: Now, you may be wondering, why would a company actually give the ACCC that data and that algorithm? So, we have a number of different ways that we can obtain data and other information. We can use public data, things like the ABS and other public sources of data, we also have internal data that can be really useful for different types of matters and inquiries, we sometimes buy data, so commercially available data.
- IMMA CHIPPENDALE: But the real interesting one in this context is the ACCC has compulsory information gathering powers under the Competition and Consumer Act. So, under different parts of that Act, the ACCC can require companies to provide information documents and data if there's a reason to believe that we need that information to do our investigations. The other way that we can get information or data is via our international treaties and agreements. So, in some circumstances, we are able to get data from some of our international counterpart agencies.
- IMMA CHIPPENDALE: I'm going to talk about a number of different, really topical issues of how competition and consumer regulators are thinking about data and analytics right now. So, the first one is the digital platforms inquiry, which has certainly got a lot of press. In December 2017, the government directed the ACCC to conduct an inquiry into the effect of digital search engines, social media platforms, and other digital content platforms. The DPI, Digital Platforms Inquiry, the DPI was very wide ranging. It covered competition, consumer protection, privacy, advertising, and media issues with a focus on journalism as well. The first report was published in July 2019, it had 23 recommendations. Most recently, one of the recommendations, which was the news media bargaining code, became law, and that was on quite a few front pages in recent weeks.
- IMMA CHIPPENDALE: The Digital Platforms Branch, has now also published an ad tech inquiry on ad tech technology, an inquiry on online private messaging. So, if you're interested, go to [acc.gov.au](http://acc.gov.au) and have a read of some of those inquiries. The ACCC's work on digital platforms has generated global interest, and it's certainly a topic that many of our counterpart regulators are dealing with right now.
- IMMA CHIPPENDALE: Another global issue is the so-called consumer data right. So, in November 2017, the government announced a CDR, Consumer Data Right, in Australia. The CDR gives consumers greater access and control over their own data. And the idea of the CDR regime in Australia is that it's going to encourage competition between providers, and also encourage switching and other autonomy and independence by consumers. The first sector that's going for the CDR is the banking sector, and then the next one along will be the energy sector.
- IMMA CHIPPENDALE: Again, if you go to [cdr.gov.au](http://cdr.gov.au), there's heaps of information about how the CDR have been implemented, the different types of data that are already available to data recipients, and other things like that. The UK for example, has had an open banking regime for much longer than Australia has. So again, lots of collaboration there and understanding how different jurisdictions are approaching these issues.
- IMMA CHIPPENDALE: The next one that I'll talk about is algorithmic analysis. So, I've already talked about Trivago, we've actually done this, got it into court, we, being the ACCC. The CMA recently... Sorry, the CMA is the Competition and Markets Authority in the UK. There's a lot of acronyms in this area. So, the CMA recently released a report, a consultation report, talking about algorithms and what their effects on competition and consumers might be. I mentioned before that our international counterparts are really interested in how we're dealing with this, and we've spoken to them about how we approached the Trivago case on a number of occasions.

- IMMA CHIPPENDALE: Another issue of global interest is AI, machine learning, and algorithms more broadly. Now, AI, machine learnings, algorithms, all need data to actually operate, and often, these are called training data sets. So it's not just the analytic techniques, it's also the data sets that are being used to train those machine learning algorithms, or AI algorithms.
- IMMA CHIPPENDALE: The ACM in the Netherlands, so that's our counterpart, the competition regulator in the Netherlands now has issued a new paper looking at the functioning of algorithms in practice. So, what do they actually do, and what are the issues and the effect on competition and consumers of having these algorithms as part of our economy?
- IMMA CHIPPENDALE: A hot topic is cartels. So cartels are almost the ultimate anti-competitive conduct. So, a hot topic is these cartel screening, which is how can we detect cartels without, or being independent of our immunity program? So, using data and analytics, the idea is that competition regulators are going to be able to generate leads to investigate potential cartels further, and that will give us a wider range of options for identifying and then investigating cartels beyond the immunity regimes.
- IMMA CHIPPENDALE: Interestingly, in the cartel sector in particular, I think around 50% of the cartels the ACCC has investigated have had an international connection because a lot of these cartels are international in nature. So, one example is the Air Cargo Cartel that you have to work with your international counterparts on these issues, because these are global companies that are potentially engaging in this type of conduct.
- IMMA CHIPPENDALE: The last topic, hot topic that I wanted to talk to about is algorithmic collusion. So, this is the idea that algorithms might teach themselves how to collectively act as a monopoly, a monopolist. And we're really interested in what the effects of algorithmic pricing, so prices that are being generated by an algorithm, might be on competition.
- IMMA CHIPPENDALE: So, studies in the lab, models by us and others, have shown that algorithms might be able to teach themselves how to act as a monopolist and that these would have negative effects on competition. There's been academic literature on this topic for quite a while. As a concept, there is a vigorous debate about what might actually happen in real life when algorithms sort of are interacting with each other. And as I said, machine learning algorithms need data sets to learn from and to build from. So, it's linking that data, the algorithms, and the effect of those algorithms together, that is of great interest.
- IMMA CHIPPENDALE: Now, I've talked sort of loosely about the different types of international collaboration that we do. Let me tell you what it looks like in real life. So, it looks like quite a lot of video calls, and given the times zone that I'm in, which is Sydney, it means quite a lot of early starts, because when we're interacting with the US, the UK, Canada, New Zealand, it turns out that the best time zone is for us to get up very early. So, lots of very early starts to actually do this international discussions and collaboration in practice.
- IMMA CHIPPENDALE: A potential silver lining of the last year is that it's really normalised the fact that we can just connect by video. So, that's been a terrific outcome in terms of international collaboration. So, one that I'm more familiar with is the Multilateral Mutual Assistance Cooperation Framework between competition regulators, the MMAC. And the part that I'm engaging with is the data and analytics group of that MMAC. The MMAC covers the CMA in the UK, the CCB in Canada, the NZCC in New Zealand, and the FTC and DOJ in the US. So, it's a group of regulators that we engage with.

- IMMA CHIPPENDALE: When I was preparing for this presentation to you, I actually went to the ACCC website, and there are pages and pages of international agreements, and treaties, and memorandum of understanding that the ACCC has with all sorts of different regulators and other international institutions. So if you want to have a look at that, go to ACCC international, and you'll find everything to do with the ACCC's international work.
- IMMA CHIPPENDALE: I'd like to finish today by giving you another example. So, a real life case study of how we're using this stuff. The Takata airbag recall is the world's largest automotive recall, and it affects around a 100 million vehicles worldwide. And in Australia, it affected around four million airbags in three million vehicles. Very sadly, they've been around 350 deaths worldwide associated with these airbags, including one death and one serious injury in Australia.
- IMMA CHIPPENDALE: So, if you do one thing today, please double check, go to, [ismyairbagsafe.com.au](http://ismyairbagsafe.com.au) and just check that your car is actually safe. The good news is that the ACCC announced last week that the recall is now 99.9% complete in Australia, which is just an amazing, amazing result. From a [inaudible 00:19:36] perspective, the manufacturers were required to provide information to the ACCC on every affected vehicle, every month, via our recall notice, issued for the technical, under section 122 of the ACL. Now, in practice, that meant we got roughly four million rows of data each month on the progress of the recall.
- IMMA CHIPPENDALE: The data and analytics side of that and the part that my team was involved in, was actually on trying to understand the risk factors associated with responding to the recall. So, this first map shows Australia, and it shows at a certain point in time, the rate of vehicles not yet remediated. So, it's a map, each block on that map represents a postcode, some postcodes are geographically very big, some postcodes are geographically very small, but we can zoom in. And in this particular map, light colors are good, dark colors are bad. So, light colors have responded to the recall more, dark colors have responded less.
- IMMA CHIPPENDALE: These particular airbags are more dangerous in hot and humid conditions. So, to assess the risk factors of the recall in different parts of Australia in different communities, one of the things we did was added in climate data. So, we got that data from the Bureau of Meteorology, match the data to the recall data, and then we get this map, which shows, okay, a slightly different picture. And as you'd expect, the northern parts of Australia are now showing a darker color with higher heat and humidity added onto that other risk at the rate of the recall.
- IMMA CHIPPENDALE: Another set of factors that are risk factors for this recall are some demographic factors. So, there are some consumers and some communities that, for different reasons, are less able to respond to the recall. So, what we did there was we got data from the ABS about different demographic factors, turned them into risk factors, matched that up with the other data, and then we get these third chart where, again, we're getting a different picture of which particular parts of Australia might need additional focus.
- IMMA CHIPPENDALE: Now, I said you can zoom in, you can actually zoom right in and see individual post codes on this. So what the ACCC's outreach offices did was they took these maps out to individual communities, and could say to people in those communities, "Did you know that there are still this number of airbags outstanding in your community? How can we help you and help your community to respond to this recall?" So, in a very real way, that's a way that we're using data and analytics to help save lives in Australia.

IMMA CHIPPENDALE: I have in a whistle stop tour told you a little bit about the ACCC and our work. I've given you two case studies of how we actually use data. So the Trivago and the Takata case studies, and I've covered a number of live issues that are of global focus, with competition and consumer regulators that all have to do with this data and algorithm driven economy. Thank you very much.