The Measure Pod: #26 App attribution for dummies, and web analysts (with Derek Ooi)

[00:00:00] **Dara:** Hello, thanks for joining us in The Measure Pod, a podcast for people in the analytics world. I'm Dara, I'm MD at Measurelab. I'm joined as always by Dan, an Analytics Consultant who's also at Measurelab. Hey Dan, what's new in the world of analytics this week?

[00:00:32] **Daniel:** So there's one big piece of news Dara that's in the news this week, and that is that Google Optimize have released their GA4 connector, which means you can now start running and optimizing AB tests and personalization experiments in Google Optimize against GA4 data. It's all pretty new and fresh. So I don't have any lived experience in telling if it's any good or not right now. But the one pro compared to the universal connector is that you can actually start sharing audiences between GA4 and Google Optimize. So in theory, on paper that is, you will be able to personalise experiences and run experiments over specific audiences using Google Optimize, which was before gated behind a 360 paywall. A bit fresh to have any kind of lived experience or context with it right now, but it's shaping up to be something that could be really exciting down the road.

[00:01:17] **Dara:** Nice, I like your disclaimers there as well. Exciting piece of news. So we've actually got a guest on the show this week and we're very happy to be joined by Derek Ooi who is a senior digital analyst. So Derek, firstly, welcome to The Measure Pod it's very good to have you.

[00:01:33] **Derek:** It’s good to be here, thanks for having me here today.

[00:01:36] **Dara:** You're very welcome. So we always kick off when we have a guest on the show, we always ask them how they got into analytics. So we actually did an episode all on this last week, which was Dan and I talking about our kind of interesting journeys into analytics. So over to you really Derek, just to give us a bit of a whistle stop tour of your background and what got you to where you are today.

[00:01:56] **Derek:** Thanks Dara, and thanks Dan for reaching out for me to come on this show. So when it comes to digital analytics, I would say I came into it by accident and it was all because I wanted to join a company and there was an opening that they had back then. And I'm not sure if you know about this company called Mindvalley, and that is a cool I would say they're cool personal growth company, which have a lot of various courses all the way from spirituality to yoga, to how to memorise things fast. So they have expanded a lot throughout the past few years, but yeah, I wanted to really join this company because they had a pretty interesting culture, and it was one of the cool companies back then. And another great thing about them is they were really good in digital marketing as well. And there was sort of the direction that I wanted to go in as the digital world is evolving and I just want to get my hands dirty in this area. That's how I got into it in the first place. I didn't know I would get this far. So I've been working in this field for almost seven years for now, and I've learned a lot along the way. I've joined a few companies, a few agencies, and now what I'm doing is basically I'm now a senior digital analyst at a company called LeasePlan Digital and what I do is basically I'm helping out with the measurement, collecting data and creating dashboards and also provide insights and analysis for all the stakeholders who are interested in the growth of the business.

[00:03:35] **Derek:** I do some part-time work along the side where I help startups to basically upskill and get familiar with digital analytics, because actually a lot of these companies, when they start off, they don't realise how important it is, and a lot of them neglect it along the way, basically on my annual assist to give back to the people based on what I've learned, I just want to give it back and to teach what is it all about and to help them find their way towards this complicated world of tracking. So yeah, that's a bit of a background about how I got here.

[00:04:05] **Dara:** Brilliant, thank you. I love the fact that you started it by saying, using the words by accident, because this is essentially the theme that we're picking up on. Everybody who ends up working in analytics or the majority of people seem to have kind of fallen into it or stumbled into it by accident. So It's always really interesting to hear people's stories and you've got to, obviously a very broad and interesting background, and I loved hearing about the work you're doing with the mentorship as well. That must be, I guess, challenging and rewarding or maybe sometimes it's more challenging than rewarding, and then other times vice versa.

[00:04:37] **Derek:** Whenever I get the chance to run some training programs. I always get very excited. Like it's like, yes, I get to do this again. But when it gets to doing the job, I realise how tedious it actually gets. You need to customise the slides, you need to prepare the slides, some of them are new topics. What we do is we normally run like lectures for all the startups at once. So normally there are like five to six or seven startups at the same time. So we have like a lecture or training session for all of them. And then after that we have for requests office hours. So during these office hours you'll go in depth with each of these companies. So that is the part which drains a lot of energy, It's sort of like working at an agency, but you need to do it for like seven different companies in the same week. So it is challenging, but I think at the end of the day, it's rewarding, the outcome is rewarding and always happy at the end of the day. I think it's a good way to expand your perspective on how like early stage startup work and how bigger SME or even bigger corporations will be very different in how they approach data, it's something really interesting to see for yourself.

[00:05:43] **Dara:** Okay, that sounded like a challenge to us. So I think we might need to take you up on that and give it a go. But actually speaking of, so you talked a lot about presenting and training there, and actually the reason Dan reached out to you is because he saw you speak and present at MeasureSummit last year. So you've given us a bit about your background and obviously you've been kind of broadly involved in digital analytics, but the topic that Dan saw you speak about was actually specifically about app analytics and app attribution. So that's actually the topic we're going to be discussing with you today. So specifically as a web analyst, why do you need to care about app attribution.

[00:06:19] **Daniel:** I mean, when I was watching your talk, Derek, I thought, first of all, it was awesome. I think it was a really well put together explanation for someone like me, and that's why I spoke to Dara about bringing you on the show because for us two, traditional web background, web analysts, from a digital perspective. When you think about app attribution and app analytics, especially since Google Analytics 4 has come out and thrown it right into the spotlight is now at the same level as web analytics. So Google Analytics 4 is app and web, and it kind of treats them both equally, or at least the perception is, oh, just throw them both together it's absolutely fine. You can report on both your sets of data together. And then all of a sudden it puts a lot of traditional web analysts into a world of like you have to get up to speed and understand how outbound analytics works and vice versa for app analysts then coming over to the web world as well.

[00:07:03] **Daniel:** The thing that got me when I was looking into this, and obviously for off the back of your presentation Derek is just why can't Google Analytics 4 do attribution for apps? Why can't GA4 do it? What is it that it's missing? Or what is it that it struggles at doing that you need to look at additional platforms and software to install on your app?

[00:07:21] **Derek:** So that's a great question Daniel. When it comes to Firebase or GA4, as a background for those who didn't know GA4 is essentially created out of Firebase Analytics to begin with hence this curiosity that has been sparked among the community about getting to know more about app analytics and Firebase tracking. So I'll put it this way, how app tracking works is very different from the web. So on the web, we mainly rely on cookies and everyone uses the same web platform. So you can be anywhere around the world using Windows, Mac, Android, or iOS. The web interface is the same for everyone that uses the same technology. It uses cookies, uses local storage, and so on. So it's pretty I would say unified an experience across the various kind of devices out there. When it comes to the mobile app it's a bit different because there's the segregation between Android and iOS. They still use the same kind of technology, which is the Advertising ID. So instead of cookies, the mobile apps use a key called the Advertising ID. So it doesn't matter if you're using Facebook, Instagram, it doesn't matter if you're using an app for Google. They all rely on this same Advertising ID for ad networks to know and to attribute the data for a particular ad.

[00:08:41] **Derek:** When it comes to Firebase and the attribute Firebase how they actually work is it uses what we call as a dynamic link, and it is similar to UTM parameters is exactly the same you just add on the UTM campaign, medium, source and so on to the links. These links works only for Firebase, and what you do is whenever you have a new campaign, new ad campaign, you generate this new link, and you need to put it into your Facebook ads or any other channels that you are running the ads on. The problem with dynamic links is it's actually more prone to errors and issues, and if you think about it is more of a reactive approach. So you need to present a link to someone and people need to click on the link, and then when they open the app, you sort of understand that they came from a certain source.

[00:09:31] **Derek:** Other attribution partners, they are basically a third party to which sort of they try to fill in the gap that Firebase left by providing like an all in one, one stop solution for attribution measurement and how these tools work is they actually have a really cool feature where they integrate directly with your ad partners. So, what this means is that mobile measurement partner, what they do is they have direct integration with Facebook, Google, Twitter, Apple search ads and a few others and they actually talk directly to these platforms. So instead of relying on this UTM links that has been generated, they proactively reach out to these channels to sort of get information from them. So they sort of know from all these different channels if someone clicks on a Facebook ad or a Google ad, or if they clicked on the Apple search ad and they have all this wealth of information and they basically collect all this data and they help you organise. Since they receive all the timestamp and all this other information about the Device ID about their IP's and so on, they are able to sort this data and really tell you which came first, which came second, which came third and give you a really accurate view on which was actually the last point of interaction before someone converts.

[00:10:53] **Derek:** This is just one of the benefit of using MMP and I will say another benefit is also with this in mind, if you use Firebase and let's say you want to track conversions in Facebook, or you want to track conversions in some other ad platforms. Traditionally, what you need to do is you need to implement the SDK, besides Firebase, you also need to implement the SDK of Facebook or Tik-Tok or for Twitter into your app. So what MMP does is it helps to just pass all these conversion events straight to the platform without the need for you to implement additional SDKs for Facebook or Twitter and so on. So, I think I'm gonna, it's sort of like going back to the point I mentioned before, it sort of acts like a one stop, one stop shop to help you manage all your conversion data or your tracking, all your attribution also with I would say another cool feature that they have nowadays is to help you sort out this iOS 14.5 which we'll talk about later probably. You can look into it as a good way to manage your measurement, your attribution.

[00:12:00] **Daniel:** That's a really, really good I was just going to say overview, but pretty deep dive into the features of MMPs and I think what's, again, I'm always coming at this from a web perspective, but for me, it's like the way a server-side tag manager works in a way the MMPs. So rather than having to implement all the bloat directly in the app, because that's a bit of a nightmare, like you said, with SDKs on web it's a little bit easier with GTM and pixels, but this is almost like you're using a server side container or you're using a third party to send one piece of information and then distribute out to multiple networks. It's a very similar concept, people don't generally tend to use Tag Manager for apps, I know that does exist, but in a way you're using the MMP in replace of that. But then it's also got some additional perks, like not just sending the conversions back, but it also manages to import the campaign data.

[00:12:47] **Daniel:** So I think that kind of makes sense in my brain. One question then. So from working with app data what value does the GA4, SDK or the Firebase SDK, what value does that bring in from an analytics perspective, I've heard it been talked about that your MMP is your kind of campaign data and Firebase or GA4 is your product data, but is there any communication between the two, can you pull in that campaign data into GA4, or how does that really work?

[00:13:14] **Derek:** I will say it is a must have, if you run a lot of Google Ads or Google app install ads because of the, just the integration within the Google suite of products, it's essential. And actually, if you want to be able to do certain audience exclusion in your Google Ads, for your mobile ad campaigns. Actually, they force you to have Firebase analytics implemented on your app. This is mainly for app install campaigns. So you can't really run away from that. But besides that how I would view GA4 or Firebase is that it's mainly a product analytics tool, as you mentioned Daniel.

[00:13:50] **Derek:** There are also other analytics tools out there, which normally we recommend our clients to use. However, when it comes to all the companies out there which have a web presence, they all use Google Analytics. So still Google is still pretty essential, we can't really run away from that. In terms of importing all this attribution data back into Firebase or GA4, currently there's no clear and straightforward way to do it. What more advanced people do is they just export the raw data from your MMP. They just export all the raw data, and they just send it as server-side event back into the product analytics tool. So they sort of manually write their own script to pass it back to these tools. So that is how you can do it, but it's very tedious, a long process and it's not very straightforward.

[00:14:41] **Dara:** So if Derek, so again, thinking about it from a comparing against the web situation, even though there are attribution tools out there that go alongside something like Google Analytics or a competitor. You could do everything with your analytics tool for web, you could do some degree of attribution. So if you've got an app and you don't use an MMP, what will you not get by just using GA4 what would you be missing by not partnering with an MMP?

[00:15:08] **Derek:** When it comes to GA4 or Firebase the only integration or prospect that you have is actually with the Google suite of apps platforms like Google Ads and Display 360. If you know, some company, some startup or some businesses started off, it is totally fine to rely on this, and this was how people were doing it, a lot of people were just relying on Firebase dynamic links before the rise of MMPs. I think one thing that is pretty obvious that I need to point out is the lack of support of Firebase and you will find millions of questions on Stack Overflow and in the Google support, asking how to solve this issue, there's always a lot of issues with mobile apps. If you use like Firebase, the support is normally non-existent. If you use the MMP, you need to pay for it, so that's the downside of MMP.

[00:15:57] **Derek:** To install the tool, and if you have any issues, they always guide you along the way, and they have technical support specialists. They have marketing specialists that can help you if you have any questions or any issues that you face. So that's the main difference that I've experienced so far. But you will save a lot of time and a lot of headaches. One point that I also like to make about Firebase, is that Firebase was introduced as sort of like a toolbox for mobile app development, so Firebase Analytics is actually just a very small part of Firebase.

[00:16:28] **Dara:** So is using an MMP, is that the only way at the moment that you can map these users with the IDFA between a campaign and then the behavior then your app? Or can you get at that data without an MMP?

[00:16:42] **Derek:** The answer is yes if you've built your own MMP, but it is possible to build your own platform to just sort of aggregate all your campaign data. You just export all the data from Facebook, from Google, and then you can do your own organization and attribution, but it will cost you a lot of money. So most companies just go ahead with MMP.

[00:17:01] **Dara:** That complexity, maybe I'm oversimplifying here, but is that complexity because of the fact that with app you've got this intermediary, which is the app store that you don't have on the web. So on the web, your campaigns are driving people straight to your website, whereas with an app, you've got to get them to download it first so they've got to go through this app store. So is that what introduces all this extra complexity or is that just a bit of a side point in a way?

[00:17:27] **Derek:** I would say that is one of the reasons why it becomes so complex, the second point is because Android and iOS testing is a bit different, like how they manage the app stores are different, how they sort of link people to a certain app or the app store is different. Another thing is there's no go-to source other than an MMP or Firebase for you to see all your campaign across multiple ad channels at the same place.

[00:17:54] **Daniel:** I'll ask you a question then Derek. So what about UTMs? What about UTMs with apps. So we talked a lot about, I get that there's this black box, which is the app stores, which is different on Android and iOS. And if you're doing app install campaigns, you're going to lose a bunch of stuff if you're not using an MMP, let's say I'm running no app install campaigns, or let's say I'm not too fussed about that and I'm just focusing on, whoever's got my app, let's say on like Facebook and everyone's already got the app everywhere or Gmail or something like that. If I'm just running I think you call them re-install campaigns or like campaigns to drive you back to the app, maybe a deep link campaign. Would a UTM and using GA4/Firebase, would that be sufficient or is there still something additional that an MMP brings to the table that you can't get just natively in GA (Google Analytics).

[00:18:40] **Derek:** I think that if the sole purpose is just to run remarketing campaigns, retargeting campaigns, Firebase would probably be sufficient. I think the only challenge that you might meet is probably if you're using a link that you're passing around. The downside is that the link might drop off all the parameters or might not be processed correctly by iOS or Android. That's the only risk that is present.

[00:19:07] **Daniel:** If you don't care about all the good stuff, then you can just use GA (Google Analytics) right?

[00:19:11] **Derek:** You can use GA (Google Analytics) it's just like you're missing out on a lot, I will say.

[00:19:16] **Daniel:** I think it's probably a good point to address the elephant in the room and probably mention iOS 14.5 onwards and the kind of complexities that arises, and I suppose to just start with a question Derek, what is it? I mean, I've heard a lot of talk about this with the App Tracking Transparency stuff with iOS 14.5. It's mentioned a lot, but how does what we've just gone through in terms of the MMPs and the Firebase or the GA4’s proposition and all of this, how does that change with something like iOS 14.5?

[00:19:47] **Derek:** So with iOS 14.5, Apple introduced what we call as the App Tracking Transparency, which you mentioned just now. And the second thing is what we call the SKAdNetwork. So what Apple is trying to do is they're trying to preserve the privacy of users and if anyone has iOS 14.5 all the apps that you open, they will be given a prompt, which asks them if they would like to allow the app to track the activities across other apps or websites, but essentially if you allow then Apple continue to share your IDFA with Facebook, with Google, and if you do not allow this unique identifier, it's no longer shared. And without this, all these ad networks are no longer able to also identify specific users, which means that all your audience building based on demographic interests, your retargeting is all, all gone. So, it's a huge change. So traditionally you were able to get this, you know, conversions data straight from the MMP or straight from your SDK.

[00:20:49] **Derek:** Because the IDFA is no longer shared they are no longer receiving this data and how Facebook or Google is receiving the conversion data is through this SKAdNetwork. It's a very smart thing that Apple does because now all conversion data needs to go through Apple, so Apple sort of owns the aggregate of data before they pass it back to Facebook and Google. So that's the gist of how it works right now because of that, you know, you can't really identify individual users anymore.

[00:21:18] **Derek:** One of the most obvious changes also that this conversion is reported randomly within 24 hours of the install. So another step to preserve the privacy. So this becomes an issue with performance marketers mainly, because you are not able to like optimize your campaigns, you'll only see 24 hours data.

[00:21:40] **Daniel:** Can I then ask, does preventing the access to the IDFAs, does that affect GA4’s just generic product tracking then, or is this purely an advertising element? I'm thinking of it from a web analyst perspective, but this is the difference between like a third party cookie and a first party cookie. They're two very different things for two very different features within web. But is this going to break GA4, has this already broken GA4 on iOS 14.5 onwards? Or is this just for the advertising side?

[00:22:06] **Derek:** This is mainly just for the advertising. So IDFA is sort of like a third-party cookie, I would say because it's the same ID used across all the apps. GA4 actually generates a temporary user ID for its users and that temporary ID is based on the specific app, it is not based on the device. But traditionally IDFA was also passed along into Firebase, and probably it's still that if someone allows it, if they allow the app to track, but if not probably they just blank it out, but the key way of identifying is based on, they call it the Pseudo User ID. I'm not sure if they still use the same word, but it's basically like a Client ID but on a mobile app. So it's specific to the app instance and specific to only your device. So, for this case is not really affected by this update.

[00:22:55] **Dara:** Do you think Android will go in a similar direction?

[00:22:58] **Derek:** I don't really know, I don't have an answer for that. But if I would assume maybe they will, but maybe not anytime soon. There was news that they were going to introduce something this year, but I tried to Google it just now, but nothing came out in my Google search.

[00:23:13] **Dara:** With the SKAdNetwork, does that still give you the same level of granularity that you had before? So if you're using an MMP and it's on the iOS side and it's using this SKAdNetwork and they're merging the data on their side, do you still get the same amount of information in the end or is it a reduced amount of data that you get back?

[00:23:32] **Derek:** It is reduced, like the MMPs trying their best to you know, provide as accurate data as possible from the SKAdNetwork, and they have been also trying to do that themselves through fingerprinting methods through probabilistic kind of methods as well. But coming back to your question, it is reduced, it is affected. And in terms of granularity, actually with SKAdNetwork you can only get only up to the campaign level, and you cannot really go deeper into the creative, you cannot really deep dive into those levels. It only allows you to see the campaign level. So, so that's the downside of the SKAdNetwork.

[00:24:11] **Daniel:** We talked a lot actually on this podcast Derek around sort of black box models, especially when Google Analytics 4 has come out with data-driven attribution, conversion modeling and behavioral modeling soon, as well as all a modeled black box mess you know, spaghetti art, a spaghetti that's going on inside of there. It sounds a bit like this SKAdNetwork that, you know, Apple have taken all the data, they're doing their own modeling to it, and they're letting you have access back a little bit, which sounds very similar to things like data-driven attribution in GA4. Do we know how they're doing attribution, what models they're applying? Because I'm just wondering if I click on three different ads and then install the app. How does Apple determine who or what gets that attribution? Do we have access to that kind of insight? Do we know what's going on in there?

[00:24:54] **Derek:** I would assume it's always the last touch. That's how everyone does it. But I don't think that they're so advanced, they're trying to reduce the amount of data that advertisers can get. So I don't think they are trying to help them in any way, but yeah.

[00:25:08] **Daniel:** I always thought that app analytics or the app world, the app data world, who was like 10 steps in front of the web world, because it was like newer, modern, fresh, and you could start again, but then you go in and it's all like last click and it's all a bit fractured. It's really interesting to see it's so new and so modern yet they're still struggling with the same challenges that the web world faces actually, or has been facing for the last 10, 15 years. You know, attribution being one of them and trying to get people to move away from last click wins, or at least be aware that there's other attributions out there, is really interesting in my head. I'm just kind of comparing side-by-side this app and web world, and they're a lot similar than I probably initially thought.

[00:25:45] **Derek:** Same struggles, but way more complicated.

[00:25:49] **Daniel:** I mean, feasibly this kind of SKAdNetwork stuff. This could come to web, right? This could come to web at some point, and we don't know, like, anything is really possible, it could be that all attribution is handled by the platform that we're on and we have to get these little glimpses into the black boxes and try and stitch them all together some way.

[00:26:06] **Derek:** I mean, it could only, if, you know, it's been agreed by the web consortium, right? The world wide web consortium because the website is based on this HTML sort of protocol that's been set up. But yeah, I think with the mobile app, Apple has so much control, so you're at their mercy and they can change very fast. We'll see what happens in the future. I'm pro privacy, but you know, businesses to make money as well.

[00:26:28] **Dara:** So Derek, you did mention a couple of MMPs earlier but if we just go back to that for a second again how maybe a tricky question, but can you give us an overview of maybe some of the pros and cons of the main ones, or maybe even just a bit of a steer for people who are thinking they do need an MMP, but they don't really know how to find one or what to look for.

[00:26:47] **Derek:** So when it comes to MMPs, there are a few key players I'm going to try to name them. One of them is Adjust and then AppsFlyer, there's Singular and there's Branch. So these are the top players at this moment. Typically for earlier stage startups, Branch is relatively cheap at the beginning and it's free up to 10,000 I think active users, but you need to pay to get better support. The other ones where you get bigger are Adjust, AppsFlyer and Singular. And they're all I would say comparable. I prefer Adjust because it's more intuitive to use the user interface, and actually the customer support is pretty top-notch. And AppsFlyer is used by a lot of people as well like Uber is based on AppsFlyer from the last I know, and they have a pretty robust backend as well.

[00:27:38] **Dara:** Brilliant Derek, I think you've just given us loads and loads of detail there. So I get the tough job of trying to summarise that. So I mean, what I'm taking away from it is that if you're tracking an App, you've got GA4, if you're running advertising, that goes beyond just the Google Ad Network, then you really need to have an MMP. There's no question, at least the way things work at the moment. You need an MMP for that extra functionality that integrates with the different ad networks. And also some of the other benefits you mentioned, like the fact that it reduces the number of SDKs that you need. So I think it's probably fair to say that if you're a business with an app, you've got GA4 and you're advertising across multiple ad networks, then you really do need an MMP. And if so, as you mentioned, there are MMPs that are maybe lower costs that can allow people to get familiar with them, start to see the benefits, and then if they need to, then they can actually upgrade to an MMP that's got more functionality and maybe suits a slightly larger business or a bigger business need. Is that a pretty fair summary would you say?

[00:28:36] **Derek:** There was a great one, I couldn't have said it better. So thanks for summarising what I just mentioned in like five seconds.

[00:28:44] **Dara:** Brilliant, okay. Well, I think now it leads us onto the bit and the show Derek which is the hardest bit. You've got to talk not about analytics for about 30 seconds. So each week we ask ourselves what we've been doing outside of work just to chill out to wind down. So we're going to put you on the spot as our guest and ask you first, what have you been doing? So based on what you said earlier Derek you're a very busy man. You've got a lot going on with your main job and a side job. So do you find any time outside of work to do anything else?

[00:29:15] **Derek:** I do actually. I mean, it's not a good thing to be a workaholic. Nowadays I've started to wind down a bit more. I have not taken many side gigs for a while. The only thing that I'm going to do is this mentorship on the side for startups. To wind down I actually liked to go for walks along my neighborhood, enjoy a bit of sun. I like to watch any shows on Netflix, it's a cool way to wind down. To keep myself grounded I actually enjoy cooking and baking a lot. So might not be the best one but I really enjoy the process and just to keep myself in touch with my own thoughts, I guess it's sort of like a mindfulness practice.

[00:29:55] **Dara:** Great, you mentioned baking. I know Dan is a keen baker or at least an occasional baker.

[00:30:01] **Daniel:** I'm an occasional okay baker.

[00:30:04] **Dara:** An okay, occasional baker, any baking Dan in the last week or have you been winding down through other methods?

[00:30:12] **Daniel:** Nothing in the last week, I really enjoy baking and it's exactly, as you said Derek it's that mindfulness aspect to it, I really enjoy, there's like a science to it. It's scratching that itch from that kind of very mathsy brain of like, everything has to be perfectly weighed and measured and everything has to be perfectly timed, which I really liked doing. But at the same time, I love doing it but actually is the eating it part that kind of sucks a little bit because I ended up baking like 30 biscuits and I'm like, I can't eat 30 and I'm just trying to give them away. So I do really enjoy baking, but it does feel a bit wasteful when I do it because I kind of go overboard and then it's just me and my wife and she's okay after two biscuits and so am I, and then what are we going to do with the others, but no, no baking for me this week I've actually been up on the Sussex downs. So around where we live, there's some beautiful countryside, that's super hilly and just going out on long walks and hikes across the downs is a really good escape, actually. So, how about you, Dara? What have you been doing?

[00:31:06] **Dara:** Well I was actually very cultured over the weekend. I went to the ballet at the royal opera house. We went to see Romeo and Juliet, which was brilliant, really dramatic. It's so impressive seeing them perform, it really was. it was breathtaking. We sadly a bit of a confession, we got there a minute late and missed the first act. So we had to watch it on a monitor by the bar, but that almost built the anticipation even more because we were watching it thinking, wow, this is really great, but it was nothing compared to when we actually got in and saw it live. So it was really good, bit strange being in a busy, packed, theatre, but, you know, post COVID, but seeing the actual performance was really great.

[00:31:44] **Daniel:** Oh, amazing. It sounds really good fun, something I've not done before, but definitely on my bucket list.

[00:31:48] **Dara:** Yeah well I'd recommend it, I think it's still running, so if you get a chance, go and see it, really good.

[00:31:52] **Dara:** Okay, quick final question, Derek. Appreciate we've asked you lots of questions today. Where can people find out a bit more about you if they want to follow you or if they want to get in touch with you.

[00:32:01] **Derek:** They can look up for me on LinkedIn, can search for my name, Derek Ooi and probably I'll appear in the top results hopefully.

[00:32:09] **Dara:** Okay, thanks again, Derek. That's it from us for this week. As always, you can find out more about us at [measurelab.co.uk](http://www.measurelab.co.uk). You can get in touch via email at [podcast@measurelab.co.uk](mailto:podcast@measurelab.co.uk), or you can just look us up on LinkedIn. Get in touch if you want to suggest a topic or a better still, if you want to come and join us for an episode to have a chat with us, otherwise, join us next time for more analytics chit-chat. I've been Dara, joined by Dan, and by Derek. So it's bye from me.

[00:32:35] **Daniel:** Bye from me.

[00:32:36] **Derek:** And bye from me.

[00:32:37] **Dara:** See you next time.