P2 Exit Interview

**Researcher 1** 00:07

Thanks for joining us again. I just as I was saying on the way up, we're just chatting to everybody. And this is the last interview actually with with with talked to three of you today. Just to fill in some gaps and pick up on on some sort of things that were talked about in the group calls that we've not had a chance to talk properly about. And and just give you a chance to yeah to talk about anything that you thought was interesting as well. So before we just start by asking how your experience the project has been.

**P2** 00:44

It's been interesting, I'll give it that it's it's when On the occasions where I managed to look at the data and they weren't, they weren't always as often as I'd like, and later on because I forgot the pass, as easy as I'd like so thank you for giving me the detail recently to go back to view it. I've viewed with interest, the sort of the changes in the location but also seeing things like the light change and things like that and tried to work out where and what it was. So that's been really interesting to me. And it certainly generated interest both from colleagues and occasionally the general public and my own family. So that's been good. And I have it's come to pubs with me and things like that. I don't think I sent the picture of it from the left luggage room but it's sat amongst the pints for a night

**Researcher 1** 01:48

a few things probably to pick up on there

**Researcher 2** 01:50

Can I just say we'd really like that photo

**P2** 01:54

I'll dig it out

**Researcher 1** 01:58

Yeah, a few things to pick up on there. But I guess start with the elephant in the room, which is that probably relative to everybody else for large chunks of this study your you haven't been able to get the data on your Probe as much as we and I'm sure you would hope to be able to. But you say you seem to stay you stay very engaged. And you've continue to be really interested in the probe and I guess then my question is, what was what was driving that? I suppose because it would have been very easy to become frustrated, I think and given up.

**P2** 02:32

Well, there's two things. There's one that I always try my best to support any research initiative where I can and what I can do for that and this was not exactly heavy in terms of the requirement to to carry this around or to put it into positions where something that was Internet of Things would be in my house and I did mess around with different locations in the house just to again that reflected in seeing things like the change in light, particularly. And at one point, I got really excited until you pointed out that the actual sample rate was less than that though, because there was there was one spike in the movement data. Now, it might have been that I just caught it while it was sampling but it was my dog hurtling from my daughter's room in the house every morning at a pretty much set time. And I thought that had picked up and then when I got COVID that there was a noticeable change in the movement, but that was because it was going nowhere during my COVID and its batteries run out as well during that point. So

**Researcher 2** 03:39

Did you get to the bottom of what that blip was?

**P2** 03:41

No, No really. Because the sample, you know, when it's presented on your you've got the hourly and then you've got the line and the line thereafter. It might well have been that the it just happened to pick up that movement at that time, but it's also likely that it was being carried from one room to another room for repositioning. What was interesting was depending on the location in the house, I've got a home as everybody else does, a home wireless network, but I've put it through a third party router because the Virgin ones are not great. The coverage in different parts of the house, I don't have the my Wi Fi uber alles that I thought I had. So when it's in another room it's picking up then what I assumed to be the neighbours which are the standard Virgin Virgin designated. The other possibility although highly unlikely is that the Virgin router has somehow still got its Wi Fi turned on. It shouldn't have and that's picking that up in one location but I think its the neighbours one.

**P2** 03:47

And your router is just a single router rather than a solid mesh one with satellites.

**P2** 05:04

It's a single router. It's not a mesh. Do the Alexas put out mesh No, I don't think they do. I'm not sure not.

**Researcher 2** 05:15

Not for your own network.

**P2** 05:17

No, it's not like a [inaudible] or something like that where you... so it's no no it's purely the home. The home router just throwing out as they normally do.

**Researcher 1** 05:30

It's quite likely that with the yeah if your your Wi Fi is coming from one point and gets weaker the further away it is, so at some point the neighbours becomes stronger

**P2** 05:41

Yeah. And you'll get that because I'm on a corner house. Then it stands on each of the divided walls. Depending on where their router is, its probably... So yeah, so we do that surprised me seeing these VM allocations of routers being different parts of the house. Now when I travelled, which I did, routinely with me to work, the difference is there is I've switched recently to travelling on the Metro so there's no it's not like one of our one of the other people in this study pointed out really interesting when they were on the bus she'd never realised that the books had Wi Fi. The Metro doesn't have that luxury. And it didn't pick up anything that as we're passing through any other hotspots as far as I saw. And I would expect to see that repeat because I do the same trip pretty much all the time. And while it picked up movement, obviously it didn't pick up any light because it was in my bag, which my phones in my pocket so it's the same sort of thing you know, so and likewise it's shared the same life as my phone at work, whereas at work, we've got dividers where we work much like we've got here, and mine was sat on top of a divider. So any light it was picking up was just this sort of stuff. We're in Kings Gate, we've got natural light that's far away. So it's these these things and obviously the movement goes down to flatline during that period. Depends on how noisy my colleagues are. So So yeah, no, no, it was interesting. Sorry, I went off babbling away. Alright, so yeah, so yeah, so it was easy to support and yes, there was a slight frustration of not being able to see all the data all the time. But when I could get it, it was great.

**Researcher 2** 07:39

Did you show anybody else?

**P2** 07:40

Yeah, I showed my son who's he's he's just interested generally, although is at 27 years old alarmingly occasionally verges on conspiracy theory stuff. So he was you know, he was like, Oh, is this gonna see what who's listening to us and things like that. And so I let him look and said, What do you make out of that and showed him you know this, here's the here's the Wi Fi sources, he's movement, here's that and so he picked up quite quickly on the fact that oh the neighbour's Wi Fi is coming through much more than I thought, you know, but when I put my own as he does, you know, if you put the phone or the particularly the Kindle to scan on, you know, we pick up on a much broader range of what's available, including the the usual hilariously named something like Hidden Police Van, you know, Mad Cat Woman or whatever they call themselves. So you know, he was interested in that. But But I think it was more from a point of how to what point does that handshake actually engage and what data is passed back forward during that handshake?

**Researcher 2** 08:52

When you're scanning for Wi Fi?

**P2** 08:55

Well, yeah, I'll just the way this picks up on where we know like, you know, it's it's open so it's listening for and he will say it's surprising sort of, you know, that that it identifies them. I said well it's got because it's, you know, something's going to make the shake so it needs to identify. So that that interested him, but yeah, I think it was expecting a bit more of a James Bond device.

**Researcher 2** 09:20

There's no special mode

**Researcher 1** 09:22

Has this Did did you or your son sort of from from there, start to think all about the way that other devices might be, handshake i like i like that term handshaking that you've used, the handshaking that other devices might be doing

**P2** 09:39

Yeah, well, we did funnily enough he he asked about was this the reason why, so we've got the only real outside of the audio entertainment sort of Internet things that we've got in the house. There are a number of plugs that are connected to them. And then there's a standalone Samsung tumble dryer that I bought on some sort of mad... It was mostly for its really good performance in terms of what it did for its like triple A rated or something. But it is internet enabled. It does sort of begs the question why I need to get a text to tell me that my washing is dry even though I'm somewhere else. And the first thing I did after a short time was disabled its connectivity because I just didn't, one I didn't want to draining on my router. But two, I just didn't really see the point in it. And he said, you know if that was if that was on, given that all these things are trying to connect with this, would they be connecting with it and could somebody connect with it? And I was like, well, maybe but to what end? You know, and he was and then he starts going on about the use of printers as third party access to systems. So you know, he's going well if it's not really that secure, you know, I was like it's it's a massive corporation that's put in. I'm sure there's all sorts of walls but yeah, you know, that's what that's what it prompted that conversation about conspiracy theories.

**Researcher 1** 11:13

Yeah. And so you well following up for that, I guess and sticking with conversations and social aspects of it. Could you tell us about, say taking it to the pub, and what kind of reaction that it prompts there when people saw it,

**P2** 11:33

At the pub it was more... What's this? And then, you know, I said I was part of the study, it's looking at how this sort of picks up various things and how, you know, I knew it was going to start a conversation. And again, the conversation was about, well, yeah, but why are they doing it? And I was like, well, you'd have to as much as I can give some background on it, there's the you know, if you want to look it up, there you go.

**Researcher 2** 12:01

The URL printed on the back.

**P2** 12:02

Yeah, yeah, exactly that Yeah. One friend who'd probably one or two pints too many had suggested that it might be easier if it had had a QR QR code. Just just to stop his fat drunk and fingers missing the web page, perhaps but he took a picture of it anyway. So whether he interacted with it, I don't know. And again, it was about you know, and the actually the example I gave was my son talking about the washing machine and stuff like that. And one of the guys used to be a systems guy at the civil service. So he then went into well that could you know is a backdoor, that's sort of thing that can happen. And so it prompted that sort of discussion about how secure is your house? If you don't have a 64 bit password on your you're totally locked down Wi Fi. So that was that's usually where the conversations went actually more about home security and stuff.

**Researcher 1** 13:08

Is that something you would talk about normally?

**P2** 13:12

No, if if that hadn't been there as a prompt, it's unlikely we would have ended up down that conversation route. In fact, it would have been much more likely to be something about politics, which I was quite glad to avoid to be honest.

**Researcher 1** 13:27

anything with that.

**P2** 13:27

Yeah.

**Researcher 2** 13:28

Did they have a good look at it? Like did they pick it up and look at it.

**P2** 13:33

Yeah, yeah, they did. And funnily enough, the I think one of the questions I got asked was around the GPS aspect of it, and to what point did it know exactly where it was? And I couldn't answer that, to be honest. I couldn't, you know, so, I just said, I actually don't know that part. And couldn't see that actually, when I looked.

**Researcher 2** 13:57

No we've had trouble with the GPS.

**P2** 13:59

Right, right.

**Researcher 2** 14:00

I mean, we we did restrict what it was recording when even though it was you know, even though you got the data even regardless of that kind of thing. We did still keep the precision, we made the precision lower than lower than it is now. I think its three decimal places of the longitude and lattitude.

**P2** 14:24

Okay, so it's quite broad space. Yeah.

**Researcher 1** 14:29

I mean, the GPS chip itself is theoretically as accurate as your phone. But then it knows where it is, but it doesn't write that down when it fudges it a little bit.

**P2** 14:41

So have you got so you've got access to the recordings of it, though, so you should be able to, oh you haven't?

**Researcher 2** 14:47

No we don't have the data is literally only on that.

**P2** 14:51

Yeah, I get that. But it has stored it on the chip. So we're

**Researcher 2** 14:54

Not just on the card.

**P2** 14:57

Right. And so the card its is only very limited in how long has it then?

**Researcher 2** 15:02

No, because it's got full, it's like a 16 gig card or something. It's got, like, it's got all of the data it's ever seen on that.

**P2** 15:11

On the SD card. So yeah, okay, so you so but you get that data right after this.

**Researcher 2** 15:17

No.

**Researcher 1** 15:17

Oh, no. No, we'll give that... for, like GDPR reasons and things like that. So we're, for the purposes of this study, what we're really interested in is what you see in your data and how you responded to the device and

**P2** 15:33

Yeah, okay. Yeah. Okay.

**Researcher 2** 15:35

So free SD card for you if you want to it.

**P2** 15:40

Which incident I think I might have taken the cable as well I have taken the cable as well.

**Researcher 2** 15:47

We've got more than enough.

**P2** 15:49

Okay, okay. Yeah, that's a pity because I thought you were going to do that, while I got to retain that I thought you were going to take access of the data. So I would

**Researcher 2** 16:00

Were you actually quite excited about that prospect of us? That might be putting words in your mouth.

**P2** 16:05

I think it would be useful it so in ways the other week when there was discussions in the meetings about being able to visualise the data. And some people much more capable people were looking at ways of particularly the 3D aspect of it. And I was willing to, to have a bit of a try but never got around to it to be fair. But yeah, I wouldn't I mean, one of the things that I signed up to, GDPR aside, was that, you know, it was what use would be made for you for analysing that data. I hadn't realised it, it was just my interpretation of the data as presented. Nevertheless, okay.

**Researcher 2** 16:42

Is there anything you'd like to do given you've now we've now said that are you now do you feel that will help me [Researcher 1]?

**P2** 16:56

I don't feel let down, so I feel let down.

**Researcher 2** 17:02

I was going like, do you want to do you want to do anything now? Do you want to do, Do you wanna, Do you want to spend some more time with it or or

**P2** 17:13

I don't mind spending more time with it. If it's if it's a benefit to yourselves. I,

**Researcher 2** 17:19

More actually but you know, so it's kind of interesting. I'm like, in some senses, then I guess my question was were you making the data for want of a better word as a sort of gift for us? Or like,

**P2** 17:34

No, because I wasn't really, aside from carrying it with me. I wasn't changing my behaviour in any way. Cool. So it should give including sitting up very late at night on a Friday night when I sent the example of did I do this? Or did my daughter read the biscuit cabinet. No, it just lived with me as I live. So, you know, I certainly didn't take a trip to Paris for its benefit. Although if I put the expenses in. Maybe I did.

**Researcher 1** 18:07

I suppose. Well, let's say theoretically, we were going to take all this data and do a bunch of visualisations or something what what would you be interested in? What would you have been interested in seeing

**P2** 18:18

Well so ref the GPS. So in the in the imagery, you can see you're moving or you can see it's something that there's movement, and it picks up the difference in for example, the Metro shit I thought would have been a better example, but as you're passing through different different footprints of Wi Fi, yeah, I would expect particularly, I mean, obviously a lot.

**Researcher 1** 18:49

Even if only at the stations when he had time to sniff about

**P2** 18:55

Exactly, exactly. So you now, some of that, as I said, I mean, do you want to connect up to it and have a look, because one, because one of the things is that I've got there's gaps in the data. Now some of the gaps in the data. I wasn't sure if it was just not populating back in the way that I thought, you know, like you said, plug it in for a little while. And after, after a tiny little, it'll connect up and give you you know, it'll populate the tables. I wasn't finding that was happening is as easy as it was part of it was I was doing it through my works PC because I couldn't view the image very well through my phone. When I was connected to the works PC it keeps defaulting on this it would drop off.

**Researcher 2** 19:42

Can't remember which password we gave you.

**P2** 19:46

So what would what would happen is it would drop off and then I would I would lose the refresh, I guess. So that was occasionally frustrating because I want and where those gaps what it does as you're scrolling is it jumps to the next set of data so if there's a gap of a few hours where it might be left overnight and it's dead, it's not doing anything anyway and then start getting recharged. It kind of jumps between them. But yeah, it didn't very little of the so-so's iPhone, which was kind of what I expected to be picking up on. Because if I sit again, if I sit on the train, and turn my phone on search for available networks, there's always a tonne of so open up public ones.

**P2** 20:39

So if we go for example, you should be able to jump back now because we've got this isn't

**Researcher 1** 20:51

doesn't seem to be loading anything.

**Researcher 2** 20:53

Don't do it too quick.

**Researcher 1** 20:56

I was slow to start with but it didn't do anything either.

**P2** 21:00

So this is me coming in this morning and plugging in so obviously got your Eduroam. You got your Eduroam and then it picks up the university one as I get towards my I would've thought slightly earlier than that, but anyway

**Researcher 2** 21:13

I'll have been

**P2** 21:14

I hadn't appreciated you could say

**Researcher 2** 21:20

oh that you can click

**P2** 21:21

click on an hour and it

**Researcher 2** 21:23

Yeah, so you can see a bit more. So that if we can can we can find the Metro

**Researcher 1** 21:30

Match Manager 22 23.

**Researcher 2** 21:34

You can find the Metro that might give you a better

**P2** 21:37

So this morning I think I got the 8:10.

**Researcher 2** 21:41

I don't think we're getting I think before nine. It would have if it's loaded that it would have loaded anything prior to that today as well.

**P2** 21:51

So it was definitely charged.

**Researcher 2** 21:54

Something was up.

**P2** 21:55

Does it doesn't give you the battery status at these points.

**Researcher 1** 21:57

Yeah, so 60%

**Researcher 2** 21:59

No, no.

**Researcher 1** 22:01

Oh each I see yeah .

**P2** 22:02

That's not on the sample. So there's periods here where it's not all you know, I mean, when I was at work, it's usually got the cable connected to it. And I know it's got a fairly short battery life. But you know, this is

**Researcher 1** 22:19

if I went into the IP address would that

**Researcher 2** 22:22

I don't think it would make any difference. I'm just wondering if the, I'm wondering if we updated this

**P2** 22:30

So when you scroll down you will eventually hit data again but it's almost coincides with when I came to see you I think the last time [Researcher 1] because you see the downstairs handshake. You get so that's [network name] is my house that was Tuesday gone. Was it

**Researcher 2** 22:49

Tuesday the second

**Researcher 1** 22:50

That's two weeks ago isn't it

**P2** 22:51

Two weeks ago. So that's so Tuesday the second is, I went to Paris on the Thursday. And

**Researcher 2** 23:00

After that

**P2** 23:01

Yeah, this is so yeah. And I ensured it was fully charged on Thursday. I ensured it was fully charged before I went because it went into from my house. It went into a suitcase and then it had to go into the hold because it was a bit risky to carry it through hand luggage. Just just for the sake of explaining what it was. But I would still have expected to pick up all sorts in the airport as it was getting wheeled around.

**Researcher 2** 23:31

And was it on when it was at the airport.

**P2** 23:34

Yeah, yeah.

**Researcher 2** 23:34

Cool.

**P2** 23:35

Yeah. It was on when we travelled back now it went through the check in services. But on land side, you've got no end of sort of free Wi Fi and stuff.

**Researcher 2** 23:46

So we should be what we're really interested in see if there's anything around. What did you say the?

**P2** 23:52

So that would be Thursday, the all so I was in Paris this whole time and it travelled with me in Paris and it was getting charged at night. So like the photographs of it.

**Researcher 2** 24:03

Yeah, they were great.

**P2** 24:04

Yeah. So So again, hoped you know you'd hoped it would be picking up the hotels, absolutely naff and hard to connect to but I bet you it still picks it up. Wi Fi service and then various cafes, bars and restaurants

**Researcher 1** 24:17

and is this what we're seeing here? Is this consistent with what you

**P2** 24:20

It's consistent with what I was and I was thinking it was down to me have an IP problems. But these bitty you see. So there is data there

**Researcher 2** 24:33

Right okay, this might be a day at least you went to the on the metro. Is it Friday 29th

**P2** 24:40

Friday Yeah,

**Researcher 1** 24:40

Oh there's the Left Luggage

**Researcher 2** 24:44

more so yeah, if you open this up now you maybe that's

**Researcher 1** 24:47

that's the evening

**P2** 24:50

seen this one. So maybe it's just because of the population maybe it's because it's just populating

**Researcher 2** 24:56

I've got confused with my own interface. But why it's okay. Yeah. So this is coming in and the morning

**P2** 25:04

Yeah so that's my house [network name], so the Virgin Media, oh you've got Nexus there you go so.

**Researcher 2** 25:10

And then like at 9am as well. So you can see... you're pretty much on the dot that day of 9am

**P2** 25:20

Yeah, coming in at 9am. And yeah, yeah, so I must have travelled by Metro to the door because quite often what I do is go a bit earlier. I get off at South Gosforth and then walk for about an hour. You know, just just just to get some exercise. So you'd still get the Nexus pickup. But that's so three that obviously the time on the train the Nexus but that's what I'm saying. There's no pickup of anybody else's phones or anything.

**Researcher 2** 25:52

Let's see what happens in the evening.

**Researcher 1** 25:55

I wonder what that is Nexus or if that's on the metro or

**P2** 25:58

Or on the platform. Oh I'll tell you what it could be the Nexus, is it 5pm. There was a Friday [inaudible] We don't always bugger off early. But it's some of the Nexus, so I also walked back down South Gosforth and it could be because it's their HQ.

**Researcher 1** 26:25

Yes, yeah. It could be.

**P2** 26:28

So, Oh, usually on Friday, I must admit I don't walk all the way down to because I want to get on the train and get the Metro as quick as humanly possible.

**Researcher 2** 26:36

Oh then there it is.

**P2** 26:37

Yeah there it is. But obviously went home that night.

**Researcher 2** 26:39

Be good to see something French in there thought wouldn't it

**P2** 26:47

It would wouldn't it? See, so it's just not it doesn't appear to have anything in those periods. It was being charged pretty much religiously.

**Researcher 2** 26:48

We could try and I mean we'll see what things are pushing on a bit.

**P2** 27:10

If you want to, I haven't tried taking the card out and putting it in my own PC and looking at it. How easy is it to visualise that you know?

**Researcher 2** 27:26

So that would that would let me see I could see if there are any data files that day at all.

**P2** 27:33

Okay. Do you want to do that? I mean you feel free if you want

**Researcher 2** 27:37

Like with your permission. Yeah, that'd be

**P2** 27:41

I'm giving sort of full of open permission regardless

**Researcher 2** 27:44

And then we could skip and then if there is something I can send you the screenshots of what you've got if that's

**P2** 27:49

I'd be really interested in seeing particularly the I can send sort of the all the dates for the travel to Paris should pick up a hell of a lot. You know movement everything, light would be light will be interesting because particularly if it just happened to hit, to know if someone opened my case while it was travelling although I suspect if the case had been opened, I would have been getting asked a lot of questions at the other end about what's that?

**P2** 27:50

You did mention at the very beginning that it had had some interactions with the general public? Did you Did you mean your mates at the pub?

**P2** 28:23

We used to be a longtime,

**P2** 28:23

No, it also went general public's probably broaden it a bit too much but certainly University. It went to the 150, still, this is still a questionable date, but anyway, 150 years of SAGE, which was at the Civic Centre and on the day it was there, we had a stand in the Civic Centre for KTP, which is what I work for but on the stand. I had my laptop and then I had this next to it. And people come up and I had a rolling display on the laptop. And there's bits of paper about what KTP is. And they were wandering around in the lunch break, and more, probably more than 90% of them who visited the stand then said what's that because it was standing alongside and I said oh, that's a that's a an experiment that's going on. Now at the time. I inadvertently, and I think I put this in a tag as well said it was Culture Lab. And then somebody said, Well, Culture Lab are they still going? I was like, no, it's not Culture Lab. It's Open Lab.

**Researcher 2** 29:35

Culture Lab is still still going

**Researcher 1** 29:40

Well, Culture Lab is still going this this research group used to be in that building and also called itself Culture Lab. But then they had to move out of that building so then had to change its name.

**P2** 29:57

Yeah, so anyway, so I don't know what the split was of the people that were at the event. But my guess is they were almost entirely early career researchers, postdocs, because there was free food. So so that also just the timing was really bad timing because there's hardly anyone on campus. So anyway, the guys that came over, were all really interested in it because it had flashing lights. And it's clearly not something that you go and buy at Dixon's you know, so they were just what is it? What's it about? And again, there was me sort of bad example of what the study is. But then showing in every case that it has this on the bottom,

**Researcher 2** 30:47

yeah, this being the logos and

**P2** 30:49

The logo. Yeah, the logo and the contact point and I usually on my thumb over the Northumbria University

**Researcher 2** 30:59

Don't tell [Researcher 2].

**P2** 31:00

I didn't. No [Researcher 2] seemed like a nice guy.

**Researcher 1** 31:06

Yeah. So can we talk maybe about the Paris trip for a little bit?

**P2** 31:09

Yeah, sure.

**Researcher 1** 31:10

How did that. Well. How did that experience of taking abroad I suppose and taking it through the airport system, but also being being in another country with it and being somewhere slightly less

**P2** 31:22

Again, the only time that I was really conscious that I was doing anything different was while my wife going oh god was we've got the open top bus which goes around the city. We did the full tourist thing and one point, lifting it up for demonstration purposes, but I hung it over the side and took a picture of it as we're approaching the Eiffel Tower. And one or two people looked at me because I was holding something up that wasn't a phone and didn't look like a phone. And you know, they were I don't even know what nationality they were but it got a couple of stares, but obviously no. But also on the plus side nobody ran away either. So but yeah, my wife sort of went ugh and likewise down at the Louvre because I actually put it on something and took a picture. Yeah, it's quite a nice picture. It probably stayed at the Louvre. Well, no, we both stayed there obviously as long as we could but it wasn't very It wasn't long enough.

**Researcher 2** 32:25

Did you go through any bag checks when you were there

**P2** 32:29

Bag checks? No, we didn't go in the Louvre. We hadn't booked advance tickets and the queues were insane queues were insane. No it oh did it. Yes, it went through. I went to the museum of mdoern art. And you put your stuff through, it was a small bag. It was in like a man back. So it went on to the tray at the side so it didn't go through the scan. I went through the scanner, but it didn't. But the security guard sort of went meh and just passed me my stuff back. So it was probably just as well I forgot I even had it with me.

**Researcher 2** 33:09

We're interested in this at the moment because we're going to take

**Researcher 1** 33:11

We're going to Berlin next week.

**P2** 33:14

You're going to where?

**Researcher 1** 33:16

Berlin

**P2** 33:16

oh, Berlin okay, sorry. Probably not going to attract that much attention. If you go to China or maybe the Middle East, you might have some issues

**Researcher 1** 33:28

We've been trying to try and get our heads around exactly what the rules are on batteries. That's that's, that's actually less than the fact that it looks like a bomb and is actually quite remember when all those Galaxy phones exploded on planes there's there's this pretty strong rules about batteries now.

**P2** 33:45

Yeah, there are and Yeah, good point. You know that I you know, I do I'm Knowledge Transfer so I deal with the administration of a lot of needless administration. Ridiculously you can take if this was in a, I suppose it's C marked and everything but if you were taking it in, for example, a phone or a Kindle which has probably got a slightly bigger battery. It's entirely fine. The minute it's not, then you're filling in all sorts of rubbish about its safety. Who knows might not be as bad but yeah, you might have a thing on your hands there if you declare them as being what they are. Anyway, yeah, so it was no it travelled it travelled well enough. But I didn't tell anyone I had it. I probably would have got myself in the bother to be honest. If I told them

**Researcher 1** 34:42

Was that was that a conscious choice not to

**P2** 34:45

It definitely went in the hand luggage as a conscious into the hold luggage as a conscious, I to be honest I would have probably made up some "I'm so innocent, I didn't realise I was causing any trouble" sort of thing. But I would have been really interested as I said earlier, if for the sake of a normal security check, the case had been opened and this and picked up on the sensors, so we could nail it to the time that had been opened up. That would be really interesting. Even though I'd probably be in bother after. But again, didn't happen as far as I know. Because I haven't seen the data from the travel to France. So yeah.

**Researcher 1** 35:29

So I suppose possibly difficult to answer given that you didn't get a lot of the data but was Was there anything in the data that you saw that surprised you?

**P2** 35:42

Yeah, there's the bit about the when I said that thing about was I watching TV or did my daughter read cookie jar? The light the way the light in certain circumstances, the light reading goes to it looks like a cloud. I's just multiple read. And sort of what's causing that because once or twice, it was left in positions, one of the places it's left is in the bay window of my house, which is in the living room and it's facing roughly, roughly east. So you could get a good indication of Sunset sunrise, and you'd see it in terms of the light because we've you know, in the summer we don't have any lights on in the room and so that conversation oh well TV was on therefore you are getting that. Could that be the case? Probably was but there were once or twice other periods where that sort of reading came and it was really in the middle of the night and now I'm not sure again, because of the sampling rate, whether this would be consistent. But I did notice the other night when it got much darker and we're sitting around that some of the trees in my garden need a bit of a cutback and there's a streetlight which is coming through the leaves. So you're getting this mottled effect. It could be that sitting in that space, and it just happens to be picking it up in darkness.

**Researcher 2** 37:20

Have we got time to pull out one of those occasions up because I don't think you would have clicked through to the.

**P2** 37:30

I'll try and remember what the date was of that when I sent it specifically. But yeah, there's a couple of them sort of like when it's been left on that shelf. And you get that sort of scatter approach. Whereas I said I mean, ordinarily you get this really nice correlation between sunrise and sunset, usually the weekend.

**P2** 37:53

We alright for time?

**Researcher 1** 38:16

Yeah.

**Researcher 2** 38:24

Yeah, something like it's kind of on the edge. It's it's one of these kinds of That's annoying. Its on the, can we get to the browser?

**P2** 38:38

I think it does it in the browser as well.

**Researcher 2** 38:40

Yeah, but the problem was I couldn't, I couldn't make it. The window seemed to be

**P2** 38:47

That's exactly

**Researcher 2** 38:48

what you were having that as well

**P2** 38:49

I was having it in small in some of the places where I wanted to look at it. I was getting really, but I hadn't. I hadn't appreciated you could open up on the hour which will give you a bit of

**Researcher 2** 38:57

Yeah, yeah, yeah.

**P2** 39:06

Should have put it up on there

**Researcher 2** 39:26

Gradually coming through

**P2** 39:33

so that's a bit that was a fairly classic overnight though.

**P2** 39:36

I think. Yes, get it to.

**Researcher 2** 40:08

Right. Oh yeah, right. So 2am Yep. What the hell's going on?

**P2** 40:12

Exactly. That's what I'm saying. So that's

**Researcher 1** 40:18

Maybe if you full screen it you'll get a little bit more real estate

**P2** 40:31

Alright, yeah, that might do it. Try there you go, oh that's already open to that point, isn't it so 2am

**Researcher 2** 40:39

Yeah so you've got like this pretty consistently dark here. And then there's this is sort of switchy changy sort of things happening

**P2** 40:44

Would would when one or the other of you is there late at night do you have, do you have the lights down very low.

**P2** 40:44

Now this one here. That could be, this is a Saturday night right? I mean, it's, it could be my son coming in. Yeah, well, there's me. I do stay up late, but it could also be my son coming in. And then because the Xbox was moved down into the into the living room at some point while I was away the last time so that's a possibility but

**P2** 41:17

No lights

**Researcher 1** 41:18

No light, like, Okay, so do the sort of flickering of the TV probably would be changing the light levels quite significantly, wouldn't it?

**P2** 41:24

Yeah I suppose? Yeah. And that would, I guess, but this is almost a pattern here. I mean, obviously, it's noise. So it's hard. You know?

**Researcher 2** 41:33

I don't know that to me. Yeah, there's so there's your that's your natural light level there. And I think you're picking that up just at about 11 as well. And you've got this sort of, this is annoying.

**P2** 41:48

But that fits, doesn't it? So you know, you've got your period of darkness. You've got there'll be some streetlight in which might explain these little bits, you know, I'm saying is this

**Researcher 2** 41:57

Yeah, I think that's pretty that's pretty much what to expect to see there. There's definitely something here, the TV screen or a light that you say it's been, you know, it's got

**P2** 42:10

But I would expect because we don't have as far as I know, I mean, under the council's brought around policy, pretty on the main streets that they knock down the streetlights at certain times. So now on the side streets, I don't think they do that. But that then you would get you might see it completely drop off. But this this here, you know the these, that's just a normal light coming up to daylight and that was quite nice seeing that drop off and come back up again, because the position it's in is where you get natural light coming through. But yeah, there's definitely one or two of these were certainly I wasn't up. But you know, they were interesting. And likewise, the sound does that actually does fit with it. But here this is the middle of the night and he's got the same sound pattern running.

**Researcher 2** 43:03

Yeah, that's not that's not volume though. So even if it's really anything any slight sound at that frequency, that's been logged

**P2** 43:13

Okay. So and that's across what five

**Researcher 2** 43:17

Yeah so that's I think of up to about twenty kilohertz. I think that's where we

**Researcher 1** 43:21

what do the different heights of the bars representing if not volume

**Researcher 2** 43:28

Its a little bit shall we say poetic. Its

**P2** 43:33

duration

**Researcher 2** 43:34

No it's like hits so it's, if you get it, it looks at this looks at the sound. I think it's one second or half a second. And then it but it's doing that multiple times. So it does that within that one second thing so that the samples are fairly short, but it's doing like say five of them. So what you're getting back is you know, it's sample one you got a frequency of like 10 kilohertz, in sample two, you got it in 10 and 15. And in sample, you know, but what I'm essentially doing is saying well actually then that I'm gonna raise the value of the 10 one because it was consistent in that sample

**P2** 44:19

because that was one of the other things I was looking at was oh through the night it seems really noisy. But that's okay.

**Researcher 2** 44:27

That's, I don't think we I sorted the sound visualisation out as well as I could've done

**P2** 44:37

Because again, there will be some things that which that will explain is that so the example of the tree that's right next to the bay window, even in the stillest of weather the leaves will move, so you're gonna get that white noise effect again, background. Okay, so that was it's that stuff that you know, I was really interested in looking at. Why is this happened at this point? I mean, some of it is I'm sure if I quizzed my son said Saturday, well, obviously not like in a police way Saturday, the 24th or whatever, you just wouldn't get it but if I if I'd said last Saturday, did you come in and play the Xbox? Yeah. Right. That explains, if anything I was trying to catch out with the box and be back to the [inaudible]

**P2** 44:38

How do you think people in the home would feel about that? If you

**P2** 45:33

Were monitoring what they were doing? I don't think they'd be very pleased at all! We've I think you'd probably remember when we first came when I first came to sign up on this. I had a different perception of what it was and I was giving the example of how we'd had a conversation and then very quickly we'd seen adverts and the correlation, you know. He was dead set against when I was getting the Amazon stuff he was sent me Why don't you get Google and I'm saying well, at the end of the day, the ecosystem is no different. You're locking in something. It's not completely open source. Why, you know, why worry about one system over another? So we've had conversations about that. I think if he thought I was actually monitoring what he was doing, he'd be he would be worried. I think the rest of the family I think it'd be more of saying kind of stuff happens. You know, like, particularly around Internet of Things. I was really excited years and years ago, a Spanish guy sort of did a demonstration of a house where as he walked between the rooms that lights came on way before the stuff that Amazon was doing. And I was thrilled about that the idea of having my own personal HAL to say hello, [P2], how you doing and all that. So certainly my wife and daughter would be like, Yeah, this is just one of his things. And this is going to, at some point. It'll be easier for us because the lights will come on as well as it's not just for him, you know? So I think that they'd be interested but not they wouldn't be against it, but they wouldn't be like actively engaged with it either.

**Researcher 2** 47:10

Would you ever describe this as being open source? Or is that sort of not quite. We sort of talking about different things.

**P2** 47:18

I think we've probably talked about it. So I was when I was saying open source I was meaning sort of, I don't know if what its programmed in or anything like that. But it was more about Apple and Google. And these guys particularly, sort of lock you into their environment. Whereas there's many of the internet of things now claim to talk to anything. Yeah. Yeah, because of certain operating standards, but you'll still find that Well, they'll say that the do it. Amazon, particularly as I said, I haven't. I haven't tried the other things but Amazon makes it bloody difficult because you've got to download an app and then authorise it through the app and tell the app to do, so it's not as hands free as you might think. So that's why that's where I prefer the kind of when I say open source in much like, I forgot the person's name, but the person in this study and her son who joined some of the meetings, [P1], you know, she was she was actively sort of hacking into things and making them fit to her environment, you know, or buying things that we you programme yourself too match in.

**Researcher 2** 48:33

So it's more it's like a sort of, I guess another term might be like plug and play in this

**P2** 48:40

kind of plug and play, but I'm thinking more of what we're thinking of. I've got really limited technical ability, but I'd like for example, to be able to write my own apps for the devices I've gotten not be restricted in what I do. And for various reasons, that's not always as easy as it might seem. So that's what I mean by open source. So these

**Researcher 1** 49:06

in the sense of sort of interoperability, I suppose, isn't it as opposed to they call it a walled garden? Like Apple does, where they don't let anybody else play inside.

**P2** 49:15

Exactly, exactly. If you play their rules, that's fine. But if you if you don't, you know, you're trying to do something else, it's not gonna and that's certainly the way Amazon as I said, do it. You know, I mean, the Kindles are sat on top of a variant of the Android operating system.

**Researcher 2** 49:36

I soldered a connector to the back in the back of my Kindle and got it gave me like a terminal window and you can see the can use Unix commands on it.

**P2** 49:49

Yeah, yeah. Well, that's there's there's various sort of probably as you're describing this, there's methods to do it that you can find on the thing as someone with not that massive technical ability this

**Researcher 2** 50:01

This was a this was a get open the board soldier on a wire here and here.

**P2** 50:05

Yeah. All right. So that's quite involved. Whereas the other versions that you get things that you can download, perhaps from the internet are fraught with danger, you know, what you're going to expose yourself to because you're using a tool like I'm using a tool I don't fully understand. So anyway, yeah.

**Researcher 1** 50:26

Has anything I suppose you've experienced during the study or conversations we've had on the calls, has any of that changed any of your attitudes towards any of that technology?

**P2** 50:36

No, I don't think it has. I think it's just more still the layman's sort of general interest in how things would make my life easier in most cases. I don't massively suffer from anxiety about the security issues. It's things are as secure as you know, there's a degree of trust in producers and then, you know, there is an onus on ourselves to make things safe. So try as much as you can, but you know, there's people that will always get through that. So no, it hasn't really changed my attitude to anything. As I said, I mean, there's a lot of devices now will carry most of this carries pretty much all that functionality. And it does sort of, in many ways sort of ask why you didn't create some sort of app that would play with the phones that would give you the same study certainly with a guarantee that the users because they plug in the phones in all the time, I suppose it's all sorts of things about privacy and that

**Researcher 2** 51:42

yeah, yeah. There's loads of answers to that.

**Researcher 1** 51:48

It's more fun.

**P2** 51:49

Yeah, it's definitely

**Researcher 2** 51:50

Well, but also like you know, we spend a lot of time in the last, you know, in this conversation, talking about how you bought it to places and the kind of ways that what people feel about it. And so there's a kind of, there is a kind of there's a

**Researcher 1** 52:11

Yeah, it was designed to be intrusive, in a way not well, not intrusive, obtrusive,

**P2** 52:17

Well it certainly stood out.

**Researcher 2** 52:20

And then yeah, structure conversation around the data, and then all of the things about, you know, we wrote all the code that's on that. We do you know what's going on on there. If we'd have put an app on your phone we don't, you know, the way we don't entirely, then know, we can't make the same guarantees about what is

**P2** 52:43

It comes comes back to exactly, yeah, yeah. So it comes back to what's happened to the data. Yeah.

**Researcher 2** 52:50

So there's sort of an opportunity to make a platform that we can we can trust ourselves but also like, in a very reasonably ask other people to trust.

**P2** 52:59

Yeah, yeah.

**Researcher 1** 53:00

I think we could could very easily you know, used black perspex and made it look, you know, aesthetically, somewhat similar to that. It was not just an aesthetic choice to do. It was a set of sort of values and principles.

**Researcher 2** 53:16

And trying to show you know, here are the sensors and here's the data that comes out of those sensors.

**P2** 53:21

Yeah. Yeah, and that's actually sorry, I forgot. Sorry. I'm sorry for sort of rolling over you as you're speaking. That was one of the things that when we were at the at the 100 years of SAGE thing when I'd said You know, you can look here and it tells you, one of the guys from a very practical sense was like oh, this would be really good for something they were building and how did you get this presumably laser cut. And he was interested in that, and then took a second look at the front and said, This is really obvious what everything's doing. You know, it's really nice the way it says what each the things are so that even even a non technical person realises that that's the light sensor, and then you've got a real line to if you want to isolate it, you can turn it off. Which incidentally, I never did what you did on the day when when I came to see you to to have whatever was done to it. You'd switched some of the switch down. Yeah, it must've been in handling. And it wasn't till I got home that night. And I was like, Hey, wait a minute. I switch them all back on again.

**Researcher 1** 54:30

Yeah, no, yeah. What I probably did was normally when I booted up the cos you can see a greyed out a column when you switch ones on and off so I was doing that to make sure that it's live. Good, quick way of telling you're getting a live

**P2** 54:43

It's interest in it goes greys out the column as well. Right. Yeah. So anyway, so yeah, that was appreciated by a couple of people. As I said, ECRs typically

**Researcher 2** 54:54

Cool. Nice. Yeah, that's nice. It's really good to hear.

**Researcher 1** 55:00

I think that's everything I wanted to ask was there anything else you wanted to?

**Researcher 2** 55:04

I suppose it's one fun thing. I think I think I think of how this, well, it's like I mean, I do kind of want to think about this, the difference between the Amazon Google like, Apple kind of thing. And then the security bit so when not very good at asking open questions. And so lets hit the nice closed question. I'm, yeah, so that's sort of do you what do you see the motivation of say something somebody like Apple as being in walling off their garden? Do you see it as a kind of financial commercial thing?

**P2** 55:50

Yeah, I don't see it as anything that has any benefit. I particularly because I kind of as you did, I'm sure, we've grown up through massive developments in IT and seeing big changes and took it in stride and just not and Apple particularly came in from an angle that was were very design based. And everything we do is free and open was the way they presented themselves. And then very quickly fell into this system where it's a lot easier now. My wife's just got an Apple phone, and doesn't appear to have had a massive difficulty transferring from her Android over but it used to be you know, what, really irked me was if I bought something that played nicely with Apple, usually an Apple product, it wouldn't then play nicely with a Nexus and Android are not much more difficult, but it's across a much broader platform and multiple users. So it's not one product line. So it's easier to interact between the different Androids. And as I said, Amazon again is another thing. So you know, on the face of it, yeah. They say, Oh, you can you can introduce new speakers and things like that. But actually, if it's not the Amazon speaker, it's a bit more work. I just want stuff to be like, I've got this I bought it for my use. And I wanted whatever device I get to connect to it without any issue.

**Researcher 2** 57:27

Would it be putting words in your mouth to say that, like, the the someone says Apple would I guess say, well, we've got a list of the suppliers that we trust and are secure and like we you know

**P2** 57:47

are endorsed

**Researcher 2** 57:47

yeah, you I mean, I think you said before, maybe the security was sort of less of an issue for you in a way

**P2** 57:55

in a way but I mean, I wouldn't I wouldn't be if Apple started, I use Apple because that's a classic example because it's one one company. I you know, if they were saying me this is for security reasons, it wouldn't really I wouldn't be buying that. And I think even though we've been talking hardware, a classic example of any of these guys, is I've got Spotify a subscription. I've got Amazon Music comes through the Prime which is a partial subscription. If I tell my Alexa to play the tunes I want off Spotify, I have to after first enabled Spotify. I can't then say play this on Spotify. It'll only play from my playlist that my likes and you know, and if I want to tell it to play something, I then have to open Spotify on here connected to the Alexa and select my playlist and that is a huge chore. Whereas if I went Alexa, play whatever from Amazon Music and then opened my playlist it just does it seamlessly. So now it's improved massively in its relationship with Spotify over the last couple of years, but it's still rubbish. So that's the kind of thing that just drives me mad. I just want interoperability.