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IN THE COMPETITION
APPEAL TRIBUNAL

Case No: 1403/7/7/21

Salisbury Square House
8 Salisbury Square
London EC4Y 8AP

Wednesday 5th February 2025

Before:
Ben Tidswell
Dr William
Bishop
Tim Frazer

(Sitting as a Tribunal in England and Wales)

BETWEEN:

Dr. Rachael Kent

Class Representative

v

Apple Inc. and Apple Distribution International Ltd

Defendants

A P P E A R A N C E S

Mark Hoskins KC, Tim Ward KC, Michael Armitage, Matthew Kennedy, Antonia Fitzpatrick,
(Instructed by Hausfeld & Co. LLP) On behalf of Dr. Rachael Kent

Marie Demetriou KC, Brian Kennelly KC, Daniel Piccinin KC, Hugo Leith, Hollie Higgins
(Instructed by Gibson, Dunn & Crutcher UK LLP) On behalf of Apple Inc. and Apple
Distribution International Ltd

Wednesday, 5 February 2025

(10.30 am)

THE CHAIRMAN: Good morning, Dr Singer.

THE WITNESS: Good morning.

THE CHAIRMAN: Ms Demetriou.

DR HAL SINGER (continued)

Cross-examination by MS DEMETRIOU (continued)

MS DEMETRIOU: Good morning.

Dr Singer, yesterday we were talking about the position back in 2007 when the iPhone was launched, and do you remember I showed you the article from the Financial Times which talked about all the different smartphone manufacturers at that time?

A. Yes.

Q. I just want to go back to what you said in the hot tub. So Day 14, page 52, line 16, please {Day14/52:16}.

So you say:

"I am going to weigh in on this issue of dominance when the App Store was launched in 2008. I will note that the App Store was launched a full year after the iPhone had been on the market and Apple was the first to market with the smartphone, so I would submit that Apple ... is itself an aftermarket to the device, right?"

Then if we go down, you say:

"So for all these reasons I think it is indisputable

1 that Apple had power from day one in this aftermarket
2 ..."

3 So you say those are the reasons for your view that
4 it is indisputable that Apple had market power, and the
5 reasons include, you said there, that Apple was first to
6 market with the smartphone; correct?

7 A. Yes.

8 Q. But can we agree -- do you accept now, having seen some
9 of the contemporaneous evidence, including the Financial
10 Times article, that it is not right to say that Apple
11 was first to market with a smartphone?

12 A. No, I still stand by that. I think that what Apple came
13 out with in 2007 was so different and so superior to
14 anything that had prior been on the marketplace that it
15 is fair to say that they were the inventor of a certain
16 category.

17 I also want to note that the issue of whether Apple
18 was dominant in smartphones in 2008 when the App Store
19 was launched is not pivotal, is not critical, to my
20 opinion to --

21 Q. Dr Singer --

22 A. Can I just please finish this point?

23 Q. Actually, no, because I am asking --

24 A. Well, because of the high switching costs in devices,
25 once a customer goes down that route, Apple would have

1 dominance in the aftermarket, in the associated
2 aftermarket. My thesis, and everything I have ever
3 written about in these reports, concerned power in the
4 App Store and power in In-App Support Services, and my
5 contention is regardless of how powerful Apple was in
6 the device market -- and I do think they were
7 powerful -- regardless of how powerful they were,
8 because of the switching costs that are associated with
9 going from one phone to another, Apple had power from
10 day one in the aftermarkets, the two aftermarkets that I
11 am studying here, which is the app distribution for
12 iPhone and In-App Support Services for iPhone.

13 Q. Have you finished, Dr Singer?

14 A. Now I have.

15 Q. Thank you. Now could you try and just answer my
16 questions, because it was a short factual question, and
17 if you are going to make a speech every time I ask you
18 a short factual question, I am not going to have time to
19 get through my material, so could I just ask you to try
20 and remain focused on the question.

21 Now, do you accept that there was intense
22 competition for smartphones when Apple launched the App
23 Store; yes or no?

24 A. I think it is fair to describe there to have been
25 competition. I think Apple won the competition. You

1 could say there was competition in the early stages, but
2 I think it is indisputable, and we went through that
3 list of competitors that Apple faced in 2007, they do
4 not exist. Apple wiped the floor with them.

5 Q. In time it did, yes.

6 Now, when launched, the App Store would not have
7 been attractive to developers, would it, if it was
8 charging an inflated price?

9 A. An inflated price. Are you speaking for the commissions
10 or for the --

11 Q. For the commission.

12 A. Okay.

13 So can I hear the question again? I am sorry.

14 Q. So when launched, the App Store would not have been
15 attractive to developers if it was charging an inflated
16 price?

17 A. No, it could still be attractive. If that is the only
18 pathway to get to these customers, these are very
19 valuable customers, if that is the only pathway, then
20 you are willing to pay a 30% tax, even though that is
21 excessive, in my opinion.

22 Q. Well, that really is absurd, is it not, because we saw
23 yesterday there were only 10 million customers at that
24 stage. 10 million or so customers at that stage.

25 A. 10 million very valuable customers that were growing

1 very quickly. Apple soon came to take over the space.

2 Q. I am looking at the snapshot in time then, and it was
3 not at all clear, when the App Store was launched, that
4 it was going to be the success that it ended up being,
5 was it?

6 A. Never -- nothing in life is ever entirely clear. But
7 I think that it would be reasonable to infer that an app
8 developer would be looking forward at the time of its
9 launch and recognising that this is a very valuable
10 footprint, I need to get a foothold in this space, and
11 if 30% is the price, I will pay it.

12 Q. Now, you are saying, let us go to your second report,
13 {C2/8/37}, and look at paragraph 60. I just want you to
14 remind yourself of what you said there. We looked at it
15 again -- we looked at it for a different reason
16 yesterday. But you say there that switching rates are
17 low because of lock-in which creates high switching
18 costs, and you say:

19 "Once someone is accustomed to a brand, there can be
20 identity and loyalty factors that inhibit switching to
21 a different brand. There are also coordination problems
22 with a family - not only does one user have to switch,
23 but she would have to convince all family members to do
24 the same. Moreover, once users become accustomed to
25 a particular OS, they may not wish to learn how to use a

1 different device and may be concerned about the loss of
2 their apps and downloads ..."

3 I am going to come back to this argument as it
4 arises during the claim period, but on day one of the
5 App Store, none of the factors that you refer to here
6 applied, did they?

7 A. On day one of the App Store. No, all of the factors
8 would apply. All of these factors for existing iPhone
9 users -- suppose an iPhone user had been a user for,
10 say, a year, then all of those switching costs -- and
11 not just those, of course the out-of-pocket expense of
12 buying another phone would apply. Those would create
13 frictions and impair switching, and that is why we see
14 these low switching rates.

15 Q. Dr Singer, let us be realistic about it. There were not
16 very many iPhone users at that point in time, so really
17 the game was about attracting new users, was it not? It
18 was not about switching; it was about attracting new
19 people to the device?

20 A. I do not know if I can agree with there were very few
21 users. In this category, which is this high-end
22 smartphone where Apple had made the category, there were
23 a lot of users and the base was growing very quickly,
24 and it was a wealthy base.

25 Q. It was growing quickly because almost all the new users

1 were new to the platform, were new to iPhone, correct?

2 So it was about attracting them?

3 A. I would submit it was growing quickly because Apple came
4 out with an innovative device that made a market. There
5 was no phone like Apple's, ever, when Apple came out.
6 It created a category.

7 Q. Well, so it created a category, and so what it was doing
8 was it was attracting new users to the device; correct?
9 All the time. It was attracting new users. That was
10 the game at that stage?

11 A. I cannot disagree with that. Of course Apple was trying
12 to attract users and developers. For the App Store in
13 particular, being a two sided platform, you need both to
14 succeed.

15 Q. I want to look at another -- and just before I do, just
16 going back to this, so these factors that you refer to
17 here in relation to the claim period, they were much
18 less important at that time, were they not, because it
19 is talking about people being accustomed to the brand,
20 switching within a family. So all of those points have
21 more force, do they not, once you have got lots of
22 customers on the platform than they did at that point in
23 time when the name of the game was attracting new
24 customers?

25 A. No, I think you are mistaking something. It is

1 a function of how long you and your family have been on
2 the phone. So if you are talking about a customer circa
3 2009, who was an early adopter in 2007, all the factors
4 are there. They are all present and ready to create
5 stickiness.

6 Q. So are you saying that those factors were just as
7 present in 2008 as they were during the claim period?
8 Is that really your evidence to the Tribunal?

9 A. I do not know if "just as" seems too strong, but I think
10 for a customer who was an early adopter and had been
11 with Apple for say a year and a half or two years, those
12 factors of stickiness are already kicking in.

13 Q. For a tiny share of customers, correct?

14 A. No, for the installed base of customers.

15 Q. Which was much tinier than the number of customers
16 during the claim period?

17 A. I think I will have to agree that Apple grew its
18 customer base over time, yes.

19 Q. Now, I want to look at another article with you. So if
20 we can go to {D1/40.1/1}. So this, again, is from the
21 Financial Times, and it is dated 6 June 2008, you can
22 see that at the top. So that is just before the launch
23 of the App Store, but three months after the release of
24 the SDK, and you see the title is "Software allowing mix
25 of applications is key". The first paragraph says that

1 the -- talks about the launch of a new iPhone, but the
2 authors say that "new software is likely to have a more
3 lasting impact"; do you see that?

4 A. No, I do not. Which paragraph would you like me to go
5 to?

6 Q. The first paragraph.

7 A. Okay.

8 Q. I am just taking you through it.

9 Then the third paragraph is a quote from
10 a consultant saying that "Apple is redefining mobile
11 computing".

12 Then if we can go to the sixth paragraph, if we
13 scroll down, we see that Steve Jobs said -- he is saying
14 that the developer community was the "source of fresh
15 impetus for iPhone sales". Do you see that bit?

16 A. No, I do not. What paragraph do you want me to look at?

17 Q. So it starts:

18 "Three months ago, Steve Jobs ... identified its
19 developer community as the source of fresh impetus for
20 iPhone sales."

21 Do you see that?

22 A. Yes.

23 Q. Then in the next paragraph, if we go down, you can see
24 that the developer, Electronic Arts, was showing off a
25 new game that took advantage of an innovative feature of

1 the iPhone; do you see that?

2 A. No, I do not. Which paragraph would you like me to look
3 at?

4 Q. "A group of partners demonstrated applications ..."

5 A. Okay, I am going to read that. (Pause)

6 Okay, I have seen that now.

7 Q. Then in the next paragraph there is a reference to what
8 you call the "restriction". So it says the App Store is
9 "the one place where users could buy software approved
10 by Apple", and Apple's 30% commission.

11 Then immediately after that, if we scroll we can see
12 a partner at a venture capital firm "announced the
13 launch of a \$100 million 'iFund' to invest in companies
14 developing applications and services for the iPhone", do
15 you see that at the bottom of the page?

16 A. Yes, and just to be clear, when you say "restrictions",
17 there is no mention of payment restrictions there, but
18 it does seem to coincide with the distribution
19 restrictions.

20 Q. Yes. Now looking at that last paragraph, so the launch
21 of this fund created by venture capitalists, that
22 suggests, does it not, real confidence that the rules
23 and commission level that Apple had just announced were
24 going to be very attractive to developers?

25 A. Yes.

1 Q. Yes. Then if we go over the page {D1/40.1/2}:

2 "Apple has seen more than 200,000 downloads of its
3 SDK since the event, and Kleiner Perkins [the venture
4 capitalist] has received close to 2,000 business plans
5 from entrepreneurs."

6 The venture capitalist, you see that in the next
7 paragraph, says:

8 "'It's pretty darn exciting' ... [and there was a]
9 swarm of activity ... going on."

10 He was right about that, was he not? It was an
11 exciting environment for developers?

12 A. Yes.

13 Q. What that suggests is the offer that Apple had put in
14 place was so attractive that thousands of entirely new
15 businesses were springing into existence just to take
16 advantage of it; correct?

17 A. Apple was creating a very attractive environment for
18 developers to profit and they would be willing to
19 tolerate a 30% tax to partake in that environment.

20 Q. They did so enthusiastically, did they not?

21 A. Yes.

22 Q. Then if we go towards the bottom of the page, we can see
23 that it says that Apple has claimed -- already
24 claimed -- top of the page now -- so already claimed
25 a 5% share of mobile operating systems. So still very

1 small at that stage; do you see?

2 A. I see that. I do not know if I would agree that mobile
3 operating systems is a relevant market, but I see the
4 statement. I think Apple is in a completely different
5 class.

6 Now, again, I have not defined a market and the
7 pre-market, and I have not studied Apple's dominance,
8 because my opinions do not turn on Apple being dominant
9 in the device market.

10 Q. No. Then it says further down:

11 "Nokia is the dominant force in smartphones ..."

12 Then if we look a bit further down it says:

13 "Apple also faces competition from Microsoft and
14 Google ..."

15 It notes that Google was planning to copy Apple with
16 an app store and Microsoft might do the same, do you see
17 that?

18 A. Yes.

19 Q. Then we can see in the next paragraph that Microsoft is
20 saying here that the carriers, that is the mobile
21 operators, have their own limited versions of this, but
22 Microsoft wanted to do the same thing, have a go as
23 well; do you see that?

24 A. Yes, we know what happened with the carriers. They were
25 completely unsuccessful in that space.

1 Q. Now if we go to Mr Schiller's cross-examination, so if
2 we go to {Day7/9:1}. Day 7 of the transcript, thank
3 you. Mr Schiller was asked about an interview that
4 Mr Jobs had given, and what Mr Ward did, who is the
5 barrister cross-examining Mr Schiller on behalf of the
6 Class Representative, was showed him an interview that
7 Mr Jobs had given, but I just want to look at what
8 Mr Schiller said.

9 So if we look at page 9 from line 9, that is
10 referring to the interview, and can you just maybe read
11 this page to yourself so that you see the context?

12 A. Yes, and can I just ask you again, because you went kind
13 of fast, Schiller is whose expert, I am sorry?

14 Q. Sorry, he is the Apple factual -- he is the executive
15 that gave factual evidence on behalf of Apple, a senior
16 executive at Apple.

17 A. Okay. Thanks. Thanks. (Pause)

18 Okay, I read the question. How far do you want me
19 to read down?

20 Q. If you just read the page so you can see the context.
21 I do not think you followed his evidence, did you, so
22 I just want to show you the context.

23 A. Okay. I am halfway through. Hold on. (Pause)

24 Okay, I have made it to the bottom of the page.

25 Q. Then if we go over the page, if you just read that as

1 well to yourself. {Day7/10:1-25}. (Pause)

2 A. Yes, I have made it to the end.

3 Q. Then if we go over the page again.

4 A. You want me to read the next page as well?

5 Q. Just read up to line 8, and then I will take you through

6 it {Day7/11:1-8}.

7 A. Okay. (Pause)

8 Okay.

9 Q. So then the question is, going back to the interview

10 that Mr Jobs gave, the question from the Class

11 Representative's counsel is, he says -- he quotes the

12 Mr Jobs' interview and says:

13 "Question: 'I don't know off the top of my head, but

14 the majority, clearly, which is great. Our purpose in

15 the App Store is to add value to the iPhone. Free apps

16 do that just as well as paid apps sometimes. We love

17 free apps.'"

18 Then Mr Schiller was asked:

19 "Question: So would you agree that what Mr Jobs is

20 making clear is that what is in it for Apple is selling

21 more devices, that is the business model?

22 "Answer: That is not the only business model, but

23 that was the main motivation in creating the App Store

24 as a feature of the iPhone.

25 "Question: Thank you. That still remains the case,

1 does it not, that that is a key benefit of the App
2 Store?

3 "Answer: That is a benefit. There are other
4 benefits as well.

5 "Question: Would you agree that the App Store is
6 a very important feature of iPhones that attracts
7 users?"

8 Then over the page {Day7/12:1}:

9 "Answer: Yes, I do.

10 "Question: Would you agree that it improves the
11 experience of people who use the devices and makes them
12 more likely to buy another one or recommend them to
13 others?

14 "Answer: Yes, I do."

15 So you can see from the way the questions were put
16 that that is positively the Class Representative's case,
17 that that is the function of the App Store, it is there,
18 and the availability of high-quality free apps is to
19 attract users to buy the device. So that is the case
20 that the Class Representative is putting.

21 You can see that Mr Schiller agreed with that, and
22 we will be inviting the Tribunal to accept that
23 evidence, and can we take it that you also agree with
24 that, Dr Singer?

25 A. What I think I read was that it is one of the business

1 motivations. So I certainly will acknowledge that a lot
2 of what is motivating Apple is to create stickiness in
3 its ecosystem, and the App Store certainly helped in
4 that regard. The Watch does the same. They bring on
5 peripherals, they bring on accessories, software --

6 Q. Dr Singer, can I just get you back on track, because I
7 am asking you --

8 A. No, I am actually finishing the answer to the question.

9 Q. No, I am going to ask the question again, because I did
10 not ask about stickiness.

11 A. I am going to give the same answer that I gave again.

12 Q. Right, well I will let you finish.

13 THE CHAIRMAN: I think you do need to let him finish.

14 I think he is answering your question.

15 MS DEMETRIOU: All right, you finish, and then I will come
16 back to my question.

17 A. When I think about what the value of the free apps were
18 here, yes, they are creating value for the device
19 itself, which I think is one of the points that he is
20 making, but they are also creating value through what we
21 call indirect network effects for the App Store. That
22 is, the more developers that Apple can attract to the
23 App Store, the more users will also go to the App Store.
24 Those are the indirect network effects that we talk
25 about for this two sided platform.

1 So there are many different benefits that are being
2 created; it is for the device itself, but it is also
3 creating value for its store.

4 Q. When you talk about indirect network effects, creating
5 value for the store in turn creates value for the
6 device, yes?

7 A. Fair, yes.

8 Q. All right. Now let us go, please, to {D1/44.1}. So
9 this is another article from the Financial Times, and
10 this time it is dated October 2008, so three months
11 after the launch of App Store. The title is "Rivals
12 take aim at iPhone's App Store", and you can see the
13 first paragraph says:

14 "Apple's rivals are making moves to match the ...
15 success of its iPhone platform with their own versions
16 of its store ..."

17 We see that Research in Motion announced it would
18 open one in March 2009, do you see that?

19 A. Yes, I bought the RIM, the BlackBerry, and it was
20 a joke, yes, and they died, yes.

21 Q. Yes, and then Google was revamping its store, do you see
22 that?

23 A. Yes, and Google has made significant inroads in this
24 market, and now we have reached a duopoly between the
25 Android phones and the iPhones.

1 Q. Both were said to be trailing Apple, yes, you see that?

2 A. I am sorry, can you say that again?

3 Q. I am focusing on the article at the time that this was
4 happening, so I am looking at 2008. At that time, both
5 were trailing Apple's App Store?

6 A. Right, Google came in after Apple, I do not know the
7 exact delay, but there was a time where Apple did not
8 really -- was not feeling competitive pressures from
9 Android systems.

10 Q. Then can you see, if we go towards the bottom of the
11 page, do you see it says:

12 "Following the Apple example, handset makers are
13 exploring how consumers can be drawn to phones by the
14 number and variety of applications available on them."

15 Then you see that RIM tried to make it even more
16 attractive to developers by taking a smaller cut, a 20%
17 commission instead of 30%; do you see that?

18 A. Yes.

19 Q. So what these firms were trying to do was trying to
20 compete by offering an attractive platform for apps for
21 their own devices; correct?

22 A. Yes, you could say that they were stealing Apple's idea,
23 and Google was really the only one that was able to pull
24 it off.

25 Q. Are you familiar with Handango?

1 A. Yes.

2 Q. So that was an app store for mobile devices such as Palm
3 in the 2000s; yes?

4 A. Yes, that died out, yes.

5 Q. Its commission rate was initially 40%; do you remember
6 that?

7 A. I do not recall. Did we look at that yesterday?

8 Q. No, so let us look at it now. {D1/919/2}. This is
9 an email -- if we can go to the first page so you can
10 see it, sorry {D1/919/1}. It is an email and it is
11 setting out the text of a Reuters news story, and I just
12 want to show you the quote on page 2 {D1/919/2}.

13 So you can see, if we go to the fourth paragraph
14 down:

15 "Bajarin said the App Store's predecessor was
16 Handango, a service that around 2005 let developers
17 deliver apps over cellular connections to users' Palm
18 and other devices for a 40% commission."

19 He then says:

20 "With the App Store, 'Apple took that to a whole
21 other level. And at 30%, they were a better value' ..."

22 Do you see that?

23 A. Yes.

24 Q. Now, Handango was an app store for Palm devices, but in
25 2009 Palm introduced its own app store. If we go to

1 {D1/67.1/1}, yes, the third bullet, you can see that
2 what Palm did was take a 30% commission; do you see
3 that:

4 "Developers will receive 70 percent of revenues ..."

5 So they pitched it at a lower rate than Handango's
6 40%?

7 A. This was Palm's offer, was the 30% commission?

8 Q. Yes. So they thought that was a competitive commission,
9 clearly?

10 A. They thought that is what they could get away with.

11 Q. So is your -- do you say that Palm was dominant too?

12 A. No, we see 30%, you know, we went through this in the
13 hot tub, we see 30% offered on Xbox and other consoles
14 where you were the only store in town. It seems like
15 30% is -- if you can create a powerful platform, and
16 there are no other choices, it seems like that is what
17 the market will bear, 30%.

18 I do not dispute that there is still value. Even at
19 30% there is a lot of value for developers. The only
20 question in my mind was what would the commission be in
21 the absence of the restraint?

22 Q. So is your position that all of these devices, so all of
23 these platforms, were dominant, because once you have
24 bought them, you are locked in, and therefore 30% is
25 a supra-competitive mark for all of them; is that your

1 evidence, just so I can understand?

2 A. No, I do not think I said that every -- I just went back
3 to the Xbox and the other things that showed up in
4 Dr Hitt's comparables, right?

5 Q. Yes.

6 A. So I have not taken a position, and I do not know if I
7 am ready to now, to say that Palm was ever dominant, so
8 I do not feel comfortable doing that. All I know is
9 that Palm did not really make a very compelling
10 platform, and so if Palm tried to come in at 30, 40%,
11 and Apple came in at 30, Apple, with the compelling
12 platform, would eat their lunch.

13 Q. So if Palm was not dominant, then 30% shows that 30% is
14 a competitive rate, no?

15 A. No, I do not -- I have not studied it, but I do not
16 think I am ready to make any -- just because I have not
17 studied it, I am not ready to speak to what Palm's rate
18 connotes, other than Palm was the only game in town for
19 a while, because they pre-dated Apple, and if you are
20 the only game in town, maybe you can get away with 30%,
21 maybe you can get away with 40%.

22 THE CHAIRMAN: Ms Demetriou, would you mind if we just pause
23 for a minute.

24 MS DEMETRIOU: Of course.

25 THE CHAIRMAN: We have to lower the blinds because we have

1 got the unusual occurrence of sunshine! (Pause)

2 Sorry, Ms Demetriou, please carry on.

3 MS DEMETRIOU: No, no, not at all.

4 So you do not know whether Palm was dominant or not;
5 is that your position?

6 A. I have never taken a position on whether Palm was
7 dominant. I know that Palm failed, but Palm was first
8 to market, or at least beat Apple to the space, and so
9 if you are the only one there, it makes sense that you
10 could at least ask for 30, you could ask for the moon,
11 you could ask for 40.

12 Q. Hang on, Palm introduced its app store in 2009, so that
13 is after the App Store.

14 A. Sorry, you had shown me one that --

15 Q. Handango.

16 A. Handango.

17 Q. Handango was 40%.

18 A. 40%, but before Apple, right?

19 Q. Yes, that is right.

20 A. So if you are by yourself, if you are the first to
21 market, you can ask for 40. These did not work out.

22 I testified yesterday, and I will say it again, that
23 I think Apple could get away with more than 30, given
24 the value they are creating, right?

25 It is not a question about -- the monopolist does

1 not extract 100% of the surplus, the monopolist leaves
2 some surplus on the table, and you are free as
3 a monopolist to do whatever you want.

4 The question is if you apply an anti-competitiveness
5 restraint, right, what would the increase in surplus
6 look like if the commission were not as high as it is?
7 That is the relevant question.

8 Q. Yes. So yesterday, in the concurrent evidence, you said
9 that 30% was the maximum that Apple could have charged,
10 and now you are saying it is not. So which is it?

11 A. No, I did not say that. In fact I said the opposite.

12 Q. You did.

13 A. No, I said the opposite.

14 Q. So your position, just so we are clear, is that Apple
15 could have charged more than 30% --

16 A. I said two things: Apple charges whatever it thinks it
17 can get away with; and number two, I think Apple could,
18 if it wanted to, go higher than 30. Given the
19 restraints, they certainly could go higher than 30.
20 Those two are perfectly consistent positions.

21 Q. How are those two things consistent? So you say Apple
22 could charge whatever it could get away with, and number
23 two, Apple could go higher than 30. They are completely
24 inconsistent propositions, are they not?

25 A. No, because even a monopolist leaves some surplus on the

1 table. The profit maximising rate is 30%. Now, could
2 Apple go higher? I think they could go higher. Their
3 profits might fall, but a lot of developers would stick
4 through a 40% tax just to be on Apple's ecosystem.

5 Q. What we see here is developers were flocking to the
6 platform because Apple wanted them to, and in order to
7 prompt them to flock to the platform Apple charged
8 a very attractive commission, did it not? It was not
9 charging the most it could get away with; it was
10 charging a very attractive commission to attract
11 developers in their hoards to this new platform?

12 A. I think developers were attracted even at the 30% take
13 rate. That is my position.

14 Q. Now, let us go to {D1/28/1}. This is an Apple
15 presentation and it dates from November 2007. If we go
16 to -- let us go to page 19 {D1/28/19}, and can we zoom
17 in. Is it possible to sharpen up the image at all?

18 (Pause)

19 A. While he is doing that, would you mind telling me the
20 date again, I am sorry?

21 Q. Yes, of course. It is November 2007.

22 A. Okay, thanks.

23 Q. Thank you. That is great. Thank you.

24 So here we see some checkpoints, and if we look at
25 the margins, so the second to last row; have you got

1 that?

2 A. I am looking at the margins, yes.

3 Q. So we see that Nokia is 40-50%. Handango, we have
4 discussed already, was -- had a 40% standard rate.
5 Microsoft, a 40% standard rate. Then we go across, we
6 have the carriers, 55-60% of revenue, AT&T negotiated,
7 and so on.

8 So it is right, is it not, that the commission Apple
9 introduced was markedly lower than that of other app
10 stores in the market at that time?

11 A. It looks like it is lower than these. You showed me
12 another one at 30, I think it was Palm. But it is
13 certainly lower than these.

14 Q. Palm came later. So Palm was seeking to compete with
15 the benchmark that Apple had set?

16 A. As did Google came later and copied Apple's 30% as well.

17 Q. Correct, and the point is that when Apple set the 30%
18 rate, it was a competitive and attractive rate, was it
19 not? It was lower than the competitors at the time?

20 A. Well, the only thing that I will grant you is that it
21 was lower. I am not ready to say it was a competitive
22 rate. It was lower.

23 Q. Well, if it is lower, and if, as you say, Apple had such
24 an attractive platform that everybody wanted, then it
25 made no sense -- if it was lower and Apple had such

1 an attractive platform, and if Apple actually was
2 seeking to charge the most it could get away with, it
3 would have charged more than 30%, would it not? It
4 would have charged 40% or something?

5 A. No, Apple is going to charge the profit-maximising
6 price, and Apple -- as an economist, I think we can
7 infer that Apple chose 30 to be the profit-maximising
8 price.

9 Q. The reason for that is because it would drive consumers
10 to buy the iPhone, correct? That is why it was
11 an attractive price for Apple, because it would attract
12 lots of consumers -- lots of developers to the platform,
13 and therefore attract consumers to buy the iPhone?

14 A. What is nice about this pricing from Apple's perspective
15 is that it is not transparent to the consumer; it is
16 a price that hits the developer. Most consumers are not
17 aware the developers are incurring a 30% tax to do
18 business on the platform. So in that sense, it is very
19 attractive to consumers because we, the consumer, do not
20 get to see the pricing. We do not understand how that
21 commission maps back to higher app prices and in-app
22 purchases. So it is attractive to consumers.

23 Q. It is an attractive price to developers, is it not?

24 A. They are willing to pay for it, because their
25 willingness to pay exceeds the 30%. So they are getting

1 surplus, no doubt, right? Economists will say if you
2 are doing something voluntarily, even at a monopoly
3 price, you are earning surplus.

4 Q. Well, Dr Singer, it is an attractive price because it is
5 well under the percentage commission that all the other
6 people in the market were charging, and so that was
7 a price that was guaranteed to get developers flocking
8 to the platform, was it not?

9 A. I do not think that what made Apple attractive was -- or
10 what at least exclusively made Apple attractive was the
11 30% relative to its peers, it is that Apple's device was
12 so superior to anything in the marketplace, and it was
13 attracting this wealthy clientele that could come in
14 and, one day, support future purchases.

15 Q. Well, do you agree that the 30% was one of the things
16 that made its platform attractive? So it is not the
17 only thing, but is it one of the things, the fact that
18 it was charging 30% as opposed to 40 and 50%, which is
19 what these others were charging?

20 A. I think the price certainly would be a consideration for
21 developers when they were choosing for whom to write
22 software, yes.

23 Q. Presumably the reason Apple was doing this analysis was
24 because it wanted to pitch its offering lower than these
25 other platforms; correct? Otherwise why would it even

1 look at them?

2 A. I think that Apple reasonably wanted to be cognisant of
3 what others who had attempted this space were charging
4 for developers.

5 Q. Cognisant because it is competing, correct?

6 A. It is -- at this point in time it is competing, and they
7 ended up taking over, but yes, at this point in time
8 they were competing, they were an entrant.

9 Q. Then if we go to another news report, at {D1.48.1}, this
10 time it is the Wall Street Journal, and you can see the
11 date there at the top, Dr Singer, 12 November 2008:

12 "Apple's iPhone Faces Off With the Game Champs".

13 It says, the first paragraph you see:

14 "... iPhone has shaken up the cell phone business.

15 Its next target: Nintendo Co and Sony ..."

16 So this is a story about the iPhone competing with
17 manufacturers of games consoles.

18 If we go to the bottom of the first page, we see
19 this:

20 "Developers are being lured by Apple's online method
21 for delivering games, which has lowered distribution
22 costs and made it possible to profit on games that sell
23 for just a few dollars or are given away with
24 advertising."

25 Then over the page {D1/48.1/2}:

1 "Apple keeps 30% of the proceeds of software sales
2 through its App Store clearinghouse."

3 Then there is a quote attributed to the president of
4 Sega:

5 "But even with that split, 'games sold via the App
6 Store are the most profitable in terms of any of the
7 formats we work on', said Simon Jeffery, the US
8 president of Sega."

9 So we can see here that the president of Sega
10 regarded the App Store and its 30% commission as highly
11 competitive, yes?

12 A. But not as economic substitutes; this is key. These
13 developers continue to write code for the Xbox and for
14 PlayStation and other consoles. What they saw was
15 an opportunity to develop a new and complementary
16 distribution channel, sales channel, and a big debate
17 that I am having with Dr Hitt is, when he sees the same
18 developer on two different channels, whether they are
19 economic substitutes, or, in my view, whether they are
20 complementary sales channels. My view is that when you
21 see them both, they did not abandon the other platforms.
22 They continue to write and sell software for the other
23 platforms, they are just saying that the terms that
24 Apple is offering them is superior.

25 Q. Dr Singer, I was not asking you about devices.

1 A. You asked me about competition.

2 Q. No, I asked you a very specific question. The president
3 of Sega obviously viewed the 30% commission as being
4 an attractive commission; correct? Yes or no, do you
5 agree?

6 A. Yes, attractive, but not so attractive as to abandon the
7 other platforms that he was writing code for.

8 Q. Right, and --

9 A. It is a complement. It is a complementary sales
10 channel, that is what this is showing.

11 Q. What it does is leads to them losing sales on other
12 devices, does it not?

13 A. No, I do not think any of these guys are losing sales on
14 other devices. What it does is it opens up a new
15 avenue, a new distribution channel, so now they have
16 multiple ways to reach a consumer. Sometimes a consumer
17 owns both a PlayStation or an Xbox and an iPhone, or
18 sometimes they just have the iPhone, but this gives you
19 a new avenue to get to the consumers.

20 Q. Let us look down a bit. So Mr Young, a longtime
21 executive at games publisher Electronic Arts, says:
22 "It feels to me like there's a real threat to their
23 [Sony's and Nintendo's] business from the iPhone."
24 Do you see that?

25 A. Yes. So now we are shifting over to the platform

1 competitors. Before, we were talking about --

2 Q. Can I just ask my question. I just wanted to check --

3 A. No, before we were talking about the developers, right,
4 and so now you are asking me --

5 Q. I have not asked a question.

6 THE CHAIRMAN: Part of the difficulty, Ms Demetriou, is I am
7 not clear, when you are showing him passages in these
8 documents, whether you are asking him to comment or not,
9 and I appreciate you are asking him at times to agree
10 that people have said certain things. But if he does
11 not agree with those things then he needs to be able to
12 say so, and he needs to explain, particularly if he
13 thinks you are putting it in a way that does not
14 properly characterise what is going on.

15 So I think the difficulty lies, if I may say, partly
16 with both of you, in the sense that I am not entirely
17 sure what you are asking him to agree or not agree with,
18 bearing in mind he is an expert and he is entitled to
19 comment.

20 Dr Singer, just to be clear, I think there is a bit
21 of a mismatch here of expectation, because Ms Demetriou
22 is trying to move through these articles and get you to
23 agree to certain things, and she will be telling you
24 when she wants you to agree and when she does not, and
25 you volunteering your view is not necessarily helpful.

1 Now, I appreciate it is a difficult exercise because
2 we are going back in time and we are looking at these
3 articles, but I think some clarity about exactly what it
4 is that is being asked might help.

5 MS DEMETRIOU: Sir, of course. I will take that on board.

6 So, Dr Singer, what I want to do is show you bits of
7 the document to make sure you are with me, because
8 sometimes you say "I cannot see that". So when I say
9 "Do you see that?", I am not asking whether you agree
10 with it, I am asking whether you are located in the
11 document. Then if I want to ask whether you agree with
12 it, I will say "Do you agree with that or not?"

13 A. That is fair.

14 THE CHAIRMAN: Just so you are clear, Dr Singer, if you are
15 not asked whether you agree with it, then you are not
16 going to be taken by us to have agreed with it. You
17 have been shown it, and Ms Demetriou will have put
18 something to you (overspeaking) --

19 A. Right. I will make it clear and I will say "Yes, I see
20 it".

21 THE CHAIRMAN: -- goes no further than that, just to be
22 absolutely clear about that.

23 A. Okay.

24 MS DEMETRIOU: So we have seen what Mr Young says. Now, do
25 you agree that Sony's business and Nintendo's business

1 at the time was in making game consoles?

2 A. Yes.

3 Q. So if Apple's success in attracting games developers to
4 the App Store was a competitive threat to games
5 consoles, that would be because it would be drawing
6 consumers to buy an iPhone rather than a console; yes or
7 no?

8 A. It could have been perceived as a threat by the console
9 maker. But for the purposes of what we are trying to
10 figure out today, is it perceived as an economic
11 substitute from the perspective of developers, and the
12 answer to that relevant question is "No". The
13 developers see these two as complementary sales
14 channels.

15 Q. So the first part of your answer was: it could have been
16 perceived as a threat by the console maker. Perceived
17 as a threat by the console maker because it was
18 concerned that customers would flow over to the iPhone
19 from these games consoles; yes or no?

20 A. They could reasonably, at the time, because in 2008, or
21 whenever this article is from, they could not know at
22 that time how people would end up playing games. It
23 turned out that gamers have multiple ways to play games,
24 and some of them avail themselves of multiple channels
25 at the same time. They own a PlayStation, they own

1 an Xbox, and of course they have a cell phone.

2 At the time, Sony, Nintendo, could not be sure that
3 that is how the world would shake out. So it was
4 perfectly reasonable for them to say at that time: wow,
5 we are scared, we are scared that Apple could eat our
6 lunch.

7 Q. So at this point in time, you agree that this other
8 channel was imposing a competitive constraint?

9 A. On whom?

10 Q. On each other.

11 A. I think that, as I stated before, from the perspective
12 of developers, which I think is the relevant perspective
13 here, they were perceived as complementary channels.

14 I think from the perspective of the platform, the
15 rival platform, in this case Sony and Nintendo, they
16 could legitimately perceive a threat from Apple. As it
17 turned out, I do not think the iPhone became a close
18 substitute for a game console, despite the fact that you
19 can play games on both. They are used for very
20 different purposes.

21 Q. Well, let us look over the page, at the top of the page
22 {D1/48.1/3}:

23 "Still, some game developers are choosing Apple over
24 Nintendo or Sony because there are no pricey game
25 cartridges to manufacture for the iPhone and there is no

1 need for a retail distribution network."

2 If we look down the page a bit further:

3 "For people like John Sims, a bank teller in Denver,
4 the iPhone is winning out over dedicated portable game
5 players. Though he concedes the Sony and Nintendo
6 devices provide better quality games, most iPhone games
7 cost far less. Plus, he prefers to carry only one
8 device."

9 So looking at that, what this is showing is that
10 games developers do see them as substitutes, not as
11 complements, yes? So game developers are choosing Apple
12 over Sony or Nintendo, that is what we see at the top of
13 the page?

14 A. There could be -- it says "some game developers." There
15 could be some game developers who abandon the old
16 platforms, but that is generally not what we see in the
17 real world. In the real world, we see the big game
18 developers being on all the platforms, and the reason
19 they want to be on all the platforms is they want to
20 address as big of a customer base as possible.

21 Second, it is not clear here that we are seeing
22 economic substitution; that is, substitution being
23 driven by a change in a relative price.

24 Q. Well, Dr Singer, I am looking at the contemporaneous
25 commentary about all of this, and it is clear from this,

1 is it not, that at that time developers saw Apple as
2 being a substitute, not a complement, and game
3 developers -- some game developers were choosing Apple
4 over Nintendo or Sony, yes, at that point in time?

5 A. It says "some game developers are choosing", and I trust
6 these are the -- I have not read the entire story or
7 remember it, but are these mobile -- are these hand-held
8 devices by Nintendo or Sony, or are these the game
9 consoles that stay in someone's home, do you know?

10 Q. So are you disagreeing -- so is your position that this
11 is inaccurate, this story? Is this your position?

12 A. No, I am not taking -- no, I cannot attest to the
13 accuracy or inaccuracy. Let us just accept that some
14 developers are, in fact, choosing Apple over these other
15 platforms, right?

16 Q. Just pausing there, I will let you come back --

17 A. No, I would like to finish -- I would like to finish
18 what I was saying, if that is okay?

19 Q. Of course. Go on, Dr Singer.

20 A. We can have some developers making that choice, A or B,
21 exclusive choices, and still the two not be in the same
22 relevant market. We cannot insist that no developer
23 would perceive them to be a substitute. Of course, some
24 might make an either/or decision. But when we look at
25 the totality of how developers are choosing, they tend

1 to put themselves everywhere. They want to be in front
2 of as many eyeballs as possible. So you write your
3 code, you write your game for every distribution
4 channel, not just the iPhone. You write it for the
5 place -- for Google's phone, for the Android phones.
6 You write it for consoles, the Xbox, PlayStation. That
7 is why they are not economic substitutes, they are
8 complementary channels.

9 Q. So do you agree that Apple was competing with the
10 console makers, like Sony and Nintendo, to get
11 developers to make more games for iOS at the expense
12 of those platforms?

13 A. Not necessarily at the expense, no, because for many, if
14 not most, of the developers they multi-home. They are
15 in many different distribution platforms. These
16 developers are looking at opportunities for incremental
17 sales which would not have otherwise happened. Now you
18 have got a mobile device, so you are not just stuck to
19 playing the game at home in your living room in front of
20 a big-screen TV. Now you can actually take the game
21 with you. This is a new opportunity for these
22 developers.

23 Q. Developers have a choice, do they not, as to which
24 platform they produce a game for first?

25 A. Absolutely there is a choice. No one puts a gun to

1 their head. But what they are choosing is they tend to
2 choose to multi-home. They tend to be across multiple
3 devices. They do not see these as economic substitutes,
4 they want to touch as wide a customer base as possible.

5 Q. Let us look at {D1/67}, and if we look at another type
6 of game, this is Sony and the PSPgo, and you can see the
7 headline, this is an article from August 2009:

8 "Sony targets iPhone developers and low app prices
9 for PSPgo."

10 You see the bold text at the start:

11 "Sony plans to lure iPhone developers to the PSPgo,
12 a revised version of its PlayStation Portable handheld
13 gaming platform, and copy Apple's low App Store prices
14 to create demand for the relatively expensive new
15 hardware ..."

16 So you can see this does appear to be an example,
17 does it not, of Sony seeking to lure developers away
18 from Apple to its own platform?

19 A. Sony, the device-maker, might consider the iPhone to be
20 a competitor and something that it is trying to compete
21 against. But the question is from the developer's
22 perspective: are you going to multi-home or are you
23 going to just choose one of these platforms? I contend
24 that they are generally multi-homing. You see the same
25 developer, the same games, across multiple platforms.

1 Q. So are you saying this does not make any sense, the
2 concept of luring developers away from Apple to its own
3 platform?

4 A. I think it is a bit naive to lure them away. I think
5 the best that you can do is -- it is going to be very
6 hard to get a developer to leave the Apple ecosystem.
7 The best that you could do, if you want to attack Apple,
8 is maybe you can get the developer to also write code
9 that would be compatible with your platform, which is
10 what the Google Android system did. They got the same
11 developers to come over and write code, right? So in
12 that sense, again, the developers do not perceive the
13 Google Play Store and the Apple App Store to be economic
14 substitutes; they see them to be complementary channels.
15 You are going after two different audiences.

16 Q. Let us go to page 3 {D1/67/3}. We see here, after the
17 first heading which says "Developers, Developers,
18 Developers", it says:

19 "Sony must also convince its developers to target
20 projects that can be profitable at such a low price.
21 That will also require a smaller cut of software sales
22 for Sony, which has historically levied a much higher
23 cut from its game developers than the 30% share Apple
24 charges in the App Store."

25 So what we are seeing there is competition, is it

1 not, to attract developers; competition on the
2 commission between these different platforms?

3 A. I think if Sony wanted to compete with Apple -- you said
4 this article, just to refresh, is 2009?

5 Q. Correct.

6 A. If Sony wants to compete in this mobile space for
7 developers, including game developers, then it makes
8 sense that they would have to be competitive on that
9 commission dimension as well.

10 Q. Yes, and if we go to page 4, just to see what that says
11 {D1/67/4}, we can see there, second paragraph, first
12 main paragraph:

13 "Sony currently requires developers to pay for
14 a very expensive ... set of tools and hardware to create
15 PSP games. Despite an 80% drop in the cost of its
16 development tools made this summer, Sony's PSP software
17 development kits still start out at \$1000 to \$1500.

18 "After witnessing the success of the iPhone App
19 Store and particularly its appeal to independent small
20 developers, Sony hopes to woo iPhone indie developers
21 into porting their apps to the PSPgo rather than
22 focusing on a few large developers to create gaming
23 titles.

24 "However, Sony will also face competition for
25 attention from Google's Android, Nokia's Symbian, Palm

1 WebOS, and Microsoft's Windows Mobile and Zune platforms
2 ..."

3 A. My screen went blank. I do not know if you did that on
4 purpose?

5 Q. I certainly did not do that on purpose.

6 A. All right, I am back.

7 Q. I am just at the bottom of the page:

8 "... all of which are actively courting iPhone
9 developers' attention in similar hopes of replicating
10 Apple's success in selling mobile [phone] apps ..."

11 My question is what we can see here, in these early
12 years before and after the launch of the App Store, is
13 a highly competitive market for development and sale of
14 different devices and operating systems; yes?

15 A. I think at the very beginning run, 2008 -- I mean, you
16 said this article is from 2008 or 2009?

17 Q. This one is from 2009.

18 A. 2009 -- that the market had not resolved in the way that
19 we ultimately know it did. You know, Palm's fate,
20 Nokia's fate, Microsoft Windows fate, and Zune, I do not
21 even know Zune, but it did not resolve it yet. Those
22 guys were still contenders, at least in theory, as of
23 2009. They quickly would be wiped out and it would go
24 down to two. But in this period of time, I will grant
25 you that they were alive, they were still alive. They

1 may have been barely kicking, but they were alive in
2 2009.

3 Q. So just thinking about all of these documents that
4 I have shown you from 2007 through to 2009, we see the
5 firms seeking to compete by introducing their own app
6 stores for their own operating systems; yes?

7 A. When you say "the firm", you mean these different --

8 Q. Precisely.

9 A. -- operating system makers?

10 Q. Yes, and we have seen we had RIM for BlackBerry, we have
11 Google Android, we have these that are mentioned here,
12 we have been through Microsoft, we have been through
13 a number of them now.

14 The question is, at this point in time there was
15 a highly competitive market between them, was there not,
16 for development and sale of different devices and
17 operating systems, and I think you have accepted that?

18 A. I think that when Apple entered, for certain in
19 2007/2008, that it was not Apple's yet, that it took
20 time for Apple to take the market. I will grant you
21 that Nokia's Symbian, Palm, you mentioned RIM is not
22 here, and Microsoft Windows were all around in 2009,
23 I will grant you that.

24 Q. Will you also grant me that these firms we have been
25 speaking about were seeking to compete by introducing

1 their own app stores?

2 A. They were seeking to compete, but an app developer --
3 and it is that developer's perspective that matters here
4 for the question of economic substitutes and defining
5 the relevant markets here, is that had any of them
6 counterfactually succeeded, right, had any of them
7 actually made a run against Apple, the question is do
8 you want to -- do you want to choose one or the other or
9 both, and this is easy.

10 If there are two successful phones -- it turns out
11 that now we have two, with the benefit of hindsight we
12 basically have two operating systems. But back then we
13 could have had three, we did not know, we could have had
14 four. The question is, do you really want to sit on the
15 sidelines, and, say, Microsoft's customers represented
16 hypothetically 10%, do you want to sit out and not
17 address any of them? The answer is no. You want to be
18 on everyone's phone, right?

19 So to that extent, the developers see these
20 different platforms as being complementary distribution
21 channels, not economic substitutes.

22 Q. So I think, before you got into that, your answer was:
23 yes, the developers were competing by introducing their
24 own app stores, yes?

25 A. I think you made a mistake. Not the developers --

- 1 Q. The platforms.
- 2 A. These platforms, these different operating systems were
3 in competition, certainly in 2007 and certainly in 2008,
4 and they had not died by as early as 2009, I will grant
5 you that.
- 6 Q. The commission was a parameter of competition between
7 manufacturers; correct? We saw that in the documents?
- 8 A. I think it is a -- I will grant you it is a parameter of
9 competition, I think that is fair.
- 10 Q. Apple's offering, its 30% commission, was competitive,
11 was it not, given what else was around in terms of the
12 other commissions, which were higher, and in terms of
13 the quality of the app store and the quality of the
14 device to which it related; do you agree with me?
- 15 A. I think it was at market, I am reluctant to say
16 competitive, but I think it was at market, and I think
17 what we can infer from this is if you can build
18 a platform and if you can attract customers to your
19 platform -- those are big ifs -- you can command a very
20 large tax on the developers.
- 21 Q. It was a price that succeeded in attracting developers
22 as a matter of fact, we know that, do we not?
- 23 A. No, no, no, they attracted it despite the price. Apple
24 won the war because it came out with a superior phone
25 and because it was able to attract customers, right?

1 The commission was certainly a part of it, but I would
2 never say that Apple won because of its price, which was
3 I think the question you put to me.

4 Q. So the price was part of the attractive offering that
5 enabled Apple to compete so successfully?

6 A. The price, because Apple came in at, it looks like --
7 you know, the comparables that you gave me are on par or
8 even below some other comparables. The price would just
9 wash away. The way -- if I had to attribute Apple's
10 success in winning over developers is that it won over
11 consumers, and developers want to be where the most and
12 most attractive consumers are, and Apple won on that
13 dimension.

14 Q. Can I just ask what you mean when you say "the price
15 would wash away", because the comparators I showed you
16 were at 40 to 50%, so are you saying that that
17 differential is not significant?

18 A. You showed me some at 30% as well. But if you come in
19 at 30, and the incumbents that you try to attack are
20 also at 30, then developers are not going to be choosing
21 on that dimension. Now, if you came in maybe at 20 or
22 you came in at 15 and you said: hey, maybe, Hal, is that
23 the reason why they won? But if you come in on par,
24 then I do not think that we can attribute their success
25 to that dimension.

1 Q. Well, Dr Singer, I showed you that the incumbents at
2 that stage were charging -- we went to this yesterday.
3 So the initial -- the initial Palm rate, the Handango
4 rate, was 40%, and then I showed you a number of other
5 incumbents that were 40-50%, and then we had the
6 carriers that were 55-60%.

7 So, first of all, let me break the question down.
8 Do you say that the differential between 30 on the one
9 hand and 40-50% on the other hand is insignificant and
10 just comes out in the wash?

11 A. No, it is not insignificant.

12 Q. No. So do you therefore accept that Apple was coming in
13 with a rate that would have been attractive to
14 developers, and that was part of the attraction of its
15 offering?

16 A. It was relatively attractive, but I think Apple
17 succeeded not because of its rate, but because it put
18 together the best phone and was able to attract the
19 right customer base.

20 Q. Well, its rate obviously helped, did it not, because
21 then you see everybody else responding to that
22 competition by lowering their rates; yes or no?

23 A. The rate -- at the margin, the rate helped. Obviously,
24 let me state it this way, if Apple had come in higher
25 that could have impeded Apple's success.

1 Q. Then we see that -- we know that in 2008 there were just
2 10 million unit sales of the iPhone, whereas by
3 January 2021, for example, there were more than
4 1.65 billion devices in use; right? So there was a huge
5 increase over that period; you agree with that?

6 A. Yes.

7 Q. So --

8 A. Oh, total devices, sorry, or Apple devices?

9 Q. Total iOS Devices in use.

10 A. Okay. Okay.

11 Q. The device can do much more now than it could in 2008;
12 yes? It is a more sophisticated device?

13 A. Yes.

14 Q. So, for example, the screen is much bigger than it used
15 to be; correct?

16 A. Yes.

17 Q. The chips --

18 A. They make big screens and small screens, but yes.

19 Q. The chips are more powerful now than they used to be?

20 A. Yes.

21 Q. That makes more sophisticated apps possible; yes?

22 A. Yes.

23 Q. Apple has introduced technology, such as LiDAR
24 technology, which has made augmented reality possible,
25 and that has enabled ever more sophisticated apps, yes?

1 A. Did you say Lidon technology?

2 Q. LiDAR, so scanning technology.

3 A. Oh, scanning technologies. Yes, scanning technologies

4 could help. I have not studied whether scanning

5 technologies are pivotal.

6 Q. Fair enough. The software development tools have also

7 kept pace with the hardware development. So those have

8 improved over time as well, have they not?

9 A. It is something I have not studied, but I would assume

10 software is improving, hardware is improving.

11 Q. So would you agree that these changes have made the App

12 Store significantly more valuable to developers than it

13 was in 2008?

14 A. I think that those dimensions -- it is hard for me to

15 keep them all in my head -- those dimensions certainly

16 create value and add value to the system, but the most

17 valuable one that I think you -- well, maybe it was the

18 first one you pointed out, the 1-point something

19 billion, you had a very big number, that to me is key.

20 If it is a two sided platform and with indirect network

21 effects, so if you can build up customers, that makes

22 the network more valuable and more attractive to

23 developers.

24 Q. I think we agree on something there, Dr Singer.

25 You have calculated Apple's average commission as

1 being 25%, have you not, around 25%?

2 A. I have it by year and I have it by category.

3 Q. We will come back to the detail. But the sort of basic
4 figure is around 25%?

5 A. I do not -- sitting here it is hard to remember,
6 because -- for the initial downloads, I do not think we
7 got much relief from the 30%. I think it depends on --
8 it depends on which of the three categories we are
9 looking at.

10 Q. We will come back to that. But anyway, significantly
11 less than in 2008; yes?

12 A. It depends on who you are. If you are a small business
13 with under a million dollars, I will grant you that 15%
14 is significantly better than 30%.

15 Q. The average commission is significantly less than 2008;
16 yes?

17 A. Relative to 2008?

18 Q. Yes.

19 A. I would have to look at my table. I remember doing this
20 by category, and I think for in-app the reductions have
21 been fairly slight.

22 Q. Right. We will come back to the detail. But do you
23 recall that what you have calculated is a reduced
24 average commission now as opposed to 2008?

25 A. It is certainly lower, yes.

1 Q. Yes. That itself does not tell the complete story, does
2 it? Because Apple is now taking that lower average
3 commission from a narrower set of revenues, is it not?

4 A. I mean, we have another agreement here, and the
5 trajectory by itself does not tell us the story. What
6 we want to know is what the trajectory would have looked
7 like in the absence of the restraint.

8 Q. So just going back to my question, I said that the fact
9 that the commission is lower does not tell us the
10 complete story about how much it is lower, because my
11 question was that Apple -- do you agree that Apple is
12 now taking that lower average commission from a narrower
13 set of revenues?

14 A. I do not think I follow the question.

15 Q. Well, because, for example, of the multi-platform rule?

16 A. Is Apple taking its commission from a smaller ...

17 Q. A narrower set of revenues. Because take the Reader
18 Rule, you now have consumers consuming material on the
19 iPhone, but Apple does not take any -- that revenue is
20 not subject to commission at all. So when you are
21 comparing the situation now to 2008, the set of revenues
22 that Apple is applying the commission to is narrower
23 than it used to be.

24 A. I am sorry, I just do not understand what you are
25 asking. I just do not understand.

1 Q. So the introduction of the Reader Rule and the
2 multi-platform rule --

3 A. Yes.

4 Q. -- excludes a certain set of developers revenues from
5 the revenues that Apple is taking a commission from;
6 correct?

7 A. I would not put it that way. I do not think it excludes
8 it, no. It is just that if you can find this content
9 outside of the iPhone then you will not be taxed on it,
10 but it is not excluding anything from the base.

11 Q. I think that is the same thing. So it is not applying
12 commission to revenues that developers are making?

13 A. I would put it differently. It is allowing -- it is
14 allowing for certain qualifying apps. It is allowing
15 the user to bring it over from outside of the App Store
16 without being taxed.

17 Q. Well, the fact that -- so sticking with the point that
18 we both can agree that Apple is charging a lower
19 commission today than it did in 2008, that fact is
20 inconsistent, is it not, with Apple being a monopolist
21 in a market with massively increasing demand?

22 A. Not at all. As I just was saying, and the same point
23 about the output too, we cannot look at the trajectory,
24 and it is a fairly slight decline, but we cannot look at
25 the trajectory and say: therefore we are looking at

1 a competitive rate. The trajectory by itself tells
2 us -- it almost has no economic content, or economic
3 value. What we want to know is what that trajectory
4 would have looked like in the absence of the restraint,
5 and if the trajectory would have been a faster decline
6 then we can attest the restraint, we can attribute that
7 inflation to the restraint, and that delta, that
8 difference, is the overcharges that Apple has imposed on
9 developers and ultimately on consumers.

10 Q. Well, let me put the point this way. So all else being
11 equal, an unconstrained monopolist, which is what you
12 say Apple is, faced with a significant increase in
13 willingness to pay, because of the increase in value in
14 the App Store, so a significant increase in demand,
15 would be likely to increase prices, would it not?

16 A. I might have to hear that again, but I think we can
17 infer that the 30% is still profit maximising. That
18 Apple could raise it, and certainly a lot of people
19 would stick through it, because they want to keep access
20 to this very valuable subscriber base --

21 Q. But let me take the point --

22 A. Can I just finish my point?

23 Q. I thought you had, sorry.

24 A. Given that Apple sticks at 30, we can infer, as
25 an economist, that 30 is the profit maximising.

1 Q. So let me try my question again. So you say that Apple
2 is an unconstrained monopolist?

3 A. Did I use the word "unconstrained"? I usually just call
4 them a monopolist.

5 Q. Well, you do not accept, do you, that there are
6 constraints from these other -- from the device
7 market --

8 A. I do not --

9 Q. -- multi-platforms?

10 A. -- think, for example, that the existence of the Play
11 Store constrains Apple's pricing on the App Store. Yes,
12 that is my position.

13 Q. So do you think that Apple is subject to some
14 constraints, or not?

15 A. I think that any monopolist -- ultimately at the
16 monopoly price things start to look closer than they
17 otherwise would. But to answer your direct question,
18 I do not think we could go through the list, but I think
19 the closest would be the Play Store. I do not think the
20 Play Store is constraining Apple's pricing in this
21 aftermarket on its phones.

22 Q. Right, so you do think that Apple is an unconstrained
23 monopolist?

24 A. I blanch at the word "unconstrained". Every monopolist
25 faces some outer constraints that prevents it from going

1 higher, but I do not think that the Play Store, which
2 I think would be the closest candidate, is constraining
3 the commission.

4 Q. All right, so let us just stick with "monopolist". So
5 your case is that Apple is a monopolist, and you have
6 accepted that Apple is faced with -- that there is
7 an increase in value in the App Store and therefore of
8 demand; yes?

9 A. The demand for the App Store has been growing over time
10 through these indirect network effects. We have talked
11 about the more customers that Apple brings in, the more
12 valuable it is, and the more valuable it is to the
13 developer, yes.

14 Q. So normally what you would expect is if Apple were
15 a monopolist, and there is this significant increase in
16 demand, then you would expect Apple to increase prices,
17 would you not, over time, relative to 2008? But it has
18 not done that.

19 A. I do not -- I do not think that we would naturally
20 expect. We have to infer, as economists, that the 30%
21 is profit maximising. So I do not think that there
22 should be some expectation that prices would have gone
23 up over time, no.

24 Q. Well, if it is a monopolist, and if it is facing much
25 increased demand, why would it not put its prices up?

1 Why would that not be profit maximising, to put its
2 prices up?

3 A. Well, remember, Apple can monetise the value in many
4 different ways. It does not just have to come through
5 the commission. Apple can do it through the user side,
6 through selling more phones. It could do it through
7 in-app purchases. There are a lot of different ways
8 that Apple can monetise and capture the value that is
9 being created. It does not have to come through
10 increases in the commission.

11 Q. So you agree with me that willingness to pay has
12 increased because the value has increased; yes?

13 A. I think that the platform has become more valuable over
14 time. I think that -- I think that is fair.

15 Q. It is right, is it not, that the profit maximising price
16 for a monopolist is higher if willingness to pay
17 increases; that is correct as a proposition, is it not?

18 A. I mean, in a very simple model, if that was the only
19 thing that was changing you could say there were
20 opportunities to raise prices.

21 Q. So the only logical explanation for why Apple has not
22 increased its prices, given that the willingness to pay
23 has increased, is that the combined effect of the device
24 and transaction competitive constraints has led Apple to
25 cut its share of developer revenues. It is the

1 constraints that are the reason why Apple has not
2 increased its prices?

3 A. I think that once you get to the monopoly price, that
4 you cannot do any better, and at that point if you try
5 to go higher, you could suffer some defection from
6 developers.

7 Q. But your point was that in 2008, the monopoly price was
8 30%; yes?

9 A. I think that Apple quickly -- in the aftermarket,
10 I think that Apple quickly acquired dominance, and I do
11 think that 30% is consistent with the monopoly price,
12 yes.

13 Q. So if in 2008 the monopoly price was 30%, and given that
14 value has increased exponentially, and so willingness to
15 pay is higher, the monopoly price now should be higher,
16 should it not, if Apple were unconstrained?

17 A. If this were the only price that Apple charges, but
18 Apple charges myriad prices, and it is a two sided
19 platform, they have got prices they can charge to the
20 consumer, and they are making a lot of money from users
21 as well. So I do not think we should instinctively
22 think that Apple should have or is leaving money on the
23 table.

24 I will say, though, I said this yesterday and I will
25 say it again today, it is conceivable that Apple could

try to go up by a few percentage points, it is conceivable they could try, but they know this market and they know what they feel they can get away with, and I think 30 is what they feel is their upper limit.

Q. That is because of the constraints, is it not, on the device market and on the transaction platforms?

A. I think they feel pushback from developers already at 30%. There have been lawsuits, there have been defections, and I think they likely believe that if they were to go higher it would generate more bad than good.

MS DEMETRIOU: Thank you. Is that a convenient time to break?

THE CHAIRMAN: Yes, we will take a ten-minute break. Thank you.

(11.44 am)

(A short break)

(11.56 am)

THE CHAIRMAN: Ms Demetriou.

MS DEMETRIOU: Dr Singer, you refer to -- you have talked about network effects, we have discussed that, and you give an example of that in action in your report as being Apple's introduction of the Reader Rule, so I just want to look at that briefly.

If we pick up {D1/141/1}, this is a document from the time that the Reader Rule was introduced, and we see

1 there it is an email which sets out the text of
2 a Reuters article. If we go to {D1/141/2}, and just go
3 a bit down the page, there is a sentence beginning:

4 "Like the Wall Street Journal ..."

5 Are you with me?

6 A. Yes.

7 Q. "... owned by Rupert Murdoch's News Corp, the Financial
8 Times has successfully persuaded many of its readers to
9 pay to read its online version."

10 You can see here the Financial Times was indicating
11 it would not offer subscriptions through the App Store,
12 and they say, if we go to the top of the page:

13 "'We don't want to lose our direct relationship with
14 our subscribers. It's at the core of our business
15 model' ...

16 "He said he was hopeful of a positive outcome to
17 negotiations with Apple, but added: 'If it turns out
18 that one or another channel doesn't mix with the way we
19 want to do business, there's a large number of other
20 channels available to us'."

21 So we can see, can we not, that the view of the FT's
22 publisher, Mr Grimshaw, was that it had other channels,
23 correct?

24 A. Yes, FT and other large publishers resented paying the
25 30% and were looking for ways to escape that tax,

1 including, you know, how could they get their readers to
2 subscribe on their own websites.

3 Q. Then if we go to the bottom of the page, it says:

4 "Grimshaw said FT.com had far more to lose by giving
5 up its customer relationships to Apple than many other
6 publishers, who had not yet developed a successful
7 online business model."

8 Then:

9 "'We have something to lose' ... 'The publishing
10 market as a whole is in a different situation'."

11 So that is what the FT publisher was saying.

12 I now want to look at what Mr Schiller says at the
13 top of page 1 when he is attaching the email.

14 {D1/141/1}

15 So he says:

16 "Without creating an exception for reader apps, we
17 will need to take the Financial Times apps (they have 5)
18 out of the App Store, as well as all other publications
19 that say 'no' to our subscription model, this June."

20 So Mr Schiller thought that Apple was going to lose
21 the FT from the App Store unless it took some action,
22 did it not?

23 A. Yes.

24 Q. Then Apple in fact adopted the Reader Rule later in
25 2011; correct?

1 A. Yes. I do not know the exact date, but yes, it was in
2 part to try to appease these large publishers, yes.

3 Q. Because it was so keen to keep these apps available on
4 the App Store that it was prepared to forego revenue
5 from the subscriptions, yes?

6 A. Yes, some of the largest publishers have countervailing
7 power in the sense that they have such a big brand name,
8 I am thinking Netflix when it comes to video, but here
9 we are talking about newspapers, there are certain
10 newspapers that have such a potent following that they
11 have a credible threat of leaving and compelling their
12 subscribers to re-up outside of the platform to avoid
13 the tax.

14 Q. Thank you.

15 Now if we go to -- I want to look again at some of
16 the cross-examination of Mr Schiller, so if we go to
17 {Day7/14}, please.

18 A. Okay.

19 Q. So {Day7/14:6}. You can see "Q", that is the question
20 that Dr Kent's barrister was putting:

21 "Question: When you improve the hardware or the
22 software of the Apple device, that helps make the
23 devices more attractive in their own right too, does it
24 not?

25 "Answer: Yes, it does.

1 "Question: So there is a sort of double effect here,
2 is there not? The device is more attractive, so you
3 sell more, and the apps become more attractive and they
4 drive sales of the devices?

5 "Answer: Yes, I think that those statements can
6 both be correct."

7 Then the question -- Dr Kent's case that is put to
8 him is:

9 "Question: All of that is true of both free apps and
10 paid apps; is it not?"

11 He agrees with that, do you see that?

12 A. Yes.

13 Q. So Dr Kent's case, so the case that her leading counsel
14 is putting to Mr Schiller, is that for both free apps
15 and paid apps, the apps make the device attractive to
16 consumers and drive sales of the device, and we see that
17 Mr Schiller agreed. Do you also agree?

18 A. It is not the theory -- it is not, certainly, the theory
19 that I am putting forward. I, you know, set the device
20 market to the side.

21 When I talk about the network effects, I am talking
22 about how getting more developers on the App Store makes
23 the App Store more attractive to users, and vice versa.
24 So those are the network effects that I wrote about in
25 my report.

1 Q. But now do you agree, seeing this evidence, and seeing
2 the case that is being put, that there is also -- that
3 making the App Store more attractive also drives sales
4 of the device?

5 A. I think that there are synergies in that direction too.
6 But, you know, those are not -- when I talk about my
7 network effects in my report, I am talking about the
8 network effects on the App Store.

9 Q. Now, Mr Holt in the hot tub agreed that Apple has
10 a strong incentive to ensure that there is a highly
11 attractive range of paid apps on its devices. Can we
12 take it that you also agree with that proposition?

13 A. Can you give it to me one more time?

14 Q. That Apple has a strong incentive to ensure that there
15 is a highly attractive range of paid apps on its
16 devices?

17 A. I just -- I think I would need more context. They
18 need -- they need to attract paid apps, is that what you
19 are saying?

20 Q. Yes. So what we are seeing, if we go back to what
21 Mr Schiller says, the case that is put to him, you can
22 see that all of this cross-examination, so:

23 "Question: When you improve the hardware or the
24 software of the ... device, that [makes] the devices
25 more attractive ...

1 "... there is a ... double effect ... The device is
2 more attractive so ... the apps become more attractive
3 and [the apps] drive sales of the devices?"

4 He says that is true.

5 The case that is put to him is:

6 "Question: ... that is true of both free apps and
7 paid apps ..."

8 So both free apps and paid apps make the App Store
9 more attractive which drives sales of devices; do you
10 agree?

11 A. Yes, the free apps -- at least the opinions I have
12 offered in my report is that the free apps -- any apps
13 that come -- any developers that come into the store,
14 whether they charge for their app or they do not charge
15 for their app -- most of them, as you know, do not
16 charge for their app -- that creates indirect network
17 effects and attracts users. It makes the users value
18 the App Store more than it otherwise would.

19 Q. Yes, and what Mr Schiller is -- the case that is put to
20 Mr Schiller, and that he accepts, is that that is true
21 both of free apps and paid apps. So can I take it that
22 you agree with that too?

23 A. I think that for the network effects that I spoke to in
24 my report, it does not matter if the developer is
25 selling a paid app or a free app. More developers are

1 a good thing, and they engender these network effects
2 and make the App Store more attractive to users.

3 A developer is a developer.

4 Q. Okay. So I want to move to consider the question of
5 switching now.

6 One point you make about device market competition
7 is that there is only limited switching between Android
8 and iOS users; correct? That is a point you make?

9 A. Yes. Just in the context, I am saying that we cannot
10 count on switching from iOS to an Android system as
11 a constraint that will regulate the commission charged
12 by Apple on its App Store.

13 Q. Yes. Let us pick up {C4/7/14}, just so that we can see
14 the scope of the debate.

15 So proposition 27, do you see that at the bottom of
16 the page:

17 "Competition in the market for devices disciplines
18 App Store commission rates."

19 You say you disagree because switching rates are
20 very modest.

21 Then if we go over the page {C4/7/15}, there is
22 a confidential figure --

23 A. Okay.

24 Q. But do you see --

25 A. I will not say that.

1 Q. Yes, we will not say it, but you can see it. So I just
2 want to remind you of the evidence.

3 Then we see in Professor Hitt's side of the table --

4 A. Okay.

5 Q. -- he has:

6 "In 2022 ..."

7 I am not going to read it out, but do you see:

8 "... [X] percent of Android smartphone users had
9 switched from an iPhone and [X] percent of iPhone users
10 had switched from an Android smartphone."

11 So we see those figures?

12 A. I see them.

13 Q. Right. In that context, I just want to look at some
14 market research carried out for Apple. So if we go to
15 {D1/842/21}, and this is, you can take it from me, from
16 the first quarter of 2020, and if we go to the next page
17 {D1/842/22}. So most of this is confidential, anything
18 in pink is confidential.

19 A. Okay, I will not say it out loud.

20 Q. Thank you. So we see the heading "OS loyalty" for iOS
21 and Android. So it is looking at the percentage. It is
22 a little bit unclear on the screen. I do not know if
23 you can see it?

24 A. Yes.

25 Q. Oh, that is better. So it is looking at the

1 percentage -- at smartphone owners who change to another
2 smartphone in each quarter, can you see that?

3 A. Well, the title at the top, I am going outside the pink,
4 says these are:

5 "Among smartphone owners who changed ..."

6 So it looks like we are only looking at the
7 switchers, from the title.

8 Q. Yes, so if you look ... Yes, so if you look at the
9 bottom part, which is very small, so you are going to be
10 doing better than me if you can read it, so I think it
11 says:

12 "% of OS owners who remained loyal to the OS, when
13 they changed their smartphone, during each quarter."

14 A. Okay, can I see the title again?

15 Q. Yes.

16 A. Oh, okay. So now I think the title might convey
17 something a little different than what I had in mind.
18 So it sounds like this is just a survey of those who
19 recently upgraded their phones.

20 Q. Exactly. Exactly.

21 So we can see, for example, in quarter 2 of 2019, so
22 if we just look at that, the percentages for Apple and
23 Android, and so the difference between those percentages
24 and 100% is the percentage that shifted; do you see
25 that?

1 A. I am not sure how to interpret this yet, because -- now,
2 we are only looking at the switchers, and we are asking
3 the switchers about their loyalty to iOS?

4 Q. No. So pausing there, you were right the first time, a
5 few moments ago. So we are looking at people who bought
6 a new phone.

7 A. Yes, we are only looking at those who upgraded their
8 phones, and we are asking: of those who upgraded ... and
9 what is the question? I do not understand what I ...

10 Q. How many -- the percentage that remained loyal to the
11 brand they were on, to the platform they were on.

12 A. Hold on. Okay. Sorry. He took it down.

13 Okay. Now I think I have it in mind. It is among
14 those who bought a new phone in the last quarter, how
15 many of those remain loyal to iOS?

16 Q. Exactly.

17 A. Okay.

18 Q. So where you have got -- so take, for example, the
19 second quarter of 2019, we have a percentage figure,
20 yes? So that is the percentage that remained loyal --

21 A. Right.

22 Q. -- to iOS. So the remaining -- the difference between
23 that and 100% is the percentage that shifted; yes?

24 A. Right. Which is much, much bigger than the figures that
25 Dr Hitt and I had agreed to in the joint statement, and

1 the reason why is that you are conditioning on those who
2 just made a switch, right? Whereas the stats that
3 Dr Hitt and I put in the joint statement were anybody
4 who switched, right, in that year, including the non --
5 including those who did not upgrade their phones.

6 Q. Who did not upgrade, okay.

7 A. That is why these are bigger figures.

8 Q. Right, so these are -- this is looking at people at the
9 point where they would be able to switch because they
10 are upgrading?

11 A. But not everyone is at that point, that is the problem.
12 I am not at that point right now, I got a phone a year
13 ago. So that is the problem. That is contributing to
14 the low level of switching, is that not everybody is
15 ready to. But what this is showing us is of those who
16 just made a new purchase, just upgraded, which ones
17 remain loyal, which is a different statistic than the
18 ones that Dr Hitt and I put forward.

19 Q. You are right that it is a different figure, but it is
20 still a relevant thing to take account of, is it not?

21 A. I do not want to say it is irrelevant, but it is just
22 Dr Hitt and I agreed on a range. We are pretty close in
23 our range. In fact, he -- I am not going to say the
24 number, but he and I agree on a certain number, then
25 he can cite one that is slightly higher, right.

1 This number, if you take one minus -- and I will not
2 say it -- you will get ... it is almost three times.
3 Three times, right? The reason why is you are only
4 looking at those who have just made the upgrade, right,
5 whereas the stats that you see in the joint statement
6 are of any customer, regardless of whether or not they
7 have just made an upgrade.

8 Q. Right. So what I am asking you is do you agree that
9 this is another relevant piece of evidence in looking at
10 switching?

11 A. It could be relevant in looking at switching. It is not
12 so relevant in looking for economic substitution,
13 because none of this is in response to a change in the
14 relative price, and the only price that Apple is
15 charging, of course, is the commission, right.

16 So none of this really informs the relevant inquiry,
17 in my opinion, which is can you count on any iPhone
18 users leaving the platform in response to a commission
19 increase? None of this can answer that question.

20 Q. So we are going to come on to that question. At the
21 moment I am just looking at pieces of evidence that are
22 relevant to proportions of people that might be
23 switching.

24 Can we look at {D1/459}.

25 Before I do that, can I just check that you agree

1 that when we consider competition between device
2 manufacturers, it is necessary to consider not only
3 those that do switch in a particular period but also
4 those that consider switching. That would be another
5 relevant piece of information; yes?

6 A. Well, I think that what we want to do, ideally, is find
7 data of those who switched in response to an increase in
8 the commission. That would give us the elasticity that
9 we are interested in, right? Is Apple concerned, when
10 it goes about setting its commission rate, that if it
11 goes -- if it raises it above -- or say a hypothetical
12 monopolist was considering raising it above the
13 competitive price, would there be any threat that
14 a consumer would leave the system, a user would leave
15 the system? I submit no.

16 So if we look at these switching rates,
17 unfortunately they do not really shed light on that
18 question.

19 Q. Dr Singer, I am going to come on -- I am taking this in
20 stages. I promise you I am going to come on to that
21 point, but at the moment I am just looking at switching
22 rates, and I just want to establish some parameters.

23 A. Okay.

24 Q. So we have agreed that what I have just shown you is a
25 relevant piece of information to look at, with other

1 information too, it is not the only piece of
2 information, but it is a relevant piece of information,
3 do you agree?

4 A. It could be, it could be important. I do not want to
5 weight ...

6 Q. Do you also agree in principle that it is necessary to
7 consider not only those who do switch in a particular
8 period but also those who consider switching?

9 A. Again, not in isolation. What we --

10 Q. Not in isolation. Take that as a proviso. Not in
11 isolation. But do you agree that is a relevant thing to
12 look at?

13 A. But relevant for what? At the end of the day on the
14 question of market power and market definition, we are
15 only interested in one thing. Would they move? Would
16 iPhone users leave the Apple ecosystem in response to
17 an increase over the competitive rate in the commission?
18 That is all we are interested in.

19 Q. Part --

20 A. So switching -- if you are asking me who I would
21 consider as a candidate in the switch, just in isolation
22 that does not really get us to the answer that we need.

23 Q. Dr Singer, I am responding to your analysis, and part of
24 your analysis relies on looking at what you say are low
25 switching rates overall. So I am going to come back to

1 the causation point, but I am trying to grapple with
2 that first stage of your analysis.

3 So you are the one that says: oh, look, overall
4 switching rates are very low. So all I am doing at the
5 moment is putting to you that there are other pieces of
6 evidence. When we are considering your evidence, a bit
7 like yesterday, when you made a comment about: oh,
8 privacy and security, look at these three surveys, which
9 you then abandoned reliance on. I am putting to you
10 there is other evidence that is --

11 A. Oh, I did not abandon reliance on those surveys.

12 Q. Let us not get into yesterday.

13 A. Yes.

14 Q. There is other evidence. You have said switching rates
15 are low overall. I am going to come to causation. You
16 have said they are low, and can we just agree that what
17 I just showed you is a relevant piece of information
18 that the Tribunal should take into account when
19 considering your proposition that switching rates are
20 low; yes or no?

21 A. I do not want to tell the Tribunal to de-weight or not
22 to consider it. So it certainly should be considered.
23 But Dr Hitt and I have, I think, come to an agreement on
24 what the relevant switching rates are, and our agreement
25 would consider everyone, not just those who recently

1 made an upgrade.

2 Q. Well, getting away from your agreement, and just
3 thinking now afresh about what is relevant, do you agree
4 that what I showed you is a relevant piece of
5 information that should go into the mix?

6 A. It is a piece of information. It does not -- it does
7 not get at what I am ultimately interested in, which is
8 economic substitution, and it is what it is.

9 Q. All right. Let us look at {D1/459}.

10 A. Okay.

11 Q. "Smartphone buyers", and if we go to {D1/459/3},
12 "Methodology", we see that the survey was of recent
13 buyers of iPhones; do you see that in the left-hand
14 column? So you can see when the survey was conducted,
15 and you see that the survey was of purchasers of
16 iPhones and Android devices; do you see that?

17 A. Yes, I see it.

18 Q. Right. Then if we go to {D1/459/41}, we see a graph of
19 consumers who considered other brands, and so we can see
20 that in the US, 37% of people who ultimately bought
21 an iPhone also considered buying an Android; do you see
22 that?

23 A. I see the number 37 above the iPhone buyers.

24 Q. Yes.

25 A. You want me to assume that what that means is that

1 they -- that they considered -- these iPhone buyers
2 considered a Samsung?

3 Q. Yes, so when you look at the bottom, it says:

4 "B1: when you acquired your [model] did you consider
5 getting a different brand of smartphone?"

6 So that was the question, and it was iPhone versus
7 Android. So taking -- let us take the UK figure. So
8 Android buyers, so the third column under the UK, you
9 see that 51% of people who ultimately bought an Android
10 had considered buying another brand; do you see that?
11 Because the green is "Yes".

12 A. So the green is some other brand. That is what the
13 green means? Because there is no label on this thing.
14 Okay.

15 Q. The green says "Yes", do you see on the right? Green is
16 yes, red is no.

17 A. Oh, mine was partially covered up. Green is yes to the
18 question.

19 Q. Yes, and so we see for the UK, 27% of people who
20 ultimately purchased an iPhone considered another brand;
21 do you see that?

22 A. Let me see if I can find it. So in the UK, you want me
23 to look at?

24 Q. Yes. So the first column says 27; do you see that?

25 A. Yes, 27% of new buyers -- or these are recent buyers?

1 Q. Recent buyers.

2 A. Recent buyers, including new buyers?

3 Q. Including.

4 A. Yes, would have considered a -- some other phone before

5 they ultimately purchased --

6 Q. The iPhone.

7 A. -- the iPhone, yes.

8 Q. Do you agree that those figures need to be considered

9 alongside the figures of people that actually did switch

10 in a particular year in order to get a view of the

11 proportion of customers that Apple could lose or gain?

12 A. Should it be considered? I do not want to tell you not

13 to consider any evidence, so I am loath to say "Do not

14 give this any weight".

15 So it is a piece of information. It does not speak

16 to switching -- it does not speak to switching

17 propensities.

18 Q. Why not? Because if somebody is considering another

19 brand, then that is a person who Apple might potentially

20 lose; no?

21 A. No, I think "considering" is fairly weak. We are trying

22 to get up to the level of economic substitute. So

23 I could consider a lot of things, but where I ultimately

24 go and how loyal I am to where I ultimately go is what

25 matters.

1 Q. Then can we look at {D1/1287}, and this is a survey
2 prepared by Accent for the CMA, and you can see the
3 date, June 2022. If we go to {D1/1287/35}, so towards
4 the bottom of the page there is a heading:

5 "Whether ever owned another [operating system]"

6 And it says:

7 "Nearly half of the iOS sample (46%) and about
8 a third of the Android sample (32%) have owned the other
9 OS some time in the past."

10 That shows, does it not, that there is a relatively
11 large group of consumers who have in fact at some point
12 changed brand as between iOS and Android?

13 A. It does not -- okay, I am just going to take those stats
14 as they are. The stat that I am interested in is among
15 iOS customers, what portion would be willing to switch
16 to an Android, and I cannot get that, I do not think
17 I can get that from either of those stats.

18 Q. No. So your question, just responding to what you are
19 saying, you say that the relevant question is that if
20 there is exploitation in your iOS App distribution
21 market, would enough consumers switch to Android to make
22 that unprofitable; yes?

23 A. I mean, ultimately that is very close. I would say,
24 when you say exploitation, just to be clear, if there
25 was an increase in the commission rate over the

1 competitive level, would this hypothetical monopolist
2 experience so much defection, say, from the consumer
3 side, as to render the price increase unprofitable.

4 Q. Now, yesterday in the hot tub you said that consumers
5 need to understand the effect that commissions have on
6 the prices of apps; do you remember that? You said that
7 that is because consumers would only punish Apple by
8 switching device if they considered that it was Apple's
9 fault that prices were going up. Do you remember saying
10 that?

11 A. I remember saying that, yes. If they thought that the
12 developer was doing it on its own, they would likely
13 believe the developer is charging the same high price on
14 the Android system, and therefore it would be a waste of
15 their time.

16 Q. But actually, Dr Singer, consumers are really only
17 interested in the prices they are paying, are they not?
18 They are not interested in who is at fault or punishing
19 anyone. They are just concerned about the prices they
20 are paying?

21 A. I think they ultimately are concerned about the prices
22 they are paying. I think that is fair. But if you are
23 looking for an impetus or some stimulant to cause a
24 substitution, the story that you would have to tell is
25 that the consumers are responding to a higher price that

1 is caused by the commission increase and that they
2 understand that mapping, and I am testifying that as
3 long as they do not understand the mapping, it is going
4 to be very difficult to expect that any consumers would
5 defect and leave the iPhone ecosystem in response to,
6 like leading with their feet, in protest, I used the
7 word "punishing" Apple in response to this price hike.

8 Q. But they do not need to understand the mapping, do they?
9 All they observe are app prices and app quality and
10 variety, and that is what they are going to react to, is
11 it not?

12 A. The problem is if they see high app prices, and they do
13 not understand that the cause of the high app price is
14 the commission, they are likely to figure that the high
15 app price charged by the same developer is going to be
16 the same high app price in the Google system, and
17 therefore that cannot be a basis of substitution.

18 Q. So you are assuming that there will be no visibility as
19 to what the app prices are on the competing platform?

20 A. I think you could try to get some visibility. It would
21 not be easy. Like before you are a Google customer, I
22 should say an Android customer, it is not obvious to me,
23 I guess you could go to the Play Store just through the
24 internet and see if you could detect a difference in
25 prices, but, look, Google is charging 30%, Apple is

1 charging 30%, so there is no strong basis a priori to
2 believe that you are going to see differential prices.
3 You are just going to see high prices, and you are not
4 going to know that the commission is one of the
5 underlying contributors.

6 Q. Well, if you are someone who is concerned about the
7 prices, it does not take much to find out -- so if you
8 are someone who spends a lot on games and in-app
9 purchases, it does not take much, does it, to find out
10 what the price of those in-app purchases are on other
11 platforms. Your friends will tell you, you can go on
12 the internet, there are all sorts of ways you can find
13 out?

14 A. It may not take much, but the problem is if you go over
15 there and Google is charging the same 30% rate, then
16 there should be no expectation that the prices are going
17 to be any different. This is going to be a very
18 difficult lever, you know, that we should not count on
19 to discipline Apple for the reasons I laid out.

20 Q. If Google is charging the same 30% rate, then that is
21 probably because it is a competitive rate, is it not,
22 Dr Singer?

23 A. That is not what a jury found in the Epic v Google case,
24 but I think the Google commission is also likely to be
25 a reflection of their market power over their subscriber

- 1 base.
- 2 Q. Let us go to Professor Hitt's reply report, so
- 3 {C3/8/48}.
- 4 A. Okay.
- 5 Q. If we look at 92(b), and you will have seen this, but
- 6 you can see how skewed the spending is on the App Store;
- 7 correct? So a very small percentage of consumers make
- 8 up a large percentage of commission, and you do not have
- 9 any reason to doubt those figures, do you?
- 10 A. No.
- 11 Q. If we go to {C3/8/88}, so paragraph 168(b), here
- 12 Professor Hitt is looking at the number of users who
- 13 spent more than £1,000 on the App Store in 2022 alone;
- 14 do you see that?
- 15 A. Yes.
- 16 Q. So they are spending, just taking stock, they are
- 17 spending more in one year than the full price of their
- 18 iPhone; yes?
- 19 A. Yes.
- 20 Q. You can see the percentage of users who do that, it is
- 21 a tiny percentage; do you see that? It is in pink so we
- 22 will not read it out.
- 23 A. I will not read it out.
- 24 Q. It is very small.
- 25 A. Yes, I see that.

1 Q. We can see also the App Store commission, the proportion
2 of commissions that they account for, which is a very
3 substantial proportion, is it not?

4 A. I am sorry, I will not say it out loud, but you want me
5 to look at the second pink ...

6 Q. Yes. So that tiny percentage of users accounts for
7 a much larger percent of the App Store's commissions?

8 A. Yes, I have agreed to that. The stat is not surprising,
9 that you have these super-users who are spending like
10 mad in the App Store.

11 Q. Then we see, if we go down to the bottom of the page,
12 footnote 301, we can see that these players, so these
13 gamers, are overwhelmingly making small transactions.
14 Do you see that? So they make very large numbers of
15 small transactions. That is what is going on, yes?

16 A. Yes, they appear to be hooked.

17 Q. So you are not disagreeing with any of this?

18 A. No. Unfortunately the end of the story is they are not
19 going to find a lot of relief when they go over to the
20 Android system who is also charging 30%. There would be
21 no expectation to get lower app prices on Android, given
22 that both dominant platforms are charging the same 30%
23 commission.

24 Q. Well, if Apple was charging too much, Google could
25 undercut Apple, could it not, and get people to switch,

1 just like Apple did to Nokia and so on?

2 A. I think -- so this is an interesting question. Could
3 Google lure customers ... I guess it is complicated.
4 Can we start off on the customer side, the developer
5 side? Let us try the developer side, that is easier.
6 Could Google lure developers away from Apple by
7 competing on the commission basis, I think is the
8 question?

9 Q. That is the question.

10 A. I think that it would be difficult to, in that the
11 developer wants to have a footprint in both spaces. So
12 it is going to be very difficult for an Android -- for
13 Google, for example, to convince a developer: hey,
14 I want you to give up on Apple entirely, just come over
15 and set up on our space. It would be surrendering too
16 many potential sales.

17 So I think for that reason, and given these
18 aftermarkets that we talked about, I think that the
19 competition between the two is fairly dull on that
20 dimension.

21 Q. But your case on incidence, which obviously we do not
22 accept, but your case on incidence is that lower
23 commissions are passed down to consumers; yes?

24 A. On the same platform. You see, the reason it does not
25 make sense for you right now is you cannot expect

1 steering by a developer to try and get you to go over to
2 the Google platform. But if there were two -- say there
3 were two payment processors on the iOS system or there
4 were two app stores, then you would expect steering to
5 try to bid down the commissions.

6 Q. Dr Singer, I think the point I am putting is a more
7 simple one. If Google lowers its commission, and if you
8 are right about incidence --

9 A. No --

10 Q. Can I just finish my question.

11 A. You are not right, because you are going across
12 platforms.

13 Q. I am really not. You have not heard my question.

14 A. Okay.

15 Q. I am not going to go across platforms. I am going to
16 stay on a platform.

17 So Google lowers its commission to attract
18 developers over, and the developers -- you say that on
19 that platform -- I am not changing platforms. So
20 Google, the developers on Google then lower their prices
21 to consumers; yes?

22 A. There is only one platform on Google. There is only one
23 app store.

24 Q. No, you are getting confused. Please just bear with me.

25 A. Okay, but who -- you are lowering your price to attract

1 who? I do not understand. There is no competition on
2 the Google --

3 THE CHAIRMAN: Dr Singer, why do we not just get the
4 question finished. If you need any clarifications at
5 that stage, you can ask for them.

6 A. Okay. Okay.

7 MS DEMETRIOU: So I am sticking with Google. So Google
8 lowers its commission. So it thinks Apple is charging
9 too high a commission. If it lowers its commission, and
10 that lowered commission makes its way through to
11 consumers who are buying apps on the Android system, so
12 they are paying lower prices; yes, that is the effect of
13 your incidence?

14 A. No, you are going across platforms again. You are
15 saying if Google lowers it in order to attract
16 developers away from the iOS? That is not the --

17 Q. No, I am not --

18 A. That is not the steering that I have in mind.

19 Q. I am not saying --

20 A. That is not the steering-based incidence I have in mind.

21 Q. Dr Singer, I am not saying any of that. Can you just
22 try and listen to me again. I think you are thinking
23 ahead to some point I am not making, so can you try and
24 listen to the point that I am making. I am not talking
25 about luring at this stage.

1 A. I am not sure you are making a point, but why do you not
2 try it a third time.

3 Q. I will try it a third time, and if you will stop
4 interrupting me, I think we will get there.

5 Now, Google -- I am not talking about luring, I am
6 on one platform. So Google lowers its commission, yes?

7 A. Yes.

8 Q. Your case is that lowered commissions would be fed
9 through to consumers; yes?

10 A. You have not added enough to the hypothetical now. If
11 Google were competing against another app store on the
12 Android system, right, if you give me that, right? You
13 are trying to work across platforms. But if there was
14 competition across app stores on the Android system, and
15 if there was a low-cost platform on the Android system
16 and a high-cost platform on the Android system,
17 developers would have incentive on the Android system to
18 steer Android customers -- their Android customers --
19 over to the lower cost platform on the Android system.

20 Q. Dr Singer, can I just try again. It is probably my
21 fault, but you are answering a question which I have not
22 put. Let me just try again. I am sure it is my fault.

23 Are you saying if Google lowered its commission --
24 take the Google Play Store. Are you saying if the
25 Google Play Store lowered its commission to developers,

1 that developers would pass on that benefit to consumers;
2 yes or no?

3 A. Just so I have the hypothetical. So these are
4 developers on the Android system -- on the Play Store?

5 Q. Exactly.

6 A. Would they pass on if Google just unilaterally lowered
7 it? Well, you cannot invoke steering in that example.

8 Q. No, you cannot.

9 A. My steering requires competition.

10 Q. I am not talking you about your steering. I am really
11 asking you a very straightforward question.

12 A. Okay.

13 Q. If the Google Play Store lowered its commission to
14 developers on the Google Play Store, is it your case
15 that those developers would pass on that reduced
16 commission to consumers; yes or no?

17 A. It is -- the incentives have been blunted severely
18 through the example that you have given, because you
19 want me to assume it is still a monopoly platform, so
20 that takes away the steering-based incentives for
21 incidence.

22 The second thing you have done is you have gotten
23 the direction of the change to be a negative one,
24 whereas we are contemplating what an increase in the
25 commissions did for our counterfactuals.

1 We already know from the experiments that Dr Hitt
2 investigated, where the small developers enjoyed
3 a reduction, those under £1 million enjoyed a reduction.
4 He cannot seem to detect a bunch of incidence in that
5 experiment. That sounds kind of close to this
6 hypothetical that she is giving me.

7 So I would say, based on that example, I would not
8 expect to see a lot of incidence. There could be some
9 incidence. But if it follows the pattern of the small
10 business incentives, which were a decline, and did not
11 involve steering, did not allow steering, because we
12 still have a monopoly platform, then I would not expect
13 a lot of incidence in that case.

14 Q. So you say you do not expect a lot of incidence but you
15 would expect some? So you would expect some lowering of
16 prices to consumers, yes?

17 A. Yes, Dr Hitt found some incidence, yes.

18 Q. If there were some lowering prices of consumers, you
19 would expect consumers to gravitate to that platform,
20 yes?

21 A. So now the best candidates for that story would be those
22 that you have identified, the whales, if I may use that
23 jargon, and I do not use that in a pejorative way.

24 If Google wanted to, say, drop the commission for
25 game developers to, say, 10 or 15%, and game developers

1 as a result on the Android system dropped their prices
2 materially, that could be attractive to the whales. The
3 problem, of course, is that it would not be attractive
4 to the vast majority of consumers on the iPhone system
5 because they just do not spend enough in a given year to
6 make it worth their while.

7 Q. No. Okay. But thinking about the whales and thinking
8 about the skewed figures that we saw in terms of
9 spending in Professor Hitt's report, it is right, is it
10 not, that it would take only a very small fraction of
11 consumers to switch to drastically reduce commissions?

12 A. It could -- it could involve a small -- of course we
13 have not seen that defection to discipline Apple of
14 late -- of yet, and I think that, you know, part of the
15 problem with this hypothetical is that it is assuming in
16 this monopoly context over in Google's platform that
17 developers would, in fact, pass through a large chunk of
18 the commission decrease. They might find it in their
19 interests just to sit on the cost savings. As
20 I discussed yesterday, firms are more inclined to not
21 share costs savings, as compared to passing along cost
22 increases.

23 Q. So just going back to -- so you think there would be
24 a small amount of incidents. We have seen that a very
25 small fraction of consumers spend a lot of the money.

1 So it would be a profitable strategy, would it, for
2 Google to reduce commissions in order to attract those
3 whales?

4 A. I think we have to assume that Google understands profit
5 maximising better than we do. That Google has not
6 attempted this yet, tells us that it would not be
7 profitable to do so.

8 Q. Well, it tells us it is a competitive price, does it
9 not, Dr Singer?

10 A. No, it tells us that Google does not think it could do
11 better than 30%. 30% is the best that Google can do.

12 Q. Now, thinking about the group, the very tiny group of
13 consumers that you and Professor Hitt have referred to
14 as "the whales", that group is likely to be thinking
15 about the quality and cost of the app phone when
16 purchasing their phone; correct? Of the App Store,
17 sorry, of the App Store when purchasing their phone.
18 They spend a lot, so they are going to be most tuned in
19 to questions of the quality and cost of the App Store
20 when they are purchasing their device; do you agree with
21 that?

22 A. I think you mean to say the price of the apps and the
23 in-app purchases within the App Store?

24 Q. Yes.

25 A. Because there is no price to the App Store for

1 consumers. I am just trying to help that along.

2 Q. That is what I mean. Yes, that is what I mean. Do you
3 agree?

4 A. So let me hear it again.

5 Q. Yes. So that small group of consumers who spend a lot
6 of money on small transactions are likely to be thinking
7 about the quality of apps and the cost of apps,
8 including in-app purchases, when purchasing their phone;
9 correct?

10 A. I think that for the whales, they would be more likely
11 to look forward and see what their prices would be
12 across the two platforms when they are making the
13 purchasing decision. I think that is fair.

14 Q. Okay. If we go back to Professor Hitt, so {C3/8/86}.

15 A. Okay.

16 Q. So paragraph 167, we see that Professor Hitt refers to
17 the Accent survey for the CMA we looked at a moment ago,
18 finding that:

19 "... 10 percent of iPhone owners considered the
20 price of digital content available on the device as
21 important in their decision to purchase the device."

22 Yes? You do not disagree with that figure, do you?

23 A. I am just trying to digest. Hold on. (Pause).

24 Yes, so 10% considered it. 90% did not even
25 consider it.

1 Q. The 10% that considered it are likely to be those users
2 who spend a lot of money on in-app purchases; correct?
3 The whales.

4 A. We do not know. It is a reasonable -- that is
5 a reasonable inference, but I do not think we know that.

6 Q. They would be most incentivised to be --

7 A. If we could help them, they should be, but we do not
8 know if that is the same 10%.

9 But, you know, when they look out at the prices on
10 the Android -- on the Play Store, I would expect they
11 are not going to see significant savings as the same
12 developer is facing the same commission.

13 Q. Now, when we are considering the position of this group
14 of consumers, can we look, please, at {C3/4/172}.
15 Again, the figures are confidential.

16 A. Okay, I will not say them.

17 Q. What we see here are the figures for the top 25 apps and
18 they are in three categories. So we have all apps, game
19 apps, and video streaming apps; do you see that?

20 A. There is a lot going on here, so let me just try to --

21 Q. Yes, we have app category on the left, and that is
22 subdivided into "All apps", "Game apps", and "Video
23 streaming apps". Then if we focus on the "Top 25 by
24 consumer spend".

25 A. Okay, that is the first row, okay.

1 Q. We see the figures in the first column for those that
2 offer digital content, do you see the "In iOS App"
3 column? Then we see in the third column how many of
4 these apps allowed digital content to be purchased
5 outside the iOS App; do you see that?

6 A. I do. I still do not know if I understand yet what
7 these figures mean, and I do not want to say them out
8 loud.

9 Q. No. But what we see here is that, without saying the
10 figures out loud, that for these top 25 apps by consumer
11 spending across all categories, and across gaming, in
12 fact, and across video streaming, transferring content
13 between iOS and other platforms is ubiquitous.

14 Look at the last column, so:

15 "Paid content can be transferred from outside of
16 iOS App to iOS App."

17 We see the percentage figures there. This is for
18 the top 25% of apps. Again, you are not in a position,
19 or you do not disagree with these figures?

20 A. If I am understanding the table right, this would
21 include a big developer, like Netflix, who has got the
22 power to demand that they be able to evade the tax and
23 bring subscribers back to the phone by making purchases
24 outside of the App Store.

25 Q. Yes, include Netflix but also 24 other video streaming

1 apps?

2 A. It just says "top 25". Are these just video streaming?

3 Q. No, the third category, do you see?

4 A. The third category, yes. But the top 25 would be the
5 biggest ones, they would include Netflix.

6 Q. They would.

7 A. These are the ones that are able to effectively achieve
8 a workaround and evade the tax by virtue of their power
9 to get their customers to follow them over to their
10 website. Now, the biggest ones can do this because they
11 have big brand names, but as I say in my report, the
12 Reader Rule and the multi-platform rule are in part
13 weakened by Apple's insistence that they still prevent
14 in-app communication. They prevent the steering from
15 inside of the app.

16 So what happens is large developers like Netflix are
17 able to induce and get their customers to follow them
18 over to the Netflix website. But if you and I were to
19 create an app, we would have a very difficult time, in
20 the presence of this prohibition of in-app
21 communication, in-app steering, to hope that one of our
22 users would follow us over to one of our websites.

23 So it makes sense that for the biggest, say, video
24 streaming apps in the category, they are successfully
25 able to take advantage of the Reader Rule.

1 Q. Yes. Let us just look at -- because you have mentioned
2 now anti-steering a few times, so let me just go on to
3 that, and then I will come back to what I was going to
4 do, but let us just take it slightly out of order.

5 So you ... yes, you in your report -- let us start
6 by looking at the way you characterise the anti-steering
7 rule in your report. So if we go to {C2/8/72}, and if
8 we look at your footnote 313, you refer to
9 clause 3.1.1(a) of the guidelines, and we can see that
10 you quote from it there; do you see that?

11 A. Yes.

12 Q. Now, we know that the multi-platform rule came into
13 effect in 2018, but aside from that particular change,
14 is it your position that this kind of prohibition on
15 buttons and links and calls to action within the app
16 itself has had essentially the same effect throughout
17 the whole period?

18 A. Oh, it is my contention -- I do not know if it still
19 reads the same post 2018, but it is my contention that
20 in the presence of prohibitions of in-app steering that
21 the multi-platform rule cannot be counted on to
22 discipline Apple's pricing of its commission. That is,
23 it would be more potent if not only the biggest players
24 but also the mediums and the smalls could avail
25 themselves of this option.

1 But they are prohibited from steering the customer
2 to their website inside of the app. They could go and
3 buy a billboard on the road, but they cannot communicate
4 inside. So that gives a real advantage to someone like
5 Netflix who has so much power and brand loyalty over
6 their customer base that they can avail themselves of
7 this rule -- of this exception.

8 Q. Dr Singer, can I just ask you, because I am really doing
9 badly with time. I know you want to make all of your
10 points, and your barristers will make the points at the
11 end, but I did just ask you a really simple factual
12 question. Every question I ask is not an opportunity,
13 I am afraid, to repeat all the points in your report,
14 because we are going to be here for days if that is what
15 you do.

16 Can we go, please, to {E/7/11}, and I just want to
17 look at the version of the guidelines that was in
18 effect -- that is in effect in April 2024. So you
19 submitted your report in May 2024. This is the
20 provision that you referred to in your report.

21 So if we look at the first bullet and the final
22 sentence:

23 "In all other storefronts, apps and their metadata
24 may not include buttons, external links, or other calls
25 to action that direct customers to purchasing mechanisms

1 other than in-app purchase."

2 That is the provision you cite, correct?

3 A. I cannot go back and forth between documents, but if you
4 want me to accept that this is the one, and this is the
5 document I cited from, I can accept that.

6 Q. All right. Then if we go over the page {E/7/12}, 3.1.3
7 "Other Purchase Methods":

8 "The following apps may use purchase methods other
9 than in-app purchase. Apps in this section cannot,
10 within the app, encourage users to use a purchasing
11 method other than in in-app purchase, except as set
12 forth in 3.1.3(a). Developers can send communications
13 outside of the app to their user base about purchasing
14 methods other than in-app purchase."

15 So the last sentence specifically provides that
16 developers can send communications outside the app about
17 other purchasing methods; correct?

18 A. Yes, through a less efficient channel you can try to
19 signal to your customer base that you have got lower
20 prices outside of the app.

21 Q. That is not something that you have addressed in your
22 reports at all, is it?

23 A. No, I think I did address this in my report. The thesis
24 in my report was that the anti-steering --

25 Q. I know the thesis, Dr Singer. But did you address this

1 particular point, that developers can, outside of the
2 app, steer consumers to pay to use other channels? Have
3 you addressed that particular point and, if so, where?

4 A. Well, I have always been cognisant of it, which is why
5 I was saying you could do it on a billboard, if you
6 would like.

7 The point is that this is a less efficient way of
8 communicating with your customer base. You would like
9 to alert them inside of the app, this is how you have
10 developed a relationship with the customer, you would
11 like to do this, but you cannot, because of this rule.

12 Q. Then if we go to -- if we look at -- if we look at the
13 reader apps in -- so we need to scroll up, please.

14 3.1.3(a), so:

15 "'Reader' Apps":

16 "Reader apps may offer account creation for free
17 tiers, and account management functionality for existing
18 customers."

19 So pausing there. The reader app may allow for the
20 user to create an account with free tiers. So that is
21 a means, is it not, by which the developer, within the
22 app, can set up a user with an account; correct?

23 A. Sorry, so what is the question?

24 Q. So the question is that this provides a means by which
25 the developer can, within the iOS App, set a user up

1 with an account?

2 A. I can only read the language that I have in front of me,
3 and it says:

4 "Reader apps may offer account creation for free
5 tiers ..."

6 Q. Yes. This is not something you have addressed in your
7 report, unless I am mistaken?

8 A. I do not think I have invoked this line in the report.

9 Q. No.

10 Then we see again under "'Reader' Apps":

11 "Reader app developers may apply for the External
12 Link Account Entitlement to provide an information link
13 in their app to a web site the developer owns or
14 maintains responsibility for in order to create or
15 manage an account."

16 So just pausing there again. Within the reader app,
17 a developer may apply for an external link account
18 entitlement, and that allows the developer to provide
19 within the app a link to an external website where the
20 consumer's account is managed; yes? Do you agree?

21 A. That is what the language says. I am not sure if this
22 was the -- that this was the same guidance from the
23 introduction of the Reader Rule. You said this is the
24 2024 version?

25 Q. This has been in place since at least September 2020.

1 Sorry, this is February 2023, this one. This has been
2 in place since at least February 2023.

3 A. Right. I have not followed every permutation of how the
4 exceptions worked for the Reader Rule over time.

5 Q. That is all right. But can we agree -- can you agree
6 now that this is another way within the app that the
7 developer can steer consumers to subscribe to paid
8 content outside the app?

9 A. Well, he can apply for it. I do not think there is
10 a guarantee that you are going to get accepted. But you
11 can apply for it, at least as of 2023.

12 Q. Well, you have got no idea about whether or not
13 a developer would be accepted, have you? You have not
14 looked --

15 A. The language just says "may apply for it".

16 Q. Are you again -- is this -- are you making a lawyer's
17 point?

18 A. I think you are vastly overreacting. I am just reading
19 back the plain language. It says "may apply".

20 Q. But then you said "I have got no idea whether they are
21 going to get accepted". But this is not something that
22 you can help the Tribunal with at all, is it?

23 A. Help them read? No.

24 Q. Right, okay.

25 So can we -- just going back to my question, do you

1 agree that this is another way within the app that the
2 developer can steer consumers to subscribe to paid
3 content outside the app?

4 A. What I would agree to is that, starting from the date
5 that this exception was allowed, that -- just reading
6 the plain language, that if you were to apply and if
7 Apple were to accept your application, then you could --
8 let me see what it says:

9 "... provide an informational link in their app to
10 a web site ..."

11 Q. Yes. So if a developer wants to steer a consumer to pay
12 for content outside the iOS App, this would be
13 a mechanism for doing it; yes?

14 A. It could be a mechanism as of 2023, yes.

15 Q. Now, I want to just ask about some different types of
16 apps in turn, and start with games, and let us start --

17 Oh, I do need to go back, do I not. I missed some
18 material.

19 We will come back to this, but I got distracted by
20 your reference to steering, so I am going to go back to
21 what I was on before.

22 A. Okay.

23 Q. I just want to consider the practicalities of moving
24 apps and moving purchased content, and the first
25 question I think will be non-controversial, which is

1 that virtually all apps are free to download; correct?

2 A. I give the statistic in my report, but a very high
3 percentage, and that is because the developers have
4 figured out that you want to get the person hooked on
5 your product first and then charge them later, after
6 they have become accustomed and familiar, and hopefully
7 addicted to whatever you are selling. If you put
8 a price on the front end, it creates a friction, and it
9 might make it difficult for you to get a foothold in the
10 space --

11 Q. So is the answer "yes"?

12 A. Well, you said "virtually". I just want to -- I gave
13 the exact statistic. I do not know -- I do not know
14 what the exact statistic is, but a very small number of
15 apps charge for download.

16 Q. All right. Now subscriptions, such as with Netflix or
17 Disney Plus, or the FT, they are tied to a user's own
18 account and so they are transferable across platforms;
19 yes?

20 A. I am not sure what you mean by "transferable". But
21 Netflix and these other subscription services now enjoy
22 exceptions because of the Reader Rule, and they also
23 enjoy lower commissions in the second year of
24 a subscription.

25 Q. You can transfer them across platforms. So if you

1 switch phone to an iOS phone, you can transfer your
2 subscription over easily?

3 A. I do not know about easily, but I think you can transfer
4 your plans over, for certain plans across -- there are
5 certain apps and purchases that will be stranded when
6 you make the switch. There are others that will come
7 over when you make the switch.

8 Q. It is easy, is it not, to move data from one device to
9 another?

10 A. I just cannot --

11 Q. You do not know?

12 A. I cannot agree or disagree. "Easy" is just -- I worry
13 about that word. I think for me it could be very hard,
14 but for someone who is technically savvy it might be
15 easy.

16 Q. The question of thinking about how much is
17 transferable -- in fact, let us go to your report at
18 {C2/8/39}. So paragraph 63, you cite the Goldman Sachs
19 report here, do you see that, and the figure of \$79.85.

20 A. Let me just ...

21 Q. So you say:

22 "Further evidence of Apple's incentive and efforts
23 to increase lock-in can also be found in various
24 financial analyses conducted by outside investment
25 firms."

1 Then you refer to a 2013 Goldman Sachs report that
2 calculates the explicit switching cost of \$79.85; do you
3 see that?

4 A. Yes. I presume these are out-of-pocket switching costs.
5 Yes.

6 Q. Well, you relied on it. So do you know?

7 A. Well, I do not think that Goldman Sachs is necessarily
8 taking into consideration all of the switching costs
9 that I had in mind in terms of time value, one's time
10 value of money, learning the new system, coordination
11 costs. I think these are the ones that they could
12 quantify.

13 Q. Right. Now, did you see, or have you seen the
14 transcript of Mr Schiller's evidence when he was asked
15 about this?

16 A. No.

17 Q. So let us look at that. So that is {Day7/124:16}, and
18 if you take it from line 16, so I was re-examining him
19 at this stage, and I went back to the Goldman Sachs
20 report. Can you just read from line 16 to over the
21 page, and then we will go over the page once you have
22 finished.

23 A. Okay. (Pause).

24 I see it. Okay. I am finished.

25 Q. Then if we go over the page, thank you. {Day7/125:1}.

1 If you read that page. (Pause).

2 A. I have read it.

3 Q. Then I am afraid there is another page for you to read.

4 A. Oh. Would you mind going back? I did not know that

5 I was going to keep going. Just one second, I ...

6 (Pause)

7 Okay, I am ready to go. {Day7/126:1}.

8 Q. So just taking it up from line 14, so I say -- I asked
9 him:

10 "Question: So can you comment on how the cost of
11 replacing apps for someone switching to Android might
12 have developed since 2013?

13 "Answer: I believe, for the vast majority, it has
14 minimised to near nothing. Applications either are not
15 paid for upfront or they are available on both and you
16 can log in and get what you already paid for because now
17 there are cross-platform Multiplatform Rules on all
18 platforms. So I think that category has ... gone away."

19 You are not in a position to dispute that factual
20 evidence, are you, from the Apple executive?

21 A. As to whether, say, the \$25 -- I am not sure I am
22 following the \$50 one. I had the \$25 one in my head.

23 Q. So the \$50 one -- so the largest component of the \$79 in
24 the Morgan Stanley report was a \$50 cost, and that was
25 of replacing apps that had been purchased.

1 Mr Schiller's point is, well, that has disappeared
2 because most apps now, unlike in 2013, are free to
3 download. That is one of the reasons why that has
4 disappeared. So paid apps have almost entirely
5 disappeared, so we agreed that that was correct.

6 A. No, but --

7 Q. So he is saying that figure has now disappeared.

8 A. I think the relevant question is at what point in time
9 did it disappear relative to the Class period?

10 Now, the period that we are looking at for damages
11 here, 2015, right --

12 Q. To now.

13 A. To now. So I cannot -- I do not know when he thinks
14 that cost went away, from that testimony.

15 Q. Well, Dr Singer, it is really your evidence that I am
16 challenging, because you refer to the Morgan Stanley
17 report without distinguishing between different time
18 periods, and what Mr Schiller has said is: well, none of
19 that is really relevant now because these costs have
20 disappeared. So when is it you say that the costs have
21 disappeared?

22 A. Well, I did not try to withhold the date of the Morgan
23 Stanley report. If we could go back to my report.

24 Q. Yes, it is at {C2/8/39}. Sorry, the Goldman Sachs
25 report.

1 A. Oh, Goldman Sachs report.

2 Q. Yes, it is my mistake.

3 A. Right. So this is from June 2013. I mean, I think it

4 can both be accurate as of that date, and it can -- that

5 component can be smaller as of today. I think those

6 both can be true.

7 Q. The truth is that there are not any more, really any

8 switching costs that are material in the context of

9 a device that you are paying £1,000 for?

10 A. No, that is not true. He was -- your testimony, or

11 Mr Schiller's testimony, spoke to those two components

12 of the out-of-pocket cost that Goldman Sachs estimated

13 in 2013.

14 Q. Yes, and one --

15 A. But then you wanted me to go from that to there are no

16 more out of -- there are no more switching costs. That

17 is quite a leap.

18 Q. Well, it is not much of a leap, when you think that the

19 biggest --

20 A. No, because it is one component. These are the

21 out-of-pocket expenses, right, and that is one component

22 of multiple components that I listed, the switching

23 costs.

24 Q. So you are referring to the explicit -- you are

25 referring to explicit switching costs being \$79.85, so

1 you rely on Goldman Sachs for that. The largest
2 component of that figure was a 50% cost of replacing
3 apps that have purchased, but that has gone. A further
4 \$25 was payment for a program called iTunes Match, but
5 that is now irrelevant since music is streamed.

6 So the totality, or near totality, of that figure
7 has now disappeared, has it not?

8 A. Well, according to Mr Schiller, I am not really in
9 a position to say yes or no, but I think a relevant
10 inquiry, follow-on, would be when did that cost
11 disappear relative to the Class period? Did it
12 disappear in 2015? It is not clear to me from the
13 testimony. He says "now it is gone". But to me the
14 relevant question is: okay, were those costs real in
15 2015, 2016, 2017, et cetera.

16 Q. You do not know, do you?

17 A. I certainly do not know from Mr Schiller's testimony.
18 He is the one who is trying to assert that they
19 disappeared. I think it is relevant to ask, crediting
20 his testimony, when does he think they disappeared?

21 Q. No, Dr Singer, I am looking at your testimony, and you
22 have put forward the Goldman Sachs report from 2013 as
23 indicating that there are switching costs of \$79.85.
24 You have not qualified that. So you have referred to it
25 as relevant evidence. You have not said: oh, it is now

1 out of date. So did you investigate at all whether that
2 figure remains relevant for any of the claim period; yes
3 or no, did you investigate it?

4 A. I think it was a reasonable inference for me to cite
5 a 2013 study to speak to the claim period, given that
6 the claim period started in 2015. You are now
7 confronting me with an assertion by one of your
8 witnesses that it went away. I am saying, fine,
9 I cannot really contest that, but it is relevant to know
10 when it went away.

11 Q. So I am asking you whether you investigated that
12 question yourself; yes or no?

13 A. I could not -- I cannot roll back time and go back and
14 investigate it now. This is the first time I heard
15 Mr Schiller make that --

16 Q. I am not asking you to. I am asking whether you
17 investigated --

18 A. I think you are. Because I am hearing for the first
19 time that Mr Schiller disavows that. He says it has
20 gone away. I do not remember Dr Hitt saying it went
21 away. If Dr Hitt had said it went away, I would have
22 investigated it.

23 THE CHAIRMAN: Ms Demetriou, it is 1.05.

24 MS DEMETRIOU: I am so sorry.

25 THE CHAIRMAN: No, no, it is fine, and I did not want to

1 stop you, but I am not sure you are going to get an
2 awful lot further. I think we can understand where the
3 battle lines are. So if that is convenient?

4 MS DEMETRIOU: It is convenient.

5 THE CHAIRMAN: Then it might be useful to take the break
6 now.

7 Just in terms of how you are doing, and as you said
8 before, you might not be going as fast as you would
9 like. As far as we are concerned, it does not really
10 matter terribly, other than that you have got your time
11 in the timetable and there is not going to be any or
12 much more than that. So really, it is an indication of
13 how much of a problem you think that is at the moment.

14 MS DEMETRIOU: Well, I think if we carry on with lengthy
15 answers it is going to be a problem, and I would ask if
16 Dr Singer could just -- where the question is
17 a straightforward question, if he could refrain from
18 trying to ventilate his evidence more generally.

19 I took the point earlier about the lack of clarity
20 when I am going to documents, and I hope I have
21 responded to that.

22 THE CHAIRMAN: Yes. I think part of the difficulty is that
23 where it is clear that you are making a point for
24 a purpose, the question really is whether Dr Singer is
25 entitled to respond to that purpose. Obviously there is

1 a bit of a grey area there. You might well say that is
2 something that can be picked up in re-examination, but
3 we cannot pick everything up in re-examination. So if
4 he thinks he has been put in a position where his
5 evidence -- an acceptance of something from you is
6 actually curtailing or impinging on views he is
7 expressing, then he may want to make that clear, and
8 I think he must be entitled to do that.

9 MS DEMETRIOU: No, of course. Of course he is entitled to
10 do that. But what I am finding is that equally when I
11 am asking relatively uncontroversial questions, which
12 are the building blocks to a proposition, that that is
13 taking much longer than would be desirable.

14 THE CHAIRMAN: Yes. I think, to be fair to everybody, it is
15 a difficult exercise to do on the --

16 MS DEMETRIOU: Yes.

17 THE CHAIRMAN: -- is it not, and obviously there are lots of
18 ramifications for some of the points you are making, but
19 I think we all understand we need to get through it as
20 quickly as possible.

21 We obviously have heard the points you have made, Dr
22 Singer, there is no need to repeat them, and if you want
23 to say "Subject to a point I have already made", then do
24 that, and there is no need to repeat it once you have
25 made it. That might help a little bit. We probably do

1 need to try and move it a bit faster, Dr Singer, but
2 equally if you feel that your answer is going to be
3 taken out of context then you need to say so, and we
4 will just have to manage that.

5 MS DEMETRIOU: Thank you.

6 THE CHAIRMAN: All right, we will resume at 2 o'clock.

7 (1.08 pm)

8 (The short adjournment)

9 (2.01 pm)

10 THE CHAIRMAN: Yes, Ms Demetriou.

11 MS DEMETRIOU: Dr Singer, you made some points in your
12 report about switching. A couple of points you made
13 were about repurchasing apps and also learning to use
14 a new operating system.

15 I just wanted to show you -- you cite in your report
16 the CMA's market study, but I want to show you the
17 Accent consumer survey done for the CMA at {D1/1287/71}.

18 If we look at figure 37, that says:

19 "Overall, how satisfied or dissatisfied were you
20 with your experience of switching from an iPhone/Android
21 smartphone to an Android phone/iPhone?"

22 You can see that the majority, so 54%, were very
23 satisfied, and the vast majority were satisfied. So
24 either very satisfied or fairly satisfied; yes? So only
25 a very few were dissatisfied?

1 A. Possibly -- I will just note that this is combining all
2 switchers, so it is looking at surveying both those who
3 went in the direction that we care about, iPhone to
4 Android, and the switchers who went from Android to
5 iPhone. So I would expect that if you upgraded, you
6 went from Android to iPhone, you would be happier. So
7 I do not know how informative this particular graph is.

8 Q. Well, there is nothing in here to suggest that people
9 find it difficult to switch. It is quite the opposite.

10 A. Difficult? I think this is with your experience.

11 Q. Let us look at figure 38.

12 A. Okay.

13 Q. {D1/1287/71}. So the main reasons given were "Easy
14 process", that is 26%, "Phone is user-friendly/easy to
15 operate", and "Phone is better quality ..." 16%. You
16 can see there "Easy to transfer data", 14%.

17 Then we see "Locked in to new/previous system" is
18 only 3%; do you see that? So, again, this is showing
19 that in fact people view the process as easy and very
20 few people see themselves as being locked in to
21 a system; correct?

22 A. I do not think so. If I am understanding it right, we
23 are only looking at those who gave a satisfaction
24 rating. It says "Reasons for satisfaction rating". It
25 does not seem like of all those surveyed.

1 Q. No, it is of those who switched. So it is not those who
2 were satisfied, because obviously we see some are
3 dissatisfied. It is those who switched. So it is
4 looking at those who switched and it is asking them:
5 when you switched, were you satisfied with the process
6 or dissatisfied? The vast majority say they were
7 satisfied and that it was easy; correct?

8 A. Oh, I am now seeing the red. I had only looked at the
9 first -- so the red also include why they are
10 dissatisfied.

11 Q. Exactly.

12 A. Okay. The question again, sorry?

13 Q. So the question is that the vast majority who switched
14 found it to be an easy process, found it easy to
15 transfer data, and only a small minority found
16 themselves -- felt that they were locked in to the
17 previous system?

18 A. I am just looking, it says "Easy process" 26%, and you
19 want me to accept that that is the vast majority?

20 Q. No, I want you to look at both charts in combination,
21 Dr Singer. So going back to figure 37.

22 A. Okay.

23 Q. We see that the vast majority were very satisfied or
24 fairly satisfied; yes? So that is looking overall at
25 whether or not they were satisfied with the switch.

1 Then we break it down into the reasons, and so they
2 give, within those -- within "very satisfied", you then
3 see why they were very satisfied. We see the reasons
4 over the page.

5 So the question I am asking you is: you accept,
6 I would have thought, that these charts show that of
7 people who switched, the vast majority were satisfied
8 with the experience of switching and only a very small
9 minority were dissatisfied; yes?

10 A. I think I will grant you, in 37, the first figure,
11 because the one on the right is switched to iOS, which
12 I am not as interested in, but I will grant you that the
13 one on the left, which is the combination of switch to
14 Android or switch to iOS, and if you sum up "very" and
15 "fairly", you get to the majority, for sure.

16 Q. Looking at both of them, the proportions are not very
17 different, are they?

18 A. Right. But we do not get to see the ones who switched
19 to Android exclusively.

20 Q. Then over the page again {D1/1287/72}. Just, sorry,
21 before we do that, switching to iOS is relevant, is it
22 not, because Apple can win business?

23 A. Not from the perspective of the SSNIP or the HMT. We
24 are thinking about where people would go if Apple were
25 to exercise market power. So we are not interested in

1 what drives people to come to iOS from Android or what
2 Android sensitivities are, that is the wrong direction.

3 Q. If we look at this page here, so can we scroll so we see
4 figure 39. So:

5 "How satisfied or dissatisfied were you with the
6 following when switching from an Android phone/iPhone to
7 an Android phone/iPhone."

8 So the first one:

9 "Transferring music from my old phone."

10 That is not really relevant now, is it, because
11 everyone streams music?

12 A. I would suggest that transferring music has become less
13 important over time. I do not know what fraction are
14 actually still downloading music, but ...

15 Q. Yes. No, that is fair. Then:

16 "Transferring data from my old phone."

17 We see again the vast majority of people were
18 satisfied with that process and only a tiny proportion
19 were dissatisfied, yes?

20 A. I think if you add the "very", if we are looking at the
21 same row, the "very" of 43 to the "fairly" of 26, you
22 get to the majority, yes.

23 Q. Then:

24 "Using a new operating system."

25 Again the vast majority on that basis, if you add

1 the "fairly" and "very", were perfectly happy with that
2 experience; do you see that?

3 A. Yes. Now these were, of course, among the actual
4 switchers. The problem, of course, is if you ask those
5 who have not yet switched or would not even contemplate
6 switching, you might get very different answers. That
7 is, they might just be afraid of a cost that could be
8 exaggerated, in their mind, from what the actual cost is
9 going to be.

10 Q. No, but the point you have made in your report is in
11 fact it is costly and difficult, and this evidence
12 contradicts that, does it not?

13 A. No, I do not think it contradicts it. I think I stand
14 by what I said in my report: it is costly and difficult.

15 Q. Right. Now, can we go, please, to {C3/8/95}. Again,
16 this is confidential, so neither of us are going to read
17 out the figures, but I just want to look at what -- so
18 looking here, we are looking at percent of developers,
19 do you see that at the bottom? What we see here from
20 this chart is that tiny numbers of developers are
21 associated with very significant proportions of the
22 commission that Apple collects; do you agree that that
23 is what this is showing?

24 A. Yes. Yes, this comports with my understanding that --
25 yes.

1 Q. Now, so it is right, is it not, that even if just
2 a handful of the biggest developers switched a small
3 fraction of their commerce away from iOS, that would
4 have a large impact on Apple's commissions?

5 A. It could, but it would make no sense for them to do so,
6 as I said before. They would be abandoning this very
7 wealthy subscriber base.

8 Q. But if they did, it would have a big impact, yes?

9 A. If they made a bad decision, in my view, they could
10 inflict not only pain on themselves, but pain on Apple.

11 Q. Yes. So what I am asking you is not whether they
12 abandon Apple, but whether they switch their commerce to
13 a different platform, so, for example, under the
14 multi-platform rule. So if a handful of the largest
15 developers switch some of their commerce to a different
16 distribution platform, that would have a big impact on
17 Apple's commissions; correct?

18 A. You might have to help -- I am just struggling. Which
19 distribution platform are you speaking of? Are you not
20 talking now --

21 Q. Their website, for example.

22 A. Oh.

23 Q. So under the multi-platform rule, if you have a big
24 gaming company, and it switches -- it steers consumers
25 to their website to make in-app purchases, you would not

1 need many developers to do that. You could take -- just
2 some of the big developers doing that, even for some of
3 their commerce, would have a big impact on Apple's
4 commissions?

5 A. I mean, in theory anything could happen. We have
6 actually looked at what happened in in-app activity on
7 the App Store under the multi-platform rule when big
8 developers left and we saw there was no diminution in
9 activity.

10 Q. That might be because the price is the same on those
11 other platforms; yes?

12 A. Oh, it could be for a lot of reasons.

13 Q. Now, and just like with consumers, those developers that
14 pay the largest commissions would have the most to lose,
15 would they not, from an increase in the commission, and
16 so the most reason to switch, if they can do that, to
17 switch transactions away, if they can do that?

18 A. Just to be clear, switch transactions to, say, their own
19 website?

20 Q. Yes, for example.

21 A. If they could -- if they could pull it off, certainly
22 you would like to go to your own website. It is
23 difficult to do that, unless you have a certain amount
24 of brand loyalty and name recognition.

25 Q. Now, some of these games companies are really big

1 businesses, are they not?

2 A. Yes.

3 Q. So Supercell, which is the developer of Clash of Clans
4 and Brawl Stars and Clash Royale, Tencent, the Chinese
5 technology company, acquired 81% of Supercell in 2016
6 for \$8.6 billion. It is a huge company, is it not?

7 A. Yes.

8 Q. Tencent is the world's largest video game vendor, is it
9 not?

10 A. I know it is up there. I do not know the rankings.

11 Q. Take it from me that in 2023 it had revenues of
12 \$86 billion, and that does not surprise you, does it?

13 A. No.

14 Q. Clash of Clans is available on Android, iOS, and PCs,
15 is it not?

16 A. Yes.

17 Q. It generates revenue for the developer by selling
18 in-game currency; yes?

19 A. Most likely. Yes. Yes.

20 Q. If we look at Professor Hitt's report at {C3/4/62}, so
21 paragraph 89, the figures are confidential --

22 A. Okay.

23 Q. -- but we see here:

24 "... Supercell's Clash of Clans ... generate revenue
25 through the purchase of in-game currency ... generating

1 a respective ..."

2 It is the second figure, so that is just the UK in
3 consumer spend on the App Store since 2008.

4 Are you aware that Clash of Clans offers its in-game
5 currency both on iOS and on other platforms?

6 A. Yes.

7 Q. If we go to {D2/256.2}, so this is the preview page for
8 Clash of Clans on the App Store, and just while we are
9 on this page, can you see at the top that it says:

10 "... Offers In-App Purchases."

11 So information about in-app purchases is presented
12 on the App Store itself; correct? Do you see that?

13 A. I do not -- I am sorry, I just do not understand the
14 question. All I can say is that it says it is free for
15 download but it offers in-app purchases.

16 Q. Exactly, and we see that on the landing page in the App
17 Store. But if we go to {D2/256.2/4}, we then see the
18 in-app purchases that are offered, and we see Pile of
19 Gems is £4.99 and Pocketful of Gems is £0.99, do you see
20 that?

21 A. Is this the price for the in-app on the App Store?

22 Q. Precisely.

23 A. I just want to make sure. I am sorry.

24 Q. Then if we look at an extract from the Clash of Clans
25 website taken in January of this year, so {D2/965.2/1},

1 and if we go to {D2/965.2/2} and can we zoom in. So we
2 see the same purchases at the same price, and so
3 Pocketful of Gems is 99 pence, Pile of Gems is 4.99. So
4 those purchases are the same price on the website and
5 on iOS, yes?

6 A. This particular developer did, yes, and I know that
7 Dr Hitt identified a handful like this as well.

8 Q. So this large developer is able to sell precisely the
9 same product in different channels; correct?

10 A. Yes.

11 Q. It really could not be easier, could it, Dr Singer, for
12 a consumer to see exactly what they are paying for and
13 to compare prices?

14 A. Well, there is no way for this developer to communicate
15 to the user inside of the app what the prices are
16 outside of the app. They would have to go looking for
17 it.

18 Q. No, but it is a huge company, and so there is every
19 possibility -- a huge company, no doubt with a huge
20 marketing budget, so it has every opportunity outside
21 the app, does it not, if it wanted to sell these
22 products for a lower price, to advertise that fact.

23 A. They could advertise that fact. It would be a less
24 efficient way of letting them know. It would be a less
25 potent way of letting them know. But I will grant you

1 that given the rules of the game, the opportunities for
2 this type of steering are greater for the large
3 developers than for the small. This would have brand
4 name recognition.

5 Q. The large developers account for almost all of the
6 commission; yes?

7 A. Yes.

8 Q. Now, let us go, for completeness, to {D2/965}. This is
9 the Clash of Clans website in February 2024. If we go
10 to the bottom of page 2 {D2/965/2} and can we scroll.
11 Can we have {D2/965/2-3} side-by-side, please. See if
12 that works.

13 So there is a promotion, do you see, 10% more. So
14 the prices are the same as we have seen before, but
15 there is a promotion of 10% more?

16 A. I have got two panels. Which panel would you like me to
17 look at? I am sorry.

18 Q. It is difficult -- it is actually cut off. I do not
19 know if we can scroll to see the bottom of page 2 or
20 whether it is just cut off in the piece.

21 Never mind. So my point is that there are -- there
22 is a promotional offer here where the developer is
23 offering 10% more of the coins for the same price.

24 A. On which -- on the App Store or on its own site?

25 Q. No, on its website.

1 A. Its own website. It is offering -- it is making a more
2 attractive offer --

3 Q. A more attractive offer.

4 A. -- on its own website?

5 Q. It is.

6 A. Okay.

7 Q. So presumably, by doing that, it decided it could drive
8 revenues by offering a promotion, right?

9 A. It could try. It could try to get people excited. It
10 could inform them, if it could steer them off the App
11 Store they would be rewarded.

12 Q. Now, Roblox is publicly listed on the New York Stock
13 Exchange, is it not?

14 A. I believe so.

15 Q. Let us go to its Form 10-K for 2023, so that is at
16 {D1/1806.1/97}.

17 A. Okay.

18 Q. We can see -- I think we need to scroll to the bottom of
19 the page. Sorry, {D1/1806.1/191}. Thank you. This is
20 the start of it and then I want to go to page 191.

21 Thank you. Yes, this is the one.

22 So we can see that the 2023 revenue, we can see that
23 at the top, is nearly \$2.8 billion; yes?

24 A. Yes.

25 Q. Then if we go to {D1/1806.1/124}, so halfway down the

1 page, we can see that under the second of the bold
2 headings, for the year ended December 31, 2023:

3 "30% of our revenue was attributable to Robux sales
4 ..."

5 So that is their virtual currency; correct?

6 A. Yes.

7 Q. So 30% was attributable to Robux sales through the Apple
8 App Store:

9 "... and 17% of our revenue was attributable to
10 Robux sales through the Google Play Store."

11 So that is about \$1.3 billion through these two
12 stores, I think you can take it from me on the maths.

13 A. Okay.

14 Q. So that is just under half of their revenue.

15 If we go to page 105 of this document
16 {D1/1806.1/105}, we can see, when you look at the last
17 pie chart, that 80% of usage is on mobile; do you see
18 that?

19 A. No, I do not. Where is -- oh, 80% of it is on mobile.

20 Q. Via platforms on mobile.

21 A. Yes, which means they have a footprint on desktops as
22 well. Consoles. So they are selling in lots of
23 different complementary channels.

24 Q. They are. We can infer that a lot of usage on mobile is
25 being funded by transactions that are not through the

1 App Store or the Play Store, because we saw that,
2 combined, Apple and Google have about 40-something
3 percent of Robux purchases?

4 A. Well, this is a breakdown of our users. I do not know
5 if this is revenue-weighting. This is number one.
6 I just want to see. I just want to make sure you are
7 doing an apples to apples, no pun intended, comparison.

8 Q. So this is percentage of users.

9 A. Right, which may not reflect the percentage of revenues.

10 Q. I think that is the point I am trying to make. So what
11 we see is that Roblox has succeeded in creating a way to
12 transact with iOS users other than through the App Store
13 and IAP; yes?

14 A. Other than through the App Store and ... Did you mean to
15 say IAP, did you mean Android?

16 Q. No, the App Store.

17 A. Okay, other than the App Store.

18 Q. Yes.

19 A. Yes, well, we saw that they also do it through the Play
20 Store, right, that was the previous page, I will grant
21 you that.

22 Q. No, no. Sorry, my question was: they found a way to
23 transact with iOS users other than through the App
24 Store; do you see that? Because we have seen that -- if
25 we go back, let me take it more slowly.

1 So if we go back to page {D1/1806.1/124}.

2 A. Okay.

3 Q. So we can see here that 30% of the revenue was
4 attributable to Robux sales through the App Store and
5 17% through the Play Store, yes? So together that is
6 47%.

7 A. Right.

8 Q. So that is about 1.3 billion through those two stores.
9 Then we take the figure of 80% of usage is on mobile.
10 So lots of usage on mobile must be funded -- must be
11 people buying prepaid cards or a subscription from the
12 website, correct? Because 80% of the usage is on the
13 mobile, and only 47% of the in-app transactions are
14 through the App Store or the Google Play Store.

15 A. Well, so, again, you are comparing apples and oranges.
16 But for the hypothetical, I can just assume that these
17 numbers can be mushed up against one another. They
18 cannot, necessarily. But I can just assume that you
19 have got statistics showing that Roblox is able to
20 consummate some transactions among iOS users outside
21 of the App Store. I can just assume that for your
22 hypothetical if you want me to assume that.

23 Q. Well, it is not a hypothetical, I am just looking at the
24 figures. It looks like quite a high proportion of what
25 is going on is -- so there is a high proportion of

1 usage, which is on mobiles. But quite a high proportion
2 of that is not transactions on the App Store or the Play
3 Store, and so the reasonable inference from those
4 figures is that people are playing the game on the
5 App Store or the Play Store, but paying for the
6 in-app -- paying for the purchases on the website or
7 somewhere else; correct?

8 A. I think somewhere else. I think it is reasonable that
9 some of them are, for sure. I do not know if we can do
10 the maths with these stats, but some of them are. I do
11 not dispute that you could do it. The question is, what
12 is the most natural way to do it? If someone is playing
13 on their iPhone and they want to consummate a purchase
14 of a sword, it is a bit of a pain to say: hold up, stop
15 what you are doing, go get the sword from the website,
16 right? They would just prefer to consummate -- that is
17 the most natural place to consummate the transaction.

18 Q. Well, we have seen that consumers can actually purchase
19 large bundles of Robux, right? So they do not have to
20 purchase an individual sword each time. They can
21 purchase large bundles of Robux, and they can even
22 subscribe to a monthly subscription. So it is not
23 actually very difficult to persuade them to log onto
24 a website to make a large transaction, is it, if that
25 saves Roblox lots of money?

1 A. Apparently users continue to make these purchases
2 through the App Store even at the higher commission
3 rate, and that is telling me it is more natural, it is
4 just easier to do it inside of the app when you are on
5 your iPhone.

6 Q. Well, until very recently Roblox chose to charge the
7 same price for Robux, irrespective of what platform you
8 buy from. So it was not even trying to shift commerce
9 away from the App Store. That suggests, does it not,
10 that Apple's 30% was a competitive price for it to pay?

11 A. No. No.

12 Q. Well, it is a huge company. Let us look at its
13 marketing budget. So {D1/1806.1/191} of this document,
14 and if we look at sales and marketing. So for 2023
15 alone, that is a few lines down, "Costs and expenses",
16 it is the last item, "Sales and marketing", it was
17 nearly \$150 million in 2023 alone. It is a company with
18 a big marketing budget, is not?

19 A. Yes.

20 Q. So if Roblox thought it was going to be profitable, if
21 they thought that Apple's commission was too much to
22 pay, and they could make lots of money by persuading
23 iOS consumers to pay for those transactions on its
24 website, then that is something that it would have -- it
25 has the budget to advertise and persuade consumers to do

- 1 that?
- 2 A. It has the budget to advertise. They are just
- 3 prohibited from advertising from within the app. When
- 4 I say "advertise"; they are prohibited from informing
- 5 the user there is a lower cost option outside of the
- 6 app.
- 7 Q. Now, very recently, in November of 2024, Roblox began
- 8 offering lower prices, so a 25% discount, online for
- 9 Robux. If we go to {D1/1806.1}.
- 10 A. I am sorry, is that 25% lower than what they were
- 11 charging on the App Store?
- 12 Q. On the App Store.
- 13 A. Okay. Well, that is at least consistent with an effort
- 14 to steer.
- 15 Q. So it is consistent with an effort to steer, and
- 16 presumably the reason why they have done this is because
- 17 they think they can make money in doing it; yes?
- 18 A. That is a reasonable inference. Whenever a firm does
- 19 something, I like to assume that they think they can
- 20 make money, yes.
- 21 Q. Now, let us go to -- now, it is right, also, is it not,
- 22 that game developers can substitute between monetisation
- 23 strategies that attract commission and monetisation
- 24 strategies that do not attract commission; yes?
- 25 A. They can substitute, they can do both, and they can do

1 neither.

2 Q. So let us go to {C3/4/280}, and this is an exhibit to
3 Professor Hitt's -- in Professor Hitt's report. So I am
4 not going to read the figures, but you can see for
5 games, the percentage -- this is the top 20 -- this is
6 the top 20 games.

7 A. Okay.

8 Q. You can see the percentage of the top 20 games that are
9 monetised through ads only; do you see that?

10 A. Yes. I will not say it out loud, but I see the number,
11 yes.

12 Q. Yes. Then the very final number is through ads and
13 other monetisation strategies. So most big games are in
14 a position, are they not, to substitute between these
15 two ways of raising revenue?

16 A. Well, you have put it as if they are -- "substitute", as
17 if they are an either/or. But that is not necessarily
18 what the data is telling us, right? The data is telling
19 us that you can go in-app, it seems like that is where
20 they started, and then once you feel like you have
21 tapped out the amount of sales that you can do off the
22 backs of customers, you can try to find a new payor,
23 which would be an advertiser.

24 So they do not necessarily -- this is not evidence,
25 not yet, at least, and I did not see anything in

1 Dr Hitt's, of economic substitution, that is developers
2 doing this in response to an increase in the price,
3 right? Sorry, an increase in the price of consummating
4 an in-app transaction.

5 Q. Well, they can shift more revenue from one to the other
6 by increasing the prevalence of ads, yes?

7 A. They can try to shift around by increasing the
8 prevalence of ads. I mean, there is a limit to that
9 too, of course. At some point the user is going to get
10 tired of being bombarded with ads, so you have to be
11 sparing in your ad exposure.

12 Q. Or they could increase the price that consumers have to
13 pay to get rid of ads. That would be another way of
14 doing it?

15 A. Yes, I know that Netflix has played around with ad-free
16 and ad-full offerings and have set their prices in such
17 a way as to try to cause you to avoid ads, yes.

18 Q. Netflix monetises without paying Apple any commission at
19 all, does it not?

20 A. Yes, that is true, and that is because they are Netflix.

21 Q. It is because it is a big, powerful company; yes?

22 A. Yes, there is countervailing power among a handful of
23 apps in the actual world, and there would be
24 countervailing power among those same apps in the
25 but-for world. They would just be getting off at a

1 lower base headline rate.

2 Q. Did you know that on Steam, game developers are not
3 allowed to use in-app advertising at all?

4 A. I have not studied in-app advertising opportunities on
5 Steam; just I have looked at the commissions.

6 Q. So let us go to {D2/939}, and if we go to -- well, let
7 us look at the first page, so you can see what it is.
8 So this is Steam's own documentation.

9 If we go to page 9 {D2/939/9}, so at the bottom:

10 "Q: Does Steam pricing support games with paid ads?

11 "A: No."

12 Then in the second sentence there is a suggestion:

13 "Steam does not support paid ads or
14 referral/affiliate revenue from showing ads to other
15 games and/or products or services. If your game's
16 revenue relies on advertising on other platforms, you
17 will need to find a new model to ship on Steam.
18 However, if you have a game that is ad supported and you
19 want to ship it on Steam, you could consider having your
20 game be a single purchase or making it free to play with
21 microtransactions or additional content as DLC."

22 So the point Steam is making is that for lots of
23 types of games that you get on platforms like iOS and
24 Steam, you could realistically monetise them in
25 different ways; yes?

1 A. Yes.

2 Q. Then let us go to {D1/216.1}. So this is an article
3 from 2013, and if we go to {D1/216.1/3}, we see that
4 Vserve provides an application for developers and can be
5 downloaded on the site. So it provides in-app
6 advertising services to developers, and do you see that
7 the revenue-sharing model is 60/40 between the developer
8 and the ad provider; yes?

9 A. Yes. I am not sure what Vserve is, but do you want me
10 to just interpret the 60/40? For whatever service they
11 are selling, 60 of it goes to the developer and 40 of it
12 goes to the ad provider.

13 Q. Exactly.

14 A. Okay.

15 Q. So the question that I am putting to you is that we see
16 here that a dollar on in-app purchasing revenue on iOS
17 is cheaper than a dollar of in-app advertising revenue
18 with Vserve; correct?

19 A. Let me just see if I follow the math, and I still do not
20 know what Vserve is. But Vserve is getting -- is
21 keeping -- I cannot tell.

22 Q. It is keeping 40%.

23 A. Oh, they are the ad provider?

24 Q. Yes.

25 A. Okay. So they are keeping 40, whereas Apple is keeping

1 30 on an app. So 40 is definitely greater than 30.

2 Q. What mix the developers go for will depend on their

3 business model and will be determined by consumer

4 preferences; yes?

5 A. The mix will be determined by the business model, yes.

6 Q. Now, can we go to your third report, exhibit 2. It is

7 at {C2/15/43}. This sets out the results of your tests

8 where you look at whether volumes of iOS in-app

9 purchases for 10 apps changed following the introduction

10 of the multi-platform rule; yes?

11 A. Correct.

12 Q. You referred to it earlier, I think, in that discussion.

13 A. Yes. Yes.

14 Q. Your point here is that there is not any apparent change

15 in volumes, and so as you say at the top of the page,

16 you say:

17 "This result suggests that the multi-platform rule

18 did not affect quantities sold for [these] top ten

19 [apps]."

20 Yes?

21 A. "... top ten in-app game purchases", yes.

22 Q. Yes. But you have not said anything here about whether

23 the price of the in-app content was the same or lower on

24 different channels, have you?

25 A. No, I am looking at activity through the App Store or

1 through the ASPS before and after the adoption of the
2 multi-platform rule.

3 Q. Yes. One of the examples is Roblox. But we just saw
4 that until the recent change announced in November 2024,
5 Roblox pricing was the same across different channels,
6 so that was likely to have been the position in 2018;
7 yes?

8 A. You want me to assume that there is no difference in
9 pricing for the entirety of 2018?

10 Q. Well, do you know? Do you know one way or the other?

11 A. No, I do not -- I did not -- this is it not a regression
12 model controlling for changes in pricing, this is
13 looking at just in-app activity running through Apple's
14 system before and after the multi-platform rule.

15 Q. So if the prices were the same, then the fact that the
16 volumes do not change just reflects the fact that from
17 the consumer's perspective, there was no reason, based
18 on price difference, to switch channel; correct?

19 A. I think that all we can infer from these graphs is that
20 we do not see a big shift away from in-app purchases
21 after the multi-Reader Rule for these apps.

22 Q. I think you accept that consumers have grown accustomed
23 to a single point of iOS distribution and provision of
24 aftermarket services for many years?

25 A. Have they grown accustomed to it? That is all they have

1 ever known. I do not know if I would use the language
2 "grown accustomed", but I will grant you they have never
3 known anything otherwise.

4 Q. That is your language, but I do not think there is any
5 difference between us.

6 A. Okay.

7 Q. You accept, I think, that consumers value convenience
8 when making purchase decisions; yes?

9 A. Yes.

10 Q. You also accept that consumers prefer what they already
11 know; correct?

12 A. Yes.

13 Q. So these would be further reasons, would they not, why
14 volumes might not change? So consumers on iOS find it
15 a highly convenient channel for making purchases and
16 they are familiar with it, yes?

17 A. Yes, it is hard to get people to change out of their
18 ways.

19 Q. There is nothing anti-competitive, is there, in Apple
20 offering consumers a service they find convenient and
21 familiar?

22 A. No, that is not the anti-competitive offence.

23 Q. Now, consumers tend to own multiple devices -- still
24 looking at games, consumers tend to own multiple devices
25 that are capable of playing these games, do they not,

1 such as a PC or a laptop and a smartphone, and quite
2 a few have consoles too; yes?

3 A. I cannot remember the exact percentage, but it is true
4 that some have both, yes, and play games on both.

5 Q. Let us look at some evidence from Mr Sweeney, the CEO of
6 Epic Games. So if we go to {H2/18/195}, and we see
7 halfway down the page a question:

8 "Question: ... your analytics group reported for the
9 week -- on February 4, 2020, that Fortnite players who
10 play on mobile are the most likely to play on other
11 platforms then (approximately 38 percent).

12 "Do you see that?

13 "Answer: Yes."

14 A. Can I just ask, is this from the Epic v Apple
15 litigation? What is this from? I am sorry.

16 Q. Just bear with me for a second. (Pause)

17 It is in the US, but let me just find out whether it
18 is the Apple litigation. I think it is. (Pause)

19 It is the Epic v Apple litigation in the US.

20 A. Thank you.

21 Q. So that is what we are looking at. So this is
22 Mr Sweeney's testimony in those proceedings.

23 Over the page {H2/18/196}, he says he would expect
24 that information to be accurate.

25 A. What information, sorry? Can we go back?

1 Q. Yes, of course. So {H2/18/195}, so:

2 "Question: ... your analytics group reported for the
3 week -- on February 4, 2020, that Fortnite players who
4 play on mobile are the most likely to play on other
5 platforms ..."

6 So 38% play on other platforms?

7 A. Okay, I see that, the Q&A, yes.

8 Q. Then if we go to {D1/508/1}, and if we start at
9 {D1/508/6}, do you see there is an email dated
10 January 9, 2018; do you see that? It is confidential,
11 but you see who it is from and who it is to; yes?

12 A. I see. I see, yes.

13 Q. Yes. So we are allowed to say the developer of Fortnite
14 and Microsoft, we are just not allowed to say the names.

15 A. Okay.

16 Q. The subject is "Fortnite going big".

17 Then you see:

18 "Folks from the Xbox team are in North Carolina
19 today, and we had a productive discussion in which we
20 disclosed the following highly-confidential plan:

21 "We're bringing Fortnite Battle Royale to iOS and
22 Android in late February. Not a dumbed-down version,
23 but the full experience ..."

24 So the developer of Fortnite is here saying that the
25 version of Fortnite that would appear on iOS would be

1 the full experience running at 30 frames per second. So
2 it looks like the developer's view is that the version
3 of the game on iOS would be equivalent to the experience
4 on a console; yes?

5 A. The line you want me to go to for that proposition is
6 where?

7 Q. The second paragraph.

8 A. The second paragraph, okay. "We are bringing ..."?

9 Q. Yes, so:

10 "Not a dumbed-down version, but the full experience
11 ..."

12 A. Okay.

13 Q. So I am just observing that it looks like the version of
14 the game on iOS would be equivalent to the experience on
15 a console.

16 A. That is a fair interpretation, yes.

17 Q. Then if we go to {D1/508/2}, this is later on in the
18 thread, you see an email dated 6 March, again from the
19 developer of Fortnite, and he says, so I am looking at
20 the third paragraph now:

21 "Full cross-platform [interoperability] is critical
22 for the mobile launch. Though only 3% of Fortnite
23 console players have played on multiple platforms, we
24 expect the number will rise to 35-40% with iOS/Android
25 given pervasive smartphone ownership."

1 As we have then seen in the testimony from
2 Mr Sweeney, that prediction turned out to be correct,
3 because we saw the evidence he gave in the US Epic
4 proceedings; yes?

5 A. I do not know if it turned out to be correct, but this
6 appears to be a prediction, and if you want me to assume
7 it turned out correct, that is fine.

8 Q. It is the evidence we looked at previously that he said
9 was correct, the evidence in his testimony in the Epic
10 proceedings, he said it was approximately 38%.

11 A. Okay.

12 Q. So the question is, this example shows, does it not --
13 this example of Fortnite shows that different platforms
14 can be substitutes for one another?

15 A. Apparently it is not that easy. Epic is suing Apple, or
16 just sued Apple, for violating the anti-trust laws,
17 allegedly violating, because it cannot get the low
18 prices that it wants. So if it were as easy as you are
19 trying to suggest, why would you have to go into
20 an anti-trust court? You could just move all your
21 transactions off the platform.

22 Q. Dr Singer, this sounds like a legal submission. I am
23 just asking you to look at the facts, and what we see is
24 that at that time he was saying 3% of Fortnite console
25 players have played on multiple platforms. They are

1 predicting a rise to 40% with iOS and Android. It
2 turned out to be around 38%. All I am putting to you,
3 I am not asking you about litigation, I am just saying
4 those figures show that different platforms for Fortnite
5 turned out to be substitutes; correct?

6 A. No, I am not going to use the word "substitute" either.
7 These are complementary channels. What he is saying is:
8 there is a lot of overlap now between iOS users. They
9 also can access our games through other complementary
10 channels, including consoles. Not substitutes. I think
11 you are using the word as an economic substitute?

12 Q. Let us go to {D1/1377/1}. So you can see that this is
13 a consumer study dated 2023. If we go to {D1/1377/13},
14 and if we look at that little Venn diagram on the left,
15 we see that 79% of players are using mobile; do you see?

16 A. This one is hard. Can we speak about this one?

17 Q. No, can you just answer my questions, and then if you
18 have got --

19 A. I just do not understand. I am genuinely confused.

20 Q. Oh, I see. Do you mean is it confidential or not?

21 A. No -- yes. Maybe you can give me a number. There are
22 just so many numbers here, and you have said a number
23 that I do not see, I am sorry.

24 Q. Sorry, let me take it slowly.

25 A. Okay.

1 Q. Do you see the total is 79%?

2 A. Ah, now I see. Okay, 79 is off to the side.

3 Q. It is off to the side.

4 A. 79 in the sentence, what does that mean?

5 Q. 79% of players are using mobile.

6 A. Okay. Whose players?

7 Q. The game players.

8 A. Game players. Okay, 79% of game players are using

9 mobile.

10 Q. Yes.

11 A. Okay, I can accept that.

12 Q. Okay. Then do you see that 16% of players use mobile

13 and a computer; do you see that?

14 A. Yes, the pink indicates a computer?

15 Q. Yes. Do you see at the bottom it says 43%, there is

16 a little picture of a computer.

17 A. Okay, I am going to take your word for it. So yes, 16

18 looks like the overlap.

19 Q. It is the overlap.

20 A. Yes. Good.

21 Q. Then do you see the console, again there is a little

22 picture of a hand-held thing. So that is 41%. Do you

23 see that 13%, the overlap, use a mobile and a console?

24 Yes?

25 A. Yes.

1 Q. Then 15% use all three, do you see that? All three,
2 15%.

3 A. Yes.

4 Q. Really these numbers are more than enough, are they not,
5 to create competitive pressure on Apple for the terms
6 that it offers to gaming app developers?

7 A. No. Respectfully, I do not think it provides
8 competitive constraint. Developers do not see these as
9 economic substitutes, they see these as complementary
10 channels.

11 Q. Now, I am just going to ask you very briefly about
12 something you debated in your evidence with
13 Professor Hitt, which is the Epic Hotfix experience. Do
14 you know what I am talking about?

15 So Epic, as you know, implemented a version of its
16 Fortnite game that allowed customers to bypass Apple's
17 IAP functionality, which was a breach of Apple's rules,
18 yes?

19 A. Yes, I think, if memory serves, they got kicked off the
20 App Store.

21 Q. Exactly, so Apple responded by removing Fortnite from
22 the App Store, and what Professor Hitt looked at was how
23 much of -- that obviously caused a significant decrease
24 in spending on Fortnite on iOS, yes?

25 A. It becomes impossible afterwards. But this is not

1 a change in the relevant price, you have just literally
2 eliminated one of the possibilities, yes?

3 Q. But what Professor Hitt shows is that nearly 42% of the
4 decrease in spending on iOS went across to other
5 platforms like PCs; yes?

6 A. Oh, I cannot remember his exact distribution. I thought
7 he was trying to demonstrate that traffic moved off of
8 iOS, and of course it had to move off of iOS because
9 the option was literally taken away from consumers.

10 Q. Well, it indicates, does it not, that switching platform
11 for the same game is a realistic and practicable option
12 for large numbers of gaming app consumers?

13 A. A realistic ...

14 Q. Practicable.

15 A. Okay, is it practicable? I do not know. It is
16 certainly possible. But at the end of the day what we
17 care about is, is it a close enough substitute, from the
18 perspective of consumers and developers, so as to
19 instill price disciplining power against Apple? That is
20 what matters.

21 Q. Let us look at what Apple thinks internally about
22 closeness of competition. If we go to {D1/732/1}. So
23 this is an August 2019 document about Apple Arcade. Did
24 you read any of Mr Schiller's evidence about this to the
25 Tribunal?

1 A. No. Mr Schiller testified about this prior to me
2 coming?

3 Q. Yes.

4 A. Oh, I did not read that, no.

5 Q. Do not worry.

6 A. Okay.

7 Q. So let us go to {D1/732/2}, and I will just give you
8 a moment to have a quick look at this slide.

9 A. Okay. Is pink confidential?

10 Q. It is, I am afraid, yes.

11 A. Okay, that is fine. (Pause)

12 Q. So if you just read the introduction and background
13 section to yourself, then we will go through it.

14 A. Okay. (Pause)

15 Q. So you can see that Apple here is considering the price
16 at which it will offer Apple Arcade, and under
17 "Approach", the second bullet point says:
18 "International pricing considers competing game
19 subscriptions from ..."

20 I will not read out the words, but you see who is
21 mentioned; yes?

22 A. Yes.

23 Q. So Apple internally regards those firms as its
24 competitors in offering this type of transaction, which
25 is gaming subscriptions; do you see that?

1 A. Yes, Apple -- this is an Apple document?

2 Q. It is, yes.

3 A. So Apple perceives these to be competitors, or competing

4 game subscription platforms, yes.

5 Q. Yes, and if we go to {D1/1318/1}, that is it. If we go

6 to {D1/1318/2}, this is a document from July 2022, and

7 the title is "App Store". Can we go to page 18

8 {D1/1318/18}.

9 Ah, sorry, I should point out that this particular

10 document appears to contain multiple versions of the

11 presentation in its notes with some mark-ups on some of

12 the slides, just so that you know.

13 But if we go to page 18, the point that is being

14 illustrated here -- so if we look at "Games Software

15 Industry by Revenue", and the point that it is

16 illustrating is that there is a growth in games software

17 revenues, and each bar on the chart, do you see on the

18 right, is the sum of mobile, console and PC; do you see

19 that?

20 A. Right. Can you help me, whose graph is it?

21 Q. So this is an Apple document.

22 A. It is Apple.

23 Q. Yes, an app Store document.

24 A. These are ...?

25 Q. So this is looking at -- if you look at the legend at

1 the bottom:

2 "Looking at the overall games industry, in 2021."

3 A. Okay.

4 Q. Then we can see the games industry by revenue by year,
5 and it is broken down into mobile, console and PC.

6 A. Right. So this is not just Apple's system; correct? It
7 is just Apple's estimate, like worldwide game sales
8 across these channels?

9 Q. That is right.

10 A. Mobile, console and PC?

11 Q. Exactly.

12 A. Okay.

13 Q. Then if we go to page 19 {D1/1318/19}. Again, this is
14 in pink, so it is confidential, but we see it is headed
15 "iOS Market Share". So I just want you to note what
16 this is at the moment.

17 Then we see a further version of this at page 67.

18 So if we can go to that {D1/1318/67}, we see:

19 "... Apple is driving this growth in mobile. Our
20 total market share last year was over [and I am not
21 going to read the figure] and has continued growing,
22 making iOS the biggest gaming platform in the world
23 ... by far."

24 Just pausing there. Internally, this is another
25 example of iOS -- of Apple internally regarding iOS as

1 being part of the gaming industry sector, which includes
2 other mobile, PC, and consoles; yes?

3 A. Yes.

4 Q. Can we go to {D1/1318/73}. We see here information
5 being given on efforts to get new apps launched, and
6 a lot of this is confidential, but we can manage it,
7 I think, by not referring to any names or details.

8 So at the very bottom of the page there is an app
9 referred to, and the ... Yes, so at the very bottom is
10 an app referred to, and it says -- the point is made
11 that the developer is looking to give the player the
12 same quality as they expect from PC and console on
13 iOS; do you see that at the very bottom of the page?

14 A. Yes.

15 Q. Then over the page {D1/1318/74}, so the third app on
16 that page, so I am not going to read the name, but we
17 see there -- so:

18 "... we have been actively working with [the
19 company] to ensure that we get the best representation
20 of [this game] on our platform as possible."

21 So, again, this is another example of Apple
22 regarding these platforms as competitors, yes?

23 A. Yes, Apple would like -- for a developer who has got its
24 game on three different platforms, a console, a PC, and
25 the iPhone, Apple would like the most amount of that

1 activity to occur on the iPhone, obviously. That would
2 generate more money for Apple.

3 But the question, the relevant question here, of
4 course, is: does that constitute an economic substitute?
5 To an economist, the answer is no. If you are in all
6 three, you are not substituting across. Your users just
7 might be using more of the game while they are on the
8 iPhone.

9 Q. All right. Now, video streaming apps. So I think we
10 can agree, can we not, that a transaction to purchase
11 a game or some digital content in a game is not
12 substitutable with a transaction to purchase content on
13 a video streaming app?

14 A. You said that word again, "transaction".

15 Q. Sorry, take it back. Your way of putting it.

16 A. Okay.

17 Q. So services provided in your markets, they are not
18 substitutable with each other?

19 A. The -- the services that, say, Apple and Google provide
20 in their separate markets are weak, distant substitutes,
21 but not close enough to constrain each other's power,
22 and therefore not close enough to be in the same
23 relevant market.

24 Q. The commission -- so taking video streaming apps, the
25 commission is very different, is it not, to the

1 commission for in-app purchases on games, because Apple
2 charges -- you calculate the weighted average commission
3 that Apple charges on subscriptions to be just 20.4%
4 across the claim period, yes?

5 A. Yes, it is lower, because as soon as you get into that
6 second year, you get down to the 15% rate.

7 Q. Yes, and in fact if you are a member of the video
8 partner program, then it is actually just a flat 15%,
9 yes?

10 A. I think recently they went to a flat 15, yes, for
11 a video partner.

12 Q. So if a developer wants to steer consumers to paying for
13 those subscriptions on another platform, like its own
14 website, it should be even easier to do that than in the
15 gaming context, because you are only asking them to make
16 one transaction, yes?

17 A. Shoot, I am sorry, I did not follow that. So if
18 a developer ...?

19 Q. So if a developer wants to steer a consumer to pay for
20 the subscription to the video streaming service, for
21 example, wants to steer them to another platform to pay
22 for it, then it is pretty easy to do, is it not, because
23 it is only one transaction you are talking about?

24 A. I think ... compared to another transaction that
25 requires a series? I am trying to figure out ... What

1 is the reference?

2 Q. Compared to games. So you put it to me that it is
3 different on games, because every time you want to pay
4 for a sword it is inconvenient to go to another website,
5 and I am saying that point does not hold, it does not
6 hold, does it, for subscription services?

7 A. Well, for subscription services it seems like one
8 transaction could get you going.

9 Q. Yes.

10 A. So it is certainly relatively easier, but it is still
11 difficult to induce from -- at least inside of the app,
12 it is difficult to induce the customer to go off site.

13 Now, I will note, I will acknowledge, that starting
14 from a point of 15, Apple has come down to 15 in the
15 second year, so now the incentive to engage in such
16 steering, you know, is mitigated.

17 Q. In fact a video streaming app does not even need to
18 allow users to transact on iOS at all, does it?

19 A. Under this new program?

20 Q. Well, at all. We have looked at the example of Netflix.
21 Under the Reader Rule.

22 A. Okay, thanks. Under the Reader Rule, I think that you
23 ...

24 Can I just hear it back? I think I agree with you,
25 but ...

1 Q. Yes. So under the Reader Rule, the developer does not
2 require the consumer to transact on iOS at all, to pay
3 anything?

4 A. It is no longer required by Apple, that is correct. How
5 about that? The developer was never doing the
6 requiring, it was Apple.

7 Q. Well, and there are examples of video streaming apps
8 that have made that decision, and Netflix is the big one
9 that you refer to?

10 A. Yes. Yes.

11 Q. Yes. I think, thinking about Netflix in a bit more
12 detail, so it was in late 2018 that they decided to take
13 away the option of subscribing on the App Store; yes?

14 A. Yes.

15 Q. I think you and Professor Hitt have had a bit of
16 a debate about whether this had any impact on the number
17 of new users downloading Netflix on their iOS Device.
18 I do not want to get into the detail of that, but
19 I think you both agree, do you not, that very large
20 numbers of new users have continued to download Netflix
21 on their iOS Devices ever since?

22 A. A large number? I cannot remember -- I think his
23 hypothesis was there was no change, and I think that we
24 saw some evidence of change. But we do not have to
25 relitigate that thing.

1 But if you are asking me if they are large,
2 regardless of whether there was a drop. I think they
3 started off large, yes, I will grant you that.

4 Q. They must all be paying for their subscriptions through
5 Netflix's website or through some other channel, yes?

6 A. Yes, unless they are pirating it, yes, but they are
7 getting it, yes.

8 Q. So Netflix has definitely managed to switch very large
9 volumes of business from the App Store to other
10 channels; correct?

11 A. Yes, I think a party like Netflix uniquely has that
12 power, so I am not moved significantly by that example.
13 I do not think Netflix is at all representative of an
14 app -- of a developer.

15 Q. Spotify would be another example, would it not, where
16 a big player chooses not to allow transactions over the
17 App Store at all, would it not?

18 A. Yes. I mean, you are going with the bigs, but yes.

19 Q. Now ... sorry, just bear with me a minute. I am just
20 seeing if we can cut some of this. (Pause)

21 Now, you rely heavily, do you not, on your HMT to
22 show that Apple is a monopolist; correct?

23 A. I certainly rely on it in part. I do not think that it
24 is the only proof but it is a part of the proof, yes.

25 Q. What that does is it involves -- essentially it involves

1 comparing Apple's actual commission to what you say are
2 the competitive commissions you found in your
3 benchmarking analysis, yes?

4 A. So I found the competitive in two different ways, right?
5 I do it through the benchmarking analysis and I do it
6 through these economic models.

7 Q. That is true.

8 A. They both take me to roughly the same place. That is
9 the starting point. Then I ask, could a hypothetical
10 monopolist raise its commission over those competitive
11 rates and do so profitably, yes.

12 Q. What you are doing essentially is saying: well, I have
13 found my competitive rates. The fact that Apple's
14 actual commission is higher means it is dominant.

15 A. No, you have skipped an important step. It is that
16 if -- it depends on which market we are speaking of.
17 But if, say, 12% were the competitive rate, then we are
18 asking could a hypothetical monopoly provide or only
19 control these assets -- distribution on the iOS,
20 In-App Support Service on the iOS -- were to raise its
21 prices, say, 5 percentage points above that competitive
22 rate, could they do so profitably? I would point to
23 Apple as someone who has done that.

24 Q. Yes, I think we are saying the same thing. So you are
25 pointing to Apple in the real world and saying: Apple

1 charges more than that, therefore it is dominant?

2 A. Correct. Well, that a not so hypothetical monopolist
3 could actually successfully effectuate that price
4 increase over the competitive level.

5 Q. You are also relying on what you call Apple's
6 foreclosure of competition to establish that Apple is
7 dominant, yes? The restrictions.

8 A. I think that an economist has direct ways of measuring
9 market power. The HMT is for an indirect approach, you
10 know, define a relevant market and see if they are large
11 in the relevant market. There are direct methods of
12 getting to market power as well, which is, one, the
13 ability to exercise pricing power, or two, the ability
14 to exclude rivals.

15 So Apple's ability to exclude all rivals, whether in
16 distribution or in In-App Support Services for such
17 a long period of time within this market, is direct
18 evidence of Apple's market power.

19 Q. What you are really doing in both cases is you are
20 relying on the same analysis, based on Apple's conduct,
21 to prove both dominance and abuse, are you not?

22 A. No. For abuse -- for abuse, I take that to mean
23 anti-competitive effects. Maybe we are speaking past
24 each other. But when I think about dominance or market
25 power, you could think about it going down two different

1 branches. The direct approach of these two tests I just
2 mentioned, you know, ability to exclude, ability to
3 raise prices profitably, or the indirect approach, which
4 is high shares, a relevant market with entry barriers.
5 Those would be the two approaches that would complete
6 the proof on dominance.

7 On abuse, I am looking to see whether or not the
8 leveraging of this power has been used to raise prices
9 anti-competitively.

10 Q. Well, do you agree that if you are wrong on your
11 counterfactual analysis, your benchmarking and your
12 model, then your HMT is also wrong?

13 A. So let us see. If you are telling me that everything is
14 wrong, the comparator is wrong, the benchmarks are
15 wrong, and the economic models are wrong, so I am
16 starting from the wrong competitive price
17 (overspeaking) --

18 Q. Yes. Then I think it just follows that the HMT is
19 wrong, right?

20 A. -- if you kick the two legs of the chair out from under
21 me, I would fall to the ground. So, yes, those are
22 pretty essential building blocks of the test.

23 Q. All right. I thought we could agree on that point.

24 A. Good.

25 Q. Then if that is right, I think we can also agree your

1 conclusion on dominance would also fall away, yes?

2 A. No, because remember I think the direct approach,
3 I consider the direct approach to be independent of the
4 indirect approach. So under the direct approach, you
5 have the ability to exclude rivals or the ability to
6 raise prices significantly, that is to exercise market
7 power, pricing power. Those are the two prongs under
8 the direct approach. So I do not think that I am
9 entirely relying on the HMT to reach the conclusion that
10 Apple is dominant.

11 Q. That looks a bit circular to me, Dr Singer. So you are
12 saying the ability to exclude rivals shows that they
13 exercise market power. Is that not circular?

14 A. No, the ability to exclude rivals is one of the two
15 prongs of what is called the direct approach to showing
16 market power, right? Market power is quite literally
17 defined as the ability to raise prices over competitive
18 levels or exclude rivals.

19 So if you have direct evidence that can be brought
20 to bear, you can analyse the defendant's market power
21 directly. If you want to go down the indirect route,
22 you have to define a relevant market and see if they
23 have a large share and they are protected by entry
24 barriers. None of it is circular.

25 Q. I think it might be easier to come back to that

1 particular topic in the context of the benchmarking, so
2 I am going to move on to the counterfactual, so I am off
3 market definition. There are some further points that
4 Mr Piccinin will ask on that tomorrow, but I was going
5 to move on to counterfactual.

6 THE CHAIRMAN: Shall we take ten minutes, is that
7 a convenient point?

8 MS DEMETRIOU: Ten minutes now. Yes, thank you.

9 (3.07 pm)

10 (A short break)

11 (3.20 pm)

12 MS DEMETRIOU: Thank you. Dr Singer, we are moving on to
13 the counterfactual, and you put forward what you call
14 your primary counterfactual and a delayed
15 counterfactual, yes?

16 A. Among others. It keeps going, it keeps going.

17 Q. Among others. We are going to cover them all, but not
18 all this afternoon.

19 A. Okay.

20 Q. Now, the primary counterfactual assumes that there would
21 have been no restrictions from the day the App Store
22 launched; correct?

23 A. Correct.

24 Q. The delayed counterfactual assumes that the restrictions
25 were in place until the beginning of the claim period

1 but were then removed at that point; yes?

2 A. Correct.

3 Q. So 1 October 2015.

4 A. Yes.

5 Q. You understand, I think, that Dr Kent has not pleaded

6 a case that Apple acted unlawfully before the start of

7 the claim period. So the allegation of breach of

8 competition law is from 1 October 2015; yes?

9 A. That is roughly consistent with my understanding, but

10 I think that is a legal construct.

11 Q. That is a legal point. In fact we can short circuit

12 this, because Apple's position is that your primary

13 counterfactual is not one that is open to Dr Kent for

14 that reason, but I think we can agree that is a legal

15 question and it is not for you?

16 A. Right. I am aware the CMA has weighed in on that

17 matter. I have read what they have said about it. It

18 seems like they have sided with the plaintiff. But that

19 is fine.

20 Q. But that is a legal question, we can agree that?

21 A. Yes, I do not think that an economist can resolve that

22 one.

23 Q. No. Good.

24 Now, you say, if we go to {C2/8/92}.

25 A. Oh, okay.

1 Q. This is just to frame the debate that is going to come.

2 A. Okay.

3 Q. So paragraph 192, you say that your:

4 "... Primary Counterfactual is best modelled by the
5 Epic Games Store or the Microsoft Store with 12 percent
6 commissions."

7 Yes?

8 A. Yes. But remember we get to the same place, roughly,
9 with Rochet and Tirole. It depends on which of the two
10 markets we are speaking of.

11 Q. Yes.

12 A. But yes, those serve as the -- as the comparables, but
13 I also look at where Rochet and Tirole would get us for
14 the primary and Landes and Posner for the aftermarket.

15 Q. We are going to look at that separately. But looking at
16 the comparables, the primary counterfactual, you say, is
17 best modelled by the Epic Games Store or the Microsoft
18 Store with 12% commission.

19 Then 193, you say your delayed counterfactual is
20 best reflected by the Aptoide iOS App Store with 20%
21 commission, yes?

22 A. For the comparables, yes, for the comparables.

23 Q. We can short circuit this point by saying I am only
24 going to be asking you about comparables, and
25 Mr Piccinin has the pleasure of dealing with the

- 1 modelling.
- 2 A. Okay.
- 3 Q. So do not talk about the modelling to me, because I am
4 not going to be able to help much with it.
- 5 A. Okay. Okay.
- 6 Q. Now, you -- so the reason for the difference between
7 those two figures, so the 12% and the 20%, is that in
8 your delayed counterfactual, Apple begins from 100%
9 market share position, and it would take some time for
10 its market share to be eroded; correct?
- 11 A. That is one way to provide the insight or the intuition.
12 I mean, I could give another intuition if you are
13 interested, but that is --
- 14 Q. Go for it, Dr Singer.
- 15 A. Just that, you know, at that time the prices would have
16 been calibrated, the app prices would have been
17 calibrated around the 30%, and that would have existed
18 from 2008 to 2015, and so it would take some time for
19 a recalibration and for competition -- competitive
20 forces to work their magic at lowering prices.
- 21 Q. Okay, thank you. In each case -- so for the primary and
22 the delayed counterfactual, what you do, your approach
23 is to compare those figures with Apple's effective
24 commission rate; yes?
- 25 A. Correct.

1 Q. So for in-app purchases, the rate that you calculate --
2 we can look at this at {C2/8/118}. So for in-app
3 purchases, the rate that you calculate is 25.2; yes?

4 A. Right. That would be the weighted average.

5 Q. Yes.

6 A. That is correct, yes.

7 Q. So I want to start with your primary and delayed
8 counterfactuals and look at the benchmarking analysis.

9 A. Okay.

10 Q. If we go to page 79 of this report {C2/8/79}. So this
11 is the start of the section on the counterfactuals.

12 What you do in this section is consider what the
13 counterfactual would look like, do you not?

14 A. Yes.

15 Q. In doing so, you take account of the evidence of
16 Mr Howell, the app industry expert; correct?

17 A. In part. We are on footnote 343 at this point. But
18 I think I cite to Howell, perhaps, in this section.
19 I do not see it yet, but ...

20 Q. Let us show you perhaps a few examples. So {C2/8/80},
21 paragraph 165, you cite Mr Howell; do you see that?

22 A. Yes.

23 Q. {C2/8/86}, top of the page. If we look at footnote 358,
24 if we go down to the bottom, again, Mr Howell.

25 {C2/8/93}, paragraph 194, you say:

1 "As Mr Howell notes ..."

2 Towards the bottom of the page.

3 So my only point, really, is that on matters
4 requiring knowledge of the app industry, you have relied
5 on Mr Howell's expertise. You have not made it up for
6 yourself?

7 A. Correct.

8 Q. Now, you have a table at {C2/8/87}, and here you set out
9 various other companies, so those are the benchmarks,
10 with what you say are their comparable commissions;
11 correct?

12 A. Yes, let me just -- give me one second to get my
13 bearings.

14 Q. Of course.

15 A. App distribution benchmarks. Yes, I am looking at quite
16 a few in this table. I guess that would be -- that
17 would take you in the direction of a more competitive
18 rate.

19 Q. I think, is it right, that you are using these data
20 points to model both Apple's App Store's counterfactual
21 commission and the commission that its competitors would
22 charge in the counterfactual?

23 A. Not so much. Not so much. I think that for the
24 purposes of damages, I am focused on overcharges that
25 customers incurred by virtue of consummating

1 transactions on the App Store, or in-app transactions
2 via an app that was downloaded on the App Store.

3 I do not think that I am making predictions
4 necessarily about what a rival would charge. These are
5 Apple's commissions. I know you do not want to talk
6 about Landes and Posner, but it is pretty clear that in
7 a dominant fringe setting Apple is going to command
8 a premium over the fringe, over the entrance. So there
9 I am explicitly rejecting the idea that Apple and the
10 entrants will be charging the same.

11 Q. Okay, so just to make sure I understand that. To take
12 your 12%, which is your benchmark in your primary
13 counterfactual, are you saying that 12% is what Apple
14 would charge in the counterfactual without the
15 restrictions?

16 A. I believe so. Is 12 -- it is hard for me to see where
17 we are in the report, but is this for the app
18 distribution market, or the in-app ...?

19 Q. Yes, so it is for distribution.

20 A. Distribution. Okay, sorry, I just wanted to get my
21 bearings. Okay.

22 Q. So we looked at the 12%. So you say your primary
23 counterfactual is best modelled by the Epic Games Store
24 and the Microsoft Store that charge 20% --

25 A. 12.

1 Q. Sorry, 12%. My mistake. So are you saying that in your
2 primary counterfactual, Apple's commission would be 12%?

3 A. Yes, for this run, yes, I am.

4 Q. Are you also saying that Apple's rivals' commission
5 would be 12% in the counterfactual?

6 A. Not necessarily. I think I have been a bit agnostic as
7 to what the rivals would be. I am trying to come up
8 with a benchmark for Apple. These are competitive
9 rates, so it is reasonable to assume that the rivals are
10 close. But I think certainly in the in-app aftermarket
11 where Apple is going up against a fringe of smaller
12 firms, it is reasonable to believe that Apple would
13 command a premium for comparable services, in light of
14 the fact that Apple is a brand name that everyone knows
15 and loves.

16 Q. So just thinking about your damages calculation which
17 you mentioned, you apply the counterfactual rate to all
18 of the commerce, so whether, in the counterfactual, that
19 happens on Apple or a rival store; is that right, that
20 is what you have done?

21 A. No, I am only looking at overcharges that could be tied
22 to the Class members.

23 Q. Now ... Yes, sorry, let me ask that question again.

24 In your damages calculation, so taking the rate in
25 the counterfactual, which you say is the benchmark rate,

1 so the 12% ...

2 In fact, if we look at this in your report it might
3 be easier.

4 A. Okay.

5 Q. So {C2/8/153}.

6 A. Okay.

7 Q. So in calculating the overcharge, what you have done is
8 you have taken your counterfactual rate and applied it
9 to all of the commerce, have you not, whether that is on
10 the App Store or on rival platforms, in the
11 counterfactual?

12 A. No. No. That is not what we are doing. We take the
13 transactions that occurred either -- on the App Store.
14 This is for app distribution?

15 Q. In the real world.

16 A. In the real world. That is our volume of commerce that
17 is affected, and we are asking: what were they charged
18 in the actual world? What would they have been charged
19 in the but-for world? It is that difference, right?
20 Then you have to do pass-through, and then you get to
21 the overcharge.

22 So I reject, respectfully, the idea that I am going
23 off of the App Store to look for volume. The volume
24 that drives the analysis is just the actual volume that
25 went over the App Store.

1 Q. Yes. But then in the counterfactual, you are assuming
2 that that volume is going to be -- some of it is still
3 going to be on the App Store and some of it will be on
4 rival platforms; yes?

5 A. That is fair, that in the counterfactual world some of
6 the volume will move over to the rivals' store. But for
7 the purposes of calculating overcharges, right, we are
8 going to assume that even if you would have made it on
9 a different place, that is a real savings that you would
10 have enjoyed. So we are just going to use the
11 difference between what Apple charged and what Apple
12 would have charged on every transaction.

13 Q. Okay, I think that is all I was getting at, so we can
14 agree --

15 A. That is the standard way of doing it.

16 Q. No, I am just trying to figure out what you have done.
17 I think we agree on that.

18 Now, you agree, do you not, that the degree to which
19 benchmarking is reliable depends upon how similar the
20 proposed benchmark is to the target?

21 A. I think that is fair. You are looking for similarities,
22 yes.

23 Q. Where there are differences, they need to be factored in
24 and controlled for; yes?

25 A. If you could factor in differences, that would be nice.

1 I mean, a lot of times from benchmarks we do not have
2 that luxury, but I am open to making corrections if
3 necessary.

4 Q. No, no, it is not a correction. I just want to make
5 sure I am reflecting your evidence correctly.

6 So if we go to {C2/8/86}, so footnote 361.

7 A. Okay.

8 Q. Yes, so:

9 "... necessary to control for as many differences
10 ... as possible ..."

11 So you accept that, yes? Where there are
12 differences, then where you can, you need to factor in
13 the differences and control for them.

14 A. That is fair.

15 Q. Now, going back to the table. So was it page 86?

16 Sorry, page 87 {C2/8/87}. You have identified 16 firms
17 and what you call the comparable commissions, and you
18 say that these firms are other two sided platforms that
19 connect software developers to users; yes?

20 A. Yes. You said "either", so I suspect an "or" is coming?

21 Did you say "either", sorry?

22 Q. No, I did not say "either". I am just setting the scene
23 for what you have done.

24 A. Okay.

25 Q. Looking at the table, you list various online platforms

1 as benchmarks, and looking at some of them, so Etsy is
2 a platform for people who make crafts and other things
3 like that, is it not?

4 A. Correct.

5 Q. Poshmark is a platform for the sale of clothes and
6 beauty products, et cetera, yes?

7 A. I think so.

8 Q. Amazon, eBay, and Google Shopping, they are platforms
9 for the sale and purchase of physical goods, correct?

10 A. I am just pausing on Amazon, because I know there are
11 some digital products available on it, but that
12 certainly includes physical products as well.

13 Q. I think you have put the Amazon Appstore separately,
14 further up the table.

15 You say for Amazon -- just looking at "Online
16 Retail: Amazon" you say 8-15% commission plus various
17 other fees.

18 If we go to {D2/54/5}, you see "Category Referral
19 Fees", and if we look over the page {D2/54/6}, we can see
20 that there are varying commissions. If we look at the
21 top one "Amazon Device Accessories", that one is
22 actually much higher, do you see, 45.9%?

23 A. Yes.

24 Q. Did you consider why that rate is higher, or not?

25 A. No, I did not consider why, no. But I do not think that

1 I end up using Amazon in my damages calculation, I think
2 it is just there for -- to corroborate and to show what
3 other competitive platforms are charging.

4 Q. So the more -- the more useful comparators are some of
5 the others; is that right?

6 A. Well, I think I end up going with the PC games category,
7 because, one, it is the closest in terms of the product
8 that is being offered; and, two, it is an episode of
9 invasion by attackers who came in with lower commissions
10 and induced the incumbent, Steam, to lower its own. So
11 for that reason, I think it has a lot of value.

12 Q. I think you accept, do you not, that Apple makes
13 investments in software, such as machine learning and
14 augmented reality, software which benefits developers
15 when they make apps; yes?

16 A. Sure.

17 Q. Then looking at some of Mr Howell's evidence on this, if
18 we go to {Day8/174:1}, and look at lines 1-8. So he is
19 there -- so the point being made there is that he is
20 accepting that ...

21 So I asked him:

22 "Question: ... the devices were essential to
23 Avatron's apps?"

24 You may know that Avatron was a company that he
25 founded, a software company.

1 It is right, going back to what you said previously
2 about all of these APIs and frameworks, they created
3 a position whereby:

4 "... small companies like Avatron did not have to
5 invest as much in software engineering because a lot of
6 the work had been done by Apple."

7 He says that he did not need -- the fact that
8 Apple -- the work Apple had done meant that he could
9 sell a product without needing a marketing team or
10 production staff or any investment in media production.

11 Then if we look at {Day8/176:1}, please. So if we
12 take it from line 9:

13 "Question: So one point that you are making here, as
14 I understand it, is that developers can use an API [that
15 is an API from Apple] without doing their own coding,
16 correct?

17 "Answer: Yes.

18 "Question: So they do not even need to understand
19 how it works from a technical perspective, do they?"

20 He agrees with that.

21 Then you see:

22 "Question: ... the upshot is that a developer can
23 use Apples frameworks, to create their own iOS Apps, by
24 using very simple code, correct?

25 "Answer: I like to think that it is not too simple,

1 but simpler than it would be without these frameworks."

2 There is more evidence on this. But I think you do
3 not disagree, do you, that Apple has invested
4 significantly in frameworks and software that create
5 value for developers?

6 A. I do not disagree.

7 Q. It follows from that, does it not, that Apple's
8 investments in its proprietary technology enhance the
9 value of the digital products that the developers are
10 creating and monetising; yes?

11 A. It enhances the value. In this case, it might allow
12 them to escape certain costs that they would otherwise
13 have to incur.

14 Q. I think we agreed yesterday that every time Apple
15 produces something like augmented reality technology,
16 that creates value for developers that use that
17 technology to provide apps that are more attractive to
18 consumers; yes?

19 A. Yes, that could -- for certain apps that could add value
20 at the margin. I think the biggest thing -- the biggest
21 source of value is bringing a particular subscriber base
22 to the table. That, to me, is the primary source of
23 value.

24 Q. You accept, I think, that Apple captures the value of
25 its proprietary technology and services through its

1 commission, as well as through the flat fee of £79 and
2 device sales; yes?

3 A. Well, I answer that one: partly agree. You are talking
4 about on a joint statement, and I explained that it is
5 capturing not only that but any other investments that
6 it made, and not just through the commission but through
7 all of its fees. All of its fees and charges are meant
8 to recover investments that Apple has made. That is
9 what I will grant you.

10 Q. Yes, so you will grant me, then, I think, that through
11 its commission to developers, it is capturing the value
12 of its proprietary technology; and other means, and
13 through other means as well, but it is capturing that
14 value through the commission it charges developers?

15 A. Right, but I am trying to amend the answer just a little
16 bit. Set aside the other charges that it is making, it
17 is just -- it is getting a return on all of its
18 investments. The fees are helping it recover and earn
19 a return on all of its investments; not just its
20 investment in whatever particular technology that you
21 are citing.

22 Q. Now, it is right, is it not, that in your
23 counterfactuals, if any competing app marketplace were
24 to provide distribution services to a developer, the
25 developer would still need access to Apple's proprietary

1 technology to develop and publish their iOS apps; yes?

2 A. I think that is fair. I think that even if there is
3 a rival app store, that every developer, with very few
4 exceptions, is going to want access to Apple's App Store
5 as a starting point. So to be able to work on Apple's
6 App Store and to work within its system, it is going to
7 have to acquire these technologies, or at least access
8 to these technologies.

9 Q. Yes, and if a developer were to create an app
10 marketplace, so a rival app store, in the form of
11 a native iOS App, that developer would also need
12 access to Apple's proprietary technology; yes?

13 A. Would a rival app store -- I will just make sure
14 I understand the question -- need access to some of
15 Apple's technologies or APIs in order to run?

16 Q. As a native iOS App.

17 A. It certainly sounds reasonable, but I do not think you
18 want to ask an economist that question. It sounds like
19 a very technical question.

20 Q. Think everybody agrees, I think, in the case, that any
21 native iOS App requires access to Apple's proprietary
22 technologies. I do not think that is contentious?

23 A. But you are going back to an app. I thought the
24 question pertained to a rival app store.

25 Q. A rival app store that is itself an iOS App.

1 A. I do not understand that. Sorry, but I see it one of
2 two ways. You can be the store or you can be the apps
3 within the store. It is hard to think of one as both.

4 Q. Yes, but the App Store is itself an app. So if you have
5 a rival app store on iOS, then it is itself a native
6 app, so it requires access to Apple's proprietary
7 technology.

8 A. I am going to defer to you on whether a rival app store
9 is itself an app.

10 Q. All right, do not worry.

11 Now, none of the firms -- going back to your table,
12 so {C2/8/87}. I think we can agree, can we not, that
13 none of the firms in this table provide access, in the
14 real world, to Apple's proprietary technology, do they,
15 because they do not own it?

16 A. Not to Apple's, but provide access to their own
17 technology.

18 Q. No, I am asking about Apple's.

19 A. I think that is fair, I do not know what the sense --
20 but, yes, if we are talking about a different platform,
21 I do not think you would expect them to provide access
22 to Apple's technology for Apple's platform.

23 Q. So the product they are providing to developers does not
24 include the use of Apple's proprietary tools and
25 proprietary technology; correct?

1 A. I think that is fair. When you go outside of Apple's
2 ecosystem and you are looking for comparables, you are
3 not going to be applying Apple's technologies.

4 Q. So in that sense, the fees they charge are not
5 comparable to Apple's, are they, because Apple is
6 providing, through its commission, the right to use its
7 tools and tech?

8 A. No, I respectfully would reject that. The mere fact
9 that you step into a different app store, say in the PC
10 game world, does not mean they are not providing
11 something comparable. It is not an Apple technology,
12 but it is access to their own technology.

13 Q. Let us look at it this way. A developer publishing an
14 iOS App on a different app marketplace, in the
15 counterfactual, would need a licence, would it not, from
16 Apple for the use of Apple's proprietary technology? In
17 order to publish an iOS App, it would need a licence
18 from Apple for using its technology?

19 A. It would need whatever it needs today, and so I keep
20 going back. In the counterfactual world, the developer
21 wants to be in Apple's App Store, and whatever you need
22 to function and to work on Apple's phone, you will need
23 that, but now you will have this extra option of being
24 available in a rival app store.

25 Q. All right, let me just take it in stages. So you are

1 agreeing with me that a developer in the counterfactual,
2 publishing an iOS App on a different app marketplace,
3 so an iOS App, would need a licence from Apple for the
4 use of its proprietary technology?

5 A. They would need whatever licences they have currently,
6 because they are going to also be, in addition to being
7 in the rival app store, they are also going to be in
8 Apple's App Store. So whatever you need to work
9 currently inside of Apple's ecosystem, I think it is
10 safe, as a non-technical expert, that they would need
11 access to that to function. That is not going to
12 change.

13 Q. Yes. I am just looking at your answer. So you say they
14 would need whatever licences they have currently
15 because, in addition to being in the rival app store,
16 they are also going to be in Apple's App Store.

17 But let us take a hypothesis where, in your
18 counterfactual, you have a developer that only wants to
19 be on a rival app store but publish an iOS App for the
20 iPhone --

21 A. We can assume anything. We can assume there is no
22 gravity either. I can make any assumption you want.

23 Q. Can you just bear with me and answer my question?

24 A. Yes, sure.

25 Q. So if this developer publishes an iOS App on a rival

1 app store but for iOS, not on the App Store, just on
2 the rival app store, it would need a licence from Apple,
3 would it not, to use its proprietary technology to
4 publish the app?

5 A. So if you are asking me, hypothetically, that an app
6 developer says: I do not want the 50-60% share of
7 transactions going through the App Store, I am going to
8 abstain from the App Store and only go exclusively
9 through this rival app store, whatever access to certain
10 APIs and other technologies that were needed to run on
11 the iPhone would still be needed.

12 Q. So either way, whether it is on the App Store or not,
13 either way, if they are going to go through a rival app
14 store, either only or as well as the app store, it would
15 need a licence from Apple?

16 A. It would need -- it would need whatever it currently
17 has. So I think Apple and the \$99 charge upfront is
18 capturing, at least in part, its licence to be in the
19 store.

20 Q. Also the commission, yes?

21 A. Also the commission, yes.

22 Q. Yes. Now, your table is not accounting, is it, for what
23 developers would have to pay in the counterfactual for
24 the right to use Apple's proprietary technology?

25 A. It does account, in the sense that whatever they are

1 paying today, right, to be in the App Store, and to
2 function on an iPhone, they would have to pay in the
3 but-for world. It is a wash. There is no added charge
4 to the developer. You have not laid out
5 a counterfactual yet, at least in my mind, that suggests
6 there is a new charge to the developer, at least I do
7 not see it.

8 Q. You say whatever they are paying today. But what they
9 are paying today is the 30% commission, and the 30%
10 commission gives them the right to use Apple's
11 proprietary technology.

12 Now, what you are saying is, look at all these
13 comparators that show that the rate would be 12% in the
14 counterfactual, and what I am putting to you is that
15 those rates do not account for the charge that they
16 would have to pay to use Apple's proprietary technology,
17 and that is right, is it not?

18 A. No, it is not right. So in the counterfactual world
19 they are going to pay the same \$99, whatever, upfront,
20 as currently paid -- there are so many acronyms, SDK,
21 you have got some name for the upfront charge. Then
22 they are going to want to be in the App Store. They
23 would not want to cede 50-60% of their sales on iPhone.
24 So when they get downloaded through the App Store, they
25 will continue to pay whatever Apple is now charging in

1 this competitive environment to Apple, and all of those
2 payments are going to be contributions to Apple's
3 investments in its technologies.

4 Q. So let me just rewind a little bit. These firms are not
5 providing access to Apple's technology; correct?

6 A. Sorry, when you say "these firms"?

7 Q. These firms in your table that charge --

8 A. Oh.

9 Q. So you are relying on, for example, the Epic Games Store
10 which charges a 12% commission, and you are saying that
11 is what the competitive rate would be in the
12 counterfactual. But that does not include any charge
13 for Apple's technology.

14 A. We have -- I mean, I have been asked this and I have
15 answered, and I will give you the same answer to it:
16 Epic is not charging for Apple's technology.

17 Q. No. On Monday -- on Monday in the hot tub, Mr Holt
18 accepted that Apple, in the counterfactual, would have
19 an incentive to charge for use of its technology in the
20 counterfactual, and you would agree with that; yes?

21 A. Charge a new fee, or to charge its existing fee? I am
22 sorry.

23 Q. To charge any fee in the counterfactual for its
24 technology; you would agree with that?

25 A. I think that to the extent that Apple is compensated

1 through both its upfront and its commission, it will
2 continue to earn the upfront and the commission in the
3 counterfactual world. These apps are not going to just
4 cede 50-60% of their potential sales and exclusively
5 list themselves on a rival store. They are going to
6 want to play these stores off of each other and it would
7 make sense to be in both, and all those times they get
8 downloaded from the App Store, they will be contributing
9 to the returns to investment that Apple has made in its
10 technology.

11 Q. Dr Singer, from Apple's perspective, do you agree that
12 in the counterfactual world with rival app stores, Apple
13 would have a commercial incentive to charge developers
14 for using its proprietary technology? That is the only
15 question I am asking you at this stage, taking it in
16 stages.

17 A. Okay, that is a new one, but I am happy to answer that
18 one.

19 Q. It is the same question I have asked you now three
20 times.

21 A. You asked me about whether Mr Holt said something.

22 Q. It is the same point. Mr Holt accepted this. In the
23 counterfactual, with rival app stores, do you agree that
24 Apple would have a commercial incentive to charge
25 developers for use of its technology?

1 A. Not a new charge. It is the same way that it is
2 recouping investments in its technology in the past. It
3 would do it through the commission and through the
4 upfront.

5 Q. Through the 30% --

6 A. They would collect that -- excuse me?

7 Q. Through the 30% commission? That is what it is doing at
8 the moment.

9 A. No, no, no, because, sorry, in the counterfactual,
10 remember, they are they able to charge 30 because they
11 are no longer monopolists. So whatever the commission
12 will be, that will be the way in which Apple will be
13 remunerated for these wonderful technologies.

14 Q. Now, are you saying -- so you are not saying, are you,
15 that in the counterfactual, Apple would have to give
16 away its proprietary tools and tech for free. That is
17 not your position?

18 A. Giving it away to whom?

19 Q. To developers.

20 A. To developers? No. I think the way they are
21 compensated currently is through the \$99 upfront and the
22 commission charge, and they would continue to be
23 compensated in that way, just no longer on 100% of all
24 the transactions and not for eternity.

25 Q. The only thing that has changed in this counterfactual

1 is there are now alternative app distribution
2 marketplaces, yes, that is the only thing that has
3 changed? So in your counterfactual.

4 A. Sorry to be difficult, no, because just remember in the
5 primary counterfactual both restrictions disappear,
6 right? So we no longer have monopoly in the
7 distribution and we no longer have monopoly in the
8 in-app support systems.

9 Q. All right, so that is the only thing that has changed.
10 There are alternative app marketplaces and payment
11 processors, yes, in the counterfactual?

12 A. Correct.

13 Q. The developers and the app marketplaces -- let us just
14 take the developers. The developers will still need
15 access to Apple's proprietary technology in the
16 counterfactual, yes, we have agreed that?

17 A. I think we have agreed to that, yes.

18 Q. None of the other app marketplaces can provide that;
19 correct?

20 A. None of them can provide that; that is correct. You
21 have to get that from Apple.

22 Q. We know that developers are currently willing to pay
23 Apple what they currently pay for its tools and tech in
24 the form of a commission on sales; yes?

25 A. Not just the commission, I have told you it is the

1 commission plus the upfront, and they are willing to pay
2 it because their willingness to pay exceeds the current
3 prices. What I am contemplating is that the willingness
4 to pay does not fall but just the prices fall in the
5 but-for.

6 Q. The price for distribution might fall in your
7 counterfactual world, but there is absolutely no reason
8 why the price for Apple's tools and tech should fall
9 because they have no competitors. None of these other
10 firms can provide the tools and tech, so --

11 A. What is the price you are pointing to? Which price are
12 you referring to, the \$99?

13 Q. No, I am referring to the commission. So you have
14 accepted that Apple monetises its tools and tech in part
15 through the commission, so that accounts for the 30%
16 rate, that is how Apple monetises its tools and tech.
17 We know that developers are willing to pay that for
18 access to Apple's tools and tech, and so we know that
19 developers would equally be willing to pay the same
20 amount in the counterfactual for Apple's tools and tech
21 as they currently pay: 30%?

22 A. Right, but because of the benefit of competition they
23 will no longer have to pay the monopoly price.

24 Q. Where is the competition for Apple's tools and tech?
25 Because none of these firms in your table are able to

1 provide it.

2 A. They are going to pay Apple for this technology through,
3 as I have said now several times, the commission that
4 Apple charges, albeit a lower commission in the but-for
5 world, plus the upfront fee. So every time a developer
6 in the but-for world wants to be on Apple's website,
7 which in my opinion would be on every occasion that they
8 were in the actual world, you pay the \$99. So we do not
9 have to take differences in the \$99. Everyone pays
10 that. In the actual and but-for world, it is awash.

11 Now, for every time you get downloaded, the
12 developer gets downloaded in the but-for world from the
13 App Store, the developer will compensate Apple at the
14 commission, right? The commission is lower, and
15 I realise Apple does not like that, but that is -- that
16 will be the compensation that Apple gets in part, and
17 the \$99 upfront, in the but-for world.

18 Q. I think where I am differing from you is you say the
19 commission would be lower, but you are assuming what it
20 is that you have to demonstrate.

21 Let me ask you this: if Apple requires -- so in the
22 counterfactual, if Apple requires developers to pay
23 a fee or a commission in respect of sales on alternative
24 marketplaces, yes, as a contribution to its tools and
25 tech, they will pay that fee, will they not?

1 A. No. You heard this in the hot tub. In my opinion, if
2 Apple's power in the primary market is taken away
3 through competitive entry, then Apple will not be able
4 to impose a penalty for using rival payment processors,
5 for example, because then everyone would move to the
6 rival store.

7 Q. Yes, but if somebody is moving to the rival store, Apple
8 owns the IP. They would still need access to the IP.
9 So they have to still pay Apple, do they not, if Apple
10 seeks a charge -- seeks to pay for it?

11 A. They will continue to pay Apple, the developer will
12 continue to pay Apple for every transaction, and I am
13 estimating somewhere around 50. I think your expert,
14 Dr Sweeting, said it could go to 50%. Every single one
15 of those transactions in the but-for world, Apple will
16 be compensated at the commission and they will have been
17 paid their \$99.

18 Q. So are you saying, then -- so let us say you have got
19 an app in the counterfactual world which is both on the
20 App Store and on a rival app marketplace, are you saying
21 that Apple is not entitled to charge any commission for
22 its IP on revenues in that alternative marketplace; is
23 that your position?

24 A. Entitled to? Where is the commission? I am trying to
25 figure out ... If the transaction is occurring not on

1 Apple's store but on the rival's, Apple does not have an
2 opportunity to hit that transaction with a commission.

3 Q. Well, I am saying to you it does, because in order for
4 that app to be on the rival store, the developer needs
5 access to Apple's intellectual property, and Apple is
6 entitled to charge for that.

7 A. Yes, but Apple will be charging for it -- and we are
8 going in circles -- with the upfront and with all the
9 transactions that occur on the App Store.

10 Q. Yes, it will. But are you saying it is not also
11 entitled to charge on revenues on the competing app
12 store; is that your position?

13 A. Unfortunately this is how competition works. They
14 cannot control that every transaction would come over
15 their App Store.

16 Q. Well, if Apple refuses to licence use of its IP to
17 developers on alternative app stores, that is the end of
18 the alternative app store, is it not?

19 A. Well, we are trying to contemplate a competitive world,
20 right, and so if your variant of this world involves
21 Apple exercising its monopoly powers, or leveraging its
22 powers in other ways, like denying IP, that seems like
23 just an alternative way to get to the same monopoly
24 outcome.

25 Q. Well, hang on a minute. We are talking about there no

1 longer being distribution restrictions. But Apple has
2 its IP, and the very nature of IP is that it confers
3 a monopoly power in that IP. That is why we have IP
4 rights. So you are saying, are you -- is your position
5 that Apple would have to give up its IP in respect of
6 developers that are producing apps on alternative app
7 stores?

8 A. No, it is not going to give up its IP. You have
9 probably seen the revenues that I would project Apple
10 would make. It is still in the billions and billions of
11 pounds per year. They are going to be compensated
12 handsomely --

13 Q. I am not interested in the revenues for the moment, I am
14 interested in mechanically how it would work.

15 So we have an app developer that produces an app in
16 your counterfactual world, okay? So the App Store is
17 still there and we have got a rival app store, let us
18 say it is Aptoide, Aptoide iOS. So the developer
19 places an app on both the App Store and on Aptoide.
20 Now, you are saying, and this is correct, that Apple can
21 still charge commissions on the revenue from the
22 App Store, so I am agreeing with you on that.

23 A. Plus the upfront fee.

24 Q. Plus the upfront fee, all of that, so I agree with that.

25 A. That contributes to its IP as well.

1 Q. No, but is your position -- I am now thinking about the
2 position of the developer on Aptoide who also needs --
3 they also need -- to get those revenues, they need
4 access to Apple's IP, yes?

5 A. They have already paid for it to get onto the App Store.

6 Q. They have paid a commission on those revenues on the
7 App Store.

8 A. Plus the upfront.

9 Q. Plus the upfront fee. But are you saying -- but they
10 also need a licence, do they not, to Apple's IP, to
11 produce the app on the rival app store, on Aptoide.
12 They need a licence to do that?

13 A. To me, you are asking I think a legal question.
14 I cannot just weigh in here. It seems like you are
15 resurrecting the tie in a different -- you know, the
16 exclusion in a different --

17 Q. No, it is a really important point, Dr Singer. So
18 Apple --

19 A. You asked me do they need a licence. Do they need a
20 licence after --

21 Q. Assume they need a licence. They --

22 A. After they have already -- after they have already
23 acquired a licence to be on the phone through the
24 App Store, do they need a second licence for all
25 downloads? Because once it is on the iPhone, I do not

1 understand why the current -- why the old licence would
2 not cover it.

3 DR BISHOP: Can I just ask a question here.

4 A. Sure.

5 DR BISHOP: It is common in IP licensing to charge
6 ad valorem licensing fees on the revenue: you want to
7 use my patent, you are going to pay me 2.5% of revenues,
8 whatever the revenues are.

9 Now, I suppose the difference between the two of you
10 here in these questions is that Ms Demetriou is
11 referring to a world in which Apple imposes that sort of
12 thing and says to people who already go through its
13 App Store: you have paid it, it is part of the 30%. But
14 if you are not in the App Store, then there is going to
15 be an ad valorem charge on your -- on various revenues.

16 Ms Demetriou, have I interpreted you correctly?

17 MS DEMETRIOU: Exactly.

18 A. But you said not on the App Store, just to be, right, on
19 the same page. You are on the App Store. You are on
20 the App Store.

21 DR BISHOP: No, you have got two different people. We have
22 one firm that is in the App Store and is selling through
23 the App Store, and one that is in a rival store, a
24 non-Apple app store.

25 A. I hear you, and, respectfully, I do not think anyone is

1 going to forego Apple's App Store in the counterfactual
2 world. Everyone wants to be in the App Store. So what
3 we are really talking about is you are being downloaded
4 through the App Store and you are paying Apple its
5 upfront fee and you are paying them their but-for
6 commission, but you are also being downloaded in the
7 rival store, and what she is saying is in that
8 contingency, Apple is entitled to charge the rival app
9 store and/or developer a new fee that does not yet
10 exist. That is the thing.

11 My contention is you are already paying, in a sense,
12 for 60-odd% of the transactions that have been
13 downloaded, right? 60% of them coming from the Apple
14 store, and 40, right? You are paying, you are
15 compensating Apple in part for the investments that it
16 has made. Do they need 100%? Do they need 100% of the
17 activity?

18 DR BISHOP: I do not want to -- I was just trying to clarify
19 what I thought was the apparent talking past one
20 another, so I am going to stop now.

21 MS DEMETRIOU: No, no ...

22 A. No, that is helpful.

23 DR BISHOP: Please continue.

24 MS DEMETRIOU: I think that was helpful. Thank you, sir.

25 So can I put it this way: I sympathise when you say

1 it is a legal point, but if we are right, if I am right
2 on the law, that in order to gain revenues -- in order
3 for an app to gain revenues on an alternative app store,
4 it needs a licence from Apple to use its intellectual
5 property, so assume that that is correct as a matter of
6 law, so it needs a licence.

7 A. A second licence.

8 Q. Yes, a licence to allow it to operate on this
9 alternative app store to use its intellectual property.

10 A. It is not operating on the alternative app store. It is
11 being downloaded onto the iPhone and then it is
12 operating on the iPhone.

13 Q. So assume -- because it is a legal issue, this -- so
14 assume it needs a licence to use Apple's intellectual
15 property, then your comparators here, they do not
16 account for any charge that Apple would make for that
17 licence; correct?

18 A. A better way of putting it, and I think we are close, is
19 that I -- my damage models are not contemplating a new
20 fee, whether for app distribution, which is what we have
21 been talking about heretofore, or as a penalty for using
22 a third-party payment processor. In neither one of my
23 damages models am I allowing for that possibility. I am
24 assuming that Apple would be compensated solely through
25 its upfront and its commission in the primary market and

1 its commissions in the secondary market for those
2 transactions that make use of Apple's technologies.

3 Q. All right. So we talked about -- we talked a little bit
4 about the DMA yesterday, do you remember, and I put to
5 you that -- I said to you that Apple cannot apply the
6 distribution restrictions or the Payment System
7 Restrictions in the EU because of the DMA, and I think
8 yesterday you thought it was only the Payment System
9 Restrictions.

10 A. Yes.

11 Q. In fact it is --

12 A. I will tell you that as an economist I am confused,
13 because when I hear that Apple instead has imposed a new
14 finite penalty of 27% --

15 Q. Dr Singer, I have not even asked my question.

16 A. But I reject the DMA as anywhere close to --

17 Q. I have not asked whether you accept or reject it.

18 I have not even managed to finish my question.

19 Can I finish my question?

20 A. Sure.

21 Q. Thank you.

22 So yesterday I think you thought that the DMA only
23 removes the Payment System Restrictions but, in fact, it
24 is both; do you accept that now?

25 A. Sure.

1 Q. So is it fair -- I mean, the fact you did not know that
2 I think probably means that you have not looked at this
3 in much detail; is that right?

4 A. I have not looked at it in much detail, because the
5 reason why --

6 Q. Yes or no? I am going to take it in stages.

7 A. I am going to answer your question.

8 Q. Well, it was just yes or no.

9 THE CHAIRMAN: I think if he wants to explain why he has not
10 looked at it, you are going to have to let him explain.

11 A. I have looked at it.

12 MS DEMETRIOU: Right.

13 A. The debate among the economists is whether or not the
14 fees in the competitive environment that has emerged
15 post-DMA can be representative of the but-for, of the
16 counterfactual world. Here we have unanimity across the
17 experts: none of the experts thought that the DMA could
18 create one, and we all have our reasons.

19 My reason is that if Apple is permitted to
20 reconstitute the tie by creating a finite penalty --
21 instead of infinity they now charge 27% for breaking the
22 bundle -- then you have not removed the anti-competitive
23 restraint. That is my reason.

24 Whether -- now she wants to know am I familiar that
25 you can also get access as a rival app store. Really,

1 at that point the experiment is so contaminated that it
2 is interesting to know this, but it does not change my
3 opinion.

4 Q. So I think, looking at the joint experts' statement, you
5 say that studying Apple's behaviour in response to the
6 DMA could be relevant; I think you accept that much,
7 yes?

8 A. Well, I do not have them memorised, but Dr Sweeting and
9 I agreed to one in particular that said the DMA is not
10 an appropriate counterfactual.

11 Q. Well, I am just putting back to you what is in the joint
12 experts' statement. You agree that changes -- you say:

13 "While the changes in other jurisdictions do not
14 approach the full removal of the restrictions, I grant
15 that studying Apple's behaviour and response could
16 potentially be relevant."

17 Is that still your evidence?

18 A. Yes, it is relevant to the extent I am telling you now
19 that Apple has reconstituted the tie.

20 Q. So, Dr Singer, I think you did more than simply answer
21 my question of whether you looked into it, and I am
22 really just going to take this in stages, so if you can
23 just try and answer the question I am putting to you.

24 Let us go to {D2/129.2/1}, this is from Apple's
25 website, and it is a summary of the arrangements under

1 the DMA in the EU, and can we scroll so that we can see
2 what is going on?

3 So we can see that the headline commission is for
4 distribution through the App Store is 17%; do you see
5 that? It is 10% for the small business program,
6 et cetera, et cetera. But let us just stick with 17%
7 for the moment.

8 Then if we scroll -- so those commissions, just
9 pausing there, those commissions apply if the app is
10 distributed via the App Store, and a different payment
11 processor is used; correct? Does that match your
12 understanding?

13 A. The 17% applies?

14 Q. Yes.

15 A. I am remembering an Apple internal analysis that said
16 that there is another -- there is another fee that is
17 going on top of that that brings them back to
18 approximately the same.

19 Q. I am going to show you that.

20 A. -- the same 27%.

21 Q. I am going to show you that.

22 No, so that is also confidential. So do not talk
23 about any internal Apple documents. But I am just going
24 to take you through the structure and let us see if we
25 can agree --

1 A. All right. Well, you are not showing me the entirety of
2 Apple's charge here. I will just let the Tribunal know
3 that.

4 Q. Dr Singer, I am going to. I am only -- you are not
5 letting me do it. So I am going to ask the operator to
6 scroll down, and I am going to show you the whole of the
7 charge. It is you who is not letting me do my job at
8 the moment, I am afraid.

9 So I am starting with the 17%, which is the
10 commission rate, and what I am putting to you, because
11 you have looked at this, I think it is
12 non-controversial, but that commission applies if the
13 app is distributed via the App Store and a different
14 payment processor is used; yes?

15 A. That is part of the charge.

16 Q. I am going to come to the rest.

17 A. Okay.

18 Q. Then if we scroll down, {D2/129.2/2} we see next to
19 "Payment processing fee" that if the developer uses
20 Apple's IAP there is an additional 3% commission payable
21 to Apple; do you see that?

22 A. Yes, if you use Apple's IAP -- ASPS, if you use their
23 payment processing, you pay Apple another 3%, yes.

24 Q. That is right.

25 Then we can see -- and I think this is what you have

1 been burning to tell us -- the core technology fee at
2 the bottom, Apple charges a core technology fee of \$0.50
3 for each annual install over 1 million annual installs
4 of an app, and that fee applies regardless of whether
5 the app is distributed via the App Store or whether it
6 is distributed by an alternative marketplace, and in-app
7 purchases are processed by an alternative payment
8 processor. So that is a charge that applies whether or
9 not the app is distributed on the App Store, or whether
10 it is distributed on a rival processor, yes? Just
11 looking at the mechanics now, do we agree that that is
12 how it works?

13 A. Yes.

14 Q. So this is Apple making a charge for the value it has
15 conferred on developers through its tools and
16 technology; correct?

17 A. Right. It has introduced a new fee that brings the
18 effective commission for breaking the bundle back up to
19 27%.

20 Q. So in the EU, we see that Apple does charge for its
21 distribution services and for use of its technology in
22 circumstances where in-app purchases are processed by
23 a third party; correct?

24 A. Correct. Which in my mind reconstitutes the tie and
25 therefore disqualifies this DMA example as being

1 a reasonable approximation of the but-for world.

2 Q. Well, on the contrary, this is a real-world guide to
3 what Apple would do in a counterfactual world without
4 your restrictions?

5 A. None of your experts agree with that.

6 Q. Well, I am asking you whether you agree with it?

7 A. No, I do not. But I thought we had unanimity across the
8 experts on this point.

9 Q. I am afraid we do not have unanimity on that point.

10 Now, the idea that Apple would not charge developers
11 that distribute on other platforms for its proprietary
12 technology in your counter-factual is utterly
13 implausible, is it not?

14 A. No.

15 Q. Your whole benchmarking exercise is flawed because it
16 simply does not take account of the fact that Apple
17 would be entitled to charge for its technology in
18 respect of revenues that are received on other
19 platforms?

20 A. No, for all the reasons that I have given you already.

21 Q. Now, I want to -- in your table, just thinking back to
22 your table, you have included platforms for the sale of
23 physical goods, Etsy, Poshmark, et cetera, but you have
24 not included the Google Play Store, have you?

25 A. Yes. Of course not.

1 Q. Now, I am going to come to your explanation in a moment,
2 so let us not get ahead of ourselves, but can we first
3 of all explore some characteristics of the Google Play
4 Store and consider whether, in terms of objective
5 characteristics, these make it more similar to the
6 App Store as opposed to some of these other comparators.
7 I want to go through a few and see whether we agree or
8 disagree?

9 A. Similar apps into the challenged conduct, that is what
10 we are trying to get to. Similar apps into the
11 challenged conduct. If the challenged conduct is there,
12 we cannot look at it.

13 Q. I am going to come to that.

14 A. Okay.

15 Q. Like the App Store, the Google Play Store is a platform
16 for the sale of digital goods as well as enabling the
17 sale of physical goods; yes?

18 A. That is true.

19 Q. So the Google Play Store in that sense is closer to the
20 App Store than Amazon or eBay or Etsy, yes?

21 A. Yes, but not closer than, say, the PC comparables.

22 Q. Now, what Mr Howell says, and I can show you his report.
23 Let us look at his report so you can see what he says.
24 So if we go to {C2/4/17}, so paragraph 34.1, you will
25 have read this. I think you refer to it. Mr Howell is

1 saying here that:

2 "It is generally much easier for a user to discover
3 a native app through a native app store than to discover
4 a web app."

5 I think you agree with that evidence, do you not?

6 A. Yes.

7 Q. That is something that both the App Store and the
8 Google Play Store provide, correct?

9 A. Discoverability?

10 Q. Through a single app store.

11 A. Yes. They are both monopolists, if that is what you are
12 asking.

13 MS DEMETRIOU: Dr Singer, can you refrain from trying to
14 argue -- Mr Hoskins, I can promise you, is an excellent
15 barrister and he will make all of these points at the
16 end. Can you just answer my questions on the evidence.

17 A. You are the one who said a single --

18 THE CHAIRMAN: Dr Singer, I think we will move more quickly
19 if you just --

20 A. Okay, but she did say a single app store.

21 THE CHAIRMAN: Well, do not argue with me now.

22 A. Okay.

23 THE CHAIRMAN: I think if you just accept the obvious
24 questions without making a positive case about it that
25 would be quite helpful.

1 A. Okay.

2 THE CHAIRMAN: You will get your opportunity, in fact you
3 have had plenty of opportunity to tell us what you think
4 about this, and we have got that on board.

5 A. Okay.

6 THE PRESIDENT: So I think if you just answer the questions,
7 we will get through more quickly.

8 MS DEMETRIOU: Thank you.

9 The routes through which transactions for desktop
10 apps take place are more fragmented, are they not, than
11 for apps for mobile devices; correct?

12 A. "More fragmented". You are going to have to explain
13 that one to me.

14 Q. All right. I will explain it. So it is right, is it
15 not, that desktop users are accustomed to downloading
16 apps from developers' websites; yes?

17 A. Or from the app store, from -- on my desktop I am
18 downloading from the app store.

19 Q. Both. They are more -- they are accustomed to multiple
20 sources, and they are more accustomed to having to
21 conduct general searches for apps on the internet; yes?

22 A. Compared to a mobile environment?

23 Q. Yes, where -- compared to a mobile environment where
24 users are accustomed to having a one-stop shop?

25 A. Well, they only have one option in the mobile

1 environment, so it makes sense that that is where they
2 would search from.

3 Q. Right. So I think you are agreeing with me?

4 A. Yes.

5 Q. So that is a further respect, is it not, in which the
6 App Store is closer in its objective characteristics to
7 the Google Play Store than it is to PC app stores?

8 A. I do not find that one very persuasive.

9 Q. Well, let us look at what you say about this. If we go
10 to {C2/8/44}.

11 A. Okay.

12 Q. Paragraph 74, you say:

13 "Distribution of content through a web browser on
14 iOS Devices is not a substitute for the distribution
15 of iOS Apps through the App Store. To begin with,
16 I note Mr Howell's evidence that native apps and web
17 apps or web pages are discovered in a different way.
18 Users generally discover web apps or web pages through
19 eg, general web search, linking from other sites or
20 social media, or online/offline advertising. As Apple
21 is aware, users generally discover native apps through
22 an app store."

23 So you say you do not find that persuasive any more?

24 A. It was persuasive for a point I was trying to make, but
25 not for the point you are trying to make.

1 Q. Ah, so it is persuasive where it suits you and not where
2 you think it might be unhelpful to the Class
3 Representative's statement?

4 A. These are two completely different points. You are
5 trying to say that because mobile has been restricted to
6 a monopoly use that is where people get it from. Yes,
7 I have to admit that, if you do not give them any other
8 options, they can only get it from the monopoly, and
9 that is true on Google's platform. But I do not know
10 why that makes it necessarily easier.

11 Q. Dr Singer, I am just asking about objective
12 characteristics of discovering apps on desktops as
13 opposed to discovering apps on mobile devices. Here you
14 have explained that the process is different. We can
15 agree with that, yes? You have said it here.

16 A. This is a different point. This is toggling between --
17 on a mobile phone this is toggling between downloading
18 from an app store and going out onto the web and finding
19 it. That is the point being made here; that those are
20 different, right?

21 Q. Yes. That is --

22 A. But now we are talking about is this more -- is this
23 a more convenient forum, because of the monopoly, than
24 when you download apps from a PC, and I am just pushing
25 back generally. I do not think that it follows.

1 Q. I think you are reading much too much into my question.
2 I was just asking about the factual point that you have
3 put here.

4 A. Yes. It is a good point for this purpose.

5 Q. So it is a good point on the facts, right? As a matter
6 of fact, there are differences in the way that apps are
7 downloaded on PCs as opposed to mobile devices?

8 A. That is not the point here. The point here is whether
9 or not digital content downloaded from the web is
10 a close substitute to content from the phone, starting
11 from the phone. I am saying that if you are starting
12 from the phone, a mobile app, App Store, it is more
13 convenient to download the app from the App Store than
14 to go out onto the web and get it. It is a different
15 point.

16 Q. All right.

17 Now, like the App Store, the Google Play Store is
18 not confined to games apps but distributes a wide range
19 of different apps; correct?

20 A. They have the same, roughly the same apps as the apps
21 that are on the App Store.

22 Q. Yes, and so they are both different in that respect to
23 Steam and the Epic Games Store, which specialises in
24 games, yes?

25 A. That is a difference, yes.

- 1 Q. Like Apple, Google has its own operating system,
2 Android, which is installed on mobile devices; correct?
- 3 A. Correct.
- 4 Q. Native apps for phones that use Android need to be built
5 for use on the Android operating system; correct?
- 6 A. Yes.
- 7 Q. Apple and Google on the one hand are different in that
8 respect to App Store, the One Store, Steam, the
9 Epic Games Store and the Amazon App Store; yes?
- 10 A. In the sense of the integration between the operating
11 system and the App Store?
- 12 Q. In the sense that apps on the Aptoide system do not need
13 to be -- they do not have a specific operating system so
14 there is not some Aptoide operating system?
- 15 A. They would still have to be compatible with whatever
16 operating system they worked on.
- 17 Q. Yes, so that would be either Android or iOS in
18 (inaudible).
- 19 A. Correct.
- 20 Q. Practically all people who use an Android device will
21 use the Google Play Store for at least some of their
22 apps; yes?
- 23 A. Almost all of their apps.
- 24 Q. Practically all developers who make apps for Android
25 will put their apps on the Google Play Store even if

1 some also place apps on other marketplaces, yes?

2 A. Even if -- I missed the thing. Even if there is?

3 Q. So even if some of those developers also place apps on

4 other marketplaces.

5 A. Yes, outside of the phone? Yes, of course.

6 Q. Or on the phone.

7 A. Well, it rarely happens. But, yes, in those rare

8 instances you are definitely going to be on a Play

9 Store.

10 Q. Yes. So the Google Play Store is providing Android

11 developers with access to the widest range of Android

12 consumers; yes?

13 A. The Play Store?

14 Q. Yes.

15 A. Yes, the Play Store, given the restraints that Google

16 imposes, is the only game in town.

17 Q. None of your mobile device App Store comparators that

18 you have in your table are examples of stores that

19 provide developers with access to all users of the

20 operating system.

21 A. You are putting your finger on what disqualifies Google.

22 It is the monopoly status. If you are a monopolist I do

23 not want you to be in the comparables set. It is that

24 simple.

25 Q. So do you agree with the factual point I am putting to

1 you?

2 A. Yes, that if you are the only game in town and you are
3 able to command a monopoly commission, I do not want
4 that to contaminate my set of competitive benchmarks.

5 Q. Now, it is right, is it not, that Google does not
6 impose, and has never imposed, the distribution
7 restriction that Dr Kent is challenging in these
8 proceedings?

9 A. It is not in the exact same way, if I could explain, it
10 is pretty close. Google is not vertically integrated
11 into the handset. They decide to licence their
12 technology to third-party handset manufacturers like
13 Samsung. But as a condition of getting access to that
14 licence, Google requires that the handset maker install
15 Google as the default, premier app store on its phone,
16 right?

17 That means that rivals can only really be bidding
18 for access to become the second provider. Then Google
19 of course imposes many other restrictions -- I will not
20 go into all of them, but I will skip to the relevant
21 one, which is the payment restriction. That is, Google
22 does not allow app developers, just like Apple, to use
23 third-party payment processors. You have to consummate
24 all app and in-app transactions through Google Play.

25 Q. So just thinking about the first point that you made.

1 So you say as a condition of getting access to the
2 licence, Google requires that the handset maker install
3 Google as the default app store on its phone; yes?

4 A. Yes.

5 Q. Now, just thinking about our counterfactual, obviously
6 Apple would also install the App Store on all of its
7 devices, yes? So that feature would also be present in
8 the counterfactual.

9 A. Yes, Apple will be available on all, but so will a rival
10 app store.

11 Q. Sorry?

12 A. Apple plus a rival app store. What I am contemplating
13 is that -- in this counterfactual is that a rival app
14 store, unlike the Android system, this rival app store
15 will co-exist alongside Apple's App Store.

16 Q. But you are not saying that it would be -- the rival --
17 Apple would be forced to pre-install the rival app store
18 are you on the phone?

19 A. No, no, no.

20 Q. No.

21 A. I have been agnostic as to how it gets there.

22 Q. Yes.

23 A. It just wouldn't be barred in the way that it presently
24 is under the distribution requirements.

25 Q. No. Neither does Google bar any rival app store on the

1 Android device either.

2 A. What Google does instead -- and I am stopping after this
3 one, because it is enough, and you can go into the
4 Epic v Google case if you are so inclined, but the
5 MADA(?) and these other requirements thwart competitive
6 entry. The proof is in the pudding if you look at what
7 Google's share of downloads is on Android phones; it is
8 somewhere north of 90%.

9 Q. So you are saying because Google has such a large market
10 share, that in itself proves that it is
11 anti-competitive, does it?

12 A. No, never. What makes it anti-competitive is their
13 large market share and their high commissions are made
14 possible through their restraints, and restraints that
15 a jury in the Epic v Google case have determined to be
16 in violation of the anti-trust laws.

17 Q. So what is the particular restraint that you say makes
18 Google's 90% market share and 30% commission possible?

19 A. Well, you know, sitting here I cannot list out every
20 restraint that has been alleged to be part of the
21 challenged conduct. But the ones that are coming back
22 to mind are the default status and the payment
23 processing restriction. Cannot use a third-party
24 payment processor.

25 Q. So those are -- so thinking -- it is not a memory test,

1 but just thinking about the issue now, because it is
2 a very important point here, you think that the most
3 important features of Google that have led to its 90%
4 market share and 30% commission are the default status
5 of the Google Play Store on phones and the payment
6 processing restriction; is that right?

7 A. There is a litany of restrictions. I think I mentioned
8 one yesterday, a technological restriction that prevents
9 side loading of an app store. So if you attempt to side
10 load you get hit with a series of warnings that
11 basically are designed to scare off the user from
12 pursuing that download.

13 Q. So are you saying in this counterfactual that Apple
14 should not -- that there should be some sort of free for
15 all for side loading and Apple should not be entitled to
16 put warnings on to try and warn consumers about the
17 dangers of side loading?

18 A. No. I am saying -- I am being agnostic as to how the
19 second or third app store makes it on to the phone.
20 What I am assuming is that in the presence of a second
21 or a third app store what would happen -- what would be
22 the competitive pressures that would manifest themselves
23 in a lower commission rate.

24 Q. So when you say -- when you say you are agnostic about
25 what would happen --

1 A. How they would get there. I do not think I have offered
2 an opinion as to how they would get there.

3 Q. No, or any explanation, I do not think you have offered,
4 have you, any explanation as to ...

5 A. Well, the payment -- we have been focusing on other app
6 stores, but of course the action is in the aftermarket
7 transactions, you know, allowing app developers to use
8 third-party payment processors and other In-App Support
9 Services. How would it happen? It would just happen
10 because people would step forward and ask to assist in
11 the consummation of those transactions.

12 MS DEMETRIOU: Sir, I am about to embark on a document, and
13 it is going to take me more than five minutes. So
14 should we rise now?

15 THE CHAIRMAN: I think that is -- unless you thought you
16 were going to finish shortly afterwards.

17 MS DEMETRIOU: I am just not. So I think it is --

18 THE CHAIRMAN: Why do we not rise now and start again at
19 10.30 tomorrow.

20 MS DEMETRIOU: Thank you.

21 THE CHAIRMAN: Dr Singer, the usual rules apply: no
22 discussing your evidence. Thank you.

23 THE WITNESS: Yes. Thank you.

24 (4.27 pm)

25 (The hearing adjourned until 10.30 am the following day)

INDEX

DR HAL SINGER (continued)1

Cross-examination by MS DEMETRIOU1

(continued)

1

2