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IN THE COMPETITION
APPEAL TRIBUNAL

Case No: 1403/7/7/21

Salisbury Square House
8 Salisbury Square
London EC4Y 8AP

Thursday 6th 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

Thursday, 6 February 2025

(10.30 am)

THE CHAIRMAN: Ms Demetriou, good morning.

DR HAL SINGER (continued)

Cross-examination by MS DEMETRIOU (continued)

MS DEMETRIOU: Good morning.

Morning, Dr Singer.

A. Good morning.

Q. So at the end of yesterday afternoon we were discussing the Google Play Store; do you remember that?

A. Yes.

Q. And the fact that it has a 90% share of transactions on Android and charges a 30% commission, and you said that that was because Google is acting anti-competitively; do you remember the discussion?

A. Yes.

Q. I asked you what specific anti-competitive conduct you were referring to, and I just want to go back to remind you of what you said yesterday. So it is in the transcript from Day 16, page 208. That should come up on the screen in front of you {Day16/208:1}.

You see near the top of the page there is a question, and I said to you that it is right that Google does not impose the distribution restriction that Dr Kent is challenging, and then you said:

1 "Not in the exact same way."

2 Then you said there, if you look at lines 11 and 12
3 you said that:

4 "They decide to licence their technology to
5 third-party handset manufacturers like Samsung. But as
6 a condition of getting access to that licence, Google
7 requires that the handset maker install Google as the
8 default, premier app store on its phone."

9 You say:

10 "That means that rivals can only really be bidding
11 for access to become the second provider."

12 Then you say:

13 "... Google of course imposes ... other
14 restrictions -- I will not go into all of them, but
15 I will skip to the relevant one, which is the payment
16 restriction."

17 Now, I just want to ask you about those two
18 restrictions in turn; yes?

19 A. Okay.

20 Q. So you agreed yesterday that in your counterfactual in
21 this case, Apple's App Store would also be pre-installed
22 on Apple's devices; yes?

23 A. I think that is a fair assumption, yes.

24 Q. So it is right, is it not, that if the pre-installation
25 of the Google Play Store is an important driver for the

1 Google Play Store having 90% of the commerce on Android,
2 the pre-installation of the App Store would have
3 a similar effect, in your counterfactual, correct?

4 A. I might have to hear that one again, because it is not
5 just the pre-installation, it is the insistence that
6 no one else be installed as the default.

7 Q. Let us take those in turn, starting with the
8 pre-installation. So if it is right, if you were right
9 yesterday to say that the pre-installation of the
10 Google Play Store is an important driver for the
11 Google Play Store having 90% of the commerce on Android,
12 then the pre-installation of the App Store would also
13 drive a high proportion of commerce to be on Apple's
14 App Store in the counterfactual; correct?

15 A. Well, close. It is true that being on the desktop, or
16 being on the handset initially, is certainly helpful,
17 but Google is insisting on more than just
18 pre-installation, right? Google is insisting that it is
19 the default on that first landing, what is called the
20 home page, right?

21 So yes, I think that Apple will be there as well, in
22 our counterfactual, and I think the App Store, as
23 a result, will get the majority of traffic, as I have
24 contemplated in my counterfactuals.

25 Q. Well, just taking that second point, you say that Google

1 is insisting that it is the default. So do you mean
2 that Google insists that there is not any other
3 play stores pre-installed?

4 A. No, my understanding is that Google will permit, and it
5 has not happened much, and when it has, Google has taken
6 efforts to thwart it. But when it does happen, it
7 cannot be on that landing page, it would have to be on
8 some page that you would have to scroll through, so
9 that, with luck, from Google's perspective, it would be
10 rare that someone would find it.

11 Q. But it is right, is it not, that in the counterfactual
12 in this case, Apple could not be required, could it, to
13 pre-install any competitor app store on its devices
14 because it is its own devices?

15 A. As I said yesterday, I have never taken a position as to
16 how that second or third app store makes it onto the
17 phone. I mean, one possibility is that it could be
18 downloadable from the App Store. I do not -- I have
19 never taken a position as to how it would happen, I have
20 just assumed it would happen in the absence of the
21 distribution restriction.

22 Look, the distribution requirement is there for
23 a purpose. If it were not there, presumably rival app
24 stores would find a way onto the phone.

25 Q. But your point is that on the Android system, Google has

1 agreements with manufacturers which mean that rival app
2 stores are not placed as prominently, or not
3 pre-installed on the phones; yes, and that that is
4 a reason why the Google Play Store has so much of the
5 commerce, and --

6 A. It is a contributing reason. You know, there are a host
7 of restrictions that are being challenged, both here and
8 in the US.

9 Q. I want to take them one by one. So I am looking at the
10 two that you have discussed so far. They would also be
11 features of the counterfactual in this case, would they
12 not, because number one, the App Store would be
13 pre-installed on Apple's devices, and number two, Apple
14 could not be forced to pre-install competing app stores;
15 correct?

16 A. You keep changing from Google's restriction. It is not
17 just pre-installation, right; it is pre-installation and
18 premier installation and exclusion of rival app stores
19 from the home page. That is in the contract with these
20 hand [set] makers.

21 Q. Can I just ask you, what is the exact restriction in
22 Google that you say is driving the 90% of commerce?

23 A. I have never been asked, and I should also be careful,
24 there is a proceeding here in which I am involved, and
25 so I am loath to get too far into the Google

1 restrictions, but I have never been asked to decompose
2 each of the myriad restraints. There are many, over 10
3 restraints I believe are being challenged inside of
4 these contracts with handset manufacturers, and no one
5 has ever asked me: is three more important than four?
6 I feel like they are all being challenged, they are all
7 being asserted to have restricted rival app stores from
8 the Android system.

9 So I feel the question is a bit unfair. I am just
10 not in a position to say it is numbers 3, 6 and 7.
11 There are something like 10 restrictions. I know that
12 Amazon once got -- made some headway on a Fire phone and
13 Google took certain actions to end Amazon's efforts
14 there.

15 Q. Well, Dr Singer, I understand you say you have never
16 been asked, but I am asking you about it now, because it
17 is an important point. Do you understand that Apple's
18 case is that the Google Play Store is a very good
19 comparator for what would happen in the counterfactual,
20 and that is why it is essential, really, that I explore
21 with you the reasons why you say it is not a good
22 comparator. So I want to take them one by one.

23 A. I am with you, but I just do not know if I am in
24 a position to say it is restriction 3, 7 and 8 that has
25 blocked ... that has led to the ... I do not know if I

1 am in that position yet.

2 Q. That is fine, and of course if you do not know, just say
3 you do not know. That is a perfectly acceptable answer.

4 A. Okay.

5 Q. Now, the -- and you know, do you not, that in the
6 Android system, some of the manufacturers have their own
7 rival app stores; Samsung is an example, yes?

8 A. Samsung does, but Samsung's store is intentionally
9 degraded via an agreement with Google. These are
10 restrictions that, you know, impair competition for app
11 distribution.

12 Q. You do not talk about that in your report. Where is
13 your evidence of an anti-competitive agreement between
14 Samsung and Google?

15 A. I do not talk about it in this report. It might be
16 coming.

17 But this report, I -- it is sufficient for me to
18 conclude on the evidence that Google is a monopolist, it
19 has been found -- we talked about this yesterday -- to
20 have violated the anti-trust laws in the United States
21 in Epic v Google. It has over 90% of the transactions
22 on its platform. For all those reasons -- and it also
23 charges 30%. For all those reasons, I do not think
24 Google is a legitimate comparable for a competitive
25 environment, and that is what we are trying to get at,

1 is what would competition bring us in the absence of
2 these restraints?

3 Q. Let us go to {AB6/25/13}, this is the CMA's market
4 study.

5 A. Okay.

6 Q. If we look -- sorry, I have got the wrong reference. So
7 {AB6/25/84}. Sorry, just bear with me for a moment.

8 A. Sure.

9 Q. Just bear with me for a moment, sorry.

10 Sorry, that was correct {AB6/25/13}. Tab 25,
11 page 13. There we go. So paragraph 2.13 of the CMA's
12 report.

13 Do you see that Samsung has -- accounts for a large
14 proportion of smartphone sales, so smartphone sales, not
15 just Android. The precise figure is confidential, but
16 do you see it accounts for 20-30% of smartphone sales?

17 A. Yes, and I cannot tell if these are by units or by
18 revenues. Maybe you know. But I think it is not
19 critical for me, for any of us, to establish that Apple
20 has dominance in the device market, but I think if you
21 state Apple's share in unit sales, you will be
22 understating their power in the market. Apple's
23 phones --

24 Q. Dr Singer, I am just asking you at the moment -- I am
25 not asking you to get into competition in the devices

1 market, I am really just asking you to note that Samsung
2 accounts for -- they sell a lot of phones. That is all
3 I am asking you to note at the moment and --
4 (overspeaking) --

5 A. Right, but I was trying to get clarification if it is
6 units or revenues, because I have seen figures much
7 higher for Apple when it comes to revenues.

8 Q. It is not actually critical for the purposes of my
9 question, but we will come back and clarify that if it
10 is important to you.

11 A. It is important, because the fact that Apple can command
12 a premium on its phone vis-à-vis its competitors is
13 another indication of Apple's power.

14 Q. Then if we go to {AB6/25/101}, paragraph 4.67, do you
15 see here:

16 "... Google estimated that between 60-90% of UK
17 Android devices ... have another ... app store
18 pre-installed ..."

19 So I am just asking you to note that figure for
20 a moment.

21 If we go over the page {AB6/25/102}, we see that:

22 "... in 2021 in the UK, [30-40]% of newly activated
23 ... [phones] had only the Play Store pre-installed."

24 So the question I am putting to you is that in fact
25 Android provides a more hospitable environment for rival

1 app stores than your counterfactual, because some of the
2 manufacturers have their own rival app stores
3 pre-installed, whereas that would not happen on Apple
4 devices in the counterfactual, would it?

5 A. So the question is why do these rivals, like Samsung
6 Store in particular, not get any traffic? Why are they
7 getting literally close to zero traffic, despite being
8 installed on all the Samsung phones? The answer is
9 there is an allegation that Google has entered into
10 an agreement with Samsung by which Samsung agreed to
11 cripple its store by becoming a niche operator that
12 carries a very small segment of the apps, and therefore
13 there is not significant competition between these two.
14 That is the allegation in the case.

15 Q. So, Dr Singer, going back to my question, the question
16 is, and I am going to repeat it, and can you just say
17 yes or no.

18 So the question I am putting to you is the fact that
19 on Android a large proportion of manufacturers
20 pre-install their own app store, along with the
21 Google Play Store, provides a more hospitable
22 environment for rival app stores than would be the case
23 in the counterfactual, because in the counterfactual
24 Apple is unlikely to permit rival app stores to be
25 pre-installed on iPhones; do you agree with that, yes

1 or no?

2 A. No, I do not -- well, I do not agree with that and
3 I also do not think it is a good proxy for the
4 counterfactual.

5 In the counterfactual, we are not contemplating
6 Apple entering into an agreement with one of its rival
7 app distributors, by which the rival agrees to degrade
8 or to limit its distribution to be a niche distributor.

9 I am contemplating, when I am modelling
10 a counterfactual world, real competition, real
11 independence. On each one of these occasions, Samsung
12 in particular, they are extremely beholden to Google,
13 and therefore they are willing to enter into certain
14 arrangements with Google that impair and impede the
15 competition for app distribution, and as a result,
16 Google has over 90, I have seen sometimes in the high
17 90%, of all downloads.

18 Q. Dr Singer, you are missing my point. Let me put it
19 again.

20 So my point is that you are complaining -- you say
21 all of these agreements between Google and different
22 manufacturers are anti-competitive, but in the
23 counterfactual in this case, Apple would not need to
24 have any agreements with manufacturers, because it is
25 the manufacturer, so it could achieve exactly the same

1 result without having any agreement. The only app store
2 that would be pre-installed on Apple devices in your
3 counterfactual would be the App Store.

4 So the fact that Google may have agreements with
5 manufacturers is just not relevant, is it?

6 A. It is relevant because we are looking for
7 a counterfactual, and I think that in our counterfactual
8 the question is -- I think the question you are putting
9 to me is how in the world can we expect a rival app
10 store to get onto the screen and get any traction in our
11 counterfactual world if Apple does not assist them in
12 the pre-install? One way that I am putting to you is
13 that you could be available for download in the App
14 Store; the rival app store could itself be an app that
15 is sitting inside the App Store and ready for download.

16 That is not permissible, under my understanding
17 today, and that could be permissible in a but-for world.
18 That is one way to get to the phone. There are other
19 ways, potentially, but that is one obvious way that
20 a rival distribution channel would get on to the phone.

21 Q. I still think you have not answered my question, but
22 I have put it three times so I am going to move on.

23 The CMA report examines different aspects of
24 Google's agreements that it says might inhibit rival app
25 stores and might contribute to the 90%, and the CMA

1 report does not identify that Google prohibits Android
2 manufacturers from putting their store on the home
3 screen. Is that something you have just made up?

4 A. No, that is my understanding. That is -- that is my
5 understanding and I believe that is true.

6 Q. Now, the other point that you referred to yesterday --

7 A. When you said the "home screen", I just mean the landing
8 page. Just to be clear, you can get -- there are
9 examples, like Samsung, where the Samsung store, or
10 Galaxy Store, can be somewhere as you flip through, but
11 it cannot be in a position of prominence. That is my
12 understanding.

13 Q. I think you have agreed with me that in the
14 counterfactual, Apple would not be required to
15 pre-install rival app stores or put them in a position
16 of prominence?

17 A. I am agnostic there. I have never taken a position one
18 way or the other.

19 Q. Agnostic. Okay.

20 Now, the second point you referred to yesterday was
21 the payment restriction that Google has, so just
22 focusing on that for a moment. The first question
23 I want to put to you is that that is not a point, is
24 it -- that particular point does not help you on your
25 app distribution counterfactual, does it? So if the

1 distribution restriction were unlawful but not the
2 payment restriction, then the payment restriction would
3 also be present in the counterfactual in this case;
4 correct?

5 A. Yes, that is correct. It is my opinion, as you know, in
6 my report, that if Apple were to lose its dominance in
7 the primary market and its share were to fall to, say,
8 40 or 50%, then we could still get to competitive
9 outcomes even if Apple continued to tie its payment
10 processing to its App Store -- access to its App Store.
11 That is, the competition in the primary market would be
12 sufficient to engender competitive outcomes.

13 So I do that analysis in what I call the
14 distribution -- you probably know it better, the
15 distribution --

16 Q. No, I also get confused. I have some sympathy with you.

17 A. It is the one that just keeps the distribution
18 restrictions in place -- or, sorry, just eliminates the
19 distribution restrictions but leaves the payment
20 restrictions in place.

21 Q. That is the payment restriction counterfactual -- no, I
22 have got it the wrong way round.

23 A. I got it right, yes.

24 Q. I think what we can agree is you have said that in your
25 report, and that is paragraph 177 of your second report,

1 and so what you are saying there is as long as you have
2 rival distributors with their own payment services, the
3 outcome will be the same as in your primary
4 counterfactual?

5 A. That is right. So even if Apple ties, in that
6 counterfactual, and Apple sets too high of a price for
7 the commission, competition in the primary market can be
8 counted on to discipline what Apple charges for payment
9 processing and other in-app support services.

10 Q. Yes, and on Android there are rival distributors with
11 their own payment services; correct?

12 A. Correct.

13 Q. Some of those rival distributors also permit third-party
14 payment services to be used also. So the Samsung Store
15 permits that and does not charge any commission where
16 a third-party payment -- service provider is used;
17 correct?

18 A. Correct.

19 Q. So on your own logic, on the logic you have just been
20 explaining, the payment restriction by itself is not
21 going to be a driver for the Google Play Store having
22 90% of the commerce. It is just not very relevant, is
23 it? It is all about the distribution restriction.

24 A. No, because I do another scenario where the only thing
25 that goes away is the payment restriction, and I think

1 that we could also get to competitive outcomes as well.

2 Q. That is where the distribution restriction remains in
3 place; yes?

4 A. Correct. Correct. But Apple is no longer allowed to
5 tie its payment processor to distribution --

6 Q. No, and the only point I am putting to you is that on
7 your logic, on the logic in your report which you have
8 just explained, which is if you have rival distributors
9 then the payment restriction by itself is not going to
10 lead to an anti-competitive outcome; on that logic, the
11 payment restriction by itself is not going to be a key
12 driver behind the Google Play Store having 90% of the
13 commerce, is it?

14 A. No, that is not -- that is not good logic.

15 Q. All right. I think we can leave that there.

16 Now, let us go back to your table -- and so I think
17 it is clear that I have put to you our case. Our case
18 is that when you compare what is going on on Android
19 with the Google Play Store, with the likely
20 counterfactual in this case, which would also have Apple
21 pre-installing its App Store and not have any rival app
22 stores pre-installed on the device, then in fact the
23 Google Play Store is an excellent comparator for the
24 counterfactual, and Apple would be likely to have 90% of
25 the commerce and would be able to charge the commission

1 it currently charges?

2 A. Okay. That is your testimony. It is not a good case,
3 but I hear it. Everyone is entitled to their opinion.

4 Q. All right. Now let us go back to your table, {C2/8/87},
5 and looking at the various comparators you have got
6 here, you do not have the Samsung Store on this table,
7 even though it is by far and away the biggest of the
8 competing Android stores. Is that because it charges
9 30% so it does not fit with Dr Kent's case?

10 A. No, it is because it is alleged to have entered into
11 agreements to undermine competition with Google.

12 Q. But there is no evidence of that. Dr Kent has not
13 provided any evidence of that and you have not either in
14 your reports. It is just an assertion, is it not?

15 A. No, it is not an assertion. Go look at the complaints
16 in the United States.

17 Q. Now, and for the same -- for the reasons that we have
18 been canvassing in relation to the Google Play Store,
19 you are wrong, are you not, to say that the other
20 Android app stores are very conservative benchmarks? It
21 is likely -- let me put it this way. It is likely that
22 in a counterfactual world without the restrictions, any
23 competing app stores that entered the market, the iOS
24 platform, would be fringe players too, that collectively
25 they would supply no more than 10% of the commerce?

1 A. No. It is actually my opinion that had Google not
2 thwarted Amazon's attempt to compete in app distribution
3 for Android phones, Amazon -- and we all have heard of
4 them, I hope -- could have achieved a sizeable share of
5 app distribution. They were precluded from doing so by
6 Google's anti-competitive actions.

7 Q. Again, that is not something that you have analysed or
8 put forward any evidence in these proceedings?

9 A. No, I have not. But I am including the Amazon Appstore
10 at 18% as something that is a reasonable competitive
11 benchmark. You like Samsung better, and I am telling
12 you what taints Samsung is that Samsung is alleged to
13 have entered into an agreement with Apple -- sorry, with
14 Google, to undermine competition.

15 Amazon, by contrast, was an attacker and was
16 thwarted by Google's conduct that prevented it from
17 achieving a foothold.

18 Q. The difficulty is, Dr Singer, that there are lots of
19 benchmarks which you have excluded. So take the Aptoide
20 Android store, where the commission is 25%, which is
21 pretty much the same as the effective commission you
22 have calculated for Apple in this context. You have
23 excluded these, and they all tend to show that Apple's
24 commission is a -- well, sorry, you have not excluded
25 that one.

1 A. I have not excluded them.

2 Q. No, that is correct, that is quite right.

3 A. That is the headline rate. So Aptoide is coming in at

4 20 -- sorry, 25 on Android, but that is the headline

5 rate, right? Apple's headline rate is a full 5

6 percentage points above it and people get discounts off

7 of that headline.

8 Q. Well, you have not calculated any effective commission

9 rate for Aptoide, so the benchmark you have given here

10 is 25%. Leaving that aside, the problem that we have is

11 you are excluding the Google Play Store, you are

12 excluding Samsung, which have 30% commission, and you

13 are excluding them because they go to support Apple's

14 case that 30% is actually a competitive benchmark?

15 A. If you think a monopoly platform, and the Play Store is

16 a good benchmark of a competitive equilibrium, then

17 maybe we should use the Play Store, but I respectfully

18 disagree with that. I do not want to go find

19 monopolists who have been alleged to have violated

20 anti-trust laws, and have been found to have violated

21 them, in fact, by a jury, by doing effectively the exact

22 same conduct that we are trying to eliminate here. Why

23 would we want to include the conduct that we are

24 challenging here in our counterfactual? It makes no

25 sense.

1 Q. Well, Dr Singer, because the conduct which is being
2 challenged here, which is the distribution -- take the
3 distribution restriction, is not present on Android,
4 because there is no distribution restriction --

5 A. That is just not true. It is present. The reason --
6 Apple achieves via physical integration what Google
7 achieves anti-competitively via contract; they are the
8 same restrictions.

9 Q. Now, let us go back to your -- looking at your table
10 again, we see that Steam's commission, you have said, is
11 20-30%. I am just going to ask you a series of
12 questions to establish the facts. I do not think that
13 the first few, at least, are going to be controversial.

14 So Steam was launched on PCs in 2003 and started
15 distributing third-party apps in 2005; yes?

16 A. I do not know the exact date, but I can assume that.

17 Q. Until late 2018, Steam charged a rate of 30% on all paid
18 app downloads and in-app purchases; yes?

19 A. Yes, we had this in the hot tub. Your expert does not
20 want to look past 2018.

21 Q. So for 13 years, it charged a rate of 30%; correct?

22 A. Yes, that is how monopolists behave.

23 Q. Throughout that time, there were no restrictions at all
24 on anyone's ability to distribution PC games outside of
25 Steam, were there?

1 A. I am not familiar with what restrictions Steam had, if
2 any, but Steam was a monopolist or effectively
3 a monopolist and charged close to a monopoly rate.

4 Q. The restrictions Dr Kent is challenging in this case
5 were not present, were they, for PCs. So Steam -- other
6 PC app stores were perfectly entitled to enter the
7 market, and could and did, and so the restrictions in
8 this case were not a feature of the market?

9 A. You said they could and did, but the thing is we did not
10 see competitive entry in earnest until much later, and
11 when it happened Steam was forced to reduce its
12 commission.

13 Q. Developers could and did distribute games from their own
14 websites; yes?

15 A. Correct.

16 Q. Throughout that period, Steam maintained its 30%
17 commission and its popularity grew; correct?

18 A. Yes.

19 Q. Now, in November 2018, Steam changed its commission
20 structure so there would be three levels of commission;
21 yes?

22 A. I think you left out the impetus, but, yes, they were
23 forced to change, yes.

24 Q. The particular level of commission would depend on the
25 volume of sales made by a particular app; correct?

1 A. I think that is right. The 20-30 depends, among other
2 things, on volume.

3 Q. So 30% where revenues were below \$10 million, 25% where
4 revenues were between \$10 and \$50 million, and 20% where
5 revenues were above \$50 million; yes?

6 A. Yes, and again I understand these as headline rates. In
7 other words, you can go below these rates with other
8 deals, but this is the headline rate. It would be
9 equivalent to Apple's 30% headline rate.

10 Q. Yes. So you say, do you, looking at headline rates ...
11 What are you saying? Are you saying the headline rates
12 are not relevant?

13 A. No, they are certainly relevant. That is where all
14 negotiations begin, it is from the headline rate. We
15 know from the opinion, right, I know you guys challenge
16 this, but we know from the opinion in Epic v Apple that
17 the court found the rate could go as low as 10.7%, and
18 I just saw another document the other day showing me
19 17.7. It is possible that the 10.7 in the opinion could
20 have been a typographical error. But it is either 10.7
21 or 17.7. I have seen indications that it can go lower
22 than 20.

23 Q. Yes, I want to come to the 10.7. But first of all, you
24 have said that -- you have said that you think that
25 there were deals that were struck, is that your evidence

1 now to the Tribunal? Because you have not said anything
2 about that in your report.

3 A. What I am telling you is that the headline rates, the
4 ones they list, just like the ones that Apple lists, are
5 between 20 and 30%. But now I have seen two documents
6 indicating that the rates can go lower, and my
7 reasonable inference from that is someone with power,
8 someone with outside options -- potentially Netflix, who
9 knows -- is able to get further discounts off the
10 headline rates.

11 Q. But you do not know that deals are struck off the
12 headline rates. You have got no evidence of that
13 yourself, have you? That is just an inference you
14 are --

15 A. It is an inference if I have seen two documents that
16 show that the realised rates are below 20%. That is
17 telling me that people -- developers are able to achieve
18 discounts off the headline rate, just as Apple offers
19 discounts off the headline rate, just as Google offers
20 discounts off the headline rate. This is very standard
21 in this industry.

22 Q. So it is interesting that Mr Holt, in his evidence, says
23 that Samsung and Amazon's headline rates are negotiable,
24 but does not say the same for Steam. But your evidence
25 is Steam --

1 A. No, the headline rate is not negotiable, let us be
2 clear. The headline rate is the posted price, that is
3 what everyone thinks they get when they walk in the
4 door.

5 My contention is that it is standard in this
6 industry for certain developers to be able to negotiate
7 discounts off the headline rate, and when we see the
8 court find 10.7 for Steam -- I do not know how we got to
9 10.7, but I can infer that someone started from the
10 lowest tier and got a discount. We see rates below, in
11 the Google Play Store, we see rates below -- you know,
12 we see 15%, I think I have seen lower. People get
13 discounts off the headline rate.

14 Google, in contrast to Apple, actually offers
15 specialised rates for certain big developers. That is
16 how you get to the lower rates.

17 Q. All right. But sticking -- I am going to go through the
18 reasoning on the 10.7 in a minute.

19 A. Okay.

20 Q. So I am going to address that in a minute. But just
21 looking at the tiered structure, so the 20-30% headline
22 rate, so taking those rates. So a game that makes
23 \$50 million will be paying 26% commission, right? So
24 3 million on the first -- \$3 million on the first 10,
25 and then \$10 million on the next 40, and then that makes

1 \$13 million out of the first \$50 million revenue; does
2 that sound right to you?

3 A. There is no way I can confirm or deny that math. I can
4 accept your math. It is fine.

5 Q. So a game that makes \$50 million, paying 26% commission,
6 you compare that to the effective commission you have
7 calculated for the App Store and it indicates that
8 Apple's commission is a competitive one, does it not?

9 A. No.

10 Q. Are you aware that Mr Holt regards Steam's 20% rate as
11 a competitive rate? Shall we look at what he says?

12 A. That would be consistent with my view. I am putting
13 Steam's 20% rate into my table, Exhibit 4, and as you
14 know, when I look at the comparators for the benchmark,
15 I use the attackers, I use the Epic and Microsoft. But
16 20%, if you are telling me that is what Mr Holt is
17 testifying as what he thinks as fair, as a fair --

18 Q. He says that is a competitive rate, so do you accept
19 that?

20 A. I think that it is a reasonable -- 20% is
21 a reasonable -- it is not exactly mine, but it is
22 a reasonable estimate. It is looking at how the
23 incumbent has reacted. It is fine.

24 Q. So you are not saying that, in the counterfactual, Apple
25 would be charging 12%?

1 A. No, I am. I am not going to abandon what I think is the
2 right one based on -- I come at it in two approaches
3 with my comparables, and my economic models, Rochet and
4 Tirole, and Landes and Posner. But if another expert is
5 putting forward 20 and I am putting forward 12, I mean,
6 I cannot say his is wrong. I do not know the full basis
7 for his.

8 Q. Shall I show you what he says? So let us go to
9 {C2/10/124}.

10 A. Sure.

11 Q. So if we look at the bottom of the page, he says:

12 "The 20% upper end of my range [that is his
13 competitive range] corresponds to the most competitive
14 headline rate that Steam offers to developers. Steam
15 only offers a 20% commission rate on games with revenue
16 over USD 50 million ... these are the titles for which
17 Steam faces the most competitive pressure on commission
18 rates, as they are the most valuable to Steam and the
19 other app stores who are seeking to attract them. They
20 are also the games for which developers have the most to
21 gain from distributing directly if doing so increases
22 their sales margin ..." {C2/10/125}.

23 We will look also at {C2/10/116} of the same
24 document. So can you just read to yourself 317.

25 A. Sure. This is still Holt?

1 Q. It is.

2 A. Okay. (Pause)

3 Q. I just want to ask you some questions about this

4 paragraph once you have read it.

5 A. Okay. (Pause)

6 Yes, I have read it, yes.

7 Q. Thank you. So you would agree, would you not, that

8 Steam faces competition from some of the biggest gaming

9 companies because those companies also have their own

10 distribution platforms; yes?

11 A. Yes, and I should just note that I have read now -- you

12 asked me to read the two pages, and your question was

13 Holt -- you implied that Holt went with Steam's 20, and

14 after reading it, it is pretty apparent that Holt is

15 saying this is a conservative upper bound.

16 Q. He says it is within his competitive range, and so I am

17 just asking you --

18 A. Well, he says it is a conservative upper bound. He says

19 it could be anywhere from 10 to 20%.

20 Q. He does, but it is within his competitive range, so --

21 A. Your question made it appear -- I mean, I took your

22 question to mean he was at 20, you are in conflict, how

23 are you going to resolve the conflict?

24 Q. Well, I am not going to quibble about the question. I

25 think I said within the competitive range. But do you

1 agree with him that 20% is within the competitive range?

2 A. I think I agree with him that that could be an upper
3 bound. You know, he is looking at Steam's headline rate
4 as an upper bound. I do not -- you know, what I just
5 would want to absolutely confirm is what is their
6 effective rate, and I do not know if we can know that
7 without their data. We have got two data points now
8 that suggest that you can actually get below the 20%.

9 Q. I am coming on to that, as I said.

10 A. But I do not know if we are in conflict if he is saying
11 10-20 is a range with 20 being a conservative upper
12 bound.

13 Q. All I am asking you is do you agree that 20% is within
14 the competitive range, yes or no?

15 A. I think it is at the extreme point of the distribution.
16 It would not be my best estimate. I think that, like
17 Mr Holt, he says it is the upper bound of the reasonable
18 range.

19 Q. All right. So what I wanted to ask you about this
20 paragraph that you have just read --

21 A. Oh, and to be clear, sorry, this is just for the primary
22 market, right? It is important for the Tribunal to
23 understand that there is a very, very small volume of
24 commerce, and in terms of damages, it is a very, very
25 small percentage of the total damages, right? Because

1 most of the action is occurring in the aftermarket.

2 Q. Right.

3 So just going back to paragraph 317, do you agree
4 that ... It is right, is it not -- I think we can agree,
5 can we not, Dr Singer, that Steam faces competition from
6 some of the biggest gaming companies because they have
7 their own distribution companies?

8 A. Yes.

9 Q. Those companies include Microsoft, which owns Activision
10 now?

11 A. Yes.

12 Q. Microsoft is one of the largest companies in the world,
13 is it not?

14 A. Yes.

15 Q. If those large companies cannot entice developers to
16 abandon Steam and sell through them, that can only be
17 that Steam is offering good value for money; yes?

18 A. I just, respectfully -- what has happened there is
19 Microsoft and Epic have forced Steam to drop its
20 commissions to be competitive. You are just ignoring
21 that component of the story. That competition is not --
22 I think your question was, is allowing Steam to run
23 ahead, or --

24 Q. No, I am saying if these very large companies -- so
25 Activision distributes games on Steam, does it not?

1 A. Probably Steam, and probably on the other distribution
2 platforms as well. As I testified yesterday, it
3 often -- you know, it makes sense to be everywhere.
4 Once you write the code to be in a store, if your store
5 is compatible with another store in the same operating
6 system, you want it on that other store.

7 Q. It makes no sense, does it, to say that Activision is
8 paying Steam an anti-competitive price, because
9 Microsoft is a multi-billion dollar company. So nobody
10 could force it to pay a supra-competitive price to
11 Steam, could they?

12 A. Are you asking me, do I think the 20% is
13 supra-competitive.

14 Q. No, I am asking you whether -- it makes no sense, I am
15 putting to you, to say that Activision is paying
16 an uncompetitive price to Steam. So if Steam's
17 commissions were not competitive commissions, Activision
18 would not be paying them, would it?

19 A. No, that is not necessarily the case. Sometimes we pay
20 a price that is above the competitive level. But I have
21 never been asked until this moment do I think that
22 Steam's 20% is supra-competitive. That is what Steam
23 thought was the appropriate place to go, and we have
24 potential discounts from there. But that is where Steam
25 thought it would go after it was attacked.

1 Is it supra-competitive? I have never offered an
2 opinion. I think Mr Holt is probably right that that
3 could serve as an upper bound of the range of possible
4 competitive rates in our counterfactual.

5 Q. On Mr Holt, could we just go back to {C2/10/142}, so
6 actually it is this page, but the bottom of the page.
7 If we go -- can we put this page and the next one up on
8 the screen. Can you read paragraph 319, please -- 391.
9 Sorry, it is the wrong paragraph. So page 142, 391,
10 that is right {C2/10/142-143}.

11 So can you read 391, please, to yourself.

12 A. Okay. So 391?

13 Q. Yes.

14 A. Okay. Give me a second. (Pause).

15 Q. I am just showing you this because you said that the 20%
16 relates only to distribution, but Mr Holt's evidence is
17 that the competitive range of 10-20% relates to the
18 aftermarket too, I just wanted to show you that, because
19 it is inconsistent with what you said a bit earlier.

20 Do you agree with this?

21 A. I do not know. I have not studied Mr Holt's. But you
22 want me to assume that 20% is his upper bound for both
23 markets?

24 Q. Have you not read Mr Holt's reports before?

25 A. Not in detail, no.

1 Q. Really? Yes, so he says that the 10-20% competitive
2 range is the competitive range for both, and I am asking
3 you whether you agree with that.

4 A. I think it is reasonable for the primary market.
5 I think for the aftermarket, I think that that would be
6 outside of what I think is a reasonable range. That
7 seems a bit aggressive. I mean, it seems too
8 conservative, how about that? It is too conservative.
9 No one has asked me what I think is the reasonable bound
10 until now, but thinking about it out loud for the
11 aftermarket, because I am coming in -- I think my models
12 are showing around 9 or 10%.

13 So I think that 20 -- 20 would be a pretty -- would
14 be a pretty conservative bound for aftermarket
15 transactions. I mean, it is --

16 Q. Do you agree with the first sentence of this paragraph?

17 A. Let me see. Of 391?

18 Q. Yes. (Pause).

19 A. Yes, I agree with that.

20 Q. That is the basis for his conclusion, so I am not sure
21 I am understanding why you are disagreeing with his
22 conclusion.

23 A. Oh, I am not disagreeing with the statement of 391. You
24 are asking me if that establishes that 20% is the right
25 upper bound for the aftermarket.

1 Q. Yes, that is what he says. The basis for his conclusion
2 is the first sentence. You have agreed with the first
3 sentence, so I am not sure why you are disagreeing with
4 his conclusion that it is the relevant benchmark for the
5 aftermarket.

6 A. That Steam's rate is the relevant benchmark?

7 Q. 20%.

8 A. Because I think that that is -- I think that that is
9 a -- Steam's rate that covers both the primary and the
10 aftermarket, and when I model the aftermarket I do
11 things differently. I am looking at what an in-app
12 support provider like Paddle is charging for my
13 comparable, and I am using Landes and Posner based on
14 a 6.5% marginal cost.

15 So I guess we are coming at this in different
16 places. You are asking me how comfortable I am putting
17 20% in the aftermarket. I think that would be really
18 stretching it. I do not think it would go that high, if
19 you are asking me.

20 Q. All right. I want to go to the 10.7% figure that you
21 have now referred to a number of times.

22 A. Okay.

23 Q. On its face -- you will recall that Professor Hitt said
24 in the hot tub that the figure is an error in the
25 judgment but that he could not -- but that it is covered

1 by a protective order, and you said, I think, that you
2 cannot see how the court got to that figure.

3 A. I do not know how he could either. I do not think he
4 was involved in the litigation.

5 Q. He was.

6 A. In the United States?

7 Q. Yes.

8 A. Epic v Apple?

9 Q. Yes. Now, on its face, 10.7% is an odd figure, is it
10 not, because we know that Steam lowered its commission
11 to 20%. But then this figure for its effective
12 commission, the 10.7%, does not make sense, does it,
13 because the lowest rate it can charge is much higher
14 than 10.7%. So on its face it is a strange figure, is
15 it not?

16 A. No, that is not how you rule it out, because I told you
17 there could be discounts off the headline. So if the
18 lowest headline is 20, at least on some transactions you
19 could get to deals as low as 10.7%.

20 I have seen another estimate now of 17.7, which also
21 comes in below 20.

22 Q. Where is this other estimate of 17.7?

23 A. I read it recently but I cannot recall -- I cannot
24 recall the source.

25 Q. It is from what? Do you know the source? Is there

1 anything we could ask you about? Anything the Tribunal
2 can look at?

3 A. I could get it for you during a break, if you are
4 interested.

5 Q. Now, it would not make sense, would it, for Steam to be
6 charging 10.7%, which is much less than its rivals who
7 are much less effectual than Steam. Steam just would
8 not do that. Why would it charge much less than its
9 much less good quality rivals?

10 A. I think it is fair that, as the incumbent, you would
11 tend to charge a premium over rivals. I will grant you
12 that.

13 Q. Now, let us go to {D1/1,681.4}, and what this is -- have
14 you seen this before, Dr Singer, this document? It is
15 the publicly available version of an expert report filed
16 by Dr Schwartz, and it was filed in proposed collective
17 proceedings brought by some developers against Steam's
18 parent company, Valve; have you seen this report before?

19 A. I do not recall seeing it, no.

20 Q. So Dr Schwartz is the developer's, so the plaintiff's,
21 expert. I would like to show you first of all what he
22 has done, then I will need to show you what Valve's
23 expert has done, and then I will ask you some questions.

24 A. Okay.

25 Q. So the first part of this is not going to comprise

1 questions to you. I am not asking you whether you
2 agree, I am showing you the work that has been done, and
3 then I will ask you the questions at the end.

4 A. Okay.

5 Q. So if we go to {D1/1681.4/185}, paragraph 308, what
6 Dr Schwartz does here is explains Steam's tiered rate
7 structure, and he says -- do you want to just read this
8 paragraph to yourself quickly?

9 A. Yes. (Pause)

10 Yes, now what I would need help on -- I have read
11 308. What I need help on is if you could remind me when
12 it was written and what date he is referring to here.

13 Q. Yes, I will come back to that. But just pausing on the
14 paragraph. So he explains the rate structure and he
15 makes the point here that the lower rates only apply to
16 a small number -- a small proportion of developers; yes?

17 A. Yes.

18 Q. Then he says he has calculated an effective commission
19 rate for the period November 2018 to December 2022, so
20 that is after Steam introduced the three tiers of
21 pricing; correct?

22 A. Yes, that is fair.

23 Q. But the figure is redacted, yes, you see that?

24 A. Yes.

25 Q. Just for your information, the date of the report is 8

1 February 2024.

2 A. Okay, thanks.

3 Q. Now if we go to {D1/1804.1}, this is the publicly
4 available version of an expert report filed by Dr Chiou
5 on behalf of Valve in the same proceedings.

6 Can we turn, please, to {D1/1804.1/81}. It is in
7 response to the report we have just looked at. So this
8 is a responsive report.

9 A. Okay.

10 Q. If you look at, so section 4.1, you can see the heading:

11 "Valve's revenue share is consistent with
12 competition, and Dr Schwartz's analysis is flawed
13 because it does not account for the effect of Steam key
14 sales on revenue share."

15 If we look at paragraph 154, you can see that the
16 allegation that is being made in the proposed
17 proceedings was that Valve was charging
18 a supra-competitive rate; do you see that from the first
19 sentence of paragraph 154?

20 A. Yes.

21 Q. The point that is being made here is that -- so Dr Chiou
22 is making the point that Dr Schwartz, who is the expert
23 for the proposed plaintiffs, had calculated shares of
24 revenues, omitting revenues from the sale of Steam keys,
25 for which publishers pay no revenue share to Valve; yes?

1 A. Yes. It is a lot, but it sounds like the allegation
2 that Schwartz overstated Steam's rate because he did not
3 treat all the zeros -- all the zero, right?

4 Q. Exactly. Exactly.

5 A. Okay.

6 Q. Then if you look at paragraph 155, you can see there,
7 the last sentence, you can see that Dr Chiou says:

8 "As calculated by Dr Schwartz, Valve's nominal
9 revenue share rate of [and there is a redacted] percent
10 is comparable to the rates of other platforms during
11 this period. Notably, Valve's average nominal revenue
12 share rate has been decreasing each year over this
13 period ..."

14 Then in paragraph 156, again the point is made that
15 these rates that were calculated by the plaintiff's
16 expert do not account for the effect of Steam key sales
17 on publishers' revenue shares.

18 "As explained ... above, Valve offers Steam keys --
19 digital codes that users redeem for games on Steam -- to
20 publishers for free. Therefore, Steam keys lower
21 a publisher's effective revenue share rate because
22 publishers pay no revenue share for games sold elsewhere
23 through Steam keys. However, Valve provides the same
24 service through the Steam platform -- and incurs the
25 same distribution costs -- whether games are redeemed

1 through keys or purchased on Steam. Therefore, it is
2 vital to account for Steam keys when analysing revenue
3 share rates charged to a publisher or when comparing
4 Valve's revenue share to the revenue share rates of
5 competing platforms ..."

6 Yes?

7 A. Yes.

8 Q. Then at 157, Dr Chiou sets out a simple equation
9 illustrating this, and I will just ask you to look at
10 that. But you see that the second equation includes in
11 the denominator "Publisher's revenue from Steam key
12 sales", yes?

13 A. Yes, I see. This is the expert for Steam?

14 Q. It is.

15 A. Okay, got it.

16 Q. Then over the page {D1/1804.1/83} at paragraph 159,
17 Dr Chiou says that neither she nor Dr Schwartz can
18 actually calculate publishers' revenue shares because
19 data on publishers' revenues is not available.

20 Then what she does, you see in para 160, is she says
21 she can make approximations based on assumptions as to
22 the volumes of Steam key sales and the prices at which
23 developers sell Steam keys.

24 A. Yes. If you go down, the last sentence is pretty
25 important, I think. Are you going to let me read that

1 one?

2 Q. You can read whatever you like, Dr Singer.

3 A. Okay. No, you just moved -- can you just put the page
4 back where it was. Sorry. I was reading something that
5 said it could be below 20 -- thanks. I am just looking
6 at this last line.

7 Q. Yes. So:

8 "... each approximation indicates an average
9 effective revenue share that is near or below 20
10 percent, a significant departure from the ... percent
11 claimed by Dr Schwartz ..."

12 So what she is saying is when you take account of
13 Steam keys, the effective commission is around 20%,
14 which is different to the redacted figure that
15 Dr Schwartz has calculated for the plaintiffs.

16 A. Right, "near or below 20 percent", and Dr Schwartz was
17 coming in --

18 Q. Higher.

19 A. -- higher than that. Yes, that is fine. So that could
20 be consistent with the 17.7 I have seen, but it is -- if
21 what you want me to admit is that it seems far from the
22 10.7 --

23 Q. You are thinking far ahead. I said I would ask you
24 questions at the end. So I am just showing you the
25 material.

1 A. Okay. Okay.

2 Q. I am not asking you to admit anything yet.

3 Then we can see -- so I was showing you
4 paragraph 160, so Dr Chiou says that she can make
5 assumptions about publishers' sales of Steam keys and
6 the price at which they are sold, and the outcomes --
7 you can see that she then explains how these
8 assumptions -- I am going to take you to the assumptions
9 in a minute. But the outcome of the approximations are
10 shown on page 85, so let us have a look at that.
11 {D1/1804.1/85}. Exhibit 5.

12 So you can see that there is a range of figures in
13 the coloured bars, yes? So on the left-hand side there
14 are some redacted developers, and you see that the
15 bottom developer is not redacted. But then you have
16 a range of figures in the coloured bars, and then you
17 have a dotted line on the right-hand side, and the exact
18 figure is redacted but it appears to be about 27%; do
19 you see that?

20 A. Yes. So she is asserting that Schwartz overstated
21 Steam's take rate; yes?

22 Q. So the effective commission rate, excluding Steam keys,
23 that was calculated by the Class Representative's
24 expert, Dr Schwartz, was calculated at being 27%; yes?

25 A. It looks like -- it looks like Schwartz is at 27, but

1 Steam is saying you are wrong and not accounting -- you
2 are not doing the math right, and if you do the math
3 right it is much lower. It seems like we are getting
4 numbers all over the place here, down to 7.2%, right?

5 Q. So Steam is not disputing the 27% if you do not account
6 for Steam keys, but Steam is saying you need to account
7 for Steam keys --

8 A. Great.

9 Q. -- and I am just going to take you through --

10 A. Great, that is fantastic. That is part of the price.
11 You should include the discounts, yes. That is the
12 competitive reaction.

13 Q. Let us go -- it is not a discount, but let us go through
14 this. Steam keys, you understand what they are, you
15 just looked at them.

16 Now, we can see, just to look at what the
17 assumptions are, so approximation 1 in dark blue. So if
18 we can go below -- we can see this is all explained
19 under the table, so if we can scroll. So
20 approximation 1, do you see that, assumes that the
21 number of Steam keys sold is equal -- that a developer
22 sells is equal to the number of Steam keys that
23 consumers actually redeem on the platform; yes? So that
24 may seem like a safe assumption, because why would
25 someone pay for a Steam key and not use it, but at the

1 same time, it is possible that that happens. Anyway,
2 that is the assumption.

3 The other feature of approximation 1 is that it
4 assumes that developers sell the Steam key for the same
5 price as they sell the game on Steam; yes?

6 A. Okay.

7 Q. Then approximation 2, which is in light blue, assumes
8 the same number of Steam keys as in approximation 1 but
9 assumes that they are sold at a 20% discount compared to
10 the price for which they are sold on Steam. So that
11 leads to a higher effective commission for Steam; yes?

12 A. Okay.

13 Q. Well, it does, does it not, because the denominator is
14 smaller than under approximation 1.

15 A. Okay.

16 Q. Then we have approximation 3 in the dark orange, and
17 that assumes that the number of Steam keys sold is the
18 number that were issued by Steam to the developer, so
19 that assumes many more Steam keys than in approximations
20 1 and 2, because it is assuming that the developer
21 actually manages to sell literally every Steam key that
22 is issued to it, and so that leads to a lower effective
23 commission for Steam, because the denominator is filled
24 with lots of transactions that may or may not have taken
25 place.

1 The difference between approximations 3 and 4 is
2 that in approximation 3, that is assuming that Steam
3 keys sell at the same price as Steam, whereas
4 approximation 4 assumes a 20% discount.

5 Then if we go to -- so that is how the
6 approximations work. But if we go to {D1/1804.1/87}, we
7 see Exhibit 6, and here we have the average effective
8 commission rates across all developers over time,
9 including Steam keys, on the four sets of assumptions.
10 What we can see is that, aside from a blip a long time
11 ago in 2009, the blue lines are basically hovering
12 around 20%, somewhat above 20%, yes, throughout the last
13 10 years?

14 A. Well, when you say the last 10 years, you mean from now,
15 or on the chart? Because the last 10 years on the chart
16 you have got activity below 20%.

17 Q. Well, what I put to you, it is hovering around the 20%
18 mark -- the blue lines I am looking at, hovering around
19 the 20% mark?

20 A. Yes, and in 2012 and 2013 and 2014 they are below.

21 Q. Yes.

22 A. But from 2015 onward they are hovering above.

23 Q. The orange pair of lines seem to be coming up now to
24 meet them close to 20%, and that suggests, does it not,
25 that in the past Steam used to issue lots of keys that

1 nobody used, whereas that practice has been stopping in
2 recent years. That is the safe assumption from this, is
3 it not?

4 A. I cannot, on the fly, accommodate all the calculations,
5 but it seems like the author or the expert is trying to
6 put an upper and a lower bound based on how you treat
7 these tokens for what the effective rate is, and it
8 looks like Steam came down aggressively in 2009. I do
9 not know if that is the date of entry, the day of the
10 attack?

11 Q. No.

12 A. But then they started coming up.

13 I think the bottom line takeaway here is that there
14 appears to be a range of potential effective rates,
15 depending upon how you treat the tokens.

16 Q. One thing that is clear from this is that the changed
17 price tiers in 2018 did not result in an effective
18 commission anywhere near 10%.

19 A. Well, when the court says the number 10.7, I do not know
20 which number they are referring to. They could be
21 referring to something in 2014 or 2013 that would be
22 supported by this graph, right?

23 Q. Now, if we are going to compare apples with apples, or
24 pears with pears, then if any comparison is going to be
25 drawn between Apple and Steam, the proper comparison

1 with Apple's 25% commission that you have calculated is
2 Steam's 27%, which is the dotted line we saw previously,
3 is it not?

4 A. No. 27, I do not know where you are getting that. Is
5 that Schwartz's overestimate?

6 Q. No, that is the effective commission without including
7 Steam keys. We saw that in Exhibit 5. If we could go
8 back to Exhibit 5 on page 85.

9 A. No, you have Steam's expert saying you must account for
10 Steam's keys to get the effective rate.

11 Q. All right. So if we are going to account for Steam's
12 keys, then when we are looking at Apple's effective
13 rate, then we would also need to take account of apps or
14 digital content that were purchased on other platforms
15 but consumed on iOS devices, would we not, under the
16 reader and multi-platform rule; that would be the apple
17 and apple and pear and pear comparison?

18 A. No, I do not think -- you want to bring in the zeros.
19 You want to bring in the zeros to bring down the --

20 Q. Yes.

21 A. But she is not bringing in the zeros.

22 Q. That is exactly what she is doing by including Steam
23 keys; she is bringing in the zeros.

24 A. No, these are actual transactions that are occurring on
25 the platform, whereas the multi-reader exceptions are

1 things that are happening off the platform.

2 Q. These are transactions -- the Steam keys are
3 transactions happening off the platform that Steam does
4 not earn any revenue from, but the content is consumed
5 on the Steam platform. It is exactly the same thing.

6 A. That is not my understanding. Like Amazon, when Amazon
7 gave a consumer subsidy as well that allowed the
8 effective commission to be lower than the headline rate.

9 Q. When you have a game, Dr Singer, so a game that a player
10 is playing on an iOS device, and the player has bought
11 Robux on the Roblox website and consumes them on the
12 iOS device, that is exactly the same thing as the Steam
13 keys being used on the Steam platform.

14 So the point I am putting to you is that if you are
15 going to include the zeros for Steam, you need to
16 include the zeros for Apple, and you have not done that,
17 have you?

18 A. I do not include the zeros, and I do not think this
19 person is including the zeros by looking at the
20 discounts, either. These are discounts off the headline
21 rate.

22 Q. These are not discounts off the headline rate. She
23 explained very carefully what she was doing. These are
24 the Steam keys. Do you want to go back to look at the
25 explanation?

1 A. I do not know if the explanation is going to tell us
2 whether these transactions occurred on the Steam
3 platform or not.

4 Q. It tells us exactly that.

5 So let us have a look at -- I think if we go to
6 page 81 {D1/1804.1/81}, can you read paragraph 156 to
7 yourself, please.

8 A. Okay. (Pause)

9 Q. Then if we go over --

10 A. I actually -- no, I want to -- you asked me to read it
11 and then see if that confirms my understanding. Yours I
12 think confirms mine. I can tell you the language that
13 confirms mine. It is pretty clear.

14 Q. Tell me the language and I will show you two more
15 things.

16 A. Okay, it says:

17 "... Valve offers Steam keys - digital codes that
18 users redeem for games on Steam - to publishers for
19 free. Therefore, Steam keys lower a publisher's
20 effective revenue share ... because publishers pay no
21 revenue share for games sold elsewhere through Steam
22 keys."

23 "Elsewhere" could suggest other -- maybe there is
24 conflict in this sentence, because it says "for games on
25 Steam".

1 Q. Yes, they use the purchase on Steam. They redeem it
2 just like Robux.

3 If we go over the page you see the equation, and
4 what you see in bold, those are the zeros that are being
5 included, so zero for Steam but revenue for the
6 developer.

7 I just want to show you Mr Holt's explanation of
8 this as well. So if we go to {C2/10/113} and look at
9 paragraph 306:

10 "Steam also allows developers to generate 'Steam
11 Keys'. This is a free service that Steam provides to
12 allow developers to generate alphanumeric codes that
13 they can use to sell their games on other stores and at
14 retail. Users can redeem these codes on Steam to
15 download and use the games as if they had purchased them
16 on Steam ..."

17 So they are using them on the Steam platform but the
18 transaction is taken off the platform. That is exactly
19 the same, Dr Singer, is it not, as what goes on for
20 Apple under the multi-platform rule. So if you are
21 going to count the zeros for Steam, which you want to,
22 you need to count the zeros for Apple; correct?

23 A. I think that could be a reasonable approach.

24 Q. If you count the zeros for Apple, then your effective
25 commission is going to be a lot less than 25%, is it

- 1 not?
- 2 A. I have not done that calculation.
- 3 Q. But it is, is it not? It is going to be a lot less than
- 4 25%? It has to be, does it not?
- 5 A. But these are not -- again, these are not Apple
- 6 transactions. But I have not done that calculation.
- 7 Q. Now, you say that the Epic Games Store, your primary
- 8 counterfactual is best modelled by the Epic Games Store
- 9 with 12% commissions; yes? That is your --
- 10 A. I think it is Epic and Microsoft are both 12 and 15%
- 11 actually.
- 12 Q. You are right. Let us take Epic first. You know, do
- 13 you not, that the Epic Games Store is operating at
- 14 a loss?
- 15 A. I have read Professor Hitt saying that, yes.
- 16 Q. It is not reasonable, is it, to select as a benchmark
- 17 the commission of a firm that is operating at a loss?
- 18 A. It depends on why they are operating at a loss. If they
- 19 are literally losing money on each transaction, that
- 20 could make it an infirm benchmark, but I do not think
- 21 that is the case. You could operate at a loss for a
- 22 myriad of reasons. You could operate at a loss because
- 23 you have not recovered your fixed upfront costs because
- 24 you have not achieved the economies of scale.
- 25 Q. You do not know why they are operating at a loss because

1 you have not analysed that in your reports at all, have
2 you?

3 A. Well, I do not -- I deeply -- well, I do know the
4 marginal cost at least here for what Apple incurs, and I
5 think it is reasonable to infer that Epic's incremental
6 cost of providing services for a given transaction are
7 going to be below 12%. I think it is unreasonable to
8 believe that Epic is losing money on each transaction.

9 Q. But you have no -- so Professor Hitt pointed out, as you
10 say, in his report, that the Epic Games Store does not
11 provide a relevant benchmark because it is not
12 profitable, and you saw that, yes?

13 A. But I just told you it is wrong to reject it on that
14 basis alone if the reason why they are incurring a loss
15 is that while they are making money on each transaction
16 they have not recovered their upfront costs.

17 Q. But you, you did not -- in your report, in your
18 responsive report, you did not address that point. So
19 you did not even mention that the Epic Games Store was
20 not profitable, let alone start analysing why that was?

21 A. Because I am confident that Epic is not losing money on
22 each transaction at 12 and 15%.

23 Q. You are confident because what?

24 A. Because I have seen the marginal costs in this industry.
25 It is not costing them 12.5%. They are probably paying

1 a payment processor somewhere in the order of 2%, and
2 then they might have other incremental costs as well,
3 but not enough to take them into the red.

4 Q. Did you follow the evidence that Epic's executives gave
5 at the Epic v Apple trial in Australia last year, in
6 April 2024?

7 A. No.

8 MS DEMETRIOU: Let us just look at that, or is this a
9 convenient ...

10 THE CHAIRMAN: How much longer do you have on the question?

11 MS DEMETRIOU: I could do this topic or I could break now.

12 THE CHAIRMAN: Why do we not take the break now, because it
13 has been quite a lot for the transcriber.

14 Thank you.

15 (11.42 am)

16 (A short break)

17 (11.55 am)

18 MS DEMETRIOU: Dr Singer, you said that you did not follow
19 Epic's evidence in Australia, but I just want to show
20 you part of it. So Mr Allison, who is a vice president
21 of Epic, and general manager of the Epic Games Store,
22 gave evidence in those proceedings, and he was
23 cross-examined.

24 If we go to {G2/16/23}. So the set-up -- the way
25 this is set out is a little tricky to follow, because

1 the questions and the answers are in the same
2 paragraphs, but I will take you through it. Again, what
3 I am going to do is show you the material and then ask
4 you questions at the end.

5 So if we pick it up at line 27 in this document, he
6 is being asked about an internal document, an internal
7 Epic Games Store document from June 2018.

8 Then if we go to line 40, we see that he is taken to
9 a heading in the document "Diesel PC goals".

10 Then if we go over the page {G2/16/24}, the second
11 bullet in the document says:

12 "\$1 billion [plus] platform quickly - as early as
13 2019."

14 Then at line 14, a question about another bullet in
15 the document, so:

16 "The likely path to Diesel's first billion in annual
17 gross revenue inclusive of Fortnite's PC revenue (est
18 \$500m) is 30-40 additional titles performing at \$15m
19 average rev/title annually."

20 So just pausing there, this is describing a strategy
21 of reaching \$1 billion in revenue annually, and they are
22 saying that half of that would come from Epic's own
23 game, Fortnite, and the other half was to come from
24 third-party developers, so 30-40 games.

25 If we go to page --

1 A. Well, additional titles.

2 Q. Additional titles.

3 A. I do not know if we know -- it is not clear that is from
4 third parties.

5 Q. So that is what he then -- he then explains that, do you
6 see below? So he says:

7 "... the first billion dollars in revenue was,
8 effectively, a 50-50 split between first-party and
9 third-party?"

10 That was the question.

11 Then he says:

12 "That's correct."

13 So do you see that?

14 Then the question:

15 "And you thought that could be achievable as early
16 as 2019?"

17 He says:

18 "At that time we did, yes."

19 Then if we go to page 24 -- sorry, that was page 24.
20 Can we just go back. Sorry, I am getting mixed up. So
21 bottom of the page. So if you can go to -- that is
22 right.

23 So then we see -- we then see that the question is:

24 "... you did think of the strategy as depending upon
25 the combined effect, in particular, of the commission

1 rate, the free game strategy and the exclusive titles
2 strategy? -- Yes. That's correct."

3 Then at the bottom:

4 "... the combined effect of those strategies was
5 intended to be disruptive to a model which you saw as
6 being fairly well entrenched in the Steam distribution
7 platform?"

8 Again, he says:

9 "Yes."

10 So that was the plan at the time, \$1 billion
11 annually. Are you aware of where Epic Games' gross
12 revenues have reached?

13 A. I do not have a figure for you, sitting here.

14 Q. So if we go to page 28 of the transcript, of this
15 document {G2/16/28}, at the end of the page he is asked
16 the question:

17 "Now - and in terms of total revenues across
18 first-party and second-party and third-party titles, you
19 still haven't hit a billion dollars, have you? -- No.
20 We got close this year, but no, not yet."

21 Then I want to show you this document {D1/1687/1}.
22 This is an Epic Games Store document, "Epic Games Store
23 2023 ... in Review", and if we look at the third
24 paragraph, please {D1/1687/2}, it says that:

25 "Players spent \$310 million on 3rd party

1 applications, down 13% year over year."

2 So my question is the Epic Games Store is actually
3 going backwards, so far as sales on third-party -- so
4 far as sales of third-party developers' games are
5 concerned; correct? Did you know that?

6 A. I do not -- I did not know the trajectory of their sales
7 of third-party games on the Games Store over time. I do
8 not have that memorised now.

9 Q. It was launched over six years ago, was it not, the
10 Epic Games Store?

11 A. That sounds right. I do not know the exact --

12 Q. It is still unprofitable, is it not? It is burning
13 through hundreds of millions of dollars, year after
14 year?

15 A. I do not know the cite for Professor Hitt's
16 "unprofitable" claim. I do not know what year that is
17 from.

18 Q. It is a commercial failure, is it not, Dr Singer? So it
19 does not tell us what a competitive price would be in
20 the counterfactual, does it?

21 A. No, that is not true, for the reasons I stated already.

22 Q. Now, Mr Sweeney also gave evidence in Australia, and if
23 we can go to {G2/12/41}, he gave evidence regarding the
24 Epic Games Store's payment services, and I just want to
25 show you that and then ask you about.

1 A. Okay.

2 Q. So if we look at line 20:

3 "Could I draw your attention to the second sentence
4 of the paragraph:

5 "'Mr Allison informed me that some of these
6 developers advised the EGS team that they were unable to
7 use EDP [that is the payment service that the Epic Games
8 Store offers] because a number of their older games
9 relied on purchases that were not compatible with EDP'.

10 "Do you see that" -- And Mr Sweeney said "Yes".

11 "It wasn't just that developers didn't want to use
12 EDP; it was that some of them couldn't use it; correct?"

13 He says:

14 "Well, with respect of the two I am most familiar
15 with, they couldn't use it quickly. If they had spent
16 more time [maybe they could have done]."

17 Then we see just under 40:

18 "The truth is that EDP at this time was a difficult
19 and tedious system for users to integrate with;
20 correct?"

21 Mr Sweeney says:

22 "Generally it was, yes."

23 So Mr Sweeney's evidence is that the Epic direct
24 payment system, his own evidence, was a difficult and
25 tedious system for users to integrate with and that

1 developers could not use the system quickly; yes, you
2 see that?

3 A. Yes.

4 Q. So there would have been incentives, technical
5 incentives, would there not, for developers to use
6 a third-party processor; yes?

7 A. For the ones that were having difficulties, yes.

8 Q. Well, for anyone, because Mr Sweeney's own evidence is
9 that the service he was providing was "difficult and
10 tedious"?

11 A. Yes, I do not know if he is speaking to all developers
12 or just some developers, but the text really speaks for
13 itself that some developers -- well, certainly
14 developers, potentially all, I just do not have enough
15 context here, were experiencing problems with the
16 payment mechanism.

17 Q. He is saying two things. He is saying that some
18 developers at least found it slow, and he is saying that
19 the EDP -- he accepts the proposition that the EDP, so
20 the service itself, was generally a difficult and
21 tedious system for users to integrate with.

22 So just looking at his own testimony, I think we can
23 conclude, can we not, that the services offered by the
24 Epic Games Store are of inferior quality to the App
25 Store; yes?

1 A. I think that is a pretty broad brush. I think you could
2 say they encountered difficulties, as most entrants do.
3 The question we are trying to resolve is does the 12-15%
4 represent a competitive benchmark and were they
5 incurring losses on every transaction at the margin,
6 right? Could they really possibly be incurring a cost
7 in excess of 12-15% on each transaction? I think that
8 is implausible.

9 Q. You did not look in your report, did you, about -- you
10 did not analyse the quality of the Epic Games Store and
11 compare it to the App Store?

12 A. No. No.

13 Q. But if there were -- if there are, as we say, marked
14 differences in the quality, those would need to be
15 factored in, would they not? I think you accepted
16 yesterday that material differences do need to be
17 factored in when drawing comparisons?

18 A. I think if it was a material difference, such that it
19 caused a platform to be impaired in its ability to
20 compete effectively, that one can try to make such
21 corrections. I think that quality differences would be
22 very difficult, as a practical matter, and your experts,
23 of course, did not do so either.

24 Q. Well, would you agree that where Mr Sweeney himself is
25 saying that his service is difficult and tedious, that

1 that is an important factor that needs to be taken into
2 account?

3 A. I do not think that it was to the level of impairment
4 such that they could not compete. I think there are
5 a billion reasons that he is offering to get this sorted
6 out, and any entrant is going to encounter difficulties
7 when they try to go up against an incumbent.

8 Q. Let us go to {D1/1576/1}. So this is an article from
9 Forbes from November 2023. If we go to page 2, please
10 {D1/1576/2} --

11 A. Okay.

12 Q. -- and look at the last paragraph that we see there, he
13 says -- the writer says:

14 "It is not exactly shocking to learn that the
15 Epic Games Store is still not profitable when (A) it
16 spends millions on free games to give away, (B) it
17 spends millions on timed exclusives, (C) it has its
18 promised 88-12 [developer]-favoured revenue split."

19 So the authors of this article are saying one of the
20 reasons the store is not profitable is because of the
21 low commission rate; do you see that?

22 A. The author lists three. I do not know if this is
23 authoritative. Where did you say this is from?

24 Q. This is Forbes.

25 A. I would not put much stock into this.

1 Q. Well, Dr Singer, you rely on material from Forbes in
2 your own report, so shall we just discount any reliance
3 you place on material from Forbes as well?

4 A. I think that if -- I would not rely on Forbes to make
5 an economic inference of that import. You know, you
6 could rely on Forbes for a fact, perhaps. But I would
7 not go to Forbes for the economic reason why Epic is
8 losing money.

9 Q. Then let us go over the page:

10 "... most importantly, gamers do not want to use it
11 because it is just not a good store front. It is
12 feature-inferior to Steam in every single way,
13 originally launching without basic functionality like
14 a shopping cart or user reviews. The only way most PC
15 players use the Epic Games Store now is to log in to get
16 free games, then leave, or maybe to buy something that's
17 a timed exclusive. Though half the time they'll wait
18 for Steam. It's not a good storefront either
19 conceptually, offering nothing of real value as a valid
20 alternative to Steam, while also being a technically
21 inferior product in almost every way."

22 Now, those are obviously factors that need to be --
23 need to be factored in when making a comparison about
24 commission levels, do they not?

25 A. None of this speaks to whether the 12-15% is causing

1 them to lose money. To do that at the margin, their
2 costs for each transaction would have to exceed 12-15%,
3 and you have not shown me any evidence of that.

4 Q. Well, what you have here is an entrant which is trying
5 unsuccessfully to compete with Steam, it is losing
6 money, and it is certainly not a good benchmark, is it,
7 for the commission that Apple would charge in the
8 counterfactual?

9 A. You seem to be upset about how generous they are being
10 with their free games. So it seems like an entrant must
11 be generous, though not necessarily on the commission
12 dimension, that is just one dimension. But they are
13 giving away a bunch of free stuff. That could be
14 contributing to their losses.

15 So this is how entrants attack. They attack
16 sometimes, especially well-heeled entrants, they attack
17 by incurring losses. If you think about the way that
18 Uber took out the taxi business, they ran losses in the
19 billions of dollars for a decade before they were able
20 to get their footing in the --

21 Q. Dr Singer, it is not a good benchmark because it is
22 a very low quality product; that is right, is it not?

23 A. No, I am not ready to say that it is not a good
24 benchmark on that basis.

25 Q. But you have not looked at the quality, I think we

1 established before?

2 A. I do not think your experts have made any attempt to do
3 a quality adjustment, and just sitting here, it seems
4 like it would be very difficult to figure out how you
5 would take the 12-15% up to account for an alleged
6 quality diminution.

7 Q. Dr Singer, they have made such an attempt, but I will
8 leave that. They have flagged the problems and said it
9 is not a good comparator. But I will move on to look at
10 the Microsoft Games Store, which is the other benchmark
11 that you place most weight on.

12 It is right, is it not, as a matter of fact, that
13 from the start of the claim period in 2015 until
14 October 2017, the Microsoft Store charged a 30%
15 commission for all apps; yes?

16 A. I think that it is -- I do not know the exact
17 trajectory, but it is conceivable that Microsoft started
18 off higher and also came down.

19 Q. Then in October 2017, it started charging a headline 15%
20 for non-gaming apps but maintained a 30% commission for
21 gaming apps; correct?

22 A. It -- I will accept that. I do not have the entire
23 trajectory memorised.

24 Q. Then in August 2021, it reduced the commission for
25 gaming apps to 12%, which is what you rely on now.

1 So it is right, is it not, then, that it follows
2 that for the majority of the claim period, it was
3 charging 30% for gaming apps even though it was trying
4 to compete with Steam?

5 A. I think that we are not trying to find the year of the
6 Microsoft, we want to know what Microsoft did in
7 a competitive environment. So if it took -- it took
8 time for Epic, the Epic entry and competition to unfold,
9 we want to see how Microsoft was pricing in
10 a competitive equilibrium.

11 Q. It is also, in terms of market share, a completely
12 insignificant store, is it not, the Microsoft Store?

13 A. I do not know Microsoft's share, sitting here.

14 Q. If we go to your report {C2/15/13}, and if we look at
15 footnote 36. Can we put the previous page up next to
16 this one, please. The bottom of the previous page
17 {C2/15/12}.

18 So you say there that Steam -- yes, so you say, at
19 the bottom of paragraph 21, that:

20 "... Steam is estimated to account for a high
21 percentage of all PC gaming sales ..."

22 Then you have footnote 36, and in that footnote you
23 refer to one estimate which suggests that Steam had 85%
24 of the PC game distribution market in 2022, and with
25 Epic at 15%. So it follows that Microsoft must have had

- 1 close to zero; correct?
- 2 A. No. It says Steam is estimated to control roughly three
3 quarters, followed by Epic, and it is a pretty big bound
4 of uncertainty, 2-15%, so you would have to do the maths
5 to see what is left over for Microsoft. It is not zero.
- 6 Q. Then you say Steam has 85%. But anyway, let us not
7 quibble about precise numbers. On any basis it is tiny,
8 is not it?
- 9 A. I do not know where I say 85, but okay, it is below --
10 they are definitely third after Epic, yes.
- 11 Q. It is tiny, and that is despite Microsoft being
12 a massive software company and also a games company
13 specifically?
- 14 A. Is it tiny? I do not know if I am ready to say tiny.
15 But it is below 15%, if they are the third.
- 16 Q. Then, again, in terms of quality, there is a substantial
17 volume of reporting from the gaming and technical press
18 criticising the Microsoft Store for its bad quality;
19 correct?
- 20 A. I am sure you can find bad reviews of many stores.
- 21 Q. But you have not investigated this, again, have you?
- 22 A. No.
- 23 Q. Now, I just want to go to {C2/8/106} in your report.
- 24 A. Okay.
- 25 Q. Now, this is in the context of your modelling rather

1 than your benchmark analysis.

2 A. Okay.

3 Q. So I am looking at market shares. You are considering

4 what market share Apple would have in the

5 counterfactual, and your models do not, themselves,

6 estimate what the market share is, do they? So you are

7 looking at comparators?

8 A. No, they are -- these are the economic models of RT and

9 LP, I will say for shortness.

10 Q. Yes.

11 A. They take the market share as an input, and there is

12 an agreement, at least between me and your expert, as to

13 the 50% counterfactual market share.

14 Q. No, we say there is not agreement, but I want to look at

15 your evidence. So you look at comparators, do you not,

16 you reach some comparators for the input, yes?

17 A. As you must. We are having to model the world --

18 Q. Not a criticism.

19 A. Model the world of what could simulate the look and feel

20 of how Apple's share would be in the absence of the

21 restrictions.

22 Q. I am not criticising you looking at app comparators,

23 I am critical of what your comparators are. Because if

24 we look at paragraph 219, please, of your report. So

25 the first comparator that you look at is Apple's device

1 market share. Sorry, it is 218, I think. 217, sorry,
2 I am getting ahead of myself.

3 So the first comparator that you look at in
4 paragraph 217 is Apple's device market share; correct?

5 A. Yes.

6 Q. But that is a completely different product, is it not?

7 A. I think it is unfair to say a completely different
8 product. It is in the realm -- you know, we have
9 a digital product, it involves the same player, it is
10 just in a market which they do not dominate as
11 thoroughly.

12 Q. But it is not a digital product, it is a phone, is it
13 not, so it is not the same thing at all.

14 A. But a phone provides digital services, it does not
15 provide physical services.

16 Q. Now, in your iOS distribution market, the only
17 consumers are the percentage of device consumers who
18 choose Apple; yes?

19 A. I do not know if it is unit share or revenue share. You
20 will have to take me to the footnote, which is being
21 suppressed right now.

22 Q. No, sorry, I am asking you in your iOS distribution
23 market.

24 A. Okay.

25 Q. So the only consumers are the percentage of device

1 consumers who choose Apple; yes?

2 A. I am not sure I am following that question.

3 Q. Who choose Apple devices. So that is the pool of

4 consumers we are looking at in your iOS distribution

5 market.

6 A. Remember, my iOS distribution market is a two sided

7 market and Apple is the monopoly provider in that

8 market. But I do not understand your question.

9 Q. Well, the end users that you are looking at in the iOS

10 distribution market are people that have bought an Apple

11 device; yes?

12 A. Yes.

13 Q. So the fact that there are tens of millions of consumers

14 in the UK who do not buy Apple devices tells us nothing

15 about the proportion of the other tens of millions who

16 do buy Apple devices that would choose to use the

17 App Store in the counterfactual, does it?

18 A. Actually, it tells you a lot, and here is why. The

19 reason why the device market shares is a reasonable

20 approximation of the share that Apple would have in our

21 primary market is, in contrast to this aftermarket, you

22 know, the app distribution and in-app services, Apple is

23 fighting in a more open and competitive environment in

24 this upper layer, the pre-market, the device market.

25 So it is reasonable to say when consumers are given

1 freedom to choose between Apple and a rival, namely the
2 Android-based phones, how do they tend to choose, and it
3 seems like they tend to go 50/50. So I thought that was
4 reasonable -- one reasonable place.

5 Now, to be fair, I have got many, many benchmarks
6 that I look at for shares. It is not just the device
7 market. We are looking at how incumbents generally fare
8 in general across a range of digital services. You
9 know, we go through -- Professor Sweeting likes to use
10 the Epic share loss as an example. He goes 50, which is
11 39 plus a fudge factor of 11, so ...

12 Q. Let us look at your next one, Dr Singer, so if we go to
13 paragraph 218 {C2/8/107}. So your next comparator is
14 AT&T which was broken up by US anti-trust enforcers in
15 the 1980s. But telecoms services in the 1980s has
16 nothing to do with app distribution in the 21st century,
17 it is just a random comparator, is it not?

18 A. I do not think it is fair to call it random. What I was
19 looking for is when, and unfortunately, or fortunately,
20 depending on your view of anti-trust enforcement, we do
21 not have many examples of a firm being forced to
22 unbundle or unwind a tying arrangement, so we have to
23 look back quite a bit, and we found one in the AT&T case
24 where AT&T was forced, by this MFN consent decree in the
25 1980s, that it could no longer leverage its power from

1 the local services into the long distance markets. Then
2 we watched how the long distance markets opened up in
3 the United States. AT&T used to have 100% share and
4 their share quickly declined, despite the fact that they
5 had the name brand recognition and other incumbent
6 advantages.

7 So I thought looking at how AT&T's share fell in
8 a tied market was a reasonable place for one of several
9 potential inputs into the share loss, and it comes out
10 again to the same place as Professor Sweeting at 50%.

11 Q. Then you also reach for aluminium manufacturing. But it
12 is striking, is it not; these are industries which are
13 very far away from the present, and the one that you are
14 shying away from is the Google Play Store, which is app
15 distribution in the 21st century, and which has a 90%
16 share of transactions, but we have covered that.

17 A. We have explained why that is a horrible benchmark, but
18 we do not need to go back there.

19 Q. Now, I want to turn to your payment system
20 counterfactual.

21 A. Okay.

22 Q. So the counterfactual world you are envisaging here is
23 that iOS apps would continue to be distributed through
24 the App Store only; correct? But then in-app purchases
25 could be made through other competing payment services

1 providers?

2 A. Sorry, in the payment counterfactual? Yes, we are going
3 to allow the other restraint to remain in place, the
4 distribution restraint, yes --

5 Q. That is right.

6 A. -- and we are going to only consider what the shares
7 would be if the tie were removed. That is correct.

8 Q. So all distribution is through Apple's App Store, but
9 then you can have third-party -- you call them
10 aftermarket service providers, happy to use that
11 terminology, are able to provide competing payment
12 services; correct? That is what we are looking at?

13 A. In-app support services, yes.

14 Q. So your position is that in this counterfactual world
15 that we are thinking about now, where a developer makes
16 an app available for free download, and uses a competing
17 payment processor for IAP, let us call it Paddle to keep
18 things simple.

19 A. Mm-hm.

20 Q. So a developer makes its app available for free download
21 on the App Store, and then uses Paddle for the in-app
22 purchases, Apple would impose no charge at all. That is
23 the basis upon which you are proceeding; yes?

24 A. Yes, that Apple would be barred from imposing a finite
25 penalty price for breaking the bundle. I mean, if we

1 are going to break the tie, if we are going to say that
2 the tie is illegal, then Apple cannot recreate the tie
3 by charging a finite penalty price as opposed to the
4 current infinite penalty price.

5 Q. But your position is that Apple would not charge for its
6 distribution services of making the app discoverable and
7 downloadable on the App Store at all; yes?

8 A. Well, this is the conversation we had yesterday, that,
9 yes, Apple would not impose a new fee. I think your
10 position is that the only compensation for access to the
11 technology is through the commission, but of course
12 Apple allows many developers on to its App Store that do
13 not monetise through a fee, through a commission, right?
14 They only monetise through free games, only free games,
15 or they monetise through in-app advertising, or they
16 monetise through the sale of physical, like Uber. Apple
17 does not charge any of those developers anything, aside
18 from the \$99, and yet your contention is they must --
19 they must -- use a commission for compensation.

20 Q. I am not making any contention at the moment, I am just
21 trying to elucidate the factual parameters of your
22 counterfactual. Let me try again.

23 Yesterday we talked about -- I gave an example of
24 a huge games developer, so Supercell, which makes Clash
25 of Clans; yes?

1 A. Yes.

2 Q. On your -- on this payment system counterfactual, let us
3 say Supercell distributes the game through the
4 App Store, because we are allowing the distribution
5 restriction in this counterfactual, so Clash of Clans is
6 distributed to consumers through the App Store, but
7 Supercell decides to use Paddle for all in-app
8 purchases; yes? Take this hypothesis.

9 A. Okay, it is an extreme one, but go ahead. That is not
10 exactly how I am contemplating this to unfold. What I
11 am contemplating is you would give your customers
12 a choice as to which kind of payment processor they
13 would like to use.

14 Q. Who would give their customers a choice? The developer?

15 A. The developer could, that is one way to get -- it is not
16 clear that all developers would say: we are going with
17 Paddle. Some developers would stick with Apple, some
18 would say: we are going to allow choice for the
19 consumer.

20 Q. Why would a developer do that?

21 A. Because it pays to play the payment processors off each
22 other, the in-app support services against each other.
23 Just like I said in the App Store distribution market,
24 you were trying to create an either/or. I actually
25 think that most developers, in my counterfactual, when

1 you have multiple app stores you want to be on both.

2 You do not want to miss the Apple action.

3 Q. There is a difference, though, is there not, Dr Singer,
4 between multiple app stores for distribution and then
5 multiple payment processors. So are you envisaging some
6 kind of world in which the game Clash of Clans is
7 distributed just on the App Store, because we are within
8 your payment systems counterfactual --

9 A. Yes.

10 Q. -- but then you get into the game and, what, there are
11 multiple buy buttons where the consumer can divert to
12 different payment processors, is that what you are
13 envisaging?

14 A. One possibility is that a developer basically holds
15 an exclusive auction and says: look, I am going to play
16 the two of you off each other. Whichever gives me the
17 better deal is going to get my payment processing. That
18 is one possibility. That by itself would put downward
19 pressure on the commission.

20 We talked about steering the other day, which is
21 that, you know, you could try to induce your users by
22 saying: Apple is staying too high on its payment
23 processing, they will not come down off, say, the 15%,
24 but I have a rival over here, Paddle, who will do it for
25 10, and given the 5 percentage points I will give you

1 some of the saving.

2 Or you could say: here are some of the options,
3 consumer, you make the choice. You could do steering
4 inside of this third scenario too. You say: you choose
5 for all of your purchases which processor you would like
6 to use.

7 Q. All right, so take your first possibility, which is that
8 a developer picks the cheapest, yes?

9 A. Yes.

10 Q. So let us say Supercell picks Paddle, because it is the
11 cheapest, for Clash of Clans, right?

12 A. Yes.

13 Q. So in that scenario, it is right, is it not, that Apple
14 would not get a penny?

15 A. For that scenario. But that is not what I think is
16 going to be characteristic of -- across all scenarios.

17 Q. Stick with the scenario --

18 A. As you know, Apple is going to continue to capture
19 a bulk, if not the majority, of the aftermarket
20 transactions in all of my scenarios.

21 Q. Right. Sticking with this scenario, please, Dr Singer.

22 A. Okay.

23 Q. Apple would not get a penny, but it would be providing
24 Supercell with valuable services, would it not, because
25 it would be providing it first of all with distribution

1 services, so all the app discovery services and so on in
2 the App Store?

3 A. In return, it would continue to collect the \$99 fee or
4 whatever Apple wanted to charge for that upfront.

5 It bears noting, by the way, that even if -- and
6 I do not know if any of your experts have even
7 contemplated this, but even if Apple were to try to seek
8 recovery by raising the upfront charge, say, from 99 to
9 199, because the upfront is a fixed cost, economics
10 would dictate that it would not enter into the marginal
11 pricing -- the pricing decisions of the app developers,
12 because only marginal costs enter into the pricing
13 decision of the app developers. I just put that out
14 there.

15 Q. Dr Singer, can I go through my questions, and then if
16 you have anything else to say you are very welcome to
17 say it at the end.

18 But the question I asked you was: Apple, in this
19 scenario, would be providing Supercell with distribution
20 services, and I think you agreed with that, yes?

21 A. And being compensated for them, yes.

22 Q. Well, hang on, and it would provide -- Apple would also
23 be providing Supercell with the right to use Apple's
24 intellectual property; yes?

25 A. Yes. Just as Apple provides Uber the right to use its

1 intellectual property today without charging it
2 a commission on Uber's transactions.

3 Q. Paddle would be charging, say, a 10% commission on Clash
4 of Clans in-app purchases in your scenario; yes?

5 A. Yes, Paddle -- that is for the comparable, but I think
6 the Landes and Posner model takes us a little below
7 that, right.

8 Q. All right, 8, 9, whatever you want?

9 A. So that would vary between the competitive rate, like
10 what the attackers would be charging would be somewhere
11 between 6.5 and 10%.

12 Q. So Paddle would be earning literally billions of dollars
13 on these in-app purchases, and you say that Apple has to
14 make do with the \$99 fee per year. Is that your
15 position in this counterfactual?

16 A. Well, I do not know how you got to billions. Paddle's
17 margins would be the difference between what it charges,
18 say 10%, and I think they might have to be more
19 aggressive. In a competitive market they probably would
20 actually have to come down.

21 Q. Let us say 8%. 8% of billions is hundreds of millions,
22 is it not?

23 A. No, but they do not get to keep -- the 8% does not fall
24 to the bottom line, it is 8% minus Paddle's marginal
25 costs.

- 1 Q. 8% of revenues?
- 2 A. No, no -- yes, 8% of revenues, that is the commission.
- 3 Then if Paddle incurs the same -- if they have the same
- 4 cost structure as Apple's, we know from Mr Dudney that
- 5 that is about 6.5%. So the margins are slight. I think
- 6 Paddle's margins would be, if I am doing the math, 8
- 7 minus 6.5 would be about 2.5%.
- 8 Q. So the developer would pay Apple nothing for what it
- 9 provides, for everything Apple provides, and the payment
- 10 processor would be free-riding on Apple's investment,
- 11 correct? That is not a realistic counterfactual, is it,
- 12 Dr Singer?
- 13 A. No, I disagree with the parameters. Again, the
- 14 developer continues to pay Apple an upfront fee of 99,
- 15 or even higher if Apple wants in the but-for world, and
- 16 the developer is then free to choose between Apple and
- 17 Paddle and whoever else is offering in-app support
- 18 services in this aftermarket.
- 19 Q. Now, just thinking about Paddle some more, because you
- 20 have said in your second report, have you not, that this
- 21 counterfactual is best modelled by Paddle; yes?
- 22 A. I think I would do it two ways, one time with Paddle and
- 23 one time with the Landes and Posner estimate.
- 24 Q. I am sticking with Paddle. I am going to leave the joy
- 25 of the modelling to Mr Piccinin.

1 A. Okay.

2 Q. Did you see Mr Owens' evidence at this trial? So he
3 gave evidence in relation to Paddle. Did you see any of
4 the transcripts of that?

5 A. No.

6 Q. So Mr Owens told the Tribunal that Paddle has no plans
7 to launch a service in respect of iOS apps in the EU,
8 despite the fact that the payment systems restriction
9 does not apply in the EU, and I just want to show you
10 what he said, and then I can ask you a question.

11 A. Okay.

12 Q. So if we can go to transcript {Day4/131:1}.

13 Perhaps we can take it from the previous page, the
14 bottom of the previous page.

15 A. Okay.

16 Q. So you can see the Chairman of the Tribunal asked
17 Mr Owens a question, and he said:

18 "You will see you have just been previously asked
19 a question about opportunities in the EU and South Korea
20 and you say [that] one [of] the substantial barriers
21 that are put in place on Paddle and developers' ability
22 to use it commercially [to use the opportunity
23 commercially]."

24 Then the Chairman says:

25 "Can you explain what you mean by 'the substantial

1 barriers that are put in place commercially'?"

2 Mr Owens says:

3 "Answer: ... I think they are numerous but I think
4 the primary one is the amount of additional kind of work
5 that these developers have to go through in order to
6 release a separate build of their application that is
7 tailored for a specific market, so that they can
8 distribute that version of their application in that
9 market, including something like Paddle's SDK within it.
10 Whereas, they would have to build a separate version of
11 their application to distribute in other markets as
12 well."

13 So what we see there is the primary reason Mr Owens
14 is giving for Paddle not entering in the market in the
15 EU, even though there is no payment system --

16 A. I am sorry, and Mr Owens is who?

17 Q. Mr Owens is the Paddle -- I think he is the chief
18 executive, he is certainly the founder of Paddle, and he
19 is relied on -- he is the witness that is relied on by
20 Dr Kent to give evidence in relation to Paddle. But
21 also, Dr Singer, just to remind you, you rely quite
22 extensively on Mr Owens' evidence in your own reports.

23 A. Yes. I just could not connect the last name. Got it.

24 Q. Right. So we know who he is now. His evidence is that
25 the key reason for Paddle not entering the market in the

1 EU now that there is no payment system restriction is
2 a commercial one relating to the fact that developers
3 would have to build an EU-specific version of their app,
4 and that it is not in their interest to do that. They
5 do not want to tailor apps for different jurisdictions,
6 and you have got no basis to disagree with his factual
7 evidence about that, have you?

8 A. No, of course I could not disagree with the factual.

9 I think there is a bigger impediment to that, which
10 is, of course, Apple's penalty price for breaking the
11 bundle. That is, to me, the elephant in the room. But
12 I cannot speak to the technical requirements that would
13 be needed to make a third-party payment processor work
14 in the but-for world.

15 Q. One would have thought if it was the elephant in the
16 room that Mr Owens would have mentioned it, and he did
17 not?

18 A. I do not know if anyone asked him about it.

19 Q. We can see that the Chairman did in fact ask him to
20 elaborate on what the commercial reasons were, but
21 anyway, we can pick that up in our submissions.

22 I just want to go to a different part of the
23 transcript. If we go to {Day12/71}, and I am just
24 showing you the counterfactual case that the Class
25 Representative is putting. If we look at -- so

1 Mr Kennedy, as you know, is one of the counsel for the
2 Class Representative, and at the bottom of the page at
3 line 20, 21, he says:

4 "... when we consider the counterfactual in this
5 case, we are just looking at what happens if we remove
6 the payment system restrictions ..."

7 A. I cannot -- could you tell me the line?

8 Q. I am so sorry, line 21, so the bottom of the page.

9 A. Oh, okay.

10 Q. So he says:

11 "... when we consider the counterfactual in this
12 case, we are just looking at what happens if we remove
13 the payment system restrictions, and in this case it is
14 confined to the UK storefront and UK consumers."

15 So the Class Representative's case is that in the
16 counterfactual, the payment system restriction would
17 only be lifted for the UK storefront, and on that basis
18 it is -- and taking into account Mr Owens' evidence, it
19 is very unlikely, is it not, that developers would find
20 it worthwhile to build a different version of their apps
21 for the United Kingdom?

22 A. No, I would disagree. I would disagree with that.

23 There is so much money at stake. If you could -- if you
24 are paying 30% today and you could have the opportunity
25 to transact instead 10% on all of your sales, that is 20

1 percentage points' worth of reasons to try to figure out
2 a way around the Apple tax.

3 Q. Again, that assumes, does it not, in your
4 counterfactual, that no payment is being made to Apple?

5 A. No. You know that that is not true, that is not what
6 I am assuming in my counterfactual. Apple grabs the
7 majority of the payments.

8 Q. Well, on any revenues -- any revenues that the
9 developers make that are on transactions that are
10 processed by a different processor, Apple would earn
11 nothing?

12 A. At the margin, they would not. They would continue to
13 make the \$99, whatever upfront fee they wanted to charge
14 for access to the store.

15 Q. Did you know that when the 99 fee -- when that point was
16 put to Mr Owens, Mr Owens said: well, if all Apple was
17 charging was \$99, that would be undercharging. Do you
18 agree with him about that?

19 A. Do you mean in this counterfactual the 99 would be ...

20 Q. Yes.

21 A. I have not seen that testimony, but as I said about five
22 minutes ago, if Apple were to raise the 99 in the
23 counterfactual world, that would not have any effect on
24 the pricing as a matter of economic theory that
25 developers would charge to their customers, so I think

1 that that would be fine for my counterfactual.

2 I did not assume that as a key linchpin of my
3 counterfactual. I am just saying that even if Apple
4 were to react that way, that would not affect pricing as
5 a matter of economics. Prices are set at the margin,
6 based on marginal cost at a mark up over market cost.

7 Q. We have discussed South Korea, and you made the point --
8 you can see in South Korea and The Netherlands there are
9 no payment system restrictions, but, again, we do not
10 see competition from Paddle in those jurisdictions.

11 A. Right, in both of those we have penalty prices as well
12 that would make it almost impossible for a rival to
13 compete.

14 Q. Now, I just want to show you Mr Holt's report. Sorry,
15 just bear with me a second.

16 A. Sure.

17 Q. Yes, so I want you to assume that I am right that Apple
18 would be, in your counterfactual, entitled to charge
19 developers a fee for its -- a commission for its
20 services and for using its tools and tech. I know you
21 do not agree, we have been round the houses on that, but
22 can you assume that I am right about that, and if that
23 is right, then I want to show you what Mr Howell said
24 about this, so Day 8 --

25 A. Did you mean to say -- you said Holt before.

1 Q. Howell, so you have also relied on Mr Howell's evidence.
2 Mr Howell is the app industry expert.

3 A. Okay.

4 Q. So Mr Howell, {Day8/220:1}. Lots of Hs in this case,
5 and lots of Ss, you and Professor Sweeting.

6 A. Guilty as charged.

7 Q. Day 8, page 220. We can see at the very bottom of the
8 page the question:

9 "Question: If a developer had to pay ..."

10 A. I am sorry, can you tell me the line. It just makes it
11 easier.

12 Q. Yes, line 25 at the very bottom. Then we go over the
13 page {Day8/221:1}. So if you read the first few lines.
14 (Pause)

15 So you see that Mr Howell is accepting that if in
16 the counterfactual Apple were entitled to charge
17 a commission for its distribution services and its tools
18 and technology, then there would be very limited
19 scenarios in which a developer would choose to pay Apple
20 and pay the alternative payment service provider; do you
21 agree with that?

22 A. I think I do, but if Apple is allowed to reconstitute
23 the anti-competitive tie with a finite penalty price
24 then we are not going to get to very different outcomes,
25 but I understand that the tie is the challenged conduct

1 and so cannot exist in any form in the but-for world.

2 Q. Now, let us go to a table in Mr Holt's evidence, so

3 {C2/10/142}. So have you seen this table before?

4 A. I feel like I saw it yesterday, perhaps.

5 Q. Yes, so if you look at the fourth column, so "Tied

6 in-app aftermarket services", do you see that column?

7 A. Yes.

8 Q. You can see that nearly all of the app distribution

9 platforms that Mr Holt lists here require in-app

10 purchases to be made through the same platform; yes?

11 A. Yes, this is not surprising. Either they are

12 monopolists, in which case they do not allow it by

13 design, or they are in a competitive market, in which

14 case the tie is not as offensive.

15 Q. But it looks like a common commercial practice, does it

16 not?

17 A. Right. The tie can remain in a competitive environment

18 and not generate anti-competitive effects. I will grant

19 you that.

20 Q. Can you see from the fifth column that the Epic Games

21 Store waives its commission entirely if the developer

22 chooses to use a third-party processor, so the

23 Epic Games Store is one of the exceptions.

24 Then if you read -- if you look at the third column

25 and then look at the asterisk, you can see that the

1 Epic Games Store waives its commission completely if the
2 developer chooses to use a third-party processor. Did
3 you know that?

4 A. I think I was aware that Epic does not impose a penalty
5 price for breaking the bundle.

6 Q. So the developer would be getting the distribution
7 services provided by the Epic Games Store for free; yes,
8 if a developer chose to do that?

9 A. Correct.

10 Q. That, you might think, would provide a substantial
11 financial incentive for a developer which distributes
12 its app through the Epic Games Store to use
13 a third-party processor?

14 A. So long -- well, we talked about this during the hot
15 tub, I believe. The question is, could you get it --
16 could you improve materially over the 12%, right? So
17 now you are getting fairly close to the competitive
18 rate, if not the competitive rate.

19 So you might look for opportunities, but if the Epic
20 in-house processing does a good job -- we have discussed
21 that earlier today, there were questions, but to the
22 extent that that works and is natural and goes down
23 easiest, then you might not want to look too hard for
24 rivals.

25 Q. No, but we know they actually do a terrible job, because

1 their own chief executive said it is a difficult and
2 tedious service, so you would have thought in those
3 services there would be both a technical and a financial
4 incentive to use someone else, would you not?

5 A. If you accept that, if you accept that it is terrible --
6 I do not know if it is terrible. He said there were
7 problems, and we do not know how long these problems
8 persisted, but if there were problems, that would create
9 an extra impetus to go looking for third-party solutions
10 for sure.

11 Q. If you look at Professor Sweeting's evidence, if we go
12 to {C3/3/106}, and you will have seen this,
13 paragraph 229, Professor Sweeting points out that it is
14 Epic's own evidence that fewer than 50 developers out of
15 1,100 or so, which distribute their apps through the
16 Epic Games Store use a third-party processor, and you
17 have not got any reason to dispute Epic's evidence about
18 that, have you?

19 A. I think that is inconsistent, certainly, with your
20 testimony that it is terrible, right? If it was
21 terrible, more would be going away. My testimony was
22 that if Epic is already starting from a competitive
23 rate, there is not great reason to go looking for
24 a third-party processor.

25 Q. Well, it is not inconsistent with our case, because our

1 case is there is just simply not demand for separate
2 payment processing services.

3 A. That is a different case. But your earlier point was
4 that it was terrible. So if it was terrible, you would
5 expect people to go looking elsewhere. Apparently it is
6 not so terrible.

7 Q. But just to be clear --

8 A. On the point of separate demand we have established
9 that, we do not need to relitigate that one, but ...

10 Q. Just to be clear, I am not giving testimony, and it was
11 not my testimony, it was Mr Sweeney's testimony we
12 looked at, so the chief executive of the Epic Games
13 Store. It was his testimony. He said it was difficult
14 and tedious. Not me. I do not use it.

15 Now, let us go back to Mr Owens' evidence in this
16 trial, so {Day4/98:21}, and if we look at line 21, he
17 was asked: well, why have you, Paddle, not taken up this
18 "generous offer" from the Epic Games Store, who waived
19 their commission, and you can see how he responds to
20 that. Line 24, he says:

21 "Answer: We do not typically contract with games
22 companies."

23 Then if we go over the page {Day4/99:9} you see at
24 line 9 the question:

25 "Question: Sure, Mr Owens, that is the current

1 position, but this is an opportunity, is it not? This
2 is an opportunity for you to offer your valuable
3 services, which are excellent, according to your
4 evidence, to developers on the Epic Games Store?

5 "Answer: If we were going to make a substantial
6 investment in increasing kind of the scope of our
7 business towards gaming we would not choose the smallest
8 possible platform to ... do it on."

9 A. Very helpful testimony, I think, for my view of the
10 world, at least.

11 Q. Well, the point here is that despite the Epic Games
12 Store being available on Android phones, the demand is
13 simply not there for Paddle to enter the market, is it?

14 A. No. Respectfully, it is a bad interpretation of that
15 line. What he is saying is that for us to have the
16 impetus to be an attacker and to make substantial
17 investments, it has got to be a big platform. Well,
18 I have a big platform for you, and that is Apple's
19 platform. So this is not a helpful predictor of how
20 Paddle would behave in the but-for world.

21 My second point is that we do not literally need
22 Paddle in the but-for world, right. We are using Paddle
23 as a proxy for what a competitive in-app support service
24 would provide or would charge. If it is not Paddle,
25 then it is going to be someone else, and I think that

1 because these entrants are likely going to be small, it
2 is more of a fringe when we come to these services,
3 there might be some pure play payment processors who go
4 really cheap. That none of this turns on Paddle
5 entering, per se.

6 Q. Well, let us go back to Mr Holt's table, {C2/10/142},
7 and you say if not Paddle it might be someone else, but
8 there is just not the evidence there that there is any
9 demand.

10 If we look at the Samsung Galaxy Store, that is
11 another example of an app marketplace that allows
12 third-party processors, and the table again indicates
13 that, like the Epic Games Store, the developer pays no
14 fee to Samsung if they choose a third-party payment
15 processor. Again, let us look at what Mr Owens said
16 about that. So {Day4/100:11}, please.

17 A. Okay.

18 Q. So line 11:

19 "Question: There is nothing in your evidence either
20 to show that Paddle has provided services to app
21 developers on the Samsung Galaxy Store?

22 "Answer: No, we have not."

23 So, again, you can see that -- and if we go on --

24 A. Oh, can I --

25 Q. Just go on. You read what you like.

1 A. Well, for the same reason -- for the same reason as last
2 time: you are not going to make the investments for some
3 atomistic app store. Galaxy has no traction on the
4 Android system. They are on a lot of phones, but they
5 are not getting any traffic, for the reasons we
6 discussed earlier.

7 So why would Paddle make investments to latch on to
8 this app store? Why would they make investments to
9 latch on to Epic, given Epic's small share. I think
10 that these are compelling reasons that he is giving.

11 Q. Then he says, so further down there is the question at
12 line 22:

13 "Question: ... I think you said little or no mobile
14 app developer interest?"

15 Then he says, his answer is:

16 "Answer: With the app developers we were in contact
17 with, who used us for kind [of] other areas of the
18 business at the time, who we would speak to about it,
19 yes."

20 So, again, he is not aware of any demand for this
21 service, is he?

22 A. Demand from --

23 Q. Interest from developers.

24 A. No. He is saying that the Samsung Store is so small
25 that it would not be worthwhile for him to make the

1 investments to latch on.

2 I do not think that we can get a gauge of developer
3 demand in our counterfactual for third-party in-app
4 support services, given these examples. All of the
5 examples that she is pointing to are affected by the
6 restraints that are in existence in today's world.

7 Q. If we go back to Mr Holt's table, {C2/10/142}. Sorry,
8 just bear with me a moment. Yes, the final example is
9 the Microsoft Store as regards non-game apps, so that is
10 the final example of there being a "No" under that
11 fourth column, so you can have a separate payment
12 processor.

13 But Microsoft's store for games is a much more -- is
14 a more significant store, even though it is not very
15 significant. It is more significant than the store for
16 non-games, yes?

17 A. Yes.

18 Q. For games apps, Microsoft does require users also to use
19 its payment services; do you see that?

20 A. Yes.

21 Q. So does Microsoft's Xbox store, which is much more
22 significant still?

23 A. Yes, the Xbox is a closed proprietary system.

24 Q. Well, is that another anti-competitive system?

25 A. No, I am not offering -- I am just saying it does not

1 make for a good -- it does not make for a good benchmark
2 for a commission, at least.

3 Q. The other point I just want to ask you about is that the
4 numbers, so looking at the second and third columns, so
5 the commissions, the numbers are all exactly the same,
6 are they not? So every marketplace, whether they allow
7 third-party payments or not, charges the same commission
8 for paid downloads as for in-app purchases; do you see
9 that?

10 A. Yes.

11 Q. So in this counterfactual that we are considering, the
12 overwhelming likelihood is that Apple would do that too.
13 So for any transactions that continued to use Apple for
14 in-app purchases, the developers would continue paying
15 the same commission as in the real world, would they
16 not?

17 A. Oh, I did not follow you, I am sorry, on that last one.
18 Could I have that back? I am sorry.

19 Q. Yes. So in this counterfactual --

20 A. The payment counterfactual?

21 Q. Exactly.

22 A. The only restriction we are removing is the payment
23 restriction?

24 Q. Yes.

25 A. Okay.

1 Q. The likelihood in this counterfactual is that Apple
2 would do the same thing. So that for any transactions
3 that continued to use Apple for IAP, the developers
4 would continue paying the same commission as in the real
5 world.

6 A. That is where I am getting -- "In the real world". Did
7 you mean to say that Apple would charge the same
8 commission in the primary as they would in the in-app
9 aftermarket?

10 Q. Sorry, yes, that is what I meant. Yes.

11 A. Okay. "The real world" was throwing me off.

12 Q. No, I threw you. That is correct. You are right to
13 pick me up on that.

14 A. Okay. That is okay. We are getting close to the lunch
15 hour.

16 Q. We are, and I am winding down.

17 A. Yes.

18 Q. I am going to finish before lunch --

19 A. We have been at this for a couple of days.

20 Q. -- so I can give Mr Piccinin the afternoon.

21 A. No. Yes, so this came up in the hot tub -- and I will
22 be very quick -- that Professor Sweeting is criticising
23 that I am treating these markets separately. I have
24 a separate model that just looks at the in-app app
25 support services, if just the payment restriction goes

1 away, and I solve for something on the order of 10%.

2 He points out that: well, hold on, in the real world
3 we have got app stores who are using a uniform price.
4 They do not diverge.

5 But if he is right, that means that I have
6 effectively left money on the table. I have understated
7 damages because I conservatively left my 30% fee to --
8 allowed it to persist in the actual world -- in the
9 but-for world.

10 If Apple were to feel pressure that after this
11 opening in the aftermarket they would need to bring down
12 their initial rate for distribution to come into
13 compliance, that would just be further damages. Now,
14 I have not modelled that.

15 I have, however -- in the joint statement I did
16 a Rochet and Tirole model that assumed counterfactually
17 a single unified market and solved for one commission
18 rate. So there is evidence in the record if Apple were
19 to just choose one.

20 The last thing I will say, I will be very quick, is
21 the action again here, as you know, is in the
22 aftermarket. When you look at where the sales are
23 occurring, there are not a lot of sales going on in
24 the -- and there are not a lot of damages going on in
25 the app distribution market.

1 The reason for that, it is no mystery, is that, as
2 I said, developers want to get in your face. They want
3 to bring you down on the phone, they want you to get
4 accustomed to using them, and then the charges will
5 come. If they put the charges upfront in the download,
6 it will create friction. So that is why so many
7 developers have avoided that upfront charge.

8 THE CHAIRMAN: Can I just ask you a question just to
9 clarify?

10 A. Yes, please.

11 THE CHAIRMAN: When you say you are leaving money on the
12 table because you have left a 30% fee to persist, do you
13 mean -- is that because of the hypothetical that has
14 been put to you, which is where you have still got
15 an app distribution restriction requirement.

16 A. Yes, that is right.

17 THE CHAIRMAN: You are saying that they are still allowed to
18 take 30% for any charge at that stage.

19 A. That is right.

20 THE CHAIRMAN: That is what you are saying.

21 A. To be conservative, for this scenario, which is the
22 payment restriction counterfactual, all you do is remove
23 the payment restriction, right.

24 We just aimed our models at the aftermarket, the
25 in-app, right, and the criticism that I am getting back,

1 and I am getting back right now in this
2 cross-examination, is: look, everyone does the same, you
3 know, for distribution, for in-app.

4 Okay, if you want me to go back, it can only come
5 down, right, because Apple would be recalibrating around
6 where the action is. The action is in the in-app
7 support service market. So if you insist that that also
8 come down, that would just lead to greater damages. But
9 I did not. I left it at 30%.

10 THE CHAIRMAN: Right. Thank you.

11 MS DEMETRIOU: So, Dr Singer, just a couple more points

12 I just want to ask you about in your report.

13 So if we go to {C2/15/84}, so paragraph 165 of your
14 report, you say -- so towards the end of that paragraph
15 you say that you understand that both Facebook and
16 Spotify have sought to use alternative payment
17 solutions.

18 On Spotify, if we look at the footnote, it takes
19 us -- if we can get the footnote, please, so that takes
20 us to appendix H to the CMA market study, and then let
21 us look at that, AB6 --

22 A. Paragraph 57, yes.

23 Q. Paragraph 57. Thank you. So {AB6/33/17}. So at the
24 bottom of the page, we have got paragraph 57, and you
25 see -- can we go over the page. I am a few lines down:

1 "Spotify submitted that it was forced to pass on the
2 Apple IAP commission in full when it was implemented
3 in June 2014, increasing its price to £12.99 per month
4 (again compared to Apple Music offered at £9.99 per
5 month). In May 2016 Spotify subsequently chose to cease
6 using Apple IAP, becoming a Reader app under the Reader
7 rule, though it has told us that this also negatively
8 impacted its competitiveness against Apple."

9 This is explaining, is it not, that Spotify altered
10 its arrangements to take advantage of the Reader rule;
11 yes?

12 A. Yes.

13 Q. So you are not, I think, saying, are you -- or are
14 you -- that this is an instance of Spotify using
15 alternative iOS in-app aftermarket services?

16 A. No, but they are evading Apple's tax by taking advantage
17 of the Reader rule, and the question is how did the
18 Reader rule come into existence? I think that Apple was
19 trying to accommodate or placate some of the big
20 developers on its site by giving them an exemption and
21 some relief to its taxation. So, to me, that is
22 evidence that there is a demand. There is a demand for
23 going outside of Apple.

24 Q. Well, what it actually shows is that consumers can
25 subscribe to Spotify without making any in-app purchase

1 at all, does it not?

2 A. They can now, yes.

3 Q. So it is right, is it not, that developers such as
4 Spotify are not coerced to use iOS in-app aftermarket
5 services to sell subscriptions since they can use the
6 Reader rule?

7 A. Spotify and other large apps, we talked about Netflix
8 before, have been able to get out of the taxation. You
9 know, we are not privy to the negotiations between
10 Spotify and Apple or Netflix and Apple, but they were
11 able to use whatever leverage they had to get these
12 exemptions.

13 Q. Where a developer submits an iOS app to Apple for
14 distribution on the App Store, the developer is not
15 required by Apple to offer in-app purchases in the app,
16 is it?

17 A. Sorry, now I am ...

18 Q. So where a developer submits an iOS app to Apple for
19 distribution on the App Store, the developer does not
20 have to offer in-app purchases in the app, does it?

21 A. No, it does not have to. This is part of the "hold your
22 breath" defence. It does not have to monetise the way
23 that might be most natural for you. There are other
24 ways to monetise. You can try to sell physical
25 products, you can try to sell advertising. But if you

1 want to monetise in this way the in-app transactions,
2 you must use Apple's processor at a 30% rate.

3 MS DEMETRIOU: All right. Dr Singer, thank you very much.

4 That is it from me.

5 A. Oh.

6 MS DEMETRIOU: You look disappointed.

7 A. I am sad.

8 THE CHAIRMAN: Good. So we will have Mr Piccinin after
9 lunch.

10 Do you have any sense of how long you are going to
11 be? I do not think it matters terribly, but it might be
12 helpful to the other side of the court just to have an
13 idea of when Mr Holt might be needed.

14 MR PICCININ: Yes, I think I will be about a day.

15 THE CHAIRMAN: Yes, so you are likely to go into tomorrow.

16 MR PICCININ: Definitely into tomorrow. We have already
17 told that to the defence team.

18 THE CHAIRMAN: Okay. Does that then mean that your estimate
19 in relation to Mr Holt is something like a day and
20 a half; is that still the position?

21 MR PICCININ: I think it is less than that, actually,
22 I think it is a day. I think we are doing okay.

23 THE CHAIRMAN: It is all under control.

24 MR PICCININ: We do not have luxurious amounts of time, but
25 I think we have enough time if Dr Singer keeps the

1 answers nice and short.

2 A. As I am accustomed to doing, yes.

3 MR HOSKINS: I am just doing this off the top of my head, so

4 I am sorry if I have got it wrong, but there is another

5 day with Dr Singer. We had the morning on Friday but

6 the afternoon was off, and then Mr Holt coming on the

7 Monday. So if Mr Holt is not starting until Monday

8 morning, that is a day. I am just looking at the

9 timetable.

10 THE CHAIRMAN: I think in the adjustment we made we offered

11 you the whole week. So we are sitting five days this

12 week and five days next week. Obviously you can give us

13 back any of that, and that is fine, but I have always

14 rather expected --

15 MR HOSKINS: But that only leaves us four days.

16 MS DEMETRIOU: It gives us four days as well.

17 THE CHAIRMAN: I think it gives everybody ... That is right.

18 I think that Mr Piccinin is signalling that he is going

19 to take half a day on Monday.

20 MR PICCININ: That is right. If we take all day on Friday

21 then we would take half a day on Monday.

22 MR HOSKINS: So half a day on Monday.

23 THE CHAIRMAN: But strictly speaking, I think there is

24 allowance for more than four days each, because you are

25 going to get Tuesday, Wednesday, Thursday, Friday

1 anyway, you are going to get your four days, and it
2 looks as if there might be some time on Monday afternoon
3 which could be divided up, if you want to do it that
4 way. But we are into the margins now, and if you said
5 to us you did not want to start until Tuesday, and you
6 were happy with your four days, then we would be happy
7 to have an early finish on Monday. It is entirely how
8 you want to do it.

9 MR HOSKINS: I understand.

10 THE CHAIRMAN: I do not think there is any question of
11 anybody getting any advantage here, it seems to me it is
12 falling pretty neutrally, and if there is any need to
13 divide up Monday because you feel like you need some
14 extra time, then so be it.

15 MR HOSKINS: I understand. So we are stopping at lunchtime
16 on Friday.

17 THE CHAIRMAN: No, we are going to sit all day on Friday.

18 MR HOSKINS: We are going to sit all day on Friday, and then
19 Apple will stop cross-examining at lunchtime on Monday,
20 and to be discussed whether we start Professor Sweeting
21 then.

22 THE CHAIRMAN: Yes, and if Apple needs more time on Monday,
23 then it is theoretically available, but not very much
24 more, and then, of course, you would have the advantage
25 of the extra hour or so that was --

1 MR HOSKINS: It is diminishing returns, I understand.

2 I just wanted for myself to understand. So it is
3 possible we will start examining

4 ProfessorProfessor Sweeting on Monday, and that is fine.

5 THE CHAIRMAN: I think that is where we are, yes.

6 MR HOSKINS: I understand.

7 THE CHAIRMAN: Good. We will resume at 2 o'clock. Thank
8 you.

9 (1.02 pm)

10 (The short adjournment)

11 (2.03 pm)

12 THE CHAIRMAN: Mr Piccinin.

13 Cross-examination by MR PICCININ

14 MR PICCININ: Good afternoon, Dr Singer.

15 A. Good afternoon.

16 Q. Just in terms of an outline for where we are going, we
17 will start with a couple of sweep-up points arising out
18 of some matters you mentioned in your discussions with
19 Ms Demetriou this morning. Then we have a couple of
20 short topics on market definition, just carrying on from
21 Ms Demetriou's questions. Then we get into the models,
22 so that will be fun. Then we finish with incidence.

23 If we could just start with those couple of sweep-up
24 points. If we bring up the [draft] transcript from this
25 morning at page 5, please, and if you just look down at

1 lines 16-19, do you recall you were being asked some
2 questions about how the Android operating system works
3 in terms of the availability of competing app stores,
4 and you said:

5 "It is not just pre-installation [Google's
6 restriction], it is pre-installation and premier
7 installation and exclusion of rival app stores from the
8 home page."

9 You said:

10 "That is in the contract with these hand [set]
11 manufacturers."

12 Did you see that?

13 A. Correct.

14 Q. Then if we could just go on to [draft] page 7 and just
15 look at lines 6-7. So here Ms Demetriou was putting to
16 you that Samsung is an example of a manufacturer who has
17 its own rival app store, and you said yes:

18 "... but Samsung's store is intentionally degraded
19 via an agreement with Google."

20 So you were saying there that they have got
21 an agreement with Google that it was included and then
22 implemented, resulting in the degradation of the Samsung
23 Store.

24 A. That is the allegation part of the challenged conduct in
25 the US, at least.

1 Q. Okay. So can we just look at a couple of documents.

2 The first one is {D1/1845.1}. Perhaps we could blow it
3 up, focusing on the text in the middle, under:

4 "How to add and remove an app on the Home screen."

5 This is an excerpt from Samsung's webpage, and
6 perhaps you could just read that text to yourself.

7 A. Okay. (Pause)

8 Q. Now, I do not want to mislead you, Dr Singer, it is not
9 just a two-step process, there is more to it. So if we
10 look at the bottom of the page as well.

11 A. Okay.

12 Q. There is a step three. If we just go over the page to
13 the top {D1/1845.1/2}, there is also a step 4.

14 A. Just to be clear, this is how you could put a Samsung
15 Galaxy Store onto your home page?

16 Q. We will get to the Samsung Galaxy Store in a moment, but
17 this is how you can put any app --

18 A. Oh, any app except a rival app store. You cannot
19 download a rival app store from the Play Store.

20 Q. We are going to look at that in just a moment. But
21 putting apps that are on the app page onto the home
22 screen does not look very difficult, does it?

23 A. No, and I never said that any app cannot be added to the
24 home screen. The difficulty, according to the
25 allegations, is that Google throws up road blocks to get

1 rival app stores onto the home page.

2 Q. So can we go back on to page 1 then, please

3 {D1/1845.1/1}.

4 A. Yes.

5 Q. If we can zoom in on the page. We can see on the left

6 what we have is the home screen?

7 A. Yes.

8 Q. On the right what we have is the app screen. Can you

9 read what the first app on the home screen -- the first

10 thing on the home screen is?

11 A. Yes, the Galaxy Store.

12 Q. Yes. So it is not true that all rival app stores are

13 prevented from being shown prominently on the home

14 screen on Android devices, is it?

15 A. I think the Galaxy Store is an exception. The Galaxy

16 Store is of course Samsung's own app store, so Google

17 cannot tell Samsung, the maker of the phone, that: thou

18 shalt not have your own app store on the home page.

19 What the restrictions are aimed at is barring

20 third-party providers of app stores access to the home

21 page.

22 Q. Okay. You would agree with me that the Galaxy Store is

23 given pride of place on the home screen; yes?

24 A. It is, but it does not compete effectively for other

25 reasons I mentioned.

1 Q. Sure. So if we can go to the next document, which is
2 {AB6/25/101}. So this is the CMA market study that
3 I think you have looked at before.

4 A. Okay.

5 Q. If you could just read paragraph 4.67 at the bottom to
6 yourself. So it is 60-90%, somewhere in there, of UK
7 Android devices have another app store pre-installed on
8 the devices.

9 A. Yes, and so I think it is fair that when I said -- just
10 to clarify, that when I said they do not allow a third
11 party, it is literally a third party, not a party to
12 this agreement. So the handset maker can put its app
13 store on the home page, Google's Play Store will also
14 be, but third-party rival app stores cannot get pole
15 position, that is in the contracts with the handset
16 makers, and they cannot be downloaded; critically, they
17 cannot be downloaded from the Play Store either.

18 Q. Okay. Can we go back to [draft] page 13 of the
19 transcript.

20 A. Sure.

21 Q. Can you just read what you said there from lines 1-4.

22 You say:

23 "... there are [some] examples, like Samsung ...
24 [the] Galaxy Store, can be somewhere as you flip
25 through, but it cannot be in a position of prominence."

1 That was just false. That was untrue, was it not?

2 A. That was incorrect. The Galaxy Store, they make
3 an exception on Samsung phones. You will not see the
4 Galaxy Store on a Huawei phone or any other non-Samsung
5 phone. But, yes, on a Samsung phone you will see the
6 Galaxy Store.

7 Q. Samsung is by far the biggest Android manufacturer in
8 the UK; yes?

9 A. Yes.

10 Q. Okay.

11 A. Yet they are not getting any traffic on their app store.

12 Q. Quite. That is the whole point, Dr Singer.

13 If you could go back to {AB6/25/108}, please, if you
14 could go on to page 108, and if you could just read to
15 yourself paragraph 4.91.

16 A. Okay. (Pause)

17 Q. When you are done, I would like you to look at the
18 bottom at the footnote as well, 285.

19 A. Okay.

20 Q. This needs to be read quite carefully. So there is the
21 Utah complaint, do you see that?

22 A. Yes.

23 Q. I wonder if that is what you were referring to, is it?

24 A. Could be, yes.

25 Q. Because it says:

1 "'Google intended to pay its most threatening
2 competitor ... to stop competing' in app distribution
3 ..."

4 A. Yes, the allegation is they were in discussions to reach
5 an agreement, right?

6 Q. Which they never reached.

7 A. Yes, but -- I do not know if they never reached the
8 agreement.

9 Q. Go back up to the top of the page.

10 A. I think the point of the allegation is you have two
11 parties who would otherwise be competing, but because
12 Google is in a position where it can extract concessions
13 or reach other arrangements with Samsung -- let me
14 finish -- that that could dampen competition. Even if
15 the agreement was never consummated, the mere fact that
16 these two parties are speaking to each other could
17 dampen competition.

18 Q. What it says there is no agreement was ever reached.

19 If you go back to [draft] page 7 of the transcript,
20 I want to look at what you actually said before, again.

21 A. Okay.

22 Q. So what you actually said is that:

23 "... Samsung's store is intentionally degraded via
24 an agreement with Google."

25 Yes? So that is saying that an agreement was made

1 and it was intentionally implemented; yes?

2 A. It is saying that an agreement was made, and I think
3 agreements have been made. I think the agreement that
4 is in the CMA report was not reached, but I do not know
5 which agreement that is speaking to.

6 Q. You think the CMA just missed one, do you?

7 A. No, I just do not know which agreement they are speaking
8 to. Any agreements -- we know that for Samsung to get
9 access to the Android system they have to enter into
10 agreements with Google, and those agreements, those
11 distribution agreements, contain provisions that are
12 being challenged as being exclusionary in courts.

13 Q. Dr Singer, the CMA -- you can see from the footnote
14 I showed you the CMA has looked at the allegations that
15 have been made in the United States and they are drawing
16 to the readers' attention the most problematic material
17 they can find in those documents, and what they said
18 about Samsung is that no agreement was ever reached?

19 A. This particular agreement was not reached. Google and
20 Samsung have entered into agreements that contain
21 provisions that are being challenged.

22 Q. You have not referred to any particular agreements that
23 require Samsung to intentionally degrade its store. Is
24 that really your evidence?

25 A. No. I was aware of the allegation that Google was upset

1 that Samsung was starting to compete on certain
2 dimensions, and there were discussions by which Samsung
3 would make its store a niche offering -- I remember
4 niche offering -- in exchange for something. I do not
5 know if that happened with or without a written
6 agreement. I do not know if it did.

7 Q. Is it your evidence -- and do you have any basis for
8 this allegation -- that Samsung intentionally degraded
9 its store?

10 A. No, that -- no, just the allegation itself, the
11 complaint.

12 Q. So what you said there -- look at it.

13 A. Okay.

14 Q. That is not an allegation you are able to sustain,
15 sitting there where you are now, is it?

16 A. The allegation I can sustain? It is not my allegation.
17 It was the State's AG's allegation.

18 Q. What you said in an unqualified way is that "Samsung's
19 store is intentionally degraded". That was what you
20 said.

21 A. That was the allegation from --

22 Q. You did not say it was an allegation.

23 A. No, I am amending it now. That was the allegation
24 I read. It is fine.

25 Q. One other point that came up in discussion with

1 Ms Demetriou concerned Steam, and if we could just go in
2 the transcript to [draft] page 65 at the bottom. This
3 one is more of a clarification, so I hope we can agree.

4 A. Okay.

5 Q. You refer there -- you are discussing there the many
6 benchmarks that you have looked at for counterfactual
7 market shares?

8 A. Yes.

9 Q. You say it is not just the device market, you are
10 looking at incumbents generally. Then you said:

11 "Professor Sweeting likes to use the Epic share loss
12 as an example."

13 A. Yes.

14 Q. "He goes 50, which is 39 plus a fudge factor of 11",
15 which is the way you describe it.

16 A. Correct.

17 Q. I think the naive person reading that could think that
18 what you meant was the entry of Epic caused Steam's
19 market share to fall from 100% to 39%. I do not think
20 that is what you meant to say, is it?

21 A. I think in reading his back-up, and we can look at the
22 joint statement and his report, but my memory is that
23 the way that he got to 50 was by looking at a share of
24 39 and adding 11. That is my memory of it.

25 Q. That is right. But the 39 includes direct distribution,

1 does it not?

2 A. Direct distribution?

3 Q. As in downloads from websites. It is looking at all PC
4 apps, not just PC apps that are downloaded from a store
5 like Steam or Epic or Microsoft?

6 A. Are you talking about the denominator would be all
7 downloads?

8 Q. Yes.

9 A. Yes, but this is his estimate of Steam. He is offering
10 this. He said he does not think that the share would
11 fall below 50, he was saying 50-90, and 50 was tethered
12 to Steam, and my memory was that he did 39 plus 11.

13 Q. I am not disputing that.

14 A. Okay.

15 Q. The point I am making is Steam did not fall down to 39
16 from 100. They never had --

17 A. It is not my benchmark, it is his benchmark. But what
18 I did want to point out to the Tribunal is that my
19 shares, we have to ... I am looking at the 30-60% share,
20 and he thinks a realistic range of shares for Apple in
21 the but-for world is between 50 and 90, I hope we can
22 agree on that, and we have significant overlap.

23 I think that was an important point to draw to the
24 Tribunal, that we have 10 percentage points of overlap
25 on what we think is a credible counterfactual.

1 Q. We do not agree on that characterisation of
2 Professor Sweeting's evidence but we do not need to
3 worry about that.

4 A. I commend you to read the joint statement then.

5 Q. We do not need to worry about that, because that is
6 something that my learned friends can pick up with
7 Professor Sweeting.

8 A. I am not worried about it, I just think it is exciting
9 that we have some agreement. It is not as contentious
10 of a point.

11 Q. We will see how much agreement we have.

12 A. Okay.

13 Q. With that, we have finished the sweep-up section, and we
14 are going to move into some market definition points.

15 The first point is about the way you approach the
16 HMT using the comparator benchmarks that Ms Demetriou
17 has been discussing with you, and I just want to explore
18 some of the implications of that.

19 If I can summarise it in a nutshell, what you say is
20 that Epic and Microsoft charge 12% for app distribution
21 services, and Apple charges more than 5% more than that
22 for services that you say are comparable, and so the
23 result of the HMT is that Apple is a monopolist; is that
24 clear?

25 A. It is not quite that simple. Remember, I get to

- 1 a competitive benchmark in two different ways.
- 2 Q. Yes.
- 3 A. So if we are looking for their price in the primary
4 market, I have got both comparables and the Rochet and
5 Tirole model. Both put me in the ballpark of 12%.
- 6 Q. We are coming on to Rochet and Tirole.
- 7 A. You would go after me if I leave out a footnote, so I am
8 just telling you, you left out something big here,
9 right, which is I have got two different ways to get to
10 the competitive benchmark, and now we ask: can
11 a hypothetical monopolist profitably raise prices over
12 their competitive benchmark, if that is all they were to
13 control, and we have a nice answer to that, because
14 Apple is that not so hypothetical monopolist.
- 15 Q. So I think you essentially agreed with me on the way
16 that your HMT works with the comparator evidence. We
17 are going to come on to the models, but I think the
18 description of what you do with the comparators was --
- 19 A. Okay, we have been through this before.
- 20 Q. We have been through that, and do not worry, we are
21 definitely coming to your models.
- 22 A. No, that is not what I -- I am not begging you to come
23 to the models, I am just begging you to describe what
24 I did accurately.
- 25 Q. Okay. So I just want to make one point of clarification

1 about the 5%. If you can just look -- because
2 yesterday, I do not have the reference for it, but
3 yesterday you described it as 5 percentage points.

4 A. Yes, it should be 5%, it is not 5 percentage points.
5 Sometimes I make mistakes while speaking, as we have
6 seen.

7 Q. No, that is fine. That was not a criticism of you at
8 all.

9 A. Yes. It is not 5 percentage points; 5% is the SSNIP, so
10 it would be smaller than 5 percentage points.

11 Q. Yes. If we have a look, we can see, and you have set it
12 out very clearly if I may say so, in your report. So it
13 is {C2/8/48}.

14 A. Okay.

15 Q. You can see in the second bullet you say it is 5%, like
16 you just said. Then for anyone struggling to understand
17 that, you make it very clear in the brackets where you
18 say it is 12 multiplied by 1.05 which gives you 15.9%;
19 yes?

20 A. Yes.

21 Q. So anyone who charges more than 15.9% for app
22 distribution services is a monopolist?

23 A. No, not at all.

24 Q. No?

25 A. No. Think about this. We are trying to ask if a

1 hypothetical monopolist were to just control the
2 facilities that we have defined to be in the relevant
3 market, Apple is the only one who has those facilities,
4 right? So we are asking if a hypothetical monopolist
5 who just controlled the markets as I have defined them,
6 right, app distribution for iOS, in-app support for
7 iOS, we are beginning from a competitive rate and we
8 are thinking about raising the commission by 5%, could
9 it do so profitably. It is very nice that we have
10 a player out there that controls just those facilities
11 and has imposed a price increase well in excess of 5%.

12 So I do not go looking at somebody who does not
13 control those facilities. We only want to look at
14 someone who controls those facilities.

15 Q. Okay. Let us suppose that we went in this case, let us
16 suppose we were in the claim against Valve, yes, the
17 makers of Steam, and let us say you wanted to run the
18 argument in that case that there is a market for app
19 distribution services on Steam. Let us say that is
20 an argument that you wanted to make, that that was
21 separate from app distribution on Epic Games Store and
22 Microsoft which do not constrain, and direct
23 distribution does not constrain Steam either, that is --
24 (overspeaking) --

25 A. Just so I understand it, because it is a weird one. So

1 we are going to define it as Steam as the market, even
2 though Steam has 50% of the market share in the --

3 Q. Sorry, even though?

4 A. Even though Steam only has 50% of the distribution,
5 according to Professor Sweeting?

6 I just want to make sure, we are going to assume
7 that Steam is a monopolist?

8 Q. Yes -- we are not assuming that Steam is a monopolist,
9 that is the argument let us say your client wants to
10 make in a case, yes? Just like you say Apple is, even
11 though we say Apple has a very small share of app
12 distribution services, app transaction services
13 generally, when you include all of the other platforms.

14 A. Okay.

15 Q. Let us say you want to make the argument that none of
16 those really constrain Steam. So you do a hypothetical
17 monopolist test, and what you do is you say: let us find
18 someone who is competitive at app distribution, that is
19 Epic, or that is Microsoft. They charge 12%.

20 A. Yes.

21 Q. Then we see, is Steam able to get away with charging
22 more than 5% more than 12?

23 A. Yes, okay. I think -- I mentioned yesterday to the
24 Tribunal there is a -- two different pathways to proving
25 market power, one is direct evidence and one is indirect

1 evidence. So the direct evidence asks can you command
2 a premium, can you exercise pricing power, right,
3 relative to the competitive rate. If Steam, and there
4 is a lot of controversy as to whether or not Steam is in
5 fact imposing a higher rate than 12.5%, but you seem to
6 think it could be no lower than 20. So if Steam is
7 imposing a rate of 20, and its rivals are imposing rates
8 of 12 to 12.5 to 15, one could, I have not done this
9 yet, but one could, in a monopoly case against Steam,
10 point to that premium, you know, 20 minus 12.5, and say,
11 look, that is evidence of Steam's pricing power in the
12 market.

13 Q. Well, more than that, because you give us the figure
14 here, it is in the second bullet. 15.9 is the
15 benchmark. If Steam is charging more than 15.9% they
16 will fail your HMT.

17 A. If in a different case -- if in a different case Steam
18 was in excess of 15.9, and its rivals were charging
19 12.5, so let us just -- I will just put this out there.
20 You do not even need an HMT for this one, right. Under
21 the direct evidence prong, if we -- we do not have -- we
22 do not have someone like Epic and Microsoft in our case
23 which we can look to as direct benchmarks. But if in
24 that hypothetical Steam case we saw that Steam was
25 charging, you want me to assume 3 percentage points, a 3

1 percentage point premium over its rivals, I would say
2 that is indicative of pricing power. It is not the end
3 of the inquiry but it is certainly indicative of pricing
4 power, yes.

5 Q. But you would conclude on that basis that it was
6 a monopolist?

7 A. No, I would conclude on that basis that it had market
8 power, not that it was a monopolist.

9 Q. In our case you are concluding, on the basis of this
10 evidence, that Apple is a monopolist?

11 A. No, I am concluding here that they have market power,
12 right. So we have two -- the HMT, remember, is the
13 first step of a three-legged stool when you go down the
14 indirect branch. So the first step is define the
15 market. You do not conclude anything from that first
16 step, you just define the contours of the market. The
17 second step is you look at the shares of the defendant
18 within that market. The third step is to look at entry
19 barriers, right? Unless and until you have passed
20 through all three legs of the stool, you reach the
21 conclusion that Apple has monopoly power.

22 Q. Let us go through the three legs then.

23 We have done the HMT, so that tells us what the
24 market is. The market is limited to Steam.

25 A. Oh, in our hypothetical case?

1 Q. Yes, the case where you are running -- where the same
2 argument is being run against Steam as you are running
3 against Apple.

4 A. Yes. I think that HMT -- so this is the first time I
5 ... I do not think we would get to the conclusion that
6 Steam is a market unto itself. All that would tell you
7 is that Steam has market power.

8 Q. But it is a hypothetical monopolist test that you just
9 explained. That was the first leg of the stool which
10 gets us to our market definition.

11 A. Yes.

12 Q. Yes. So it gets us to a market definition which is
13 Steam?

14 A. Yes, if Steam -- if a hypothetical monopolist could
15 raise prices 5% over competitive levels. But HMT would
16 tend to suggest that Steam might be a market unto
17 itself. That is true.

18 Q. Thank you. I mean, just so you understand our case on
19 that, we say that is absurd.

20 A. Well, knowing that Steam has 50%, I am going to take
21 Professor Sweeting's numbers, 50%, it seems like it
22 would be hard to square that with Steam being its own
23 market. However, 50% suggests dominance in many
24 jurisdictions.

25 Q. Apple's market share of a wide market that includes all

1 of the other platforms over which developers can
2 transact with end users is much smaller than 50%. So we
3 could say the same thing about Apple.

4 This is the problem, Dr Singer, is that you are
5 using the HMT to discriminate between -- to decide what
6 should go into the denominator.

7 A. Yes, but in our case we have -- the direct and the
8 indirect methods are both pointing in the same
9 direction. They are both telling us that Apple is
10 an airtight monopolist.

11 If we were to do my test in the -- in this
12 hypothetical Steam case, we might get conflicting
13 evidence between the direct and the indirect.

14 Q. What would be the conflicting evidence?

15 A. I think that the conflicting evidence could be that
16 Steam was forced -- I assume we are doing this post
17 invasion --

18 Q. Yes.

19 A. -- after they have dropped their prices, yes? Because
20 pre-invasion, we would not be having this issue at
21 all --

22 Q. Post-invasion. Let us do it today.

23 A. Pre-invasion, let me just make it clear --

24 Q. Let us do it today, Dr Singer.

25 A. No, I know, but if Steam were at 30 and they had nearly

1 100% of the PC game distribution, it is not a tough
2 case. Steam is the market, right? Steam gets invaded
3 and they drop their price, and you are saying to assume
4 that they drop it but not by enough to go below this --

5 Q. Drop it to 20. Call it 20.

6 A. Fine, drop it to 20.

7 Q. We say it is 27, but call it 20, just to make it easy
8 for you.

9 A. Yes, right. Now this HMT is implying that Steam may be
10 a market unto itself. All the HMT can tell us is
11 pricing power, that is all they can tell us, is: could
12 a hypothetical monopolist who just controlled Steam's
13 assets exercise pricing power? The HMT might tell us
14 that: yes, if all you controlled were Steam's assets,
15 you could exercise pricing power. If Steam is charging
16 a premium over the competitive rate, then they likely
17 are exercising pricing power.

18 Q. The thing is, Dr Singer, it is actually the most common
19 thing in the world in differentiated product markets to
20 have price dispersion that is significantly more than
21 5-10%, is it not?

22 A. In markets, you could have -- if you have differentiated
23 markets you could have price variations, but it is
24 commonly used in -- as direct evidence. If someone
25 commands a pricing premium and it cannot be explained by

1 other quality differences, as you are suggesting, then
2 that can be accepted as evidence of market power.

3 Q. There is more than a 10% price difference between the
4 cheapest sports shoe and the most expensive sports shoe
5 that you might use, yes?

6 A. Right, and so there is more than a 10% difference in
7 what an iPhone costs and what a Samsung phone costs, and
8 from that you could claim that Apple has some pricing
9 power in the device market.

10 Q. If you follow your logic, you would end up saying it was
11 its own market, which is absurd.

12 A. It is not absurd. All the HMT can tell us is that if
13 a hypothetical monopolist that controlled just those
14 facilities could exercise power. I think you have to
15 use some context and some other parts of your brain to
16 get to the final solution. Oftentimes you have to look
17 at how the indirect evidence stacks up against the
18 direct evidence. Here it is very easy. There is no
19 tension at all. They point in the same place.

20 Q. Dr Singer, remind me, which part of my brain am I not
21 using? Which part did I miss?

22 A. I have been in cases in which --

23 Q. In this case.

24 A. No, there is no conflict here. I have been in cases in
25 which the direct evidence and the indirect evidence can

1 point, and the literature says when they are pointing in
2 different directions, I can take you to cites, it says
3 sometimes we should refer to the direct evidence.

4 Q. Sorry, and what was the -- remind me, what was the
5 direct evidence in this case?

6 A. The direct evidence, remember, the ability to exclude,
7 which they do fully, and the ability to command
8 a premium in price. There really are no -- it is hard
9 to find a comparator because they do not allow any other
10 app stores or payment processors on the site, but
11 I think it is pretty fair to say they are commanding
12 a premium. So those are the two things I cited.

13 Q. Sorry, there was the premium, which is the same point.
14 What was the other one?

15 A. The ability to exclude rivals, that is the second prong
16 for direct evidence. That is airtight. They do not
17 allow it by contract.

18 Q. You say it is airtight, but it is only airtight if you
19 think those are the only rivals, as in if the only type
20 of rival is another app store on iOS.

21 A. Well, it is certainly airtight. The foreclosure is 100%
22 in my market, in my relevant market. But they are able
23 to exclude even in a broader market. There is no
24 competition, at least on their platform, with the
25 exclusions in place.

- 1 Q. But "at least on their platform" are the important words
2 there.
- 3 A. Yes.
- 4 Q. Because Ms Demetriou spent much of yesterday showing you
5 lots of ways in which developers can shift commerce --
6 developers and consumers can shift commerce away from
7 Apple's commission to other platforms, yes?
- 8 A. It is the same evidence that Professor Hitt gave, and
9 none of it is in response to a change in relative
10 prices, right? These developers are developing the same
11 good, the same product, and slight variations, across as
12 many channels as possible to get -- and Professor Hitt
13 and you, apparently, look at that and say: aha, economic
14 substitution. It is not.
- 15 Q. The point that Ms Demetriou was putting to you is if
16 Apple's commission was supra-competitive, then
17 developers and consumers have the means to defeat it by
18 substituting to these other platforms.
- 19 A. These means must not be very powerful because they
20 permit Apple to command a 30% --
- 21 Q. Exactly, and that is where we come back full circle to
22 your HMT. That is all you have got?
- 23 A. It is all I have got for what? It is the part of the
24 indirect test.
- 25 Q. Yes, but it is also your direct test. You said the

1 pricing power --

2 A. No, I just said the direct test has two components:
3 ability to exclude rivals, which they do in spades, and
4 pricing premium.

5 Q. I think we have probably gone around this circle enough
6 times now. We will move on.

7 A. Yes.

8 Q. The last topic on market definition that we need to
9 cover is the question of whether IAP and downloads, paid
10 downloads, are in the same market.

11 So you treat the services that Apple provides to
12 developers facilitating the initial download of the app
13 onto their device as being in a separate market from the
14 services that Apple provides to developers facilitating
15 their in-app transactions; is that fair?

16 A. Correct. Correct.

17 Q. Now, we are going to have that debate in a moment, but
18 before I get to that, I just want to clarify, and I hope
19 we can agree about this, that the points Ms Demetriou
20 was putting to you on market definition yesterday, if
21 they were correct, provide an answer to both of your
22 markets.

23 Perhaps let us just go through it together so we are
24 clear, and let us think about --

25 A. I am not sure what you are talking about, but anyway.

1 Q. It will become clearer.

2 A. Okay.

3 Q. Let us just think about your aftermarket first, about
4 the services relating to IAP.

5 A. Sure.

6 Q. So Ms Demetriou spent quite a lot of time, as we have
7 just discussed, going through the various ways that
8 developers and consumers could shift commerce that
9 currently takes place through IAP onto other platforms.
10 I do not want to debate with you whether she was right
11 or wrong on that; for what it is worth, Ms Demetriou is
12 always right.

13 But just so that we know we are talking about the
14 same things, you remember she showed you about how
15 developers like Roblox could encourage consumers to
16 switch to buying Robux on the Roblox website; yes?

17 A. Yes. Just not within the app. Yes.

18 Q. You remember that Ms Demetriou also went over how
19 consumers could switch from iOS devices to Android or
20 other devices, and in that way their IAP transactions
21 would switch to the Play Store, or whatever other
22 platform as well?

23 A. From iOS to ... sorry, did you say the Play Store?

24 Q. Yes. So consumers could -- if Apple's commission were
25 excessive, then Google could charge a lower, more

1 competitive commission, and in consequence to that you
2 could have some consumers stop buying iPhones and for
3 their next device buy a Samsung instead, and ...

4 A. I mean, it is fanciful, because they do not compete.

5 Q. That is fine. I was not going over whether Ms Demetriou
6 was right or wrong, I was just identifying the points we
7 are talking about. I know you do not agree, but you do
8 understand those are all arguments about how, if Apple
9 charged a supra-competitive commission for IAP, then
10 some combination of that switching we have just been
11 discussing would make that attempt unprofitable. That
12 is our argument. I am just checking that you understand
13 that is our argument?

14 A. I understand your argument, if that is what you are
15 asking me.

16 Q. So if we are right about that argument, then even if you
17 are right that we need to look at IAP separately, that
18 market would have to be defined so as to include these
19 other substitution possibilities. If we are right that
20 these substitution possibilities exist, they relate to
21 your IAP aftermarket?

22 A. If they exist, not just exist, of course, but if they
23 actually serve to constrain --

24 Q. If they are economic --

25 A. Yes, if people are actually availing themselves of these

1 substitutes in a way to discipline Apple, then does the
2 difference between the two markets, primary and
3 aftermarket, matter any more? No. So if you have
4 expanded the market, wrongly in my view, to include
5 every transaction under the sun, then that is right,
6 Apple's share is too small on either market, whether
7 they are combined or separate markets.

8 Q. I thought we would agree on that.

9 Now, if Apple is charging a competitive commission
10 in the aftermarket for the reasons Ms Demetriou has
11 talked about, so a competitive commission for IAP, then
12 any attempt by Apple to charge a supra-competitive
13 commission on paid downloads would be doomed to fail,
14 would it not?

15 A. Well, if counterfactually the 30% were competitive, that
16 is what you are asking me to assume, right?

17 Q. Yes.

18 A. If Apple were to raise its price over, then ...

19 Q. Perhaps I can help you?

20 A. Okay.

21 Q. What would happen if you tried to charge
22 a supra-competitive price for paid downloads is that all
23 of the developers would switch away from paid downloads
24 into IAP, yes?

25 A. Oh, your question is going to the substitutability

1 between downloads and IAP.

2 Q. Exactly, yes.

3 A. So you are asking: if you tried to -- if Apple were to
4 try to charge a supra-competitive price just in the
5 primary but not in the secondary --

6 Q. Correct.

7 A. -- would that affect how app developers monetise; is
8 that what you are asking?

9 Q. Yes.

10 A. Wow. Developers currently with the same rate already do
11 not like to monetise through paid downloads, because it
12 discourages people from getting hooked on your app.

13 Q. Exactly.

14 A. So it seems to me that if now -- you are basically
15 asking if you create yet another incentive, could you
16 further discourage?

17 Q. Yes.

18 A. It seems like they have already left that store, right,
19 they are not really -- so I do not know if it would
20 create any more incremental force to get them to change
21 their strategy. They have revealed their strategies to
22 us. They tend not to want to charge for initial
23 downloads.

24 Q. So, really, I mean if Apple is constrained in relation
25 to IAP commissions, then we are done, Apple is not

1 dominant in any market?

2 A. This is almost tautological. If you want me to assume

3 that 30% --

4 Q. It is not meant to be difficult.

5 A. No, tautological is what I said. It is not a difficult

6 question --

7 Q. No, I know, that is what I am saying, it --

8 A. If you are saying assume that the 30% is a competitive

9 rate, what are the overcharges? Well, you know, we can

10 all go out right now, go to the bars.

11 Q. That sounds fun!

12 A. Okay.

13 Q. Now let us look at it the other way around. We have

14 just done competitive IAP, and discussed that there is

15 no point thinking about distribution after that because

16 we are done. Now let us think about competitive

17 distribution.

18 A. Okay.

19 Q. If we could just look at [draft] page 14 of today's

20 transcript.

21 A. Okay.

22 Q. I think you have prospectively answered the question.

23 A. Okay.

24 Q. If you just read lines 21-25, just to remind yourself.

25 A. 21-25?

1 Q. Yes.

2 A. Okay.

3 Q. There is a bit of a gap there, but the point you were
4 making was that even if Apple ties in the
5 counterfactual --

6 THE CHAIRMAN: Mr Piccinin, I think if you want him to read
7 it, it is probably helpful not to talk over him. It is
8 up to you how you do it, but I think if you ask him to
9 read it, you need to let him read it.

10 MR PICCININ: That is fair, sir, yes.

11 A. So, yes, I have got it back in my mind, and it is my
12 opinion that if you have competition in app distribution
13 and, say, everyone's share were to fall to 30, 40%, then
14 a tie in that situation would not be as offensive,
15 because you could not leverage power from the primary
16 into the secondary.

17 Q. Exactly. So, again, if the primary market is
18 competitive we do not need to worry about the
19 aftermarket?

20 A. In terms of modelling, in terms of competition
21 authorities, right.

22 Q. In terms of anything in this case.

23 A. You know that you and I could impose a tie on our
24 customers, and if we do not -- there is all sorts of
25 exclusionary conduct that you and I could do without

1 market power, right, that would not run afoul of the
2 anti-trust laws. We could do it with impunity, right?

3 Q. Sorry, just to make sure I have got that. If the
4 primary market is competitive, then Apple is not
5 dominant in the aftermarket either?

6 A. If the primary market is competitive, then the firm can
7 engage in a tie or any host of exclusionary conduct and
8 not inflict anti-competitive effects in the tied market.
9 I think that is pretty obvious.

10 Q. Thank you. All right. Having established that about
11 whether it matters or does not matter, since there is
12 a pleaded dispute about whether the Tribunal should call
13 it one market or two markets, I am just going to run
14 through five reasons why we say you should look at them
15 as a combined market.

16 A. Okay.

17 Q. I am going to ask you about them in turn, I am not going
18 to just put all five to you, so you do not need to write
19 them down.

20 A. I was just wondering if we were going to do my three
21 favourites. But we can do your five, that is okay.

22 Q. We will do my five.

23 You accept that distribution consists of a bundle of
24 services, do you not?

25 A. Yes, there are many services that are being offered to

1 facilitate, you know, the consummation of a download in
2 the primary market, yes.

3 Q. Like App Review, and search, and the provision of
4 information about the apps, consumer reviews?

5 A. Yes.

6 Q. All of that?

7 A. I list out all the services, yes.

8 Q. So those are all steps along the pathway to bring
9 a paying customer to a developer; yes?

10 A. Yes.

11 Q. So the ability to make the customer pay after they have
12 already downloaded the app, and maybe tried it and liked
13 it, is really just an extension of that pathway, is it
14 not?

15 A. I do not know what you mean by "an extension of the
16 pathway".

17 So we are now talking about five years later,
18 a customer who has paired off with his favourite app,
19 wants to consummate a transaction, and you are calling
20 it an extension of the pathway. At some point, my
21 contention is that Apple's contribution to the value
22 that had been created starts to dissipate and that the
23 developer should be capturing a greater portion of the
24 revenues that are being calculated -- that are being
25 generated. You are calling it an extension, you know --

1 Q. You give the example of five years. What about the
2 example of five minutes? So someone downloads an app,
3 and in order to make the app useful they need to make
4 an in-app purchase.

5 A. What I will grant you is that -- of course, many in-app
6 transactions are happening way past, you know, five
7 minutes of the initial download. But I will grant you
8 that the matchmaking value is at its highest at the
9 point of download and then it dissipates over time.

10 Q. I see.

11 A. Yes.

12 Q. So the second point. If we can go back to what is fast
13 becoming our favourite document, or our favourite page
14 in our favourite document, it is {C2/10/142}.

15 A. Yes, you like this one.

16 Q. I really like Mr Holt's report. I am sorry it is not
17 yours.

18 A. Yes. So yes, I am familiar with it.

19 Q. So table 7.4 in Mr Holt's third report. Again, I think
20 there are some factual points here that you have already
21 discussed. So every marketplace that offers both
22 distribution and in-app purchase services charges the
23 same commission for both; yes?

24 A. Yes, we established that this morning, that the app
25 stores tend to like to have uniformity in their prices.

1 Simplicity in their prices.

2 Q. That suggests, does it not, that the app marketplaces
3 are making one single economic decision as to what the
4 commission will be across both sets of services; yes?

5 A. I think they -- it is hard to get into their brain, but
6 ultimately they are arriving at a single number.
7 Whether or not they solve for the problem all at once,
8 we know that most of the activity is occurring in the
9 aftermarkets, right. So to me, if I were hired, I would
10 say: let us get that one right, and then we could maybe
11 bring the primary market into uniformity.

12 Q. I see. Then it is right, is it not, that all of the big
13 ones here also -- I think the way you like to describe
14 it is tie in the in-app aftermarket services?

15 A. When you say the big ones; the ones who are the dominant
16 or the sole platform for their --

17 Q. Not just sole. Steam as well.

18 A. No, but when I think about the Play -- when I think
19 about Xbox, at the bottom of Professor Hitt's favourite
20 comparables, he likes to go to the people who control
21 the platform, right? But I do not know if that is what
22 you are talking about.

23 Q. But Steam as well, right?

24 A. So Steam no longer controls the platform. They may have
25 at one point, but they have lost share and they have had

1 to drop their commission.

2 Q. They also tie the in-app aftermarket services, do they
3 not?

4 A. I am forgetting now who ...

5 Q. It is the second one on this list.

6 A. So where do you see --

7 Q. So you see the fourth column.

8 A. Right. So yes, they are still -- so they are still
9 forcing you to use Steam as the payment processor, yes?

10 Q. Yes.

11 A. Again, my contention is that if the market opens up, if
12 they loose footing in the primary market, and I think
13 that has happened in PC games, then these ties may not
14 be as objectionable; that is, if you went into a court
15 and you challenged Steam's tie-in, if they only had --
16 I do not know what their market share is, but 39,
17 somewhere between 39 and 50, there could be a legitimate
18 debate as to whether the tie is offensive at that point.

19 Q. Is it not obvious that what is really going on here is
20 that these marketplaces are charging the aftermarket
21 commission as a fee not just for the literal processing
22 of the in-app transaction, but also for the distribution
23 of the app that contains the in-app purchase option?

24 A. I do not know how you can necessarily get to that from
25 looking at the same numbers in the columns, no.

1 Q. I mean, is it not fairly obvious that the commercial
2 proposition is that if you want me to distribute your
3 app, then you need to pay me X percent, 30, 12, 25,
4 whatever, of all the revenues that you get from
5 customers as a result of downloading the app from my
6 store?

7 A. No, because we have at least three examples, right, that
8 do not do that. Three examples do not tie. They allow
9 for openness, right?

10 Q. We do not actually have any evidence of any of those
11 having any material volume of commerce flowing through
12 third-party aftermarket service providers.

13 A. This is now -- we have been through this one a lot, but
14 just quickly. If you are at 12% and you open up --

15 Q. That is --

16 A. Okay, we do not have to do that.

17 Q. I know what you think about why, but where that leaves
18 us is that there are no examples of any stores that have
19 any material commerce flowing through third-party
20 aftermarket service providers?

21 A. Well, we do not know that. It turns out on the two --
22 I think Professor Sweeting and I -- you can ask him when
23 he comes on, but the two other ones, and I cannot
24 remember, I think it was Samsung and Microsoft, maybe,
25 we just could not find the percent to which -- the

1 extent to which -- we just know that they open it up,
2 right.

3 Q. We do not have any evidence at all of people using it.

4 A. That avail themselves of the option, right?

5 Q. Yes.

6 A. I am also saying just the mere possibility of availing
7 yourself of that option would put downward pressure on
8 the rates.

9 Q. Third point. You say -- this is one of yours, I think.

10 A. Okay.

11 Q. You say that the aftermarket is a one sided market as
12 distinct from the distribution market which is two
13 sided; correct?

14 A. Yes. Yes.

15 Q. It is one sided, but the one side is the developer's
16 side, in your view?

17 A. Right, the developer is the only buyer in the
18 aftermarket. There are no matchmaking services going on
19 in the aftermarket. I do not know if you still ...

20 Q. I understand that is your view. But you understand, do
21 you not, that the developer has to make the decision to
22 use IAP at the same time as it puts the app up for
23 distribution?

24 A. That is by contract. That is Apple's restriction in
25 operation. That is the payment restriction.

1 Q. So you like to talk about a sword being bought five
2 years down the line, but isn't that the wrong
3 transaction? The decision to buy IAP services from
4 Apple is made at the time you put your app up for
5 distribution?

6 A. No, Apple is saying, by contract, that for you to get
7 access to our store, you must agree that for every
8 in-app transaction you have got to buy a payment
9 processing service from us, and that is going to
10 invoke -- I think when you say the IAP. We have a lot
11 of acronyms here, we also have the API.

12 Q. But my point is different from that.

13 A. Okay.

14 Q. My point is that the developer has to decide, as part of
15 submitting its app for review, what, if any, IAP options
16 are going to be in there: swords, bundles of coins, bags
17 of gems. All of that has got to be done as part of the
18 decision to put the app up for distribution?

19 A. Well, I am going to push back gently, because I think
20 that you can make modifications to the app and what
21 types of skins are available after it has been posted to
22 the --

23 Q. Sure, but all of that has to go back through App Review
24 again, does it not?

25 A. Yes, probably so.

1 Q. Yes, and has to be reflected on the App Store for
2 whenever the app is being downloaded, yes?

3 A. I think that all of those -- I mean, it is a technical
4 question, but my understanding is that those in-app
5 products for purchase are available within the app and
6 that the transactions that are happening in the
7 aftermarket are merely unlocking those things that are
8 already there.

9 Q. Yes, and so the decision as to what should already be
10 there, as you put it, when it is being downloaded, that
11 is a decision that happens at the same time as the
12 distribution services are obtained by the developer?

13 A. So I will grant you that the decisions of what to put --
14 what Christmas ornaments to put in your app are
15 available are made at the time that you go into the
16 store, but the transactions that implicate those swords,
17 and the nature of the services and who is the buyer and
18 who is the seller in support of consummating those
19 transactions, is happening at a later point in time.
20 That is my point.

21 Q. Sorry, could you say that last bit again?

22 A. Yes. The actual purchase of the sword which is going to
23 trigger -- remember I talked about these two parallel --

24 Q. Yes.

25 A. -- that is why I do not like the word "transaction", but

1 these two parallel activities, one is the purchase of
2 the sword itself, the developer has to turn around and
3 acquire support services for the consummation of that
4 purchase, and it is that related activity that is part
5 of our in-app support services market.

6 Q. But that activity, the developer/Apple interaction,
7 happens in the distribution market.

8 A. No.

9 Q. It happens at the same time as the app is being put up
10 for download.

11 A. No. That activity in an open market would occur between
12 the developer and whoever is providing in-app support
13 services. It could be a third-party payment processor,
14 it could be --

15 Q. In the real world, it happens as part of the App
16 Review --

17 A. No, it happens in the real world by contract. Apple is
18 not allowing you to avail yourself of any options in the
19 aftermarket.

20 Q. Can we have a read of 391 at the bottom of this page
21 {C2/10/142}.

22 A. Sure.

23 Q. You have looked at this earlier with Ms Demetriou. Can
24 we have the whole of it up.

25 So Mr Holt says:

1 "Workable competition in the aftermarket does not
2 necessarily require the option to choose a separate
3 aftermarket provider if there is workable competition in
4 the primary market."

5 You agreed with that before?

6 A. Yes.

7 Q. The second sentence:

8 "App stores that compete on commission rate for
9 developers will also compete on the commission rates for
10 in-app aftermarket services, because developers who are
11 assessing which app stores to use will take into account
12 the commission ... that is relevant to their business
13 model, eg the rate for in-app aftermarket services."

14 If we just go over the page to see the ending of it
15 {C2/10/143}.

16 A. Okay.

17 Q. What Mr Holt is describing here is a system market?

18 A. I do not think he is, not from reading those two
19 sentences.

20 Q. All right.

21 A. You can ask Mr Holt what he thinks. I do not know if
22 Mr Holt has weighed in on the question of market
23 definition.

24 Q. All right, that was my third point.

25 The fourth point. There are, in fact, several

1 aspects of the service -- what you call the aftermarket
2 service that are actually provided to the user. Do you
3 accept that or do I need to run through some examples?

4 A. No, I know -- I think I know the examples you are using,
5 but I would gently push back that they are being
6 provided to the user, right, but they would be -- that
7 functionality could be provided by a third party in-app
8 support service provider, yes.

9 Q. Does it not undermine your view that this is just
10 an Apple/developer relationship, if Apple is actually
11 providing some of these services, like Ask to Buy or
12 Family Sharing or subscription management to the user?

13 A. No, because I think I have seen testimony here that
14 a third-party provider like Paddle could support in the
15 delivery of family support services.

16 Q. That is not the point I am on, Dr Singer.

17 A. No, but you cannot point to the fact that Apple is doing
18 it today as proof that only Apple could do it --

19 Q. That is not my point --

20 A. -- same --

21 Q. Forget Apple. It is not who is doing it, it is who they
22 are doing it for. For whom. The answer is: for the
23 user.

24 A. You are conflating again these two parallel economic
25 activities. The user does want the sword, but the user

1 is not interested in the back-end plumbing that
2 facilitates that transaction. That is a -- that is
3 a separate activity and one between the developer and
4 whoever is providing the in-app support services. Today
5 by design it is Apple, but in a counterfactual world it
6 could be provided by a third-party provider. In fact,
7 we know that some of these app stores have opened up
8 already.

9 Q. Okay. You say the consumer does not care about the back
10 end, but ultimately the developer is only going to sell
11 the sword to the user if the consumer is willing to make
12 that purchase in the app with all the back-end plumbing
13 that is there, right?

14 A. Let me just make sure I have got it. The consumer ...

15 Q. The developer cannot force the consumer to buy the
16 sword?

17 A. Oh no. Yes. In these two parallel transactions, the
18 consumer's demand for the sword, and then there is
19 a derived demand for these in-app support services that
20 allow the transaction to happen, just like I walk or you
21 walk into a store and we buy a loaf of bread, there is
22 some back-end transaction going on that we are largely
23 oblivious to, but it needs to happen in order to
24 effectuate the transaction.

25 Q. But if Apple's IAP service was unreliable or vulnerable

1 to fraud, or the Ask to Buy thing did not work properly,
2 or perceived by users as being any of those things, then
3 fewer IAP transactions would take place. They might
4 take place on the developer's website instead?

5 A. Yes, so the support services, when I go into a store and
6 I buy a loaf of bread, are not top of mind. But if I am
7 trying to check out, and all of a sudden there is a bug
8 in the support services, I might stop going to that
9 store. If that is what you are asking me? It is
10 something in the background, but if it is buggy, and it
11 is actually interrupting what I want, which is a loaf of
12 bread, then, yes, I might complain to the store owner.

13 But it is not really something that I can address.
14 That is going to be on the store owner and the seller in
15 that one sided market of support services.

16 Q. Do you think payment cards are a one sided service as
17 well?

18 A. I have not weighed in on the payment cards yet, but ...

19 Q. That is fine. Apple's work in providing these services
20 is actually bringing both sides of the transactions
21 together?

22 A. I will grant you in the primary market they are, for
23 sure.

24 Q. No, I mean in the secondary market.

25 A. For matchmaking, for bringing -- for pairing off -- I

1 mean, the primary thing -- not to use the word
2 "primary", but the key deliverable that Apple is
3 bringing to the table in the primary market for
4 distribution is the matchmaker, they are bringing
5 together consumers and developers.

6 Q. But in the aftermarket as well, the work that Apple does
7 to make it reliable and trusted by consumers helps to
8 bring the consumers together to transact with the
9 developer in the app, does it not?

10 A. Apple is showing up in the in-app aftermarket merely by
11 contract. They forced themselves into that transaction.

12 Q. All right. Final point, I think, on this topic, yes, if
13 we could go to {D2/193}.

14 A. Okay.

15 Q. I think Ms Demetriou might have shown this to you
16 yesterday. Does it ring a bell? No, it is a new one
17 then.

18 A. Okay.

19 Q. This is about how you can use the App Store to promote
20 your in-app transactions, and if we can go just over to
21 page 2.

22 MR HOSKINS: Could you give the dates of the documents,
23 please, I think that would be helpful.

24 MR PICCININ: We will find out. I do not want to keep the
25 date from you, but I do not know it off the top of my

1 head.

2 So if you could look at page 2 {D2/193/2}.

3 A. Okay.

4 Q. If you look at the top, the point is made that if you
5 are promoting your in-app transactions on the App Store
6 page itself, that is also a way of promoting downloads
7 of the app itself. Yes? Does that make sense to you?

8 A. Kind of. Maybe you could help me understand how you
9 would promote in-app transactions on the App Store
10 itself. You mean like in the description of what your
11 app has to offer?

12 Q. That is one part of it, yes. So just taking that part
13 first.

14 A. Okay.

15 Q. That is a way of promoting your app because it shows
16 what great value in-app transactions you have got?

17 A. So can developers promote their in-app services from the
18 App Store, like pre-download, is that what you are
19 suggesting?

20 Q. Yes, I am going to show you on page 1 what you can do.

21 A. This does not really speak to the services of the
22 relevant market.

23 Again, what you might be doing is you might be
24 conflating the transaction or the economic activities
25 happening between the developer and the user and that

1 which is happening on the relevant markets. Like
2 promotion, promotion of how exciting your game is, is
3 not happening in our markets.

4 Q. It is not happening in?

5 A. It is not happening in the relevant markets.

6 Q. Which market is it --

7 A. That is something between -- that is something between
8 the developer and the user. So promotion of in-app
9 services, I have not seen -- that one has not come up
10 yet.

11 Q. Okay. We --

12 A. Go ahead.

13 Q. I am told this document is referred to in
14 Professor Hitt's report, we do not have a date for it,
15 as in we do not know the date it first appeared on the
16 web, but the screenshot was taken in March 2024, you can
17 see that in the top left.

18 The point I wanted to make, if we just look at the
19 image that we see here --

20 A. Mm-hm.

21 Q. -- is you can actually create a clickable link to
22 purchase the in-app purchase from the App Store webpage.

23 A. Okay.

24 Q. This is something that Apple facilitates. It allows the
25 developer to communicate with the end user.

1 MR HOSKINS: I am sorry to interrupt. The thing about the
2 date is that we know this was a new offering that was
3 introduced we believe in around 2023. It has just got
4 to be made clear to the witness. You cannot keep
5 showing documents assuming they have applied throughout
6 the claim period and not give a date, it is just not
7 fair.

8 MR PICCININ: I did not put to the witness that this applied
9 throughout the claim period.

10 THE CHAIRMAN: The witness now is aware that it is possibly
11 something that has not arrived until a later date. If
12 you are not in a position to direct him on that, then he
13 needs to qualify his answers on that basis. He is free
14 to qualify his answers on that basis.

15 MR PICCININ: Sure. I have no objection to that at all.

16 THE CHAIRMAN: There is a point here that applies, I think,
17 generally, and it is not a criticism of you,
18 Mr Piccinin, because certainly I had not appreciated
19 there was a point with this. I think it is always very
20 helpful with these things -- I am assuming when they are
21 coming up that they are current unless they have a date
22 on them. Of course, it is not necessarily very helpful
23 if the date actually matters for the purposes of the
24 litigation.

25 So there are quite a lot of website entries and

1 possibly they could come from 2015 or they could come
2 from 2024, and that is somewhat problematic. To the
3 extent that anybody -- and this applies to both sides of
4 the court -- is deploying them, it is always very
5 helpful to know at least what reference point we are
6 working to, even if we do not know when it first went
7 on. But that is not a criticism of you.

8 MR PICCININ: No. But by and large, sir, and you may have
9 already seen this for yourself, by and large the
10 information is recorded in the index on Opus, and
11 I think we all try to make it clear when we know. But
12 this one, I was not making a particular temporal point
13 and I did not know.

14 THE CHAIRMAN: No, and it is all very well if it is on Opus,
15 but I am not working from that, and I do not imagine the
16 witness is, so in a way it is actually more about
17 getting it out in front. I am not criticising you.
18 Everybody tries their best. There is just a point where
19 these web pages in particular are problematic.

20 MR PICCININ: Yes. It is an entirely fair point.

21 So you can see, Dr Singer, that it is possible,
22 actually -- or it has been possible since it has been
23 possible -- to click on a little button to begin the
24 flow to purchase the in-app product from the App Store
25 itself.

1 A. Yes. I would submit that this is not the traditional
2 way in which in-app purchases are made. They are made
3 from the app, not the App Store --

4 Q. I was not suggesting it was the traditional way --

5 A. -- point in time and the like. So, okay, you have shown
6 me that for this one app, at a very late date, you could
7 make a pre-in-app purchase, if you like; at least, they
8 could advertise the ability to make in-app purchases
9 before you download the app.

10 Q. To be fair to you, I should show you on page 2 again
11 what actually happens.

12 A. Okay.

13 Q. {D2/193/2} So under "Ensuring a seamless purchase flow",
14 if you do that, and somebody clicks on the button, then
15 the user is taken into the app to continue the
16 transaction in the app.

17 My point is that a transaction like that seems quite
18 difficult to categorise, in your dichotomy, does it not?

19 A. Because it is a -- you want me to assume it is a -- the
20 user demands the in-app at the point of purchase, right,
21 for this hypothetical, right?

22 Q. At the point of download.

23 A. Yes. So remember I had multiple reasons for why I think
24 there are different services, and so what you are doing
25 now -- my third one, I think, was different points in

1 time. You have come up with an example, we do not know
2 how idiosyncratic this example is, of an in-app purchase
3 that could happen at the same point in time of download,
4 right?

5 So to the extent that this has ever happened, this
6 would eliminate the third of three prongs. I talked
7 about multi -- about matchmaking goes away after the
8 first; different timing, right, and different place;
9 App Store versus the app. So he wants me to assume that
10 there could be a transaction where the demand -- where
11 they are both happening, where they are both happening
12 at the same time.

13 Q. At the same time and at the same place, effectively?

14 A. Well, no, you just admitted it is not happening at the
15 same place, right, because the in-app transaction is
16 going to happen from within the app, not the App Store.

17 Q. That is true. The purchase flow begins from the
18 App Store, that is the point.

19 A. Okay. Okay.

20 Q. Those were all the points I wanted to ask you about. My
21 overall conclusion is that it just makes no sense to
22 analyse in-app transaction services as being --
23 (overspeaking) --

24 A. Okay. That is your testimony, that is fine.

25 Q. It is not my testimony, but it is my case.

1 A. I usually -- you know, I usually do not get things like
2 that after a series of questions. That is fine.

3 Q. It is a British thing. We have to put our case to you.

4 Okay, so we are done with market definition now, and
5 we can move on to the models.

6 If we could just start by looking at a document
7 which is at {AB6/9.1/1}. Just so you can see what this
8 document is, it is the European Commission's -- it was
9 actually produced by the commission staff -- practical
10 guide on quantifying harm in actions for damages based
11 on breaches of competition law.

12 If we could just go to page 33 {AB6/9.1/33}, you can
13 see there is a discussion here of one methodology for
14 doing that, which is simulation models, and I just
15 wanted to see if we could establish some basic common
16 ground about what we do when we look at these kind of
17 models, what we are doing with them.

18 So in paragraph 97 in the first sentence, you can
19 see that the Commission tells us that:

20 "Simulation methods draw on economic models of
21 market behaviour."

22 Yes?

23 A. Yes, and we should -- you know, I would have to read the
24 entire section. It is not clear just from the word
25 "simulation" that this would be where the Rochet and

1 Tirole or Landes and Posner model would go.

2 "Simulation" has a broad meaning in economics.

3 Q. Yes. It might become clearer to you as we go through --

4 A. We will see. We will see.

5 Q. -- that that is what they are talking about.

6 So in the third sentence they tell us:

7 "The branch of economics known as industrial

8 organisation has developed models of competition ...

9 that can [be used to simulate market outcomes]."

10 Do you see that?

11 A. Yes, okay.

12 Q. In paragraph 98, they refer to two classes of models,

13 one is Cournot and the other is Bertrand, yes?

14 A. Yes.

15 Q. Cournot is where the firms -- the competitors compete by

16 choosing quantities, and then the market price, or the

17 firm price, drops out from the demand function?

18 A. Correct.

19 Q. What a demand function is, just because we are going to

20 get to some soon, the demand function is

21 a representation of consumer preferences; yes?

22 A. That is fairly abstract.

23 Q. Yes.

24 A. I think you could help a student better. There are

25 better definitions.

1 Q. Well, I will try and help a student better.
2 What it tells you, more specifically, is what the
3 marginal consumer is willing to pay at any given
4 quantity?
5 A. Yes, that is also true. I do not know how helpful it
6 is --
7 Q. Okay.
8 A. -- relationship between units demanded in price.
9 Q. Okay. Price that the consumer is willing to pay, that
10 is ...
11 A. Yes, each point on the demand curve will tell you the
12 willingness to pay of that particular consumer. Yes,
13 that is also true. But that is kind of a hard way to
14 introduce the concept, yes.
15 Q. Okay. So that is the Cournot model or models.
16 Then there is the Bertrand type of model, and that
17 involves firms choosing prices instead of choosing
18 quantities; yes?
19 A. Correct.
20 Q. Again, we can then get the quantities from the demand
21 function, so we just read off the quantity demanded from
22 the price that is set by the competing firms; yes?
23 A. Okay, yes.
24 Q. Can you see in the fourth sentence of this paragraph,
25 the Commission says that in Bertrand models, prices

1 increase with the degree of product differentiation?

2 A. Yes.

3 Q. That is actually true of Cournot models as well, is it
4 not?

5 A. I think so, although product differentiation is usually
6 introduced in the Bertrand context, okay?

7 Q. Usually. That is true.

8 Paragraph 99, the Commission -- so if you could
9 just -- yes, that is probably enough. The Commission
10 explains that in both types of models, outcomes depend
11 on the number of firms, on barriers to entry, on the
12 degree of differentiation, and characteristics of the
13 market like the shape of the demand function and cost
14 structure. Those are all fair points, are they not?

15 A. Yes. Sure.

16 Q. Then over the page {AB6/9.1/34}, paragraph 100, the
17 Commission says in the second sentence that:

18 "The simulation model should be constructed [to
19 replicate] the most significant factors influencing
20 supply (in particular, the way competition takes place
21 ...) and demand conditions ..."

22 Yes?

23 A. Yes.

24 Q. The way you do that is to express those factors in
25 a series of equations; yes? But now I am not just

1 referring to what the Commission says, I am just asking
2 you about how to do this.

3 A. Yes.

4 Q. Actually, the Commission does say it too in about the
5 middle of 100.

6 A. My screen keeps going black.

7 Q. Oh no.

8 A. It is back on. Now it is black again.

9 Q. Oh really?

10 A. Okay, now it is back on.

11 Q. I wonder if we should take a --

12 THE CHAIRMAN: Maybe it is a good time to take a break. Is
13 it convenient to do that? Better than waiting for the
14 screen to come on.

15 A. The screen is on and it seems to be lasting now.

16 THE CHAIRMAN: Do you want to try and finish and then we can
17 take a look at it over the break.

18 MR PICCININ: It will not take long to finish this point,
19 and I do not think any of this is controversial either.

20 The way we do an economic model is we express those
21 factors that the Commission has been talking about in
22 a series of equations, yes?

23 A. That is how this reads; they would be expressed, yes.

24 Q. That is what you do in your models too?

25 A. I mean, I am quite literally just writing out the

1 equilibrium price equation from the models as they are
2 derived. The only innovation I am bringing is I am
3 putting it in the context of a commission basis, as
4 opposed to prices.

5 Q. I think you are being modest, Dr Singer, about your
6 contribution.

7 A. I appreciate that, but I --

8 Q. We will come on to what you do.

9 Then there will be some parameters, some terms in
10 those equations that you need to estimate or make
11 assumptions about, yes?

12 A. Yes. Yes.

13 Q. The idea is that once you have filled in those gaps,
14 then the model will make its prediction about what would
15 have happened to price and quantity in the
16 counterfactual, yes?

17 A. It could, yes.

18 Q. Over the page {AB6/9.1/35}, paragraph 104.

19 A. Okay.

20 Q. The Commission makes the point that Dr Bishop made
21 during the hot tub that everyone agreed on, which is
22 that every model is obviously, at best, only
23 an approximation of reality, because it is relying on
24 stylised assumptions of some kind?

25 A. Correct.

1 Q. The point is, it can never be perfect, and so we should
2 not sort of nit-pick about every little detail.

3 A. Yet ... here we are.

4 Q. We will see. But the Commission does say that even very
5 comprehensive models still depend very much on the right
6 assumptions being made, in particular regarding the
7 central questions of what is the likely mode of
8 competition and the likely customer demand?

9 A. Sure. Sure. That is fine.

10 Q. You would agree with that?

11 A. Yes.

12 Q. So when we are looking at a simulation model, in
13 addition to making sure that it is all internally
14 consistent, obviously, we should focus on the
15 assumptions that are really driving the results; is that
16 fair?

17 A. Absolutely. Absolutely.

18 MR PICCININ: That might be a convenient moment now. We are
19 done with the Commission. Thank you.

20 THE CHAIRMAN: We will break for ten minutes.

21 (3.13 pm)

22 (A short break)

23 (3.25 pm)

24 MR PICCININ: Dr Singer, you have got two models, there is
25 the Rochet and Tirole model and the Landes and Posner

1 model; yes?

2 A. Correct.

3 Q. The Rochet and Tirole model you use for the distribution

4 markets; yes?

5 A. Yes.

6 Q. You use the Landes and Posner model for the aftermarket;

7 yes?

8 A. In-app support services, yes.

9 Q. Sure. For all the reasons that I have just debated with

10 you before, you understand we say that it makes more

11 sense to analyse Apple's commission-setting decision, it

12 is a single decision applying to both sets, yes?

13 A. You are entitled to that, and I have also now used --

14 Q. I know.

15 A. -- Rochet and Tirole to do a unified market as well, to

16 come up with a but-for commission rate. That was part

17 of the joint statement.

18 Q. I think where you get on that is 14.5%, is it not?

19 A. Yes.

20 Q. Let us put that to one side, we do not need to have that

21 argument again, and go through your two models in turn.

22 We will start with Rochet and Tirole.

23 A. Okay.

24 Q. That is a two sided model, is it not?

25 A. Yes.

- 1 Q. It models demand for transactions on the App Store from
2 buyers and developers separately; yes?
- 3 A. Yes, it is assumed that, yes, the demands are separate,
4 but they are connected, yes.
- 5 Q. Because a transaction can only happen if both the buyer
6 and the developer choose to use the App Store to
7 transact?
- 8 A. Correct.
- 9 Q. So if we can go to your report, to {C2/8/216}, please.
- 10 A. Okay.
- 11 Q. This is where you write down some of the relevant
12 equations, and you see what I mean, Dr Singer, you did
13 write down some equations?
- 14 A. Yes, I did do that.
- 15 Q. So A.2 you see in the middle of the page. That is your
16 profit function, is it not?
- 17 A. Yes.
- 18 Q. What a profit function is, is it tells you what profits
19 Apple expects to earn, depending on the decisions it
20 makes and that other people make; yes?
- 21 A. I think that is fair, in broad strokes.
- 22 Q. Just so that everyone can follow what it means, the Π
23 on the left-hand side of it is profits; yes?
- 24 A. Yes.
- 25 Q. Then the first set of brackets on the right-hand side,

1 so that is the PB plus $rS(r)$ minus C, that is basically
2 the gross margin for Apple, is it not? It is price
3 minus cost for Apple?

4 A. Correct.

5 Q. The price component of price minus cost, as you have
6 written it, comes in two parts; yes?

7 A. Yes. In theory it could come from both sides of the
8 platform.

9 Q. At the moment you are allowing it to come from both
10 sides of the platform?

11 A. Yes.

12 Q. So PB is the price charged by Apple to the buyers; yes?

13 A. Yes.

14 Q. Then $rS(r)$ is the commission, that is r , multiplied by
15 S , which is the price of the app?

16 A. Correct.

17 Q. We write $S(r)$ because the price of the app, in your
18 world, depends on the commission, yes?

19 A. Yes, it is complicated, yes.

20 Q. So $rS(r)$ is the amount which the developer pays to
21 Apple?

22 A. Yes.

23 Q. So those brackets, which I am just going to call the
24 gross margin for short, is then multiplied by two
25 distinct functions. The first of them is the DB

1 function; do you see that?

2 A. Yes.

3 Q. DB is the buyer demand; yes?

4 A. Yes.

5 Q. So that is the demand from end users; yes?

6 A. From what users? End users, yes.

7 Q. End users. That is a function, but the way the notation

8 works is that you have DB, then open brackets, and what

9 follows are the things that determine buyer demand, are

10 they not?

11 A. Correct.

12 Q. So those are the price of the app; yes?

13 A. Yes.

14 Q. Then the price that Apple charges to the user, if any?

15 A. Correct.

16 Q. The idea is that if those prices collectively increase,

17 then buyers will want to transact less?

18 A. Correct.

19 Q. Yes. So the next term is DS, so that is another

20 function, which is the seller demand function; yes?

21 A. Yes.

22 Q. That depends on the commission; yes?

23 A. Correct.

24 Q. What was interesting to me about this -- I like a good

25 profit function -- what was interesting to me about it

1 is this is one where the total quantity of transactions
2 that the firm enjoys is actually the product of two
3 demand functions, DB and DS; yes?

4 A. Not my innovation. This is straight out of Rochet and
5 Tirole, yes.

6 Q. That is what it is.

7 A. Yes.

8 Q. So I want to see -- and you are right that comes from
9 Rochet and Tirole, obviously, and I want to look at that
10 so we can understand it a bit better.

11 A. Okay.

12 Q. So if we go to {C5/61/6}, perhaps let us just look at
13 the first page so you can see what it is.

14 A. Okay.

15 Q. This is the Rochet and Tirole paper.

16 A. Yes.

17 Q. If you go back to page 6 {C5/61/6}, in the third
18 paragraph you can see that the professors ask us to
19 consider the case of payment cards; do you see that?

20 A. Yes.

21 Q. What they are saying is imagine that the buyers want to
22 purchase something, like a real thing, at a price P ,
23 yes?

24 A. Yes.

25 Q. That transaction is going to take place by card if, and

1 only if, the buyer pays by card instead of by cash; yes?

2 A. Yes.

3 Q. That is obvious. Then they introduce some notation.

4 There is the BB and BS, do you see those?

5 A. Yes.

6 Q. Those are the benefits that the buyers and the sellers

7 get if the transaction happens by card respectively;

8 yes?

9 A. Okay.

10 Q. Those are different for different buyers and sellers;

11 yes?

12 A. Yes.

13 Q. So there is a probability distribution for each of them;

14 yes?

15 A. Okay.

16 Q. The buyer's demand for paying by card depends on this PB

17 variable, and that is the price charged by the card

18 platform to the buyer; yes?

19 A. Yes.

20 Q. Then the seller's demand for accepting a payment by card

21 depends on PS, which is the price charged by the card

22 platform to the seller, yes?

23 A. Yes.

24 Q. They introduce the notion of a quasi-demand function, do

25 you see that, just above the first equation on the page;

1 yes?

2 A. Yes.

3 Q. If you look at the footnote, footnote 6, they explain
4 that the reason they are calling it a quasi-demand is
5 that actual demand, as in the total quantity, depends on
6 both types of users, the buyers and the sellers;
7 obviously you agree with that?

8 A. Yes.

9 Q. So you can see from these two equations, the way they
10 are set out, that those two functions, the two
11 quasi-demand functions, are both probabilities; yes? Do
12 you see that? The Pr , probability, that BB is greater
13 than PB is equal to the demand function for buyers; yes?

14 A. Yes.

15 Q. So those are the probabilities that the buyer and seller
16 respectively want to transact by card; yes?

17 A. Yes.

18 Q. Effectively they are the probabilities that you have
19 found a consumer whose preference for paying by card
20 exceeds the card company's charge for using the card,
21 and likewise for the seller; yes?

22 A. I mean, yes, you need a match for the transaction to be
23 consummated.

24 Q. So over the page at the top {C5/61/7}, you can see in
25 the first sentence that Rochet and Tirole model those

1 probabilities as being independent of each other; yes?

2 A. From which line would you like me --

3 Q. So the first sentence:

4 "Assuming for simplicity the independence between BB

5 and BS ..."

6 Yes?

7 A. Yes, you would have to go back and tell me what BB and

8 BS are.

9 Q. Those are the buyer's and seller's respective benefits

10 derived from paying by card.

11 A. So the benefits are assumed to be independent, yes.

12 Q. That then leads to the probabilities that those benefits

13 exceed the price also being independent of each other,

14 and that is why you can see here that the quasi-demand

15 functions can be multiplied together; yes?

16 A. Yes. It is a notational ease that allows them to write

17 the demand as a product, as opposed to what is

18 customarily just one simpler demand function.

19 Q. What "independence" means in probability theory is just

20 that the probability of one thing happening is -- does

21 not depend on whether the other thing has happened or

22 not.

23 So in this case, the probability that a buyer wants

24 to pay by card does not depend on whether the seller

25 wants to pay by card.

1 A. Oh, it is not the seller pay by card. But I get your
2 drift, it is the seller wants to accept --

3 Q. Transact.

4 A. -- transact at that price, yes.

5 Q. Okay. That is why you then get the profit function that
6 is written here that you can see being written as
7 a gross margin, multiplied by the quasi-demand for
8 buyers, multiplied by the quasi-demand for sellers, yes?

9 A. Okay.

10 Q. Because they are probabilities; yes?

11 A. Yes.

12 Q. So if we can go back to your report again {C2/8/216},
13 and actually at A.1 you had already exactly reproduced
14 the Rochet and Tirole function; yes?

15 A. Yes.

16 Q. Again, the quantity of transactions is equal to DB times
17 DS, yes?

18 A. Yes.

19 Q. Then you have just rewritten that in A.2, this is what
20 you were telling us before. Your main innovation was to
21 change PS into a commission?

22 A. I spell out two other innovations. You see that is
23 number 1, but there is number 2 and number 3 as well.

24 Q. Yes. You have also built into the DB function the fact
25 the buyers are paying a price for apps that depends on

- 1 the commission rate as well; yes?
- 2 A. Yes. This was perhaps more complicated than what the
- 3 original Rochet and Tirole had imagined, but then life
- 4 presents you challenges sometimes, and we are trying to
- 5 get at this more complicated market.
- 6 Q. But again, in your model as well, the total number of
- 7 transactions that Apple processes is equal to $DB \times DS$, yes?
- 8 DS, yes?
- 9 A. Yes.
- 10 Q. That is because, just like in the Rochet and Tirole
- 11 model, you need both the buyer and the seller to choose
- 12 Apple in order for the transaction to take place through
- 13 the App Store, yes?
- 14 A. To choose Apple and to be willing to commence such
- 15 transaction at the prices that are existent.
- 16 Q. Okay, if we could go over the page {C2/8/217}. What you
- 17 then do with the profit function is to derive
- 18 an equation, which you label A.4, and what that does is
- 19 it defines the commission and the buyer side price that
- 20 Apple would set if it were maximising its profits; yes?
- 21 A. Yes.
- 22 Q. The way you do that is by using calculus to derive the
- 23 rate at which the profit function changes as you change
- 24 the commission rate; yes?
- 25 A. Correct. Yes, you take the derivative with respect to

- 1 the commission and set it equal to zero. Yes. Yes.
- 2 Q. Just to talk through the logic of that, this is again
- 3 just so that everyone can follow. One thing that
- 4 happens if Apple increases the commission is that it
- 5 earns more money on the transactions that still take
- 6 place; yes?
- 7 A. That is the good news, yes.
- 8 Q. That is the good bit. Then the bad bit is that some
- 9 buyers do not want to transact on the App Store any more
- 10 because apps are more expensive?
- 11 A. That is the first part of the bad news.
- 12 Q. So that is the elasticity of buyer demand that you have
- 13 down in A.5?
- 14 A. With respect to the commission, yes. But you have more
- 15 bad news too, which is you could have sellers not
- 16 wanting to transact at higher commissions as well.
- 17 Q. That was my next question. Too easy.
- 18 A. Okay.
- 19 Q. Then the profit maximising commission is found when this
- 20 expression on the left of A.4 is equal to zero, and that
- 21 is the profit maximising price, because at that point
- 22 increasing the commission further will create just as
- 23 much benefit from the higher commission, the good bit,
- 24 as it does disbenefit from the lost transactions; yes?
- 25 A. Close. I think for the A plus, you would say if you

1 went any further, right, at the margin the losses would
2 exceed the benefits, right?

3 Q. Yes, that is what I was trying to say.

4 A. Okay.

5 Q. Thank you for the feedback though.

6 A. That is okay. I am a tough grader.

7 Q. Yes, and you can see the profit maximising price that
8 Apple charges to the users, PB, and the profit
9 maximising commission, both depend on a number of
10 parameters, including the elasticities of the two demand
11 functions; yes?

12 A. Yes, there are a lot of parameters in the front of the
13 model which is your point before the break, and you said
14 you should focus on the most important, and the most
15 important is the share loss, yes.

16 Q. Yes. We will talk about the share loss.

17 A. Okay.

18 Q. Before we get there, I just want to see how it works
19 mechanically.

20 A. Yes.

21 Q. So if we could now go to {C2/8/110} and we can see what
22 you have actually done with this model, and you have
23 organised it very neatly for us in a table. The table
24 is divided into two halves. There is the actual world
25 at the top; yes?

- 1 A. Yes.
- 2 Q. The counterfactual world at the bottom; yes?
- 3 A. Yes.
- 4 Q. So in the top half, concerning the actual world, what
5 you are doing is you are using real world data on
6 App Store transactions to identify the values of various
7 parameters of the model; yes?
- 8 A. Yes. Or, as we might say, to parameterise the model.
- 9 Q. Or calibrate?
- 10 A. Calibrate, yes, that is good.
- 11 Q. So let us run through it together then.
- 12 A. Okay, good.
- 13 Q. The first row is consumer expenditure. Let us not read
14 it out, because that is prohibited. You just take that
15 from Apple's transaction data; yes?
- 16 A. Yes.
- 17 Q. That is an easy one for you.
- 18 Then 2 is Apple's commission revenue, which you also
19 just take from the data; yes?
- 20 A. Yes.
- 21 Q. Row 3 is the market quantity demanded, and that is just
22 the total number of paid downloads; yes?
- 23 A. Yes.
- 24 Q. So you just take that from the data as well, yes?
- 25 A. Yes.

1 Q. Then 4 is our first calculation, but it is an easy one.
2 We just take the total expenditure and divide by the
3 quantity of transactions and that gives us the average
4 app price; yes?

5 A. Yes.

6 Q. Then 5, we have the commission rate, which is also
7 fairly easy. That is the commission revenue divided by
8 the consumer expenditure; yes?

9 A. Just to be clear, the weighted average across the entire
10 period, yes.

11 Q. Yes, it is just calculated as the simple division that
12 you set out there, 5 equals 2 divided by 1?

13 A. Yes.

14 Q. Sorry, I should have said that is how this table works.
15 It has a nice code in the first column which tells you
16 what operation is being done in order to produce the
17 results.

18 A. Yes, and we were trying to make it as easy as possible,
19 and it is painful, because you know there is not a lot
20 of activity here and, depending what side you are on, it
21 does not bear much fruit. But yes, we are going through
22 these --

23 Q. That is fine. So then you have the marginal cost, at 6,
24 in percentage terms, which you take from Mr Dudney's
25 report, yes?

- 1 A. Consumer incidence.
- 2 Q. No, 6.
- 3 A. Yes, Dudney -- I can say that out loud, yes? That is
- 4 6.5% -- (overspeaking) --
- 5 Q. Then at 7, you just convert -- sorry?
- 6 A. No, that is the marginal cost that Apple incurred per
- 7 Mr Dudney.
- 8 Q. Then at 7, you convert that marginal cost percentage
- 9 into a pence per transaction figure; yes?
- 10 A. Yes.
- 11 Q. You do that just by multiplying by the app price; yes?
- 12 A. Yes.
- 13 Q. Then at 8 we have got consumer incidence, we have caught
- 14 up with you, and that just comes from your incidence
- 15 analysis which I think is going to be tomorrow's topic?
- 16 A. Great. Just as a preview, when we run and calibrate the
- 17 model, you see 50% here, that is the lower bound, but we
- 18 do --
- 19 Q. I know you do it with the other numbers as well.
- 20 A. Yes.
- 21 Q. Then at row 9, this is where it gets slightly trickier.
- 22 So this is a formula you have put together for
- 23 calculating how much the app price changes when the
- 24 commission rate changes; yes?
- 25 A. Yes.

- 1 Q. We do not need to worry about that any further.
- 2 Then we get to the real meat, which is the various
- 3 elasticities of demand at 10 to 13; yes?
- 4 A. Yes.
- 5 Q. Actually, I think 10 to 14. But you distinguish here
- 6 between elasticities with respect to price and
- 7 elasticities with respect to commission; yes?
- 8 A. Unfortunately, I mean, yes, that is -- the model is
- 9 calling for it, yes. Consumers can be sensitive because
- 10 higher prices or higher commissions or both, yes.
- 11 Q. Just so we are all clear what an elasticity is, it is
- 12 the percentage change in one thing in response to
- 13 a percentage change in something else?
- 14 A. Correct.
- 15 Q. Okay. There is a simple formula that you can use to
- 16 switch between elasticities with respect to price and
- 17 elasticities with respect to commission; yes?
- 18 A. Yes. I mean, simple for some. Not so simple for
- 19 others. But yes, we provide that formula, yes.
- 20 Q. That just uses your row 9 formula, that is what it is
- 21 for?
- 22 A. Okay.
- 23 Q. Essentially all that does is it just takes into account
- 24 the need to convert the commission into pence
- 25 transaction and also the incidence rate?

- 1 A. Okay.
- 2 Q. Just so we are clear again, when we talk about the
3 product price elasticities, the elasticities with
4 respect to price, we are talking about the elasticities
5 with respect to a pound amount, pounds and pence amount,
6 that the buyers or the developers pay; yes?
- 7 A. Correct.
- 8 Q. So now we get to the key thing, which is the way you
9 identify these elasticities, because you cannot find
10 those in the App Store data?
- 11 A. Unfortunately no.
- 12 Q. So the way you identify them is you look at the prices
13 that Apple actually charges, and then you ask yourself
14 the question, what buyer and developer demand functions
15 would have to look like for those prices to be profit
16 maximising for Apple within the logic of this model;
17 yes?
- 18 A. That is fair.
- 19 Q. On the buyer side, Apple charges zero; yes?
- 20 A. Yes.
- 21 Q. So what you are saying in row 10 is how elastic must
22 buyer demand be to explain Apple's decision to set
23 a price of zero on the buyer side; yes?
- 24 A. Yes.
- 25 Q. Then on the developer side, you say how elastic must

1 developer demand be to explain Apple's decision to set
2 an average commission of 26.8%; yes?

3 A. Correct. What this is saying is that Apple correctly
4 perceives that the sensitivity is on the buyer side and
5 so, as a result, sets a zero price on the buyer side and
6 sets a high price on the seller side.

7 Q. Sure. These formulas come from the maximisation of the
8 profit function that we looked at before; yes?

9 A. Correct. Correct.

10 Q. Now, the buyer side product price elasticity formula is
11 not actually written down anywhere in your report other
12 than here, but it is written down here, and we can see
13 what that is. It is app price divided by commission
14 times app price minus marginal cost; yes?

15 A. Yes.

16 Q. There is a similar equation, I just mean similar in
17 function, for the developer side at row 13; yes?

18 A. Yes.

19 Q. So in both cases, I think you have already agreed to
20 this, you are using the fact that Apple chooses to set
21 a commission of 26.8% and zero to draw a conclusion
22 about what the elasticity of demand must be?

23 A. Yes, how Apple perceives the relative elasticities, yes,
24 under this model.

25 Q. Under this model.

- 1 A. Yes.
- 2 Q. Then in rows 15 and 16, you take things a step further,
3 do you not, and you estimate a full linear demand
4 function; yes?
- 5 A. Yes.
- 6 Q. That is not something that Rochet and Tirole did. It is
7 another innovation on your part; yes?
- 8 A. Correct.
- 9 Q. What this says, just looking at the numbers that you
10 have got there, is that the market quantity demanded is
11 equal to 477 million, minus 119 million, multiplied by
12 the app price; yes?
- 13 A. The total market demand; yes?
- 14 Q. Yes.
- 15 A. Yes. Under that linear formulation, that would explain
16 the data that we observe.
- 17 Q. Yes. That is what I wanted to ask you about. Because
18 the inputs that you use there in rows 15 and 16 to make
19 that calculation relate exclusively to the buyer
20 elasticity of demand. So if you just look at row 15.
- 21 A. Okay.
- 22 Q. What you have got there is, you see how it says in 15,
23 it says -- let us take it a step back. Row 15, the
24 parameter you are talking about is a beta parameter --
- 25 A. Of a linear demand function.

- 1 Q. A linear demand function is alpha minus beta times that
2 price.
- 3 A. Correct.
- 4 Q. So the beta term is the term that determines the impact
5 that price has on market quantity?
- 6 A. Correct.
- 7 Q. The way that you calculated that is you have taken
8 the -- you have got 3 times 10 divided by 4, so that is
9 market quantity times the buyer price elasticity divided
10 by the app price; yes?
- 11 A. Yes.
- 12 Q. Then in row 16 you have the alpha term, which is the
13 market quantity plus row 15 times the app price, and row
14 15 is the beta term that we have just looked at; yes?
- 15 A. Yes.
- 16 Q. So the developer side elasticity just makes no
17 difference at all?
- 18 A. Because this is the demand not for the platform but
19 I think instead for the products themselves. Let me
20 see. Three times ... market quantity demanded. Yes,
21 this is the number of units that are transacted over.
22 Right? Yes.
- 23 Q. The number of units that are actually transacted?
- 24 A. Yes.
- 25 Q. So that is the total market quantity of transactions

- 1 that Apple transacts through the App Store; yes?
- 2 A. Correct.
- 3 Q. That only depends on parameters relating to the buyer
- 4 side?
- 5 A. For this linearisation, this last step, we will see how
- 6 this last step is used, ultimately. But, yes, to
- 7 linearise the demand we are only looking at prices that
- 8 affect the buyer side.
- 9 Q. You can see how it is used in row 19. So in row 19 we
- 10 are in the counterfactual world, and what you are doing
- 11 in the counterfactual world is working out what the
- 12 prices and quantities would be if Apple faced
- 13 competition and halved its market share. You can see
- 14 that you are taking the market quantity demanded as
- 15 being equal to that linear demand function?
- 16 A. Right, for that part of the simulation, and I do not
- 17 know if that is going to be an input, I do not know if
- 18 it is. Let me see again. I am looking for 19. It
- 19 shows up in the buyer side elasticity formula.
- 20 Q. Yes.
- 21 A. But that is just telling us our prediction of the number
- 22 of transactions that occur. I do not know if that is
- 23 going to be going into the but-for commission
- 24 calculation.
- 25 Q. Shall we follow it through, then?

- 1 A. Sure. Sure.
- 2 Q. So in row 19, as you have just rightly said, this linear
3 demand function determines the market quantity demanded;
4 yes?
- 5 A. In the counterfactual, yes.
- 6 Q. In the counterfactual.
- 7 A. Yes.
- 8 Q. Then you use it again to determine the counterfactual
9 buyer side market elasticity in row 22, yes?
- 10 A. I will follow you down. Let me just see what 15 and 20
11 are. (Pause)
- 12 Q. My point is you are picking up 19 there.
- 13 A. Yes, and that is only to inform the buyer side product
14 price elasticity, right, how sensitive they are to that.
- 15 Q. What you are feeding into that is what the market
16 quantity demanded; yes?
- 17 A. Yes, but only to get the elasticity of demand for the
18 product. That is not the platform, that is the product
19 itself.
- 20 Q. I know that is what you are using it for, but what you
21 are putting in there is the total quantity of
22 transactions that will actually happen?
- 23 A. Yes, I am making a prediction about the number of
24 transactions that will actually happen.
- 25 Q. So row 22 then determines the buyer side elasticity in

row 23 -- buyer side Apple, I should say, because at that point we are on the firm specific demand function. That in turn demands the buyer side commission rate elasticity in row 24; yes?

A. Yes.

Q. Then that feeds into the aggregate commission rate elasticities in row 27.

A. Yes.

Q. Then that is the key input -- you do not give the formula, but that is the key input that then determines the counterfactual commission rate in row 28?

A. Correct.

Q. The problem we have here, Dr Singer, is that the profit function you started from said that the total number of transactions that Apple is going to process is equal to the buyer demand function multiplied by the seller demand function?

A. Correct. Correct.

Q. But what you have done here is you have calibrated and then implemented your model using the total number of quantity demanded, which derives exclusively from the buyer demand function.

A. Correct.

Q. That is an internal contradiction.

A. Not a contradiction, and I think we explained this in

1 the report too. By the way, I have not heard this
2 critique yet, so I am hearing this afresh. It was not
3 in Professor Sweeting's report, I hope we can agree on
4 that.

5 But we should go to my report and see why we do it
6 that way, I can try to remember.

7 Q. Do you have a hard copy of your report then?

8 A. I do.

9 Q. Do you want to have a quick look? We are on page 110.

10 A. I think that we would consume lots of time.

11 DR BISHOP: Which paragraph?

12 MR PICCININ: Sir, we are on page 110.

13 DR BISHOP: It is not clear --

14 MR PICCININ: If we look at the bottom of the page.

15 DR BISHOP: Can you tell me what paragraph numbers you are
16 at, approximately, in your report.

17 MR PICCININ: 223-ish.

18 DR BISHOP: 223. Ah yes, here it is.

19 MR PICCININ: Dr Singer, can I put to you what I say the
20 contradiction is here, and then you can think about it
21 and tell me if I am right or wrong.

22 A. Yes.

23 Q. On one hand, your formula for calculating the profit
24 maximising commission in both the actual and the
25 counterfactual assumes that the total number of

1 transactions Apple enjoys is equal to DB times DS?

2 A. Correct.

3 Q. But your formula for DB in the counterfactual assumes

4 that the transactions are equal to DB alone?

5 A. Correct, and I could go back and check, but I think what

6 I am implicitly assuming is that that probability that

7 developers will still stick around in the counterfactual

8 world at the lower commission rate is 1, that is, they

9 are not going to move away from the platform. That is

10 kind of --

11 Q. Dr Singer, I thought you might say that, you see.

12 A. Yes.

13 Q. But there is a problem, because when we go down to the

14 developer side pricing elasticity in row 25, that is

15 1.32; yes?

16 A. Yes.

17 Q. That is calculated as 12 divided by 17.

18 A. Yes.

19 Q. 12 is the developer side price elasticity from before,

20 from the actual world; yes?

21 A. Yes.

22 Q. Then 17 is just the market share. So the market

23 elasticity is actually 0.66 on the developer side, both

24 in the actual and the counterfactual; yes? Do you see

25 that, or do you need me to take that more slowly?

- 1 A. You said you want me to assume 0.66?
- 2 Q. 0.66 is what you get in 12.
- 3 A. Yes, it is very inelastic. There is almost no
- 4 sensitivity in --
- 5 Q. It is not zero, is it?
- 6 A. It is not zero.
- 7 Q. Then in the counterfactual, the market elasticity is the
- 8 same, actually, on the developer side. You do not write
- 9 it down, but it is implicit in your equation in 25.
- 10 A. Right, because Apple was the market in the top, yes.
- 11 Q. That is fine. So effectively what -- but the price has
- 12 changed, has it not?
- 13 A. The price has -- the commission has come down.
- 14 Q. Yes. So you are assuming a constant elasticity demand
- 15 curve for the developers?
- 16 A. Yes.
- 17 Q. Okay. So it is a constant elasticity demand curve for
- 18 the developers, and that constant elasticity is 0.66 in
- 19 the counterfactual?
- 20 A. Yes.
- 21 Q. When the price is 15?
- 22 A. 15%, yes.
- 23 Q. 15%. So if you have elasticity of 0.66 when the price
- 24 is 15%, that means that if you were to increase the
- 25 price by, say, 10%, the total quantity demanded would

1 come down by 6.6%, I think.

2 A. No, I cannot do that math in my head, but I think you

3 are asking --

4 Q. It would come down by a non-zero amount, perhaps we can

5 agree on that?

6 A. When you say "come down", what would come down, sorry?

7 Q. The quantity demanded by sellers.

8 A. If the commission falls, the --

9 Q. No, if the commission goes up. Start from the

10 counterfactual. Let us go to the counterfactual world,

11 yes?

12 A. The commissions are falling.

13 Q. In the counterfactual the submissions are 15.1, that is

14 what you say at the bottom, yes?

15 A. Yes, but they fell relative to the actual --

16 Q. That is fine, but just follow me.

17 A. Okay.

18 Q. We are in the counterfactual world, okay, that is the

19 only world we have ever known?

20 A. Yes.

21 Q. The commission is 15%?

22 A. Yes.

23 Q. The developers have a market elasticity of 0.66; yes?

24 A. Yes.

25 Q. What that means, what it means to say that their

1 elasticity is 0.66, is that if we increased the
2 commission from 15% --

3 A. Yes.

4 Q. -- by, say, 10%, then we would decrease the quantity
5 demanded by the developers by 10 times 0.66, that is why
6 I said 6.6%.

7 A. Yes. Yes.

8 Q. Okay. The problem is if what you are saying is that all
9 of the developers are on the App Store anyway, then we
10 have got a different contradiction.

11 A. I do not think it is a contradiction. It is that if
12 developers are on the store, and the commission is
13 falling, as this simulation is having, then they cannot
14 be doing any more. They cannot be offering any more
15 goods than they are currently doing -- they are there
16 already. I think what they were trying to figure out is
17 what would be the effect on the buyer side.

18 Q. I am sorry, Dr Singer, that does not work. Because if
19 they are all there --

20 A. How are you telling me it does not work? It is exactly
21 how it works. Who are you to tell me it does not work
22 this way?

23 Q. Dr Singer, the points I am putting to you are just
24 points of logic, just economic reasoning. Do not worry
25 about who I am --

- 1 A. If this was a problem, it would have come up in the
2 debate I had with Professor Sweeting --
- 3 Q. Do not worry about ProfessorProfessor Sweeting. You are
4 not being cross-examined by Professor Sweeting, you are
5 being cross-examined by me.
- 6 A. By a non-economist, and you are asking me if this
7 constitutes a --
- 8 Q. Dr Singer, either I am right or I am wrong.
- 9 A. -- I cannot respond to it in real time either.
- 10 Q. Why not? It is your model, Dr Singer.
- 11 A. No, because when we did this a year ago, we had
12 a justification for why we did that. You are asking me
13 why we did that assumption, and I am telling you as best
14 I can right now that we cannot expect the developers to
15 move out of the store with a reduction on the
16 commission.
- 17 Q. Dr Singer, you have come to this Tribunal to invite this
18 Tribunal to adopt and place some weight on the analysis
19 that you have presented here, right?
- 20 A. Yes.
- 21 Q. This Tribunal cannot do that unless they can understand
22 it for themselves and believe it to be robust?
- 23 A. Yes.
- 24 Q. You understand that too?
- 25 A. Yes.

1 Q. I am now putting to you that it is not robust, that it
2 has an internal contradiction in it, and we need to
3 explore that to find out whether the Tribunal can rely
4 on it or not?

5 A. It is not an internal contradiction, it is a simplifying
6 assumption about what developers would do, right? If
7 this was such a flaw --

8 Q. Do not worry about that.

9 A. The way that this would be hashed out is that I would
10 give the model, Professor Sweeting would present
11 critiques, and I would respond to the critiques.

12 Q. You need to respond to the critiques from me.

13 A. I am responding, but it is hard in this forum, when you
14 make an allegation that I should have made the market
15 equilibrium quantity of transaction also a function of
16 the developer side.

17 Q. That comes from your profit function, Dr Singer.

18 A. Yes, that comes from the profit function.

19 Q. Your profit function.

20 A. Right, but now I am trying to make a prediction about
21 number of transactions in the but-for world.

22 Q. Dr Singer, can you see what you have done here? You
23 have taken a model which required those two demand
24 functions to take values between 0 and 1, and you have
25 not noticed that, and what you have done is converted

1 the DB function into a linear demand function and
2 forgotten about the DS side; that is what has happened
3 here?

4 A. I have not forgotten about the DS side. That is for
5 that one input. If you see, I am following as close as
6 I can to the structure of the Rochet and Tirole model.

7 Q. Well, the problem is that if the developers are all on
8 the App Store in the counterfactual, then they cannot
9 have an elasticity of 0.66, and yet your Apple
10 commission rate of 15.1% is calculated on the assumption
11 that the developer side elasticity is 0.66.

12 A. Well, yes. So what we are quibbling about now is how
13 small the elasticity is. 0.66 is very small.

14 Q. We are not quibbling. It is an internal contradiction
15 in your analysis.

16 A. I do not see that. I think the 0.66 is my best estimate
17 of the supply elasticity, and it is telling you that
18 developers are extremely insensitive to changes in
19 commissions, right, and it is a fair assumption that as
20 we ride down the commission from 30, to 25, to 15%, you
21 would not see a material increase in the number of
22 developers that come out of the woodwork for this store.

23 Q. I think I have put to you enough about that.

24 A. Okay.

25 Q. We will move on to the next flaw in the model.

1 A. Okay.

2 Q. Because I am afraid that is not the only one.

3 So we have already discussed that in row 10, you
4 pinned down the buyer side market elasticity in the
5 actual world using the assumption that it is profit
6 maximising for Apple to set the PB equal to zero; yes?

7 A. Yes.

8 Q. In the counterfactual, PB is also equal to zero; yes?

9 A. Yes.

10 Q. Nowhere in this table do you check whether it is still
11 profit maximising for Apple to set PB equal to zero in
12 the counterfactual?

13 A. Right. I am imposing zero. I am imposing zero.

14 Q. But you do not impose it in the actual. In the actual,
15 you are assuming that this is profit maximising for
16 Apple to set PB equal to zero?

17 A. Yes. Yes.

18 Q. But in the counterfactual it is not -- with the rest of
19 your parameters, it is not profit maximising for Apple
20 to set PB equal to zero.

21 A. But it is a reasonable assumption that Apple is not
22 going to change its pricing structure based on a --
23 based on the entry of competition. I thought that --
24 I thought that I could justifiably keep the price at
25 zero, that is Apple's business model.

1 Now, if you are asking could Rochet and Tirole be
2 used to solve for the but-for price? I am telling you
3 that I have constrained the price to be zero, and that
4 is a very reasonable assumption. I do not think Apple
5 is going to abandon its model.

6 Q. Dr Singer, the problem is not whether that is a
7 reasonable assumption or not, the problem is this: you
8 are relying on the proposition in the actual world that
9 it is actually profit maximising within the logic of the
10 model for Apple to set -- (overspeaking) --

11 A. I have to, to calibrate the model around that first
12 order condition -- (overspeaking) --

13 Q. I understand why you have done it.

14 A. Okay.

15 Q. But if the truth is that Apple, come what may, will set
16 PB equals to zero, even though it might not be profit
17 maximising to do it, then you do not have any basis for
18 that inference that you draw in your calibration stage?

19 A. I am not following your logic. The basis is that I am
20 going to assume that Apple continues with a zero price
21 on the user side and I am going to solve for the profit
22 the new profit maximising commission.

23 Q. The way you are doing it is to assume that it was profit
24 maximising in the actual world to set PB to zero?

25 A. We are going in circles. Yes, I have agreed to that,

1 yes.

2 Q. But then, within the confines of your model, it is no
3 longer profitable to do that in the counterfactual?

4 A. It may be, but even if it is not, I am not interested in
5 solving for a but-for price on the consumer side. I do
6 not think that Apple is going to rebalance its price in
7 that way. What I am solving for is for a new commission
8 rate. That is all I am interested in.

9 Q. The reason why you do not think Apple would rebalance is
10 because, come what may, Apple, just as a policy
11 decision, will not want to charge users, yes?

12 A. You can think of it as an external constraint on the
13 model, that is happening outside the model, but Apple is
14 always going to stay at zero.

15 Q. That is the problem, Dr Singer, because --
16 (overspeaking) --

17 A. -- the problem.

18 Q. The problem, Dr Singer, is that if you are right that
19 there is an external reason outside the model why Apple
20 would never charge a positive value of PB, then you are
21 wrong to calibrate the model on the assumption that it
22 is profit maximising for Apple to charge PB?

23 A. But we have no other choice but to calibrate around
24 profit maximisation. That is all we can do as
25 economists. We have our first order condition, and that

1 is like a basic building block of economics, that they
2 are profit maximising when they set zero as the consumer
3 price.

4 Q. Even though they might not be profit maximising in the
5 counterfactual?

6 A. Oh, in the counterfactual? Could they do better by,
7 now, introducing a price? They could, but I did not
8 solve for that, I solved for the new but-for condition.

9 Q. Right, so that is the second point. I think we have
10 probably debated that as far as we usefully can.

11 So there is a third point, and this one is one that
12 hopefully you will recognise from Professor Sweeting.

13 A. I hope so. If I recognise the critique, I can speak to
14 it more intelligently.

15 Q. I do not accept that, Dr Singer, because you need to be
16 able to understand and explain and defend your work.

17 A. If I hear a critique for the first time, an economic
18 critique for the first time in this, I am going to
19 absorb it, I need to go back and see if we provided
20 justification for why we wrote the market demand that
21 way, the linearised version for that way. It is just --
22 I would come prepared with an answer for that. I will
23 do as best I can with new criticisms.

24 DR BISHOP: It does seem to me peculiar, Mr Piccinin, that
25 a number of very complicated critiques are raised for

1 the first time in cross-examination after critical
2 reports by economists have not said anything about them.
3 They have said a great deal about other less complex
4 things, but this is then raised and sprung, as it were,
5 for the first time in cross-examination.

6 MR PICCININ: Sir, it has not been held back. These are my
7 points that I am putting to the witness in
8 cross-examination. This is my first opportunity to
9 cross-examine Dr Singer, and they are only questions --
10 I am not putting any new separate model to him, I am not
11 putting some other paper he has not read before, I am
12 asking him questions about the steps that he has taken
13 in his table.

14 I would say as well that if Dr Singer wants to
15 reflect on it overnight, he is going to be in the box
16 tomorrow, if he has further thoughts about it he can
17 tell me in the morning.

18 THE CHAIRMAN: Well, I think, Mr Piccinin, that is fine, and
19 I think that is entirely fair, and it obviously would
20 have been desirable if those points had been picked up
21 by someone else and put in the expert reports --

22 MR PICCININ: They were not.

23 THE CHAIRMAN: -- but we are where we are. I do not think
24 there is much point having a dialogue with Dr Singer
25 about whether he is in a position to respond to these

1 now, and the last bit of argument was not really very
2 helpful to us. I think if you can concentrate on
3 getting the points down. There is no point having an
4 argument about whether he remembers or not, because if
5 he is not in a position to, then he is not, and as you
6 say, he will have some time tonight if he wants to think
7 about it further. So if you want to get on with it and
8 give us the next point, that would be helpful.

9 MR HOSKINS: Sir, there is a very important procedural
10 fairness point, which has been raised with the Tribunal,
11 which is how do we take this forward, because everyone
12 in the room, on this side as well, is hearing this for
13 the first time.

14 It is very unsatisfactory. If the submission at the
15 end of the day is going to be: you cannot put any weight
16 on these models because of these fundamental flaws,
17 there has to be a proper process beyond simply Dr Singer
18 hearing a list now and going away overnight.

19 If this had come up as it should have done -- if
20 these were good points they should have been raised with
21 the economists, and they could have debated with their
22 own economists and put it in the reports, then Dr Singer
23 would have looked at this, would have had time to look
24 at it, would have had time to consult his team on it.
25 He is currently in purdah. It is simply unfair to put

1 an expert in that position, to come up with detailed
2 points that they have just not had a chance to consider
3 and say: overnight is enough. It is simply not fair.

4 THE CHAIRMAN: Mr Hoskins, where does that take us? Are you
5 suggesting Mr Piccinin cannot ask these questions?

6 MR HOSKINS: They either cannot run this case, or, if they
7 are allowed to run it, then there has to be a further
8 written response from Dr Singer. Those are the two
9 options.

10 MR PICCININ: Sir, I do not accept that at all. We did not
11 have an obligation to call Professor Sweeting at all.
12 I could have cross-examined -- Apple is entitled to
13 cross-examine an expert witness.

14 THE CHAIRMAN: That is not quite right, is it? Not the
15 process we have been through, Mr Piccinin. We have been
16 through a process where the amount of paper that has
17 been devoted to these expert reports is phenomenal, and
18 the whole point of that process is so that we all know
19 what the big issues are.

20 Just to be clear, I am not in the business of
21 stopping you asking questions, but there is a fairness
22 point here, and if you are -- if Dr Singer is at
23 a disadvantage because of the way it has come out, then
24 obviously that will go to the weight we can put on any
25 submission you make about whether or not he has dealt

1 with the questions properly.

2 So I am not going to stop you asking questions --

3 MR PICCININ: I am done with these questions anyway, sir.

4 THE CHAIRMAN: I am sorry?

5 MR PICCININ: I am done with those questions anyway.

6 THE CHAIRMAN: I thought you had one more.

7 MR PICCININ: I do, but this one is not going to be

8 a surprise. This one is one he has heard before.

9 THE CHAIRMAN: Fine, okay. Just in terms of how we deal

10 with these ones that you have asked, as you say,

11 Dr Singer is entitled to go away and think about them,

12 and certainly I think in relation to the first one he

13 indicated that some review of his report might be

14 fruitful.

15 Dr Singer, you are absolutely entitled to go and

16 look at your report again, and if you want to come back

17 to any of those points in the morning then you are free

18 to do so.

19 If you feel that you are unable to address the

20 questions then for any reason, for example, not being

21 able to contact a member of your team, you should say so

22 as well, and that will go to the weight we give to the

23 dialogue you have had with Mr Piccinin. That is about

24 as good as I think I can do, given where we are. But if

25 you feel that you have a problem with it, you should say

1 so.

2 A. I would like the ability to contact my team tonight.

3 THE CHAIRMAN: I do not think we can do that.

4 A. Oh, I cannot.

5 THE CHAIRMAN: Let me put it this way: I do not think that

6 that is something that -- it is not an area we really

7 want to get into, partly because I think it puts you in

8 an awkward position, because limiting what you can talk

9 about is quite a difficult thing, and once you start

10 talking to somebody in your team about your evidence

11 then nobody has any visibility or control about how that

12 works. I am not terribly keen on that idea.

13 A. Okay.

14 THE CHAIRMAN: I would rather, if you think there is

15 a serious problem because you cannot talk to your team

16 about it, which I think we would all understand, then

17 you tell us about that in the morning. If you can

18 answer your points by your review overnight, then so be

19 it. If you cannot, come back and tell us what the

20 problems are, and then we will work out how to deal with

21 it after that.

22 A. Okay, great.

23 THE CHAIRMAN: I do not know ... Mr Hoskins, that is where I

24 am. I do not know if you anything else to say about

25 that, but that is where I think we --

1 MR HOSKINS: The point has been ventilated. You see where
2 we are coming from. It is a really unfortunate
3 position. To have a trial that has been prepared with
4 this amount of detail and to be left in this position,
5 it is really unacceptable.

6 THE CHAIRMAN: Let us see where we get to in the morning.

7 MR HOSKINS: Absolutely.

8 THE CHAIRMAN: Mr Piccinin.

9 MR PICCININ: I will carry on.

10 Dr Singer, are you on {C2/8/110} still?

11 A. Yes, but I can go with the electronic if --

12 Q. Sure. That is the page I want you to be on.

13 A. Okay.

14 Q. We have already talked about this a little bit, but if
15 you look at rows 23 and 25, you can see that in the
16 counterfactual you are calculating Apple's own brand
17 elasticity by starting with the market elasticity and
18 dividing by Apple's market share; yes?

19 A. Correct.

20 Q. So I want to see where that comes from, and that we get
21 on page 106 of your report.

22 A. Okay.

23 Q. If you could go to that electronically, please, as well
24 {C2/8/106}. If you could just read footnote 424 to
25 yourself. (Pause)

- 1 A. Yes.
- 2 Q. So you can see you take that formula from -- so we are
3 in the Rochet and Tirole model here?
- 4 A. Yes.
- 5 Q. But you take that formula, which you use in the Rochet
6 and Tirole model, from Landes and Posner?
- 7 A. From the citation, but it does not mean the Landes and
8 Posner model, from the citation, yes, because I think it
9 is a pretty common formulation for how to write down the
10 residual demand.
- 11 Q. Let us have a look at it. You cite pages 939-940,
12 I will just show you that. I think it is actually
13 a wrong reference, but I will show you anyway.
- 14 A. Okay.
- 15 Q. It is {C5/9/4}. So you can see that is 939 in the top?
- 16 A. Okay.
- 17 Q. Then over the page is 940 {C5/9/5}. I do not think that
18 is where you meant to go. Later on you refer to the
19 same formula, though, and it is on page 10 of the
20 document, which is 945.
- 21 This is obviously not a criticism of you, Dr Singer,
22 I hope that is clear. I was just trying to be fair to
23 you {C5/9/10}.
- 24 A. Okay.
- 25 Q. So you can see the formula you had in your footnote

1 right at the top of the page?

2 A. 2 or 3 you want me to look at?

3 Q. It is 2.

4 A. Yes.

5 Q. You can see in footnote 18, you tell us -- sorry, not
6 you; Landes and Posner tell us that that comes from the
7 appendix; yes?

8 A. No, it says, footnote 18:

9 "This formula, like the Lerner index, has long been
10 a part of the industrial organisation literature."

11 Then it is pointing back to Scherer, Stigler, yes,
12 for its derivation. So this is an element of Landes and
13 Posner, but I am not importing the Landes and Posner --

14 Q. I have not put a question to you, I am just trying to
15 show you, and then we will get to what it all means in
16 a moment. I am just explaining why I am going to the
17 appendix, it is because that is where Landes and Posner
18 tell us to go to. They say:

19 "For its derivation, see the Appendix."

20 At the end of that footnote, yes?

21 A. Sorry, I do not see that. I was looking at their cites
22 in the first paragraph of footnote 18. Do you want me
23 to go further down?

24 Q. I want you to read the whole of footnote 18. In
25 particular, it is the last sentence of footnote 18 that

1 I want you to ... Sorry, the last sentence of the first
2 paragraph of footnote 18, thank you.

3 A. Oh:

4 "For its derivation, see the Appendix."

5 Okay, fine.

6 Q. So that is where we are going. That is on page 50
7 {C5/9/50}, it starts on page 50. You can see the
8 heading "Elasticity of demand of a dominant firm"; yes?

9 A. Yes.

10 Q. Then if we go over the page to {C5/9/51}, just to show
11 you that this is indeed the right bit, you can see in
12 equation 13, they do indeed derive the equation that we
13 are looking for here, yes?

14 A. Yes, but this is not (inaudible), they are citing back
15 to Scherer. They are just saying this --
16 (overspeaking) --

17 Q. It is a very old --

18 A. -- way to write a residual demand.

19 Q. I am not suggesting this is original work.

20 A. There is a critique that I was wrongly importing Landes
21 and Posner into the Rochet and Tirole model.

22 Q. Dr Singer, that is the point we are on, but just to be
23 clear, so you know where this is going, but just to be
24 clear, I am not so worried about the terminology,
25 whether it is Landes and Posner or not, I am interested

1 in what is actually happening in the model.

2 A. Okay. Good.

3 Q. So if we can go back over to page 50, I want to see how
4 they get to this equation. {C5/9/50}

5 So equation 9 there defines what is called, you have
6 referred to it, the residual demand curve; yes?

7 A. Yes.

8 Q. That is -- so just reading it out, effectively, the
9 first term on the left-hand side is the quantity
10 demanded for the firm -- sorry, I will just wait for the
11 ...

12 THE CHAIRMAN: Carry on.

13 MR PICCININ: The term on the left-hand side of the equation
14 is the quantity demanded from the firm in question.

15 A. Okay.

16 Q. That is equal to the market demand minus the quantities
17 supplied by the competitive fringe; yes?

18 A. Correct.

19 Q. Okay. So this is important. The way this model works,
20 the model that Landes and Posner are talking about in
21 this particular section, is that Apple sets a price
22 knowing that, depending on what price it sets, the
23 competitive fringe will come in and produce a certain
24 number of transactions; yes?

25 A. That is not quite how I would put it. It is that the

1 demand that Apple is facing can be written as the market
2 demand minus whatever the fringe takes on its own.

3 Q. Okay. So let us -- I think I can work with that. If we
4 look at equation 10 --

5 A. Okay.

6 Q. What they do, this is how they are getting to the
7 formula that you have used.

8 A. Okay.

9 Q. What they do is they take the derivative of the residual
10 demand curve with respect to price; yes?

11 A. Yes.

12 Q. What that is saying, just to put it in words, is if I,
13 Apple, increase my price, two things will happen: the
14 first thing is that developers will buy less in total,
15 or fewer transactions will happen in total; yes? That
16 is the first term.

17 A. Yes.

18 Q. What that is is a movement along the market demand
19 curve; yes?

20 A. Okay.

21 Q. The reason that Apple's change in price causes
22 a movement along the market demand curve in that way is
23 because Apple's price is the market price. There is
24 only one market price in this framework.

25 A. No. There are two separate prices.

1 Q. Can you show me where the second price is? I can only
2 see one P.

3 A. Yes, the fringe -- the fringe is coming in -- at least
4 in the Landes and Posner model, the fringe is coming in
5 at a lower price.

6 Q. I mean, in this equation there is only one P, is there
7 not?

8 A. Correct. No, I know, but this is the P that Apple
9 charges.

10 Q. That causes -- looking at that first term, Apple's
11 increase in price causes a reduction in the market
12 demand that is --

13 A. Absolutely.

14 Q. -- just a movement along the market demand curve?

15 A. That is fair. That is fair.

16 Q. That only makes sense if there is a single --

17 A. Fringe is charging the same price. No. No.

18 Q. No, no, there is a --

19 A. You could still move -- no, I disagree. You could still
20 move the demand -- you could still temper the demand
21 down in the market level even if the fringe --
22 regardless of what the fringe is pricing. Apple is the
23 big mover there.

24 THE CHAIRMAN: Mr Piccinin, is this raised in an earlier --
25 has this been raised by one the experts?

1 MR PICCININ: Yes, this is all part of the point that what
2 he is using is the dominant firm in the fringe model,
3 he has tacked that on to his Rochet and Tirole model.

4 THE CHAIRMAN: But the particular point you are making about
5 whether it takes into account the -- (overspeaking) --

6 MR PICCININ: That there is a single price. That is the
7 critique that we have made of his use of this model
8 in --

9 MR HOSKINS: Can my learned friend please show us where it
10 comes up in any of the expert --

11 MR PICCININ: I will find it overnight.

12 MR HOSKINS: Well --

13 THE CHAIRMAN: I think we have been sort of just thinking
14 a little bit further on it, or certainly I have. I have
15 not had a chance to briefly consult with the rest of the
16 panel.

17 I think this is a bit unsatisfactory, and I think
18 I am going to stop you now, Mr Piccinin, because I want
19 to have a conversation about whether we do need to let
20 Dr Singer speak to one of his team, and the
21 circumstances in which that could be done so that it is
22 controlled. Because I think we are concerned.

23 If one thinks about the different ways this could
24 play out, one is that he is able to come back tomorrow
25 morning and say, "I have got an answer to this". That

1 would be fine. But that may not be the case, and he is
2 in a position where we do not know what Dr Singer's view
3 is on the points you have taken because he says
4 "I really need to speak to people who were involved in
5 this, and to go back into time and work out what we
6 did". We think that is not an unreasonable position for
7 him to take.

8 Now, that may be unsatisfactory, because we do not
9 then know what the answer is unless we agree with
10 Mr Hoskins that he should put something supplemental in,
11 and then of course you cannot cross-examine him because
12 that will be after he has gone. So all of this is
13 getting quite uncomfortable, I think.

14 If what we are really trying to get to is an
15 understanding of whether Dr Singer is able to deal with
16 the points you have put, then I think the obvious way to
17 do that is to let him speak to his team about it on the
18 basis that he would have done this, no doubt, with the
19 support of his team in the first place.

20 Now, my immediate reaction to that was that that is
21 not a great idea because of the lack of control. But it
22 does seem to us that we would be open to suggestions
23 about how that might be controlled, so that we were all
24 comfortable that the subject matter was limited to those
25 particular items, and certainly one of the ways we

1 thought would be, for example, if Mr Hoskins was willing
2 to be on the call. I do not know that you would, but
3 that is one measure of control of it.

4 So, in other words, at the moment our inclination is
5 drifting towards if you want to deal with these points
6 and you want us to rely on them.

7 MR PICCININ: I do, sir.

8 THE CHAIRMAN: Then I think it is only fair to let Dr Singer
9 not only have a chance to reflect on it but also to be
10 able to discuss it with his team, as he would have done
11 if they had been put in the expert report that he had
12 seen four months ago.

13 MR PICCININ: Well, sir, if I can just articulate briefly
14 why I say that is not right and it is not fair with
15 respect.

16 THE CHAIRMAN: Yes, of course.

17 MR PICCININ: Dr Singer, it is fine for him to have a team,
18 of course, help him to prepare the models and prepare
19 his report. I mean, it is common to have testifying
20 experts have teams assist them. But at the end of the
21 day, when the report is filed -- forget
22 cross-examination -- at the time that it is filed, the
23 testifying expert needs to have a full understanding of
24 everything that is in their report.

25 THE CHAIRMAN: Well, that is fair, but these are not just

1 general principles, are they? They are points of quite
2 considerable and technical detail, and no doubt it may
3 well be that they have never been thought about. But if
4 they were thought about, as Dr Singer says they were
5 thought about, a year ago, and actually getting back to
6 that point is not necessarily an easy thing to do if you
7 are stuck in a hotel room by yourself. So I am not sure
8 that that really answers the problem.

9 MR PICCININ: Can I just take a moment?

10 THE CHAIRMAN: Why do you not, and just while you are doing
11 that, I will just see if Mr Hoskins --

12 MR HOSKINS: I am very unhappy even with the prospect of
13 this taking place overnight. What should have happened
14 is this should have been in the written expert reports,
15 and then there would have been a written reply written
16 with the benefit of Dr Singer's team, and then that
17 would have been discussed in the joint expert procedure.

18 To say, having heard these for the first time,
19 overnight he can speak to his team and put something
20 together to be delivered orally tomorrow, we are so far
21 away from how expert evidence is supposed to work, let
22 alone expert evidence at this level of detail, and it is
23 entirely in the hands of Apple and the way they have
24 chosen to present these points.

25 The unfairness is -- the only way this can be

1 remedied is either it is not in, or there is a written
2 procedure, which is deeply unattractive, I get that.
3 But just having an overnight conversation of material of
4 this complexity, in my submission does not solve the
5 problem.

6 I understand your difficulty, but we are absolutely
7 in a fundamental bit of the trial here, these models.

8 THE CHAIRMAN: Well, I think certainly from where we were
9 15 minutes ago, I think we have moved quite a long way
10 towards your position, even if we have not got the whole
11 way. So if the choice is -- I mean, I think at the
12 moment, and we will consult on this, but at the moment
13 I think the idea of something supplemental is just very
14 unattractive.

15 MR HOSKINS: I understand that.

16 THE CHAIRMAN: If we do that, then really Dr Singer has to
17 remain available for cross-examination. I am sure he
18 does not want to do that.

19 MR HOSKINS: I understand that.

20 THE CHAIRMAN: It is not a helpful thing for the timetable.

21 Indeed I am not even sure how it would work.

22 MR HOSKINS: Well, sir --

23 THE CHAIRMAN: But certainly -- sorry, let me just --

24 MR HOSKINS: No, no, of course. I did not mean to
25 interrupt. I am sorry.

1 THE CHAIRMAN: No, just let me do this bit.

2 Certainly it seems to us at the moment that it would
3 be better to give him the opportunity not just to think
4 about it but also to speak to his team to see whether he
5 is able to address the points.

6 Now, it may be we end up in no better a position
7 than if we had just left him by himself. I do not know.
8 But certainly that seems to us to be a better position
9 than what I was suggesting 15 minutes ago which, on
10 reflection, is really perhaps less than ideal in another
11 way.

12 MR HOSKINS: I understand that. You will understand that
13 for Dr Singer that will be a -- I cannot speak for him.
14 There may be a pressure to offer something.

15 THE CHAIRMAN: Yes.

16 MR HOSKINS: That is what I am worried about. So he feels
17 the need to come back and say something, when the truth
18 is this should have been fleshed out in the way I have
19 described. Then we end up in a very unsatisfactory and
20 unfair situation where you say: well, he said something,
21 and we are going to deal with it on that basis. That is
22 my concern.

23 Now, if it is made clear to Dr Singer that if
24 he genuinely feels that he is not able to do justice to
25 these points, simply an overnight conversation,

1 he should be able to say that and he will not be marked
2 down for saying that. That is the trouble. Unless it
3 is that sort of discussion we are having.

4 The other difficulty I have, of course, is I admire
5 Mr Piccinin's erudition, but the idea that I can deal
6 with this in re-examination of some sort without having
7 had any chance whatsoever to discuss this with Dr Singer
8 is, of course, pie in the sky. Again there is
9 an unfairness there. We cannot re-examine. I am not
10 going to be able to re-examine on this.

11 THE CHAIRMAN: What about supervision? Would you, or would
12 somebody that we could satisfy the --

13 MR PICCININ: That is essential.

14 THE CHAIRMAN: -- be willing to participate.

15 MR HOSKINS: Of course we can supervise. If that is your
16 decision, of course we can have someone supervise.

17 THE CHAIRMAN: Well, I think at the moment, probably,
18 because of where we are, we have to take it in stages.
19 Now, none of that stops you from making the submission
20 that you no doubt are going to make about the whole
21 fairness of the process and the weight which was put on
22 it. But in terms of finding the best way forward that
23 is practical, I think that is probably where we are at
24 the moment.

25 But I absolutely understand your point about

1 Dr Singer. It does not strike me that Dr Singer is in
2 the business of saying things that he is not confident
3 about.

4 MR HOSKINS: I know, but I do stress the point that there is
5 a difference between saying: Dr Singer, do your best and
6 come back and tell us what you can tomorrow, and saying
7 to him: if you genuinely feel that you cannot do this
8 justice overnight --

9 THE CHAIRMAN: Yes.

10 MR HOSKINS: -- you should be free to say that and you will
11 not be marked down for it.

12 You see the difference there, and I think they are
13 quite important differences.

14 THE CHAIRMAN: Yes.

15 MR HOSKINS: You will understand the pressure that any
16 expert would feel under to try and assist the Tribunal
17 to some extent. But that is what I am concerned about:
18 that that just locks in the unfairness.

19 THE CHAIRMAN: Yes.

20 MR HOSKINS: Unless the free choice is given.

21 THE CHAIRMAN: Yes. I understand. Okay, thank you.

22 MR PICCININ: Sir, I do want to say, just to clarify, these
23 are not points that have been held back. Obviously
24 Professor Sweeting is an independent expert, and he has
25 made all of the points that he wanted to make in his

1 expert reports.

2 I, in the course of preparing the cross-examination,
3 want to make sure I understand the models that I am
4 cross-examining on, so I have personally studied them in
5 detail and found these flaws in them, and so these are
6 the points that I am putting to Dr Singer.

7 Now, Dr Singer says, you know, I am not
8 an economist, and he is right: I am a barrister. So
9 these are all points -- I have studied economics. But
10 these are all points that I have been able to come up
11 with. If they are points that I have been able to come
12 up with, they ought to be points that, as Dr Singer puts
13 it, a PhD economist can deal with.

14 So I accept that he should have overnight.

15 THE CHAIRMAN: Well, I am not sure whether that is
16 a submission as to whether you are -- I mean, I do not
17 think that anyone is -- I am not criticising you, and if
18 it is a submission that you should not be criticised,
19 I do not think you need to worry about it.

20 MR PICCININ: Well, it was a response to the --

21 THE CHAIRMAN: If it is a submission as to why Dr Singer
22 cannot deal with it, we have been around that beat
23 already, and I am not sure it takes us any further.
24 I think we can form our own view, and we have sufficient
25 expertise here to form our own view on the

1 reasonableness.

2 MR PICCININ: Quite.

3 THE CHAIRMAN: What I think we might do is ... I think we
4 will rise for just a couple of minutes just to make sure
5 we are clear about what we want to do, and we will come
6 back and let you know what our proposal is in a moment.

7 MR PICCININ: I am grateful. Thank you.

8 (4.29 pm)

9 (A short break)

10 (4.34 pm)

11 THE CHAIRMAN: So, Dr Singer, what we are proposing is that
12 you should be able to speak to the relevant member or
13 members of your team who helped you with these
14 calculations this evening, if you think that is
15 something that is possible.

16 THE WITNESS: Sure.

17 THE CHAIRMAN: We are going to ask, please, that you do that
18 under supervision. So I am sure you can agree that
19 between the parties, but I am assuming it will be
20 someone from the counsel team or from
21 Hausfeld & Co. LLP, a partner from Hausfeld & Co LLP.

22 MR HOSKINS: We will make sure it is someone suitable.

23 THE CHAIRMAN: Yes.

24 MR HOSKINS: We will see who draws the short straw, but we
25 will make sure it is someone suitable.

1 THE CHAIRMAN: I am sorry for that person if it spoils their
2 evening, but it will be under conditions of supervision
3 because we have rules, Dr Singer, as you know, about
4 discussing your evidence, and we want to make sure that
5 we limit the discussion simply to the points you have
6 just been asked about.

7 THE WITNESS: Okay.

8 THE CHAIRMAN: You will be able to come back and tell us in
9 the morning whether you have any further thoughts, aided
10 by that discussion. I think implicit in that is that if
11 you ask them for information and they need to work on it
12 overnight, they can send you things so you can see them
13 in the morning.

14 THE WITNESS: Okay.

15 THE CHAIRMAN: But, again, I am sure it will be impressed on
16 them that they need to limit that to the questions.

17 THE WITNESS: Sure.

18 THE CHAIRMAN: Then when we return in the morning, I am sure
19 you have heard what Mr Hoskins said, but if you feel
20 that you are constrained by the way this has arisen so
21 that you cannot give us a sensible answer in the time
22 available and circumstances, then of course you should
23 say so.

24 THE WITNESS: Okay.

25 THE CHAIRMAN: The weight we put on the evidence and

1 questioning will be influenced by that.

2 THE WITNESS: Okay.

3 THE CHAIRMAN: So you should not feel that you are under any
4 pressure or obligation to come back and provide
5 an answer if that is not something you feel you can
6 comfortably do.

7 Is there anything else that you need in order to be
8 able to do that? I suppose the one thing that occurs to
9 me, I do not know if there is any objection to that, is
10 it would be quite helpful, no doubt, for Dr Singer to
11 have the transcript.

12 MR PICCININ: Of course.

13 THE CHAIRMAN: So you can see exactly what the questions are
14 and be able to follow what happened. So someone will be
15 able to provide you with that as well.

16 Is there anything else you think you might need?

17 THE WITNESS: I think it is just one question.

18 THE CHAIRMAN: Yes.

19 THE WITNESS: I think it is just one question, one issue.

20 THE CHAIRMAN: Well, there were -- I think there were ...

21 MR PICCININ: Would you like me to summarise them?

22 THE CHAIRMAN: It might be quite helpful if you did, yes.

23 I had three points, I think. Are there three?

24 MR PICCININ: Although the third one I do not think was
25 actually a surprise.

1 The first one was the internal contradiction between
2 using a profit function, which was DB times DS, and then
3 using a demand function --

4 A. For the market.

5 Q. Yes, for the market, exactly.

6 A. Yes.

7 Q. That is the first point.

8 Then the second point was that in calibrating the
9 model you assumed that it was profit maximising for
10 Apple to set a --

11 A. Yes.

12 Q. You remember that point.

13 A. I think I know the answer to that one right now. But
14 yes. Okay.

15 Q. I think we have already had that discussion.

16 A. Yes. That is why I think it is --

17 Q. But if you have anything further.

18 A. That is why I really think it is -- it is really one
19 issue, which is: is there any contradiction between the
20 profit function of Apple as modelled by Rochet and
21 Tirole, and the market demand function as I simulated it
22 for one of the inputs. I think that is the question.
23 I do not think there is a contradiction.

24 THE CHAIRMAN: Well, you should feel free to come back on
25 any of the three in the morning.

1 THE WITNESS: Okay.

2 THE CHAIRMAN: But that certainly was our impression too;
3 that the first was probably the one that was likely to
4 require the most concentration.

5 MR PICCININ: Perhaps if I just tell you -- I had not
6 finished making the third point. Perhaps I will just
7 tell you what it is and you can --

8 A. The third point?

9 Q. The third point, remember, I was just showing you from
10 Landes and Posner that that is where you take your --

11 A. Yes.

12 Q. -- expression for the elasticity of residual demand.

13 A. Yes.

14 Q. Then what you do is you set the supply elasticity equal
15 to zero. I think you saw that in the footnote; do you
16 remember that? No?

17 A. Keep going.

18 Q. If you go back to footnote 424, and so therefore
19 {C2/8/106} do you see in brackets "(conservatively set
20 to zero)"? So there is actually no strategic
21 interaction being modelled at all between Apple and its
22 competitors.

23 So the model cannot explain how it is that Apple has
24 come to have a 50% market share, because you have
25 assumed that suppliers do not respond to Apple's price.

1 Those are the points.

2 A. Yes, okay. Fine. That is fine. Okay.

3 THE CHAIRMAN: Okay.

4 MR PICCININ: That third one really should not have been

5 a surprise, because Professor Sweeting made

6 a substantial --

7 THE CHAIRMAN: Mr Piccinin, are there any others?

8 MR PICCININ: Not on the models.

9 Perhaps I should foreshadow one point on incidence,

10 just so that you ...

11 THE CHAIRMAN: Well, I am not sure. I am not inviting you

12 to air them. I am just making the point that the luxury

13 we have this evening of allowing Dr Singer to go away

14 and check it is not going to be something we have

15 tomorrow. So if you start down a line which Mr Hoskins

16 objects to, then you may find that you are not able to

17 ask those questions.

18 MR PICCININ: Sir, I am actually very keen to be fair to the

19 witness. I am not trying to surprise him. I think

20 there is only one other point that you might not have

21 looked at before, I think.

22 THE CHAIRMAN: In a way, I am not sure -- I think Mr Hoskins

23 would say we should not be where we are, and, you know,

24 you are going to have to take a -- I do not think we are

25 going to rehearse it now at 4.40, and that, again, I do

1 not think would be fair to Dr Singer. I think I am just
2 putting you on notice that the solution we have now to
3 allow Dr Singer to go and look at it is not going to be
4 one you have tomorrow, and that will go to the question
5 as to whether it is a fair question. Now, it may be a
6 perfectly fair question because it is not something that
7 Mr Hoskins could criticise as arising in the way it
8 does. It may not be. I do not know.

9 MR PICCININ: It is a very short point and I am very happy
10 to tell him what it is, then he can think about it.

11 THE CHAIRMAN: I do not really want to get into that now.

12 I am just saying to you, you need to consider whether
13 you want to ask that question based on the position it
14 would put Dr Singer in, and obviously if it is fine, it
15 is fine. If it is not, Mr Hoskins will say so and we
16 will have to make some decision about how we proceed.

17 So it might be helpful if you indicate when you get
18 to us so none of us -- and Mr Hoskins has an opportunity
19 to talk about it --

20 MR PICCININ: I will. I am really not trying to be unfair
21 to anyone, sir.

22 THE CHAIRMAN: I know you are not, and I understand that,
23 and I am not criticising you. But it is, I think --
24 I do not know if it is an unusual situation, but it is
25 certainly not a particularly helpful one to find

1 ourselves in. That is not a criticism of you. It is
2 just the way it has come out.

3 MR PICCININ: That other point is a fairly simple one
4 anyway.

5 THE CHAIRMAN: Well, let us see. Why do we not have that
6 discussion in the morning.

7 Is there anything else on any of that? Are we all
8 comfortable about what the plan is?

9 MR PICCININ: Yes, sir, subject to one point.

10 THE CHAIRMAN: Yes.

11 MR PICCININ: Which is, of course, what weight you give to
12 any of this, the questions, the answers, the whole
13 thing, will be a matter for submissions in closing.

14 THE CHAIRMAN: Absolutely. That is still --

15 MR PICCININ: I do not accept -- to be very clear, I do not
16 accept that it is reasonable for an expert to come back
17 and say it was too hard to answer the question so I am
18 not answering it.

19 THE CHAIRMAN: No, and I am sure Mr Hoskins has made it very
20 plain that he is not going to accept that it has been a
21 fair process.

22 MR PICCININ: Exactly.

23 THE CHAIRMAN: Therefore that will be a matter that, no
24 doubt, we will have to consider in due course when we
25 come to it.

1 MR PICCININ: Exactly.

2 THE CHAIRMAN: Good. Thank you.

3 In that case, we will resume at 10.30 tomorrow
4 morning, and, Dr Singer, you have got in writing your
5 instructions.

6 THE WITNESS: Yes.

7 THE CHAIRMAN: Of course you know that other things are off
8 limits for discussion with others.

9 THE WITNESS: Yes, that is fine.

10 THE CHAIRMAN: Thank you very much.

11 (4.41 pm)

12 (The hearing adjourned until 10.30 am the following day)

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