COMPETITION AND MARKETS AUTHORITY
MICROSOFT / ACTIVISION MERGER INQUIRY

Notes of a call with NVIDIA
held via MS Teams
on Monday, 9 January 2023

PRESENT:

FOR THE COMPETITION AND MARKETS AUTHORITY

Martin Coleman	- Chair
John Thanassoulis	- Member
Ashleye Gunn	- Member

FOR THE STAFF

John Bardsley	- Legal Adviser
Katie Davidson	- Assistant Director of Data Science
Caitlin Emerson	- Case Officer
Francesco Fiori	- Economics Adviser
Max Hobbs	- Economics Intern
Sharon Mayor	- Principal Case Officer
Oliver Norden	- Assistant Director, Economics
Mohini Patel	- Case Officer
Colin Raftery	- Senior Director
Rebecca Saunders	- Assistant Legal Director
Luke Stringer	- Economics Adviser
Ricardo Zimbron	- Project Director

FOR NVIDIA

Ben Damstedt	- Senior Director, Litigation
Hyunseok Doh	- External Legal Adviser
Phil Eisler	- Vice President, Cloud Gaming
Jeff D Fisher	- Senior Vice President, Gaming Products
Azadeh Morrison	- Senior Litigation Counsel
Trevor Soames	- External Legal Adviser
Tim Teter	- Executive Vice President and General Counsel

1   Q.   (Mr Zimbron) Hello, thank you for making yourself available to speak to us

2   today. My name is Ricardo Zimbron and I am a Project Director at the CMA. I

3   will take us through some administrative points to start with ahead of

4   substantive discussion.

5   When the CMA carries out a phase 2 merger investigation, which is what we

6   are in now, an independent group is appointed to be the decision makers, and

7   we have three of those group members today: Martin Coleman, Ashleye Gunn,

8   and John Thanassoulis. They are online at the moment. I am also joined by a

9   number of my colleagues here at the CMA case team who will introduce

10   themselves when they speak.

11   In terms of today's discussion, as we discussed in our correspondence with

12   you, we are investigating this merger, and any information that you can provide

13   to us could be useful for our investigation and help us to better understand the

14   markets that the Parties operate in.

15   We expect that this call will last around an hour. It is our standard practice to

16   record calls like this. This is so that we have a good record of the call and we

17   can check what was said without needing to revert back to you. We will make

18   a transcript of our call available to you, and you will be able to correct any

19   inaccuracies or flag any information that you think is confidential. The

20   information that you provide may inform our published reports, or be included

21   in an anonymised published summary of customer and competitor responses,

22   or be included in other documents that it may be necessary to share with the

23   parties or other parties, but we will discuss this with you should it be necessary.

24   Before we start, I am afraid I have to give a disclaimer, which is the warning

25   that we give in every call with every third party in every merger investigation,

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1   which is that it is a criminal offence to supply information to the CMA that is

2   false or misleading in a material respect if you do so knowingly or recklessly,

3   under section 117 of the Enterprise Act 2002. That means, if we ask any

4   questions and you do not know the answer, then it is fine not to give a response,

5   or get back to us later.

6   Do you have any questions on any of this before we get started?

7 A.   (Mr Eisler) No.

8 Q.   (Mr Zimbron) Thank you so much for joining us, and I guess it would be great

9   if you could just briefly introduce yourselves before we get started.

10 A.   (Mr Teter) I am Tim Teter, I am the General Counsel. With me are two of my

11   colleagues in the Legal Department, Ben Damstedt and Azadeh Morrison, and

12   then I will let Jeff Fisher, who heads up our Gaming Team, and Phil Eisler, who

13   heads up the Cloud Gaming Team, introduce themselves.

14 A.   (Mr Fisher) Hi, I am Jeff Fisher, I run the gaming business at NVIDIA, Senior

15   VP of Gaming.

16 A.   (Mr Eisler) Hi, I am Phil Eisler, I am the Vice President and General Manager

17   of GeForce NOW Cloud Gaming at NVIDIA.

18 A.   (Mr Doh) I am Hyunseok from Quinn Emanuel, Brussels.

19 A.   (Mr Teter) It does not appear that Trevor Soames has joined us yet, but the

20   Quinn Team have told us that the CMA is interested in information, particularly

21   about cloud gaming and our perspective on cloud gaming, where we are and

22   where it is headed, so that is why we have Jeff and Phil here today. We have

23   put together a few slides but I will just give a brief one-minute overview of where

24   we are, and then, if it is okay with you, Phil can present our perspective, but as

25   Phil and Jeff will explain, we think cloud gaming is poised for success. It

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1   certainly cannot be dismissed as nascent or uncertain in any respect. The

2   technology is here. We have been working on it for many many years. The

3   customer gamer demand is here. Gamers worldwide use cloud gaming, and at

4   this point, what we and any cloud gaming service really needs is the content.

5   Gamers will not invest in cloud gaming without the content, but the demand is

6   there otherwise. The technology is there too. Today, as Phil will explain, AAA

7   games are really more important than ever. These games - oftentimes

8   multiplayer games - are massive endeavours that require huge investment and

9   developer time and money, in some respects. They are as complicated, in

10 terms of script, content and technology, as major motion pictures. So, those

11 AAA games are really critical, and Activision's library is one of the most popular

12 among gamers, especially gamers who crave the ability to use online gaming,

13 and many gamers view all or part of Activision Blizzard's portfolio really as a

14 'must have'. If they do not have it, they are not interested in signing up for a

15 service.

16 As you also probably have learned in your investigation, independent

17 publishers, like Activision, have fundamentally different incentives to first party

18 publishers. First-party publishers are publishers that are owned entirely by a

19 particular platform, so that would be the shops, the design teams that Microsoft

20 owns. Their incentives are completely different. If Activision or any

21 independent publisher stays independent, they have a strong incentive to make

22 their library available as widely as possible, including on services such as

23 GeForce NOW, but of course, if they are first-party owned, that incentive

24 disappears.

25 So, I think Ben and Phil will now take us through it.

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1   A.   (Mr Eisler) Thank you for that overview, Tim. ██████████████

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3   First of all, ██████████████████████████ that the future of cloud gaming

4   is uncertain, and at NVIDIA we strongly disagree with that. We see continued

5   growth in cloud gaming, and NVIDIA certainly have been the leader in solving

6   the technical challenges of cloud gaming, and we believe that they are largely

7   solved at this point. We have had now four generations of cloud gaming

8   hardware that have come out, where we have made it better and better with

9   each generation, to the point now where it outperforms most PCs and consoles

10   in your home, even from a latency perspective, and we have achieved that by

11   putting more and more powerful GPUs in the Cloud. To understand the major

12   part of any latency of a game is actually the game engine itself; the rest of the

13   system components, like your input or your display, are a small part of it, and

14   even the round trip delay of a network can be a small part of the overall delay.

15   In our first generation gaming, we were running the game engine in the Cloud

16   at 30 frames per second; then second generation we went to 60 frames per

17   second; third generation we went to 120 frames per second, and we just

18   announced at CES this year, our 4080 generation, that will be streaming up to

19   240 frames per second. That effectively has shrunk the time that it takes for

20   the game engine in the Cloud down to the point where it can more than

21   compensate for the round trip delay of the network, and actually deliver lower

22   latency for most gamers than they get on their home console or their home PC

23   or laptop. In fact, what we did at CES is we brought in about two dozen press

24   where we gave them a kind of a 'Pepsi challenge' with a local machine and a

25   cloud machine, and none of them could tell the difference; it just felt the same

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1   to them. So, we have really solved the latency problem of cloud gaming, and

2   from a technical standpoint, we think the market is ready to take off.

3   It has, of course, other benefits, in that it makes gaming more accessible, so

4   that you do not have to download and install the game and update the game,

5   so it is far more convenient. Affordability is a big factor too. There has been a

6   fairly publicised statement that Moore's Law is dead, and Moore's Law had

7   several aspects to it; the most famous one being that the number of transistors

8   doubles. Historically, the cost of transistors also came down roughly by half,

9   but that is no longer the case. The cost of transistors is actually going up. At

10   the same time, GPUs are needing more and more transistors, and so the cost

11   of each GPU generation is now going up, making it more difficult for gamers to

12   afford the latest generation GPU. So, one of the benefits of cloud gaming is

13   that, since it is a shared computing environment, it offers the opportunity to give

14   consumers lower cost access to the next generation gaming hardware to play

15   the newest games, and we are seeing games start to take advantage of the

16   bigger GPU's more memory, to the point where in the future, we see games

17   that might only run in the Cloud due to the ability to store large amounts of data

18   and have large memory and be able to afford these larger and larger GPUs as

19   we go forward. So, we think that cloud gaming is a very important part of the

20   future of video games in general.

21   We have been working at various stages. We started off with a beta. It was a

22   free beta. We had a large number of publishers who participated in that beta,

23   who were very interested in learning with us about cloud gaming, including

24   Activision, Bethesda and Microsoft with Minecraft, and so it was very popular,

25   and at some point we had to commercialise the service, so we came out of beta

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1   and started charging. I think our first rate was 5 dollars a month. At that point,

2   I think we had proven the technology to everyone, so everyone was happy with

3   the technology, ████████████████████████████████

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9   █████████████████████████████████ Activision was the

10   one who removed their titles at that point. Bethesda was another, as well as

11   several other publishers. Now, over time, many of them have come back to the

12   platform, including Ubisoft and Electronic Arts, recognising that it does offer the

13   proposition of expanding their markets to new platforms. It serves largely

14   people with underpowered computers, people who have an older computer or

15   laptop, or a computer with integrated graphics that cannot run the new games,

16   so they can get GeForce NOW and basically level up their computer. It also

17   services a lot of people who run platforms that are not Microsoft Windows, so it

18   is very popular in the Mac market because it provides compatibility with PC

19   games to the Mac market. It provides compatibility to Chromebooks offered by

20   Google, and so it really enables people on a lot of different platforms to get

21   access. For that reason, we have had a number of publishers continuing to join

22   us, and we have had healthy discussions with many publishers who are actively

23   considering re-joining us, including Activision prior to the announcement of the

24   acquisition.

25   I mentioned performance earlier. We have been increasing steadily and,

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1   generally, we have been able to offer greater performance than the latest

2   consoles. In our last generation, we went up to 120 frames per second. On

3   the current generation, we are now streaming at 240 frames per second, and

4   that ability to stream at twice the frame rate enables us to have the game engine

5   latency to compensate for the round trip delay of the network, so that it feels

6   like people are just playing locally. That slide was an image of that

7   announcement from CES.

8   In terms of the market researchers, Newzoo is one active one that tracks the

9   cloud gaming market. There are several others that have similar forecasts.

10   ██ I think

11   their author was trying to describe cloud gaming as 'not a market'. I do not

12   know where that is coming from; it is very definitely a market. It is tracked by, I

13   believe, three or four different market research houses, all with forecasts for

14   growth. It is active in countries around the world. In fact, China is one of the

15   most active countries for this market, with multiple participants. People like

16   Tencent in China are participating in it, and there are different forecasts for each

17   region around the world, and it is really forecasted to become a major market

18   in the next five years going forward.

19   I mentioned earlier about Moore's Law, and the fact that there are multiple

20   aspects to Moore's Law. One was the doubling of transistors, but also

21   associated with that was that the cost of transistors would roughly be cut in half

22   so that you could get more performance at the same price with each generation,

23   but what happened is that, as we have been chasing more and more

24   transistors, it is getting more expensive, so the providers, like TSMC, have had

25   to raise the price per transistor for everyone, and so, now the cost of transistors

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1   has been going up for the last few generations, while the transistor counts are

2   still going up, which means that for GPUs which have one of the larger dies and

3   the bigger transistor budgets, the costs are going up, and so that leans into the

4   benefit of cloud gaming, that in a shared computing environment, people will be

5   able to afford it more easily. Also for the client devices, they are having to

6   economise on the number of transistors that they can dedicate to GPUs, which

7   means that they are not as able to play the latest games. So, it is going to

8   make, we think, more and more sense, because of the end of Moore's Law, to

9   have bigger GPUs in the Cloud, streaming to clients that have lighter GPU

10 transistor budgets.

11 I mentioned earlier that NVIDIA has largely solved the technical challenges of

12 cloud gaming, including latency. One thing I forgot to mention is that we are

13 not doing it just by ourselves; I think the network industry is also helping. With

14 the deployment of fibre more broadly around the world, the advances of

15 DOCSIS on the cable side have increased bandwidth. Nielsen's Law, which is

16 alive and well, says that the end users' bandwidth is doubling every couple of

17 years, but in addition to the bandwidth improvements, they are also improving

18 latency inconsistency. There is something called 'Low Latency DOCSIS', and

19 a similar standard for 5G wireless, as well as over fibre optics, that is focusing

20 on low latency, low loss, so there are new standards coming that are going to

21 improve latency and consistency, which will also benefit cloud gaming on the

22 network side, so we are supported by the entire network industry, from the

23 equipment manufacturers to the service operators of broadband and mobile,

24 that are making the networks better and better able to deliver high bandwidth

25 with great consistency, which is fantastic for improving the end quality of cloud

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1 gaming.

2 Now that the technical issues have been solved, the only remaining barrier to

3 the growth of cloud gaming is access to the critical content. Gaming is very

4 much a hit driven business, where the Top 50 games are 75 per cent of what

5 people play. Although there are thousands of games out there, they are

6 definitely not all equal. There are definitely 'tentpole' games that drive

7 consumer adoption, and Activision has many of those titles. Call of Duty has

8 certainly always been a critical platform - one that the console vendors have

9 paid tens of millions of dollars to get marketing rights for exclusivity, to sway

10 gamers to one platform or the other. Also, on the PC side, the Blizzard titles

11 are very important as well, like World of Warcraft and Overwatch are also critical

12 titles that we see on our PC gaming charts for what gamers play, and I think

13 that, between the Microsoft library, the Bethesda library and the Activision

14 Blizzard library, Microsoft will control a large swath of the most critical 'tentpole'

15 titles for swaying gamers, and so this is really the last barrier to the growth of

16 cloud gaming.

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19 There has been quite a bit of talk about what happened to Stadia. They took a

20 different strategy to GeForce NOW. Just to recap, GeForce NOW's strategy is

21 very much to be an extension of gaming. So, we run Windows in our Cloud

22 servers and that gives us easy compatibility with all of the thousands of games

23 that have been developed over the years for PC gaming, but the flip side of that

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10	Google chose a different path. They decided, "Okay, instead of paying this high
11	rent to Microsoft, we will run Stadia on Linux and start working with publishers
12	to port the games". That proved to be hugely expensive and hugely time-
13	consuming. They were paying tens of millions of dollars per publisher and
14	spending one to two years to port titles. So, in the end, they ended up with very
15	few titles and a cost model that just was not sustainable, and eventually decided
16	to stop the business. In addition to that, they ended up with titles that were kind
17	of an island. In a multiplayer world, you want to be connected to the rest of the
18	players out there, so with the GeForce NOW System, since it is PC-based, you
19	are connected to all of the millions of PC players out there for matchmaking,
20	but the Stadia titles ended up being their own island with not enough volume to
21	have efficient matchmaking, so they were unable to make a go of it, by not
22	paying the rents to use Microsoft Windows on their cloud servers, and the lack
23	of content ended up killing them. This is just more feedback from editors
24	knowledgeable in the industry about the dearth of titles, and that eventually
25	leading to their demise because they elected to go with a strategy that was not

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1   using Microsoft Windows.

2   The importance of the Activision Blizzard title is very critical in the industry in

3   general and to cloud gaming in particular. There are many accolades about the

4   Call of Duty franchise. It is true that they do have some years when they have

5   more success and some years when they have less success, depending on

6   what they are releasing, but certainly the free-to-play version of Warzone has

7   been extremely successful. We see that continuing to be among the top

8   games. ███████████████████████████████████████

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10   █████████████████████████████████ They are very critical. Although there

11   is a lot of focus in discussion about Call of Duty, from a PC perspective and

12   cloud gaming perspective, we think that the Blizzard titles are equally viable.

13   Overwatch, World of Warcraft and Diablo are also extremely important titles to

14   the PC gaming industry and to the future of cloud gaming. If those were

15   foreclosed and not available on cloud gaming, I think it would severely hamper
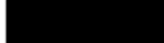
16   the growth of cloud gaming.

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19   have about 1,500 titles now, so it is true, █████████████ there are a lot of

20   titles to choose from, but titles are not equal. The small indie titles do not make

21   up for a Call of Duty or an Overwatch, and so consumers really want to play

22   those critical titles. It is often based on friend networks, that if their friends are

23   playing Call of Duty, you cannot give them a substitute title, because that is

24   where their friends are. It is based on what they view by watching Twitch

25   videos, and so there is a lot of marketing and hype and brand awareness of
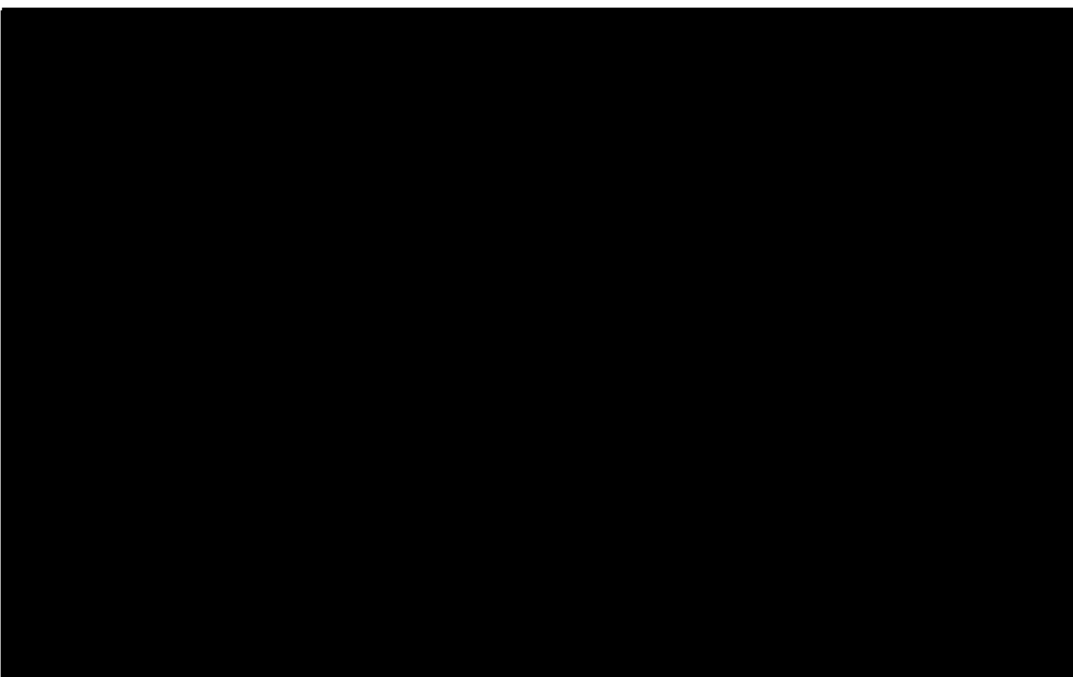
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1   these tentpole franchises, and you have just got to have the most critical titles.

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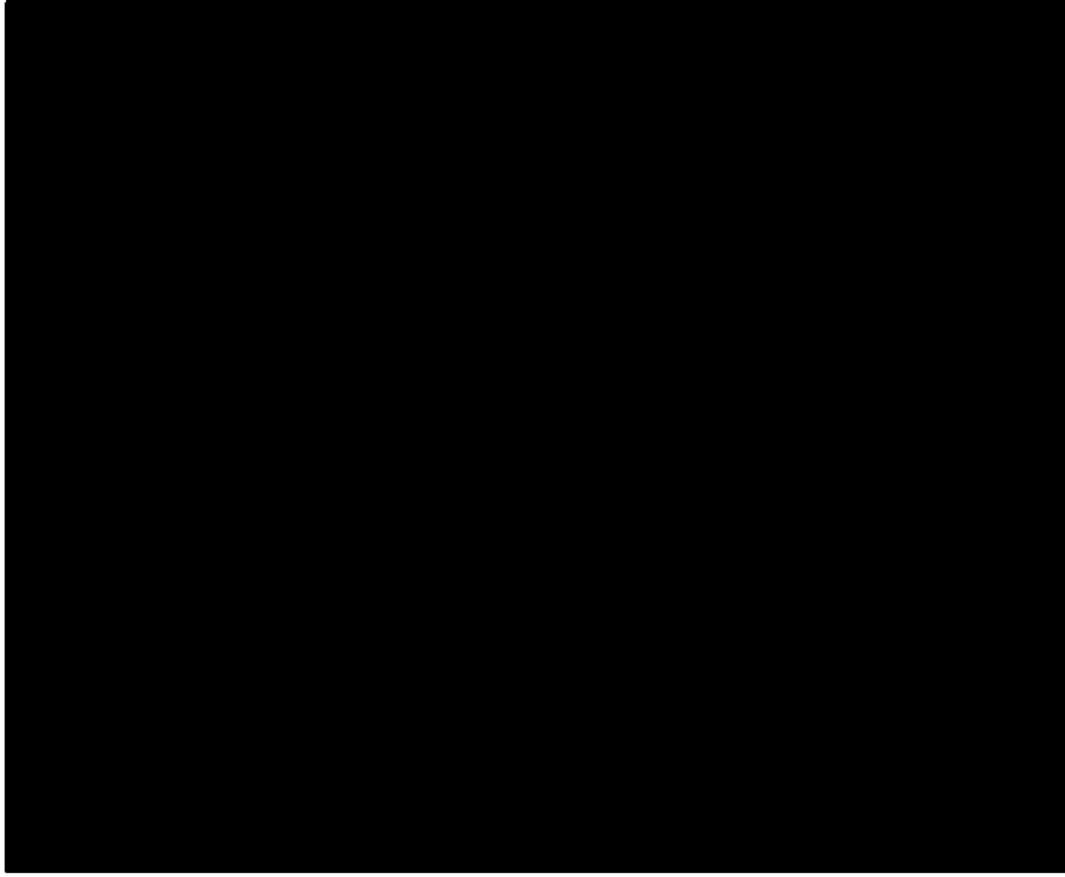
15   Q.   (Mr Fiori) Phil, hi, my name is Francesco Fiori, I am an Economist. ████████

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2   Q.   (Mr Fiori) Thank you.

3   Q.   (Mr Thanassoulis) John Thanassoulis here, I am one of the Members of the

4   Panel. Thank you for a great presentation. ████████████████

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13   Q.   (Mr Thanassoulis) Got it. Thank you.

14   A.   (Mr Eisler) ██████████████████

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22   You can see here that we do provide a service where a lot of users, as I

23   mentioned earlier, have these older laptop computers with usually integrated

24   graphics that just cannot run the games - they run them at like seven frames

25   per second which is basically unplayable - so switching over to GeForce NOW

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1   they can run them at 60 or 120 frames per second and get much better latency

2   and playing experience, so we do help a lot of people typically who do not have

3   the funds to buy a gaming computer or a new console to play these games with

4   their friends.

5   A.   (Mr Fisher)   On GeForce NOW, I would say ████████ or more of our

6   customers are on PC, so really do not have the capability to play most of these

7   games; they are on integrated graphics laptops, Chromebooks, Macs, so this

8   does extend access to gaming for 10 or 20 dollars a month, for a 2,000 dollar

9   gaming PC, to really low-end clients and gamers who do not have the funds or

10   the capability to buy high-end PCs.

11   A.   (Mr Eisler) John, did you have a question?

12   Q.   (Mr Thanassoulis) Yes, I do. That was a really interesting comment. ████

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5　A.　(Mr Fisher) But Phil, I think you would agree with me, the vast majority of our

6　　　customers are not folks who have a high-end gaming PC. The vast majority

7　　　are folks who are new into gaming or do not have a high-end PC.

8　A.　(Mr Eisler)   That is very true, and internationally as well, when we go into

9　　　developing countries, like Turkey or Brazil, GeForce NOW is extremely popular

10　　　where people just do not have the means to afford new generation consoles

11　　　and so forth, so there is kind of a socio-economic group that benefits from cloud

12　　　gaming the most, I would say, where they cannot afford these gaming PCs or

13　　　consoles, which, as I said, because of the end of Moore's Law, are getting more

14　　　and more expensive; they are not getting cheaper.

15　Q.　(Mr Thanassoulis) Thank you.

16　A.　(Mr Eisler) We mentioned that the importance of content is king, and we have

17　　　a Developer Relations Team that interfaces with the global game publishing

18　　　industry, with hundreds of publishers that they interact with on a daily basis.

19　　　We have been working for more than five years to get them to join GeForce

20　　　NOW, and we have had 1,500 games join - I think around 500 publishers. ████
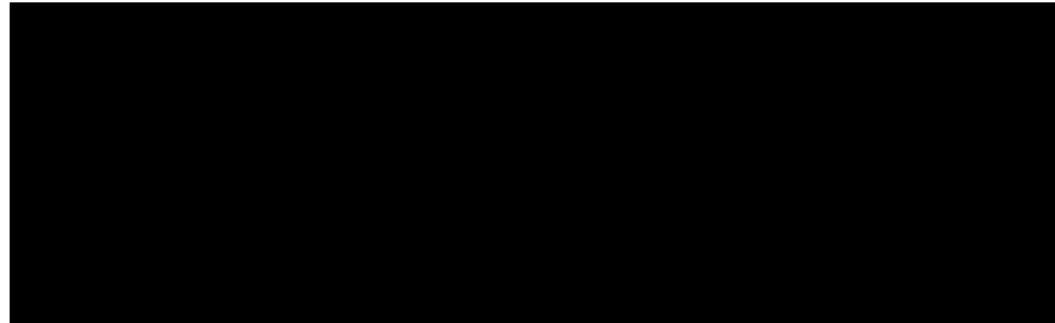
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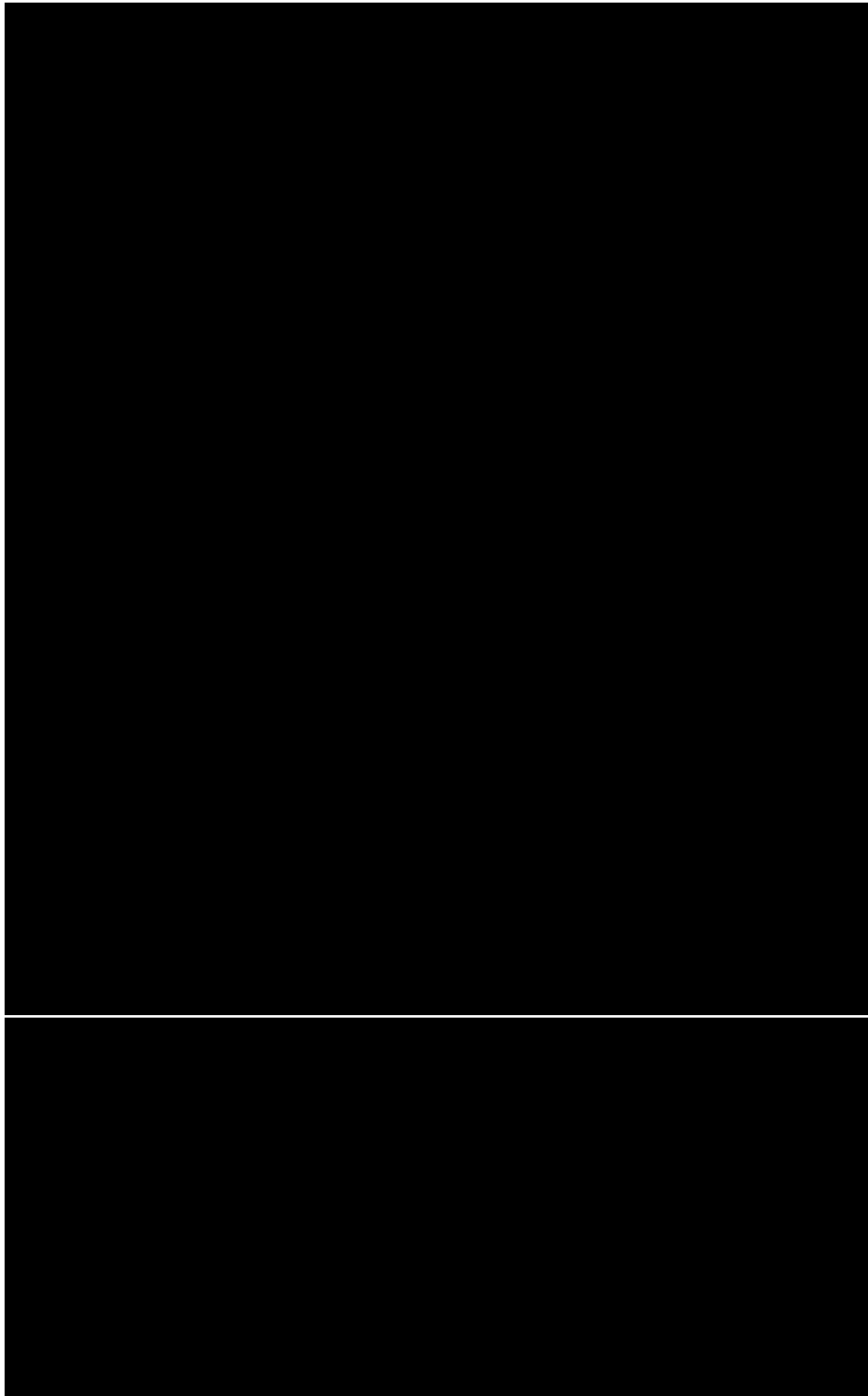[page * arabic]

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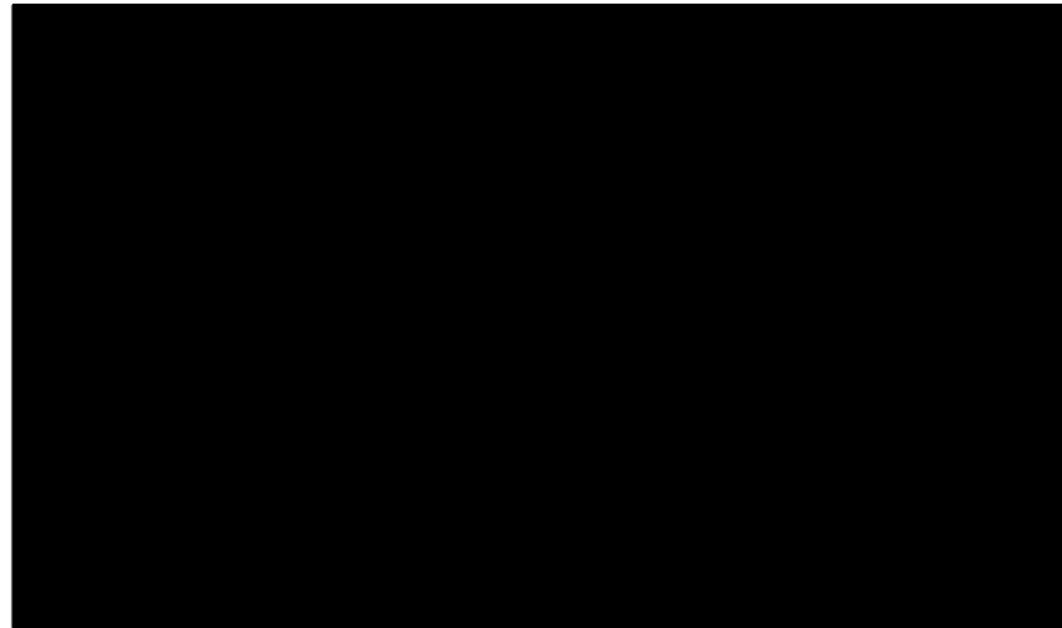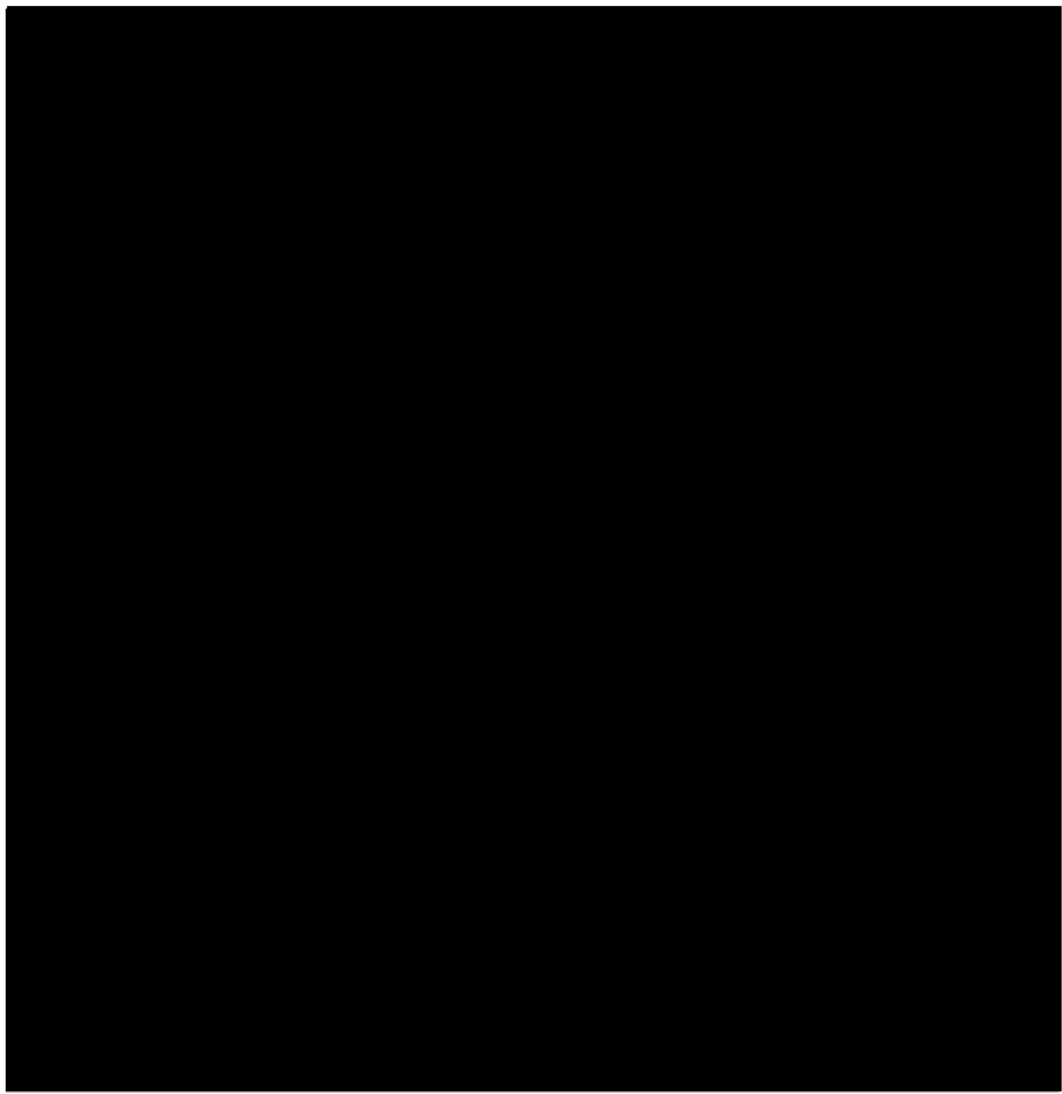
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1   Q.   (Mr Zimbron) Thank you.

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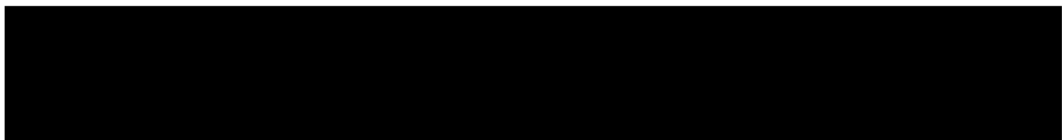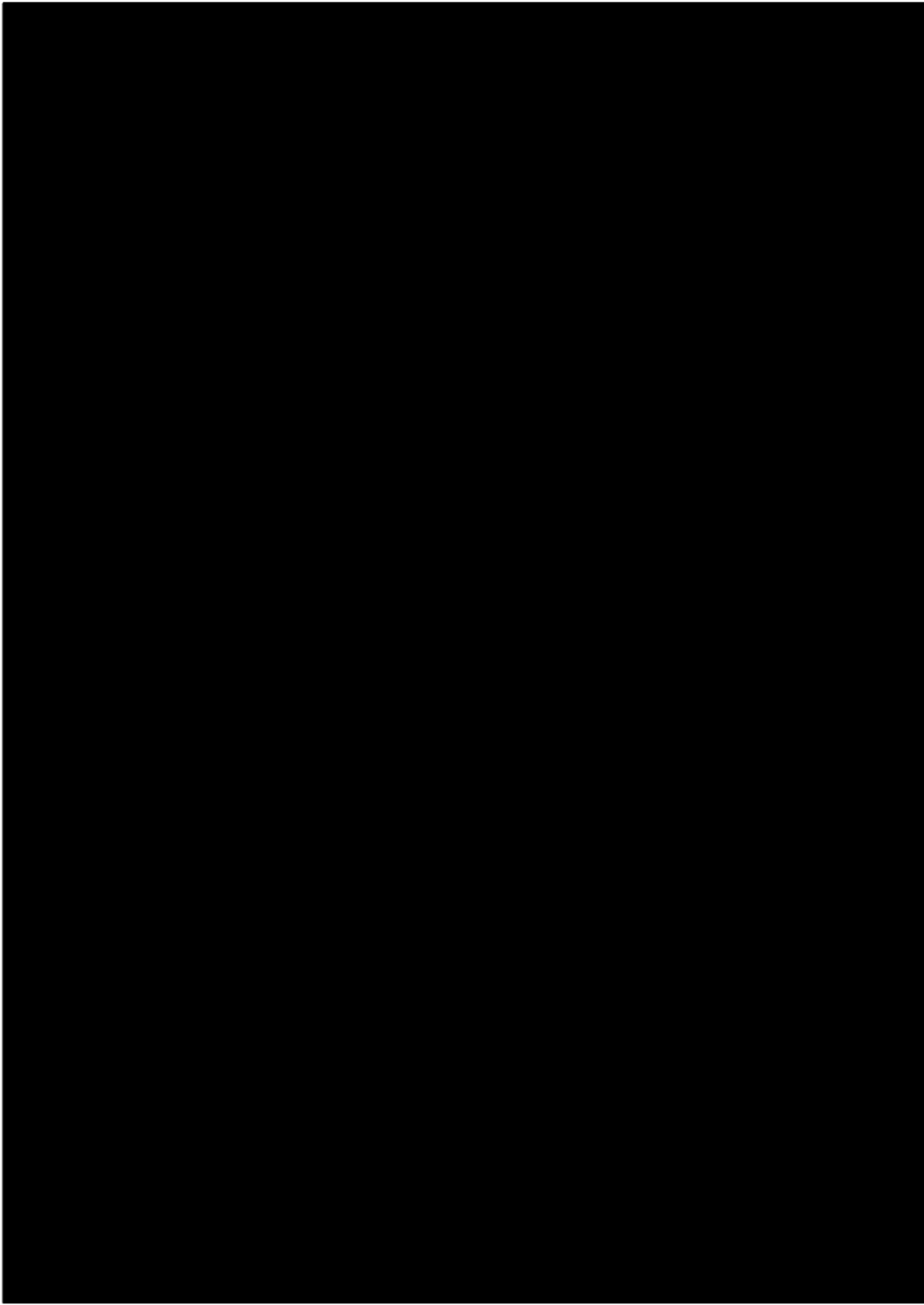4   A.

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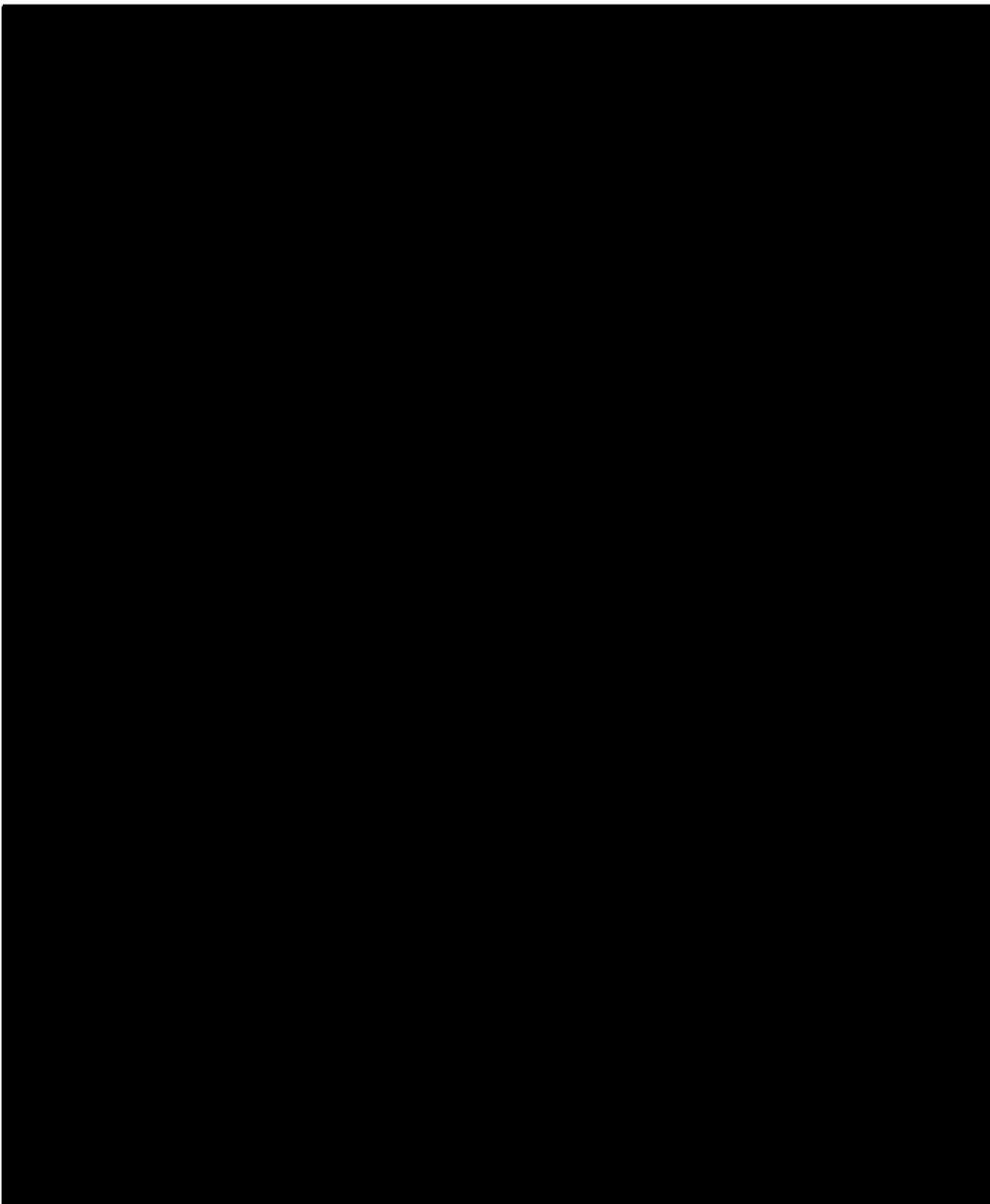13

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20 Q. (Mr Zimbron) That was really helpful. Thank you very much for that. I am sure

21   the team have quite a few questions. We have heard a lot about cloud gaming

22   from various participants in the industry. One recurring theme is the question

23   of whether or not using GPUs - and given the cost of GPUs that are required to

24   run these games - cloud gaming services can really be profitable. What are

25   your views on that?

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1   A.   (<u>Mr Eisler</u>) It can be profitable.

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7　Q.　(Mr Zimbron) That is really interesting. Just as a matter of interest,

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9　- you mentioned the issues that Google ran into when trying to use

10　an alternative, using Linux - did you ever consider using a different operating

11　system, for example, using Linux and having a Proton layer? Is that something

12　that you would consider, and if not, why not?

13　A.

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18　The problem with it is it runs into a lot of compatibility issues. It kind of works

19　95 per cent of the time, but the last 5 per cent can sort of kill you. In particular,

20　we found that the Wine Proton is not very compatible with anti-cheat systems

21　in games. One of the problems with multiplayer online games has been

22　cheating, so people install programs to give them an advantage, and then it

23　discourages the community, so it is very bad for the business of game

24　publishers, so there is a large industry of anti-cheat vendors; some publishers

25　do it themselves but there are some third-party companies like EasyAntiCheat

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1   or BattIEye, and they tend to be very invasive into the computer in that they

2   need to make sure that no cheating software is installed, and so, while the basic

3   game engine can be run through a Wine Proton layer, often the anti-cheat

4   software will not run and the game will shut down. ███████████████

5   █████████████ and I think the example was given of the steam deck and

6   Valve Steam has been a big proponent of Wine and their version of Proton, but

7   I think if you go and look through the compatibility, they have a whole website

8   dedicated to compatibility, so you know that it is a problem, and they rate them

9   from 'fully compatible' to 'partially compatible' to 'not compatible', and when you

10   take that across thousands of games, it is not a small undertaking. ████████

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13   Q.   (Ms Davidson) Can I ask for a quick follow-up? ███████████

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16   A.   ██

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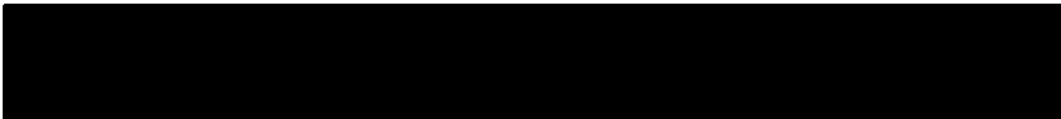
3 Q. (Ms Davidson) And could that work happen at the publisher/developer side or

4 would it need to happen on the Cloud platform?

5 A. (Mr Eisler) It is possible in the future. There is definitely a bit of a 'chicken and

6 the egg' problem with cloud gaming, in that at its current size, although it is

7 probably getting up to medium size now with millions of active, it is not in the

8 tens of millions of sizes where it's a must support directly by the publishers,

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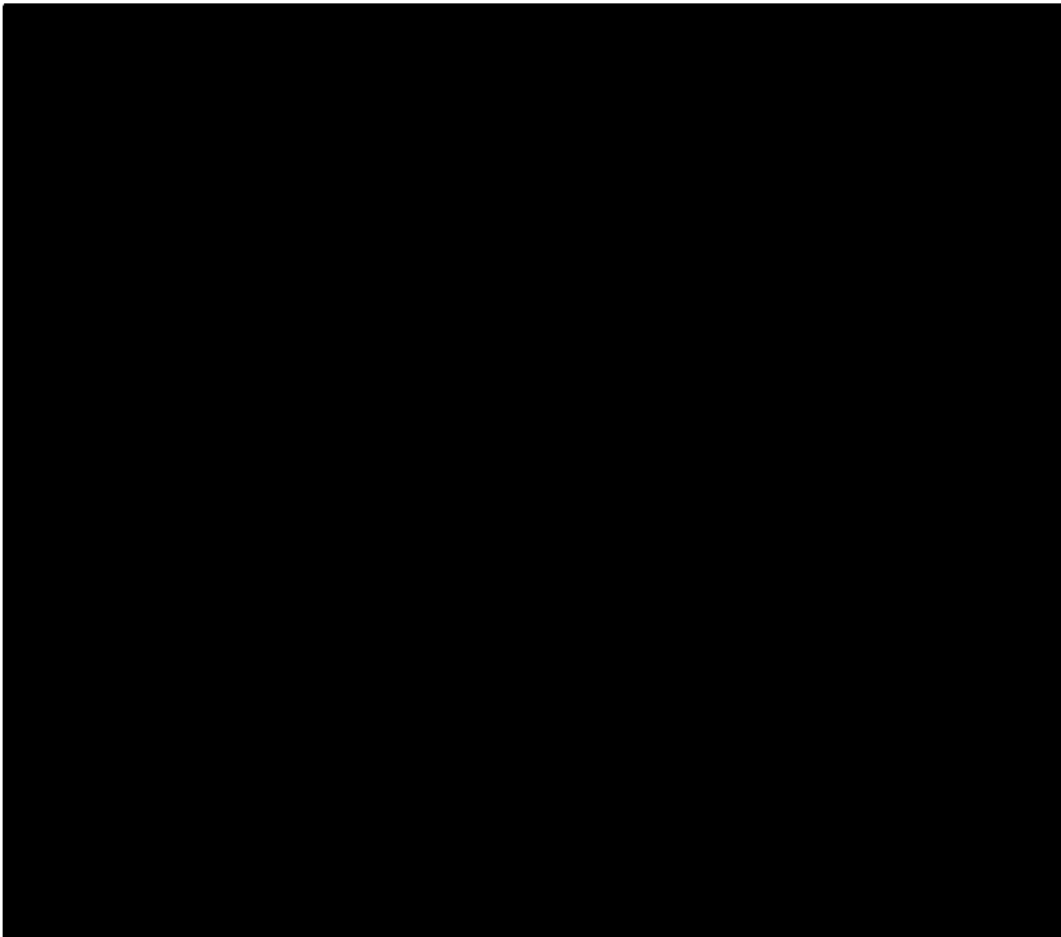
23 Q. (Mr Zimbron) This is all quite interesting in terms of the costs that would be

24 involved in this and the size that you need to be in order to get publishers to

25 actually do some of this work,

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15 Q.   (Mr Zimbron) That makes sense.

16 Q.   (Mr Stringer) Luke Stringer here, Economist on the Case Team. Just going

17   back to Proton, you mentioned some of the issues with its effectiveness, do you

18   think that with further investment and more use of Proton for gaming, that those

19   issues could be reduced and the performance of Proton could improve?

20 A.   (Mr Eisler) I think the problems are solvable for some of the games but probably

21   not all of the games. A large part of it is, as I mentioned, working with the anti-

22   cheat providers to make them more friendly with Proton, ███████████████

23   ███████████████████████████ and the whole anti-cheat space is very

24   tricky because, if you make changes, you have to make sure that they do not

25   allow exploits by the cheaters, so that is where it becomes tricky because you

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1   have got to do it in a way that does not break the purpose of anti-cheat in the

2   first place, and I mentioned, there is not one single anti-cheat program, there

3   are many of them, and so it has to be done multiple times with different anti-

4   cheat programs, ███

5   ████████████████ If you want to get a good look at that, I recommend going

6   looking at the steam deck compatibility list, and you can see how they are

7   struggling with it; some games are fully supported, particularly Valve's own

8   games because they have their internal publishers to do so; there are some

9   games that are partially supported and some games that are fully supported,

10   so you can see how they are struggling with it working through a list of games,

11   and so I think we will end up in a similar place where it will work for some of the

12   games and not for other games.

13   Q.   (Mr Stringer) And lastly, do you think it is possible that as Microsoft makes

14   updates to Windows or to DirectX that that could have a negative impact on the

15   performance of Proton?

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22   Q.   (Mr Thanassoulis) What would it do to your business, do you think, if the merger

23   goes ahead, if Microsoft put Activision's games for cloud gaming exclusively on

24   their own platform, on Game Pass or something similar, so that your customers,

25   if they wanted to play Activision games on PC over the Cloud, then they have

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1   to go and subscribe to Microsoft, what would that do to your business?

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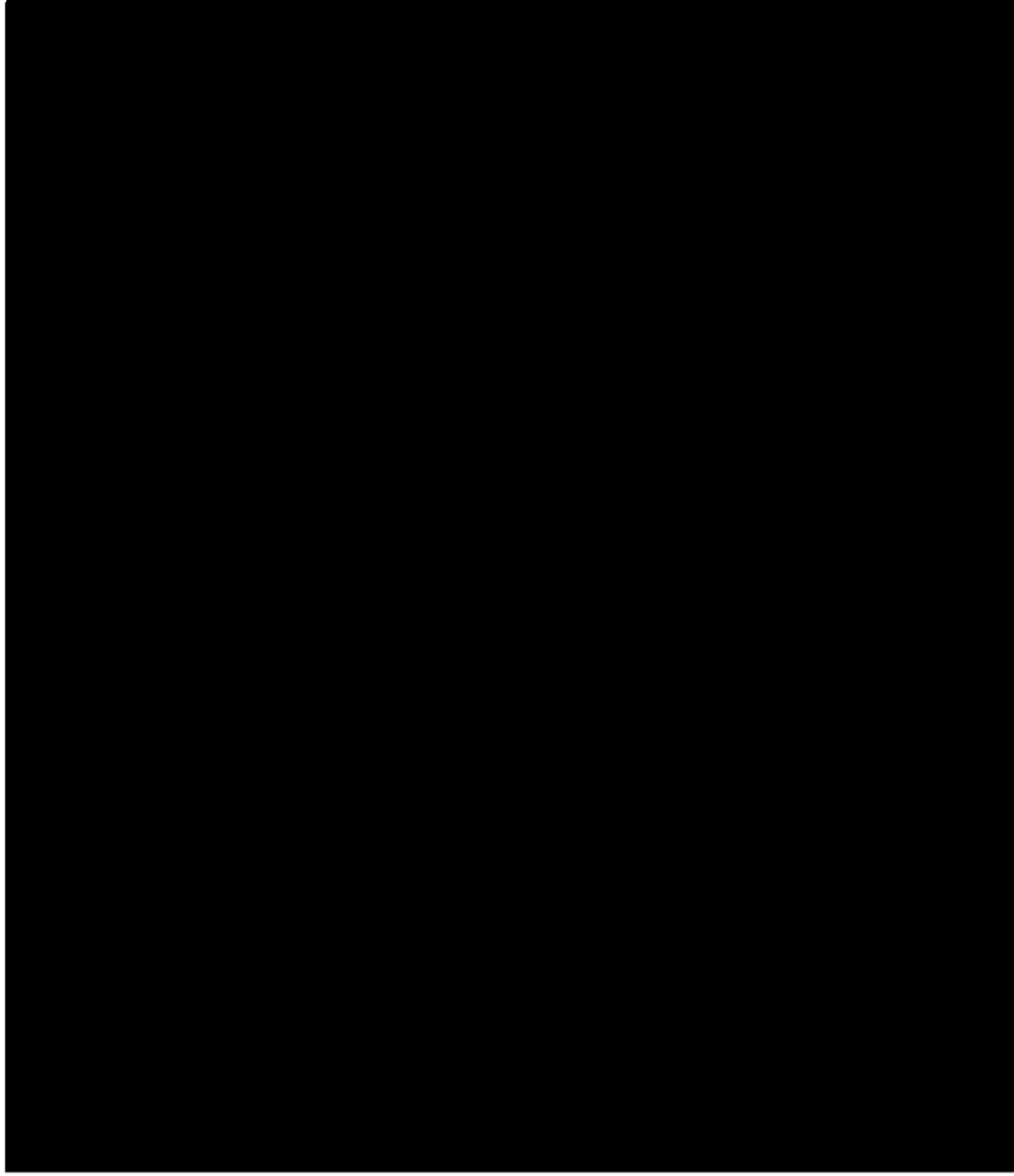
21   Q.   (Mr Thanassoulis) And then a follow-up.

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25   A.

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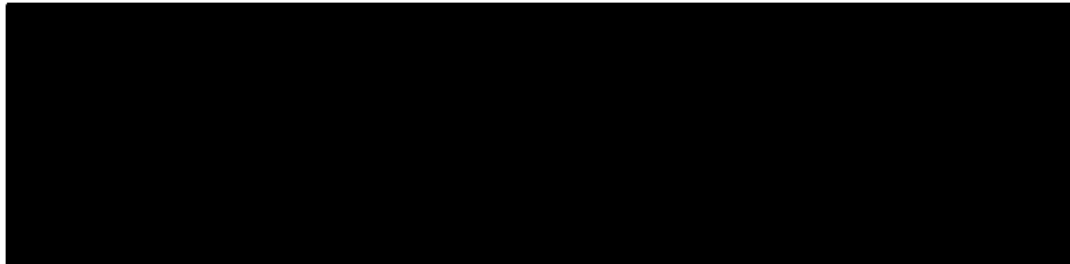
10   Q.   (Mr Thanassoulis) That is very helpful, thank you.

11   A.   (Mr Teter) Jeff, could you just touch on briefly some of the unique features that NVIDIA GPUs support, like ray tracing, for example, and how GFN is able to bring those things to users that maybe some of the older PCs or consoles obviously cannot?

15   A.   (Mr Fisher) I can start and you can jump in, Phil. Consoles are on a five to seven year upgrade cycle, that is when the technology is upgraded. Low-end PCs, integrated graphics, just have very little graphics capability. On the GeForce side, every one to two years, we roll out a new architecture that delivers new hardware in the hands of gamers and to developers - developers need new hardware to advance the state of the games, make them more visually rich, more multiplayer, bigger worlds - and over the last four years, some of the newest technology we brought to gaming is technology that came from the movie-rendering industry, called 'ray tracing', and all of the realistic scenes that you see rendered in Avatar have been rendered offline. They take about several hours to a day per frame to be rendered on high performance

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1   computers. We have brought that technology into the PC, called 'real time ray

2   tracing', and you can now render those realistic scenes in real time at 60-120

3   frames per second with our latest hardware. Our model on GeForce NOW is

4   to bring that hardware to cloud gamers with every generation, and what started

5   as a 2080, which was our technology from 2018, to a 3080, which is our

6   technology from 2020, to a 4080, which is our technology that we just

7   announced last year, is almost immediately available to cloud gamers. Our

8   business model is more about renting a gaming PC in the cloud than it is

9   building a walled garden of hardware and software that you are locked into a

10 specific ecosystem. We are leveraging the Windows PC ecosystem with cloud

11 gaming, as are a number of other folks in the industry. Does that answer your

12 question, Tim?

13 A. (Mr Teter) Yes. The point I wanted to make sure that the panel understood is

14   that GeForce NOW is not providing some second-class experience, by any

15   stretch of the imagination. Folks who use GeForce NOW can enjoy things that

16   you could not even imagine, even on your console or your PC five years ago.

17   With ray tracing availability, you've got some incredibly premium experiences

18   that you are able to get now on any client device, thanks to GeForce NOW, and

19   so when folks say, "Well, gee, is it going to be successful? ▮▮▮▮▮▮▮▮

20   just to echo your point, Jeff, I think there is no question that it will be, for two

21   reasons: (1) is the economies of scale and our ability to provision a single large

22   GPU in the Cloud for multiple users; and (2) we have technical features that

23   nobody else does, frankly. Ray tracing is a huge one, and as you get more and

24   more publishers supporting ray tracing, more and more games supporting that,

25   that is another strong inducement for people to say, "Hey, I've got a Mac right

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1   now, I've got an old PC, I really really really want to play GeForce games but I

2   can't afford my own gaming PC, I'm going to sign up for GeForce NOW and I'm

3   willing to pay for it." I think that is the trajectory that is absolutely inevitable.

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8   A.   (Mr Fisher) Let me just add a bit to that.

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13   so we are bringing 4080s and that class of gaming to new customers

14   of ours, and we truly believe in that model, and we have GeForce NOW running

15   around the globe. That is one point. We do believe that this is an opportunity

16   to expand access, simplicity and, ultimately, reduce cost, and democratise

17   gaming by moving it to the Cloud. The other point I want to make is that we

18   have seen that in our other businesses, with Compute. Ultimately, sharing

19   GPUs is the model to extend high performance computing to even enterprise

20   class customers, and ultimately, we are investing in this on the gaming side,

21   because it is inevitable that the client side will slowly erode and all these gamers

22   will ultimately move into the Cloud because of the economics. So, as Tim said,

23   we fully believe in this model.

24   Q.   (Mr Thanassoulis) I think you separated out mobile phones earlier, so I just

25   wondered if your service had a minimum pixel size for the screen, or is it

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1   something that customers could play on a tablet, if it connects to the Internet,

2   and therefore on a high-end mobile phone, or actually do you have a minimum

3   pixel size?

4 A.   (Mr Eisler)   We do not have any real pixel size restrictions on our mobile

5   devices, so we scale to the different pixel resolutions of phones and tablets.

6 Q.   (Ms Davidson) Are controllers always needed? Is it not touch-control enabled?

7 A.   (Mr Eisler) We have a mixture. We started out requiring a kind of Bluetooth

8   controller, the wrap-around phone ones, or you can have just a straight Xbox

9   compatible one, but we found that to be quite limiting because not everybody

10   has a controller in their pocket, ████████████████████████

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22   ██████ so we are able to stream the PC version from the Cloud and get the

23   simplified integrated touch controls into the game itself, and in doing so, ████

24   ████████████████████ and that was done, of course, at the time

25   when Apple removed Fortnite from the iPhone, and so we were part of bringing

1   Fortnite back to the iPhone, and that became quite popular by having those

2   integrated touch controls.

3   Since then, ██

4   ██████   so Genshin Impact is a game from Mihoyo out of China, which also

5   has integrated touch controls on GFN. It plays very well, and we have a handful

6   of other games. So there are I think about 10 games all together that have

7   integrated touch controls. The rest are best played with a connected Bluetooth

8   controller, and then there are now some dedicated cloud gaming mobile

9   devices that have integrated display and controller. There is one from Logitech

10   that is Nintendo Switch-like, but it is really designed for cloud gaming. Razer

11   has another one, so there are a couple of those dedicated mobile gaming

12   devices as well.

13   THE CHAIR: Hi, I am Martin Coleman, Chair of the Inquiry Group. Thank you very

14   much for your presentation in answering that question, which was very helpful.

15   I just wanted to follow-up on a response you gave John. John asked you about

16   what would happen if Microsoft put Activision games exclusively for cloud

17   gaming onto its own platform, and you made the point that gamers are not going

18   to switch games. Another thing they might do is multihome, they might just

19   have more than one subscription, and you see that, for example, in video

20   streaming, that tends to be people who cannot get all their content on one

21   platform, so they will multihome. Do you see that as part of the future?

22   A.   (Mr Eisler)   It is certainly possible. I do not know how friendly that is to

23   consumers. That has been part of the console market business model for a

24   while, and Sony has some exclusives, Microsoft has some exclusives, Nintendo

25   has some exclusives, and a gamer who wants to play everything is forced to

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1 buy all of them, and the PC market has always been different from that. It has

2 been more open. It has been just one PC platform with all the content available.

3 What is going to happen with Cloud in the next few years is those things are

4 going to merge, so I think if we can bring the console behaviour with exclusives

5 in the markets, then we are going to force consumers to buy all the services to

6 play them all. If we have more of a PC-centric model to it, where it is open,

7 then consumers are not forced to buy all of them, so I think it just goes back to

8 affordability. I think people who are more well off will be able to afford to

9 multihome, but because cloud gaming is not cheap - it is going to be 10 to 20

10 dollars a month - not all households can afford to multihome, but some probably

11 can afford it.

12 A. (Mr Teter) If I can just add one point to that? I think that you need a critical

13 mass of subscribers in order for this kind of service to be economically viable,

14 and in order to have a critical mass of subscribers, you have to have a sufficient

15 amount of content, and so, at some level, █████████████████████

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18 ████████ It is not just about whether consumers would be interested in paying for

19 multiple subscriptions, it is about whether there are enough of them who are

20 willing to play.

21 Q. ███

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23 A. ███

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16	Q. (Ms Davidson) Thank you.
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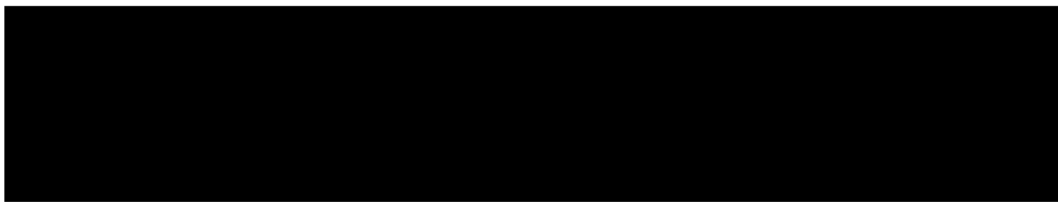
4 A.   (Mr Eisler) I think one thing is that Call of Duty itself goes through cycles where

5   they launch every two years, and then in between launches it goes up and it

6   goes down, so I think that we do see that the Call of Duty demand rises and

7   falls through time, as they have different marketing events and product
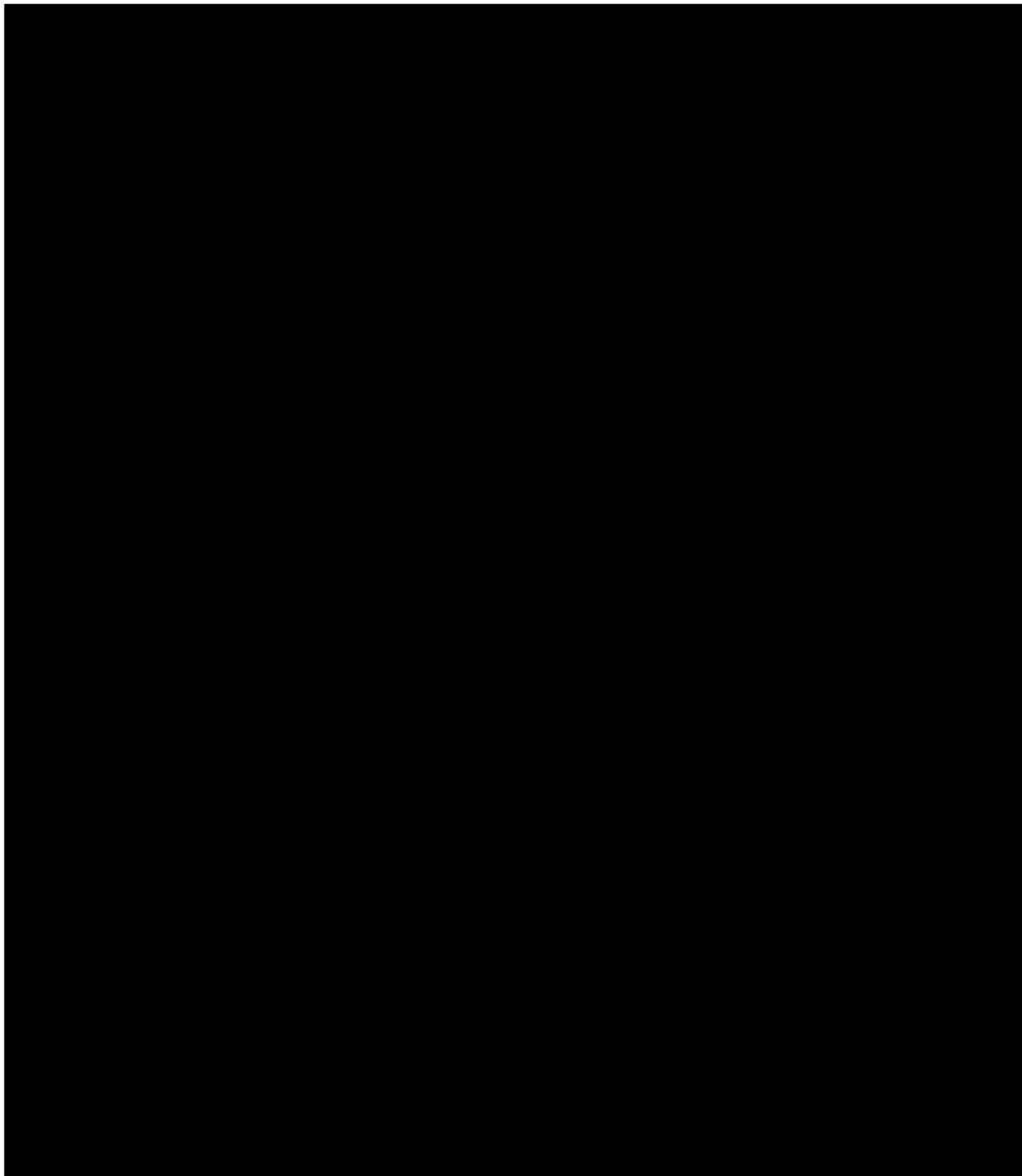
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2 Q. (Mr Fiori) Okay, thank you.

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24 A. (Mr Soames) And also, if I may, I appreciate that time is running out for the

25 meeting, and to Ricardo and colleagues, many apologies for not joining right at

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1   the beginning. I had major problems with the web version of Teams, so I am

2   not able to download the app because of the abuse of Microsoft's dominant

3   position in relation to my client, Slack, and I cannot have it on my computer, but

4   might I just make an observation related to confidentiality if I may, which is

5   something I would like to have said at the beginning, but obviously the

6   presentation that has been made by Phil, plus the Q&A, contains confidential

7   elements which would comprise specified information under the Enterprise Act,

8   the disclosure of which, to Microsoft and Activision, would cause significant

9   harm to the legitimate interests of NVIDIA. Obviously, we want to work with

10   you and obviously you need to make available, in due course, of course,

11   whatever you consider to be appropriate in your provisional findings and also

12   perhaps the transcript of this meeting. We obviously need to have the

13   opportunity of identifying those things that have been said which we,

14   respectfully will submit, are confidential in relation to both Microsoft and

15   Activision. We also fully appreciate that you are bound by the guidance given

16   by the CAT in the Meta case, which obviously is a gloss on your guidelines, but

17   to the extent that you ultimately consider that any of the claims that we have

18   made -- still, nevertheless, that information needs to be provided to the notifying

19   parties as part of your statutory duty, then we would be wanting to engage with

20   you to ensure that any such disclosure is done within the context of

21   confidentiality, that would only accessible to the external counsel of Microsoft.

22   We are obviously happy to provide more information as to why certain issues

23   are confidential,

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5   Q.   (Mr Zimbron) Yes, that is all well, Trevor, thank you, and we will go to the usual

6   process if we intend to rely on any of this information. Unless anyone has any

7   final questions? No. Well, thank you very much again. This has been

8   enormously helpful, and as I said, we will let you know what, if anything, we

9   intend to rely on in our process and will be in touch in due course.

10 A.   (Mr Soames) Thank you very much.

11 A.   (Mr Eisler) Thank you, everyone.

12 A.   (Mr Fisher) Thanks for your time.

13 Q.   (Mr Zimbron) Thank you.

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Key to punctuation used in transcript

--	Double dashes are used at the end of a line to indicate that the person's speech was cut off by someone else speaking
…	Ellipsis is used at the end of a line to indicate that the person tailed off their speech and didn't finish the sentence.
- xx xx xx -	A pair of single dashes are used to separate strong interruptions from the rest of the sentence e.g. An honest politician – if such a creature exists – would never agree to such a plan. These are unlike commas, which only separate off a weak interruption.
-	Single dashes are used when the strong interruption comes at the end of the sentence, e.g. There was no other way – or was there?