

## Foreign Affairs Committee

### Oral evidence: The FCO's role in blocking foreign asset stripping in the UK, HC 296

Tuesday 5 May 2020

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Members present: Tom Tugendhat (Chair); Alicia Kearns; Stewart Malcolm McDonald; Bob Seely; Henry Smith; Royston Smith.

Other Members present: Greg Clark, Chair of the Science and Technology Committee; Mr Tobias Ellwood, Chair of the Defence Committee; Meg Hillier, Chair of the Public Accounts Committee; Mark Pawsey, Acting Chair of the Business, Energy and Industrial Strategy Committee.

Questions 1-109

#### Witnesses

I: Sir Hossein Yassaie, Former CEO, Imagination Technologies, Dr Ron Black, Former CEO, Imagination Technologies, Ray Bingham, Acting CEO, Imagination Technologies, Partner and Co-Founder, Canyon Bridge, and John Rayfield, Chief Technical Officer, Imagination Technologies.



## Examination of witnesses

Witnesses: Sir Hossein Yassaie, Dr Ron Black, Ray Bingham and John Rayfield.

Q1 **Chair:** Welcome to this afternoon's session of the Foreign Affairs Committee, again held remotely. Thank you, first, to the team who pulled this together and, most importantly, to the witnesses who agreed to join us today: Sir Hossein Yassaie, former chief executive officer of Imagination Technologies and serial entrepreneur; and then Dr Ron Black, former CEO of Imagination Technologies, Ray Bingham, acting CEO of Imagination Technologies, and co-founder and partner of Canyon Bridge; and John Rayfield, former chief technical officer of Imagination Technologies.<sup>1</sup>

May I start off at an obvious place? Sir Hossein, you have spoken in the past, and in fact written very recently, about foreign acquisitions in the UK. To what extent is foreign acquisition of UK tech companies a national security issue?

**Sir Hossein Yassaie:** It depends on the tech, and where the technology ends up. If I may talk about that a little bit, in my experience and knowledge of the tech—take the licensing business, which I have done for many years—the No. 1 issue is whether the tech is enabling tech, which in other words can be used in many applications, so not just two use cases but hundreds of use cases, with many things dependent on it. It is really important that that is understood and the implications taken into account.

A consequence of that is use case, use cases today and in the future. I will give a quick example: certain technologies such as high-performance GPUs are used today in autonomous driving, but there is no reason why that technology could not be used in a different use case, clearly.

The third element of this is how rare the know-how is. Certain technologies are only doable by a small number of companies around the world, a small number of teams, and I would say Imagination and Arm fall within that category. We therefore have to take that into account.

The last element is the control and what happens to the technology after it is acquired, because there needs to be governance and some degree of confidence that whatever is expected will happen. Any technology can be used positively or negatively, particularly if they are complicated and computer-intensive, so it is really important what happens to the tech after it is acquired. The direction it is driven in will be very important.

Q2 **Chair:** Sir Hossein, given the range of technologies you spoke about there, what technology produced by the UK should be covered by Government control of foreign acquisitions at the moment, would you say?

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<sup>1</sup> See correction provided by witness at Q37



**Sir Hossein Yassaie:** I would say anything in security, cyber-space technology software, and high-performance computing, whether CPU or GPU. At least we need to keep an eye on what happens to that technology. In my experience, those two areas are probably the most important ones.

Q3 **Chair:** That covers a very broad area. Would you say that should cover a lot of companies operating in the United Kingdom today?

**Sir Hossein Yassaie:** My view of the UK, as you probably saw in my article, is that we have been a little bit too lax about this space. That term describes, I think, what we have done in the past. The problem is that the nature of technology these days is really complicated. You can deploy technology in a platform in a diverse way, and you can make it do amazing things in software—most things are programmable. GPUs, many years ago, were not programmable; now they are used to do AI—advanced stuff. Unfortunately, in order to decide whether something is a national security interest and the implications of that, you have to look deeply at what it is, you have to do a risk assessment, and you have to look at what happens if the ownership changes.

**Chair:** Stewart McDonald, you wanted to come in on this area.

Q4 **Stewart Malcolm McDonald:** Sir Hossein, I am interested in what you said when you categorised the areas that the Government should concern themselves with. Only a couple of weeks ago, the Secretary-General of NATO—without naming China, but I think we all know who he had in mind—said that NATO member states had to be more mindful of potential hostile actors and business takeovers. People think of NATO as a hard defence outfit involving tanks, troops and all the rest of it, but it is increasingly concerning itself with digital and cyber-security, for obvious reasons: that is where the threat picture continues to evolve. Do you think there should be more co-ordination in bodies such as NATO, among its member states, to better shield off adversaries that might try to use a hostile takeover or asset stripping of companies as a means to attack Western countries?

**Sir Hossein Yassaie:** I am not really a defence expert, but I am a technologist. I would say that we need to understand the enabling power of the technology and the fact that these things are becoming more and more powerful and programmable; they can, therefore, do many things. Unfortunately, I cannot really help other than to say that I would like to see more attention to these issues.

In order to understand the implications, we need cross-group collaboration. I have seen in some Government papers that different Departments are working together. I would certainly recommend that, because these are complex issues. I am sure that the same would apply to NATO, but I am not an expert in defence and what happens there. The tech itself requires a deep understanding of the use cases and the opportunity for the way it could be used in the future.

Q5 **Stewart Malcolm McDonald:** I understand what you mean when you say that you are not a defence expert. In the case I mentioned, if NATO



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is going to concern itself, for example, with China buying up Greek ports, should it concern itself when China tries to buy up technology companies within its member states? Would that be a sensible thing for NATO to consider?

**Sir Hossein Yassaie:** I am generally very positive about investment and acquisition, as long as there is a clear understanding about what will happen to the tech in the future. For example, if the development continues in the member state and it is quite clear what is going on, I would be much more relaxed about that than a situation where the technology is transferred to some other country. My take is that it depends on the tech, what happens to it and the governance around it.

What you can do with a specific technology may be very lame and okay, but it can be deployed and steered in a different direction, if someone wants to and if the technology is powerful enough to do so.

Q6 **Chair:** Sir Hossein, could you give us an example of technology that may be steerable in such ways?

**Sir Hossein Yassaie:** I think I gave an example earlier. We comfortably talk about autonomous driving cars. The technologies that would make a car driverless or autonomous can be deployed in other applications, such as military or other targeting applications. That is a very simple example. That is possible because what was in the car 10 years ago, in terms of capability and power, was very limited, but today the chips that go in the car to detect pedestrians and drive the car are sophisticated pieces of equipment and completely programmable. Therefore, we need to understand that.

Q7 **Chair:** Given the complexities here, should the UK Government be protecting almost every IT business in the country?

**Sir Hossein Yassaie:** No. I set out, in some communication recently, that I don't believe so. I think what we really need to do is this. There are certain technologies that can be happily used and deployed, but the governance around what happens to the tech and the control around it is what matters. Essentially, if we want to sell some businesses—for some of them, I am sure, it would not matter, because they are not unique and many people, many teams, around the world could do those things, but if the technologies are powerful and unique and could be used in an unfriendly manner, I think a control mechanism and governance needs to be around them to make sure the right thing happens.

Q8 **Chair:** Given that those control mechanisms need to come in, do you think that the control mechanisms that the UK Government currently has are sufficient?

**Sir Hossein Yassaie:** I think this is the term I used about what we have: it is lax.

Q9 **Chair:** It's too lax. How does it compare with, for example, what there is in countries in the European Union or countries like the United States?



**Sir Hossein Yassaie:** I have familiarity with the US. In the US, there is CFIUS, which many of you know. I said this in a press conference recently: I don't think we need to go as far as that. But we don't need to be where we have been in the past. We need a balance that allows us to—basically, what we require or the steps we need to take in order to make this decision are these. First, understand what the tech is through people who understand it, in terms of its platform nature, its enabling nature and what else it could enable. Obviously, around that we need to do an element of risk assessment. And then, precisely what governance and control is put in place around it? Some technology may be perfectly fine. There are many companies doing something and then taking it around the world, and it is perfectly fine doing transactions around that.

If the technology is unique, a small number of teams can do it, and it is powerful, I think it is very important that there is sufficient control around ownership—that's at the extreme end—and definitely governance.

Q10 **Chair:** Okay. When you are looking at these acquisitions, how do you differentiate between acquirers? How do you differentiate between hostile actors and non-hostile actors?

**Sir Hossein Yassaie:** That is very difficult for me to judge. I'm sure better people are placed to do that. From a technologist point of view, I can talk more about or understand whether a technology is enabling—the use cases for it—and the kind of governance that needs to go around it. That would be more my space. As to who could be an adversary or not, I really can't comment.

Q11 **Chair:** Okay. Would you describe Apple's previous attempts to buy companies like Imagination as a form of asset stripping or not?

**Sir Hossein Yassaie:** I think you are putting me on the spot with this specific company, which I would rather not talk about, but what I would say is this. If a company comes to the UK, invests in the UK, maintains a meaningful development activity, allows the team there to do their stuff, engages with the local community—part of all of this is that, as the UK, we need to worry about the ecosystem that we have in the UK, in terms of creativity, universities and other things. If companies come into the UK, respect what is going on, would like to be part of the community and do that, I think that is fine. I think the problem occurs—I am not suggesting any particular company or country behaves like this, but if there is a case where what is going to happen is that a particularly unique and capable technology is sort of taken away from the UK and steered in a different direction, that we should worry about. I would welcome investments by companies—many companies—in the UK if they are contributing to what goes on here.

**Chair:** Alicia, you wanted to come in, and then I'm going to call Greg.

Q12 **Alicia Kearns:** Thank you, Chair, and thank you for coming before us, Sir Hossein. I think it's quite difficult, with technologies and IP, to fully understand their potential. It is not always evident, and obviously it evolves over time, as our own understanding and wider IP evolve. One of



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the concerns raised at the Defence Select Committee last week was that sometimes the UK Government, due to existing legislation, is in a position to act only once the horse has bolted the stable, as you might say. In that light, do you think it would be prudent to expand the scope of intervention powers to include measures that can take effect after a deal or takeover has taken place?

**Sir Hossein Yassaie:** Given the complexity I have just touched on, and given that I have a reasonable understanding of the specifics when I say that, I would say that unless a huge amount of energy and effort has gone in prior to approving something, we could end up with the wrong decision. I would say that, within reason, having that ability up to a certain amount of time afterwards—I am not an expert, but I would not think that six months or something like that post event would be unreasonable for the Government to be able to revisit what has happened because of the complexity.

**Q13 Greg Clark:** Obviously, the art here is to be able to distil concerns into rules that can guide behaviour, both on the part of policy makers and companies, so I was interested, Sir Hossein, by your comment about the takeover of Arm, the British technology company, by SoftBank. You said that you really did not like the idea of Arm being acquired by a foreign investor.

SoftBank is a Japanese company and Japan is a good friend of the United Kingdom, so to try to unpack those concerns, is it about particular parts of the technology sector that deserve protection? Is it about particular types of buyer? Is it about particular companies? Or, behind your regret, was there perhaps a disappointment that no UK buyers were in a position to step up and make a bid? What was behind your concern and regret there?

**Sir Hossein Yassaie:** Thank you for asking that. I have to stress that, with the direction and understanding of this session, I thought the focus was on national security, but my comment about Arm was not, and is not, about national security.

There are a number of things here. One is national security, and the other thing is that we need to make sure—I am really passionate about this—that strategically, as a country, we build an ecosystem of companies that work together and work with universities. That drives the creation of new talent—young people come to it. It becomes a powerhouse that allows us to do that.

My comment about Arm was strictly in relation to that, because I did not want us to lose, or even erode, that ecosystem. We should be building on it. I would say the same thing about Imagination, but that is not a national security issue. If you consider long-term economic impact, which could be significant—a national security issue—then you could bring it in, but I was not speaking about it in that context.

**Q14 Greg Clark:** I see. So, if I might put it this way, it is a matter of industrial strategy that you were referring to.





**Sir Hossein Yassaie:** That is right, yes.

- Q15 **Greg Clark:** But these rules need to be brought together, because if you have a proposed takeover, you need to look at it through different lenses at the same time—a national security one, of course, and that question of industrial strategy. Given your experience as a very successful entrepreneur in the technological space, if it were the case that a company like Arm, which was built up from small beginnings, could not be taken over, would that have consequences for the level of investment that UK technology firms could attract? Would it have implications for whether founders chose the UK as a place to set up a technology firm, if they could anticipate that if it were successful it could not be sold to anyone other than, by implication, a UK firm?

**Sir Hossein Yassaie:** I understand what you are saying but I would say that, in the case of Arm, the company was already a public company. From a business point of view, it had resources to do stuff. On the public market it also had ability to get investment. I do not think it probably applies to Arm that much, but I understand your core point: is the UK a place where people would want to start up and get to an exit and so on?

That brings me back to the ecosystem: the reason I am fighting and arguing for building an environment where we attract capability and skills and then entrepreneurs can get on and do business, and an environment that allows those to exit. Just to add a little bit to that, compared with the US, where there are many companies that buy and sell opportunity to exit, the UK does not have that. For me, to help my portfolio of companies, I built my own collection of angels, private VCs and private equity—almost like an ecosystem to help them achieve that. I think we just need to do more of that. I completely understand your point and that is the thing I would like us to build more on.

**Greg Clark:** So we make the UK more attractive and better through things that we do within the UK. That is very helpful. Thank you very much.

**Chair:** Meg, you wanted to follow up.

- Q16 **Meg Hillier:** Yes, please. I was interested in what you just said there, Sir Hossein. I meet many technology companies that, a year or two later, have been sold out at the point at which they are emerging or have become very valuable. What two or three things do you think the Government could do to help prevent the sale of really great UK technology companies to overseas purchasers?

**Sir Hossein Yassaie:** That is going to have a longish answer. The reason the UK has some issues is that companies that are global tend to achieve a global presence and global customers and grow and so on. Companies that are more local-centric would need probably to be more supportive with the ability to do local business. For example, I always would like to see the NHS being a customer of many of our companies—*[Interruption]*

**Chair:** Forgive me, but there is a strange background noise. Sir Hossein,



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we couldn't hear you. Can you say that again?

**Sir Hossein Yassaie:** What I was saying is, in terms of helping UK companies, encouraging companies to become global is a really good thing because they can go out and find customers globally. For companies that are locally operating, making sure the capability we have locally—for example, the NHS being a customer for those companies—and using the ecosystem, so again it goes back to the ecosystem we have to help them, would be very helpful. Fundamentally, I actually think the investment environment in the UK has developed more. I certainly would like to see Government getting more directly involved in start-up funding and so on, in terms of a sovereign fund or something, to build what we do not have in the UK compared with a country like the US.

**Chair:** Meg, are you finished there? Okay. Henry, you wanted to come in.

Q17 **Henry Smith:** Thank you, Chair, and thank you, Sir Hossein, for appearing before us this afternoon. I am guessing I probably know the answer to this from your previous answers, but do you think that the Enterprise Act 2002 is sufficient in preventing UK national security-sensitive companies from being taken over by foreign entities? If not, do you think this 18-year-old piece of legislation now needs significant updating and how, given the way world has changed significantly in the past two decades?

**Sir Hossein Yassaie:** I am obviously not a legal expert, but I have had some experience over the past few years and I did have a look at part of that Bill. When I read it, it looked like there were a lot of processes and legal approaches to things—I am sure they work brilliantly—but I couldn't see anything that dealt with the complexity of what the tech industry looks like and the kinds of things that need to be worried about. As I said, I think the most important thing that needs to be done going forward is to have a real understanding of the tech, in terms of use cases, enabling power, risk assessment and control—a mechanism post-ownership that ensures governance and that use cases stay. This is about really sensitive technology. There is some that is not sensitive. I would say that the legislation should be modernised around our understanding of tech today, and the complexity and power that it has.

**Henry Smith:** Thank you. That is very helpful.

Q18 **Chair:** Can I follow up with Ron? Ron, you have clearly seen some of the legislation in recent weeks. What do you think of the UK's legislation, and how does it compare with that of other countries, like the United States?

**Dr Black:** Certainly, I don't know all the intimate details of the legislation. Like Hossein, I am not an expert. As Hossein was saying, the legislation that you have has much less strength than, for example, CFIUS in the US, which I am rather more familiar with.

I will make one other comment, which I feel brings together much of what the Committee and Sir Hossein have been discussing. I say this not from Government experience—I have none—but from 25 years of experience of





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running tech businesses. I think the issue that you are dealing with is something that we deal with in business all the time: identifying, managing and ultimately mitigating risk. Again, the Committee and Sir Hossein have talked about this. When you attempt to define rules—or I guess in your case laws about mitigating risk—the challenge is the bright line: what is okay and what is not okay?

A comment was made about the horse bolting. A lot of the time in business, things are not normally clear until post facto—until an event has happened—but it is almost always possible to know whether risks are increasing or decreasing. For instance, in my mind what is really needed here, which may be a precursor to specific laws, is a risk assessment framework. That is really what I think Sir Hossein is talking about.

That, in my mind, would constitute three things. The first is the likelihood that there is or could be in the future an issue with foreign control. Hossein was describing the example of a technology that is broadly available in multiple jurisdictions, so the likelihood that something that is not scarce is an issue might be less than something that is very scarce. He was referring to the GPU, CPU type of skills. The second factor would be something like the impact that control could have on commerce, and specifically the UK economy. The last, and certainly not the least, would be the impact that such control could have on the UK, and I guess by extension, on American and Five Eyes national security.

If you had a risk assessment framework where you could score it—quite candidly, I could build something like that, working with somebody like my colleague, Sir Hossein—you could have a better feeling about whether risks are increasing or decreasing, rate them, and devote the Government's scarce resources to the most risky and most impactful takeovers or possible takeovers. Quite candidly, through this monitoring I think that is where you dissuade bad behaviour prior to something happening. That is how we manage programmes in business. We try to manage and monitor it, and then prevent things from happening that, in recollection, you would say, "Well, this was really not good."

You have a lot of tools, but the major two—again, I think Sir Hossein has a lot of experience here, especially in the UK—are the enforcement of having a majority of independent directors, which is just good governance, and the limitations on ownership. In the US, the CFIUS rules are very broad. I have seen the output of CFIUS, but I have not participated in the details of it. However, again in summary, it seems to me that something that is perhaps lacking here is a risk assessment framework that really focuses on those three things, and then ties into the actions that Government can take.

**Q19 Chair:** You raise some interesting points there, Ron, which we will come back to shortly.

Could I just ask this next question of both of you? Clearly, Imagination Technologies has become, as it were, an example of one of many companies that are in a similar position. Prior to the 2017 acquisition of



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Imagination Technologies by Canyon Bridge, were there any other attempts by any Chinese firms to buy it?

**Sir Hossein Yassaie:** Not to my knowledge, no.

**Dr Black:** I wasn't involved with the company, so I have no basis to know that.

**Chair:** Tobias, you wanted to come in.

Q20 **Mr Ellwood:** Yes. Thank you to all those giving evidence today, and thank you for allowing me to join this Committee. This is such an important subject to cover.

You mentioned Five Eyes and the relationship between those countries, which is going to become more and more critical as we become more cautious about the use of technology. Do you think there should be greater formal collaboration in order to set international standards to do with technology? At the moment, there does not seem to be an international forum or organisation that the Chinese or the Russians are not able to veto and that allows us to set those very high standards that we are looking at—the parameters that we want other nations to follow.

**Sir Hossein Yassaie:** That is a very interesting idea. It would be good if everyone had an understanding of what the boundaries are, what big tech means, what the risks are and what kind of controls would work. I think that is a very good idea, and if you have to do it via another forum because not everyone participates, five is better than one.

**Dr Black:** I can only agree with Sir Hossein. In the spirit of the discussion that I gave or of the framework, I think sharing frameworks, especially with information that is public or essentially public—things that companies could self-attest to—could be incredibly valuable. Now, this is just like decisions on risk. Risk can be viewed very differently in an investment profile: some country could be very risk averse, and some other country not risk averse. However, having that framework—sharing the framework and having an open dialogue—seems to be in everybody's best interest. Obviously, because there could be differences of opinion, each of the sovereign nations should decide what is in their best interest and that of their economies, but I could only see that as extremely positive.

Q21 **Mr Ellwood:** I just want to pursue this further, because I could see us going around the blocks again and again on these technological challenges where companies are being bought by outsiders who have very different standards and values. Until you create the absolute framework, the conditions under which we can all work, this will continue behind the back doors.

I wonder whether a recommendation that might come from this study could be not just Five Eyes, but Five Eyes plus five others—Japan, Korea, possibly India, Germany and France—in order to create a Five Eyes-plus that sets those standards, bypassing the United Nations, the WTO and other organisations. As I say, those organisations have now become corrupted or paralysed because of the overt and subtle influence of



countries such as China pursuing a very different set of ideologies.

**Sir Hossein Yassaie:** I really like the idea, because as a technologist, I am tired of saying the same thing: “These are the issues. Please understand that there is more to this than meets the eye.” We have to have some understanding. It would be good to have a collection of people who understand this stuff, discuss it and agree, and everyone then signs up to what these technological boundaries are, what the issues are and what the risks are. I definitely think it is a great idea.

**Dr Black:** I do as well. I think it is an excellent idea—again, with each of the countries being able to define their boundaries of what is exceptional risk. Quite candidly, if I was in your position—you mentioned India—India may have a very different risk profile than what the UK does. I would like to know what that risk profile is, perhaps in a confidential way—their assessments of these things—and take that into account, and what other things may happen down the line.

Q22 **Chair:** Talking of risk profiles and how people build them up, do you think that merely monitoring would have the Schrödinger effect of influencing behaviour?

**Sir Hossein Yassaie:** I’ll pass that to Ron to comment about.

**Dr Black:** Could you rephrase that question? I am very familiar with Schrödinger’s equation, but I am maybe not familiar with it in this context.

Q23 **Chair:** Depending on how you look at it, it’s both, as it were. Do you think a risk matrix would be able to influence both sides of behaviour?

**Dr Black:** Absolutely. Again, using the examples of what I do after having run eight businesses—all of them complicated turnarounds—it is really that continuous assessment of risks and follow-up, where you are really assessing the most critical risks. Obviously, something small about the coffee machine not working correctly in the morning is not something that you are going to spend time on, but there are critical risks and other individuals. When you are running a company, the teams that are managing those know that you are going to look at things, and they follow up and ensure the correct behaviour. I really think that monitoring not only helps you be aware; it dissuades bad behaviour pre-something and post-something—absolutely.

Q24 **Chair:** I am going to move on to another section and talk about the takeover of Imagination, in particular. There are a few people who want to come in on this. I will be calling Meg, Royston and others shortly but, if I may, I will start.

Ron, what conversations did you have with the UK Government prior to the attempted appointment of four directors by Canyon Bridge?

**Dr Black:** Unfortunately, I cannot answer this question due to the terms of the contract with Imagination that I signed when I started my employment there.



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Q25 **Chair:** Okay, thanks. Ray, what discussions did Imagination Technologies have with the UK Government before the change of directors?

**Ray Bingham:** Good morning—I am calling in from California. As you know, there was no change of directors. Given the input that we have had from various stakeholders, our conclusion was that those nominations should be withdrawn and we should move on to consider other independent directors to help advance the interests of the company. In the course of that, to my knowledge, there were no conversations with Government per se.

Q26 **Chair:** Would you be happy for anybody else on this session to answer those questions?

**Ray Bingham:** If you are referring to releasing Mr Black to answer those questions, of course, I would be happy for him to talk about any conversations he might have had with Government.

Q27 **Chair:** Mr Black, would you be happy to answer?

**Dr Black:** Can I just make sure that I understand? Is Ray releasing me from any contractual requirements that include the non-disparagement and non-disclosure of all things? If he does—Ray, we have known each other for a long time—I want to make sure that you have the authority to do that if you want me to answer more specific questions about this.

**Ray Bingham:** I will share with the Committee that this question came up last night. On the extent to which that release might be given, we have not yet had time to even consider whether the board would support that kind of release, so, no, I do not at this time have the authority to do that on my own. I understand from briefings last night that there is a concept of parliamentary privilege, which protects Mr Black from being pursued based on the evidence he might give today. I respect that privilege, as far as I understand it.

Q28 **Chair:** Mr Bingham, this is a contractual arrangement that you are holding Mr Black to; it is not a parliamentary matter. Unless you can release Mr Black, it would be a contractual matter for you.

**Ray Bingham:** Thank you. I don't have the authority. There was no time, when we heard this request through Mr Black's lawyer, for us to be able to do that. I couldn't assemble the board in time to even consider the matter.

Q29 **Chair:** Okay. We will move on. Did you understand the circumstances under which you would have had to report any changes of directorship before they were made? I know the meeting was pulled, but it was planned, so we can assume that you must have thought about it.

**Ray Bingham:** We did think about it. In fact, we even took legal advice as to whether it would be advisable. In the end, the question was muted by our decision, based on multiple feedbacks, that we should withdraw the nominations. In the end, there was really nothing to report.

Q30 **Meg Hillier:** You say there was nothing to report on that. Are you clear that, had it gone a bit further, you would have had to report it to



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Government or not?

**Ray Bingham:** I actually do not know. The advice we got was that we probably should, but there was no clear bright line that I am aware of in that regard. However, from our original acquisition in 2017—working with Karen Bradley, the Secretary of State at that point—and in my earlier meetings in the past couple of weeks with Secretary Dowden, we gave commitments, certainly with respect to any future changes in Government, that we would work with his office and advise him of those proposed changes, even to the extent of the identity of the new independent directors and their fitness to add to the capabilities of Imagination’s board and the governance that it is responsible for.

Q31 **Meg Hillier:** That is after an intervention by the Department for Digital, Culture, Media and Sport. Were you surprised by the intervention of the Secretary of State, which then led you to not appoint the directors?

**Ray Bingham:** I would not say that it led to our not appointing the directors. We had many inputs from management, legal advisers and political advisers, as well as from the Secretary’s office. The overwhelming weight of evidence was that those appointments should not go forward and that that meeting should not go forward.

Q32 **Meg Hillier:** It is interesting that you say you had had advice, in turn, from management and legal internally, yet the names were being mooted as appointees. You were going to make these appointments. Did you get the management and legal advice after you had made the decision, or was it an iterative process—were you seeking that advice? It is odd that the names came out for the appointment, and then you had advice internally suggesting it was not a good idea. Which was the driver? Was it the external intervention by the Government, or was it from that internal route?

**Ray Bingham:** It was really all of the above. Any time a board seeks to add directors or rebuild its governance model, it is incumbent on board members to seek advice and understand the implications of those additions from a business point of view, from a capability-around-the-board-table point of view, and certainly from a community and Government point of view.

Q33 **Meg Hillier:** How significant was the Government’s intervention from your point of view as a company?

**Ray Bingham:** As I think we evidenced in 2017, when we spoke extensively to the Government about who we were and what we were looking to accomplish by acquiring a very deeply troubled Imagination, the Government was important. We made commitments to the Government at that point about maintaining our headquarters and workforce in the UK, and about maintaining the UK as the driving force behind the technology produced by the company. It is no different today. As we worked over the last couple of weeks through Secretary Dowden’s office, it is clear that this is a relationship and an influence on what we do that we will sustain as long as we own the company.



- Q34 **Alicia Kearns:** Autocratic regimes such as China tend to be quite nebulous when it comes to their networks, proxies and lines of authority. We all know about the Chinese intelligence law that requires companies to report intelligence if requested to do so by the Chinese Government, or more specifically the CCP. Given that, how would you assess and how have you gone about assessing whether board members might be fully independent or state-captured?

**Ray Bingham:** Let me begin that answer with the fact that Imagination is not Chinese-state-owned. Imagination is owned by Canyon Bridge, which is owned by the three partners—myself and two other partners in a general partnership. Our limited partners are Chinese financial institutions led by China Reform, which is the largest of those limited partners. As limited partners, they have no say in the company's governance or in the selection of management or board members. Any board will of course pay attention to what its investors are thinking and feeling, and that happens in every country around the world. I have served as a chairman, board member and CEO in significant technology companies, and of course you pay attention to investors anytime you do anything in the company. In our particular case, we have consulted stakeholders that mattered to the governance of the company and the interests in the UK of national security that have been spoken about during this meeting and in conversations leading up to this meeting.

- Q35 **Alicia Kearns:** I am trying to get to how you go about this. There might be several degrees of separation between some elements that are Chinese-owned. Regardless of whether only a small part or 100% of the company is owned by the Chinese, the requirement is there for the reporting of all potential intelligence to the Chinese Government and to the Chinese Communist party. On the subject of board members: how much effort has been put into truly understanding all those on the board and all those engaged as individuals?

**Ray Bingham:** Currently, the board is composed of the three Canyon Bridge partners: two American citizens and one Taiwanese citizen, who is a long-serving lawyer of some note and who left the law practice to become a partner in Canyon Bridge. I know all their backgrounds, and I certainly know my background. I have stood up to that scrutiny many times on other technology boards, including significant technology boards, on which I have served. As we go forward with our plans that we stated to the Secretary of State to add independent directors, we'll look at a variety of things which would be natural for the selection of any board members. We look at the capabilities that they bring from the points of view of technology, market and finance. We also look carefully at independence issues to ensure there is no conflict of interest between the employment backgrounds they have or have had and their duties to Imagination as directors. That process is just getting started, by the way, so I cannot say that it is done. We have committed to Secretary Dowden that we will converse with his office, and with him personally if he so desires, to understand any candidates and where they come from, to ensure or establish independence as we have stated.





Q36 **Alicia Kearns:** Thank you. I would caution that nationality does not therefore defer someone's potential to be a proxy for another party or interest. However, given that you are looking at this at the initial stages, what mechanisms are you looking at putting in place, should a board member be found not to be independent?

**Ray Bingham:** If a board member is found not to be independent, that would be a concern for any board, and that lack of independence would first have to be declared and in the record, and then to the extent that it was a problem for the conduct of business, or the security of the business, that board member could very well be excused.

**Alicia Kearns:** I will leave it there, Chair.

Q37 **Royston Smith:** Can I bring in Dr Black and Mr Rayfield, please? I understand that you may not be able to answer as fully as we would like. However, during your time at Imagination Technologies, were you aware of any efforts by Canyon Bridge to move Imagination's activities to China, whether that be operation, personnel or property?

**Dr Black:** Unfortunately, again I cannot answer this question due to the terms of my contract with Imagination, which I signed when I joined the company.

**Royston Smith:** Mr Rayfield?

**John Rayfield:** Just to clarify my status for everyone, I resigned on 6 April. I am working my six-month notice period and I am very much engaged in running the engineering team of the business still, so I am still very much part of the company. I also obviously have a contract with Imagination, so I do not think that is something I can answer at this time, clearly with that in place.

**Royston Smith:** It is going to be quite difficult if we are not going to—Mr Bingham, could you perhaps pick up on some of that?

**Ray Bingham:** Would you mind restating the question?

Q38 **Royston Smith:** What level of Imagination Technologies—any of that—moved to China, whether that be operations, personnel or property? Did any of Imagination Technologies' operations move to China?

**Ray Bingham:** No. I will add for the Committee's understanding, however, that when we founded Canyon Bridge and when we acquired Imagination, one of the core investment theses was that Imagination could be significantly benefited by taking advantage of the very fast-growing market in Asia generally, and in China in particular, in the electronics business.

Currently a very small part of Imagination's revenue comes from Chinese semiconductor companies—the market that we serve. And a plan was developed very early on that we would establish a larger presence in China, by way of a university programme and by way of much stronger engineering and customer support, to further develop that market.



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Our population, relative to the potential of the market, was really quite small. So, under Dr Black's leadership, we began building that capability out. But I will emphasise that core R&D and the like is not being done in China at this time, though I suppose it could be at some point under the plan that Ron was developing.

- Q39 **Royston Smith:** Can I ask Sir Hossein a question, please: does the recent pushback from the UK Government, and the media and Parliament, about the attempted appointment of directors suggest that the existing powers of intervention are effective?

**Sir Hossein Yassaie:** I would say I was really pleased to see the intervention, because I have to add that I only got involved—I have a question for Ray, related to that, if I can ask that later—after I found out that the CEO had resigned and a number of other executives, such as John, had resigned. I felt that, for people to stand up to that, it had to be something pretty serious. I was really pleased to see the Government intervening and stopping the board appointments. For me, the most important thing is that the governance of a company is preserved, particularly if the ownership is not UK; you really expect that to happen. The question I wanted to put to Ray, and if you don't mind, I'll put it now, is that I do not understand whether any of those directors who were appointed were interviewed by any of the executives at Imagination—

**Chair:** Forgive me: the courtesy is that we ask the questions.

**Sir Hossein Yassaie:** Sorry.

- Q40 **Alicia Kearns:** Mr Rayfield, you resigned during the proposals to appoint four China Reform-linked directors. Why did you feel you had to resign, and why did you feel you could not stay with the company?

**John Rayfield:** I think this is pretty much in the public domain; there seems to be a lot of leaking things to the press. Basically, my root reason was just business success. As the company would have looked in that scenario, selling IP around the world—particularly in some of the biggest markets, such as the United States—would have become very problematic. For me it was a very simple, "Do I think we can be successful any more?" and the answer was no. That was what led me to the place I got to.

- Q41 **Alicia Kearns:** Can you talk me through why that would be problematic? Was it solely a financial decision, rather than concerns specifically about having those Chinese directors?

**John Rayfield:** A very large proportion of the worldwide semiconductor market is still in the United States, a tiny piece is in Europe and a growing piece is in Asia. For Imagination to succeed, it needs to be able to address the worldwide market; that could be a reason why the UK looks particularly attractive, as a more independent place in the world to have IP, where you can address a wide global market. That was one of the appealing things to me about Imagination at the time I joined, because I believed we could address that world market, and I think those actions would have taken away such a significant slice that I could not see how we could be financially successful in the future.



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Q42 **Alicia Kearns:** May I ask what the response was to your resigning over this decision?

**John Rayfield:** I think I need to be careful here, quite frankly. It is honestly difficult to tell, because the proposals were withdrawn, so it is difficult to fully understand the sequence of events. I will leave it there, if I may. I could probably put something more in writing, if you have more detailed questions; that could be a confidential answer.

Q43 **Stewart Malcolm McDonald:** To follow up on Alicia's question, Mr Rayfield, you mentioned that when you put your resignation in the proposal was withdrawn. Do you think the two events are connected?

**John Rayfield:** So many events were happening at the same time that I don't think it is clear. But, as I said, this is probably the other side of the line of my confidentiality with the company, so I can't really answer that.

Q44 **Stewart Malcolm McDonald:** Would you be surprised if the two events were not connected?

**John Rayfield:** Again, it is very difficult to tell, to be honest. I'm sorry. A lot of things happened in that timeframe, in a very short period of time.

Q45 **Stewart Malcolm McDonald:** So to what extent did the appointment of those four directors worry you, from a security or—dare we even discuss it—a moral perspective?

**John Rayfield:** I don't know anything about these directors. All I know is that they are from China Reform, so I can't specifically comment on those appointments.

Q46 **Stewart Malcolm McDonald:** To what extent do you think Imagination is subject to any kind of influence or control by the Chinese Government or the Chinese Communist party?

**John Rayfield:** Again, I think I can't comment on this, on the basis of confidentiality with the company.

Q47 **Chair:** May I go back, Mr Bingham? We spoke about the ownership of Canyon Bridge at the beginning and you said it is a US firm. What is China Reform Holdings's ownership of Canyon Bridge?

**Ray Bingham:** China Reform doesn't own any part of Canyon Bridge. China Reform is a limited partner in the fund that acquired Imagination.

Q48 **Chair:** Forgive me. How much of the fund does it provide?

**Ray Bingham:** 99%.<sup>2</sup>

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<sup>2</sup> Imagination has written to the Committee to explain that their reference to China Reform's interest in the fund that acquired Imagination should have been 35%, and not 99%. The 99% figure refers to China Venture Capital Fund Corporation ("CVC"), a fund in which China Reform holds the largest interest, namely 35.29%. The other 64.71% of CVC is owned by China Pacific insurance (Group) Ltd, CCB Capital Management Company, CCB Trust Co. Ltd and Shenzhen Investment Holding Company Ltd. CVC in turn holds a 100% interest in Yitai Capital Limited ("Yitai"), a Hong Kong company which



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Q49 **Chair:** Would you say that any investor who provides 99% of the fund may have some influence over the fund manager?

**Ray Bingham:** I would say that, of course, a general partner like Canyon Bridge would be respectful of the views of their limited partners—emphasis on limited partners—just as when I was the CEO of a significant New York stock exchange company, I paid attention to the views of my investors and what they thought of an earnings report or an acquisition or any other fundamental change. That is just natural. So we do listen, but I can tell you this as evidence: our decision to withdraw the names and the appointments of those directors shows that the Canyon Bridge partners are fully in charge and are independent of China Reform.

Q50 **Chair:** Okay. Forgive me, I am going to go back a few years. When Canyon Bridge took on Imagination Technologies in 2017, it also made a bid for Lattice in the United States. Do you remember what the CFIUS report said about that position?

**Ray Bingham:** I remember only generally. They took the view that because of the involvement of a state-owned enterprise—the several financial institutions that were our limited partners—they worried about influence, just as in the questions being asked.

Q51 **Chair:** They worried about influence, you say. At the time, you said that there was no influence. Is that correct?

**Ray Bingham:** That is correct.

Q52 **Chair:** You say that obviously you have listened to your investors. Do you think that listening to the 99% investor gives them more influence than the 1% investor?

**Ray Bingham:** No, I do not. The 1% investor in this case is Canyon Bridge, the general partners, who are the sole owner of Imagination.

Q53 **Chair:** So other than the general partners, there are no other investors.

**Ray Bingham:** There are not. We refer to Canyon Bridge, but the limited partners are made up of several significant Chinese institutional investors—financial services companies and banks and that sort of thing—that formed the financing that supported the fund that bought the company.

Q54 **Chair:** When you say there wasn't significant influence, isn't it interesting that, as Mr Rayfield just put it, the four directors who you attempted to put on the board were all from China Reform?

**Ray Bingham:** Actually, that is not accurate. As Mr Hossein partially asked, I do know and have worked with three of the four directors and

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was described in both Imagination's RNS announcement of 22 September 2017 and in the 9 October 2017 scheme documentation as a "Chinese state-owned enterprise." Yitai is the limited partner of the Canyon Bridge fund that owns Imagination holding 99% of the partnership interests in the fund, with Canyon Bridge Capital Partners LLC, the general partner of the fund, holding the remaining 1% partnership interest.



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have met all of them. One of them is an Australian citizen that is not part of the China Reform Group. The other three are, but all come with significant resumés, having worked for Western international companies such as Goldman Sachs, for example, and other commercial banks. I knew those people in a different context, but they were all credible nominees. At the end of the day, the important thing is that in listening to their interests in helping Imagination move forward, particularly in China, and become a more successful company and diversify its revenue stream, that we heard from other stakeholders, such as management, which was very significant, and of course, as has been particularly emphasised in this meeting, the Government. The weight of evidence was such that bringing that process any further was just not a good idea.

- Q55 **Chair:** It is interesting, because normally one of the responsibilities of any management is to focus on shareholder value and, indeed, UK law is pretty clear on that, under section 172 of the Companies Act 2006. In this circumstance, the shareholders are, in reality, China Reform—*[Inaudible]* the shareholders are Canyon Bridge, but basically China Reform are the shareholders of Imagination Technologies. It seems slightly odd that a decision was taken that led various people in the senior management of Imagination Technologies to make a decision to appoint directors who would have undermined shareholder value, unless, of course, shareholder value was not the sole thing that people were looking at.

**Ray Bingham:** There are several things in your question that, with respect, I just cannot accept. China Reform is not a shareholder in Imagination. They are a limited partner of Canyon Bridge, with emphasis, again, on “limited”. There was no decision made to appoint those directors, as was suggested and encouraged strongly by China Reform and other partners.

- Q56 **Chair:** Sorry—forgive me. I appreciate that they are a limited partner, but if they own 99% of a firm— I have savings in a pension fund that do not even come to 1% of its holdings. I suspect you have savings in other firms that do not even come to 1%. The influence I have over those pension funds is, to put it politely, limited. If I had 99% of the holding in that fund, I would suggest that “limited” is an unusual term. I understand that it is a legal term in this context, but it is not, in a political sense, limited in any way. If you own 99% of an investment fund, I think you will find that your influence is unlimited.

**Ray Bingham:** Well, I am afraid that that is just not my experience with this situation, or my understanding of how these things work. We, as directors of Imagination—also the general partners, but primarily the directors—have a duty to put Imagination first. That is my understanding of any board on which I have served, whether American, European or, now, UK. Whether they have influence or a louder voice than others is likely true, but on whether that is decisive when making decisions like this, I suggest that the evidence shows that it is not.



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I also add to my comments that, when China Reform understood the reaction that was happening politically, with our employees and potentially with customers, they were very gracious in withdrawing those nominations that they had so strongly encouraged.

Q57 **Chair:** Sorry—first of all, you told us in 2017 that they had no influence, and you just repeated that here, but you’ve now just said that China Reform very strongly encouraged the appointment of these four directors. Forgive me; I am not quite clear. Did China Reform have influence on the governance of this company or not?

**Ray Bingham:** They of course have— They are, of course, a voice that we listen to, but at the end of the day, the decision is ours—the partners at Canyon Bridge and the board members of Imagination.

Q58 **Chair:** Okay. I think the evidence—well, your own statements—somewhat contradicts that. Can we come back to the question of management? There is a suggestion that China Reform have taken a rather more active part in management decisions. Would you—entirely and on the record—refute that?

**Ray Bingham:** I don’t know what “active” means in this case. Let me give you some context. When we established Canyon Bridge with Chinese investors, one of the strategy elements was that these Chinese investors could be very helpful in helping us grow our business in China. That is a market opportunity that every small technology company struggles with because they don’t have the resources or the channels or the reach to be able to do that, and we felt that these particular investors could be helpful to us in making introductions and identifying ways in which we could better position ourselves to be successful as a British company operating in China, and that has proven to be the case. They have made introductions and helped us understand how things work in China, and they have extended our influence in China by the mere fact that they have supported us financially. That said, there is no case that I am aware of where they have taken a hand in making decisions that is the prerogative of management or the board. They have been advisers and helpmates, but they have not tried to assert themselves into management or board decision making.

Q59 **Chair:** So they have expressed no views on, for example, the choice of the chief executive officer.

**Ray Bingham:** Um—not as yet, no. I don’t expect that they will. However, as we continue our search for a permanent chief executive officer for Imagination going forward, just as I committed to Chairman Dowden to consult with his office about who their selection might be, I would certainly consult with the other stakeholders, including the management team, but also China Reform as an investor in the Canyon Bridge fund. I would certainly make them aware and consult them for their reaction.

Q60 **Chair:** So the main reason—forgive me if I’m incorrect—for Imagination Technologies getting into trouble in 2016 was because of the loss of the Apple contract, and the reason it recovered was because Dr Black



managed to renegotiate the contract and seemed to put the company back on to a very strong economic footing. Would that be correct?

**Ray Bingham:** Let me rephrase it a bit. The company was in a very unhealthy way and over-reliant on one single customer. That customer, as they will do, announced that they were designing us out of that contract. That put it at risk, and eventually we lost for a period of time approximately 50% of the revenue of the company. As we brought Dr Black in as the CEO at the beginning of 2019,<sup>3</sup> he made renegotiating and basically restoring the Apple relationship a prime objective of his, which he did in a masterful way. However, even though the value of restoring that cash flow has been very important to the company, the company is still loss-making. It is still struggling to show top-line growth, and those are issues that we as Canyon Bridge have continued to invest in to the tune of approximately \$50 million in the last two years and have stated publicly that we are prepared to invest more to get the company into a profitable and more financially stable position.

**Chair:** Alicia, you wanted to come back in.

Q61 **Alicia Kearns:** Yes, I have a question around how you do business in China if that is what the priority was. Working on countering organised crime and hostile influence, our mantra very much is “Follow the money”, and here the money appears to be Chinese. I am interested in what trade-offs that might result in. In a survey done by the European Chamber of Commerce in 2019, over 20% of businesses surveyed said they felt compelled to transfer technology to maintain market access in China. Has Imagination Technologies ever felt such compulsion, given that you have just set out a clear priority for expanding into the Chinese markets?

**Ray Bingham:** No, I don’t believe we have. You asked how we do business in China. It’s very similar to how we do business in any other geography. It means putting salespeople and engineering support people into the field to work with prospects, and eventually customers, to help them identify sockets—places in which our intellectual property can be inserted into their commercial and, largely—in our case, almost entirely—consumer products.

Q62 **Alicia Kearns:** May I put that question to John and to Ron? Do you believe that Imagination Technologies has ever felt a compulsion to transfer technology to maintain its market access? Perhaps we can start with John.

**John Rayfield:** I think, consistent with Ray, the way of doing business today is as he describes. There are plans to increase engineering resources in China and in the UK.

Q63 **Alicia Kearns:** Sure, although increasing staffing is not quite the same as transferring technology over or sharing it.

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<sup>3</sup> Mr Bingham said “2018” during the evidence session but subsequently corrected this.



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**John Rayfield:** Again, I'm obviously bound by confidentiality with the company, so it is difficult for me to get into a lot of detail on these things. I just need to leave it there.

- Q64 **Alicia Kearns:** Perhaps I should put it more simply to Ray: has Imagination Technologies transferred any technology over to secure its market access in China?

**Ray Bingham:** No, we have not. I will add that transferring technology in our world is simply done by licensing technology to our consumers, to the extent that they need those licences in order to use the technology. In our case, those licences are all for personal use—cell phones, tablets, games and that sort of thing. They have not been subject, with one very small exception, even to export control. Export control is something that we look at very seriously, but to date, because what we do is license technologies that help build consumer products, we've not been required to go through export control, with, as I say, one small exception.

**Alicia Kearns:** I'll leave it there, Chair, although I would say that consumer technology is often the easiest entry point for hostile states that are seeking to access information and technologies.

**Chair:** I will move on. Mark Pawsey wanted to come in.

- Q65 **Mark Pawsey:** I have a quick question about the future market for Imagination and its products. We have heard about the importance of the Apple contract, and Ray has told us about the great work that Dr Black did in getting that relationship up and running once again. Ray, can I ask you whether you think the appointment of four Chinese directors would make retaining the Apple business easier or harder?

**Ray Bingham:** Well, that would require speculation. I don't believe there is a connection, but there were so many reasons not to add those directors, and concern for customer reaction was certainly one them.

- Q66 **Chair:** Forgive me for coming back on the directors question again, but given that there are so many reasons not to add these directors, that the then management of Imagination Technologies was against it, and that China Reform wasn't particularly interested in using any leverage, who was suggesting the new directors that have been so roundly rejected?

**Ray Bingham:** You are describing a process. The conversations around China Reform's view that they could be even more helpful in China if they could be closer to the action, if you will, and closer to the board activities, started in the fall of '19. The discussion carried on for some time as we talked about what it might look like, how it might happen and who they might be. It was very much an evolving process, but it was something that they clearly believed they could be more helpful with than the much less formal relationship that they had as a limited partner. But the initiative was certainly theirs.

- Q67 **Chair:** Okay. Forgive me, but you have just clarified what we were trying to get to earlier: these four nominees were from China Reform.



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**Ray Bingham:** No, three of them were from China Reform; one of them was not.

Q68 **Chair:** But that was the nomination, so the 99% shareholder with limited influence suggested, and you accepted the suggestion until you decided not to accept the suggestion.

**Ray Bingham:** Well, sorry, but with respect, they promoted this idea. They felt strongly that they could be even more helpful in China. We did not accept that view, and in the end it was withdrawn.

Q69 **Chair:** Sorry; forgive me for seeking to clarify this. We have already heard from Sir Hossein that there are security implications in some of these products made by Imagination Technologies. We are aware from other companies that subtle forms of control are exercised over companies that have agreed, for example, to be sold but retain certain elements. We have seen how Canyon Bridge has been described by the United States Administration. Politely put, they have called it a front company for Chinese money, haven't they? And now we are now getting some confusion—to put it politely—as to who did or did not try to appoint four directors, effectively changing control of a company that was agreed to stay under the control mechanism agreed in 2017. Can you see why this process of questioning is leaving us somewhat confused?

**Ray Bingham:** I am sorry that there is confusion. For me it is quite straightforward. Our limited partner, who was very enthusiastic about the prospects of Imagination, was very interested in helping further. It is not uncommon for shareholders—in the United States we call them activists—to try to be more helpful by adding their weight, in this case to the board. They even went so far as to suggest the names of these directors, three of whom I knew relatively well. At the end of the day, after taking counsel with Government—certainly—but also with employees and legal advisers, we concluded that it was not a good idea, and China Reform agreed to stand down.

Q70 **Chair:** About 24 hours before the board meeting.

**Ray Bingham:** They agreed to stand down.

Q71 **Chair:** Let's be honest: it was about 24 hours before the board meeting, after it had been made public and after the British Government had raised objections.

**Ray Bingham:** I couldn't—I don't know that that is correct.

**Chair:** Okay. Stewart, you wanted to come in on the IP question.

Q72 **Stewart Malcolm McDonald:** Before we go on to IP, I want to ask Mr Bingham directly about the attempted or near appointment of the board of directors. Does he share the view that the apparatus of the Chinese state, in one form or another, tried to influence the appointment of those four directors, to get them into position?

**Ray Bingham:** Well, no, I don't go that far, based on my experience with these Chinese institutions. My experience with China Reform, since the



foundation of Canyon Bridge in late '16, has been completely, totally on a commercial and business basis. When we talk to them about Imagination it is almost entirely about financial results and human resources. Are we attracting the right people? Are we keeping the right people? Are we being efficient? Are we expanding our margins? Very importantly, in a company that spends more than 80%—mark that—of its revenue on R&D, expanding our revenue to be able to sustain that level of R&D in the UK is essential. Those are the things that we talk about in every single meeting.

**Q73 Stewart Malcolm McDonald:** Can I take it from that, Mr Bingham, that you don't think that Imagination is a target of the apparatus of the Chinese state at all?

**Ray Bingham:** I have no reason to believe that it is.

**Q74 Stewart Malcolm McDonald:** Really?

**Ray Bingham:** There is nothing in my interaction with China Reform that would suggest that conclusion. I would also add that the kind of technology that we have is aimed exclusively at consumer products and consumer capability. While I suppose it is possible, with the level of engineering that we have in the company, that they could do something more deleterious, that is not our business. That is not what we pay them for, that is not how they work, and those are not the markets that we develop products for.

**Q75 Stewart Malcolm McDonald:** How do you as a company best guard against that? You said in response to a question from my colleague Alicia Kearns that if a director was found not to be independent or under the influence of a foreign state actor or another hostile actor, that member of the board would be removed. How would the process change, though, in terms of appointing people to the board, to ensure that your company was resilient, and to prevent it from being an attack surface, such as those that we have talked about today? Either you are being naive, quite frankly, or you are just not looking.

**Ray Bingham:** I am having trouble connecting the question of independence with the question of being a target of the Chinese state. The directors that we appoint would be independent of any Government, I believe—certainly the Chinese Government. They would be independent of China Reform and the other investors in Imagination.

**Q76 Stewart Malcolm McDonald:** How does the company guard against that? Talk me through some of the processes that you have in place to guard against that.

**Ray Bingham:** On any board, you would start with interviews with the directors to understand that. There is typically—in our case, it is very elaborate—what we call a directors and officers questionnaire, which goes through all the business and professional connections that the investor has. In substance, it requires the prospective director to sign an affirmation on an annual basis that the facts establishing their independence are still true. If, by behaviour, some of those facts and positions came into question, the board would look into that. It would be



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their duty to affirm that the director was still, notwithstanding those affirmations, acting in an independent way. If the conclusion was that that was not the case or there was significant doubt, the board itself could require the director to stand down. If worst came to worst, the owners of the company, Canyon Bridge, could reform the board, excluding that director. I think those mechanisms are really quite strong and thorough.

**Q77 Stewart Malcolm McDonald:** So there could be a change in how directors are appointed, presumably, if it was found to be the case that someone wasn't acting independently and that your current systems of vetting, et cetera, had failed.

**Ray Bingham:** Well, certainly we would look to understand how that one slipped through. My experience with such things is that it is either oversight or prefabrication on the part of that individual.

**Q78 Stewart Malcolm McDonald:** And you are not convinced that the company would be a target of that kind of activity?

**Ray Bingham:** I don't know that it would be, I think was my comment. Certainly, it is something, given the nature of our business—really, for any technology business—that you would guard against with the mechanisms that I just described.

**Q79 Stewart Malcolm McDonald:** You must find all the interest in it from the Committee and elsewhere rather curious, then, if that is what you believe.

**Ray Bingham:** I'm sorry. The words weren't quite clear.

**Q80 Stewart Malcolm McDonald:** I was just saying, Mr Bingham, that you must find the interest of this Committee, the US Government and the media in what has happened at Imagination Technologies rather curious if you don't believe that it has been the target of some kind of foreign interference. You must find all this interest incredibly bizarre.

**Ray Bingham:** No, I don't. The question was, "Do I believe Imagination is a target of the Chinese state?" My answer was that I have no evidence to suggest that the interests of our limited partners are anything other than business interests.

**Q81 Stewart Malcolm McDonald:** Do you think it's bizarre that people think it is a bit more than business interests?

**Ray Bingham:** No, I don't think it's bizarre at all, given the evidence in many other situations and the general posture of some of these states. I think this is really quite appropriate, and it was very useful that Secretary Dowden and his office took an interest in this.

**Stewart Malcolm McDonald:** That's all from me, Chair. Thanks.

**Chair:** Meg Hillier, you wanted to come in, and then I will come to you in a moment, Tobias Ellwood.

**Q82 Meg Hillier:** Thank you, Chair. Mr Bingham, in terms of the technologies



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that Imagination Technologies produces, can you see that some of those might be useful in the hands of the Chinese Government and potentially a risk to national security? Would you acknowledge that?

**Ray Bingham:** Certainly. They are technologies that either we possess or that could be developed by our engineers, which could be used in a bad way.

Q83 **Meg Hillier:** Can you provide more detail on those?

**Ray Bingham:** No, I don't think I would be really confident to explore that. I would be happy to come back to you in writing. As has been mentioned by both Ron and Sir Hossein, the high-performance computing that is involved in the solutions that we include in our IP cores could be used for other things, other than the consumer products that we develop. I will add that my understanding is that, for that to happen, it would require, in most cases, vast amounts of capital and time. That is something we don't have the interest, the strategy or the capital to pursue.

Q84 **Meg Hillier:** What would you say are the main competitors you have got delivering those products in the UK?

**Ray Bingham:** Our main competitors for the business that we are in, these mobile intellectual property cores—these mobile GPU cores—are companies such as Arm, primarily, on the mobile side, and some of our prospective customers are working to develop, or have already developed, their own cores and hence are competitive for those sockets internally.

Q85 **Meg Hillier:** The intellectual property model that you operate is quite an interesting one, but as we have seen from Apple's experience, there is, allegedly, a risk that once you licence out the intellectual property, it could be usurped by another organisation, including, in this case, elements of the Chinese Government. How do you try and prevent that from happening in the model you use to promote and protect your intellectual property, which is obviously the most valuable part of the business in many respects?

**Ray Bingham:** Just to be clear, I would never want to take the position that Apple usurped our technology or in some way misappropriated our technology. Their view and their capability is that they, in a clean-room context, developed their own GPU capability and therefore didn't need the licence from Imagination any longer. I think that, at the end of the day, it was clear that there was a very productive role for Apple and Imagination together. The way in which these cores are licensed makes it very difficult, both from an engineering and a legal point of view, for companies to misuse the technologies we export.

Q86 **Meg Hillier:** You say legally, but, obviously, the law covers more than one country. If you were dealing with an organisation or a national Government that did not want to obey the law, it would be quite hard. You could pursue them forever, but they might, by then, have run off with the technology and used it. We know, for example, in the case of the Chinese, that they want your semiconductors. They want to be self-





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reliant in producing those.

I have two questions really. First, how do you guard against that, whatever the law says, because people can break the law? Secondly, what do you think would be the impact on the UK market if, as a major producer of components and semiconductors, you were no longer able to provide to the UK market and the European market?

**Ray Bingham:** To the possibility of copying our models, I can tell you that many companies have tried to do what we do, and most of them have struggled—some of them even in other countries, such as China. The business of copying what we do from the licences that we sell is very, very difficult and has proven to be quite unsuccessful for any company that I am aware of. So just the engineering level of copying makes it very difficult.

I would also add that companies, even Huawei and its subsidiary HiSilicon, as much as they would like to produce all their own chips, end up buying a very large majority of the chips they use in the products that they sell from Western companies. If it was so easy to copy, in whole or in part, I would suggest that they have certainly not been successful in working that through.

**Q87 Meg Hillier:** Going back to an earlier question from a colleague, do you not see why we have an interest in this? If it is so hard to copy and replicate, and you say that Apple did it in a clean room and they are a big corporation, do you not see that if the Chinese had a controlling interest in Imagination Technologies, that would give them a very powerful position in their own domestic market, let alone the ability to supply it more globally—notwithstanding any issues around security, but simply on the retail side?

**Ray Bingham:** I certainly see the interest of this panel and others in examining foreign investment in technology companies. That I do not contest in any way. What I have suggested here is that the follow-on—Chinese control of this company—has not happened, and nor do I believe it is going to happen.

**Q88 Meg Hillier:** But it was on the cusp of happening. It got quite a long way before other pressures externally stopped it happening. I am just interested in whether you can tell us anything. I know that board discussions will be private up to a point, but was it even on the radar of the board that actually having four Chinese directors, three of whom came from a major funder in the fund—the massively majority funder in the fund—was of interest?

You talked in your submission, and in other places, about the need for that knowledge of the Chinese market, but four new directors seems quite heavy-hitting. Given their connections to the funding, and their funding from the Chinese Government, did no alarm bells ring that there might be other reasons for the interest from that side, let alone what you thought you were getting from them?



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**Ray Bingham:** Alarm bells did ring, which is why we took counsel with a variety of sources, including legal and other political advisers, and paid attention to management's views on it as well.

Q89 **Meg Hillier:** I am puzzled. Certainly in our world of politics, you do the checking out before you make the announcement. I am not in business like you, but if I had picked up that there was unease, or if I had done the checking beforehand, I might not have gone further than the idea. You are saying that you had got as far as announcing the potential of these appointments, and there was then a political and public hoo-hah about it, which partly led to you not going with it. Obviously, you say the management and the board were interested as well. Did you do any checks before it was mooted?

**Ray Bingham:** I do not believe there was any announcement made by us.

Q90 **Meg Hillier:** Okay, but it was very much in the public domain. I follow tech businesses up to a point, because of my constituency interest, but, frankly, it was the public attention that brought it to my attention and, I guess, that of many of my colleagues here. There was publicity around it that meant we all knew that it was happening. Did you do any checks before it hit the public domain, when it was just an internal discussion about who to appoint to the board to help you, in your words, with understanding the Chinese market? Were there internal discussions before it hit the public domain?

**Ray Bingham:** Yes, there were, and there were also checks with other stakeholders before it was leaked to the public.

Q91 **Meg Hillier:** Did they come back clean, or did people have concerns before it hit the public domain?

**Ray Bingham:** No, people had concerns.

**Meg Hillier:** Okay. I will leave it there, Chair; perhaps someone could pick up from me.

Q92 **Mr Ellwood:** Regarding what Meg was saying, Mr Bingham, do you not smell a very patient Chinese rat here, that is looking to the long term to really take advantage of the direction—*[Inaudible.]*

**Ray Bingham:** I can't hear.

**Mr Ellwood:** Okay, I will start again. I am looking bigger picture here, following on from Meg's interesting questions. Do you not smell out a very patient, long-term Chinese rat here that is taking advantage of the fact that this company, Imagination Technologies, has been taken over by an American company that is now based in the Cayman Islands with a Chinese interest from China Reform, which is owned by two Chinese state-owned banks? This is part of Chinese ambitions for the Made in China 2025 programme.

I ask you, sir: you are based in California—you must be very conscious of the live debate that is taking place over 5G and Huawei. How does this sit



with the long-term picture of a clash in ideology between what China wants to do and where it wants to go—its approach to the international rules-based order—and what the West is trying to achieve as well? I fear that you are getting caught up right in the crosshairs, and need to do more on recognising how you are being utilised or played for the benefit of China, taking advantage of cutting-edge technology that they are currently without.

**Ray Bingham:** Certainly, you make a very important point that, as this debate plays out, we should all be on point and vigilant about what role we play in this game, or not.

My experience with Imagination is that this is a financial investment on the part of financial institutions in support of a very traditionally organised private equity fund, and other than their interest in helping us grow faster in China by nominating these directors, the behaviour of our investors has been commercial. It has been about making this company successful so that we can at some point, as is the objective of any private equity fund, take a much more successful, financially sustainable company public, or through a trade sale, so we have a financial exit that results from all that activity. For me, nowhere in there does the state have an opportunity to get involved, but I will leave it to others to speculate on what their motives might be.

Q93 **Mr Ellwood:** My concern is the trajectory of where China is going, and the wider debt-trap diplomacy that we see them utilising through their one belt, one road initiative. They are not part of the Paris club of states that are committed to sustainable solutions. I simply pose this question: if we were all to have the same conversation or inquiry five years from now, what do you think the state of the company will be, and what will China's interest be? Do you think it will be no greater; that they will have expanded no deeper into the ownership of Imagination Technologies?

**Ray Bingham:** As long as we are owners of the company, the company will be owned by Canyon Bridge and its three partners, and supported by a limited partner that entrusted us with investment capital. I will, though, emphasise that as private equity investors, we will always be looking for an exit that establishes the company on a much higher value than what we paid for it three years ago.

Q94 **Mr Ellwood:** Finally, if I may, you yourself—your company—are not in it for the long term. This is purely a financial investment. You are less interested in the technical side of this.

**Ray Bingham:** That's the nature of private equity investing. Our job as fund managers is to take the money that has been entrusted to us, invest it in areas that we see as attractive, and then be held responsible for the financial returns—the financial returns only—of the assets that we invest in.

Q95 **Mark Pawsey:** I want to pick up on that point. Ray has just said, "As long as we are owners". I was going to ask Ray: how long are you guys going to stick around for?



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**Ray Bingham:** We will stick around until we can exit this investment successfully, at a higher valuation. In my experience—I now have about 14 years of experience in private equity investing—sometimes these investments can take quite a long time. I recently exited from one that I was involved in after 12 years of work and, thankfully, successfully.

Q96 **Mark Pawsey:** Okay, but it could happen quite imminently.

**Ray Bingham:** Well, it could, but then you have to think about what kind of value the company would attract at this time, given its loss-making status and the need to show revenue growth as a way of communicating that you have a sustainable business.

Q97 **Mark Pawsey:** In that respect, I want to ask you about the future of the 581 employees in the UK. You told us that the market for Imagination would in future exist in Asia and that's one of the reasons why you are bringing Chinese investors on to the board, but Mr Rayfield believes the market is still in the US. Why are you right and he wrong?

**Ray Bingham:** I think we are both saying the same thing. Approximately 80% of our revenue today is in the West; and as we have become more successful and as we broaden our technology offerings into adjacencies, we will be able to grow the revenue in Western companies—Western companies are very important to the future of this company. The point about China is that it is a very fast-growing market for electronics products, particularly consumer products, which is our business. A very important way for us to grow revenue and to be able to afford to continue to invest in R&D in the UK in the way we have been doing is to grow revenue, and one of the best ways to do that should be the Chinese market.

Q98 **Mark Pawsey:** We have heard on many occasions commitments from investors, people acquiring UK businesses, that they are going to retain a plant in the UK. We heard from Kraft, who acquired Cadbury's and made commitments about keeping plants open but immediately closed them. The business Committee heard from the company, Melrose, that bought GKN and promised to keep plants open and then immediately closed them. Particularly if you guys are not going to be around that long and are holding this purely as an investment, what credibility can we give to the assertions that you have given us about maintaining a UK long-term presence?

**Ray Bingham:** I can tell you that when we came into this investment in 2017, the commitment we made was that it would be a UK-based, UK-headquarters company and that we would respect and grow the presence of UK technology engineering in the UK. Now, almost three years on, we have kept that promise and plan to continue to do that.

The thing to understand about this business, in contrast to other businesses that you might mention, is that the assets of this company reside in the engineers that are assembled, more than two thirds of which are in the UK. They are not all UK citizens; we have citizens in our UK populations from over 40 countries, but they are attracted here because



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there is this concentration of intellectual capability and intellectual excitement that results in companies like Arm and Imagination being able to do things that nobody else can. The thought of moving that someplace else is unthinkable, because the assets are in those people—

Q99 **Mark Pawsey:** You made that very clear in your very long letter to the Committee, and thank you for that. But would you be willing to give a legal undertaking to the commitments that you are making to keep a presence—a substantial presence—here in the UK? Would you make that a legal undertaking?

**Ray Bingham:** You know, we have had active dialogue and ongoing dialogue with Secretary of State Dowden, and I think that that is something that we could consider affirming in those discussions.

Q100 **Chair:** We are beginning to get to the closing stage. I was wondering if I could just clarify a couple of bits. Forgive me—does Canyon Bridge own any other holdings at all?

**Ray Bingham:** We have one other investment.

**Chair:** What is that?

**Ray Bingham:** It is a small, early-stage company that we invested in at the very beginning of our partnership—a much less than 10% position in a start-up.

Q101 **Chair:** And what would you say is the asset distribution between these two companies?

**Ray Bingham:** The asset distribution—the value?

**Chair:** Yes.

**Ray Bingham:** It is 95% Imagination. It is where I spend all my time, for sure.

Q102 **Chair:** I just come back to the fact that for those who think that possibly this is a way for a Chinese state-owned enterprise like China Reform to take control of a UK company like Imagination Technologies, then you have provided a very useful cut-out.

**Ray Bingham:** I don't know what that means.

**Chair:** Well, I think most people will.

**Ray Bingham:** "Cut-out" is a phrase I am not familiar with.

Q103 **Chair:** Given that your investment is 99% from a Chinese Communist party-owned business called China Reform, and your investments are 95% in a single business, it appears that the rest—the 1% that is yours and the 5% that is a secondary investment—could look to others like a distraction, rather than a principal area of business. That's all.

If I may, I will go back to Sir Hossein. Sir Hossein, you have heard quite a lot of evidence on this. Do you think that we should be confident now that



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the IP will remain in the UK, and that there is a really fundamental difference between transfer and licensing here?

**Sir Hossein Yassaie:** I think there is a fundamental difference between transferring and licensing, and I would say that, up to now, there probably has not been any transfer of technology—I would not be surprised—as far as Imagination is concerned, but who knows about the future?

Did you want me to talk about Imagination or generally? I am just trying to do the right thing here.

Q104 **Chair:** I am keen to hear whether what you have heard in the evidence about Imagination is something that you would say is something that is being repeated in other businesses. Is this something that we are seeing more of in other places? And is this something that raises concerns?

**Sir Hossein Yassaie:** I would say—I go back to my key point—I think the fact that the UK Government had to intervene to deal with the governance issue, and actually I am still concerned that the CEO and two executives who objected are still not at the company. The changes that were made, because of the process that started, have not been corrected, in my opinion. s

So, I would say from a governance point of view we have a long way to go and from my point of view I would certainly like to see a process that understands the depth of the tech, and the risks and mitigation around them, and put in place—whatever the decision is, whether to proceed or not, and what shareholding, etc.—the decision should take that into account.

Finally, the governance that follows must ensure the compliance of what matters for the business and security.

Q105 **Chair:** Ron, did you have any final points? Are you able to comment on what you have heard?

**Dr Black:** Yes. Maybe I could help out, Mr Chairman. There is just a bit of a point on licensing and transfer, because it is a very important topic, and maybe I can even comment a little bit about the cyber-security elements.

I am not going to talk about anything with respect to Imagination specifically, but Imagination is my third licensing business and I have been involved in cyber-security for a long time. I think this came up, but when you license a technology, you provide the authorised rights, so there is a legal element of it, and the design is put into a package that is transferred, but, as Ray said, it is very difficult for the company to get it, pick it up, modify it or improve it. If you transfer the technology, that is exactly what the customer wants; they want the ability to do that.

Having been involved in these companies for a long time, the sticky part is that I can say something is a license, but implement, let's say, a complementary business model so it ends up in a transfer. The way that works is that, first, I provide you with a licence to this technology, so you





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have the legal rights to it. Then, you ask for selective help: “I need some help on the source code.” It sounds okay, so I provide you with the source code for additional compensation, which is a separate deal outside the licence to do it. Then, you need additional training, because your team are not really experts in that, so there is a third transaction about the additional training.

Then, ultimately, because employees are very fungible and can move all over, you find out that critical employees who have critical parts of that design are now working at the company that took the licence with the extra help. Technically, in those countries you are not allowed to use the information that you have, but who knows what an employee who has transferred to another company does? The whole point here is that, while that process is more cumbersome, the only the way to stop this, and I think that is where Hossein was getting, is to have management understand what the real intent is—not rules that you schedule, but the intention-based actions—and to not let it happen.

The other part here, which I don’t think the Committee opined on enough, and should, is about cyber-security. This is not a technology statement about Imagination, although Hossein can talk about that; all technology has a cyber-risk. The way those risks usually happen is through people exploiting bugs or use cases that the designers don’t anticipate. Every technology I have worked with in what I would dare to say is 25 years in the business—every technology has bugs. The issue you have is trying to minimise the bugs and whether you have a management team that is taking best practices to minimise what those bugs are and not to allow them to be exploited by a bad actor.

If the answer to either of those questions, especially the trust and confidence in the management and, as Hossein was saying, the governance, which is very challenging, is no, there is incredible risk that you end up having a transfer of technology that becomes a cyber-risk.

**Chair:** Right. You have laid a further avenue of questions, but sadly, we are running out of time and we were focused on various other elements. Alicia, did you want to come in on that?

Q106 **Alicia Kearns:** It was simply to ask, if those are the two big questions, does Imagination Technologies answer yes or no to those two questions?

**Dr Black:** I can’t answer for Imagination. That would have to be for Ray.

**Ray Bingham:** Which questions are you focused on?

Q107 **Alicia Kearns:** Ron, do you want to put your two markers in the sand as to what would be concerning if a company was answering no?

**Dr Black:** Yes. Ray, I was opining on the specific difference between licensing and transfer, because they can sound kind of similar, and you can use the definition of licensing and find it is actually a transfer. You must have processes, procedures and management that are not necessarily rule-based, but intention-based, because you can always design around the rules. It is like the differences, as you are a former



CFO, between rule-based and intention-based accounting: you can follow the rules, but your intention is to do something bad. The second is the processes and procedures associated with cyber-security and the issue you have in managing it so that you are minimising the risks of having cyber-vulnerabilities. The only way to do that is to adopt best practices to try to eliminate and remove bugs. Of course you have to have trust and confidence in the management that they are doing it, because bugs can also be created accidentally or on purpose. So I think those are things—and this isn't a statement: you are going to answer about Imagination; I am talking more in the spirit of what this Committee is doing. These are things, as Hossein said, that are complicated and we need to have frameworks to discuss them openly and assess the risk and really then use the laws to take action to minimise it.

**Q108 Alicia Kearns:** Thank you, Ron. The question is, Ray, is Imagination Technologies upholding where it needs to on those two, and then, John, whether you agree with the answers that are given.

**Ray Bingham:** Look, I believe we are, and to the extent that John believes that there are shortcomings, then, as one of my senior executives, I would be very interested in understanding his point of view so that we could fix those; because the risks that Ron talks about are extremely important to brand and to national security and, of course, as a British company—a leading British technology company—we care very much about both.

**John Rayfield:** My opinion is yes, we are careful about those things at this time. There is no malicious intent at this time.

**Alicia Kearns:** “At this time”—that you have repeated twice.

**Q109 Chair:** Mr Rayfield has answered the question as he has chosen to answer it. Given that legislating for intent is really difficult, presumably this is why you come back, Dr Black, to your initial point about observation mechanisms—which influence behaviour.

**Dr Black:** Yes, that is exactly it. Again, in business we deal with these things all the time. There is no controlled experiment, there is no do-over; so you have to use—to some extent it is common sense. It typically goes along two fronts that are used in problem solving, if you are at all familiar with mathematicians. One is Occam's razor, which is actually Thomas of Occam—he was a 14th century philosopher who said the simplest answer is the correct one. So when you see a set of things that are of unnecessary complexity, you usually think there is a different calculus going. The second one is Bayes' theorem, which says if you have a hypothesis and something updates your hypothesis you should update it, whether it is more likely or less likely. I quite candidly think I could structure something for you as an example, not specific to Imagination but generically, how a Committee like this might assess risk on all these different elements: the impact the risk could have to the UK economy; the risk they could have to national security, which would be tied to the cyber-security aspect of it; and even take the steps to try to automate it and try to put it into a



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process where the companies, to a large extent, are kind of self-verifying, and then you are spending critical resources on areas that just don't add up. I think the Committee here has pointed out that a few things in their minds don't add up. So if you had something like this previously, would you have had a different opinion?

**Chair:** I am going to call time there, but I am extremely grateful to our four witnesses. Sir Hossein, thank you very much indeed for giving us your time. Dr Black, thank you for your insight. Mr Rayfield, thank you very much for your contributions; and Mr Bingham, I am very grateful for your candour throughout. We are going to stop it there. If there are written submissions that you wish to make, please do feel free to follow up. You know how to do so.