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## The Governance of Big Tech

23<sup>rd</sup> March 2021

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### Plenary 1: Big Tech: Risks & Rewards

- Brian Christiansen, Senior Portfolio Manager and Executive Managing Director, Sands Capital Management
- Di Rifai, Chair, Creating Future Us
- Professor Andreas Hoepner, School of Business, University College Dublin

Chaired by Kerrie Waring, CEO, ICGN

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#### **Kerrie Waring, CEO, ICGN:**

We start with some observations around the economic impacts: How has digital transformation changed the market, the competitive landscape that we all operate within? How do we deal with the concentration of power in these hugely profitable big companies? And what about things like tax arbitrage? I'll come to Di first on this from a board perspective.

**Di Rifai:** I think that every company is becoming a tech company. Everybody is going through digital transformation. And there needs to be a responsible way to go about doing that. What I would like to do is reframe this as a larger system problem. Everything we have created for society at large, including things like education, health care, energy, etc., were created for an industrial age. And we now have a digital age, especially with covid having sped it up – we really have not thought through what those new pillars would look like in a digital age. The economics both arises and drives from all of this.

The legal system itself has not really adjusted to the digital reality we're in. We have so many laws still missing in action in terms of describing copyright laws and IP laws that have not adjusted to a tangible world. We also have incentives like the taxation system. And taxation law has not adjusted to the fact that you can move IP around in a way that kind of games the tax system. It was built on that industrial age of factories in a certain geography, attached to the ground, not intangibles that we have now.



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**Kerrie Waring:** I really like to the point you made that actually all companies are tech companies and we're dealing with the time of huge systemic change, whether that is with regards to the geopolitics that Eric talked about earlier or taxes you're alluding to now. Brian, what is your perspective on the on the macro-economic environment that we work in? What are the big levers?

**Brian Christiansen:** So how has digital transformation, the digital age impacted competitiveness? I think there is a number of different ways. If I were to just choose three big ones, I would say that the pace of innovation is substantially faster in the digital age. One example is that it took Coca-Cola one hundred and twenty-eight years to reach about one point eight billion consumers on a daily basis. It took Facebook 16 years. And now Facebook has a market cap that's three to four times that of Coke, so that gives you a sense of an intangible world, and how quickly these companies can scale up on a global basis, that also leads to challenges and growth and complexity. I think the second thing that we're seeing is that companies are staying private for longer. One of the interesting things in the digital age is that start-ups are cheaper to build. You have cloud computing, open source, software developer and API toolkits. All of those things are actually lowering the costs of starting a new business, which is fantastic from a society standpoint and innovation standpoint, but simultaneously what's happening is these companies often require more aggressive investment phases to seize first mover advantages and user stickiness and network effects, given how fast white spaces can close in the digital area. And so an intensity of competition is also joining that that speed of innovation.

Also, one of the things that I mentioned was how technology is really touching our industries. In the first 10 to 15 years, what you saw was the rise of the big horizontal platforms, whether that was e-commerce or social media, really how consumers start their journey on the Internet. And now we're seeing a complete transformation with the application of digital technology across industries, whether that's in education, in financial technology, consumer lending, but also not just in consumer facing industries like education or real estate, but also in the productivity and workflows of companies themselves and the rise of enterprise software. So I do completely agree with this idea that that actually long term, I don't think technology or big tech is the



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right term. I think we'll be talking about it like, electricity. Of course, all companies use electricity, right? It's going to be that ubiquitous. But during that transfer, during that transformation around data security and privacy and the rules of engagement, it will be important not only for society at large, but for companies to reduce some of the ambiguity that exists within some legal setups and expectations that society has. I still think there's a bit of a disagreement or at least an opportunity to harmonize on the rules of engagement.

There's only one other comment that I'd make. It's around this this concept of winner take all that comes up a lot when we're talking about a digital technology. And I think it's absolutely correct that that most of these technologies do lend themselves to higher concentration when you apply a digitization to these industries. But I think originally we thought it was going to be winner take all and with many of these industries it's still a winner take a lot. But I think there's actually a lot more intense competition and sometimes people realize. So, for example, Alibaba in China, not only do you have Alibaba e-commerce, but you also have JADI Dotcom. You have a pin duoduo, which is over one hundred billion dollars market cap. You have made in Taiwan. You have the competitive intensity that is actually higher and the pace and change of innovation is higher than people often estimate. We see that even in the US with Amazon on one side. But Wal-Mart's doing fantastic with their e-commerce strategy. Shopify is arming the rebels, so to speak. So it's a very dynamic industry. And it's something that we should keep in mind because innovation is ultimately something that can drive productivity and can drive a positive change. That's what we're seeing from an investor perspective.

**Kerrie Waring:** There are lots of really excellent points. I guess we obsess a little bit with the big six, thinking that they monopolize the marketplace. But as you point out, actually it is very dynamic. And then there is the ripple effect throughout the whole market infrastructure, the supply chain and so on. Andreas, what are your views?

**Professor Andreas Hoepner:** I'd like to start with two higher level points before I go into more detail. We used to live in an age where the most valuable resource was oil and the problem there was it is not renewable and is polluting. I am quoting John



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Naisbitt here, at least paraphrasing him; we are living in an age where the most valuable resource is data. It's not only renewable, but also self-generating. So the issue is not finding the data. The issue is to avoid drowning in the data. And so, in essence, looking at the next step of the digital transformation, it's really decision making. It is data scientists, financial data science. And that leads to a couple of very big complexities, which I think are essentially governance questions. The first complexity, I like to quote the attorney who is accredited to say that the problem in financial markets is that very few people fully understand how it works. And these very few people are nearly always conflicted in their interests. So they don't know what's good for society. So if that's a problem with financial markets then there's even a bigger problem with data science and certain aspects of big tech.

The number of people that really have the competencies to fully understand the consequences of certain decision making is extremely limited. And most likely the vast majority of these are conflicted. The person I currently find most interesting Tristan Harris and the work that he is doing. If you watch *The social dilemma*, and I'd like to speak about the latter more, but the addiction levels that people have to news feeds, I believe, in five to 10 years we will compare this with other forms of addictions, gaming addictions, alcohol addictions, tobacco addictions. Newsfeeds look so harmless, but they are incredibly addictive and from an educator's perspective, I believe of my students or at least some of my students have better control of their news feed addiction. They probably would actually learn more from an educational perspective.

**Kerrie Waring, CEO, ICGN:** That's a great Segway, into the social impacts of big tech. I also saw *The social dilemma*. I also have small kids and I am also addicted to email. What I hadn't quite appreciated, though, was the degree to which algorithms actually shape and coerce our behaviour without us even realizing it. And this is where I would be really interested to hear from Brian and Di in particular, what is the governance oversight role here? In the absence of global regulation, Brian, the heats on you as an investor to hold companies to account where you can, of course, where dual class shares are not inhibiting your ability to do so. I'll quote Edward Tufte, professor emeritus at Yale University, who said *There are only two industries that*



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*call customers, users; illegal drugs and software.* So what should big tech be doing to counteract this, Brian? How do you talk to companies about this?

**Brian Christiansen:** In the 18<sup>th</sup>, 19<sup>th</sup> and 20<sup>th</sup> century, we had a phenomenal rise and advancement of technology. Electrification, the combustion engine, refrigeration, all which combine to transform supply chains, transform transportation, transform manufacturing. We literally had a massive reduction in global poverty. All these things were quite positive. But we also realized over those decades that a number of externalities developed. In the US we had the creation of the Environmental Protection Agency, the EPA. We had a number of new clean water and air pollution, legislative acts all aimed at the mitigation of externalities created by many of those industrial age companies. We're going through a similar phase right now in the digital age. We are in the very beginning of it. I think there is a tremendous amount of optimism, as there should be. It is completely transformed our lives and allowed us to accomplish things that that we hadn't anticipated. So that is the positive side. But we are realizing that there are also some externalities. And I think the first step was transparency and to have some of these issues acknowledgment by the companies themselves, and engagement by investors on these issues. Trust is going to be incredibly important to the future. And there is a portion of the society that right now is very worried about some of these issues. If the companies are not able to address them, they will lose users, they will use engagement. That is the major message that that we're sending to these companies. It is in their best interest. Even though it is an externality that's not baked into their profit and loss statement today, we actually think it is very baked into how sustainable their investment model can be over the very long term.

I think there's a rise in awakening within Silicon Valley, within these companies and starting to really internalize some of these issues. And that is a positive. But it's going to be a journey. It's not easy because the companies themselves need help. They need engagement from investors with their ideas. They need engagement from regulators. They need engagement from other stakeholders to figure out a solution. I don't think it's simply a matter of tweaking our industrial age policies and regulatory frameworks. It's a different way of how to approach these things and because it's so



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complex, it's difficult. It's going to require work and it's going to require alignment. But I tend to be an optimist as a growth investor. You have to be as an investor in innovation and. But it's a challenge.

**Kerrie Waring** Trust is a huge issue. Di what are they practically doing at the moment from a corporate governance perspective? What is it the boards are doing to becoming more and more competent or to build back trust with society?

**Di Rifai:** I love this question and also, Brian, thank you so much for mentioning the word externalities, because we in the Yazji space have been talking about externalities for a while in terms of environmental externalities. And now we're seeing societal externalities, which is the piece of Yazji. And I think it's all about how do we now start to learn the lessons from the environmental movement to say, let's not wait till we have these externalities almost to the point of no return. Let's catch them early.

Generally speaking, most boards seem to see this whole kind of digital transformation as an IT issue. So you what you see is a lot of Gortari Actos, which is great as the first wave because you need somebody on the board who understands technology and can question and challenge in the right ways.

Ultimately, this is business model change. This is societal change. This is a system change. So the whole board has to think differently. It's not just adding that one technology capability on. I also think governance itself needs to change. We wrote this revolutionary paper called Governance Rebooted, saying that governance itself has to change. We have a governance structure that is outdated for a digital age, because currently, we meet every two months at best, maybe quarterly at worst. And we have a real time world where stuff is happening continuously. If you look at covid and what happened is a prime example: You had the last board meeting in December of 2019, then the next meeting was probably March 2020. And in the meantime, the whole world changed. Your business might have been out of business at that point. So how do you create a governing structure that reacts much more dynamically to a world that is moving? How do you live in a world that has such





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radical transparency? How do they deal with being so accountable to stakeholders now, which, again, in the industrial age, they weren't? We have been mandating the stakeholder concept. Now you are accountable to the stakeholder. Now, you might have to listen to that, but really have a fundamental change of view around this idea of being immersed in stakeholders rather than just bringing an employee onto the board and hoping that represents all employees out there. Pretty soon we have these bloated boards and more committees than anybody can attend properly and then we start to get into trouble. We really need to question corporate governance in a digital age in order for it to become an enabler of transformation rather than a drag on transformation. How do you incorporate this diversity in the crowd intelligence into a board? Because you have people on boards generally who are pretty risk averse because they tend to be older, and you have a movement that's very young going on.

So, again, do you add one more young person onto the board as yet another representative? So I think there's a question here, and I certainly we don't have all the answers, but I think we need to really think about the subject.

**Kerrie Waring:** I would focus our attention on the ICGN global governance principles that we've had in place for twenty-five years, and actually my impression is that today's boards are far more sophisticated than those of the past. I'm not sure we can generalize in terms of the size or frequency of actually board meetings themselves. But certainly, all of the things you say in terms of how the boards transition to the digital age, I think is really important. How do they embrace the innovations and the use of technology? As terrible as Cauvin has been for so many well, for all of us, actually, it's really helped us to innovate, improve our game, to communicate more efficiently. So that has many benefits. But I'm really interested to hear your perspectives on this and how this is shaping wider society, what may be some of the detrimental impacts of one of the great efficiencies that we're seeing with the technological age?

**Professor Andreas Hoepner:** The key point in this age is really giant information asymmetries and even bigger knowledge asymmetries. If I record this correctly on GitHub for 30 months and not a single person of the US Defence Service actually



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was looking into this particular hacker that pointed that out afterwards on Twitter, on Hecho one gets premiums from companies like Facebook up to twenty thousand dollars and is very happy doing that from India. But that's nothing to what some of the tech investors would be expecting. So we're having a joint knowledge disadvantage. If you look at Hecho on the types of hackers that are there, the money they're getting is virtually nothing compared to the damage that happens when the hack occurs. So we really in a situation where pretty much all the data in the world is available to us, or at least to some of us, and those with money could hire people to help. But people don't really connect the dots and know where they need to look. Certainly not Xanthi exposed. They'll figure it out a few days later. And to take the aspect of addiction intensified, which is one way to abbreviate these days with a social challenge. So the addiction intensified, algorithms would be relatively easily controllable from a technical perspective, if you just let someone really financially independent into the design to say it's not OK to have a child that shows this type of behaviour and is already mentally somewhat unstable, and you're posting the things that will keep them longest on your platform, but probably just gets them down that rabbit hole. As a society, we do need to define boundaries. And then we do need to arrive at some form of financially independent audit mechanism. And I stress financially independent, because if you get things paid by the tech firms to go in and to look at the algorithms, then not much is happening other than great PR.

Take the example of Facebook and child suicide. Nick Clegg famously went on the BBC and endorsed a charity whose view was that it's fine to leave them online because they help you with problematic cases. Obviously, the charities seemed quite likely to have been funded by Facebook if you looked it up. So in essence, we if we can establish financially independent audits of key algorithms and I'm sure this will take a decade, because it's not as easy as it sounds by any means. And we can establish a couple of simple decision rules that can be implemented by technical experts in the same way that we do it with the airline industry. I think that's the best example in the airline industry. The industry itself, of course, has an incentive to cut costs, but the people that actually regulate them and check them technically have the same level of knowledge and they have ensured safety over time. And I think that is where we need to get to, in particular when it comes to news feeds. And I





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personally agree with you, the link to news feed is way too useful to. But even and I would stress this, this is a minor thing and but even the autofill on Google. It's kind of the smallest little bit of a news feed you put a word in and depending on which city you are, depending who you are, you get a result different out of it.

All these little things effectively entice our behaviour and in that sense, make a solicitation for our time. To look at finance, when a retail investor gets a proposal from an estimate there are rules that the media has to follow, not to sell them the dream, magic deep learning algorithm that gets five to eight percent return every year and eventually is morally bankrupt. And in essence, when they make offers for our time in the same way that they make offers for someone's money, then we need protections for our time and for our mental health in the system also. I believe that especially in B2C. I think there needs to be very clear guidance of which principles have to be adhered to.

**Kerrie Waring:** The panel that we're going to have on regulation is going to touch on market abuse and protection of privacy and behaviour later. But you touched on the influence of algorithms. I'm really interested to hear Brian's perspective on this in terms of big data and in terms of the fact that many investors have actually set up data science teams. I think APJ or CPPIB have done it. How has it changed the way in which you approach your investment decisions practically, but maybe perhaps psychologically as well? Be interesting to hear about that.

**Brian Christiansen:** I think the short answer is that that for us, it hasn't changed much. Quite frankly, we actually have internal phraseology that we're old fashioned investors in a changing new world order. What we're trying to do is find a select group of businesses that we think can grow much faster and for much longer than the market anticipates. And when you find it, we want to own it for a really long period of time. So if we can own a business for 10, 15 plus years, we will. And it's a fundamental bottom up driven process which requires a lot of judgment. And so we have a 50 person investment team and we only invest in about one hundred and thirty five businesses. We try to add a layer of data and intelligence, but it's really to inform that judgment making process rather than replace it. And in many ways, we



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do see systemic risks that can be associated with a replacement of judgment with algorithms. So that's not something that that we intend to do. But we do think that that is driving more volatility in the markets. Volatility can create opportunity and a great business, but it can also create a lot of day to day noise, so to speak. We have a little bit of a different take on where we are investing in data science. We are investing in new sources of data. That budget line item, whether it's data warehousing, business intelligence, all of that, all of those things are growing significantly at our firm. But at the centre, what we do is still people and judgment for our investment decision making. And I don't see that changing.

**Kerrie Waring:** I guess it comes back to Andreas's point as well, around the need for competence and education for the market generally so that we're all more sophisticated about how to engage with companies on these issues. And we've got a few questions, Andrius, a quick one from Anna: There are hundreds of frameworks on A.I. Ethics. Which was the one that you mentioned?

**Professor Andreas Hoepner:** I mentioned the Asilomar AI principles, which is kind of a meta framework.

May I briefly comment on Brian's previous point? I absolutely agree that it needs to be informed rather than replace. And I think when we have that when we have the abbreviation EHI there three meetings. One is artificial intelligence that really happens. That is really just marketing. The next one is augmented intelligence that is empowering the human. That is the informed rather than replace. And then the third one is, addiction intensify, the problematic one. To highlight the level that currently is happening in practice; if you take all the corporate governance indicators that the audience might know from MSCI, from various other providers assessments, before you can essentially test the financial market materiality, both upside and downside of these indicators regularly at any point in time so that you get immediate clues when the structure of the financial market, means that suddenly dual voting shares are a much bigger problem in this kind of sector. In this kind of legislation, the data science enables you to go beyond, Jigsaw goes into very specific activities as we demand from the green taxonomy. So a lot of what actually is called I in reality is augmented



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intelligence. And it simply means that you have a generation of tools that are a lot better than just downloading data and making judgments. You essentially get indicative suggestions of where the opportunity is for you as a human, to prioritize your time so you can look at something that may be interesting. So a lot of the very interesting leads that you might have followed five, 10 years ago, hopefully you wouldn't have to follow nowadays with the data centre system.

**Kerrie Waring:** Di, building on from that point, how competent do you feel by boards are in in the adoption of AI and embracement of all of that? What are they practically doing?

**Di Rifai:** I think it differs quite widely because it depends on the business model that they have got. I would say from my observations, talking to other board directors and chairmen, that they have an awareness that AI can be a tool, that they need to look at it as part of their business model and how it can be used. But the question is, again, as Andreas pointed out, there is a wide range within AI, which is used as a monolith term to describe a lot of different kinds of algorithms, if you want to kind of simplify it. And what algorithm applies to which business, where? I don't think that happens at the board level, that kind of conversation, there's more of a reliance on the CTO to kind of make those decisions.

The board is more likely thinking about challenging the strategy around that, which is appropriate. You do not want to get into conflict with executives on this. But I do think that education on A.I. needs to rise within boards so that they can understand the externalities of A.I. as much as the AI technology itself. Because it's not just a technology decision. You have to think about the data. You have to think about how you use the data. More importantly, you must think about who it replaces within your organization. How many people are going to get made redundant as a result of AI or automation and whose responsibility is it to retrain them? Do we just throw them out there, does the government help or do we do something to help them migrate? So there are decisions around that stakeholder concept within the universe that need to occur. And I'm not sure we were that advanced yet on boards.



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**Kerrie Waring:** It would be interesting to know to what extent do investors engage with companies on the digitalization strategy? How does that align with the long-term direction for the companies? Focus on your key stakeholders. We should maybe think about that more deeply. Now, we've got some questions piling up here. So I'm going to start from the top, from Paul Driver and I'll move this to Brian. Isn't one of the key points on data that users are not the customers, i.e. those who pay with cash, but all the product being sold and influence, perhaps without the education yet to fully understand that or the regulation to make algorithms transparent? What do you think about that? I guess it's to the behavioural collection point without even realizing it. What more should you be doing as an investor, Brian, when you talk to companies about this? And what more should the market and regulators be doing in that area?

**Brian Christiansen:** I think about it in two ways. Increasingly we all agree that users want more control of the of their data and privacy settings, and that includes, who their data is shared with and how it's used. But if you feel like you have an appropriate amount of control, there's still a large part of the population that is willing to work with it within that context, to trade off for free, useful services. Facebook, for example, the user numbers and user engagement is still pretty powerful and it's still growing. And to me, one of the things about that demonstrates is, at least for now, people are willing to make some sort of a trade-off. Now, the flip side is, is there is a growing number of people that are concerned and change on the margin matters. And so what is either going to happen is those companies who use an advertising based model are going to have to refine it to build trust.

Or there's going to be alternative models that end up winning, and what's fascinating is that we do we are seeing a lot of innovation in alternatives to the ad based business model, primarily around subscriptions. So, for example, in this in this sort of start-up space, we see companies like Patreon, they are helping artists and creators to earn a monthly living through subscriptions or companies like some stock, which are empowering writers to monetize content not through advertising, but actually through a subscription. So the innovation cycle is coming in order to help solve some of these some of these challenges and arm entrepreneurs and arm creators arm



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content makers with an alternative model. And so if the traditional advertising model doesn't evolve itself, it's our view that that we're going to see these alternative models and we think there's room for both. But it's going to involve mitigating those externalities for the advertising model to ultimately have a long-term place. And so those are the types of things that we're engaging companies about.

**Di Rifai:** Brian made some really great points here. What you are seeing is that where that externality can occur, you have these models that go to a premium so that people who don't want to share their data pay a premium and then people who can't afford or don't want to or are happy to share their data, don't pay a premium, don't pay a subscription. What you find occurring is people who can afford to pay, i.e. the better off people end up having privacy, whereas people who can't afford to pay the poor and vulnerable, end up getting advertised at in bulk. So we have to be careful with these emerging innovations and how the unintended consequences of these actions bear out. We don't end up in this kind of multi universe where you have inequality rise rather than going down.

**Kerrie Waring:** I think what you're both discussing is addressing the question from Robert Wigley, which asks, shouldn't I have a new principle requiring investors to engage on harm caused by the some of these online services?

I know that we see change through regulators and in market through coalitions. We saw it with the Human Capital Management Coalition. We saw it with climate action 100 plus. And so I do wonder whether we should have a coalition of investors engaged with big tech on some of these specific issues to get more traction. Thinking about how we have that engagement with them would be a start.

Let me move on to a question from Vanak. Many consumers are addicted to digital offerings. Therefore, how can we balance the so-called power monopoly in the hands of the tech giants like Facebook and Google and minimize the gains from these strong hands? Address this concentration of power. What can we do about it? But to Brian's earlier point, he sees the market as increasingly dynamic. What's your view?



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**Professor Andreas Hoepner:** My view is that we're talking about knowledge and that the concentration of power, because I assume you put someone, say Rupert Murdoch, in charge of Google. I think you'd see a very different type of behaviour and you might not see the power being that powerful for that long. So it's really the concentration of knowledge that is key here. Certain individuals may or may not necessarily be formally that powerful, but if they're practically very knowledgeable and the whole system depends on them, then the system will operate at least temporarily to their interest so that in the tech systems, that results in preferential treatment.

I'd like to briefly mention extending governance into managing top executives also. Interestingly, chief information officers are important but the second most useful are chiefs of H.R. because engaging with your people and training them not to get fixed is also very important. So I believe as important as power is, it is really a knowledge aspect in the in this digital age, especially as we move more from simple I.T. to advanced financial data science, where small teams of knowledgeable people can easily outperform hundreds, if they are effective, i.e. they do the right thing and the other guys don't really know what to do.

**Kerrie Waring:** Knowledge is power in a way. It takes me back to *The social dilemma* point where Twitter says there are around 10 guys in Silicon Valley who are basically creating these algorithms with, influence or behaviour.

**Professor Andreas Hoepner:** I agree. If I can just jump in on that. Knowledge is power. But mostly what we have is legal structure. And a kind of the theoretical view on corporate governance. I think in the way we assess corporate governance; we have to look more at the practice of the actual governance rather than just at the theory of the policies, and knowledge is my personal knowledge which may be limited, not encoded in the corporate governance ratings that I'm familiar with.

**Kerrie Waring:** We've talked a lot about the social aspects. What about the environmental impacts? It's pretty notable that the big six companies have published





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net zero targets. But it's also notable that their data centres are primarily based in developed markets where fossil fuel fuels are heavily used. So, Brian, how do you square up the conversation with companies around environmental footprint and the use of fossil fuels?

**Brian Christiansen:** This is actually an area where a lot of the big tech companies have been investing more meaningfully and have long term targets to continue to do so. It is an important topic. Data centre usage is about one percent of electricity usage globally, but it's one of the fastest growing contributors to electricity usage. Each company is a little bit different in terms of their profile of data centre. So for example, Facebook and Google have a larger proportion of their data centres in developed markets vs. emerging markets. But for Microsoft and Amazon, given their cloud infrastructure businesses, a higher proportion on a relative basis is in emerging markets. And the challenge there, as you were alluding to, is there's less existing renewable pools of energy in those in those markets. So essentially the companies are doing a number of things. The first is they're signing these power purchase agreements to finance renewable projects and buy renewable energy that they can sell back into the energy grids wherever their data centres are operating. At Facebook and Google because of the footprint, they're already matching one hundred percent and at Microsoft and Amazon they're not there yet, but they've committed to matching one hundred percent of their energy usage to renewables by 2025.

And to complement those purchasing, purchase power agreements for renewable energy, companies are also either purchasing carbon offsets or increasingly, investing in carbon removal projects, which are required to get to net zero. Most of these companies are already carbon neutral via paying for offsets and they've set targets to become net zero. So Microsoft was the first that committed to be net zero by 2030. And they're actually doing direct investments in carbon removal projects. Facebook followed suit with the target by 2030. With Amazon, it's a little bit more challenging for them because of their fulfilment network, but they're targeting net zero by 2040. The larger your infrastructure is in emerging markets; it does make it a



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little bit more difficult, but all of these companies have targets for 100 percent renewable energy in the in the foreseeable future.

**Kerrie Waring:** Di, what's your experience of how boards are incorporating and actively overseeing the incorporation of sustainability related targets such as net zero?

**Di Rifai:** It depends, again, which board company we're talking about; the existing tech companies versus the companies that are going towards tech, I would say. Can I broaden this slightly by saying that the taxonomy of ESG at the moment, the E bit of ESG is actually very "industrial age" because we look primarily on the planet and earth, but increasingly we have an issue in space. So we have a ton of debris now in space. Apparently 60 percent of what's out there in orbit of the of Earth is actually debris. And that raises a very interesting issue about all the space companies and the starling's of the world that are sending tons of satellites out and there is no real international governance that dictates the space area and says who can pollute and who can't pollute. So it's almost like we're having the ocean plastics problem happening all over again, out in space now. It's that tragedy of the commons where nobody wants to pay for it unless it's enforced and there is no one government that dictates it. And so this idea of where it sits in ESG needs to be slightly broadened now to incorporate a digital age where there are other environmental issues to think about besides just the pollution of Earth. That's a point that we need to think about.

The other thing is, you have a trade-off, like Brian just mentioned, where you have these companies who are doing incredible things on the environmental front and making very big commitments, yet on the societal front, they're actually doing some harms. In an ESG framework, how do you balance when one company's very good on one front, when you have ratings, but those ratings don't necessarily always take the digital aspect into the G bit. So how are we balancing these trade-offs in a way that gives us something very actionable at the end, something that is meaningful at the end? And to answer your original question on boards, I think boards are across the board being pressured to think about the E bit. In fact, if you think about ESG, it's primarily driven by E, and the S and G trail. So there's not a board out there. It'd be



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surprising to find a large company board that isn't very actively involved in thinking about ESG especially the E bit of ESG. So I would say people are on a pathway there and the pressure will continue. And board members, I think, are increasingly expressing our TCFD requirements and everything else. It's hard to stay in the dark on this, but the S and G are still lagging a little.

**Professor Andreas Hoepner:** I'd love to reach Carbon Neutral and Net zero academically. Isn't it funny how a company like HSBC says we've been Carbon Neutral since 2005 and will be near zero by beyond 2030, and Microsoft really has to be praised because they're the only ones owning up to that. Microsoft are the only ones having a public block from Brad Smith saying, yeah, we are carbon neutral, but we actually find out that doesn't mean that much. We really need to get to net zero. And as many others, we oversold our carbon neutrality. We never really worked. So I think Microsoft is actually very, very good at it when it comes to electricity demand.

There is a much more giant government problem in the tech industry, and that's Bitcoin. Whoever started Bitcoin – and we do not even know that, is way more polluting than any of the top five companies. I also understand Brian's point of the actual set up. Bitcoin, Ethereum and the whole of crypto is a giant and an entirely needless pollution exercise. So if your friends to look at the work of Demos and others from Berkeley and Chicago will nicely document that, I have very significant concerns about the polluting implications of crypto and then even more so, the governance of it, people naively are walking to Bitcoin and saying, oh, but they can't increase the money supply like the Fed could. Well, you don't even know who runs it. So, yes, they could increase the money supply every time. They haven't done it yet. But you don't even know who Nakamoto is. Could be a person, could be many, could be a Secret Service Agency, could be anyone. So the only speculation, the only plausible scenarios of Nakamoto is probably anyone benefiting from Bitcoin. And then there is a whole range of people or organizations that could be Bitcoin. We are trying to trace back to the very first mention of Bitcoin anywhere on the Web to get a closer idea of where that is. So I really think when we're talking environmental, then it's the governance of cryptocurrency that is hugely important and in particular Bitcoin, because with Ethereum you know who it is. And they have policies. With



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Bitcoin nothing of that is known. And Tesla has made a giant bet on Bitcoin, so Tesla gets a little bit implicated on that one.

**Kerrie Waring:** I think you just set us up for our next conference; The governance of crypto.

**Kerrie Waring:** We're coming to the end of the hour. this is such a huge leap, a broad subject, and we are now flying into conversations around sustainability. But can we just bring it back to technology and the digital transformation of our world from an investment perspective, what is the burning thing that you think we need to prioritize going forward to help bring about a safer place, given all of the concerns we've expressed on this panel?

**Brian Christiansen:** I take it back to the conversation we were having earlier, and I think I said it best, looking into the externalities and the industrial age. We've been doing a little bit of that already in the digital transformation age, but anticipating more, being ahead of it, identifying what those externalities are, and then bringing those into management discussions and boardroom discussions, I think that is that is key. The answer is going to be a little bit different for each company because of how homogeneous the digital transformation is across industry sectors and geographies. It's not going to be a one size fits all. Also, in many ways that that means it's going to be a more complex, more specific, deliberate discussion that each management team, each company, each industry, each government is going to need to have. And we've got to start now because it's got to be moved up that priority curve.

**Di Rifai:** There's a bubbling up of innovation around this idea of what we do about the societal implications, and that's eventually finding its way to boards as a much-filtered version. I do think we need to get better intelligence about those things. There is a big discussion right now about the purpose of the company in a new world order. And that conversation links into what we're talking about here because companies are trying to find their way in this new world order; what is their role? What is their contribution to society and its stakeholders? There is this jockeying almost between what governments used to be perceived to do through the industrial



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age as it took over education systems and health care systems and energy systems and all kinds of other systems. And now companies with this privatization agenda have now taken on more of those kinds of societal responsibility. And the question is, where is the balance going to come out? And so there needs to be, as Brian said, multiple conversations because not everyone will land at the right line or shade of grey in all of this.

You've got individualistic societies in the US that will draw the line one place and then you've got more socialistic societies like ours in Europe that will draw the line in a different place. But companies and their boards have a really big role to play here in challenging and questioning what their effects are even in in in the slimmest version possible. Still, because they're accountable to consumers, they're accountable to talent, to their employees. And if they want to attract the best talent and keep it, then they need to do things. And investors hopefully will be like multiple Brian's out there, talking this kind of story to their companies. If we get all those stakeholders together opining on those responsibilities, then I think we end up in the right place and boards will listen. So I hope that that's where we end up.

**Professor Andreas Hoepner:** We need a financially independent audit mechanism for information feed algorithms selling to minors. We protect minors and everything TV. We protect it in various aspects. We protect adults in financial services. So we really need to protect our children online. And that means auditing the algorithms that sell to them. And I believe that audit has to be financially independent. It's time for audits to not be paid for by the hand that feeds them. That is a general point, but that's really the one overriding aspect of all of them.

And in addition, if you want to do a Bitcoin event, I think that's a great idea of governance, of cryptocurrency. But the main central point we need is that independent audit mechanism for the eyes that sell in particular to minors.

**Kerrie Waring:** Thank you. And that's a very serious point to conclude on, and it does make me reflect that I think ICGN perhaps could be doing more serious thought around these issues.



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