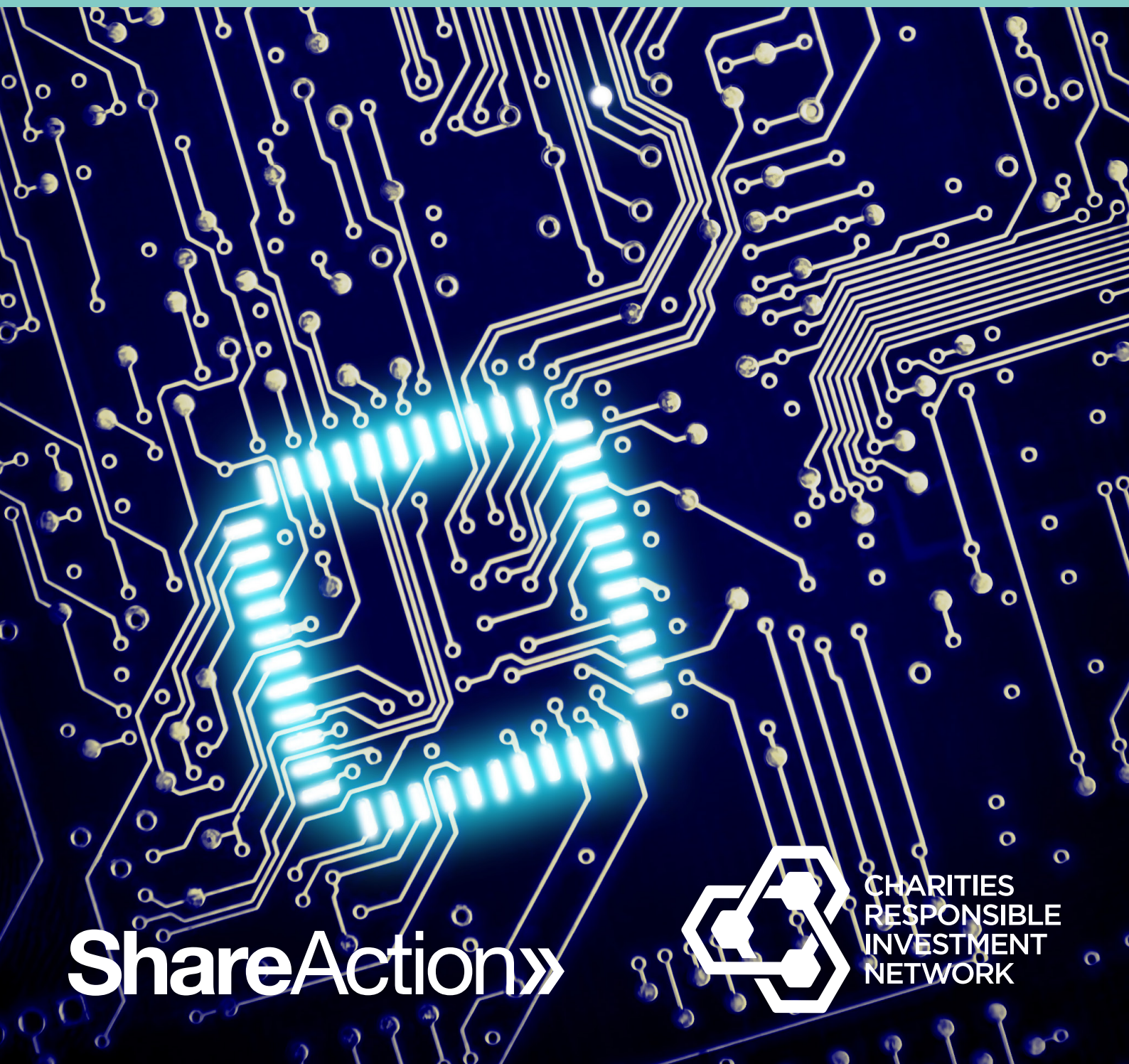
Do Androids Dream of Responsible Investment?

Exploring responsible investment in the age of information



ShareAction»

CHARITIES RESPONSIBLE INVESTMENT NETWORK

Acknowledgements

Our thanks go to the five experts who kindly agreed to be interviewed for this briefing. Their expertise and input was invaluable for developing this briefing.

Benedict Dellott (Centre for Data Ethics and Innovation)
Christine Chow (Hermes Investment Management)
Ionna Noula (Internet Commission)
Jonny Shipp (Internet Commission)
Julian Huppert (Jesus College, Cambridge)

About ShareAction

ShareAction is a non-profit working to build a global investment sector which is responsible for its impacts on people and planet. We mobilise investors to take action to improve labour standards, tackle the climate crisis, and address pressing global health issues, such as childhood obesity. Over the last 15 years, ShareAction has used its powerful toolkit of research, corporate campaigns, policy advocacy and public mobilisation to drive responsibility into the heart of mainstream investment. We want a future where all finance powers social progress.

Visit shareaction.org or follow us @ShareAction to find out more.

About the Charities Responsible Investment Network

The Charities Responsible Investment Network supports charity investors to further their mission through responsible investment. It supports members by fostering a community of practitioners, providing in-depth research into environmental, social and governance (ESG) topics, delivering training tailored to Network members' interests and needs, and facilitating a range of optional engagement activities with selected companies and other entities across the investment chain.

Author

Isobel Mitchell
Senior Officer – Networks
isobel.mitchell@shareaction.org

Disclaimer

Introduction	4
Bias and discrimination	5
Manipulation and influencing behaviour	11
Big tech: Market dominance	17
Automation and the future of work	18
Conclusion	21
Ask your asset manager	22

Introduction

The five biggest companies in the world today are technology companies. In 2018, Apple became the first trillion dollar company, and they are now joined by Microsoft and Amazon. This small handful of companies define the 21st century experience and marketplace, and touch every aspect of our daily lives – both business and leisure. They facilitate how we communicate (Facebook), to how we spend our spare time (Netflix), shop (Amazon), travel (Uber), as well as provide the tools that help us do all this (Google, Microsoft).

The rise of technology companies and their services has not only been profitable for investors, but also brings enormous societal opportunities; improving healthcare, making services cheaper and more accessible, and contributing to climate solutions.

Recently however, technology companies have come under fire for their negative impacts on society - from the proliferation of fake news on social media platforms, to biased and discriminatory algorithms magnifying existing societal inequalities.

The Cambridge Analytica scandal - in which Facebook, the world's largest social media platform, allowed a political data firm access to private information on more than 50 million unknowing users in order to target them with political advertising - showed that these serious ethical concerns bring reputational and regulatory risks, which can be financially material.[1]

These concerns are particularly challenging for investors to address. This is firstly due to the unique structure and governance of technology companies, where it is common for the CEO or founder to retain superior voting rights. This means that conventional methods of investor engagement are challenging. Secondly, understanding the sector can require technical knowledge, which can make it difficult for investors to understand and therefore engage on these issues.

Against this backdrop, this briefing for the Charities Responsible Investment Network (CRIN) aims to give an overview of some of the key investment risks emerging from the technology sector, and to empower asset owners to engage their asset manager(s) on these risks.

This briefing covers bias and discrimination, manipulation and influencing behaviour, market domination and automation. These topics are not intended to provide a comprehensive overview of the many sprawling and interrelated issues emerging from the technology sector, but were raised as areas of particular concern by members of the CRIN. The briefing brings together desk-based research, case study examples of investor action, and interviews with leaders in the field. Throughout the piece we provide sample questions, to support asset owners to ask their asset manager(s) about the emerging responsible investment risks relating to the technological revolution. Some initial questions are:

Ask your asset manager(s):

What research are you doing internally to learn about the evolving risks surrounding technology?

Have you published any research or articles that formalise your views and priorities for these risks moving forwards? What are you doing to act on these?

Bias and discrimination

Artificial intelligence (AI), the ability of computers to perform tasks commonly associated with human beings, has revolutionised many aspects of daily life. AI makes decisions for us about which route to take, which emails are spam, and what news we see. AI is also used to make less everyday decisions, such as who gets arrested, hired, or diagnosed.[2, 3, 4]

Although AI systems are often represented as bringing impartiality and objectivity to decision-making, this is not always the case. In fact, it might be more accurate to think of them as "an opinion embedded in mathematics".[5] One of the main concerns around the widespread use of AI is the potential for these systems to be biased, therefore leading to discriminatory decision-making and unfair outcomes at scale. Investors should be concerned that, without the correct governance interventions, the rise of AI has the potential to perpetuate and worsen existing inequalities.

Machine Learning, the ability of machines to learn from their own 'experience' and without being explicitly programmed for each action, is the current most widespread application of AI. Machine learning algorithms are able to analyse and detect correlations between data – lots of it – in order to make predictions.

Machine learning may use formal data, facts like our date of birth or address, but it increasingly also includes informal data. Dr Christine Chow, Director and technology sector lead at Hermes Investment Management explains:

"Because of search engines and social media becoming more popular, we have now created a lot of informal data for ourselves that reflects our behaviour and who we really are as a person beyond the factual information we give to the world. That could be Facebook likes, it could be our browser fingerprint, it could be the way we interact with our phones. All of this is being heavily studied and used by many companies."

A 2019 report by Hermes Investment Management, 'Investors' Expectations on Responsible Artificial Intelligence and Data Governance', identifies three potential sources of bias in AI systems: input bias, process bias, and outcomes bias.[6]

AI systems are trained on data that reflect the historical and current biases and inequalities in society – for example, greater male representation in high-paid jobs (input bias). Input data is then fed into a model designed by humans (process bias), which creates outputs which are interpreted by humans (outcomes bias). In this way, bias can arise both through data which contains the results of historic biases, and through present human cognitive biases when they interact with AI systems. Christine Chow suggests that the latter biases are harder to eradicate from systems.

"Input bias is the kind of bias you realise you have in your sample then you adjust that data sample. The bias you cannot diversify away from is when it involves human judgement, which is rooted very deeply in our consciousness or sub-consciousness; it could be political views, it could be religious views, it could be Brexit."

In the case of machine learning, the outputs sometimes get recycled as input data, creating a feedback loop. Because of this, AI systems are inherently not neutral and have the potential to amplify human biases, leading to injustice and discrimination at scale.

Case study: Rekognition

Artificial intelligence is increasingly being used in facial recognition technologies for law enforcement and security purposes. Facial recognition technologies promise to increase efficiency in these sectors by identifying people in crowds, when this would otherwise have to be done manually by human staff. However, there are mounting concerns about their potential to exacerbate race and gender biases and discrimination (see Box 1: Hikvision).

In 2019, Amazon faced two shareholder resolutions relating to their facial recognition technology, Rekognition, which can identify, track, and analyse people in real time and recognise up to 100 people in a single image. The first resolution asked Amazon to prohibit sales of Rekognition to government agencies, citing concerns about racial profiling and other human rights violations. The second called for the board to commission an independent report into the threats to civil and human rights posed by the technology.[7]

The resolutions were filed following research that suggested that the technology is biased and inaccurate; disproportionately misidentifying minorities and women, and potentially exacerbating biases in law enforcement and security systems. One test found that Rekognition misclassified women as men 19% of the time, and darker-skinned women for men 31% of the time.[8] In another, Rekognition disproportionally misidentified 28 African-American and Latino members of the US Congress as people in criminal mug shots.[9]

Despite concerns surrounding Rekognition, Amazon has aggressively marketed the product to police departments and federal agencies,[10] and reports suggest the technology is used by at least two US law enforcement departments, and has been pitched to the US Immigration and Customs Enforcement agency (ICE).[11, 12]

Mary Beth Gallagher, Executive Director at Tri-State Coalition for Responsible Investment, said in a press release: "Shareholders are deeply concerned by the serious chilling effect of surveillance on immigrant communities and on all of us, including the ways in which this technology can be used by government to instil fear, prevent people from accessing the services they need, and perpetuate racism."[13]

Amazon itself recommended shareholders vote against the resolutions, arguing that "new technology should not be banned or condemned because of its potential misuse" and that users bore responsibility for adhering to strict usage rules.[14] However, the largest proxy advisor firms, ISS and Glass Lewis, recommended shareholders support the resolution calling for an independent report. In their written rationale for this recommendation, ISS wrote that Amazon "may be lagging its peers" because it has "not developed rules for bidding on government contracts, has not formed an artificial intelligence ethics committee and has not announced partnerships with civil liberties organizations."[15]

Amazon's stance contrasts with that of their competitor, Microsoft, who has called for government regulation of facial recognition technology, and refused a request from a US police department to install facial recognition technology in officers' cars and body cameras, citing human rights concerns.[16]

Despite the positive recommendation from ISS and Glass Lewis, both proposals were voted down, receiving 2.4% and 27.5% support respectively. As is common in technology companies (see Box 2: Share structure), Amazon's founder and chief executive, Jeff Bezos, retains a large portion of the company's stock (16%) and voted against the proposals, therefore determining a large portion of the vote.[17] Nevertheless, the resolutions could easily have passed, had more shareholders used their vote to challenge Amazon on their stance on facial recognition.

Michael Connor, Executive Director at Open MIC – a non-profit organisation that works to foster greater corporate accountability at technology companies through shareholder engagement – said that "shareholders - especially large institutional shareholders - need to press Amazon on this critical issue by raising their concerns with management and voting their shares. There's a lot at stake."[18]

Ask your asset manager(s):

How did you vote on proposals 6 (Prohibit Sales of Facial Recognition Technology to Government Agencies) and 7 (Report on Impact of Government Use of Facial Recognition Technologies) at Amazon's 2019 AGM, and what were your rationales for the voting decision?

Box 1: Hikvision

Hikvision, the world's largest surveillance company, supplies cameras and facial recognition systems to 're-education' camps in Xinjiang, Western China, where an estimated one million Uighur Muslims are being held. In October 2019, the US Commerce Department blacklisted Hikvision on grounds that the company is implicated in human rights violations against Muslim minorities in Xinjiang.[19] The blacklisting does not prevent US investors from buying the shares in Hikvision however, which is included on MSCI's benchmark emerging markets index – an index tracked by $1.9tn of assets.[20]

Ask your asset manager(s):

What specific measures are you taking to ensure that investee technology companies' services are not being used to suppress individual human rights or liberties, especially where they operate in China or another country where there is extreme government censorship or control?[i]

Box 2: Share structure

It is common for technology companies to adopt multi-class share structures that allow founders and CEOs, and sometimes their family members, to retain superior voting rights. For example, Google and Facebook's founders own shares with ten-to-one voting rights, and public ride-sharing app Lyft's co-founders have shares with twenty-to-one voting rights, giving them close to a majority control of voting power (49%), despite owning less than 5% of total shares.

The use of unequal voting rights violates the principles of corporate democracy and deprives public shareholders of a meaningful voice in how a company is run, removing critical checks on corporate decision-making. It also means that shareholder resolutions filed at tech giants who use multi-class shares face a tough challenge to win majority support, unless the founder or top executives are on board. This makes engaging with technology companies in conventional ways challenging, and increases the importance of regulation and shareholder engagement with regulators.

In an attempt to curb these unequal share structures, investors have filed shareholder resolutions calling for 'one share, one vote'. In 2019, these were filed at Facebook (24.5% for) and Alphabet – Google's parent company – (30.1% for) amongst others.

Ask your asset manager(s):

How did you vote on the 'Approve Recapitalization Plan for all Stock to Have One-vote per Share' resolutions at Facebook (resolution 5) and Alphabet (resolution 4), and what were your rationales for these voting decisions?

i The Joseph Rowntree Charitable Trust engaged their asset managers on this and other related questions. You can find further information about the engagement here. The Charities Responsible Investment Network has also produced an investor briefing on oppressive regimes, including questions to ask asset managers, which can be found here.

Recommendations

The potential for AI systems to exacerbate existing biases and reproduce discriminatory practices erodes trust between consumers, regulators and technology companies. This can threaten the long-term value of technology companies, as they risk their social and regulatory licenses to operate, as well as regulatory fines and litigation costs. Investors are well placed to engage on the topic through the lens of stewardship and long-term sustainable corporate development. They can be key players in encouraging companies to assess and mitigate any negative societal impacts of AI systems before they are deployed.

Hermes Investment Management's report on Responsible Artificial Intelligence established five expectations for engaging with technology companies on the societal impacts of their technology.[21] These include:

> **Explainability:** A company should explain its use of AI in understandable language (e.g. explaining why users are seeing certain targeted adverts). Transparency reduces the asymmetry of information held between a company and its stakeholders, and is therefore vital for building trust with users.
>
> **Oversight:** A company should have the capability to thoroughly understand the risks and opportunities presented by AI and identify different parties that should be responsible for the impact of AI (e.g. a dedicated ethics committee), putting human safety as a priority over revenue and profit.

Based on his own experience in the independent oversight committee of a healthcare technology company, Dr Julian Huppert, Director of the Intellectual Forum at Jesus College Cambridge, suggested that one way of finding out whether a technology company has the correct oversight and governance is whether it trusts people enough to allow an independent audit.

"Companies often don't like to adopt more transparent oversight systems because they see it as risky. And they're right to see it as risky, because oversight should be risky. At the moment, the technology sector is not trusted: Facebook have a catastrophic problem with trust and use of Facebook is down in the US and UK. Investors should want to see companies allowing this sort of independent report."

Julian Huppert suggests investors should ask companies:

- "Do they have an ethics committee that meets in secret every now and then and has no teeth – which is the standard model – or do they have one which is free to report publicly on criticisms?
- "If using machine learning, what steps are they taking to ensure that the input data is representative and free from bias?
- "For companies that do anything in biometrics (e.g. facial recognition), what are they doing to make sure it can't be abused by anybody?"

Ask your asset manager(s):

What are your governance expectations of investee companies who are developing AI systems? This could include:

- Adherence to global standards for responsible AI development,
- Board-level ethics expertise,
- An independent ethics committee which reports publicly.

How have you engaged with companies developing and using AI systems to ensure that these systems are not leading to biased or discriminatory outcomes, especially around biometrics (such as facial recognition)? This should include long-term goals and an escalation plan, as well as case studies.

Manipulation and influencing behaviour

Every day, 2.5 quintillion bytes of data are created. This includes 3.5 billion Google searches, 600 million tweets and 300 million photos uploaded to Facebook.[22] Everything we do online - from googling the nearest café to liking a friend's post on Facebook - leaves a digital trace. These clues to our daily lives are compiled into enormously detailed customer profiles that allow online platforms such as Facebook and Google to deliver highly targeted advertisements on the basis of characteristics such as location, demographics, interests and behaviour. Christine Chow says:

"We have a lot of data brokers out there that collect information about people so that they have a full picture of who you are - not just where you live and where you were born but also how you behave, how you react to things, what buttons to press in you to make you click."

The ability of Google and Facebook to offer advertisers 'microtargeting' tools has driven advertising revenues for the companies, with Facebook collecting 97% and Google 88% of overall revenue from advertising.[23] This is the business model Shoshana Zuboff coined as 'surveillance capitalism': The collection and commoditisation of personal data, using pervasive digital surveillance, as the core source of income for these companies.

To maximise the number of advertisements we see, and therefore their revenue, Facebook and Google have an incentive to keep users on their platforms as often as possible and for as long as possible. The platforms do this in two ways:

- Using algorithms to personalise user experience based on their online profile, and
- Designing addictive features into their platforms.

We will now turn to exploring the impact that these methods, as well as targeted advertising itself, are having on society.

Personalised content

To keep us on their platforms and viewing adverts for as long as possible, social media platforms and search engines use algorithms to actively show us more of what we like, and obscure content we don't want to see, based on our past engagements with the platform in the form of 'clicks' or 'likes'.

This restricts users' exposure to diverse perspectives on news and current events, creating 'echo-chambers' or 'filter-bubbles'. Filter-bubbles give the impression that a certain point of view is more widely held than may be true in reality, which can influence users' perception of the world and may make them more likely to believe misinformation and fake news.

Personalised content algorithms have also been shown to promote increasingly extreme and sensationalist content - including abusive, discriminatory or hateful content – as this content receives more user engagement, such as shares and comments (both positive and negative), therefore attracting users to the site more often and for longer.

One study by Zeynaep Tuflcki into YouTube recommendations found that, regardless of the subject, the platform's algorithm recommended ever more extreme videos for users to watch upon completing their current video.[24] For example, watching videos on vegetarianism led to the algorithm recommending videos on veganism, while jogging videos prompted recommendations for ultra-marathons. For political videos, both right and left wing, the recommendations trended towards conspiracy theories.

Jonny Shipp, Founder and Project Lead at the Internet Commission – which has developed an independent framework for assessing and benchmarking technology companies' content governance systems and procedures – believes that decisions around online content have a fundamental impact on society:

"The Internet Commission started by asking 'what are the social impacts of technology, and what should people be concerned about and companies more accountable for?' We found that many of the issues that came out of that question could be traced back to decisions about online content."

Designed addiction

The second way platforms aim to capture our attention for as long and as frequently as possible is by building features into their apps that are designed to make them addictive. These features often mirror the techniques used in casinos and slot machines. One example is the 'pull to refresh' feature common on social media app news feeds, where pulling the screen downwards prompts the feed to refresh. Just like pulling the lever on a slot machine, this feature exploits users' attraction to unpredictability. Jonny Shipp told me:

"Designed addiction is, I think, a fundamental problem. The internet is an amazing place with information, freedom of expression and great empowerment in lots of different ways, but it had to find a business model, and the one it chose is based on highly targeted advertising. In order to make this business model effective, companies design their services to be addictive. Their primary purpose has become to grab your attention and sell you to advertisers. The cause of the problems we now face is that business model's effect on society."

As the negative health effects of their products become more widely known, big tech is being compared to the 'new tobacco', except that instead of damaging our lungs, it damages our mental health.[25] Digital addiction has been shown to interfere with young people's education and sleep, and contributes to increased levels of anxiety and depression – even putting young people at higher risk of suicide.[26, 27] In May 2019, the World Health Organization created a new

classification of "gaming disorder" to describe a pattern of gaming behaviour characterised by impaired control, prioritising gaming over other daily responsibilities, including attending school or work and keeping social appointments.[28]

Case study: Apple and iPhone use

Like tobacco, technology companies are increasingly finding themselves in the cross hairs of investor pressure for their harmful effects on society. In January 2018, Jana Partners and the California State Teachers' Retirement System (CalSTRS), wrote to Apple urging the iPhone maker to develop software tools that would help parents control and limit phone use more easily, and to consider the impact of overuse on mental health.[29] In a nod to the regulatory clampdown, litigation and reputational damage that has plagued the tobacco and oil sectors, the investors warned that "companies pursuing business practices that make short-term sense may be undermining their own long-term viability."

Apple addressed Jana Partners and CalSTRS concerns by introducing a feature that allows parents to set time limits on the use of certain apps, as well as providing users with summaries of how long they have spent on their devices. The investors welcomed Apple's move toward meeting the challenge of screen addiction and praised the company for its ethical leadership.[30]

Targeted advertising

Targeted advertising deliberately and covertly exploits our decision-making vulnerabilities to achieve the highest probability of influencing our decisions. In theory, digital surveillance and targeted advertising makes it possible for banks to target high-interest loans at online users experiencing financial difficulties, or for pharmaceutical companies to target drug advertisements at those suspected to be in a health crisis.

Although the most direct harm associated with commercial targeted advertising is that it diminishes individuals' economic interests, one academic paper claims that the "deeper, more insidious harm is [targeted advertising's] challenge to individual autonomy".[31] The authors add:

"By deliberately and covertly engineering our choice environments to steer our decision-making, online manipulation threatens our competency to deliberate about our options, form intentions about them, and act on the basis of those intentions . . . Online manipulation thus harms us both by inducing us to act toward ends not of our choosing and for reasons we haven't endorsed."

The covert and manipulative nature of targeted content is particularly concerning in the case of political advertising, which rose to prominence after concerns were raised in 2016 and 2017 about the use of social media to influence voters around the world, including in the UK Brexit referendum and US presidential election. Between May 2018 (when Facebook made data on political advertising spend publicly available) and November 2019, one third of the 18 biggest customers for Facebook's advertising system were affiliated with political campaigns, with Donald Trump being the platform's biggest customer during that window, spending $21.5m on adverts.[32]

Harnessing the same mechanisms and tools of persuasion used for the purposes of commercial advertising, political campaigns can exert meaningful influence over voters' political opinions. This includes the use of 'microtargeting' to create highly personalised messages, which can entrench belief systems and "[create] a curated worldview inhospitable to pluralistic political discourse", leading Amnesty International to conclude that political advertising online can threaten the right to freedom of expression.[33] Beyond the harm to individuals, political advertising therefore promises a collective harm, threatening our democracy as well as our autonomy. Such online manipulation is therefore not simply an ethical problem, but a social and political one too.[34]

Case study: Alphabet and Facebook content governance

In 2018 and 2019, Alphabet and Facebook both faced shareholder proposals asking the companies to issue reports detailing their strategies and policies for how they govern the content on their platforms, and the extent to which they address the financial and reputational risks posed by content management controversies. Controversies listed included election interference, fake news and the spread of hate speech and violence.

Neither company supported the resolutions, which received 5.7% of the votes at Alphabet and 6.9% at Facebook in 2019, down an average of 5% from similar resolutions in 2018, despite positive recommendations from ISS and Glass Lewis on the resolutions at Alphabet and Facebook respectively.

Ask your asset manager(s):

How did you vote on proposals 16 (Report on Policies and Risks Related to Content Governance) and 9 (Report on Content Governance) at Alphabet and Facebook's 2019 AGMs respectively, and what were your rationales for these voting decisions?

Box 3: Discrimination in targeted advertising

Targeting by advertisers and political parties using Facebook and Google's platforms has been shown to profile users in sensitive and discriminatory ways. Examples of categories used to target (or exclude) users include 'under 18', 'lower 50% income bracket', 'interested in addiction treatment centres' and 'sexual orientation'. Such profiling inherently seeks to differentiate between people based on personal characteristics, beliefs and behaviours.[35]

In 2019, Facebook settled five lawsuits with civil rights groups who accused the social media platform of facilitating discriminatory practices in housing, employment, and credit advertising, by allowing businesses to exclude certain users from seeing adverts based on characteristics such as race, gender and age.[36] The lawsuits claimed that Facebook was allowing advertisers to prevent older users and women from seeing certain job adverts, and users with children from seeing certain housing adverts.

As part of the $5m settlement, Facebook said that it would create new rules that restrict job, credit and housing advertisers from targeting users based on age, gender or zip code. However, these measures only apply to advertisers based in or targeting people in the US, meaning users in the rest of the world are still at risk of discrimination in those areas.

Recommendations

In 2019, a group of 49 investors, led by the Investor Alliance for Human Rights, delivered a statement to 22 technology companies.[37] The statement urged the companies to use the Ranking Digital Rights (RDR) Corporate Accountability Index as a tool to help them improve their governance systems and performance on human rights risks related to privacy and freedom of expression.

In 2020, the RDR methodology will expand to address human rights harms associated with targeted advertising and algorithmic decision-making systems. The RDR Winter 2020 Investor Update includes useful questions for investors to ask investee companies concerning targeted advertising and algorithmic systems. Key examples include:

1. Does the company conduct human rights impact assessments on processes for policy enforcement, targeted advertising, and algorithmic decision-making systems?

2. For targeted advertising, does the company clearly disclose how advertisers can target users through its platform or service, what targeting parameters are available to advertisers, and whether there are categories of users that advertisers are prohibited from targeting?

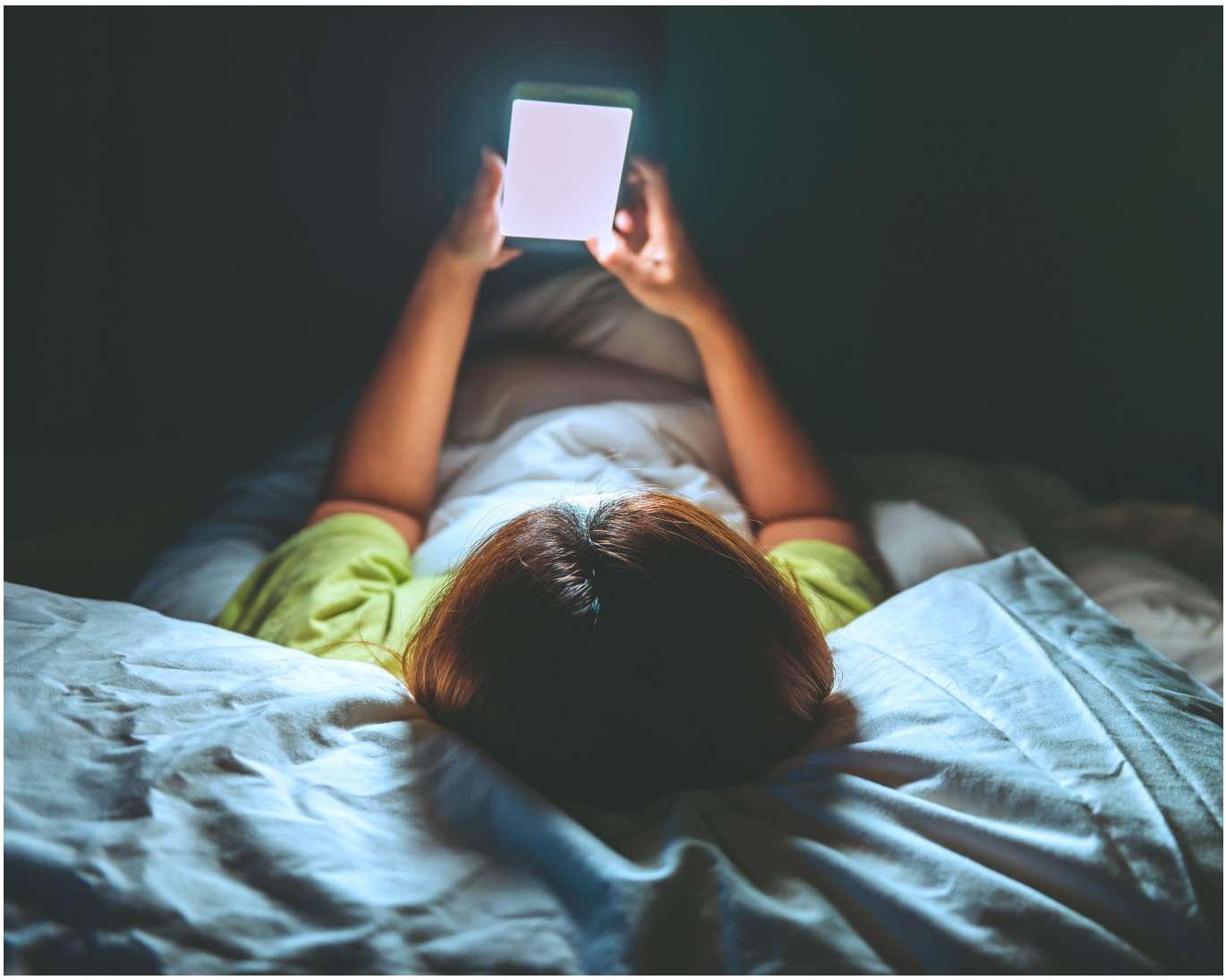
3. For algorithmic decision-making systems, does the company clearly disclose how online content is curated, ranked, or recommended?

Ask your asset manager(s):

Do you encourage technology companies to collaborate with independent third parties on their content governance? This could include the Internet Commission's process for benchmarking internal systems and procedures for deciding which online content to promote, investigate or remove.[ii]

Do you consider designed addiction in technology companies' products and its negative societal effects, especially on younger users, in your engagements with investee companies?

Will you use the RDR Winter 2020 Investor Update questions and the forthcoming results of the 2020 RDR index to inform your stewardship activities with technology companies?



ii The Internet Commission's current cohort of reporting partners includes a major broadcaster, a global games platform, a children's social media network, a global dating service and a leading education technology provider. To find out more, please see inetco.org or contact Emma Hoksbergen, Project Lead, on Emma.Hoksbergen@inetco.org.

Big tech: Market dominance

A small number of technology companies have dominated their niches: Facebook and Facebook-owned companies dictate the social media and messaging landscape, googling has become synonymous with online searching, and Amazon controls online shopping. These 'big tech' companies have achieved such dominance through acquisitions. Google has, to date, acquired 240 companies (averaging one a week in 2010 and 2011) while Facebook has consumed over 80.[38, 39] Acquisitions can help technology companies expand into new markets, eliminate start-up competition, and access other companies' data or personnel.

This means that some technology companies have become bigger than both investors and regulators are used to dealing with. Today, seven of the top ten companies by market capitalisation are technology companies.[40] Technology companies and their services are developing faster than regulators can respond.

Notably, no country has yet sought to split up big tech companies for contravening anti-trust law. This is partly because their platforms are free to use and they therefore do not constitute a monopoly by the conventional definition, which focuses on dominant companies' impact on the consumer, and partly because they often acquire start-ups which are too small to attract regulatory attention.

Big tech companies do demonstrate monopolistic behaviour, however: One example is Amazon's use of their position as a dominant buyer to push prices down with suppliers, as was seen in their public dispute with the major publishing house Hachette. Following a contract disagreement, Amazon - which controls 50% of book sales across the US and 83% of all e-book sales - disrupted sales of Hachette's books by preventing customers from pre-ordering Hachette titles, reducing the discounts it offered, and delaying the shipment of Hachette books for up to a month.[41] Amazon's aggressive tactics prompted outrage from almost 1000 authors who signed a petition demanding Amazon stop using writers as hostages in its negotiations. The group, Authors United, also took out a full-page advert in the New York Times attacking Amazon's actions.[42]

Such dominance brings regulatory, as well as reputational, risk: Elizabeth Warren's 2020 presidential campaign promised to split up 'big tech', and in July 2018, the EU Commission fined Google £3.8 billion for using its Android smartphone platform to secure dominance of its search engine.[43] Given the reputational, regulatory and legal risk of 'big tech' outgrowing itself through aggressive mergers and acquisitions strategies, or abusing their power as dominant buyers, investors should be engaging with these companies on how they are respecting competition and anti-trust norms.

Ask your asset manager(s):

What are your expectations for companies' competition and mergers & acquisitions policies, and what actions would you take if a company failed to meet these?

How are you assessing regulatory or litigation risk of big tech companies getting too big?

Automation and the future of work

Rapid advances in technology, including the use of AI and physical robotics, are changing the future of work. As technology develops, millions of workers in every sector may be impacted by automation – i.e. technology completing tasks which were previously undertaken by humans, such as autonomous vehicles. A widely cited McKinsey Global Institute study projected that between 75 and 375 million people (up to 14% of the global workforce) may need to change occupation and acquire new skills by 2030 due to automation.[44]

Jobs most likely to be automated in the short-term are physically predictable jobs in manufacturing, agriculture and transport, and low-level service sector roles. This will affect both men and women, with PWC data suggesting that women will be more at risk of being affected until the late 2020s as administrative tasks are automated, and men being more at risk in the mid 2030's, when machines such as autonomous vehicles replace manual tasks where male representation is higher.[45] Julian Huppert says:

"Autonomous vehicles are going to be a massive societal change. It's likely to be the largest area with effect on employment. There are roughly one million people in the logistics business and professional drivers in the UK. That is one million jobs that will suddenly go within a few years. Once you have the technology, getting rid of the driver is fantastically helpful – not having to stop and go back to where the driver started from, etc. - so those jobs will go rapidly."

However, Benedict Dellot, Head of AI Monitoring at the Centre for Data Ethics and Innovation, and previous Head of the RSA's Future Work Centre, told me that automation is more nuanced than it appears on the surface.

"When you start to look more closely at how automation works, you begin to see that it plays out in strange and unexpected ways. In fact, what people describe as automation often isn't automation at all. Sometimes machines just pass work onto consumers, for example in the form of self-service checkouts. In other cases, there are people sitting behind the scenes doing work that we thought was automated. Take digital content moderation, where you have thousands of individuals, often overseas, looking through content on YouTube trying to decide whether it is inappropriate content, which is a horrible job to do. This work is invisible to most of us, but it isn't automated."

In fact, most studies predict that the automation is likely to create more jobs than losses, both over short and long-term predictions. Many of these studies look to past technological improvements to predict future impact on jobs. For example, the McKinsey study points to how previous technological improvements have led to increased efficiency and therefore more leisure time, facilitating new jobs in entertainment, sport and DIY. An OECD report reflects on how the introduction of ATMs to replace bank tellers actually led to more bank tellers being employed, whose roles evolved to include a wider variety of services, including advising customers on different products.[46] As the UK Government's briefing on the impact of automation on jobs says, technological improvements do not lead to long-term unemployment; instead, the types of work change as roles evolve and new tasks emerge.[47]

Because of this, Dellot argues that investors should prioritise addressing other ways in which technology is shaping the future of work and the effect this has on workers' rights and quality of jobs.

"In the near-term, the problem is not that technology will eliminate jobs but rather than it could undermine them, making them less secure and meaningful. We can already see AI being used to transform recruitment, power surveillance and inform workplace scheduling – impacts that are more subtle, easily hidden, and which can play out in nearly every workplace. That's where the greatest change is likely to be felt in the near-term, and that's where the efforts of shareholders, policymakers and activists should be focused. And there are quick wins to be had. For example, large employers should be encouraged to undertake bias checks on the recruitment algorithms they use, and to agree with workers how they use AI-powered surveillance technology. That's not asking much from companies."

Dellot uses the example of gamification in gig platforms – app-based platforms which employ short-term contract workers, such as Uber and Deliveroo – to demonstrate one of the less sensational but more pervasive issues surrounding technology and work.

"Gamification uses behavioural nudges to get workers to behave in ways they otherwise wouldn't, and which they may not be conscious of. At least one ride hailing company gives drivers rewards, such as fuel discounts, for achieving a set number of rides each month. This plays on how humans are wired and quite deliberately gets them to keep logging on, to keep working. These kinds of tiny design tricks aren't a necessary feature of gig apps - they're something the platforms have decided to install. It's difficult to draw a line here between what's ethical and what's not, but at a minimum we should be keeping an eye on gamification."

Of gig economy platforms generally, Dellot urges for a case by case approach to companies:

"Lumping them together is not helpful: the gig economy is big and it's multifaceted. It includes everybody from low paid cleaners and drivers, all the way through to lawyers who use platforms to find freelance consulting work. You could have a very healthy, valuable, beneficial gig economy, but you also might have one that's very disempowering for the workers, depending on the regulations that are in place and the exact design of these platforms."

Investors should therefore focus on ensuring that companies are protecting workers' rights and the quality of jobs as technology shapes the future of work, both through providing re-training and up-skilling for workers whose jobs will become obsolete, as well as ensuring that existing jobs, and new jobs created by automation (such as content moderation and gig work), are secure and meaningful.

Ask your asset manager(s):

How are you engaging with companies to ensure that workers' rights and the quality of jobs remain a central consideration when introducing technology for the purpose of recruitment, surveillance or scheduling? For example:

- Are companies undertaking bias checks on any recruitment algorithms they use?
- Are companies agreeing with workers about how they use AI-powered surveillance technology?

What are your expectations for how gig platforms treat their workforce? How do you engage with gig platforms to ensure that they are creating a gig economy that is healthy and beneficial for their workers?[iii]

How are you engaging with companies on the impact of automation on their workforce and ensuring that work is secure and meaningful, including re-training and up-skilling workers where possible?

iii As yet, there are no clear standards for what constitutes a healthy and beneficial gig economy for workers and thinking in this area is very much developing. However, common themes include:
- Fair pay, i.e. a wage that truly meets the costs of living (e.g. the real Living Wage standards in the UK);
- For workers not to be misclassified as self-employed (which restricts workers from accessing rights such as sick pay);
- Greater control over how workers' personal data is used;
- The right to collective bargaining.

Some examples of standard setting for gig work include the Taylor Review - which recommends removing the income floor for access to sick pay, and introducing a right to request guaranteed hours - and doteveryone, who are calling for a legal obligation on gig platforms to pay a Minimum Gig Wage.

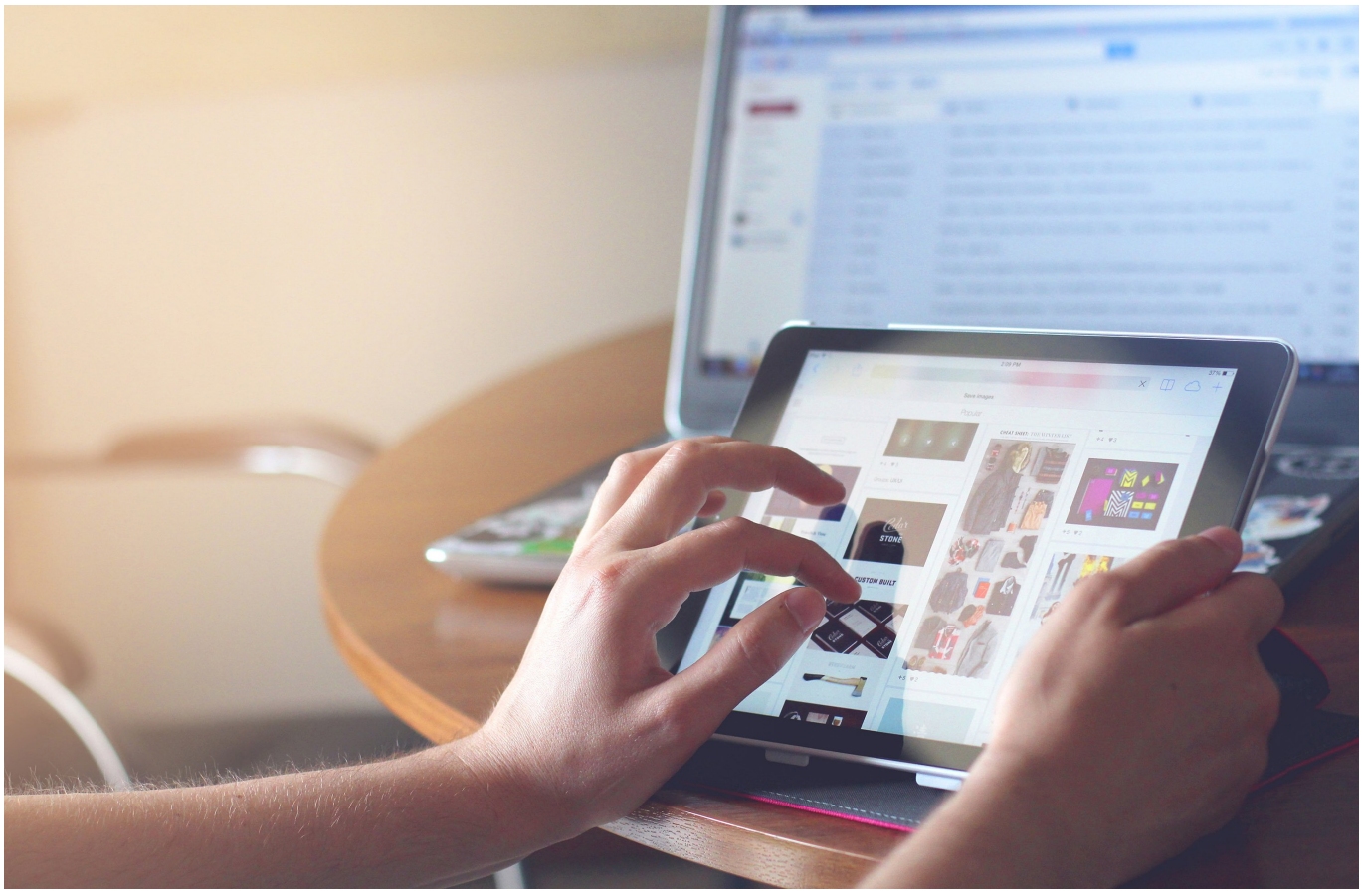
Conclusion

Technology sector companies are both some of the largest in the world, and a major source of growth, accounting for 19% of new IPOs since 2010.[48] The sector also falls outside of traditional ethical/SRI screenings, meaning that technology companies are likely to have a heavy weighting in many charity investors' portfolios.

Historically, the sector has avoided scrutiny from the responsible investment community, due to the 'black box' nature of its products and services, the perception that technical knowledge is required to engage, and the consistently healthy returns.

This briefing has outlined some of the social and governance issues emerging from the technology sector as it grows and develops. These issues are sprawling, interrelated, and range from the immediate (e.g. Hikvision) to the long-term and systemic (e.g. automation). Instead of attempting a comprehensive account of all of the issues, we have aimed to provide a sense of the range and breadth of issues related to the technology sector, and to point towards case studies of responsible investors beginning to grapple with them.

With the aim of empowering asset owners such as CRIN members to engage their asset manager(s) on these issues, we have provided recommended questions throughout this briefing. These questions are collated in full below, in a format intended to make it straightforward for asset owners to send on to their managers. We hope that they provide a basis for constructive dialogue with your asset manager(s) on ambitious engagement with the technology sector.



Ask your asset manager

Initial questions

What research are you doing internally to learn about the evolving risks surrounding technology?

Have you published any research or articles that formalise your views and priorities for these risks moving forwards? What are you doing to act on these?

Bias and discrimination

How did you vote on proposals 6 (Prohibit Sales of Facial Recognition Technology to Government Agencies) and 7 (Report on Impact of Government Use of Facial Recognition Technologies) at Amazon's 2019 AGM, and what were your rationales for these voting decisions?

What are your governance expectations of investee companies who are developing AI systems? This could include:

- Adherence to global standards for responsible AI development,
- Board-level ethics expertise,
- An independent ethics committee which reports publicly.

How have you engaged with companies developing and using AI systems to ensure that these systems are not leading to biased or discriminatory outcomes, especially around biometrics (such as facial recognition)? This should include long-term goals and an escalation plan, as well as case studies.

What specific measures are you taking to ensure that investee technology companies' services are not being used to suppress individual human rights or liberties, especially where they operate in China or another country where there is extreme government censorship or control?

Share structure

How did you vote on proposals 4 and 5 (Approve Recapitalization Plan for all Stock to Have One-vote per Share) at Alphabet and Facebook's 2019 AGMs respectively, and what were your rationales for these voting decisions?

Manipulation and influencing behaviour

How did you vote on proposals 16 (Report on Policies and Risks Related to Content Governance) and 9 (Report on Content Governance) at Alphabet and Facebook's 2019 AGMs respectively, and what were your rationales for these voting decisions?

Do you encourage technology companies to collaborate with independent third parties on their content governance? This could include the Internet Commission's process for benchmarking internal systems and procedures for deciding which online content to promote, investigate or remove.

Big tech: Market dominance

What are your expectations for companies' competition and mergers & acquisitions policies, and what actions would you take if a company failed to meet these?

How are you assessing regulatory or litigation risk of technology companies getting too big?

Automation and future of work

How are you engaging with companies to ensure that workers' rights and the quality of jobs remain a central consideration when introducing technology for the purpose of recruitment, surveillance or scheduling? For example:

- Are companies undertaking bias checks on any recruitment algorithms they use?
- Are companies agreeing with workers about how they use AI-powered surveillance technology?

What are your expectations for how gig platforms treat their workforce? How do you engage with gig platforms to ensure that they are creating a gig economy that is healthy and beneficial for their workers?[iv]

How are you engaging with companies on the impact of automation on their workforce and ensuring that work is secure and meaningful, including re-training and up-skilling workers where possible?

iv As yet, there are no clear standards for what constitutes a healthy and beneficial gig economy for workers and thinking in this area is very much developing. However, common themes include:

- Fair pay, i.e. a wage that truly meets the costs of living (e.g. the real Living Wage standards in the UK);
- For workers not to be misclassified as self-employed (which restricts workers from accessing rights such as sick pay);
- Greater control over how workers' personal data is used;
- The right to collective bargaining.

Some examples of standard setting for gig work include the Taylor Review - which recommends removing the income floor for access to sick pay, and introducing a right to request guaranteed hours - and doteveryone, who are calling for a legal obligation on gig platforms to pay a Minimum Gig Wage.

References

All accessed on 18th March 2020

1 Wigglesworth, R., Kuchler, H., Cornish, C. (2018). *"Facebook shares plunge by a fifth after growth warning,"* Financial Times. Available online at: https://www.ft.com/content/d0639b96-90d3-11e8-b639-7680cedcc421

2 Polonski, V. (2018). *"AI is convicting criminals and determining jail time, but is it fair?"* World Economic Forum. Available online at: https://www.weforum.org/agenda/2018/11/algorithms-court-criminals-jail-time-fair/

3 Dastin, J. (2018). *"Amazon scraps secret AI recruiting tool that showed bias against women,"* Reuters. Available online at: https://www.reuters.com/article/us-amazon-com-jobs-automation-insight/amazon-scraps-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK08G

4 Martin, N. (2019). *"Artificial Intelligence Is Being Used To Diagnose Disease And Design New Drugs,"* Forbes. Available online at: https://www.forbes.com/sites/nicolemartin1/2019/09/30/artificial-intelligence-is-being-used-to-diagnose-disease-and-design-new-drugs/#107de4c444db

5 O'Neil, C. (2018). *"The Truth About Algorithms,"* RSA. Available online at: https://www.thersa.org/discover/videos/rsa-shorts/2018/the-truth-about-algorithms--cathy-oneil

6 Hermes Investment Management (2019). *Investors' Expectations on Responsible Artificial Intelligence and Data Governance.* Available online at: https://www.hermes-investment.com/ukw/wp-content/uploads/2019/04/investors%E2%80%99-expectations-on-responsible-artificial-intelligence-and-data-governance.pdf

7 Amazon (2019). *Notice of 2019 Annual Meeting of Shareholders*. Available online at: https://ir.aboutamazon.com/static-files/35fa4e12-78bd-40bc-a700-59eea3dbd23b

8 Singer, N. (2019). *"Amazon Is Pushing Facial Technology That a Study Says Could Be Biased,"* The New York Times. Available online at: https://www.nytimes.com/2019/01/24/technology/amazon-facial-technology-study.html

9 Snow, J. (2018). *"Amazon's Face Recognition Falsely Matched 28 Members of Congress With Mugshots,"* ACLU. Available online at: https://www.aclu.org/blog/privacy-technology/surveillance-technologies/amazons-face-recognition-falsely-matched-28

10 https://www.aclu.org/blog/privacy-technology/surveillance-technologies/amazon-teams-government-deploy-dangerous-new?redirect=blog/amazon-teams-law-enforcement-deploy-dangerous-new-facial-recognition-technology

11 Cagle, M., Ozer, N. (2018). *"Amazon Teams Up With Government to Deploy Dangerous New Facial Recognition Technology,"* ACLU. Available online at: https://www.aclu.org/blog/privacy-technology/surveillance-technologies/amazon-teams-government-deploy-dangerous-new?redirect=blog/amazon-teams-law-enforcement-deploy-dangerous-new-facial-recognition-technology

12 OpenMIC (2019). *Shareholders Press Amazon To Stop Selling Racially Biased Surveillance Tech to Government.* Available online at: https://www.openmic.org/news/2019/1/16/halt-rekognition

13 OpenMIC (2019). *A Win For Shareholders In Effort To Halt Sales of Amazon's Racially Biased Surveillance Tech*. Available online at: https://www.openmic.org/news/2019/4/4/a-win-for-shareholders-amazon

14 Amazon (2019). *Notice of 2019 Annual Meeting of Shareholders.* Available online at: https://ir.aboutamazon.com/static-files/35fa4e12-78bd-40bc-a700-59eea3dbd23b

15 Singer, N. (2019). *"Amazon Faces Investor Pressure Over Facial Recognition,"* The New York Times. Available online at: https://www.nytimes.com/2019/05/20/technology/amazon-facial-recognition.html

16 Menn, J. (2019). *"Microsoft turned down facial-recognition sales on human rights concerns,"* Reuters. Available online at: https://www.reuters.com/article/us-microsoft-ai/microsoft-turned-down-facial-recognition-sales-on-human-rights-concerns-idUSKCN1RS2FV

17 Reuters (2019). *Amazon facial recognition ban won just 2% of shareholder vote.* Available online at: https://www.cnbc.com/2019/05/25/amazon-facial-recognition-ban-won-just-2percent-of-shareholder-vote.html

18 OpenMIC (2019). *A Win For Shareholders In Effort To Halt Sales of Amazon's Racially Biased*

Surveillance Tech. Available online at: https://www.openmic.org/news/2019/4/4/a-win-for-shareholders-amazon

19 Donnan, S. (2019). *"U.S. Blacklists Eight Chinese Tech Companies Including Hikvision,"* Bloomberg. Available online at: https://www.bloomberg.com/news/articles/2019-10-07/u-s-blacklists-eight-chinese-companies-including-hikvision-k1gvpq77

20 Riding, S., Thompson, J. (2019). *"Chinese governance raises red flags," Financial Times.* Available online at: https://www.ft.com/content/10001b4c-82e8-11e9-b592-5fe435b57a3b

21 Hermes Investment Management (2019). *Investors' Expectations on Responsible Artificial Intelligence and Data Governance.* Available online at: https://www.hermes-investment.com/ukw/wp-content/uploads/2019/04/investors%E2%80%99-expectations-on-responsible-artificial-intelligence-and-data-governance.pdf

22 Marr, B. (2018). *"How Much Data Do We Create Every Day? The Mind-Blowing Stats Everyone Should Read,"* Forbes. Available online at: https://www.forbes.com/sites/bernardmarr/2018/05/21/how-much-data-do-we-create-every-day-the-mind-blowing-stats-everyone-should-read/#3b2bffee60ba

23 New Economics Foundation (2018). *Blocking The Data Stalkers: Going Beyond GDPR To Tackle Power In The Data Economy.* Available online at: https://neweconomics.org/uploads/files/NEF_Blocking_Data_Stalkers.pdf

24 Tufekci, Z. (2018). *"YouTube, the Great Radicalizer,"* The New York Times. Available online at: https://www.nytimes.com/2018/03/10/opinion/sunday/youtube-politics-radical.html

25 Cuthbertson, A. (2019). *"Facebook Is 'The New Cigarettes For Our Society', Says Tech CEO,"* Independent. Available online at: https://www.independent.co.uk/life-style/gadgets-and-tech/news/facebook-cigarettes-marc-benioff-salesforce-a9265756.html

26 Royal Society for Public Health (2017). *#StatusOfMind.* Available online at: https://www.rsph.org.uk/uploads/assets/uploaded/d125b27c-0b62-41c5-a2c0155a8887cd01.pdf

27 Twenge, J. (2018). *"Are smartphones causing more teen suicides?"* The Guardian. Available online at: https://www.theguardian.com/society/2018/may/24/smartphone-teen-suicide-mental-health-depression

28 World Health Organization (2018). *Gaming Disorder.* Available Online at: https://www.who.int/features/qa/gaming-disorder/en/

29 Sheehan, A. (2018). *"Letter from JANA Partners & CalSTRS to Apple, Inc.,"* Harvard Law School Forum on Corporate Governance. Available online at: https://corpgov.law.harvard.edu/2018/01/19/joint-shareholder-letter-to-apple-inc/

30 Bradshaw, T., Kuchler, H. (2018). *"Smartphone addiction: big tech's balancing act on responsibility over revenue,"* Financial Times. Available online at: https://www.ft.com/content/24eeaed6-8a7f-11e8-b18d-0181731a0340

31 D. Susser, B. Roessler, H. Nissenbaum, (2019) *"Technology, autonomy, and manipulation,"* Internet Policy Review, vol. 8, no. 2. Available online at: https://doi.org/10.14763/2019.2.1410

32 Holmes, A. (2019). *"From Trump to Planned Parenthood, these are the Facebook pages spending the most money on political ads,"* Business Insider. Available online at: https://www.businessinsider.com/trump-other-advertisers-spending-most-on-facebook-political-ads-2019-11?r=US&IR=T#1-donald-trump-19

33 Amnesty International (2019). *Surveillance Giants: How The Business Model Of Google And Facebook Threatens Human Rights.* Available online at: https://www.amnesty.org/download/Documents/POL3014042019ENGLISH.PDF

34 D. Susser, B. Roessler, H. Nissenbaum, (2019) *"Technology, autonomy, and manipulation,"* Internet Policy Review, vol. 8, no. 2. Available online at: https://doi.org/10.14763/2019.2.1410

35 Amnesty International (2019). *Surveillance Giants: How The Business Model Of Google And Facebook Threatens Human Rights.* Available online at: https://www.amnesty.org/download/Documents/POL3014042019ENGLISH.PDF

36 ACLU (2019). *Facebook Agrees To Sweeping Reforms To Curb Discriminatory Ad Targeting Practices.* Available online at: https://www.aclu.org/press-releases/facebook-agrees-sweeping-reforms-curb-discriminatory-ad-targeting-practices

37 Investor Alliance For Human Rights (2019). *Investor Statement on Corporate Accountability for Digital Rights.* Available online at: https://investorsforhumanrights.org/sites/default/files/attachments/2019-01/IAHR%20Statement%20on%20Digital%20Rights_Final%20%283%29.pdf

38 Crunchbase. *Google > Acquisitions.* Available online at: https://www.crunchbase.com/organization/google/acquisitions/acquisitions_list

39 Crunchbase. *Facebook > Acquisitions.* Available online at: https://www.crunchbase.com/organization/facebook/acquisitions/acquisitions_list

40 Desjardins, J. (2019). *"A Visual History of the Largest Companies by Market Cap (1999-Today),"* Visual Capitalist. Available online at: https://www.visualcapitalist.com/a-visual-history-of-the-largest-companies-by-market-cap-1999-today/

41 Ellis-Preston, H. (2014). *"Amazon and publisher Hachette end dispute over online book sales,"* The Guardian. Available online at: https://www.theguardian.com/books/2014/nov/13/amazon-hachette-end-dispute-ebooks

42 Flood, A. (2014). *"Bestselling authors take out full-page New York Times ad against Amazon,"* The Guardian. Available online at: https://www.theguardian.com/books/2014/aug/08/authors-ad-new-york-times-petition-amazon

43 Rankin, J. (2018). *"Google fined £3.8bn by EU over Android antitrust violations,"* The Guardian. Available online at: https://www.theguardian.com/business/2018/jul/18/google-faces-record-multibillion-fine-from-eu-over-android

44 McKinsey Global Institute (2017). *Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation.* Available online at: https://www.mckinsey.com/~/media/mckinsey/featured%20insights/Future%20of%20Organizations/What%20the%20future%20of%20work%20will%20mean%20for%20jobs%20skills%20and%20wages/MGI-Jobs-Lost-Jobs-Gained-Report-December-6-2017.ashx

45 PwC (2018). *Will robots really steal our jobs? An international analysis of the potential long term impact of automation.* Available online at: https://www.pwc.co.uk/economic-services/assets/international-impact-of-automation-feb-2018.pdf

46 Nedelkoska, L., G. Quintini, (2018). *"Automation, skills use and training,"* OECD Social, Employment and Migration Working Papers, No. 202, OECD Publishing, Paris. Available online at: https://doi.org/10.1787/2e2f4eea-en

47 House of Commons (2019). *Automation and the future of work.* Available online at: https://publications.parliament.uk/pa/cm201719/cmselect/cmbeis/1093/1093.pdf

48 Strauss, D. (2019). *"Goldman Sachs analyzed 4,481 IPOs over 25 years and concluded that these 5 attributes can make or break a newly public company,"* Markets Insider. Available online at: https://markets.businessinsider.com/news/stocks/5-most-important-factors-for-successful-ipo-performance-goldman-sachs-2019-9-1028507003#firm-age2

Disclaimer

ShareAction does not provide investment advice. The information herein is not intended to provide and does not constitute financial or investment advice. ShareAction makes no representation regarding the advisability or suitability of investing or not in any particular financial product, shares, securities, company, investment fund, pension or other vehicle or of using the services of any particular organisation, consultant, asset manager, broker or other service provider for the provision of investment services. A decision to invest or not or to use the services of any such provider should not be made in reliance on any of the statements made here. You should seek independent and regulated advice on whether the decision to do so is appropriate for you and the potential consequences thereof. Whilst every effort has been made to ensure the information is correct, ShareAction, its employees and agents cannot guarantee its accuracy and shall not be liable for any claims or losses of any nature in connection with information contained in this document, including (but not limited to) lost profits or punitive or consequential damages or claims in negligence.

Fairshare Educational Foundation (t/a ShareAction) is a company limited by guarantee registered in England and Wales number 05013662 (registered address 16 Crucifix Lane, London, SE1 3JW) and a registered charity number 1117244, VAT

shareaction.org
info@shareaction.org
+44 (0)20 7403 7800

16 Crucifix Lane
London,
United Kingdom
SE1 3JW

CHARITIES RESPONSIBLE INVESTMENT NETWORK

ShareAction»