THE CHURCH OF ENGLAND

Big Tech

The Policy of the Church of England National Investing Bodies and The Advice of the Church of England Ethical Investment Advisory Group





ETHICAL INVESTMENT **ADVISORY GROUP**

The Church of England Ethical Advisory Group provides independent ethical investment advice to the Church of England's three National Investing Bodies detailed below:



The Church Commissioners for England, who support the work and mission of the Church of England across the country.



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Foreword

Artificial Intelligence already affects almost every aspect of our lives. AI powers websites, Big Tech companies, commerce and research. AI is already being deployed in financial services, human resources, policing and social services. In general terms the deployment of artificial intelligence is running much faster than public awareness of the technology and good governance.

There is immense potential for good in AI and in Big Tech companies but this is combined with significant potential for harm to individuals and to societies. This has huge implications for responsible Christian investors.

Over the last five years there have been many attempts to identify sound principles to undergird the ethical development of new technologies. The OECD AI principles adopted in May 2019 are the most widely accepted summary:¹

- inclusive growth, sustainable development and well-being;
- human-centred values and fairness;
- transparency and explainability;
- · robustness, security and safety; and
- accountability.

The Rome Call for AI Ethics from February 2020, signed by Pope Francis and many others, calls for similar principles.²

The application of technology is developing rapidly. Responsible investors will need an awareness of this and of the considerable imbalances of power which are created by the scale of the Big Tech companies and the challenge of holding large multinational companies to account.

In this context, I warmly welcome this report from the EIAG which presents a helpful survey of the field and roots the discussion of the ethics of technology in the Christian tradition. I commend the principles outlined here and the need for ongoing

2. Pope Francis et al., *Rome Call for AI Ethics* (Rome, February 28, 2020), available at: https://www.vatican.va/roman_curia/pontifical_academies/acdlife/ documents/rc_pont-acd_life_doc_2020228_rome-call-for-ai-ethics_en.pdf.

further reflection on the impact of technology on all our lives.

Steven Croft is the Bishop of Oxford. He was a member of the House of Lords Select Committee on Artificial Intelligence and a founding Director of the UK Government's Centre for Data Ethics and Innovation.

^{1.} The OECD Artificial Intelligence (AI) Principles, available at https://oecd.ai/en/ai-principles.

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Executive summary

By Big Tech we mean the world's largest internet and technology companies such as Alphabet, Amazon, Apple, Meta, Twitter and Microsoft, as well as Alibaba, Baidu and Tencent. These are companies that in the last decade or two have spearheaded many of the most innovative developments in digital communications and artificial intelligence through the development and deployment of a large number of new technologies, such as machine learning, and the monetisation of personal data.

Our concern is not so much with company-specific issues as with certain themes that many of these tech companies have in common. These cluster around a business model which draws on the aggregation of very large amounts of personal data, the analysis of that data by algorithm-based machine learning methods in order to predict human behaviour, and the monetisation of these predictions. We choose this as the central theme of analysis of Big Tech because in our judgement this is an underlying dynamic of Big Tech companies which generates many of the other concerns often associated with them, from design choices that exploit users' vulnerabilities and behavioural biases to issues about data privacy, and from algorithmic bias to the problems of content moderation.

As complex technologies develop, as regulatory measures oscillate, as investor sentiment shifts and as public awareness of the human-scale impacts increases, the EIAG expects the tech ecosystem to continue to evolve. This Advice is therefore not intended to be a prescriptive final word but rather to set out high-level principles, grounded in the Bible and Christian theology, to allow the National Investing Bodies of the Church of England to steward their investment assets in this fast-moving sector in a way that is manifestly Christian.

Whilst these principles are derived from a reading of Scripture and of Christian theology and ethics, they are not only for the Church and for Christians. Christians believe that Jesus Christ is the one through whom the whole world was created and in whom it will be fulfilled. It follows that these principles describe understandings and commitments which are valid for wider society, for social, economic and political institutions, indeed for everyone.

- 1 Flourishing as persons. First, we are called to flourish as persons and to enable others to do so. We can understand the meaning of human flourishing by giving examples of its absence. Poverty, for example, implies a lack of flourishing, as do being enslaved or oppressed.
- 2 Flourishing in relationship. Second, we are called to flourish in relationship. The biblical vision of shalom is a profoundly relational one, in which nothing and no one exists by and of themselves, but only in relationship to others. Flourishing in community is the flip side of flourishing as persons: we are created not as individuals, but as persons for each other.
- 3 Standing with the marginalised. Third, we are called to stand with the marginalised. Jesus declares that he has come to bring good news to the poor, release to the captives, and freedom to the oppressed. There is a constant refrain throughout Scripture that God cares for the smallest, the weakest and the least powerful.
- 4 Caring for creation. Fourth, we are called to care for creation. There is a sense throughout much of Scripture that the natural world is not just inert matter, but is capable of praising God. This suggests that it is not only to be treated well because it is in human interests to do so, but that it is to be loved and cherished for its own sake.
- 5 Serving the common good. Finally, we are called to serve the common good. All of the different dimensions of shalom are encompassed within a holistic condition of peace and justice that is shared by all. It is a vision of the good that is held in common by all, from which all benefit and to which all contribute. It is a universal vision of the good, in which not only human beings participate, but also the whole of creation. The idea of the common good, an idea that is opposed to both individualism and collectivism, captures some of this sense.

In applying these five principles to our thinking about Big Tech companies, this Advice sets out a basic requirement that Big Tech companies take moral responsibility for the products and services they create, to ensure that these align with the five principles outlined above. In particular it recommends that the sector makes public commitments, including:

- a commitment to verifiable transparency;
- a commitment to promote humancentred design;
- a commitment to enable the flourishing of children and other vulnerable groups;
- a commitment to foster a tech ecosystem that serves the common good.

There need be no basic conflict between Big Tech companies doing the right thing ethically and doing what is in their and their shareholders' long-term interests. However, if they behave in ways that undermine public trust, they erode their public licence to operate, which in turn carries business risks and creates long-term implications for investor confidence. By contrast, to the extent that they enjoy and deserve public trust, they reward longterm investor commitment and make a genuine contribution to the common good.

The Policy of the Church of England National Investing Bodies



POLICY AMBITION

- 1 The National Investing Bodies (NIBs) of the Church of England have the ambition to be at the forefront of institutional investors' approach to responsible investment in "big tech", sensitive to and consistent with the ethical thinking of the Church of England. We are supported in this ambition by the Ethical Investment Advisory Group, who provide additional expertise to help navigate business, investment, ethical and theological considerations.
- 2 Big Tech companies have grown significantly in size and influence over the last 20 years, and are widely seen as a core part of more sustainable investment allocations. Currently (early 2022), Big Tech companies comprise approximately 13% of the global index and regularly appear in the top 10 holdings lists of the NIBs, and most institutional investors. They have the potential to constitute "systemic" risks and opportunities, and are therefore a significant focus for active ownership strategies.
- The NIBs have engaged directly with big tech companies for many years on topics including corporate governance, human rights, taxation, executive remuneration, and content moderation.² However we believe the variety, size, technical nature, and rapidly changing picture of these companies' impacts on society warrants dedicated responsible investment analysis, advice (provided by the EIAG), and a dedicated policy.

RATIONALE

4 Having considered and welcomed the EIAG's comprehensive Advice, the NIBs note the pervasive impacts (both positive and negative) of these companies on society. We note their (and our) moral responsibility in relation to those impacts, and commit to continue our active ownership in relation to "big tech" companies.

- 5 The advisory themes apply to target companies in different ways, and to different degrees at different times. Some themes, including for example the surveillance economy, are most relevant to only a subset of big tech companies. This has led us to emphasise the need for caseby-case assessment and **direct engagement**.
- 6 We note that due to the nature of some ownership structures, which limit the ability for asset owners to exert influence through voting rights, we therefore also commit to supporting improved **public policy and regulation** of big tech companies, consistent with EIAG advice, and support wider Church initiatives in this area.
- 7 We also emphasise our potential role in the development of relevant industry standards, particularly where regulation and policy are not yet in place. This is because we do not believe comprehensive industry standards exist for big tech companies, though we have contributed to some progress, for example investor expectations on big tech and human rights.³ We believe that investor involvement in industry standard setting reflects an opportunity for investors to drive change in an effective and efficient way.

APPROACH

8 Informed by the Advice and the five theological principles identified by the EIAG, our approach focuses on the following four overarching themes. In general, and consistent with best practice in responsible investment, we encourage companies to reflect on the impacts of their technologies, have robust policies and procedures which allow them to act on those reflective insights, and explain how the design and outcomes of their technologies have been controlled in a way that is consistent with

^{3.} Work on the expectations investors have of tech companies has been carried out by the Council on Ethics of the Swedish National Pension Funds and the Danish Institute for Human Rights. See "Tech Giants and Human Rights: Investor Expectations", January 2021, available at: https://www.humanrights.dk/ publications/tech-giants-human-rights-investor-expectations.

^{1.} See \P 4 of the Advisory paper for a description of the companies in scope.

^{2.} See ¶ 8 of the Advisory paper.

the four themes outlined below. We call on companies to demonstrate:

a. a commitment to verifiable transparency

From a user perspective, policies, terms and conditions, and consent processes should be clear, concise, and easy to find. Enhanced information related to impacts on users and society should be provided. Where possible, data on actual or potential impacts of new technologies on society should be made available.

b. a commitment to "humancentred design"

Safety and fairness for users should be prioritised, particularly in relation to algorithmic processes and outcomes. Ethical considerations, including the risk of adverse impacts on users and society, should be incorporated into company governance and risk management processes.

Users should have a choice over how algorithms and persuasive technologies impact their online experiences. For example, they should be able to turn off algorithms that curate their content feeds; provide recommendations or nudges; they should be able to switch off personalised advertising; and choose alternative recommendation systems.

Users should know how their data is collected, what it being used for, how it is aggregated and/or anonymised and how it is altered. Users should be able to exercise "data rights", such as the removal of personal data and portability between platforms.

c. a commitment to enable the flourishing of children and the vulnerable

Children and other vulnerable groups deserve enhanced protections. For example, in relation to social media, age verification, profiling (by both advertisers and algorithmic systems), nudges, addiction, and harmful content.

d. a commitment to foster a flourishing and well-governed tech ecosystem for the benefit of the common good Companies should establish Board responsibility for the ethical and social impacts of their business, particularly data and algorithmic systems.⁴

- 9 The NIBs, collectively, seek to address these topics through three strands of active ownership:
 - a. **Direct Engagement** involving identifying appropriate data points to assess and engage relevant holdings and to monitor company progress over time. Some data points exist, but some may need to be developed. This strand will involve company-by-company assessments, as well as acting in collaboration with other asset owners, as appropriate.
 - b. **Public Policy and Regulation** involving support for more effective regulation of big tech companies, consistent with the EIAG's Advice. This may include support for wider church initiatives that foster a culture of moral responsibility, assess tech impacts on society from a theologically informed perspective, and suggest steps to improve performance.
 - c. **Industry Standards** working with or forming/ leading global collaboration among investors to drive global standards of best practice and transparency in big tech. To date, in relation to big tech, we have been supporting global coalitions of investors active on Human Rights, content moderation, and artificial intelligence.

^{4.} See also The Church of England Ethical Investment Advisory Group (EIAG), "Human Rights", April 2021, available at: https://www.churchofengland.org/sites/ default/files/2021-05/EIAG%20Human%20Rights%20-%20web%20%281%29.pdf.

The Advice: Background

- 1 This Advisory Paper has been produced in response to a request by the Church of England National Investing Bodies to provide advice to enable them to act as distinctively Christian institutional investors in relation to Big Tech companies. It is intended (i) to offer theological and practical insight to help them understand how, where and why investing in Big Tech companies may or may not be consistent with Christian values; (ii) to contribute towards a shared public understanding of the role of tech in society; and (iii) to develop the basis in Christian ethics for investment policy decisions in relation to Big Tech.
- 2 This report was written in conjunction with and on the advice of the Mission and Public Affairs Council of the Archbishops' Council. It has been informed by a series of roundtables on theological and investment aspects of Big Tech, followed by three "ThinkIns" with leading independent experts hosted by Tortoise Media, and finally a meeting with Big Tech industry leaders hosted from Lambeth Palace by the Archbishop of Canterbury. A very wide range of opinions was expressed at these meetings: this report draws on these but makes no attempt to do justice to them all or to provide a comprehensive overview of them. A list of speakers at each event is listed in the acknowledgements at the end of this report.

WHAT WE MEAN BY BIG TECH

Big Tech is a name often informally used for 3 the world's largest internet and technology companies such as Alphabet (parent company of Google and YouTube), Amazon, Apple, Meta (parent of Facebook, Instagram and WhatsApp), Twitter and Microsoft, and (notwithstanding the rapidly shifting regulatory contexts) it also often includes Alibaba, Baidu and Tencent (parent of WeChat). These are companies which in the last decade or two have spearheaded many of the most innovative developments in digital communications, artificial intelligence, internet search, social media, cloud computing web services, and the like. This has involved developing and deploying a large number of new technologies, such as machine learning, and new business models, such as the monetisation of

personal data. Many other companies, notably telecommunications companies, use similar technologies and business models, but by virtue of their market dominance it is the tech giants that have attracted the most attention.

THE SCOPE OF THIS ADVISORY PAPER

4 The concern of this advice paper is not so much with company-specific issues, as with certain themes that many of these tech companies have in common. These cluster around a business model which is novel in drawing on the aggregation of very large amounts of personal data, the analysis of this data and associated metadata by algorithm-based machine learning methods in order to predict human behaviour, and the monetisation of these predictions, notably through marketing to advertisers. We will usually refer to it as the "attention economy' business model",³ "data extraction" or a "surveillance business model".⁴

3. In the 1970s, Herbert Simon, the Nobel Prize winning economist, noted that "in an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients." Herbert A. Simon, "Designing Organizations for an Information-Rich World" in Martin Greenberger (ed.), *Computers, Communication, and the Public Interest* (Baltimore, MD: The Johns Hopkins Press, 1971), pp. 37–72, at pp. 40–41. In 2017, Tim Wu asserted, "Human attention, valuable and limited in supply, is

a resource. It has become commonplace, especially in the media and technology industries, to speak of an 'attention economy' and of competition in 'attention markets'' and noted, "Firms like Facebook and Google, which have emerged as two of the most important firms in the global economy, depend nearly exclusively on attention markets as a business model." Tim Wu, "Blind Spot: The Attention Economy and the Law", *Antitrust Law Journal*, vol. 82, no. 3 (2019), available at: https://scholarship.law.columbia.edu/faculty_scholarship/2029/.

James Williams, winner of the Nine Dots prize, describes the attention economy as "the environment in which digital products and services relentlessly compete to capture and exploit our attention. In the attention economy, winning means getting as many people as possible to spend as much time as possible with one's product or service." James Williams, *Stand out of our Light: Freedom and Resistance in the Attention Economy* (Cambridge: Cambridge University Press, 2018), available at: https://doi.org/10.1017/9781108453004.

4. The language of "surveillance capitalism" derives from a much-discussed analysis by the Harvard Business School professor, Shoshana Zuboff, in *The Age* of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power (London: Profile Books, 2019). It should be noted that Big Tech companies contest the idea that their business involves surveillance, since that implies a lack

- 5 We choose this as the central theme of analysis of Big Tech because in our judgement this is an underlying dynamic of Big Tech companies that generates many of the other concerns often associated with them, from design choices which exploit users' vulnerabilities and behavioural biases⁵ to issues about data privacy, and from algorithmic bias to the problems of content moderation. These specific issues, and many others, are related to each other through this core method of creating value.
- 6 It should be noted that not all Big Tech companies currently depend on an attention economy or surveillance business model to the same extent. Apple, for example, while it has been subject to criticism for some of its business practices,⁶ has to date publicly eschewed many of the practices associated with data extraction and has made protection of user privacy one of its differentiating selling points. The focus of this review is on the core business of the collection, aggregation and analysis of data about people to make predictions that influence people's future behaviour. The way companies maximise their data collection, analysis and predictive technologies is likely to be the source of value creation in the medium to long term and will

have enormous influence over people and society across the world.

Not all activities by Big Tech companies are therefore of central concern for this advisory paper. Cloud-based infrastructure services, for example, have been the subject of heavy investment by Amazon, Microsoft and Google, and whilst there are privacy and environmental concerns,⁷ which the NIBs may engage with, these services are not a primary focus of this Advice.

- 7 However, whilst it is not easy to separate out the attention or surveillance aspects of tech companies from their other activities, it is expected that innovations in operating systems (such as Google's Android or Meta's Oculus operating system), embedded devices (such as Meta's VR headset or Amazon's Alexa) or Al technologies (such as Amazon's Lex) which enable the maximisation of data for commercial purposes will be relevant for this Advice.⁸ This does not mean however that the attribution in this paper of particular behaviours to "Big Tech" applies to all tech giants equally.
- 8 The Ethical Investment Advisory Group has published advice papers that are relevant for activities of Big Tech companies which are not discussed in this paper. Environmental issues such as planned obsolescence, the high energy

of consent on the part of the user. However, we will suggest below that, given the opacity of the terms of service to which the user consents, and in some cases the unavailability of realistic alternatives to the platforms, this consent is at best flawed. Informational capital has been defined as the tendency to perceive personal information as a basic resource (like energy), an essential input to the management of public and private enterprises, as the most reliable element on which to build safety enhancement and efficiency strategies, and as a commodity, exchangeable on the "information market".

^{5.} Concerns such as those from Guillaume Chaslot provided in evidence to the Joint Committee on the Draft Online Safety Bill: "The ideal algorithm when you are going through a bad period is one that tries to cheer you up, but the algorithms of many platforms are trying to keep you in this self-harm mentality when you have fallen into it... The tricky thing is that it does not give you what you want. It takes advantage of one vulnerable moment to try to recommend things that are harmful to you." Joint Committee on the Draft Online Safety Bill, "Corrected oral evidence: Consideration of government's draft Online Safety Bill", 14 October 2021, Q 101, available at: https://committee on the Judiciary, Subcommittee on Antitrust, Commercial and Administrative Law, "Investigation of Competition in Digital Markets" (2020), pp. 330–76, available at: https://judiciary.house.gov/uploadedfiles/competition_in_digital_markets.pdf.

^{7.} Kate Crawford in *Atlos of Al* observes that metaphors like "the cloud" imply something floating and delicate within a natural green industry and yet in reality it takes a gargantuan amount of energy to run computational infrastructures. She cites Tung-Hui Hu's *The Prehistory of the Cloud*: "The cloud is a resource-intensive, extractive technology that converts water and electricity into computational power, leaving behind a sizeable amount of environmental damages that it then displaces from sight." Kate Crawford, *Atlas of Al: Power, Politics, and the Planetary Costs of Artificial Intelligence* (New Haven, CT: Yale University Press, 2021), pp. 41–42, quoting Tung-Hui Hu, *The Prehistory of the Cloud* (Cambridge, MA: The MIT Press, 2015), p. 146.

^{8.} It is often maintained that Amazon Web Service's access to the aggregate data of their customers gives Amazon valuable early intelligence on potential competitors. See, for example: Alistair Barr, "Amazon Finds Startup Investments in the 'Cloud'", *Reuters*, 9 November 2011, available at: http://www.reuters.com/ article/amazon-cloud-idUSN1E7A727Q20111109; and Martin Moore and Damian Tambini (eds), *Digital Dominance: The Power of Google, Amazon, Facebook, and Apple* (New York: Oxford University Press, 2018), p. 29.

consumption of computational tech (including the indefinitely expansive future energy needs of machine learning applications), and the dependence upon minerals such as cobalt, lithium, neodymium or terbium are significant issues for Big Tech companies to address. Corporate tax practices and fair treatment of employees and supply chains are also of vital importance. Relevant advice on such issues is published in EIAG papers, including:

- Climate Change Policy;
- Corporate Tax Policy;
- Executive Remuneration Policy;
- Extractive Industries Policy and Advice;
- Human Rights Policy;
- Supply Chain Engagement Framework; and
- Supply Chain Paper.

The ground covered by these is not repeated here.

- 9 For all these reasons, the engagement decisions made by investors and the priorities they pick out will vary from company to company.
- Some other activities of individual companies will be of particular interest and concern to Christian thinking, but are not covered in current EIAG advice. For example, Alphabet, through its biotech subsidiary Calico (an acronym for the California Life Company), has invested significantly in research into age-related diseases. While there is unquestionably much important research needed to assist in tackling the diseases and debilities associated with aging, Calico has been widely reported as being motivated by the aim of defeating death itself.⁹ Regardless of the realism of the aspiration, this is instructive about an ethos evident among some big tech company founders.

- 11 The use of artificial intelligence is critical to the operation of the attention economy business model, and Big Tech companies are heavy investors in AI research and development. However, there are many aspects of AI that are not immediately related to the attention economy model and so are not covered in this paper. These can be listed under three headings. First, practical applications of AI: these include its use or potential use in medical diagnosis, the determination of insurance risk, policing, judicial and penal decision-making, facial recognition, education, smart homes, smart toys, etc. Second, the threat to jobs from Al-automated businesses: some argue that AI technologies will make human jobs obsolete,10 while at the same time there has been a proliferation of precarious jobs through the rise of gig-economy businesses such as Uber or Deliveroo. Third, longer-term and speculative concerns about general-purpose artificial intelligence ("strong Al"11), the possibility of hostile superintelligences, and so on.
- 12 Finally, it should be noted that this review is weighted towards discussion of Big Tech companies based in the United States, though we will also draw out some relevant considerations with regard to issues raised by China's growing Big Tech sector.

THE CHURCH AND BIG TECH

13 Why does the Church of England concern itself with questions about Big Tech? The first reason is that it is itself a major user of Big Tech products. Many churches will have Facebook

^{9.} Harry McCracken and Lev Grossman, "Google vs. Death", *Time Magazine*, 30 September 2013, available at: https://time.com/574/google-vs-death/. One of Google's co-founders, Sergey Brin, joined Mark and Priscilla Zuckerberg and Anne Wojcicki (founder of gene-sequencing company 23andMe) in establishing the Breakthrough Prize in Life Sciences, to "recognize excellence in research aimed at curing intractable diseases and extending human life".

^{10.} Daniel Susskind, A World without Work: Technology, Automation and How We Should Respond (London: Penguin Books, 2020). For example, when WhatsApp was purchased by Facebook for \$19.5bn in 2014 it had 55 employees, giving it a market capitalisation-to-employee ratio of \$345m. By comparison, when EE Ltd was acquired by BT Group in 2015 for \$19.5bn it had 13,000 employees giving it a market capitalisation-to-employee ratio of \$1.5m.

^{11. &}quot;[G]eneral-purpose AI, that is, machines that can quickly learn to perform well across the full range of tasks that humans can perform...has been the goal of AI since the beginning. We're not there yet, but if, as most experts believe, it's a plausible outcome in the next few decades, we must prepare for the potential consequences." Stuart Russell, "AI and the Economy", BBC Reith Lectures 2021 — Living with Artificial Intelligence (Lecture 3), available at: https://www.bbc. co.uk/programmes/moo12fnc.

pages, or will use social media to communicate with people in their congregations or to reach out beyond. Since the Covid-19 lockdown, many churches have begun to livestream or record services via Facebook or YouTube. For them, as for many organisations, the use of Big Tech platforms has been an enormous benefit, and an invaluable part of living and working in the contemporary world.

- 14 A second reason is the size and dominance of Big Tech companies: the companies listed earlier form seven of the ten largest global companies by market capitalisation¹² and five of them collectively make up 15.36% of the MSCI World Index.¹³ The National Investing Bodies are investors in many tech companies. As socially responsible investors, they have a long-standing commitment to engagement with funds and companies they invest in on all environmental, social and governance matters. Their engagement is informed by ethical and Christian biblical and theological perspectives, which show how fundamental commitments of Christian faith bear on matters of public concern.
- 15 A third concern surrounds the financial and investment consequences for the National Investing Bodies of the activities of Big Tech. For example, the impact of social media on the stability of democratic processes and democratic society¹⁴ is liable to affect the value of their investments. Similarly the dissemination of disinformation or fake news on social media has been increasing in recent years¹⁵ and can lead

to apathy, extremism and poor policy decisions damaging business confidence, at least in the short term.¹⁶ The virality of misinformation on COVID-19, identified by the UN secretarygeneral as a "global enemy", has been blamed for a large number of unnecessary deaths and has wrought damaging consequences at a societal level, including for public health care systems.¹⁷ The negative potential and realised impacts of Big Tech companies is an increasingly widespread concern, leading to questions about their social license to operate: that companies address these issues quickly and effectively is fast becoming essential to regaining trust from stakeholders and sustaining their credibility.

16 The Church however has a role not just as an investor, but also as a body that seeks to contribute to public moral debate and understanding. Beyond the investment concerns, the phenomenon of Big Tech raises questions about the nature of human freedom, human dignity and human identity, as well as about the nature of technological development and the relation of private enterprise to the common good, that are of central concern for Christian thinking. These questions are not specific to tech companies or to investment in them, and they require deep reflection about the fabric of our society and what we truly wish to value. Answering them is not only a matter for tech leaders, journalists or politicians, but involves a "whole of society" approach in which religious bodies also have a role, alongside thought leaders, civil society advocacy groups, educationalists, industry specialists, investors, and others. Many of the responses Christians may make to tech developments will be more widely

^{12.} Jenna Ross, "The Biggest Companies in the World in 2021", *Visual Capitalist* (10 June 2021), available at: https://www.visualcapitalist.com/the-biggest-companies-in-the-world-in-2021/.

^{13. &}quot;MSCI World Index (USD)", *MSCI.com* (June 30, 2022), available at: https://www.msci.com/documents/10199/178e6643-6ae6-47b9-82be-e1fc565ededb.
14. See for example Hunt Allcott and Matthew Gentzkow, "Social Media and Fake News in the 2016 Election", *Journal of Economic Perspectives*, vol. 31, no. 2 (Spring 2017), 211–36, available at: https://www.aeaweb.org/articles?id=10.1257/jep.31.2.211.

^{15.} Churches can need to be aware that they are as vulnerable to spreading negative or fake news on social media or the temptation of chasing virtual "likes" as any other actors, and may themselves be subject to the same social-media induced patterns of polarisation. See "Facebook's Next Target: The Religious Experience", *The New York Times*, 25 July 2021, available at: https://www.nytimes.

com/2021/07/25/us/facebook-church.html.

^{16.} Soroush Vosoughi, Deb Roy and Sinan Aral, "The spread of true and false news online", *Science* vol. 359, iss. 6380 (9 March 2018), 1146–51, available at: https://www.science.org/doi/10.1126/science.aap9559; and David M. J. Lazer et al., "The science of fake news" *Science* vol. 359, iss. 6380 (9 March 2018), 1094–96, available at: https://www.science.org/doi/10.1126/science.aao2998.
17. See for example E. M. Lederer, "U.N. Chief Antonio Guterres: Misinformation about COVID-19 Is the New Enemy", *Time* (New York, NY: 2020); and Saiful Islam et al., "COVID-19—Related Infodemic and Its Impact on Public Health: A Global Social Media Analysis", *The American Journal of Tropical Medicine and Hygiene* vol. 103, iss. 4, 1621–29, available at: https://doi.org/10.4269/ajtmh.20-0812.

shared across society, but others may be more distinctly Christian in conception.

THE STRUCTURE OF THE PAPER

17 Because this paper seeks to set out the discussion in theological and ethical contexts, we start with an account of some theological pointers for helping us to think about Big Tech (Section II). We then discuss some of the core features of Big Tech (Section III), before drawing out recommendations (Section IV). This page is intentionally blank.

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Theological background

In this section, we propose five principles that form the framework for our thinking about tech. These principles affirm that human beings live well and are fulfilled when they are:

- i. flourishing as persons;
- ii. flourishing in relationship;
- iii. standing with the marginalised;
- iv. caring for the creation;
- v. serving the common good.

These principles are valid for all human beings, regardless of their religious beliefs. This section describes them and shows how they can be derived from Christian biblical and theological commitments.

- 18 When we ask how we should think theologically about Big Tech, we are faced with an immediate problem. At the time the Bible was written, the digital technologies that we are familiar with were unknown; the internet, artificial intelligence, social media, and the attention economy business model did not exist. So we are not in a position to read off from the surface of the scriptural text how we should think about them in any straightforward way. Nor were biblical writers familiar with many of the conditions that enable and to some extent constrain Big Tech, such as the complexities of the modern economy, the pervasiveness of technological ways of thinking, or the ideals of liberal democracy.
- 19 However, a moment's reflection will help us realise that this does not mean the Bible has nothing to say about the world of Big Tech. The Bible has much to say about the nature of human beings, the ways in which they can flourish, their propensity to sin, and the possibility of their being restored to right relationship with God and with each other. It knows a lot about how economically powerful people use their wealth to exploit the poor, how people communicate with each other using whatever media are available to them at the time, how people can be led astray by manipulative behaviours, how society can be dominated by forces beyond the control of individuals, and many other similar themes. All of this has a bearing on our thinking about Big Tech.

- 20 Rather than cherry picking individual biblical texts and trying to correlate them to our present-day concerns, it is better first to see how we are located within the big picture of God's relationship to the world presented across Scripture as a whole.
- 21 One place to start is with Jesus' own understanding of his mission, as presented by Luke. At the beginning of his ministry, Jesus returns one sabbath to the synagogue in his home town Nazareth, where he reads from Isaiah:
 - "The Spirit of the Lord is upon me, because he has anointed me to bring good news to the poor. He has sent me to proclaim release to the captives, and recovery of sight to the blind, to let the oppressed go free, to proclaim the year of the Lord's favour."

Then he says, "Today this Scripture has been fulfilled in your hearing" (Luke 4.16-21).

22 The placing of this passage at the start of Jesus' ministry in the narrative of Luke is deliberate and strategic: it is a programmatic statement of Jesus' understanding of why he has been sent, which is why it is sometimes called the "Nazareth manifesto". The passage Jesus reads is taken from Isaiah 61, part of a prophetic vision about the future deliverance promised to God's people. This vision in part draws on the idea of the Jubilee year found in Leviticus 25, that is, a year when slaves would be freed, debts forgiven, and property returned to its original owner.18 This in turn is expanded in Isaiah to encompass a holistic understanding of salvation as characterised by shalom, a Hebrew word which is understood in Israel's Scriptures to refer to a

^{18.} Leviticus 25:10–12, New International Version: "Consecrate the fiftieth year and proclaim liberty throughout the land to all its inhabitants. It shall be a jubilee for you; each of you is to return to your family property and to your own clan. The fiftieth year shall be a jubilee for you; do not sow and do not reap what grows of itself or harvest the untended vines. For it is a jubilee and is to be holy for you; eat only what is taken directly from the fields."

future time of peace and justice, of wholeness and fulfilment—an all-embracing healing of all that has gone wrong and a restoration of relationships between human beings, between human beings and the natural world, and between human beings and God. In saying that this has been fulfilled in their hearing, Jesus is indicating that in his person and ministry, that eschatological future¹⁹ has been made present in all of its dimensions.

- 23 A similar idea can be found in Jesus' teaching about the Kingdom of God. This also has roots in the Old Testament, in declarations for example by the Psalmist that "the Lord reigns" (Psalm 93.1, 97.1). In proclaiming that the kingdom of God is near (Mark 1.15), Jesus is again announcing that in his person and ministry the reign of God celebrated by the Psalmist truly has been made present. This proclamation demands repentance and belief in the good news that God's reign has indeed come. And it is accompanied by miracles of healing, which are the first-fruits of eschatological shalom: they show that salvation is about reconciliation with God, and yet is also the multidimensional restoration of bodies and minds, and of relationships with one other and with the natural world.
- 24 Yet Jesus did not come only to preach the Kingdom and to demonstrate its presence in his actions. The gospels also tell that the Son of Man must suffer, be killed, and after three days rise again (Mark 8.31). The New Testament brings out several aspects of the significance of Jesus' death and resurrection for the salvation of the world, which have been elaborated by theologians. For our purposes, following Paul's statement that "Jesus was handed over to death for our trespasses and raised for our justification" (Romans 4.25), we may see the cross as God's decisive "No!" to the sin and

evil that harms the creation which from the beginning had been declared good (Genesis 1.31); and the resurrection as God's decisive "Yes!" that demonstrates the establishment of Christ's reign over all powers that would oppose it, the ultimate of which is death (1 Corinthians 15.26).

- 25 While the powers of sin and death have been defeated, their defeat will only finally be made manifest when God is "all in all" (1 Corinthians 15.28). In the meantime, the Church is called to bear witness to the good news of the Kingdom that Jesus preached, showing in its words and actions what the reign of God looks like. It is to demonstrate how all are called to reconciliation with God through Christ, and to show what that reconciliation looks like in practice in a broken world. The vision of shalom, when God's reign shall finally be manifest as the fulfilment of creation, is to guide the Church as it seeks to work out what principles would best embody and enable the kinds of relationships to which all human beings are called.
- 26 These principles are derived from a reading of Scripture and of Christian theology and ethics, but they are not only for the Church and for Christians. Christians believe that Jesus Christ is the one through whom the whole world was created and in whom it will be fulfilled. It follows that these principles describe understandings and commitments that are valid for wider society, for social, economic and political institutions, indeed for everyone.

(I) FLOURISHING AS PERSONS

- 27 First, we are called to flourish as persons and to enable others to do so. It may not be immediately obvious what this means, but the passage Jesus reads out gives us some clues, by giving examples of lack of flourishing. Poverty, for example implies a lack of flourishing, as does enslavement and lack of freedom.
- 28 We can generalise this to say that we are to work to oppose anything which prevents people from flourishing as whole persons, in body, mind and spirit. Elsewhere in the gospels, and perhaps here, blindness also refers to the spiritual blindness and poverty of those who are unable

^{19. &}quot;Eschatology" is a theological term which literally means "study of the last things", i.e., the study of the completion and fulfilment of all things in Christ. An important emphasis in twentieth-century New Testament studies and theology has been the recognition that eschatology does not just relate to what happens at the end of time and history, but also has significance for present-day existence.

to grasp what the gospels proclaim about Jesus: Christians believe that those who cannot see Jesus for who he is also cannot fully flourish.

(II) FLOURISHING IN RELATIONSHIP

- Second, we are called to flourish in relationship. The vision of *shalom* is a profoundly relational one, in which nothing and no one exists by and of themselves, but only in relationship to others. Flourishing in community is the flip side of flourishing as persons: we are created not as individuals, but as persons for each other. God declares that it is not good for Adam to be alone, and so makes Eve as a partner, equally made in the divine image. The commands on which all the law and the prophets hang are commands of love. People are identified by the family or the tribe or the community to which they belong, pre-eminently the communities of Israel and the Church.
- This sense of the intrinsically relational nature of human beings is not dissimilar to the African philosophical idea of "ubuntu", which is often translated as "I am because we are".20 It implies that people's identities exist in a nested series of communal belongings, a complex interweaving of familial, geographical and associational ties which provide them with a sense of belonging and to which they owe a level of obligation in return. One implication of this is that the notion of human rights is better understood, not as the protection of atomistic individuals over against an impersonal society, but in the context of a network of relationships by which persons are already constituted, and against whose injustices they may rightly need to appeal.

(III) STANDING WITH THE MARGINALISED

31 Third, we are called to stand with the marginalised. Jesus declares that he has come to bring good news to the poor, release to the captives, and freedom to the oppressed. There is a constant refrain throughout Scripture that God cares for the smallest, the weakest, and the least powerful.

32 Within Israel, God's care for those who are vulnerable and excluded is shown in the command in Deuteronomy, "Open your hand to the poor and needy neighbour in your land" (Deuteronomy 15.11), and in Isaiah's pronouncement of the fast that God chooses, "to loose the bonds of injustice, to undo the thongs of the yoke...to share your bread with the hungry, and bring the homeless poor into your house" (Isaiah 58.6–7). Jesus tells a rich man who was already obeying all the other commands to sell what he owns and give the money to the poor (Mark 10.17-22). And the judgement of the nations will be based on whether individuals and nations give food to the hungry, welcome to the stranger, clothing to the naked, and visits to those in prison (Matthew 25.31-46). Taking the side of those who suffer from abuses of power, are vulnerable to structural bias in the operation of systems, or are likely to be the target of discriminatory or prejudicial behaviours, is a non-negotiable feature of any ethics that claims to be based on Scripture.

(IV) CARING FOR CREATION

- Fourth, we are called to care for creation. One of the features of the Jubilee year in the Bible, the year of the Lord's favour that Jesus proclaims, was that there was to be no sowing or harvesting: the land was to be allowed to rest and lie fallow, itself freed from the necessity of toil (Leviticus 25.10–12). Like the people who work on it, the soil also is an active contributor to the common good. The vision of *shalom* is one of all-encompassing peace and harmony, including between animals that would naturally prey on one another: the wolf shall live with the lamb, "for the earth will be full of the knowledge of the Lord, as the waters cover the sea" (Isaiah 11.6–9).
- 34 "The earth is the Lord's, and all that is in it"(Psalm 24.1). At its creation God declared it to be good, and human beings, made in the image of God, are called to tend it and work for its good.

^{20.} The Linux-based operating system Ubuntu was named after the same philosophy. See "The story of Ubuntu" at: https://ubuntu.com/about.

But it too has been affected by the fall. Because of Adam's sin, it brings forth thorns and thistles, and is groaning with labour pains as it awaits in eager longing to share in the freedom of the glory of the children of God (Romans 8.19–23). Then too it will be able to join in the praise of the Creator to which the Psalmist summons it: "Praise him, sun and moon; praise him, all you shining stars!" (Psalm 148.2). There is a sense throughout much of Scripture that the natural world is more than inert matter, but possesses some level of agency. This suggests that it is not only to be treated well because it is in human interests to do so, but that it is to be loved and cherished for its own sake.

(V) SERVING THE COMMON GOOD

- Finally, we are called to serve the common good. All of the different dimensions of *shalom* that we have discussed are encompassed within a holistic condition of peace and justice that is shared by all. It is a vision of the good that is held in common by all, from which all benefit and to which all contribute. It is a universal vision of the good, which is participated in not only by human beings, but by the whole of creation. The idea of the common good, developed especially in Roman Catholic social teaching in opposition to both individualism and collectivism, captures some of this sense.
- The language of the kingdom of God underlines the thought that this common good is not just finally a secular ideal. No—this worldly conception of the good can fully capture the meaning of the eschatological realisation of God's reign, in which death has been defeated and the ruling powers of this age have been destroyed, in which "mourning and crying and pain will be no more" (Revelation 21.4).
- 37 These five principles provide the background against which we think about Big Tech and make recommendations. They should be understood as guiding principles which require constant further thoughtful and imaginative exploration in relation to particular circumstances, rather than a tick-box exercise which can be checked off and then ignored. Moreover, although they are drawn from the Hebrew vision of *shalom* and Jesus'

preaching of the reign of God, they are principles that are relevant for everyone, both those who are Christian and those who are not. And they are also relevant both for individuals and for society as a whole—for communities, voluntary organisations, businesses and governments alike.

Core features of Big Tech

- 78 The impact of Big Tech's products and services cannot be overstated. Over half the world's population, several billions of people, use their products every day.²¹ Apple, Microsoft, Alphabet, Amazon, Meta and Tencent are among the world's largest companies by market capitalisation, replacing the oil, mining and banking giants of old.²² Many of them are worth more than the Gross Domestic Product of most medium-income countries. But it is possible for companies to become very large and have no significant effect in changing personal, social and political realities: arguably of greater importance than their sheer size has been how they have change the world for people in a multiple of ways.
- 39 The scale of their achievements and the possibilities tech companies make claim to are extraordinary—and yet, as Tim Wu observes of Facebook, its success is not due to a high level of invention.²³ Many of the products and services offered by Big Tech are made possible by the invention and development of key technologies financed heavily in their early stages by public

sector funds (such as the US government) as well as significant public infrastructure improvements (such as Openreach in the UK). These publiclyfinanced enabling technologies such as solid-state drives, liquid crystal displays, signal compression algorithms, GPS and Siri—the voice-activated assistant²⁴—are all vital components of what makes a smart phone such as the iPhone "smart", as illustrated in the diagram below.²⁵

Amongst the benefits enabled by these technological advances are:

- connecting people with families and friends—whilst synchronous communication such as SMS has facilitated the sustaining of relationships both near at hand and over great distances, Big Tech products have made use of technological advances to create products offering increased levels of ease, cost and immediacy;
- providing access to information and knowledge with a speed and level of detail and comprehensiveness that was unknown



Figure 1: What Makes the iPhone so Smart?

24. In 2000, the US Defence Advanced Research Projects Agency, Darpa, commissioned the Stanford Research Institute to develop a proto-Siri, a virtual office assistant that might help military personnel to do their jobs.
25. "What Makes the iPhone so Smart?", in Mariana Mazzucato, *The Entrepreneurial State: Debunking the Public vs. Private Myths in Risk and Innovation* (London: Anthem Press, 2015), p.116, Figure 13.

^{21.} Simon Kemp, "Digital 2021: Global Overview Report", *Datareportal* (27 January 2021), available at: https://datareportal.com/reports/digital-2021-global-overview-report.

 [&]quot;Largest Companies by Market Cap" at: https://companiesmarketcap.com/.
 Tim Wu, The Attention Merchants: From the Daily Newspaper to Social Media, how Our Time and Attention is Harvested and Sold (London: Atlantic Books, 2016).

when sources of knowledge were paper based (newspapers, encyclopaedias, library catalogues, telephone directories);

- enabling companies to sell to each other and to consumers goods and services of a diversity, quality and price that would never have been possible in days when availability of information was much more imperfect and customers were much more dependent on the vagaries of the suppliers accessible to them;
- supporting the information and communications substructure for governments, businesses, civil society organisations, shared interest groups, and many other bodies, including churches and other religious organisations;
- in many parts of the world, giving access to news and current information where previously there was none;
- bringing access to health and educational services in remote areas;
- accelerating the transition to decarbonisation, for example by leveraging a wealth of public data from fixed sensors, outdoor video footage, navigation devices, and mobile phones to model new urban transportation and infrastructure design;
- providing online banking and insurance services across poorer regions, especially in the Global South;
- making platforms available for individuals to express unpopular opinions, speak out against governments, and mobilise popular protest;
- providing the means of national and international scientific and academic collaboration, hastening new scientific, medical and technological discoveries;
- multiplying and increasing access to and availability of different forms of entertainment;

- opening up the possibility of friendships, including life partnerships, with others who once would have been near impossible to find, through dating apps and the like;
- empowering marginalised individuals who might be unique or unusual in their own communities to meet and to find support groups of sympathetic others.
- 40 The list could be extended indefinitely. Many of these benefits were not the result of technologies developed by Big Tech companies, even if Big Tech has built on them. Perhaps most transformative of all is that in many central cases these services have been provided free of cost at the point of use. Whilst the world wide web and similar competing graphical information navigation platforms (such as Gopher) were also free and non-commercial, this free-of-cost service differentiated Big Tech products from the incumbent communications channels. Thus, even if there are concerns with the business model that has made this possible, as we shall discuss later, the lack of cost has enabled billions of people across the globe to participate in society in a way never previously possible, people who might otherwise have been excluded because they were unable to afford the subscription. At the same time, it has provided these companies with billions of customers and access to billions of data points.
- 41 These are examples of ways in which Big Tech has contributed to human flourishing as individuals and in relationships, has empowered the marginalised, and contributed to the common good. One does not have to be a signed-up technological determinist to recognise that the benefits of algorithmic and optimisation technologies deployed by tech companies mean that there will be no going back: any plausible and desirable future will seek to incorporate all these benefits and others.
- 42 But how is it that some of the most valuable companies in the world, which in some cases have market capitalisations of a trillion dollars or more, can give their products away for free to their users? The business model which lies behind this is less than twenty years old, but

it is revolutionising the economy, culture and society. As we shall see, it depends on (a) the harvesting and aggregation of users' personal data, (b) the maximising of users' attention, (c) the analysis of this data by Al/machine learning algorithms, (d) the prediction of users' future behaviour on the basis of this analysis, and (e) the monetisation of these predictions by marketing them to advertisers, market researchers, product developers and others who can use the data for better understanding their customers and markets. When combined with powerful network effects (i.e., the greater the number of users of a particular platform, the greater the benefit each user derives from the platform) and a high positive viral coefficient (which implies the low cost to companies of acquiring new users),²⁶ company growth can be explosive. But before we turn to this, we will look first at the cultural, economic, and political background that has made it possible.

(I) BACKGROUND AND ENABLING CONDITIONS

Big Tech did not emerge from a vacuum. It arose in a particular set of historical circumstances, which have decisively affected the way it has been shaped. For a full understanding of it as a phenomenon we therefore need an appreciation of the wider milieu in which it operates. This involves considering the ideological, cultural, social, political and economic structures in which technological development is embedded, but also the dominant narratives, symbols, and values by which a people imagine their collective social life. It will be important not to lose sight of the wider milieu even as we rightly focus our attention on specific features of Big Tech and delineate specific theologically-grounded concerns; this will be essential in keeping moral evaluation tethered to the notion that human existence is fundamentally relational, historical and contextual.

(a) Technology and technological culture

- 44 Technology is one of the most characteristic features of the modern world. Its benefits are to be seen in every area of human life as part of everyday existence. A world without the technological advances we are familiar with, in medicine, transport, energy, engineering, communications, manufacturing and computer science, is all but unthinkable to modern people. A return to a world without anaesthetics or antibiotics is one that nobody is likely to wish for.
- 45 Technologies can of course be put to good use or bad use. For example, the same social media app that hosted an ad for a cleaning job that lured a victim into domestic slavery also provided the means of rescue by connecting the victim with international human rights organisations.²⁷ But it would be a mistake to deduce from this that technology or particular technologies are neutral in and of themselves, and that ethical questions only arise over their use.²⁸ Our technologies, even when used well, shape us in ways which we may not always be aware of, for better and worse. Think for example of the ways in which people's sense of time and distance has changed as the result of international air travel, or how their relationships with their neighbours and local communities have altered through access to cars and public transport. Technologies affect our sense of what is real and worthwhile in the realm of human existence and social relations.

^{26.} The rate at which new users are generated by referral from existing customers rather than through advertising is known as the "viral coefficient"; successful social media platforms characteristically have high positive viral coefficients. Technology entrepreneur Peter Thiel credits René Girard's mimetic theory ("We desire what others desire because we imitate their desires.") for his early investment in Facebook. "Facebook first spread by word of mouth, and it's about word of mouth, so it's doubly mimetic", he said. "Social media proved to be more important than it looked, because it's about our natures." Quentin Hardy, "René Girard, French Theorist of the Social Sciences, Dies at 91", *The New York Times*, 10 November 2015, available at: https://www.nytimes.com/2015/11/11/arts/ international/rene-girard-french-theorist-of-the-social-sciences-dies-at-91.html.

See the testimony of Patricia Wanja Kimani in: Justin Scheck, Newley Purnell and Jeff Horwitz, "Facebook Employees Flag Drug Cartels and Human Traffickers. The Company's Response is Weak, Documents Show", *The Wall Street Journal*, 16 September 2021, available at: https://www.wsj.com/articles/facebook-drugcartels-human-traffickers-response-is-weak-documents-11631812953.
 George Grant, "The computer does not impose on us the way it should be used", in Abraham Rotstein (ed.), *Beyond Industrial Growth* (Toronto: University of Toronto Press, 1976), 117–31.

46 We discuss below (paragraphs 94–100) some of the specific ways in which the technologies developed by Big Tech companies affect human flourishing and the common good. But it is worth noting in passing that technology as a general feature of the modern world has been the subject of much theological discussion.²⁹ Some of this has gone beyond the immediate ethics of particular technologies to ask larger questions about what the role of technology is in ways of thinking that characterise the modern world, how it relates to progress, whether or not it distances us from nature, even whether it can act as a surrogate form of salvation. While these themes are not pursued here, they provide important background for a theological understanding of the phenomenon of technology as a whole.

(b) Political and economic backgrounds

- 47 The neoliberal political and economic background against which Big Tech originally emerged in the United States is one that has been influential to varying degrees across the developed world since the 1980s. It has been particularly potent in the US, and to a lesser but still significant extent in the United Kingdom and elsewhere. Its tendency is to seek and prioritise market solutions to all matters of innovation, production, distribution and exchange. This entails a scepticism towards the state, a conflation of regulatory bureaucracy with tyranny and authoritarianism, and the concomitant advocacy of low-tax and lowregulation or self-regulation regimes.
- 48 Big Tech has flourished in a context where disruptive innovation and new technologies facilitate the rise of new entrants into the market, enabling them to challenge established

market positions—the process that the economist Joseph Schumpeter described as "creative destruction".³⁰

- 49 But US Big Tech companies have grown from their origins as bright, idealistic start-ups to holding monopoly or near-monopoly positions in their respective markets, they have also benefited from another feature of neoliberal regulatory regimes. In principle, orthodox market economics promotes the importance of perfect competition for the proper and efficient running of markets, but in practice the tendency of individual firms if they are not constrained will always be to seek monopoly control of the markets they operate in.
- 50 In the United States, trust-busting has been an important part of the regulatory landscape since the earlier part of the twentieth century; monopolistic control was regarded as being bad for consumers and bad for innovation. But heavily influenced by the Chicago School (which espoused a strong presumption that markets work themselves best without any assistance from government), the regulatory environment has acquiesced in monopolies so long as their power is exercised in a way that is not prejudicial to the consumer, particularly in terms of higher prices.³¹ By contrast, following the creation of the EU's single market in the early 1990s, Europe has deregulated many of its markets and improved its antitrust enforcement leading to lower prices and less market concentration relative to the US.³² There are clear indications that the US is departing from the Chicago School approach to anti-trust regulation.33

^{29.} See for example Noreen Herzfeld, *Technology and Religion: Remaining Human in a Co-Created World* (West Conshohocken, PA: Templeton Press, 2009); Brian Brock, *Christian Ethics in a Technological Age* (Grand Rapids, MI: Eerdmans, 2010); Michael S. Burdett, *Eschatology and the Technological Future* (Abingdon: Routledge, 2015); Scott A. Midson (ed.), *Love, Technology and Theology* (London: Bloomsbury T & T Clark, 2020); and John Wyatt and Stephen N. Williams (eds), *The Robot Will See You Now: Artificial Intelligence and the Christian Faith* (London: SPCK, 2021).

^{30.} Joseph Schumpeter, *Capitalism, Socialism, and Democracy* (New York, NY: Harper & Brothers, 1942).

^{31.} Herbert J. Hovenkamp and Fiona Scott Morton, "Framing the Chicago School of Antitrust Analysis", *University of Pennsylvania Law Review*, vol. 168, no. 7 (June 2020), 1843–78, available at: https://scholarship.law.upenn.edu/cgi/viewcontent. cgi?article=3115&context=faculty_scholarship.

^{32.} Germán Gutiérrez and Thomas Philippon, "How European Markets Became Free: A Study of Institutional Drift", *National Bureau of Economic Research*, Working Paper No. 24700 (June 2018, revised August 2020), available at: https:// www.nber.org/system/files/working_papers/w24700/w24700.pdf.

^{33.} For example, the appointment of Lina Khan as Chair of the Federal Trade Commission (FTC) and Tim Wu to the National Economic Council as a Special

- 51 In relation to free market economies, it should also be observed with Zuboff that "[s]urveillance capitalism is not the old capitalism...[but] is instead defined by an unprecedented convergence of freedom and knowledge".³⁴ Whereas F.A. Hayek, drawing on Adam Smith, had defended market freedoms and the price mechanism because nobody has access to all the information needed to allocate resources efficiently, Big Tech continues to defend and profit from free markets while possessing unprecedented amounts of knowledge about market actors.³⁵
- ⁵² The role of venture capital in the US context should also be noted. Attracted by visions of changing the world and the promise of hyper returns, an enormous wave of private capital has flowed in search of the next tech success story. However, private equity often prioritises founders' "energy and spirituality" and the immediate growth, especially of users, over questions of governance or avoidance of negative externalities.³⁶ By contrast there is a shift in focus to governance and negative externalities as the company seeks to access the public markets, though by this time it may be difficult to change "hardwired" behaviours.
- 53 Although the biggest Big Tech firms are based in the US, similarly large firms offering competing products and services exist throughout the world. The largest and most important of these are located in China, where Big Tech business approaches have taken root in a very different political and economic context.³⁷ Politically,

China's one-party state means that political power rests with the Chinese Communist Party, which is unafraid to exercise power in ways that depart from Western liberal democratic norms and sensibilities, as evidenced from its treatment of the Uyghurs in Xinjiang and its enactment of the National Security Law in Hong Kong. Economically, while China is nominally a Communist country, its economy has in practice high levels of free market entrepreneurial activity which interact variously both in cooperation and in conflict with the Chinese state.

- 54 China's tech culture has been characterised as having several significant features.³⁸ It is vast,³⁹ fast growing and highly innovative⁴⁰ and rather than establishing market leadership in one market in the way that Google leads in search, Facebook leads in social media, Amazon leads in retail, and so on, the largest Chinese tech company's products tend to act as portals to the entire internet: Tencent's WeChat mobile app, for example, delivers functions that would be associated in the West with WhatsApp, Facebook, Zoom, Instagram, Apple Pay, Uber, Bookings.com, Deliveroo, Skyscanner, and so on, all on the one platform. In part enabled by this, Chinese tech companies are amassing vast amounts of high-quality data, tracking not just online behaviour as US companies do, but also mapping people's real-world purchases, meals, locations, movements, and uses of public transport.
- 55 The relation of Chinese Big Tech companies to the Chinese state is complex. The Chinese Communist Party has written itself into the articles of association of many of the

Assistant to the President for Technology and Competition Policy. 34. Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (London: Profile Books, 2019), p. 498. 35. F. A. von Hayek, "Economics and Knowledge", a presidential address to the London Economic Club, 10 November 1936, first published in *Economica* (February 1937), available at: https://oll.libertyfund.org/page/hayek-economics-and-knowledge-1936.

^{36.} Charles Duhigg, "How Venture Capitalists are deforming capitalism", *Letter from Silicon Valley*, 2020 issue, *The New Yorker* (23 November 2020), available at: https://www.newyorker.com/magazine/2020/11/30/how-venture-capitalists-are-deforming-capitalism.

^{37.} Tencent (founded 1998) and Alibaba (1999) were founded before Facebook (2004) and around the same time as Google (1999). The Chinese versions of

Pinterest, Twitter (Weibo), and PayPal (Alipay) are already larger and increasingly broader in scope than their US counterparts.

^{38.} See in general Kai-Fu Lee, AI Superpowers: China, Silicon Valley, and the New World Order (Boston, NY: Houghton Mifflin Harcourt, 2018). On China's surveillance culture, see Kai Strittmatter, We Have Been Harmonised: Life in China's Surveillance State (Exeter: Old Street Publishing, 2019).

^{39.} China has nearly one billion smartphone users and Didi, for example, which is a ride-hailing e-taxi service similar to Uber and Lyft, has over 550 million users, greater than the population of the USA.

^{40.} See Tortoise, "The Global Al Index", at https://www.tortoisemedia.com/ intelligence/global-ai/.

country's biggest companies, ensuring that it has some level of internal influence on their decision-making.⁴¹ The Personal Information Protection Law (PIPL) limits how companies collect, store, and use personal data and was based on the EU's GDPR framework, but has been criticised for not restraining the state surveillance system.⁴² Under its Cybersecurity Law, all network operators are also required to monitor user-generated information for prohibited content, which is vaguely defined but includes various ethnic, religious, and linguistic groups and testimonies from Uyghurs about arbitrary detentions in Xinjiang.43 This regulation leaves Chinese users with a highly censored and monitored version of the internet⁴⁴ and gives wide opportunities for the government to interfere with companies' operations.⁴⁵ On the other hand, the devolution of monitoring of content to companies has in practice led to their applying directives inconsistently and at times in defiance of government demands.⁴⁶ The rising power and commercial success of Chinese Big Tech has led to a backlash, with evidence of a crackdown by the Chinese government resulting

in significant penalties for anti-competitive behaviour⁴⁷ and illegal data collection.⁴⁸ This has been attributed by some commentators to the government's ambition to replace Big Tech (which focuses on e-commerce, gaming and chat) with Deep Tech (which enables smart cities, self-driving cars, cloud computing, and ubiquitous AI).⁴⁹ This in turn has created considerable uncertainties for companies and investors looking to invest in China.

56 The difference between the Western experience of the internet and the Chinese experience of it, when taken with other growing internet universes such as India, has led to increasing talk of the "splinternet", at least in a regulatory and jurisdictional context. However, the differences should not be overstated, at least in a corporate tech and financial context. Chinese tech companies are deeply entrenched in an intertwined and global tech system in terms of ownership, reach, technical expertise and influence. Tencent, for example, is headquartered in Shenzhen, incorporated in the Cayman Islands and has the South African group Naspers as its largest shareholder. In turn it has been a consistent investor in non-Chinese companies.⁵⁰ In 2020, the Bytedance-owned app TikTok (including its Chinese version Douyin) overtook Facebook as the most downloaded social media app in the world.⁵¹ Facebook's largest market is India, not the US,52 and together China and India

^{41.} See Jennifer Hughes, "China's Communist party writes itself into company law", *Financial Times*, 14 August 2017, available at: https://www.ft.com/content/ a4b28218-80db-11e7-94e2-c5b903247afd.

^{42.} See Adrian Shahbaz and Allie Funk, "The Global Drive to Control Big Tech", *Freedom on the Net*, 2021 edition, available at: https://freedomhouse.org/report/ freedom-net/2021/global-drive-control-big-tech.

^{43.} Ng Yik-tung, Sing Man, Wang Yun and Luisetta Mudie (tr.), "China Detains Hui Muslim Poet Who Spoke Out Against Xinjiang Camps", *Radio Free Asia*, 27 January 2020, available at: https://www.rfa.org/english/news/china/poet-01272020163336. html.

^{44.} As of December 2021, a website run by the anti-censorship group Greatfire.org, which tracks the availability of apps in different countries, had identified 8,390 apps that were unavailable in Apple's China store compared to other app stores. See App Store Monitor, available at: https://applecensorship.com/app-store-monitor/na/CN?l=en.

^{45.} For example, in May 2021, the *New York Times* reported that Apple abandoned the encryption technology it typically uses when storing user data in China after the Chinese government prohibited the technology's use. Jack Nicas, Raymond Zhong and Daisuke Wakabayashi, "Censorship, Surveillance and Profits: A Hard Bargain for Apple in China", *The New York Times*, 17 May 2021, available at: https:// www.nytimes.com/2021/05/17/technology/apple-china-censorship-data.html. 46. Lotus Ruan, "Regulation of the internet in China: An explainer", *The Asia Dialogue*, 7 October 2019, available at: https://theasiadialogue.com/2019/10/07/ regulation-of-the-internet-in-china-an-explainer/.

^{47.} Elena Moore, "China Fines Alibaba \$2.8 Billion For Breaking Anti-Monopoly Law", *NPR*, 10 April 2021, available at: https://www.npr. org/2021/04/10/986112628/china-fines-alibaba-2-8-billion-for-breaking-antimonopoly-law.

^{48.} Manish Singh and Rita Liao, "Didi app pulled from app stores in China after suspension order", *TechCrunch+*, 4 July 2021, available at: https://techcrunch.com/2021/07/04/didi-app-pulled-from-app-stores-after-suspension-order/.
49. "What Tech Does China Want?", *The Economist*, 9 August 2021, updated 16 August 2021, available at: https://www.economist.com/business/what-tech-does-china-want/21803410.

^{50.} Mercedes Ruehl and Primrose Riordan, "Tencent boosts global investments as Beijing cracks down on gaming", *Financial Times*, September 2021, available at: https://www.ft.com/content/422e3bd4-6coc-493c-b888-883d331a89b9.
51. BBC News, "TikTok named as the most downloaded app of 2020", *BBC News*, 10 August 2021, available at: https://www.bbc.co.uk/news/business-58155103.
52. "Leading countries based on Facebook audience size as of January 2022", *statista*, available at: https://www.statista.com/statistics/268136/top-15-

have more mobile data traffic than the US and Europe combined. $^{\tt 53}$

(II) THE ATTENTION ECONOMY BUSINESS MODEL

- 57 The surveillance-based attention economy business model⁵⁴ is one particular way of extracting value from the massive technological advances detailed in paragraph 39.
- 58 One of those advances—the internet—can be conceptualised as a constant dialogue between different networked computers, whether these be mobile devices, desktop computers, servers or mainframe computers. When we open any web page we enter a system of connections. Immediately the device we have logged on with will send information, such as its internet protocol (IP) address, browser type, language preference, and possibly other information such as one's physical location or username, to other networked machines, and will in return receive data (such as a web page) back. This incessant process of sending and receiving packets of information continues even when we are not using our device, and is part of the proper functioning of the internet.55 This constantly alert, networked infrastructure was not invented by Facebook or Google, nor do they represent the original vision of a democratising, empowering technology dreamed of by the early internet pioneers. They and other tech companies have amplified and leveraged the internet's possibilities to create new industries

that they dominate and often in practice set the rules for. Although their business model may in some contexts seem like the only way the infrastructure of the internet can be implemented, the exchange of information that constitutes the internet does not of itself require the data extraction, ad-based monetisation, or other particular features that characterise the attention or surveillance paradigm. In the same way, internet services such as online dating apps, travel comparison services and instant messaging services do not require this model to exist either.

- So how does the attention economy business model work? In essence, the answer is simple: "Senator, we run ads", as Mark Zuckerberg summed it up, famously shattering the illusion of Big Tech as an altruistic provider of free services.⁵⁶
- 60 An attention economy or targeted-advertisingbased model can be broken down into five steps.
- (a) Harvesting and aggregating users' personal data
- 61 Every time we go online, we give others the opportunity to gather data about us. Some of this data is *personal information*, such as our date of birth, marital status, or credit card number, which we are free to share or withhold at various points in our online experience. But much of it is *personal data* in the form of metadata, which can be acquired invisibly from every keystroke or mouse click we make when we are online.
- 62 This personal data is collected whenever we use a mobile app, visit a website, interact on social media, do online shopping, use geo-location services, play a game on a VR headset, talk to digital assistants such as Alexa or Google Assistant, or upload health and other data from wearable technology. And increasingly personal data can be taken from our use of the internet of things: smart doorbells and home security,

countries-based-on-number-of-facebook-users/.

^{53.} See China Internet Network Information Center (CNNIC), at: https://www.cnnic. com.cn/.

^{54.} Variously known as surveillance-based or targeted-advertising or data extraction business model.

^{55.} We should also not forget the physical realities of digital platforms. Kate Crawford depicts a blueprint of the physical infrastructure of a Google data centre on the banks of the Colombia River in Oregon. Its three vast data centres, each the size of a football field, use enough energy for 82,000 homes. Data centres such as this are not clouds or ephemeral connections: they are vast physical constructions requiring energy, human labour and natural extraction, networked to a network of networks via a constantly alert system of cookies, browsers, switches, gateways and code. Kate Crawford, *Atlas of Al: Power, Politics, and the Planetary Costs of Artificial Intelligence* (New Haven, CT: Yale University Press, 2021).

^{56.} Mark Zuckerberg, testifying before Senate, as reported by NBC News. See "Senator, we run ads', Mark Zuckerberg", *Loucas Ferekides* Youtube channel, 11 April 2018, available at: https://www.youtube.com/watch?v=GGTWU0xkfGQ.

smart lighting and heating systems, remote health and childcare monitoring, and so on.

- 63 This amounts to increasing levels of "datafication", i.e., the rendering as digital information of every aspect of our individual and social lives. Spaces and surfaces that once were regarded as "analogue" and unamenable to external observation or information gathering have become subject to potential surveillance.
- 64 The use of such metadata is formally legitimated by the user's consent to the terms of conditions of service.
- 65 However, these terms of service are lengthy, often written in opaque legal jargon, seemingly designed not to be read by the user and offering no opportunity to be selective in their acceptance; accordingly, they are rarely even given a casual glance by the vast majority of users before they click "I Agree". It is reasonable to assume that most users have no idea how their data is being used, who it is being shared with and what impact it may have on them⁵⁷ or indeed what they have formally consented to.⁵⁸
- 66 In practice users are denied any meaningful choice. Of course, they are formally free to withdraw from a platform (though this can be an inconvenient obstacle) or not to sign up to it in the first place. But for a teenager, say, all of whose friends use a particular platform, the option to "accept this platform's terms of service or don't use the platform" represents freedom of choice in name only. For example, schoolchildren

www.visualcapitalist.com/terms-of-service-visualizing-the-length-of-internetagreements/. whose teachers had chosen Google Classroom to access learning from home during the COVID-19 pandemic had no choice but to consent to the platform's terms and conditions in order to continue their learning.

- 67 Inevitably this asymmetry weights the contractual power on the side of the company—as it does in many similar kinds of consumer contracts. However, given (i) the value that accrues to tech companies from possessing large amounts of data, and (ii) the widespread ignorance of this value or wilful apathy with regard to it⁵⁹ on the part of individual users, there is particularly good reason to think that individuals do not fully understand what they are consenting to.⁶⁰ While projects such as ToS;DR,⁶¹ which seek to create a transparent and peer-reviewed process to rate and analyse company terms of service and privacy policies, are helping to inform users, their influence to date has remained limited.
- 68 For these reasons, the consent given by the user can at best be described as imperfect. Whether or not users mind about this is another matter, and varies between people and across cultures. Some care but feel they have little choice. Others like the targeted advertising it makes possible, and enjoy the personalisation it offers.⁶²

^{57.} One impact may be personalised pricing where businesses may use information that is collected or inferred about an individuals' characteristics to offer different prices to different consumers. See "Pricing algorithms: Economic working paper on the use of algorithms to facilitate collusion and personalised pricing", *Competition & Markets Authority*, CMA94, 8 October 2018, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/ attachment_data/file/746353/Algorithms_econ_report.pdf. 58. One estimate suggests that the average American "would need to set aside almost 250 hours to properly read all the digital contracts they accept while using online services". Nicholas LePan, "Visualizing the Length of the Fine Print, for 14 Popular Apps", *Visual Capitalist*, 18 April 2020, available at: https://

^{59.} See Paul Lee and Cornelia Calugar-Pop, "Changing attitudes to data privacy: Digital Consumer Trends 2020", *Deloitte*, 21 October 2020, available at: https:// www2.deloitte.com/uk/en/pages/technology-media-and-telecommunications/ articles/digital-consumer-trends-data-privacy.html; and C. Miller, H. Kitcher, K. Perera and A. Abiola, "People, Power and Technology: The 2020 Digital Attitudes Report", *Doteveryone*, 2020, available at: https://doteveryone.org.uk/wp-content/ uploads/2020/05/PPT-2020_Soft-Copy.pdf.

^{60.} In many countries around the world financial regulation imposed after the global financial crisis of 2008/9 mandated stricter standards of transparency and fairness to customers particularly with regard to understanding terms and conditions.

^{61.} Terms of Service; Didn't Read (ToS;DR) at https://tosdr.org.

^{62.} Researchers have highlighted consumers' nuanced and often contradictory perceptions, finding practices such as data-driven targeted advertising sometimes intrusive and disturbing, yet also often taking pleasure in feeling seen and recognised. Minna Ruckenstein and Julia Granroth, "Algorithms, advertising and the intimacy of surveillance", *Journal of Cultural Economy*, vol. 13, iss. 1 (2020), 12–24, available at: https://doi.org/10.1080/17530350.2019.1574866.

(b) Maximising users' attention

- 69 The more time a user spends on a website or a social media platform, the more data they are liable to cede, and the more a user shares the less likely they are to leave the platform.63 There are therefore huge incentives for companies seeking to harvest large amounts of data to sustain their users' attention. An ecosystem of algorithms including content recommendation algorithms (which decide what appears in users' personal newsfeeds or via autoplay) and "people you may know" algorithms (which encourage users to join particular groups or connect with certain users)⁶⁴ combine with other persuasive technologies to influence the content users see and how they interact with it.65 As a former software engineer at YouTube said, "YouTube's top priority is not to help us learn to play the accordion...or see a new city—it's to keep us staring at the screen for as long as possible, regardless of the content."66
- 70 Companies have therefore invested very heavily in "persuasive technologies". These are deliberate techniques designed to facilitate continued engagement, by exploiting psychological triggers, rewards and other elements of habit formation to manipulate user behaviour and "hook" users to products. Innovative persuasive techniques

have been elaborated and taught to generations of tech students⁶⁷ to make products accessible,⁶⁸ frictionless⁶⁹ and habit-forming.⁷⁰ Examples of persuasive technologies include features very widely used in online environments, such as:

- "likes" or "streaks"⁷¹—which stimulate the rewarding neurotransmission of dopamine;⁷²
- tagging and notifications—which prompt users to pick up a device;
- clickbait—which piques curiosity;
- "bottomless bowl" scrolling—so that the user never reaches the end of a news feed;
- default choice architectures—which nudge users towards choosing particular options;
- "dark patterns"—which trick users into actions they didn't intend, such as taking out a premium subscription or clicking on an advert that looks like a navigation button;⁷³
- "sludge" or excessive frictions—which make it hard for users to act in their best interests such as cancel a subscription or opt out of notifications.⁷⁴
- 71 These persuasive technologies, combined with recommendation algorithms, draw users in by

^{63.} De Lin Show, "Hooked: How big tech companies build addictive apps", *Towards Data Science*, 21 April 2020, available at: https://towardsdatascience.com/hooked-b44813baf91e.

^{64.} Algorithms are ordered sequences of instructions that enable computers to solve problems. A simple algorithm might instruct the computer to "add 2" to the number inputted, and output the result. Algorithms can be used to perform calculations, process data, automate reasoning, and so on. A recommender algorithm is a set of computer instructions that takes previously inputted data (for example, films a person has watched, in the case of Netflix) and outputs recommendations ("if you liked *x* and *y*, try *z*"). Facebook's News Feed is controlled by a proprietary algorithm that allocates content to each user's News Feed based on who the users are friends with, what kind of groups they have joined, what pages they have liked, which advertisers have paid to target them and what types of stories are getting the most likes, shares and comments.

^{65.} For example, based on geographic location.

^{66.} Guillaume Chaslot, "Down the Rabbit Hole by Design", *Your Undivided Attention* podcast, episode 4 (10 July 2019), Center for Humane Technology, available at: https://www.humanetech.com/podcast/4-down-the-rabbit-hole-bydesign.

^{67.} See for example Stanford University's Behavior Design Lab, at https:// behaviordesign.stanford.edu/.

^{68.} For example, Twitter's innovation enables anyone to express their view to the world without the need for a blog or website site but by simply typing a few words, sharing a photo or video and clicking "post".

^{69.} For example, Google reduces the cognitive effort and time required to search for the internet by auto correcting spelling, saving passwords and auto completing forms. It will also suggest predictive results based on your search history.
70. Nir Eyal, *Hooked: How to Build Habit-Forming Products* (London: Penguin Books, 2014).

^{71.} For an explanation of Snapchat Streaks, see "I've lost my Snapstreak",
Snapchat Support, at: https://support.snapchat.com/en-GB/a/snapstreaks.
72. Sören Krach, Frieder M. Paulus, Maren Bodden and Tilo Kircher, "The Rewarding Nature of Social Interactions", *Frontiers in Behavioral Neuroscience*, vol. 4, article 22 (28 May 2010), available at: https://www.frontiersin.org/articles/10.3389/fnbeh.2010.00022/.

^{73.} Harry Brignull defined the term "dark patterns" as instances where designers use their knowledge of human behaviour (e.g., psychology) and the desires of end users to implement deceptive functionality that is not in the user's best interest. See "What is deceptive design?", *Deceptive Design*, at: https://www.deceptive. design/.

^{74.} Čass R. Sunstein, "Sludge Audits", *Behavioural Public Policy*, 6 January 2020, 1–20, available at: https://doi.org/10.1017/bpp.2019.32.

piquing their curiosity or exploiting their natural tendency to choose the option that requires the least expenditure of energy. They also work by manipulating people's social emotions. For example, the number of likes, shares, comments, retweets, friends or followers one achieves easily becomes an index of one's popularity or social success. A notification that one has been tagged creates a mild social obligation to respond with a like or a comment. And fear of missing out (FOMO) is among the reasons why, when one has a spare moment without anything else to do, the reflex response is to reach for one's smartphone.⁷⁵

72 It is important to note that these processes do not rob us of our capacity to exercise choice. While there is considerable discussion of the senses in which social media can be addictive for some people,⁷⁶ defenders of digital platforms also cast doubt on the extent to which people become helpless victims, deprived of free will.⁷⁷ Individual users bear some responsibility for the way they interact with digital platforms, for the self-control they exercise and the habits they form.⁷⁸ Casting them simply as passive in the face of inexorable technological forces runs the risk of denying them the very agency they can in fact learn to develop.

- 73 Nevertheless, even if these persuasive technologies and the like do not formally impinge on our freedom, in the sense that we are not finally externally or internally prevented from choosing differently, they are very effective at nudging our behaviour in particular directions. We may not become automatons as a result of such persuasive technologies, but we do become more likely to spend time on social media than we might have done otherwise⁷⁹ and when we are online we are more likely to participate in networks that are more clustered than in those we develop in real life⁸⁰ (i.e. our online networks are likely to include people that are more like us with shared preferences, interests and behaviours and are more tightly knit with multiple shared connections within clusters and fewer connections across different clusters of people).
- 74 It is in principle possible for terms and conditions of service, and even for some uses of persuasive technology, to be implemented in ways that are genuinely beneficial to the user. Nudge techniques, for example, work in similar ways to persuasive technologies. They also alter people's behaviour in predictable ways without compelling compliance, and are widely used in ways that are of value to those subject to them, for example by health services: "take one pill a day after breakfast" on a prescription is more effective in ensuring patients consistently take their drugs than "take one pill a day".
- 75 However, as used by Big Tech companies, there is a huge asymmetry of power between software designers and the Als located in large corporations, on the one hand, and the individual user with their smartphone, on the other. And it is clear that they are aware of this. As internal Facebook documents show, algorithmic technologies and persuasive techniques are often experimented with, resulting in significant negative consequences for individuals, society

^{75.} It has been suggested that Instagram's notification algorithms will sometimes withhold "likes" on photos and deliver them in larger bursts in order to increase the dopamine response primed by an initial negative outcome. See Anderson Cooper, "What is 'brain hacking'? Tech insiders on why you should care", *CBS News*, 9 April 2017, available at: https://www.cbsnews.com/news/brain-hacking-techinsiders-60-minutes/.

^{76.} Vikram R. Bhargava and Manuel Velasquez, "Ethics of the Attention Economy: The Problem of Social Media Addiction", *Business Ethics Quarterly*, vol. 31, iss. 3 (July 2021), 321–59, available at: https://doi.org/10.1017/beq.2020.32. EIAG has done work on addictive behaviours in its Advice paper on Gambling: The Church of England Ethical Investment Advisory Group (EIAG), "Gambling", May 2021, available at: https://www.churchofengland.org/sites/default/files/2021-05/ Gambling%20-%20web.pdf.

^{77.} Nick Clegg, "You and the Algorithm: It Takes Two to Tango", *Nick Clegg*, 31 March 2021, available at: https://nickclegg.medium.com/you-and-the-algorithm-it-takes-two-to-tango-7722b19aa1c2.

^{78.} Hunt Allcott, Matthew Gentzkow and Lena Song, "Digital Addiction", *National Bureau of Economic Research*, Working Paper No. w28936, 21 June 2021, available at: https://ssrn.com/abstract=3870938. It should be noted that Gentzkow has been a paid consultant for Amazon and Allcott has been a Senior Principal Researcher at Microsoft since 2018.

^{79.} Allcott, Gentzkow and Song, "Digital Addiction".

^{80.} Sinan Aral, The Hype Machine: How Social Media Disrupts Our Elections, Our Economy, and Our Health—and How We Must Adapt (New York, NY: HarperCollins, 2020).

and politics;⁸¹ many of these are downplayed publicly and only addressed with retrospective action once a crisis has escalated.⁸²

(c) Analysing this data by Al/machine learning algorithms

- 76 The data which is obtained from users is analysed using algorithms, AI and machine learning techniques, in order to discover patterns in users' behaviour. Machine learning is a technique of analysing data increasingly widely used in many contexts: speech recognition (e.g., Siri or Alexa); facial recognition (e.g., photo tagging); spam and malware filtering; search engines; customer support (e.g., through chatbots); medical diagnosis (e.g., analysing tissue samples); fintech (e.g., for credit scoring or computational trading); machine translation (e.g., Google Translate); etc. Amongst the varieties of machine learning are "supervised learning", where a computer is given a problem to which the answer is already known (e.g., where an image is known to be of cancerous cell tissue), and the computer builds up increasingly accurate methods of identification; and "unsupervised learning", where a computer has to discover patterns in the data without any prior assumptions about what the correct result may be.
- 77 The refining of the algorithms which are at the heart of machine learning depends crucially on massive amounts of data: quite understandably, data is dubbed the "new oil" or the "new sand".⁸³ This approach to machine learning has made the accumulation of data a primary goal of every company that depends on this attention

economy/data extraction business model and it appears that very little work is being done to explore new approaches that might bear fruit with smaller datasets.⁸⁴ Access to metadata is therefore of vital importance to sustain these business models. When a 2021 upgrade of Apple's iOS gave users the active choice to opt out of data tracking, early reports suggested that 85% of users worldwide had opted out, prompting one commentator to speculate that Facebook could be "gone in ten years".⁸⁵

- 78 Persuasive technologies are designed to maximise users' onscreen time, but it turns out that onscreen attention time is increased not just by features deliberately engineered in, but also by unintended aspects of users' behaviour which influence both the amount of time spent online and the type of material that they are likely to be exposed to.
- 79 For example, recommendation algorithms optimised for increased user engagement and a high viral coefficient will direct users' attention towards posts, videos, etc., of a similar kind to those that they have already liked or shared: users are more likely to want to see things that they have previously shown they are interested in, and the items they are more likely to be interested in are those they find emotionally engaging. However, it turns out that certain emotions are more likely to elicit a response than others: in particular, if something incites fear or anger, it is more likely to be shared, which may become a matter of concern if, for example, that fear or anger inflames hostile or prejudicial attitudes. It also turns out that the likelihood of an item being shared is negatively correlated to its truthfulness: according to one study, fake news is shared six times more frequently than

^{81.} See *The Facebook Files, The Wall Street Journal,* available at: https://www.wsj. com/articles/the-facebook-files-11631713039.

^{82.} For example, Facebook's work to eliminate domestic servitude on its platform increased after Apple threatened to remove its app from their App Store. Owen Pinnell, "Apple threatened Facebook ban over slavery posts on Instagram", *BBC News*, 23 September 2021, available at: https://www.bbc.co.uk/news/ technology-58645547.

^{83.} Tim O'Reilly argues sand is a better analogy as individual data is not valuable on its own; it is only valuable in aggregate. Tim O'Reilly, "Data Is the New Sand", *The Information*, 24 February 2021, available at: https://www.theinformation.com/ articles/data-is-the-new-sand.

^{84.} Due to the high energy requirements associated with massive datasets, the lack of focus on sparse-data machine learning is likely to be of increasing environmental focus in coming years.

^{85.} Margaret Taylor, "How Apple screwed Facebook", *Wired*, 19 May 2021, available at: https://www.wired.co.uk/article/apple-ios14-facebook. At first sight this might seem in conflict with the evidence that people don't care about companies taking their data (paragraph 68); but they may care enough to respond to an active choice presented to them, not enough to reject Ts and Cs they are offered on a take-or-leave basis.

responsibly-sourced news, because of its higher emotional content and unexpected information content.⁸⁶ Algorithms optimised for engagement and a high viral coefficient have no stake in either the truthfulness or the moral worth of the item being shared, only in the likelihood that they will increase time spent on a site: for this reason they should not be described as a neutral technology.⁸⁷

80 Another feature of using algorithmic systems that has received much attention is the danger of unintentionally and unacceptably biased algorithmic outcomes. This has been associated with the use of unacceptably biased datasets for training Als. For example, datasets which disproportionately associate black people with criminality will have their biases replicated in any machine learning systems based on them, leading to a variety of discriminatory and oppressive results in the context of policing, judicial sentencing and insurance.88 Automated eligibility systems for access to welfare assistance have consistently stigmatised those who are black, poor, or working-class.⁸⁹ But it also arises in the context of internet search and social media: although one might have thought search engines and social media platforms would have an interest in eliminating systematic bias in their data analysis, since bias leads to more inaccurate identification of user groups and therefore less effective targeting of advertising, in practice both Google's and Facebook's ranking algorithms have been found to reinforce racism and sexism.90

81 Attempts to address algorithmic bias via automated systems of algorithmic fairness have not been able to replicate the context-sensitive and intuitive notions of fairness rightly demanded both by a moral sense of natural justice and by legal systems.⁹¹ Moreover, tech companies jealously guard their proprietary algorithms and the results these generate, with the result that there is no independent means of verifying the extent to which bias or discrimination has occurred.

(d) Predicting users' future behaviour on the basis of this analysis

- 82 Analysing personal data allows tech companies to infer an enormous amount of information about their users. This includes not only immediate deductions about consumer behaviour (which online stores users visit, which brands they prefer, which items they end up buying, etc.), but also less immediate insights into users themselves. Tristan Harris for example lists the following amongst things platforms can easily predict:
 - whether you are lonely or suffer from low self-esteem;
 - your Big Five personality traits with your temporal usage patterns alone;
 - when you're about to get into a relationship;
 - what your sexuality is before you know it yourself;
 - which videos will keep you watching.92
- 83 All this can be done without knowing—or at least without passing on—any individual's

^{86.} Soroush Vosoughi, Deb Roy and Sinan Aral, "The spread of true and false news online", *Science*, vol. 359, iss. 6380, 1146—51, available at: https://www.science.org/doi/full/10.1126/science.aap9559. Cited in "Making Sense of the World: Misinformation, conspiracy theories, and fake news", *Ledger of Harms*, Center for Humane Technology, at https://ledger.humanetech.com/.

^{87.} It should be noted that in principle these mechanisms operate in relation to fake news that appeals to those on the liberal-left as much as to those on the political right.

^{88.} See Ruha Benjamin, *Race after Technology: Abolitionist Tools for the New Jim Code* (Cambridge: Polity Press, 2019).

^{89.} Virginia Eubanks, Automating Inequality: How High-Tech Tools Profile, Police and Punish the Poor (New York, NY: Picador, 2018).

^{90.} Safiya Umoja Noble, *Algorithms of Oppression: How Search Engines Reinforce Racism* (New York, NY: New York University Press, 2018).

^{91.} See Michelle Lee, "Why technology cannot solve algorithmic fairness (1/3): gaps between how computer scientists and ethical philosophers define fairness", *Deloitte*, 26 November 2020, available at: https://ukfinancialservicesinsights. deloitte.com/post/102gkg2/why-technology-cannot-solve-algorithmic-fairness-1-3-gaps-between-how-computer; Sandra Wachter, Brent Mittelstadt and Chris Russell, "Why Fairness Cannot Be Automated: Bridging the Gap Between EU Non-Discrimination Law and Al", *Computer Law & Security Review* 41 (March 2020), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3547922; and Andreas Tsamados et al., "The Ethics of Algorithms: Key Problems and Solutions", *SSRN*, 28 July 2020, available at: http://dx.doi.org/10.2139/ssrn.3662302. 92. Center for Humane Technology, "A New Agenda for Tech", *Humane Tech*, 23 April 2019, available at: https://www.humanetech.com/news/newagenda.

identity as such. With the aggregation of data, if one knows that persons A, B and C like all of x, y, and z (whether those be particular films, clothing brands, or favourite beers), then if person D likes x and y then they are also likely to like z—all without knowing the identity of any of the individuals concerned. It is the power of aggregation, matched with the probability that people will behave in ways that can be predicted on the basis of their similarity to others with similar traits, that gives rise to the sometimes uncanny sense that the internet is listening in.

- 84 But of course, the more one knows about an individual (their gender, their geographical location, and so on, and most importantly who they are) the more valuable the information about them will be. Datasets become significantly more valuable when they are cross-tabulated against each other:⁹³ Google, for example, combines datasets for each user from free services such as Chrome, Android and Gmail to support its core business, using Google Accounts to unify each user's activity and to improve targeting of advertising. Users gain highly functional apps, while Google learns something highly monetisable.⁹⁴
- 85 Some have maintained that the effect of the analysis of large amounts of personal data is not just that user behaviour can be predicted, but that it can to some considerable extent be guided. Zuboff, for example, maintains that the ultimate goal of Big Tech is to herd us towards guaranteed outcomes, in which "it is no longer enough to automate information flows *about us*; the goal now is to manipulate or *automate us*".⁹⁵ Whether or not this is the conscious intention of Big Tech companies (about which there is scope for doubt), it is the case that *at the aggregate level* to be able to predict is also to be able to guide—the fact that increased

advertising typically correlates to increased sales is all that advertisers need to know, regardless of the mechanisms by which advertising is effective in relation to individual consumers.⁹⁶

(e) Monetising these predictions by marketing them to advertisers

- 86 The power this gives to Big Tech companies far outweighs anything the traditional print or broadcast media can offer to advertisers. The relatively crude audience segmentation that a television company can manage (audiences for daytime TV vs those for early evening or postwatershed viewing, for example, informed by data from statistically-based audience research), cannot match the highly targeted microsegmentation of markets that an online platform can achieve based on detailed knowledge of its users' characteristics and preferences and supported by users' feedback and shares.⁹⁷
- 87 Key to this is the process of real-time bidding (RTB).⁹⁸ A single visit to a website can prompt an auction among advertisers which can result in a person's personal data being seen by hundreds of organisations. Real-time bidding allows online advertisers to compete for available advertising

^{93.} Amrutha Aprameya, "Cross Tabulation: How It Works and Why You Should Use It", *humans of data*, 21 January 2016, available at: https://humansofdata.atlan. com/2016/01/cross-tabulation-how-why/.

^{94.} Martin Moore and Damian Tambini (eds), *Digital Dominance: The Power of Google, Amazon, Facebook, and Apple* (New York, NY: Oxford University Press, 2018), pp. 35–36.

^{95.} Shoshana Zuboff, The Age of Surveillance Capitalism, p. 8 (italics original).

^{96. &}quot;The evidence suggests that...UK publishers earned around 70% less revenue when they were unable to sell personalised advertising but competed with others who could." The Competition and Markets Authority, "Online platforms and digital advertising: Market study final report", 1 July 2020, p. 15, para 44, available at: https://assets.publishing.service.gov.uk/media/5efc57ed3a6f4023d242ed56/ Final_report_1_July_2020_.pdf.

^{97.} According to one authority, segmentation categories include "survivors of incest, rape and sexual abuse, people with mental health issues, impotence or infertility...[Data brokers are able to] target vulnerable people in a way that print media is not capable of." Testimony of Pam Dixon, Executive Director, World Privacy Forum, before the Senate Committee on Commerce, Science and Transportation hearing, "What Information Do Data Brokers Have on Consumers, and How Do They Use It?", 18 December 2013, available at: https://www.commerce.senate.gov/2013/12/what-information-do-data-brokers-have-on-consumers-and-how-do-they-use-it.

^{98.} For a detailed explanation of real-time bidding, see Johnny Ryan, "'RTB' adtech & GDPR", Assorted Materials, available at: https://assortedmaterials.com/ rtb-evidence/. Also see Information Commissioner's Office, "Update report into adtech and real time bidding", 20 June 2019, p. 13, available at: https://ico.org. uk/media/about-the-ico/documents/2615156/adtech-real-time-bidding-report-201906-dl191220.pdf.

space by viewing bid requests which contain information about the user including a unique identifier, the user's IP address, browser, location, time zone, language, device type (desktop/mobile, brand, model, operating system). The RTB ecosystem may also augment the data collected with information from other sources in a process known as "data matching" or "enrichment". That may include micro information relating to the audience segmentation of the user such as whether the user is of "very low net worth".99 This open auction process involves several hundred organisations processing personal data of website users—much of which is aggregated, disaggregated, traded, passed around and ends up in the hands of government agencies.¹⁰⁰ Millions of bid requests are processed every second utilising automation, which involves the packaging of multiple data sources into user profiles shared openly throughout the ecosystem.

- 88 It is important to remember that it is not user data that is sold, but the ability to target advertising more precisely. It is therefore not the users of online platforms who perform searches or enjoy free social media who are the customers, but the advertisers and market researchers. In the celebrated saying, "When the product is free, you are the product"—or more precisely, knowledge about your likely preferences and therefore the opportunity to influence your future behaviour is the product that is sold.
- 89 The proportion of all advertising revenues that have gone to just two companies, Google and Facebook, has led to a market near-duopoly which controls approximately 60% of the total U.S. internet advertising market, as well as the vast majority of year-over-year growth within it.¹⁰¹ It is also important to note that Google and

Facebook do not simply sell advertisements to marketers that appear on their own platforms. They also dominate across the breadth of the supply chain. Google, for example, can in a single transaction, act on behalf of both the advertiser (the demand side) and the publisher (the supply side), whilst also operating the ad exchange that connects these two parties.¹⁰²

90 The access users have to services for free means that in the US monopoly regulations have not to date been applied to Big Tech platforms, as is discussed further below. But this does not mean that there is not the potential for abuse of quasi-monopoly powers over attention economy businesses' true customers, i.e. advertisers.¹⁰³ This has proved disastrous for many traditional print media platforms whose business model has depended on advertising: perhaps most notable amongst these have been local and regional newspapers in many parts of the world, which have been unable to maintain their independence and often their ongoing viability as sources of revenue have dried up.¹⁰⁴

^{99. &}quot;Audience Taxonomy", *IAB Tech Lab*, available at: https://iabtechlab.com/ standards/audience-taxonomy/.

^{100.} See Byron Tau, "How Cellphone Data Collected for Advertising Landed at U.S. Government Agencies", *The Wall Street Journal*, 18 November 2021, available at: https://www.wsj.com/articles/mobilewalla-says-data-it-gathered-from-consumers-cellphones-ended-up-with-government-11637242202.
101. Dina Srinivasan, "The Role of Data and Privacy in Competition", Statement

for the Hearing on Online Platforms and Market Power to U.S. Congress, Subcommittee on Antitrust, Commercial, and Administrative Law, Part 3, 18 October 2019, available at: https://dinasrinivasan.com/wp-content/ uploads/2019/10/Dina-Srinivasan_Congressional-Statement_Hearing-on-The-Role-of-Data-and-Privacy-in-Competition_10-18-19-1.pdf. 102. For example, a user viewing content on YouTube will have their impression sent to a Supply Side Platform (SSP) such as Google Ad Exchange which broadcasts it to an ad network such as Google AdSense or Google AdMob and receives bids from Demand Side Platforms such as Google Ads. See Johnny Ryan, "Learn about Real-Time Bidding", The Irish Council for Civil Liberties video, available at: https:// www.iccl.ie/digital-data/iccl-report-on-the-scale-of-real-time-bidding-databroadcasts-in-the-u-s-and-europe/.

^{103.} These costs are of course ultimately passed down to consumers: the UK Competition and Markets Authority concludes that the costs of digital advertising, averaging out at £500 per UK household, are likely to be higher than they would be in a competitive market. See The Competition and Markets Authority, "Online platforms and digital advertising", p. 7.

^{104.} Regulators around the world, including the Australian Competition and Consumer Commission (ACCA), are examining these concerns and regulatory forms are gradually being introduced. The ACCA's "Digital advertising services inquiry" report in August 2021 made a number of recommendations including that powers should be given to the ACCA to develop sector specific rules to address conflicts of interest and competition issues in the ad tech supply chain. Commonwealth of Australia, "Digital advertising services inquiry: Final report", Australian Competition & Consumer Commission, August 2021, available at: https://www.

- 91 It might be asked whether these practices are different in principle from more traditional forms of targeted advertising, such as the use of loyalty cards by supermarkets. These give them detailed knowledge about customers' purchasing habits, and enables them to offer price deals, rewards and other inducements in return for continued spending but they lack the ability to track their customers spending, social, dietary habits and preferences and actions even if they never set inside their own store.
- 92 Clearly there are continuities between the attention economy business model and this kind of targeted advertising. Both aim to predict and to some extent guide purchasing decisions, based on knowledge of a customer's previous behaviour and other data about them. Both aim to use psychological and behavioural modification techniques to motivate consumption.¹⁰⁵ But equally clearly, there is a completely different level of ambition on the part of Big Tech, and the use of a whole set of techniques that are not found in mainstream targeted advertising. The extent of datafication and the techniques used to collect it, the range and sometimes illegal tying of sources of personal data on which Big Tech surveillance draws (for example Google's bundling of its search engine and Chrome apps into its Android mobile operating system),106 the increasing sophistication of persuasive technologies, the deployment of advanced machine learning techniques, and the asymmetry of power/knowledge between the user and the company, bolstered by lobbying:107 these all point to an intensification of a long-standing dynamic that is certainly a difference of degree, and arguably a difference of kind.

blocking tool", *Financial Times*, 1 February 2015, available at: https://www.ft.com/ content/80a8ce54-a61d-11e4-9bd3-00144feab7de?siteedition=uk#axzz3Qbumslf6.

(III) IMPACTS OF THE ATTENTION ECONOMY BUSINESS MODEL

93 When we turn to consider the impacts of the attention economy business model, we should not forget or neglect the many benefits to human flourishing and to the common good which this rapid technological innovation has provided. As we noted at the outset (paragraph 39), these include sustaining relationships with family and friends, enabling the delivery of healthcare, offering powerful new channels for political expression, and making information available on a scale hitherto unknown to individuals and communities, in the Global South as much as the Global North. All of these unquestionably contribute to the human good.

(a) Personal and relational impacts

- 94 But while these benefits are real, it is also the case that Big Tech products and services have been developed and optimised without adequately attending to their long-term impact on people and communities, and the scale and importance of their activities suggest that these impacts can no longer be ignored. There are many problematic personal and relational impacts that need to be taken into account.
- 95 The addictive nature of social media, the attractions of recommender algorithms, the seductions of clickbait, are all aspects of the way in which persuasive technologies have been designed to influence people's behaviour in ways that can diminish their flourishing as persons. So, people come off their mobile phones guiltily or ruefully, with a sense that it has not been time well spent. Unsurprisingly they find themselves less able to focus for long periods of time, to think in depth, or to solve complex problems: the concentration needed for deep attention is less easy to summon.¹⁰⁸

accc.gov.au/system/files/Digital%20advertising%20services%20inquiry%20-%20 final%20report.pdf.

^{105.} It is worth remembering that Vance Packard's early expose of subliminal advertising techniques, *The Hidden Persuaders*, was published in 1957, over sixty years ago.

^{106.} Tom Warren, "Google fined a record \$5 billion by the EU for Android antitrust violations", *The Verge*, 18 July 2018, available at: https://www.theverge.com/2018/7/18/17580694/google-android-eu-fine-antitrust.
107. Robert Cookson, "Google, Microsoft and Amazon pay to get around ad blocking tool". *Financial Times*, 1 February 2011, available at: https://www.ff.com/

^{108.} Reynol Junco, "Too much face and not enough books: The relationship between multiple indices of Facebook use and academic performance", *Computers in Human Behavior*, vol. 28, iss. 1, January 2012, 187–98, available at: http://dx.doi.org/10.1016/j.chb.2011.08.026; Onur Sapci et al., "The relationship between smartphone use and students' academic performance", *Learning and Individual*

- 96 There is a danger that people's perception of what is worthwhile or valuable is distorted. The pressure to achieve likes or retweets or followers, and the risk that virality comes to be confused with depth, mean that truth and value can come to be confused with fame and popular appeal. The desire to look more appealing means that people will tend to hide their more vulnerable side, or conversely broadcast their vulnerable side—both of which are easier to do when one is communicating through carefully honed messages rather than through the hesitancies and unpredictabilities that make up face-to-face conversation. Similarly, the desire to be liked means that people are less willing to share an opinion if they think their friends may disagree with it, but this becomes even more likely if the medium of communication rewards simpler emotions and less nuanced thoughts, and doesn't facilitate the give-and-take that might lead to more complex or thought-through conclusions.
- 97 Conversely, it can be easier to be unkind when the person you are addressing is not physically present in front of you, but appears in the form of text on a screen, problems which are much enhanced on platforms and in forums where anonymity is the norm.
- 98 The effect on people's physical and mental health has been widely reported. Stress, loneliness, feelings of addiction and increased risky health behaviour, have all been associated with increased social media use. People are liable to be less empathetic, more prone to confusion and misinterpretation in their relations with others, and less able to attend or be present to others.¹⁰⁹ Online behaviour has an impact on offline behaviour: participating in sexist behaviour on Twitter has been shown to increase the levels of hostile sexism in the workplace.¹¹⁰ Yet it

could be argued that positive changes regarding climate change and racial justice would not have gathered as much momentum had they not been amplified on social media platforms.

- 99 Whilst all of these are serious issues for adults, they are much more so for children who have not learned the resilience to counter the effects of large amounts of time spent online. A ledger of stories collected by Sum of Us about how confidential online platforms (like Instagram, Facebook, TikTok, YouTube or Roblox) have negatively impacted a child, make distressing reading.¹¹¹ Studies suggest that children and young people experience reduced attention spans, shallower cognitive abilities, and loss of identity because of their engagement in social media.¹¹² The search for instant positive gratification through receiving immediate and superficial responses is liable to teach them that negative emotions happen to losers, rather than being a normal part of life that everyone has to learn to cope with.
- 100 All of these represent dimensions in which our capacity to flourish as persons and flourish in relationships is being compromised. The more our mobile screens gain our attention, the more danger we are in of being drawn away from the true and the good to the entertaining and the superficially appealing. Persuasive technologies gnaw away at our power of freedom and selfdetermination, and erode our capacity to "want what we want to want".¹¹³ Indeed, as James

Differences, vol. 89 (July 2021), 102035, available at: https://doi.org/10.1016/j. lindif.2021.102035.

^{109.} Vikram R. Bhargava and Manuel Velasquez, "Ethics of the Attention Economy", contains extensive evidence.

^{110.} Jesse Fox, Carlos Cruz and Ji Young Lee, "Perpetuating online sexism offline: Anonymity, interactivity, and the effects of sexist hashtags on social media", *Computers in Human Behavior*, 52 (2015), 436–42, available at: https://gap.hks.

harvard.edu/perpetuating-online-sexism-offline-anonymity-interactivity-and-effects-sexist-hashtags-social-media.

^{111. &}quot;Is Big Tech harming children you love?", *SumOfUs*, available at: https:// impact-of-tech.vercel.app/. There is also evidence showing how Facebook profiles young people for advertising purposes, and fails to exercise due care over what advertisers promote to them. See Reset Australia, "Profiling Children for Advertising: Facebook's Monetisation of Young People's Personal Data", *Reset Australia Research Report*, 26 April 2021, available at: https://au.reset.tech/news/ profiling-children-for-advertising-facebooks-monetisation-of-young-peoplespersonal-data/.

^{112.} Sherry Turkle, *Reclaiming Conversation: The Power of Talk in a Digital Age* (New York, NY: Penguin, 2015), p. 401.

^{113.} James Williams, Stand out of our Light: Freedom and Resistance in the Attention Economy (Cambridge: Cambridge University Press, 2018), p. xii, available at: https://doi.org/10.1017/9781108453004.

Williams writes, "to the extent that we take these fundamental capacities to be among our uniquely human guiding lights, there's a very real sense in which epistemic distraction *literally* dehumanizes".¹¹⁴ All of this makes it more difficult for us to lead undistracted lives or to be our best selves.

(b) The threat to privacy

- 101 A second area of concern involves the right to privacy. In human rights terms, there are three dimensions of privacy:
 - the freedom from intrusion into our private lives;
 - the right to control information about ourselves;
 - the right to a space where we can freely express our identities.¹¹⁵

As Amnesty International has argued, each of these is under threat from the activities of Big Tech. Human rights jurisprudence has consistently interpreted the right to privacy to permit interference with privacy only when legal, necessary and proportionate, but the scale of data gathering undertaken by Facebook, Google and others, even if it is legal, is not remotely necessary or proportionate. The right to control information about ourselves has been given clear articulation in the EU's General Data Protection Regulation (GDPR), but even in those countries to which it applies, the take-or-leave nature of the terms of service amounts in effect to a form of "forced consent". Finally, the fact of one's data being extracted, collated and analysed can lead some people to internalise pressures to conform to social or governmental expectations. To give one example, LGBT people living in a culture where same-sex intimate conduct or transgender identities are stigmatised or illegal might face

pressure to conform when they know their personal data is being collected.¹¹⁶

- 102 Once information has been amassed about individuals, unless it is actively destroyed it remains there as an aggregated body of data, at the company's disposal; even if it is destroyed, it remains forever encoded in the algorithms that it has been used to train. It is liable to be subject to data breaches: perhaps the most infamous and significant example of this was the acquisition of the data of up to 87 million Facebook users by the British firm Cambridge Analytica, data which was subsequently used to provide support through targeted political advertising of the 2016 presidential election campaign of Donald Trump. It can be obtained by government security agencies.¹¹⁷ It can be inappropriately used: the biggest GDPR fine issued to date is against Amazon for using its users data without their free consent.¹¹⁸ It can be used for political surveillance by the security agencies of non-democratic regimes: the most compelling examples of this are in China, where mass surveillance systems are operated together with the social credit system which is currently under development, all with the co-operation of Chinese tech companies.
- 103 In the European Union the GDPR came into force in 2018, providing a range of strict provisions about the use of data and increasing the control individuals have over their data.¹¹⁹ Any organisation processing the personal information of individuals located in the European Economic Area must implement basic data protection principles. Amongst its provisions are that information processing may only be carried out in accord with a limited number of lawful purposes; consent must be clearly specified, without a clear imbalance between a data controller and the individual,

^{116.} Amnesty International, "Surveillance Giants", pp. 19–22.

^{117.} Byron Tau, "How Cellphone Data Collected for Advertising Landed at U.S. Government Agencies".

^{114.} James Williams, Stand out of our Light, p. 80 (italics original).(1115. Amnesty International, "Surveillance Giants: How the Business Model of1Google and Facebook Threatens Human Rights", Amnesty International report,42019, p. 19, available at: https://amnestyusa.org/wp-content/uploads/2019/11/1Surveillance-Giants-Embargo-21-Nov-0001-GMT-FINAL-report.pdf.1

Matt Burgess, "Why Amazon's £636m GDPR fine really matters", Wired,
 August 2021, available at: https://www.wired.co.uk/article/amazon-gdpr-fine.
 GDPR is retained in the UK as the UK GDPR. The Data Protection Act 2018 is the UK's implementation of the General Data Protection Regulation (GDPR).

and may be revoked; individuals have the right to access the personal data an organisation holds about them; and breaches of sensitive data must be reported. Whilst data protection regulations such as the GDPR have strengthened the control individuals have over their data, there are concerns that data protection regulations have been used by some large platforms as an excuse to restrict access to data for third parties such as academics,¹²⁰ small companies¹²¹ or publishers, while sharing it without restrictions within their own "walled gardens". There are also concerns that in some circumstances a blanket prioritisation of individual privacy can inadvertently protect bad actors. Thus, end-toend encryption (E₂E) does nothing to protect the collection of metadata (how long you talk, who you talk with, how often, where and who is nearby), but it may for example prevent the detection and mitigation of child sexual abuse material online.122

104 These concerns about privacy remain relevant even with the recognition that worries about it differ between cultures, countries and indeed individuals. It is often maintained, for example, that perhaps arising from the Confucian ideal of harmony Chinese citizens are more willing to acquiesce in the development of stateled surveillance and the public reputation management channelled by the social credit system in exchange for an orderly, stable society and effective government. And one might well expect a similar trade-off to be made in other societies. But regardless of how any particular individual or society balances out the goods, it remains the case that the right to privacy protects aspects of human life that are important for human flourishing.

(c) Social and political impacts

- 105 Amongst social and political impacts, there are first of all the occurrences of filter bubbles and echo chambers. Most people tend to follow and to like and share posts from people they trust, i.e., friends and family members, and those whose opinions they share; that is, they will form "preference bubbles" with people they have consciously chosen to engage with. They will also receive content or group recommendations pushed by algorithms which are similar to those they or their friends¹²³ have already indicated an interest in or sympathy towards through their online activity, but which they hadn't actively chosen: these form "filter bubbles", i.e., items filtered for them by algorithms.¹²⁴ This means some people see the same content time and time again and others will not see it at all.¹²⁵
- 106 These processes at first sight seem innocuous. After all, as tech company representatives argue, most people prefer to see prioritised on their feed content that is from people they know or is related to their interests. Those that don't want this can (in many cases) switch to chronological settings.
- 107 However, often the default setting will result in people hearing the opinions of those that they trust and broadly agree with. They are relatively unexposed to views they are unfamiliar with expressed by people from different backgrounds or walks of life than their own. Coupled with a

^{120.} Facebook restricted data access to academics from New York University's Cybersecurity for Democracy project for breaching the platform's privacy obligations. See BBC News, "US consumer watchdog criticises Facebook's NYU ban claim", *BBC News*, 6 August 2021, available at: https://www.bbc.co.uk/news/technology-58104609.

^{121.} Jason Furman et al., "Unlocking digital competition", Report of the Digital Competition Expert Panel (13 March 2019), p. 124, ¶ 4.42, available at: https://www.gov.uk/government/publications/unlocking-digital-competition-report-of-the-digital-competition-expert-panel.

^{122.} NŠPCC, "End-To-End Encryption: Understanding the impacts for child safety online", NSPCC report based on research undertaken by PA Consulting, April 2021, available at: https://www.nspcc.org.uk/globalassets/documents/news/e2ee-pac-report-end-to-end-encryption.pdf.

^{123.} Recommendations based on a friend's or other contacts' interests are known as "edge effects". See Laura Edelson's testimony to the Joint Committee on the Draft Online Safety Bill, 14 October 2021, available at: https://parliamentlive.tv/ Event/Index/f8eb5e28-138c-4ff9-b494-fef97618fb2e.

^{124. &}quot;Similar" can be misleading. For example, during the preparation of this report, a Facebook search in the UK for "teste antigenique" for a holiday in France recommended a group with the word "antisémitique" in its name.

^{125.} Eli Pariser, *The Filter Bubble: What the Internet Is Hiding from You* (London: Viking, 2011), available at: https://order-papers.com/sites/default/files/tmp/webform/order_download/the-filter-bubble-what-the-internet-is-hiding-from-you-eli-pariser-pdf-download-free-book-7b9d193.pdf.

curation feed optimised for engagement, these filter bubbles can be intensified. For example, algorithms are optimised to promote content that is deemed "engaging"—i.e., posts that attract the most likes, shares and comments will be promoted. This means that content that is controversial, divisive or scandalous and attracts more comments is more likely to be seen by other users than say uplifting but uncontroversial posts.¹²⁶ In a political context this means that people are liable to live in echo chambers, with their political opinions reinforced: they are apt to be convinced that their views are widely shared, while having very little experience of those who have different social or political understandings.¹²⁷ Political parties in the EU have complained that due to the impact of the algorithms they have been forced to skew negative in their communications in order to resonate on Facebook; this has the downstream effect of leading them into more extreme policy positions.¹²⁸ And because political opinions are buttressed by sets of political facts or quasifacts, there is an erosion of a common, agreed fact base—of the kind that public broadcasting and news at its best has tried to achieve-which might otherwise have served as an initial foundation for shared political understanding.

108 To some extent this is intrinsic to any kind of community, where people with limited information and sympathies try to form opinions about the common good of the community as a whole. But it is intensified where the media of communication reinforce a sense of emotional immediacy, don't encourage pushback, and give the illusion that one has interacted with a variety of people. Rather than fostering a social and political ecology marked by a recognition of diversity, an understanding of different points of view, and the sense of give and take that comes with genuine debate, the tendency of social media is towards an exacerbated polarisation of society.

- 109 While this polarisation is largely an unintended consequence of the way the algorithms are currently programmed, another social and political impact depends on deliberate intervention by users. Social media—like the internet in general—provide a largely unconstrained and often anarchic space that encourages self-expression and free speech. This is crucial for the articulation of unpopular opinions, the flourishing of novel forms of artistic expression, the expression of minority voices, etc., whose publication may not otherwise be commercially viable, may be excluded by the editorial decisions of the mainstream media, or may be contrary to the official line of governments. All of these are amongst the benefits that products such as social media and online forums have sustained, and in principle should be applauded and defended by appeal to the right to free speech.
- 110 However, particularly when combined with the echo chamber occurrence just discussed, this freedom can be abused and used to spread misinformation, disinformation and hate speech.¹²⁹ This contributes to the proliferation of conspiracy theories such as QAnon. When combined with the tendency to reduce complex issues to soundbites, this makes it more difficult

^{126.} Under Facebook's engagement-based metrics, a user who likes, shares or comments on 1,500 pieces of content has more influence on the platform and its algorithms than one who interacts with just 15 posts, allowing "super-sharers" to drown out less active users. See Jeff Horwitz and Deepa Seetharaman, "Facebook Executives Shut Down Efforts to Make the Site Less Divisive", *The Wall Street Journal*, 26 May 2020, available at: https://www.wsj.com/articles/facebook-knows-it-encourages-division-top-executives-nixed-solutions-11590507499.
127. "Communal Conflict in India Part I", internal Facebook report, July 2020. See Newley Purnell and Jeff Horwitz, "Facebook Services Are Used to Spread Religious

Hatred in India, Internal Documents Show", *The Wall Street Journal*, 23 October 2021, available at: https://www.wsj.com/articles/facebook-services-are-used-tospread-religious-hatred-in-india-internal-documents-show-11635016354. 128. Keach Hagey and Jeff Horwitz, "Facebook Tried to Make Its Platform a Healthier Place. It Got Angrier Instead", *The Facebook Files, The Wall Street Journal*, 15 September 2021, available at: https://www.wsj.com/articles/facebookalgorithm-change-zuckerberg-11631654215.

^{129.} The engagement-based ranking model provides financial (as well as political) incentives to bad actors such as troll farms and clickbait actors to plagarise viral and evocative content and posting to multiple pages and make money from the platforms advertising monetisation programmes. See Karen Hao, "How Facebook and Google fund global misinformation", *MIT Technology Review*, March 2021, available at: https://www.technologyreview.com/2021/11/20/1039076/facebook-google-disinformation-clickbait.

to deal in a fact-based effective manner with complex global issues such as the Covid-19 pandemic or climate change. The global nature of tech platforms means that companies are often seeking to review and moderate content posted in dialects they have no expertise in. This means that in many countries such misinformation as well as hateful or even illegal content can go undetected and can be amplified to millions of users before being moderated.¹³⁰

- 111 This is not just a feature of social media. Because search engines also segment users by previous searches, geographical location, etc., their automated search suggestions will vary without users necessarily being made aware of alternatives. A user based in one part of the United States may find their search term "climate change is" autofilled with "the greatest threat to humanity" and a list of similar phrases, while in another part it may be completed with "a conspiracy theory" and the like.¹³¹
- 112 In some cases, there have been severe political impacts as a result. Amongst them have been:
 - in 2018, in a context where Facebook is the only access people have to news, the platform acknowledged that it did not do enough to stop incitement to violence towards the Rohingya people in Myanmar;
 - the mobilisation of extremist groups through the use of recommender algorithms on Facebook;
 - the use of Instagram, Facebook, Twitter

and other platforms for influencing election campaigns in several countries around the world in ways that go beyond the limits of ordinary political advertising: these include voter suppression, targeted political advertising branded as news rather than as political advertising, and in the case of the Russian interference in the 2016 US Presidential Election, the creation of thousands of fake social media accounts spreading fabricated evidence to support the candidacy of Donald Trump over that of Hilary Clinton;

- the livestreaming on Facebook, subsequently uploaded onto YouTube and other sites (though soon taken down), of the 2019 shootings at mosques in Christchurch, New Zealand, by a far-right terrorist gunman;
- the use of Twitter by President Trump to summon supporters to a rally in Washington DC on 6 January 2021, to defend his claim that the presidential election had been "stolen" from him, a rally which led to the storming of the Capitol by rioters and deaths.
- 113 Another social and political impact can be attributed to the business model of Big Tech companies, particularly Google and Facebook. A consequence of the loss of advertising revenue going to traditional print media outputs such as local and regional newspapers has been the loss of a vital infrastructure for journalistic output, removing one of the historic organs for mediating local and regional identity and ensuring a functioning democracy.
- 114 In general, there is the danger that these impacts of Big Tech business models will contribute to an erosion of confidence in the democratic process and have a deleterious effect on the flourishing of the virtues, institutions and practices that make for healthy democracies.

(d) Are the negative impacts intrinsic to the business model or separable from it?

115 There is much dispute whether the kind of negative impacts identified here are intrinsic to the business model of Big Tech companies, or are contingent consequences of their activities.

^{130.} Justin Scheck, Newley Purnell and Jeff Horwitz, "Facebook Employees Flag Drug Cartels and Human Traffickers. The Company's Response Is Weak, Documents Show", *The Facebook Files, The Wall Street Journal*, 16 September 2021, available at: https://www.wsj.com/articles/facebook-drug-cartels-human-traffickers-responseis-weak-documents-11631812953.

^{131.} Guillaume Chaslot, "Google Autocomplete Pushed Civil War narrative, Covid Disinfo, and Global Warming Denial", *Guillaume Chaslot*, 9 February 2021, available at: https://guillaumechaslot.medium.com/google-autocomplete-pushedcivil-war-narrative-covid-disinfo-and-global-warming-denial-c1e7769ab191; see also Chau Tong and Nicholas Diakopoulos, "Searching for BLM: Search behavior and Google results during the 2020 Black Lives Matter protests", *ResearchGate*, March 2021, available at: https://www.researchgate.net/publication/350529538_ Searching_for_BLM_Search_behavior_and_Google_results_during_the_ 2020_Black_Lives_Matter_protests.

- 116 To the extent that social media companies such as Facebook or Twitter have acknowledged that there are valid criticisms, they have tended to deflect these away from their fundamental business model, towards society. Thus, for example, the mantra that they are "platform, not publisher": just as telephone companies are not responsible for what is said on their telephone lines, so social media companies should not be obliged to exercise editorial control over what is said on their platforms. Facebook moreover sets a high store by free speech, and has historically been extremely reluctant to be party to anything that looks like censorship. By allowing free speech, they maintain, inevitably the platform will reflect society: if society has bad actors, it is not surprising that these will be reflected on social media platforms.
- 117 For them, the issue is therefore not one of changing the business model or their design choices but of mitigating harms. In this case, regarding free speech on Facebook, the company has sought to address this by processes of content moderation and the setting up of the Facebook Oversight Board, which provides judgements which are intended to be independent about controversial content.
- 118 Against this, critics maintain that many of the harms are intrinsic to the business models. Amnesty International, for example, argues that the assault on the right to privacy involved in the harvesting of personal data, and the consequent effects on freedom of expression and opinion, freedom of thought and the right to non-discrimination, amount to a regime of surveillance that has become part of the business models of Google and Facebook. The evidence of many privacy scandals over the years suggests, they say, that "it is difficult not to see these numerous privacy infringements as part of the normal functioning of their business, rather than aberrations".132 And this parallels Zuckerberg's description of Facebook's decision to release personal information: "We decided that these

would be the social norms now, and we just went for it". $^{\ensuremath{\text{133}}}$

- 119 However, it may not be most fruitful to frame the issue as one of distinguishing "harms intrinsic to the business model" (which cannot be changed without posing an existential threat to the companies) from "harms contingently consequent on the business model" (which can be mitigated by changes to design choices). The reason is quite simply that, even if tech companies do face ethical concerns, they do not need to stop existing to be rid of them. Business models are not immutable, monolithic givens: they are the outworking of conscious decisions which can in principle be made differently—indeed the business model of many Big Tech companies has changed over time. Thus, the use of surveillance, massive datasets and persuasive technologies are the direct results of design and monetisation decisions for which these companies are directly responsible. With a different approach to content moderation, market-driven interoperability, reformed governance around optimisation models, and transparency on unintended or unacceptable bias decisions, different outcomes could be produced without requiring a change of business model.
- 120 Of course, given the market and financial pressures on companies, it may be very difficult to change or retreat from particular business models, and some companies have responded aggressively to regulatory threats that they perceive as existential in nature.¹³⁴ However, change in this rapidly evolving sector and in response to changing consumer demands and global regulatory shifts is constant, and engagement with long-term stakeholders will be vital for the long-term success of these companies.¹³⁵

^{133.} Bobbie Johnson, "Privacy no longer a social norm, says Facebook founder", *The Guardian*, 11 January 2010, available at: http://www.theguardian.com/technology/2010/jan/11/facebook-privacy.

^{134.} Andrew Hutchinson, "Facebook Threatens to Leave Europe Due to Proposed New Data-Sharing Regulations", *Social Media Today*, 21 September 2020, available at: https://www.socialmediatoday.com/news/facebook-threatens-to-leave-europedue-to-proposed-new-data-sharing-regulat/585619/.

^{132.} Amnesty International, "Surveillance Giants", p. 6.

^{135.} Apple for example introduced tools to limit apps tracking users across the

(IV) MONOPOLY CONTROL

- 121 The final feature in relation to Big Tech that we should note refers to the nature of the market environment in which it operates. This particularly concerns the monopoly, nearmonopoly or oligopoly control of markets by particular companies.
- 122 In the case of social media, size creates advantages, to the point that there is a selfreinforcing near-monopoly in certain markets, such as social media and search. In the case of social media this is assisted by strong network effects, which render social media platforms more or less natural monopolies: the more users there are on a particular platform, the more others will be attracted to it, since they will want to join the platform that most of those they want to interact with have already joined. First mover advantage may also contribute to a platform's success (though not always: the social networks MySpace and Friends Reunited were eclipsed by Facebook for a variety of reasons, including the latter's superior functionality). In the case of both social media and search, access to more massive piles of data than one's competitors also increases the superiority of service one can provide: the more data a search engine has access to, for example, the more accurate can be its search suggestions and results, which in turn attracts more users, who then yield more data, and so on, in a selfreinforcing circle which gives yet more to those companies who have already.
- 123 The near-monopolistic nature of the hold these companies have on their markets, together with the fact that their services are nearly as important for many people as public utilities such as electricity, water and gas, has led to claims that they should be regarded and regulated as in effect natural monopolies, with enforceable expectations about service levels, guarantees about access to provision, and so on.¹³⁶

- 124 The CMA's interpretation of Google's ecosystem of services below (Figure 2), illustrating their dominance over a large proportion of the most important consumer-facing markets for internetrelated services, should be particularly noted. These include the global markets for search engines (Google), browsers (Chrome), maps (Google Maps), video (YouTube) and mobile operating systems (Android).¹³⁷
- 125 The control some companies have over their markets can stifle competition, because of the way they handle their market dominance. Frequently Big Tech companies operate by acquisition of those companies that are innovating or might present a potential threat:138 indeed the best that many start-ups can hope for is to be swallowed up as a lucrative acquisition by a large predator company, and it is precisely with that expectation that many of them get venture capital funding. The unenforceability in practice of monopoly legislation, especially (to date) in the US, means that there is often no practically realistic possibility of starting up alternatives that have a serious chance of taking on the incumbent market leaders and remaining independent. One of the consequences of a lack of competition, according to conventional

to freely use or switch between competing products and services while retaining access to their own data and contacts. There are various regulatory moves towards requiring greater interoperability (the Digital Markets Act in the EU and the US ACCESS Act and related bills; see also EU Commission, "A Digital Agenda for Europe", Brussels, 19 May 2010, COM(2010)245 final, p. 3, available at: https://eur-lex. europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF), but there are both benefits and costs of interoperability, as well as complex trade-offs and the optimal interoperability measures will be context specific (Jason Furman et al., "Unlocking digital competition").

internet. Facebook, Google and TikTok introduced technical changes to protect children following the recommendations of the UK's Age Appropriate Design Code. 136. Ideas such as interoperability break this analogy. Interoperability allows products and services from competing firms to work together and enables users

^{137. &}quot;Illustration of Google's online consumer-facing ecosystem", in The Competition and Markets Authority, "Online platforms and digital advertising: Market study final report", 1 July 2020, p. 57, Figure 2.4, available at: https:// assets.publishing.service.gov.uk/media/5efc57ed3a6f4023d242ed56/Final_ report_1_July_2020_.pdf, as reproduced in Ian Brown, "Making interoperability work in practice: forms, business models and safeguards", *Ada Lovelace Institute* blog, 16 December 2021, available at: https://www.adalovelaceinstitute.org/blog/ making-interoperability-work-practice/.

^{138.} These sorts of acquisitions have been labelled "killer acquisitions". OECD, "Start-ups, Killer Acquisitions and Merger Control", *OECD*, 2020, available at: https://www.oecd.org/daf/competition/start-ups-killer-acquisitions-and-mergercontrol-2020.pdf.



Figure 2: CMA's interpretation of a selection of Google's products and services.

economic theory, apart from the potential for exploitation of customers, is the smothering of innovation.

126 As mentioned above in connection with venture capital funding, this market power has been further protected from external criticism or engagement by the adoption by a number of US-based Big Tech companies of a dual or tripleclass share structure which grants all effective say in the running of a company to the founders and a select group of original shareholders, in practice disenfranchising all other shareholders. While such an ownership structure may be important in an enterprise's early stages, since it allows it to raise funds without the original vision being lost to, say, the desire for shortterm profits, the lack of appropriate sunset clauses points result in a less than accountable relationship between public shareholders and those with executive power within a company.

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Discussion and recommendations

127 The five principles we discussed in section II are intended to guide our thinking about Big Tech companies, but also about the behaviour of individuals, governments, and other companies and organisations. While the principles are theologically grounded, they are ethical principles or values which are relevant to everyone: their force is moral, and they retain their moral force even if they may also need to be implemented in legislation, regulations or codes of practice to be more fully effective.

TAKING RESPONSIBILITY

128 The first requirement therefore is guite simply a moral one, that Big Tech companies, like all companies, take responsibility for the products and services they create, to ensure that these align with the five principles. Their platforms have often been very effective in enabling humans to flourish as persons and in relationship, have frequently benefitted those who are marginalised or vulnerable, have contributed to caring for creation, and have served the common good in many ways. The industry has worked collaboratively with society to tackle many associated harms.¹³⁹ However, too often, when confronted with evidence that they have also been implicated in causing harm, tech companies have attempted to shift their responsibility elsewhere, with the result that serious inconsistencies have often appeared between the public position of a company and the views of its users, employees and executives.¹⁴⁰ The EIAG expects companies to think proactively about the outcomes of the products and services they pioneer. Rather than seeking to prioritise their self-interest, they should be aiming to ensure their products and services make a positive contribution to the long-term good of society as a whole. We do not expect perfection but we do expect transparency and humility. It is not tenable or productive to dismiss harmful consequences as "unintentional"

or simply reflective of the good or ill in society. With their vast global reach and economic size, comes enormous societal influence, and with that influence comes great responsibility: not to solve all the problems they face but certainly to anticipate them and to mitigate them in their design.

- 129 As the largest, most powerful companies in the world, they are making a major contribution to the long-term future for all of humanity, and it is essential that they bring their enormous technological capabilities to bear to serve human flourishing and the common good. Given their societal power and their technological capacities, the presumption must be on them actively taking responsibility for the potential harms caused by their platforms and seeking ways to mitigate these, rather than providing ad hoc and reactive solutions to problems pointed out by others.
- 130 Because of the vast asymmetry of power between digital platforms and their users, the personal nature of the data they hold about users, and the potential for harm should that data be misused, there is a case for recognising an essential element of care in the behaviour of platforms towards their users which goes beyond the merely contractual. That is, platforms have an ethical duty of care towards their users which should be a guiding principle for framing the terms of service which forms the contractual basis of their relationship.¹⁴¹ Because platforms also have a broader influence in relation to society as a whole, this ethical duty of care in fact goes beyond responsibilities towards individual users and extends to responsibilities to society more generally: this is one aspect of saying that they should serve the common good.

^{139.} For example, developing and sharing hashing technologies or digital footprints such as PhotoDNA created by Microsoft which has had significant impact on reducing the circulation of child sexual abuse images online.

^{140.} Of Com highlighted that the experiences of the users were often at odds with the communications of a company.

^{141.} The responsibility of platforms for a duty of care approach is supported by academics such as Prof. Lorna Woods (Lorna Woods, "The duty of care in the Online Harms White Paper", *Journal of Media Law*, vol. 11, iss. 1, 6–17, available at: https://doi.org/10.1080/17577632.2019.1668605) and Dr Damian Tambini (Damian Tambini, "The differentiated duty of care: a response to the Online Harms White Paper", *Journal of Media Law*, vol. 11, iss. 1, 28–40, available at: https://doi.org/10.1080/17577632.2019.1666488).

- 131 Of course, it is a matter of detailed debate whether particular words or actions count as evils that should have been prevented or as allowable expressions of free speech. Many of the large tech firms have argued that they should not be left with the responsibility of adjudicating the many complex areas highlighted in this review, and that this should be a matter for democratic societies to decide—in the absence of which bodies such as the Facebook Oversight Board have been set up.¹⁴²
- 132 Such reflection on the rules of the road does indeed need to be a joint civil, social and political undertaking, and we acknowledge the role of all stakeholders-including investors—in this undertaking. Yet, for it to be effective, it is essential that the large tech firms assume a moral responsibility to promote human-centred products and services. Such a call to responsibility is central to the core recommendations from Ranking Digital Rights published in 2020: "If the internet is to be designed, operated, and governed in a way that protects and respects human rights, everyone must take responsibility: companies, governments, investors, civil society organizations, and individuals."143
- 133 What are the norms that should be respected in adjudicating these issues? If this is not to be left to either state power or market forces alone to decide, it follows that the norms will need to be based on a set of values. The most discussed value-based alternative in the current discussion about Big Tech focuses on protecting and respecting human rights.¹⁴⁴ These include rights of privacy and freedom of expression, but also rights to equal treatment and non-discrimination and others. Excellent work has been done by organisations such as Ranking Digital Rights in working towards international human rights standards on the internet, by evaluating digital

platforms and telecommunications companies on relevant commitments and policies.¹⁴⁵

- 134 We fully and unequivocally endorse this emphasis on human rights: in EIAG's advisory paper on Human Rights we provide theological grounds for the responsibility of businesses to respect human rights, and for endorsing the human rights expressed in the UN Guiding Principles on Business and Human Rights.¹⁴⁶ This commitment to human rights is complemented and framed by the five principles discussed earlier: respecting persons as individuals and in relationship, and standing with those who are vulnerable or marginalised, all require protection of and respect for their rights.
- 135 The five principles fully incorporate human rights, therefore. But they are broader and deeper than human rights. They also indicate, amongst other things:
 - why it is that we should respect people's rights—ultimately because they are made in the image of God;
 - that protection of rights enables human beings to flourish;
 - that rights are set in the context of human beings as relational beings, who are called to love one another;
 - that human responsibilities extend to the created world, not just to other human beings;
 - that rights are (partially) constitutive of but also oriented to the common good.

^{142.} See Nick Clegg, "You and the Algorithm".

^{143.} Ranking Digital Rights, "2020 Recommendations", 2020 Ranking Digital Rights Corporate Accountability Index, available at: https://rankingdigitalrights. org/index2020/recommendations.

^{144.} More generally, and not specifically in relation to Big Tech, see Mark Carney, *Value(s): Building a Better World for All* (London: William Collins, 2021).

^{145.} Ranking Digital Rights at: https://rankingdigitalrights.org/. Note also the work of the Global Network Initiative (https://globalnetworkinitiative.org/), which is an alliance of tech companies, human rights organisations, investors and others, working for freedom of expression and privacy rights against government intervention. Work on the expectations investors have of tech companies has been carried out by the Council on Ethics of the Swedish National Pension Funds and the Danish Institute for Human Rights. See "Tech Giants and Human Rights: Investor Expectations", January 2021, available at: https://www.humanrights.dk/ publications/tech-giants-human-rights-investor-expectations.

^{146.} The Church of England Ethical Investment Advisory Group (EIAG), "Human Rights", April 2021, available at: https://www.churchofengland.org/sites/default/files/2021-05/EIAG%20Human%20Rights%20-%20web%20%281%29.pdf.

SPECIFIC RECOMMENDATIONS FOR TECH COMPANIES

136 What does responsible behaviour look like? The emphasis on taking responsibility frames the recommendations made below, and makes clear that the onus is squarely on companies to behave ethically in line with the five principles, even in the absence of external requirements on them to do so.

137 The following recommendations indicate some of the lines which investors may wish to pursue. We recognise that it may not be fully clear yet what a tech industry fully oriented to prioritising human values would look like, which is why it is important to keep the five principles in mind. We also recognise that priorities for engagement will change as opportunities occur and as companies change their policies and practices over time.

- 138 The EIAG recommends that the NIBs engage with the sector to address these concerns by asking the sector to make four key public commitments with regard to taking responsibility:
 - a. a commitment to verifiable transparency;
 - b. a commitment to promote humancentred design;
 - c. a commitment to enable the flourishing of children and other vulnerable groups;
 - d. a commitment to foster a tech ecosystem that serves the common good.
- 139 Regulatory attempts around the world to address the harms raised herein have sought to strike a balance between the responsibility of users to use their products and services appropriately and the responsibility of platforms to provide a safe, fair and non-manipulative environment for users to interact within.¹⁴⁷

How a company collects and processes its data and applies its algorithmic systems to that data is integral to creating that safe, fair and non-manipulative environment. The EIAG recommends the NIBs focus on these two key components of data and algorithmic systems when engaging on the commitments.

CONCLUSION

140 It is crucial to recall that there need be no basic conflict between tech companies doing the right thing ethically and doing what is in their and their shareholders' long-term interests. To the extent that they continue to behave in ways that undermine public trust, they also continue to erode their public licence to operate, which carries business risks and has long-term implications for investor confidence. By contrast, to the extent that they enjoy and deserve public trust, they reward long-term investor commitment and make a genuine contribution to the common good.

^{147.} The body of criminal law is being updated around the world with regard to online user behaviour. For example a new "harm-based" communications

offence to replace the offences within section 127(1) of the Communications Act 2003 and the Malicious Communications Act 1988 has been proposed in the UK whilst attempts to address harms such as the virality of misinformation and hate speech particularly in France (Avia Law) and in Germany (NetzDG) have faced strong opposition from freedom of speech advocates fearing that minority and marginalised voices risk suppression and private companies become arbiters of "truth".

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During the course of our reflections on this topic we hosted a number of roundtables and discussions to include the perspectives of a wide group from civil society, the Church, academia, the investment community and the technology community.

We started our reflection with a "Theological roundtable on Big Tech", which was held at St George's House in February 2020. We are grateful to our EIAG Member Prof. Robert Song for chairing this group and to Dr Nathan Mladin for acting as rapporteur and preparing the early drafts of this work. We are indebted to all those who generously offered their time and insights to this group: Prof Stephen Williams, Dr Michael Burdett, The Revd Dr Andrew Davison, Dr Sue Halliday, Joe Westby, The Revd Dr Simon Cross, The Revd Dr Malcolm Brown, The Revd Dr Kathryn Pritchard and Barbara Ridpath, as well as representatives from the NIBs and the EIAG. We are also grateful to Prof. John Wyatt and Dr Adrian Weller who did not attend the roundtable but provided additional insights to this early work.

Our second roundtable looked at the topic from the perspective of asset managers and asset owners and we are grateful to the UN PRI for hosting this roundtable on their online platform in the early days of the Coronavirus lockdown in April 2020, chaired by EIAG Member Faith Ward. We were grateful for insights from Sebastien Thevoux-Chabuel, Jeremy Richardson, Mais Callan, David Sneyd, Dr Christine Chow, Robert Wilson Jr, Andrew Cave, Katie Beith, John Howchin, Helen Price and Carlota Garcia-Manas.

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