SICKLY TECH

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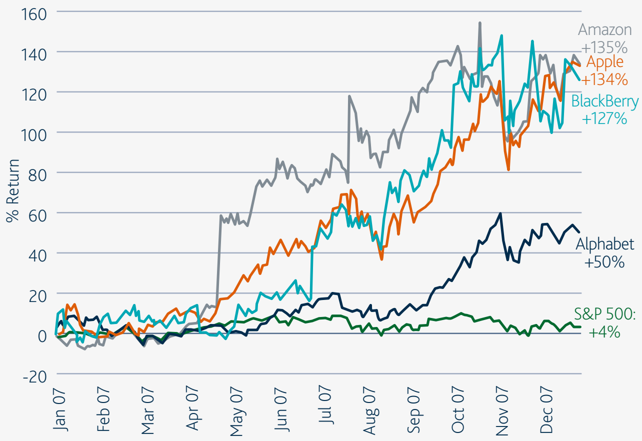
> It is only a matter of time before the global dominance of the US internet companies is broken. Regulation and taxation, spearheaded by Vestager, will be their undoing[1].

G. Soros – Chairman of Soros Fund Management and of the Open Society Foundations

Big Tech is having a rough time of it at the moment, besieged from all sides – governments and regulators have to show an interest, while investors have questions about economic harm and consumers question their social licence to operate.

Now don't misunderstand, for technology is undoubtedly the future and has improved our lives in so many ways, but there's something not quite right about Big Tech at the moment, despite phenomenal long-term share price performance. In fact, the original 'Four Horsemen' were setting the pace back in 2007:

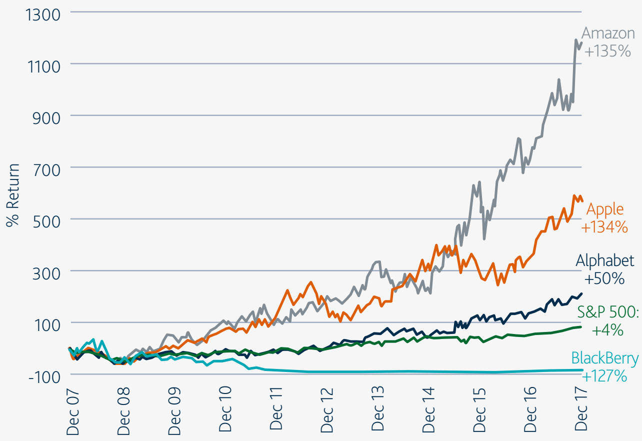
Big tech in 2007



Source: Bloomberg as at December 2007.

And with the exception of Blackberry, whose fortunes may represent a salient note for our comments, they have continued to deliver strong returns:

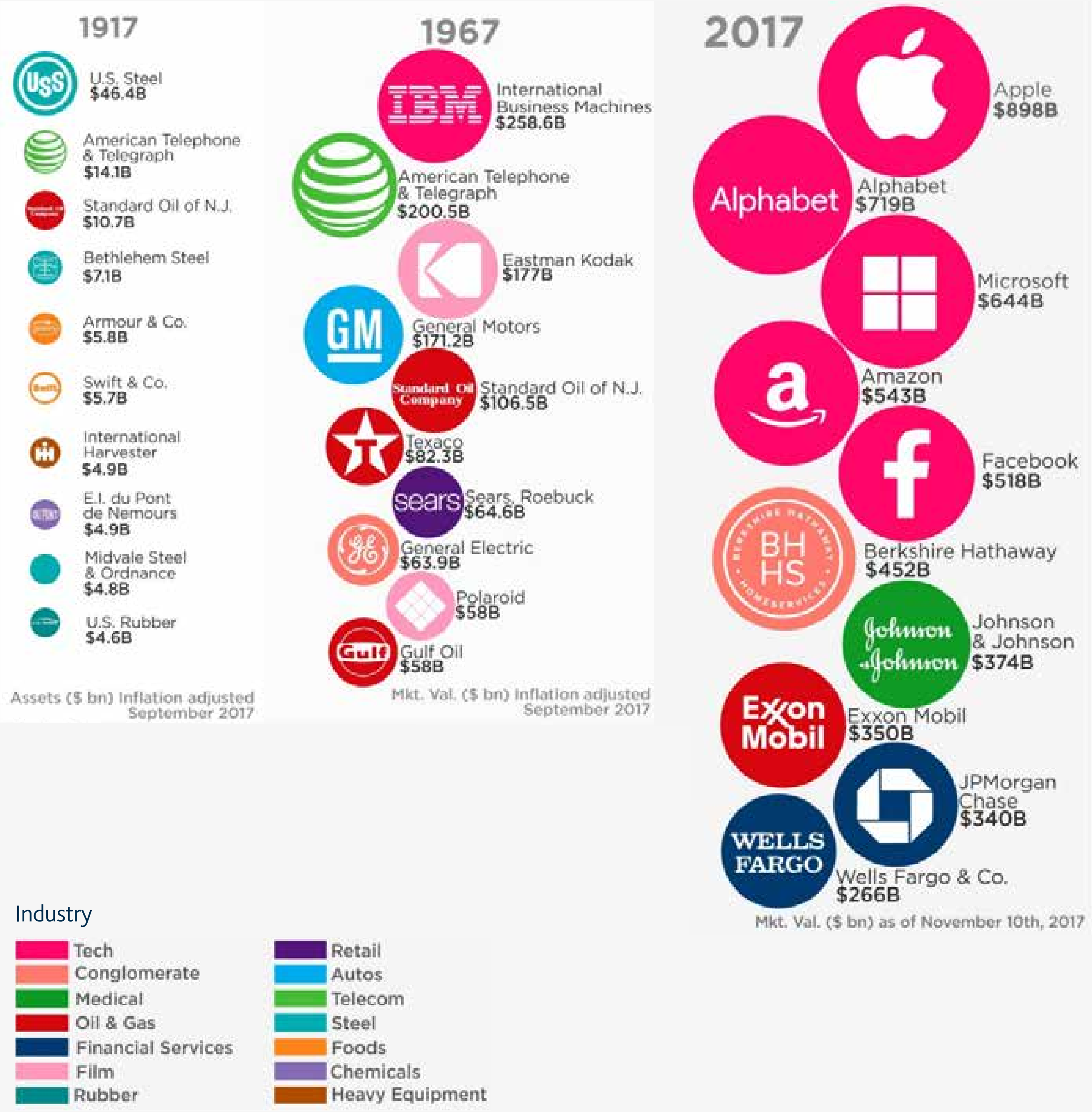
Big tech to date



Source: Bloomberg as at December 2017.

[1]Soros, G. (2018). Only the EU can break Facebook and Google's dominance | George Soros. [online] the Guardian. Available at: https://www.theguardian.com/business/2018/feb/15/eu-facebook-google-dominance-george-soros

Their growth has allowed these companies to become some of the largest in the world:

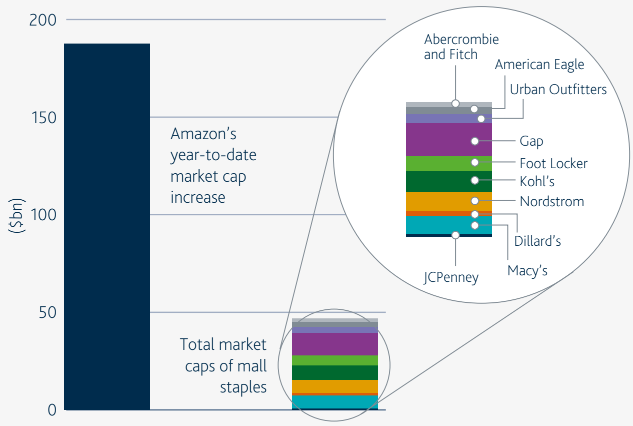


Source: Visual Capitalist, How Much. http://www.visualcapitalist.com/most-valuable-companies-100-years/

We saw continued dramatic outperformance by tech in general and by the FANGs (Facebook, Amazon, Apple, Netflix and Google) in particular

Even the market ruckus in February earlier this year mysteriously failed to correct the leaders of the market – instead we saw continued dramatic outperformance by tech in general and by the FANGs (Facebook, Amazon, Apple, Netflix and Google) in particular, which benefit from the ongoing growth in internet commerce:

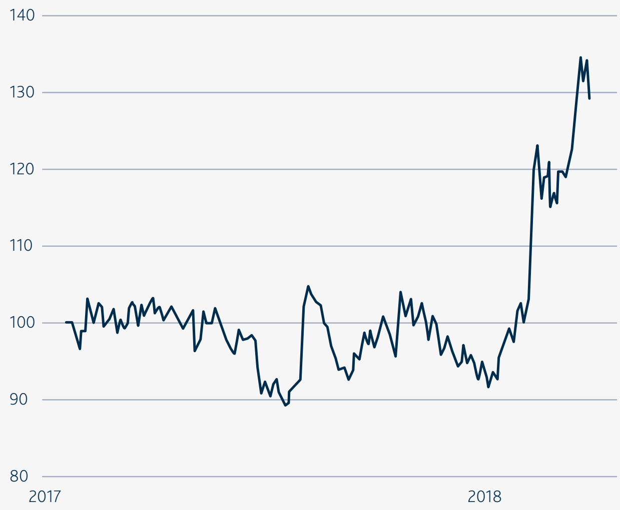
Amazon's 2017 growth is almost four times the combined total value of 10 retailers that traditionally dominate US malls



Source: FT

In recent times, Netflix has been the star of the show:

Netflix relative to NYSE FANG+ index



Source: Bloomberg.

Not much appears to have changed with this company's fundamentals, but rumours of it being a potential take-over target abound. However, even with that associated optimism, one would certainly want to question whether it errs on the frothy side of speculative. At a 120x 2018 forecast earnings, and 12x last year revenues, the current price looks stretched, particularly in a business area where it is increasingly competing head on with the likes of Amazon, HBO, and in the not too distant future, Disney. And that is before we examine how the company has largely been funding operations through an accumulation of debt (rated junk) to the tune of roughly $0.5bn every quarter last year, amounting to a total figure of c.$6.5bn.

However, on the back of the Cambridge Analytica (CA) scandal, Facebook has illustrated their potential vulnerability. That CA obtained data from 50m+ Facebook users and quite possibly used it for political purposes without either its knowledge or consent seems beyond doubt – it has raised deep questions about Big Tech's social license.

50M+

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What is increasingly obvious is that one way or another, investors need to care about the FANG stocks. They are an important part of the US and global indices, and influence the fortunes of a vast ecosystem of other companies. They dominate consumer growth, technical innovation and economic trends. Furthermore, they influence our communication, are pre-eminent in logistics, and are looking at other industries (i.e. healthcare) to move into. However, there is an important question to answer over whether they are responsible stewards of the power they control.

MONOPOLISTIC

The FANG stocks are increasingly monopolistic in their individual spheres. Last year, Amazon generated $177.9 billion in sales, up 31% from the previous year. This is notably faster than the wider growth in ecommerce. Consumers spent $453.46 billion on the web in 2017, a 16% increase. Amazon's dominance is growing. It has therefore been implicated in the failure of a number of its high street rivals – the first casualty was Borders, but this year has seen Toys'r'us, Sports Authority and Payless struggle in its shadow. J.C. Penney, RadioShack, Macy's, and Sears have each announced more than 100 store closures, and there have been similar failures in other markets where Amazon is dominant. The bipartisan New Center Project notes that nearly half of all e-commerce passes through Amazon.

Other Big Tech names show similar dominance: Facebook controls 77% of mobile social traffic and Google has 81% of the search engine market. Estimates vary, but research by eMarketer estimated that Google's share of the ad search market would grow to more than 80% by 2019. This is echoed by a forecast from GroupM, the WPP-owned media buying agency, which said Google and Facebook are set to attract 84% of global spending on digital advertising, excluding China, in 2017.

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There is an argument that this is much-needed disruption. Amazon has simply exposed those companies with weak business models, and forced others to re-group, as Walmart is doing as evidenced by buying Jet.com. Google and Facebook have achieved dominance because they have proved themselves consistently innovative and superior to their competition. There is the network effect, it is argued, and big technology continues to deliver for its consumers.

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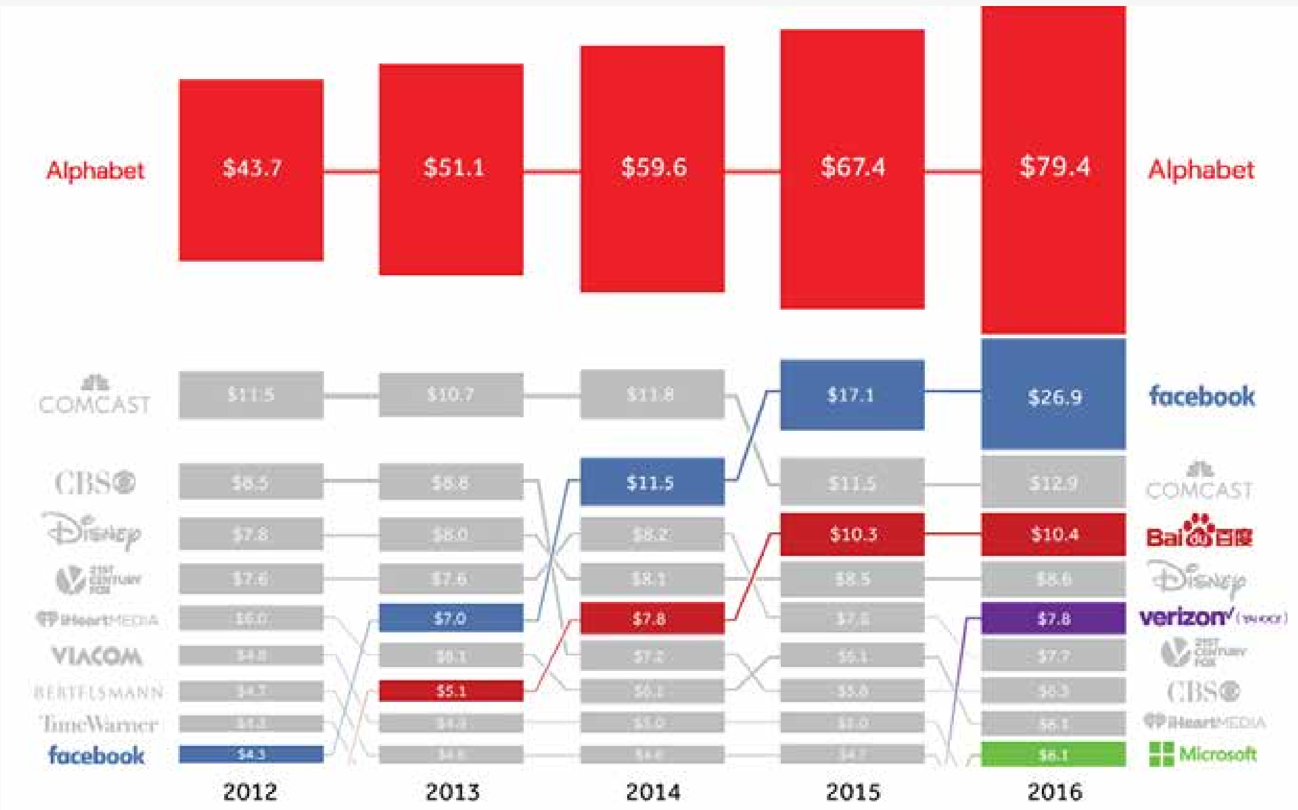
Top 10: Global advertising revenue (in billions)



Source: Visual Capitalist; http://www.visualcapitalist.com/the-tech-takeover-of-advertising-in-one-chart/

But we see a number of problems with this argument:

Their influence is spreading

Amazon is not merely a retailer anymore. Its shareholders have shown themselves indifferent to its profitability, allowing it to use its ballooning revenue base to invest heavily elsewhere – it is also a marketing platform, a delivery and logistics network, a payment service, a major book publisher, a producer of television and films and a leading provider of cloud server space and computing power. Amazon showed growth of 45% in the fourth quarter for its cloud business. There is a point at which this ceases to be good for the consumer, and in danger of becoming predatory capitalism.

Turning to Facebook, creating a superior social networking app may not be sufficient to unseat it, for example. Facebook's response to this very threat – from WhatsApp and Instagram – has been to simply buy the opposition. It is unclear whether these takeovers are genuinely in the interests of all stakeholders. To attract sufficient users to be a credible rival, to survive predatory pricing action and to resist aggressive corporate tactics, will be a stretch for most start-ups, who may increasingly find that access to capital will be difficult to obtain as the FANGs more monpolistic

What is best for the consumer in the future?

To date, US antitrust policy has been clear. If a company brings clear consumer benefits, it can be as big and powerful as it wants. However, there is a difference between what is good for the consumer in the short-term and what is good for the consumer in the long-term. In the short-term Amazon is pushing down prices and giving consumers choice, but will it have the incentive to do so if its monopoly builds? When does it become so big as to pose a threat to consumers or competition? Are competitors given a fair chance to challenge? By current antitrust standards, it isn't there yet – after all, online sales remain a fraction of overall sales – but there are questions over whether antitrust legislation is fit for purpose in the digital age.

Proper use of data

From credit card numbers to shopping records, and beyond to political affiliation or medical records – the prize for Big Tech is data. Can technology companies be trusted to use that data responsibly? European policymakers have been worried enough to bring in the new General Data Protection Regulation (GDPR). It represents a robust set of requirements aimed at guarding personal information. This pushed Facebook to publish privacy principles for the first time and to roll out educational videos helping users understand and exert some control over who has access to their information.

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Yet, this action is not be enough of a response to save Facebook from its latest misstep. Denial and obfuscation have characterised the initial responses, but the leakage of data to political consultancy Cambridge Analytica (with or without their knowledge) could well be too much to bear.

Jonathan Guthrie in the FT mused that "if a British business has 'Cambridge' or 'Oxford' in its name, the risk of dodginess is correspondingly raised. Particularly if the company is not based in either of those seats of learning". The facts of the situation may not yet be entirely clear, but it seems highly likely that Cambridge Analytica (CA), a voter-profiling firm, made a request on Amazon's Mechanical Turk platform, offering to pay Facebook users in the US to download and use a personality quiz app. This allowed CA to scrape c.270,000 people's data from their Facebook profiles, and unwittingly, that of their friends, amounting to a more sizable 58 million people.

Mark Zuckerberg wrote: “I apologise for any harm done as a result of my neglect to consider how quickly the site would spread and its consequences thereafter – as prescient today as it was back in 2003”.

Facebook claim that technically this wasn’t a data breach, but it does bring into light the sophisticated and opaque systems or algorithms that are used to target adverts – similar tools are in use with other Big Tech providers. It has not yet become clear exactly what CA did with all the data, but the public reaction thus far is largely one of incredulity that Facebook could fail to understand that the data could be used in

Both the informational superstructure and the data structure of our age lie in the hand of the so-called private superpowers, such as Facebook and Google which have never fully acknowledged their responsibilities, still less lived up to them

dangerous ways. It sticks in the craw that a firm should have the ability to harvest data on such a scale without sufficient controls, including the informed consent of the date subject, (i.e. the individual). “Both the informational superstructure and the data structure of our age lie in the hand of the so-called private superpowers, such as Facebook and Google which have never fully acknowledged their responsibilities, still less lived up to them”[2].

The insidious nature of the algorithms that guide users lies at the core of many of the problems. Secretive formulas, with only very select computer scientists entrusted to work on them, and with fewer still having complete front-to-end knowledge of their workings, drive the user experience. Former Google and YouTube employee Guillaume Chaslot has documented in great detail the potential for distortion. This comes to light in the form of encouragement to follow recommendations which can take the user in increasingly extreme directions – one example is of “a thriving sub-culture that targets children with disturbing content, such as cartoons in which Peppa Pig eats her father or drinks bleach”. We live in a strange world where the original developer of the ‘Like’ button has dedicated his working life to atoning for it!

The National Fair Housing Alliance (NFHA) and three of its member organizations recently filed a lawsuit against Facebook in federal court in New York City, alleging that Facebook’s advertising platform enables landlords and real estate brokers to exclude families with children, women, and other protected classes of people from receiving advertisements about housing. With almost 2 billion users, Facebook customizes the audience for its millions of advertisers based on its vast trove of personalized user data. After being warned repeatedly about its discriminatory advertising practices, Facebook allegedly continues to use this data to deny people access to rental housing and real estate sales advertisements because of their gender and family status.

Influence on regulators

Big tech has a powerful lobby. The US Federal Communication Commission’s decision to roll back ‘net neutrality’ rules – the principles that stipulate that internet service providers must treat all online traffic the same – demonstrates the power of this lobby. In theory, this means that Google algorithms can put competitor products to the back of the queue. Lobbying has had noticeably less success in Europe, where regulators have taken a harder line against technology giants.

Lack of accountability

There are a number of serious questions on the accountability of Big Tech. This has been played out in the realm of publishing. Companies such as Facebook and Google are disseminating content, but without same checks and balances as conventional publishers. This has led to well-publicised issues around fake news and the promotion of rogue content, such as terrorist or paedophile activity. At the same time, Facebook has been accused of draining readers and revenue from the conventional news media.

Their algorithms are opaque, their apps are designed to be addictive, and there are real questions over whether they are anti-democratic. Are they subverting conventional democratic institutions, while at the same time not taking responsibility for the content disseminated through their sites?

In June 2017, the European Union fined Google €2.42bn after finding the technology giant abused its internet search monopoly, promoting its own shopping service at the expense of other price comparison sites. It was the biggest competition fine to date from the European Commission, and also showed that Big Tech could not necessarily be trusted. Ultimately does Big Tech use its power properly and wisely? And if it doesn’t, who is responsible for, or able to stop it?

[2] John Thornhill, ‘After Cambridge Analytics, politicians must act to save the web’, March 2018, the Financial Times.

THE PROBLEMS FOR INVESTORS

Poor engagement with shareholders

In many cases, big technology companies don't need additional capital. They have vast cash flows and cash mountains large enough to support whatever innovation (or corporate acquisition) they choose to pursue. The Economist recently estimated the combined cash pile of Apple, Alphabet, Microsoft, Amazon and Facebook at £330bn. Shareholders can play an important role in holding companies to account, but only where the company needs to listen to them. Many of these companies have multi-class share structures that it harder for shareholders to call company management and boards to account, as voting control is concentrated around the founder.

Large technology companies have grown very fast. In many cases, their governance structures still resemble those of younger companies. With this in mind, they are often only in the foothills of engaging with shareholders effectively.

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Social conscience?

Forbes recently reported that the three richest Americans are now wealthier than the combined bottom half of the U.S. population. CEO Jeff Bezos is currently the only person in the world with a personal fortune of more than $100bn. In general, the US government has been tolerant of individuals accumulating excessive wealth. However, its tolerance may wane if these wealthy individuals do not contribute effectively to the US economy. The McKinsey Global Institute estimates that automation may destroy up to 73m U.S. jobs by 2030. Additionally Apple has recently faced calls from shareholders to develop ways to combat smart phone addiction in the young.

Aggressive tax evasion

Technology companies' aggressive tax planning arrangements are increasingly concerning. Simply put, technology firms can be particularly expert at reducing their tax burden. Many technology companies have structured their financial arrangements to avoid domestic taxation in countries in which they operate. For example, Amazon paid just €16.5m in tax on European revenues of €21.6bn reported through Luxembourg in 2016. This is drawing the attention of regulators and while many technology companies are trying to find a compromise with local tax authorities, such practices continue to cast a shadow.

Big Tech will contest that they are not strictly doing anything illegal, and are merely taking advantage of one outcome of globalisation, principally that national tax systems were in large measure designed to handle non-traded services and manufacturing.

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But that doesn't necessarily make this activity morally acceptable – if tax is minimised in one jurisdiction, then it seems plausible that other tax payers in that domicile will have to pick up any shortfall. Amazon, for example, chooses to run its business without a margin, not only reduces its corporate tax liabilities, but gives pricing advantage over its competitors who seek to make even a modest margin of, say, 5%.

Even where governments have taken an interest in tax affairs, Big Tech has shown itself fairly adept at manipulating the situation to their own advantage – consider the tax holiday 'awarded' by President Trump on repatriated profits. Setting aside the issue of super-normal profits from economic rent activity, many internet-based companies have sought to argue that they are technology companies, even though their activities are quite clearly disrupting an existing industry, AirBnB being a perfect example in the hotel sector.

A second example would be the use of a loophole by Uber in the UK to avoid value added tax (VAT) on booking fees. By treating its 40,000+ drivers as separate businesses, each too small to register for VAT, Uber claims that it is following the letter of the tax law, even if it seems unlikely that it is satisfying the spirit. Legitimate maybe, wise, perhaps not – other similar firms like Gett and mytaxi are less bold. This comes on the back of the European Court of Justice (ECJ) deciding that Uber is a transportation service, not an information platform, and hence open to additional regulation.

Workers' rights

The treatment of their workers holds potential difficulties for Big Tech too. A recent undercover stint in an Amazon warehouse[3], or "fulfilment centre" as they are termed, revealed genuine concerns over the treatment of its workforce. This follows on the back of similar revelations, all of which point to mental and physical stress being experienced. "The challenge was finding sufficient time to eat and drink. We were allocated half an hour for lunch but, by the time you made it to the canteen and elbowed your way through a throng of workers, you had 15 minutes before you started the long walk back to the warehouse".

While we would all acknowledge the convenience offered by online shopping and the superb delivery logistics of companies like Amazon, it is undoubtedly disturbing to read: "The sheer misery of the work left you craving cigarettes and alcohol and everything else that offered the promise of any kind of emotional kick". The picture painted is not a pretty one. Moreover, this type of toxic culture in an organisation is unacceptable. A positive corporate culture has been linked to retention of talent, increased levels of productivity and shareholder value.

Moreover, those who work for Amazon and Uber have sub-contracted relationships, which deny them full employment rights, such as sick and holiday pay. Arrangements such as this make it harder for them to organise collectively as 'organisers' can be more easily termintated.

[3] Bloodsworth, J, (2018), 'Hired: Six Months Undercover in Low-Wage Britain', London, Atlantic Books.

Children and vulnerable groups

The NSPCC advocated earlier this year that a government-imposed mandatory code of practice was the best way to ensure online child safety. The NSPCC chief executive noted that: "It's simply wrong that the government has allowed social networks to mark their own homework for the past decade". It's most recent report strongly states that the time for a voluntary code has passed. Algorithms make decision about us on our behalf – and "when we outsource thinking to machines, we are really outsourcing thinking to the organisations that run the machines"[4].

The UK's National Crime Agency (NCA) has accused firms such as Facebook and Google of offering a commercial advertising outlet for pop-up brothels, noting that "People are using the internet and social media sites to enable sexual exploitation and trafficking". Clearly this is a complex issue which raises questions about the potential for harm and tragedy from pushing certain activities underground, but it once again calls into question Big Tech's judgement in managing its social responsibility.

The NSPCC chief executive noted that: "It's simply wrong that the government has allowed social networks to mark their own homework for the past decade

Furthermore, in 2001, the United Nations Human Rights Council endorsed the Guiding Principles for Business and Human Rights (UNGPs) which employ the United Nations 'Protect, Respect and Remedy' framework around human rights, transnational corporations and other business.

The UNGPs establish universal guidelines for counteracting and addressing the risk of adverse impacts on human rights linked to business activity.

These Guiding Principles are grounded in recognition of:

(a) States' existing obligations to respect, protect and fulfil human rights and fundamental freedoms;

(b) The role of business enterprises as specialized organs of society performing specialized functions, required to comply with all applicable laws and to respect human rights;

(c) The need for rights and obligations to be matched to appropriate and effective remedies when breached[5].

Given the prevalence of data, it doesn't seem unreasonable to charge Big Tech with acting as information fiduciaries

CHECKS AND BALANCES

The fortunes of many of these companies are wrapped up with those of their charismatic founders, who may or may not have political ambitions, but certainly have philanthropic ambitions. For many companies this is the main check to their power and ambition. But is it enough? After all, this still rests with one person. The other check is that these companies need to recruit the best – top graduates, engineers and programmers. Share schemes are a meaningful part of their compensation (around half in many cases). If the share price falls, so does their ability to recruit the strongest people. However, again, the question remains – is this enough of a check on the power of Big Tech?

Given the prevalence of data, it doesn't seem unreasonable to charge Big Tech with acting as information fiduciaries – it is alarming to think that small design changes by Facebook, for example, could have electoral repercussions in our democracies. "New, hyperpartisan media created the perfect conditions for another dynamic that influence the 2016 election, the rise of Fake News"[6] :

[4] Foer, F, 2017. Facebook's War on Free Will. The Guardian, 19 September 2017.
[5] Ruggie, John, 2011- Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework – Report of the Special Representative of the Secretary General on the issue of human rights and transnational corporations and other business enterprises.
[6] Madrigal, AC, 2017. What Facebook Did to American Democracy. The Atlantic, 12 October 2017.

WHAT ARE THE RISKS?

While Big Tech has seen significant share price growth over recent years, sustainability issues pose a risk to its ability to grow revenues, profitability and – ultimately – to its ability to operate effectively in a societal context.

Increasing regulatory intervention

The influence of Big Tech is already being hotly debated by politicians. UK Prime Minister Theresa May acknowledged in September that Facebook and other tech companies had made progress in their efforts to tackle these issues, but added that they still needed to go "further and faster". In particular, the speed at which terrorist-related material should be erased has been a contentious issue.

£4.8bn

Google tax was introduced in 2015 and predicted to raise £4.8bn by 2022-23

A new German law came into effect in October 2017, allowing the government to fine larger social media firms if they fail to remove 'manifestly unlawful' posts within 24 hours. There has also been the introduction of the so-called "Google tax", introduced in 2015 and predicted to raise £4.8bn by 2022-23. Similarly, India is moving towards treating online companies as resident for tax purposes regardless of actual physical presence. Likewise France is evaluating ways to equalise taxes on tech companies to make their taxes equivalent to those that would have been paid by companies that are physically resident in that country.

The Organisation for Economic Cooperation and Development (OECD) seems at least to acknowledge the tax challenges presented by digitalisation, although it has criticised elements of the EU's recent proposals. It has expressed concern over economic distortion that might arise from the EU's new digital tax plans, perhaps more from a sense that the EU has jumped the gun ahead of its plans which looked for an outcome by 2020.

Europe has generally been ahead of the US on this. The US regulatory authorities swiftly approved the Amazon/Whole Foods deal. In contrast, the GDPR drastically increases the level of fines for companies found to be in breach of data protection law, up to 4% of global annual turnover or €20m euros, whichever is higher, however, this is only a drop in the ocean for Big Tech. While the GDPR will go so far, there is a another possibility for change which sees some Big Tech firms reclassified as publishers, with the same level of responsibility for content are more traditional media firms.

Enforced breakup/nationalisation

There is an outside risk, a tail risk if you will, with low probability but high potential impact. For the time being, most of these companies have not engaged in the type of anti-competitive behaviour that would bring them to the attention of antitrust legislation. However, there are signs of more aggression. Amazon named one campaign to approach small publishers "The Gazelle Project," designed to target them "the way a cheetah would a sickly gazelle." Smaller technology firms have complained quietly about anti-competitive practices, but most fear being cut out of funding and jobs.

There is talk of rewriting antitrust legislation to reflect the modern era better, and Big Tech may fall foul of this. It may form part of a 2020 US election campaign, with the Democrats already focusing on the problems of economic concentration in this year's Congressional elections. Some have suggested that breaking up Big Tech may provide an answer, but other reject this idea on the basis that it will be complex to enforce.

Alternatively, should Big Tech be seen as public utilities – a cogent case could be made, for example, in the case of 'matching' platforms such as Uber. The Norwegian government has just launched an app, Entur ("one trip"), intended to offer timetables and eventually tickets for all public transport anywhere in the country. Additionally, governments could require that online service providers plug into related public services such as tax collection – this would help tax collection from them and ensure that they are paying their way.

The Norwegian government has just launched an app, Entur ("one trip"), intended to offer timetables and eventually tickets for all public transport anywhere in the country.

The Estonian government is a leader in this field and has gone several steps further with a project that is best seen as tech statecraft. With dispersed data storage and powerful firewalls, they have created the most online savvy society anywhere in the world, what has been referred to as the Digital Republic of Estonia. Normal social services are linked on a single platform (legislation, voting, education, justice, health care, banking, taxes, etc.), so that the preparation of a loan example is no longer an exercise in hunting three current utility bills as proofs of address, because the links can all be made online. Verification for that reason too is much quicker. Instead of concerns over data piracy, a tech savvy culture has developed to enhance everyday life.

Data as labour

A number of commentators have noted the "social problems with the culture of 'free' online, in which users are neither paid for their data contributions to digital services nor pay directly for the value they receive from these services"[7]. A large source of the anxiety is associated with employment and income distribution, with a fear that AI will replace human workers – there is an accompanying subtle shift in the labour share of income versus that which accrues to corporates.

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Most activities related to data are framed as consumption rather than production. Instead, in order to avoid a crisis of technological unemployment, we should all see ourselves as digital labourers. In order to master automated cars, algorithms must be trained on massive amounts of data that everyone supplies. Therefore, the solution proposed is to think of data as labour rather than as capital, viewed as the property of those that generate them, in return for which payment should be made.

However, the value of data is in the aggregate, with no one individual's data being of great worth[8]. For that reason, there may be a need for collective action, with some proposing data-labour unions to negotiate on behalf of all. Their role could be extended to certify data quality too, beyond mere collective bargaining with tech companies. Only then would we get back to the utopia originally envisaged for the internet as a venue for the free exchange of information and ideas.

Consumer/shareholder/user disengagement

Advertisers are sensitive. Wary of their reputation by association, advertisers do not want their products associated with rogue content such as terrorism, racism or homophobia. Diageo, Mars, Hewlett-Packard and Deutsche Bank were all among groups pulling advertising from YouTube and owner Google after their campaigns appeared alongside videos featuring children and explicit comments.

Ultimately, businesses such as Facebook or Amazon are dependent on consumer engagement. If they become disillusioned, or switch off, their business model will struggle.

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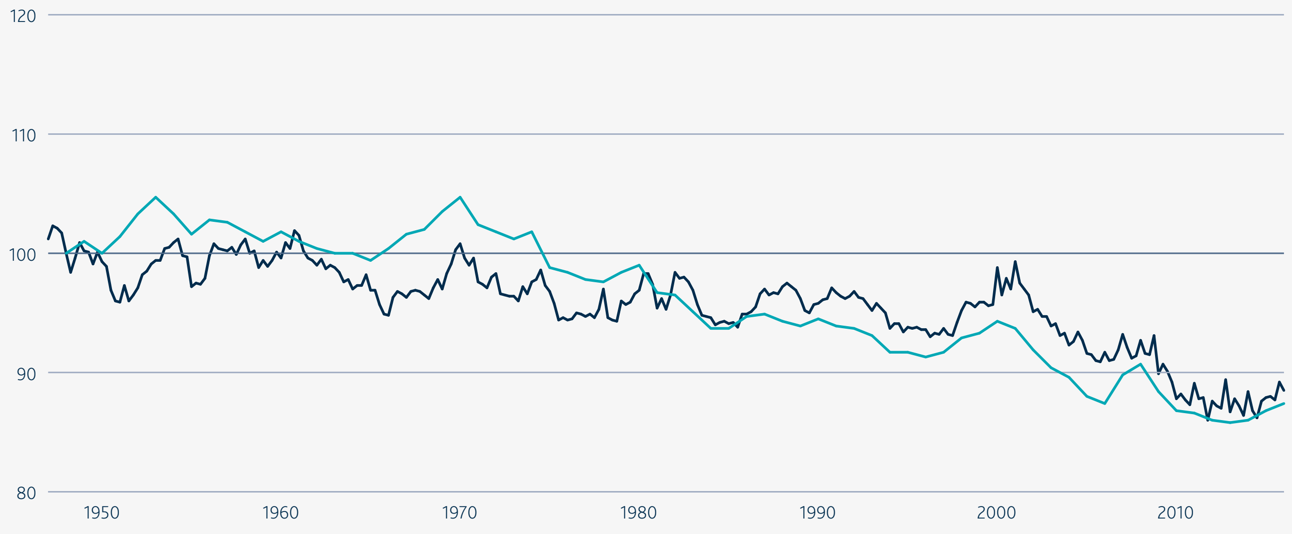
Declining share of labour



— Business Sector: Labor Share, Index Q1 1948=100, Quarterly, Seasonally Adjusted

— Shares of gross domestic income: Compensation of employees, paid: Wage and salary accruals: Disbursements: To persons, Index 1948=100, Annual, Not Seasonally Adjusted

Source: US Bureau of Labor Statistics.

[7] Arrieta Ibarra, Imanol and Goff, Leonard and Jiménez Hernández, Diego and Lanier, Jaron and Weyl, E. Glen, 'Should We Treat Data as Labor? Moving Beyond 'Free'' (December 27, 2017). American Economic Association Papers & Proceedings, Vol. 1, No. 1, Forthcoming. Available at SSRN: https://ssrn.com/abstract=3093683

[8] Eric Posner and Glen Weyl, 'Radical Markets – Uprooting Capitalism and Democract for a Just Society', forthcoming May 2018, Princeton University Press

WHAT ARE THEY DOING TO ADDRESS THESE ISSUES?

It has been a slow burn, but Mark Zuckerburg of Facebook has made some of the right noises about fixing Facebook, or at least, acknowledging there is a problem. He made 'fixing Facebook' his annual personal challenge (previous challenges have included learning Mandarin and visiting every US state).

Google and YouTube have had to work hard to show that they can identify and address problems with its content faster and more effectively. In August 2017 YouTube issued a statement: "(There are) four new steps we're taking to combat terrorist content on YouTube: better detection and faster removal driven by machine learning, more experts to alert us to content that needs review, tougher standards for videos that are controversial but do not violate our policies, and more work in the counter-terrorism space."

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In June 2017, Facebook, YouTube, Twitter and Microsoft created a joint forum to counter terrorism following years of criticism that the technology corporations have failed to block violent extremists and propaganda on their platforms. As asset managers and asset owners, it is not good enough to simply place Big Tech on a banned list of companies unless they reform – our job as stewards of capital must be to engage with those companies directly in order to help change their modus operandi, earn their social licence, and to seek the help of government in to reclaiming ownership of *our* data.

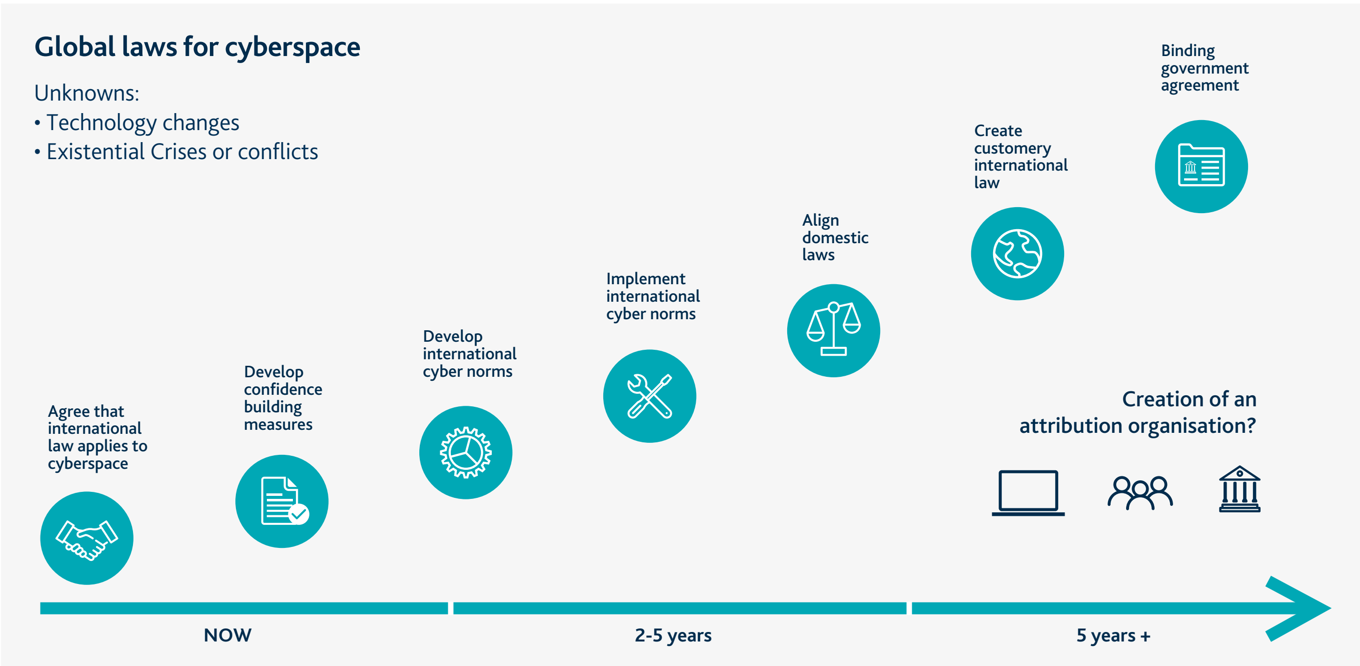
Our job as stewards of capital must be to engage with those companies directly... to seek the help of government in reclaiming ownership of our data.

Digital Geneva Convention or Tech Magna Carta

"The risk of a major cyberattack has risen at a time when international mistrust and the erosion of common norms, standards and architecture has made it more difficult to co-ordinate responses to attacks when they occur"[9]. With more than 30 governments acknowledging that they have offensive cyber capabilities, the cyber arms race is clearly underway. Microsoft's own Kaja Ciglic, Director of Government Cybersecurity Policy and Strategy, acknowledged as much in her contribution to the Observer Research Foundation's collection of Essays, 'Our Common Digital Future'.

It took until 2015 for the UN to follow Microsoft's suggestion that existing international law applies to cyberspace, but perhaps for fear that this solution may not go far enough, Microsoft, among others, have proposed a Digital Geneva Convention. Although the finalisation of what this might precisely contain, the World Economic Forum has developed some core guiding principles.

Under their proposals there would be ample scope for the involvement of all stakeholders, whether government, individual citizens or Big Tech. Agreement on a basic set of principles is an obvious first step, but even that may prove too contentious for some, and equally too slow for others – politicising the work of national CERTS as arbiters might be viewed as dangerous.



Source: World Economic Forum.

[9]Ian Bremmer and Cliff Kupchan, 'Top Risks for 2018', Eurasia Group.

Engagement with governments

These companies are increasingly recognising that they need to engage with governments and tax authorities to prevent a more onerous and intrusive clampdown. Google agreed a deal with British tax authorities in 2016 to pay £130m in back taxes and promised to bear a greater tax burden in future. Britain's take from the "Google tax" – which actually comes from 14 companies hit £281m in 2016-17, higher than initial estimates. Similar deals are being seen in other jurisdictions.

£130m

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Overall there is a sense that there is a willingness, if not quite yet an enthusiasm, to accept that there is a need for change, for a revamp of the tax system that applies to multinationals more generally to make it fit for purpose in the 21st century. While the US may be pursuing its own particular agenda, there seems to be political will and momentum in the rest of the world, most notably in Europe, to achieve a more sensible, more balanced outcome for the taxation of Big Tech. There are five areas in particular that demand attention: competition, taxation, data ownership, platform neutrality and copyright.

However, countries may continue to arbitrage tax laws, so an international agreement may be difficult.

Apple and IBM recently launched public relations efforts to demonstrate their responsible use of data.

Changing business models

Apple and IBM recently launched public relations efforts to demonstrate their responsible use of data. Apple's new privacy website shows features that differentiate it from, say, Google – algorithms that work at the level of individual devices rather than in the cloud. IBM met with European commissioners and members of Parliament, pledging that they would never turn over client data to any government surveillance programme and saying clients would own the rights to their data and algorithmic 'learning' from it. There is increasing mileage in being seen to use data responsibly.

The issues that we have raised are not isolated to the developed world, and many of the same issues can be imagined with Alibaba, Tencent, Baidu and Huawei in China. China's digital economy is undoubtedly one of the most vibrant in the world, albeit with a heavy national security component. China has gone some way to developing a regulatory and legal framework, and it is too simplistic to assume that it can only be seen through the lens of a "police state". The Cyber Space Administration of China (CSA) has already drafted a first cyber security law – this is intended to bring under one umbrella standards for technology, hardware, networks and data flows, together with rules to regulate the digital economy.

Additionally China has issued a standard known as the Personal Information Security Specification that is loosely based on the European GDPR model. However, it contains around eight exceptions for the collection of data, including a somewhat uncertain 'national security' exemption. The social credit scoring system first defined in 2014 has now given rise to concerns over privacy and it seems likely like a further regulatory system will be need to be developed.

CONCLUSION

It has been easy to see Big Tech as a one-way bet with a uni-directional positive societal impact, but sustainability considerations are its Achilles Heel and present an only recently acknowledged risk to investors. As they become an increasingly important component part of the US indices, investors need to consider whether these companies are adequately addressing governance (and other) considerations. The consequences of a failure to do so could be severe. Great responsibilities come with running enterprises of extraordinary political, cultural and social influence. Big Tech still (just) has time to recognise this and act, before others do on their behalf, else a reckoning seems imminent.

There is a delicate balance to be achieved between the preservation of free speech and the benefits of the internet on the one hand, and the societal responsibilities of Big Tech on the other

The Financial Times' John Thornhill comments: "All this comes as further confirmation of how we are turning the wondrous informational resource that is the internet into a cyber cesspit, where Russian trolls, Islamist terrorists, and corporate and political lobbyists peddle bile, propaganda, and lies". Such views are gaining considerable traction – failure to acknowledge the underlying problems and lack of action will risk seeing the solutions taken out of the hands of Big Tech.

We have explored a range of solutions to the problems that our society and Big Tech face, from increased regulation to proper taxation, through to paying for data and a tech Magna Carta. Each has something to commend it, yet none on their own seem likely to provide the whole solution – our expectation is that a combination will ultimately be required. There is a delicate balance to be achieved between the preservation of free speech and the benefits of the internet on the one hand, and the societal responsibilities of Big Tech on the other. It is a stretch to believe that Big Tech are all passive utilities with no greater duty of care to the modern world. They must act as our informational gatekeepers to control (mis-)information that is seen and shared around the world.

As shareholders, we have the ability to reinforce the need to manage personal data more carefully, to be cognisant of the unintended effects on our cherished democracy, and to call into question the societal propriety of social media. Existing share structures with dominant founders make this challenging, but careful, well-structured engagement on these difficult, but vital issues, should be able to make a difference.

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