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Section A

1. Abstract

Rapid digitalization is affecting all aspects of life – including the way we interact, work, shop and receive services – as well as how value is created and exchanged. In this process, the data economy and cross-border data flows are shaping economies. Big Tech corporations is impact our ‘everyday lives’ and disrupting markets. In recent years, Big Tech multinational corporations MNCs have come occupy have the largest market capitalisation in the world. Its stratospheric rise and growth has penetrated markets and its restructuring social-economic-governance and community life. Big Techs unique platform model - together with rapid scalability and acquisitions, has enabled it to earn super monopoly profits, posing multiple policy-regulatory and fair competition challenges. This research working paper describes the policy challenges in the data- platform economy globally its impact for South Africa. Competition policy remedies that arise in digital markets with strong network effects, and its varying negative impact on public welfare and the public good will be analysed. By applying the stakeholder and public utility regulation theory approach as well as ‘new issues’ such as, privacy, financial disclosure standards etc that can aid regulation.

A key focus of this paper will explore a niche area regulation - that of financial disclosures and reporting by Big Tech in regulatory filings. As the current system of disclosures entrenches information asymmetry advantages between Big Tech vis a vis regulators and the public. New trends in the area of regulatory reporting and disclosures such as Environmental- Social, and Governance (ESG) investing are prompting companies to adopt data transparency, new impact assessment standards, and can strengthen corporate governance and regulatory oversight of multinational corporations and Big Tech at national level.

2. Introduction, Background and Context

In recent years, Big Tech's countervailing power has been at the centre a number of spectacular controversies, leading to a series of destabilising effects on the economic-political-community-social-personal life throughout the world and in most jurisdictions. These have given rise to widespread concern about finding appropriate "fit for purpose" policy-governance framework governance frameworks to rein them in.

The term 'Big Tech' signifies the inordinate power that accrues to a corporation through an ever-expanding concentrated market power – and business models of stacks built on the *network effect and the associated control-capture of data value chains*. Big Tech is used in common parlance to refer to a handful of digital companies that wield such power. It may also be seen as a stand-in for the phenomenon of corporate capture of data value.

Globally, the power of multinationals MNCs are many steps ahead of policy makers and regulators and the general public. But in recent years, regulatory powerhouses such as the EU Commission, the FTC well as the recent US Congressional hearings have stepped up with intensive oversight, and regulators have imposed record fines of hundreds of millions of dollars being on Google, Facebook, Amazon – aka GAFAM for a myriad of anti-competitive practices in various online markets it operates. Regulators in the Global South do not as yet, have the capacity to act in this way, but with the required tools, knowledge and regulatory lessons, nations such as South Africa and many African nations can develop more solid regulatory interventions in the public interest.

2.1 Overview of Big Tech's datafication model and local impacts

The rapid consolidation of market power in the hands of winner-take-all platform behemoths – the "capitalist platform firm" (Srnicsek 2017) – marks the *platformisation of production and market exchange based on capitalist control of "network-data architectures"* (Gurumurthy et al 2019). The wealth accumulation strategy of platforms is based on the extraction of network monopoly rents and algorithmic rents (Mazzucato, Entsminger, and Kattel 2020) from the public. Platforms do not just leverage network effects in growing their userbase. Data accumulation plays a central role in the monopoly power of platforms – to expand their reach and create new markets where none existed previously (Srnicsek 2017,)

Leading public value and innovation scholar Mazzucato poses a key challenge:

"What can be done about these firms' growing market dominance? For starters, the situation demands a more proactive regulatory agenda, so that public authorities are not constantly playing catch-up. What we have now is a case-by-case regulatory "war of attrition," frequently waged by litigation against *past* business practices. After a lengthy appeals process, the result almost always amounts to "too little, too late." (Mazzucato, 2022)

By the late 2000s, it was impossible to ignore the writing on the wall. If the original Internet was basically the democratic, pluralist and decentralised web, the new Internet was increasingly assuming a hierarchical, centralised character. The frenetic increase in computing power and exponential growth of digital data generated either directly in the virtual space or indirectly in the physical space has seen the emergence of twenty first world order, understood widely as ‘platform capitalism’ (Gurumurthy, et al 2019)

According to Singh of IT for Change, an NGO working in India, who has been advocating for fair internet governance and a ‘data commons’ presciently captures the unfair power of big tech:

“From the innocent logic of social networks to the attention economy’s feverish aggregation of users into profiles, *Uberisation* (capitalist subversion of cooperative forms of peer production and exchange in the on-demand economy), *Amazonification* (parasitic capture of network economies) and finally, the universalisation of the platform model in the tangible economy (new processes of appropriation of the ownership of the means of production), the short history of platform capitalism stands tall as a spectacular myth”.(Singh, IT for Change, 2020)

2.2 Financial Disclosures

A big part of the “regulatory void” is connected to Big Tech’s *unique multi-sided digital platform business model*, predicated on “free services’ (in the sense that they are not provided in exchange for direct payment) and relentless product diversification.

- a) *Nominally free products* are integral to Big Tech’s multi-sided digital platform business model and generate enormous sums of revenue when monetised through advertising or subscriptions
- b) *User engagement underpins* the ability of these platforms to be monetised, yet no monetisation disclosures on user operating metrics or data are mandated for a platform’s free products. Big Tech’s sources of profits have become increasingly diversified across multiple products and monetisation models.

Yet Big Tech companies still portray themselves as ‘single segment’ or ‘two segment’ product companies in their reports, segment disclosure rules are designed to ensure diversified companies disaggregate their financials to reveal hidden data, but have failed to ensure Big Tech undertakes meaningful financial disclosures (on profits/losses, revenue, etc.) by product.

Leading public intellectuals Professor Lina Khan (now FTC chair) Prof Mariana Mazzucuto of Institute of Public Value at LSE, Prof Ingrid Schneider of EIT Hamburg, Prof Tom Wu of Stanford, and Tim O Reilly, leading open source advocate and publisher, Parminder Jeet

Singh of India etc have emerged as leading critiques at the forefront of the great Big Tech reform debate, and through many research programs, are proposing innovative regulatory interventions to reign in Big Tech and hence ensure fair competition, ensure space for smaller players, and crucially to preserve and promote the public interest in the digital economy and society.

In order to explain how the digital platform and Big Tech's dominance in a range of markets has been established in a remarkably short period of time they looking at key economic concepts of *Network effects* that underpin the scale of Big Tech's business model(s), and how they create and extract value and economic rents (Khan 2018; Mazzucato 2018). They are arguing that strong network effects inherent in digital marketplaces and platforms also make their benefits very difficult for new entrants to replicate (Rohlf's 2001; Bamberger and Lobel 2017).

"As noted above, network effects occur because more people using the platform improves its utility to both the consumers and/or the producers on it (O'Reilly 2018). This makes sheer scale a key condition for its success, and this can be seen as a 'structural barrier' or fortress for any new potential entrant. In terms of the free principle of social media, they unpack further. In growing the user base, 'there is no more important feature when it comes to widespread adoption than being "free",' notes tech commentator Ben Thompson (2018). This naturally privileges, at almost any cost, user growth and high levels of R&D spending to expand the user base (Eisenmann, Parker and Van Alstyne 2011; Coyle 2019). Once dominant, the product can be monetised more and more, as fewer competitors exist and consumer lock-in is greater.

Just as environmental, social, and governance reporting is becoming essential to help navigate climate change, she contends that enhanced 10-K regulatory reporting in the US jurisdiction is necessary to reveal the nature and extent of Big Tech's market dominance. Only then can we see if these giants owe their continued growth to value creation or to value extraction.

This analysis speaks to the so called 'free' model of Google and Facebook in particular, whose provision *"Its Free and Always Will Be"* being Facebooks by-line etc are seriously misleading, as the *ad tech model* means social media giants make billions off consumer data. So instead of a virtuous platform, the *multiplatform model* today is a vicious cycle of datafication and monetisation' that is central to the ad- tech business model, fundamentally uncompetitive and, is abused by the most nefarious forces in society.

2.3 Proposed Research Objectives

The digital economy has novel characteristics which distinguish it from traditional markets and suggest the need for a different approach.

- a. Analysis of Big Tech's monopoly control over data value chains – the multi-market platform model, its competition impact at national level (South Africa)
- b. What type of *information and regulatory disclosures* required (product and operational information) to ensure effective oversight? How can regulators draw upon ESG disclosure model?
- c. The type of *integrated ICT policy and inter-institutional-regulatory* approach that is suitable for developing country contexts such as be placed on Big Tech in national jurisdictions such as South Africa and Africa?

2.4 Challenges and opportunities in South Africa's digital economy

South Africa, as a middle-income developing nation has multidimensional challenges. The Covid pandemic has deepened inequality, job losses and social conflict. Indeed, the latest World Bank report again cites South Africa as the most unequal nation in the world. (World Bank 2022). A growing digital divide and the "4th industrial revolution" 4IR together with legacy issues and new technology replacement in terms of the future of work in this digital economy is generating tremendous concerns and anxiety (UNDP, 2019, ILO, NEDLAC).

With an unemployment rate of 39% unemployment (Stats SA, 2022) illustrates the many constraints currently faced by South Africa within a spiralling rate of change of technology in the global context which making it a much more complex exercise to ensure that the necessary socio-economic measures are in place to upskill citizens to participate meaningfully in in the new digital economy (Stats SA, PC4IR,2020)

Mainstream ICT services continue to grow rapidly. For instance, South Africa's telecommunications sector revenue realised a positive increase of about R8 billion in 2022, the overall revenue from mobile services also increased by 7.07%. However, total fixed internet and data revenue and total fixed line revenue decreased by 10.97% and 14.49% in 2022, respectively. Machine-to-Machine (M2M) Mobile Subscriptions M2M mobile-network subscriptions increased by 23.39% from 9.3 million in 2021 to 11.5 million in 2022. Over a 5-year period, M2M mobile-network subscriptions increased by 13.82%. International Internet Bandwidth Capacity in Megabits per second (Mbps) The total international internet bandwidth (Mbps) capacity increased from 1.3 million in 2021 to 2.7 million in 2022. Over a period of 5-year, the total international internet bandwidth capacity increased by 33.49%% (ICASA State of ICT report 2022)

Post apartheid South Africa has had a long list of mediocre ICT policies and programs ranging from convergence regulation to ill-fated broadband and universal service programs, weak SOE performances, and the hype around the recent 4th Industrial revolution commission (PC4IR). In this regard there is a case for a more systemic and critical review of ICT policy, regulations and institutions.. Policy and legislations impacting on ICTs include:

- ECT Act, 2005
- 4IR Commission PC4IR
- Broadcasting Act, 2010,
- MDDAct,
- National Cloud Policy, 2022,
- POPI Act and the Info Regulator
- National Broadband strategy and Broadband Connect
- Copyright Amendment Bill CAB, 2022-23
- SOE review – Telkom, Sentech, SABC, Infraco,

The *SA Broadband Connect* strategy has not achieved its stated objectives, especially in underserved communities, and connectivity to schools and clinics remain low. The Presidential Commission on the Fourth Industrial Revolution (PC4IR, 2020,) has argued that the intention must be to “promote the development of a digital services small-business sector in South Africa. This would create a pool of more digitally literate small-business proprietors and employees. The flow-through effect of digital literacy to the communities in which the small businesses are rooted would be considerable” (SADA, 2020, p. 31).

Small and medium-sized companies, can contribute significantly to employment and income in the South African economy and new generation innovations are possible. These entities face significant barriers to adopting digitisation such as high broadband costs, digital and coding skills gaps, and the acquisition of capital-intensive technologies and building the scarce skills required to assimilate these. (LINK centre policy paper, 2022)

In this context, Platforms, in their various forms, are intermediaries that bring together a set of parties (consumers, producers, employees, and employers) to interact online and that use data to plan and create these interactions. In the case of South Africa, transaction platforms generating local data for local use are important for distributing goods and services (education, social, cultural) produced by various sectors and by citizens who participate as producers (consuming but also providing or adapting goods and services distributed through platforms). Yet recent conflicts (and lack of regulation) by Uber and Bolt drivers have showed up the precariousness of gig workers.

At an industry level, innovation platforms provide ways of sharing common designs and for interactions across a sector. Relevant examples could include operating systems (e.g., Android or Linux or Open AI) and technology standards (e.g., MPEG video) (UNCTAD, 2019,)

Furthermore, unlike other nations in the Global South such as India, Brasil, Malaysia, China, etc, South Africa does not have a well-established indigenous ICT and localised software development corporations or ‘tech champions’ that have any significant local or global market presence, thus the potential of its digital economy and data localisation for development is constrained. Hence, after 27 years of democracy it largely relies on first tier global ICT MNC corporations and OEMs for services in both the public and private sector, thus crowding out much needed innovation for local entrepreneurs to scale and go global.

3. THEORETICAL FRAMEWORK

A theoretical framework provides the research enquiry a philosophical framework of the report. Literature review is defined as “the use of ideas in the literature to justify the particular approach to the topic, the selection of methods, and the demonstration that this research contributes to something new.” (Hart, 1998). The following conceptual frameworks, theoretical frameworks and models are classified as being relevant to the subject and are discussed in detail in this section. It provides an integrated view to provide a solid understanding of Big Tech policy and regulation in 21st century informational society

- *Information Society* theory;
- *Regulatory Governance* theory;

3.1 Information Society theory

The United Nations UN defines the information society as:

“A society characterised by a high level of information intensity in the everyday life of most citizens, in most organisations and workplaces; by the use of common or compatible technology for a wide range of personal, social, educational and business activities, and by the ability to transmit, receive and exchange digital data rapidly between places irrespective of distance”.

Webster (2014) states that information is seen as a unique characteristic of the new world. This “e-society”, as it has become known, is driven by a “weightless economy” motivated by information. Technological concepts are centred on the innovations that have risen. The rise of new technology is a clear indication that times are changing. Alvin Toffler, one of society’s leading futurists, spoke about three phases of technological innovation. The first was the agricultural revolution, the second the industrial revolution, and the third is the information revolution (Webster, 2006).

The economic value of information activities could be measured by gross national product. There is an economic achievement that the information economy is providing. The information activity, according to Webster (2006), provides greater economic activity and multiplier effects than the previous two waves of technological innovation, namely agricultural and industrial.

The emphasis on information networks that connect locations has become a focal feature of social organisations relates to the spatial characteristics of an information society. This gives rise to the concept of a “wired society”, where we are all connected to a network in some way. The physical location of where a person is, is no longer relevant and information can be accessed from anywhere. If one considers a gig worker working for social media giants, they could work and deliver quality outputs from anywhere in the world. For instance, content moderation’ is a core operational function of social media companies, with the bulk of content moderators’ working in the Global South, in metros such as Philippines, Manilla, Nairobi,

Bangalore, casting the spotlight on the new 'digital sweatshops', exposing the underbelly of the global digital economy. (Heeks, 2019).

3.2 Network Theory of Power thesis

Leading communications scholar and sociologist Professor Manuel Castells is another important theorist whose work on the Information Age could be added to the Information Society theory through his major work – *The Network Society* (1998). His view on the information age is that it has given birth to 'a new society' that has come into existence by the spurt of networks that are supported by Information Communication Technologies and gives importance to information flows (Webster, 2006).

Castell's (1998) core thesis is that the main characteristic of the information age-network society is the spread of networks that *links people, companies and countries- communications networks as the great spatiality*. This is evident in today's Big Techs configuration and gig economy through networks, people-users-consumers-citizens are more connected and able to become financially empowered at a global and local scale; hence the term "Glocalisation", as information and data is sourced- and crucially created locally, both and used-applied in both the national-local and global contexts. So, when reams of user behaviour data are sourced via community networks, the data is extracted – via cross border data transfer to global multinationals (i.e., Facebook), the data being sliced and diced and on-sold to advertisers for a premium

Governance in market economies is increasingly evolving as a patchwork of regulatory institutions, strategies, and functions". This patchwork varies widely across regions, nations, regimes, sectors, issues and arenas, but the increase in the role of regulation in shaping policy and politics is evident almost everywhere. Regulatory processes condition the *operation, manipulation and deployment of political, social and economic power*. The penetration of regulation as an *institutional design, as a practice and as a discourse to all spheres* is captured by the concept of *regulatory capitalism* (Levi-Faur 2005). A growing body of academics led by Peter Drahos have converged around new research programs on 'Regulatory Capitalism and RegGov as a dedicated field of study.

In this fluid and dynamic defining on the essence of governance, the rapid diffusion and behaviour model of Big Tech in the last several years can partly be explained by its effective managing and manipulation of these various 'patchworks of regulatory institutions and forums' in various global-regional-national settings.

Regulation in this context thus refers broadly to the means that guide any activity - individual or institutional, and thus is a constantly fluid and elastic concept. It is in this *fluidity-elasticity* that norms and compliance can be stretched, and mainly multinationals and corporates have the resources and policy stamina to engage continuously to refine, revise and reshape policies in their image.

In this 'tech lash and "taming big tech' moment, regulating Big Tech is gone to the forefront of national and supranational forums, and one of the major challenges in the global economy. All major global international forums - United Nations, ITU, World Economic Forum (WEF), G20, OECD, EU, BRICS, African Union, ASEAN etc have dedicated *Digital Economy* tracks and workstreams.

In this dynamic context, can a new mode of policy-regulation model emerged or be strengthened? Responsive regulation suggests that governance can and should be responsive to the regulatory environment and to the conduct of the regulated in deciding whether a more or less interventionist response is needed, but this is a dynamic process linked to the state of society, the nation state itself, and citizen priorities and demands, all-encompassing the public good.

In seeking to define "new governance," these scholars argue have taken a number of different approaches. The most common approach is to define it as a "type" or "mode" of regulation and then list a set of attributes which make something "new governance" regulation. Typologies like these by positing that "blurring boundaries" is an attribute of new governance regulation as well.

According to leading regulatory theorist Jason M Solomon:

“The idea of blurred boundaries is operative in new governance theory in several ways, which in advancing a conceptual frame of regulatory governance, describes below. They are: (1) *blurring the roles of regulatory actors*; (2) *blurring the stages of regulation*; (3) *blurring the modes of regulation*; (4) *blurring the functions of a regulator*.

In this context, MNCs especially have managed to 'set the rules' at the WTO regarding Trade in Services charter, WIPO regarding IPRs, and, crucially the UN Internet Governance Forum IGF, thus controlling the narratives. One can argue that had there been a stronger UN – and state oversight of the IGF processes, many of the nefarious activities and models of Big Tech we see today could have been reigned in.

4. RESEARCH METHODOLOGY

A *qualitative methodology* will be employed. It is an approach where the researcher uses theoretical frameworks and seeks to find answers to hypothesis through theory. These draw upon disciplines of political science, public policy, economics and management theory. The reason for using a qualitative approach is generally to use theory to test phenomena. According to Creswell (2003) qualitative research generally one in which knowledge claims are based primarily on *constructivist perspective or advocacy/participatory perspective (political, policy, issue-orientated, change orientated)*. Some of the key characteristics of qualitative studies include:

- Constructivist and Advocacy driven;

- Open ended questions;
- Emerging approaches;
- Focus on a single concept of phenomena;
- Validates accuracy of findings;
- Makes interpretations of data;
- Creates and agenda for change/ reform;
- Collaborates with participants

Qualitative method as an inquiry process of understanding a social or human problem based on building a complex, holistic picture, formed with words, reporting detailed views of informants, documentary analysis. The key value of the qualitative research approach in this research study is that it allows the subject under study to be tested from the detailed views of the participants to gain a better insight into one key concept. The value of this research method is the interpretation it allows into the enquiry of the personal reflections of the participants and past research, programmatic information and results, etc.

Qualitative research allows the exploration of a phenomenon using various data sources through a variety of lenses to reveal multiple facets (Baxter & Jack, 2008).

4.1 Research Methodology and Design

Qualitative research is also described as inductive. It is driven by data and conclusions are drawn from the data. This is unlike the deductive approach which is used commonly in the quantitative approach. Ideas are formulated and trialled to test. Benoliel (1984) as cited in K.A. Meadows (2003) states the following as purposes of qualitative research:

- *Description* – not a lot is known about a specific target grouping of people or a social occurrence. In the case of this research, not a lot was known about the skilled female participating in the gig economy, their motivating factors as well as the advantages and challenges facing them in this new economy.
- *Hypothesis generation* – where no distinct hypothesis is found and where the collection of rich information will assist in the formulation of hypotheses that could be further researched.
- *Theory development* – Qualitative data is analysed with a vision of developing a wholistic scheme to explain the scheme that explains the observed phenomena.

Research design can be defined as the strategic framework that connects the research question to the implementation of the research. These plans help guide the researcher on how to go about collecting and arranging data. Through the planned observations, the researcher aims to understand the and fulfil the purpose of the research.

(Blanche, Durrheim, & Painter, 2006). This research shall take the form of a qualitative study. An analysis of the data economy and digital platforms concentration and their impact on labour, SMEs, gender empowerment in South Africa were a key focal point for this study. This explanatory research looked at both the surface level and the deep level to help explain the recent “gig economy phenomenon” (Zainal, 2007).

Qualitative research gathers insight through observations or in the form of written or verbal feedback. Data is then analysed, themes identified and then clustered. (Blanche, Durrheim, & Painter, 2006) Adding to this, research was conducted using purposive and snowballing sampling to interview respondents to understand this topic in more detail. Sampling can be defined as the “selection of research participants from an entire population, and involves decisions about which people, settings, events, behaviours and/or social processes to observe,” according to Blanche, Durrheim, & Painter, (2006).

In addition to content analysis, I have also applied *thematic analysis*, which can be considered a form of pattern recognition with the document’s data (2009). This analysis takes *emerging themes* and makes them into categories used for *further analysis*, making it a useful practice for grounded theory. It includes *careful, focused reading and re-reading of data*, as well as *coding and category construction* (Bowen, 2009). The emerging codes and themes may also serve to “integrate data gathered by different methods” (Bowen, 2009,)

Section B

5. Challenges of Big Tech in 21st Digital Economy – Unpacking the challenges

In 2021, the Big Five tech giants—Apple, Amazon, Google (Alphabet), Meta, and Microsoft—generated a combined \$1.4 trillion in revenue. What are the sources of this revenue, and how does it breakdown? Amidst rising unemployment and pandemic-induced chaos, the Big Five still managed to see a significant revenue uptick.

In 2019, big tech’s combined revenue grew by 12%. The following year, throughout the onset of the global pandemic and the various economic challenges that came with it, big tech still increased its combined revenue by 19%.

And in the 2021 fiscal year, big tech saw a 27% growth in combined revenue, year-over-year.

Company	Revenue (FY 2020)	Revenue (FY 2021)	Growth (YoY)
Apple	\$274.5 billion	\$365.8 billion	33%
Amazon	\$386.1 billion	\$469.8 billion	22%
Alphabet	\$182.5 billion	\$257.6 billion	41%
Microsoft	\$143.1 billion	\$168.1 billion	17%
Meta	\$86.0 billion	\$117.9 billion	37%
Combined	\$1.1 trillion	\$1.4 trillion	27%

Many leading public policy specialists, sociologists, regulators, even psychologists have begun to seriously probe the Big Tech all-consuming power in the public domain – political-economic-socio-personal domains. How did these companies continue to thrive throughout economic turmoil and global chaos? For starters, it was made possible because the societal changes triggered by COVID-19 ended up driving demand for big tech’s products and services.

Despite their differences, Big Tech firms have more *techno-economic similarity* than previous iterations of the top five. For example, in 1999, at the height of the dot-com bubble, the five biggest companies were three tech firms – Microsoft, Oracle, and Cisco Systems – as well as a manufacturing conglomerate – General Electric – and retail giant Wal-Mart. Importantly, no previous incarnation of ‘Big’ capital – e.g., Big Oil, Big Pharma, Big Banks – has held all five positions at the top of the corporate hierarchy. The five largest members of Big Tech are the

pinnacle of *this model*, hence the popular application of the label ‘Big Tech’ to a variety of firms like Netflix, Uber, Spotify, Zynga, and PayPal,

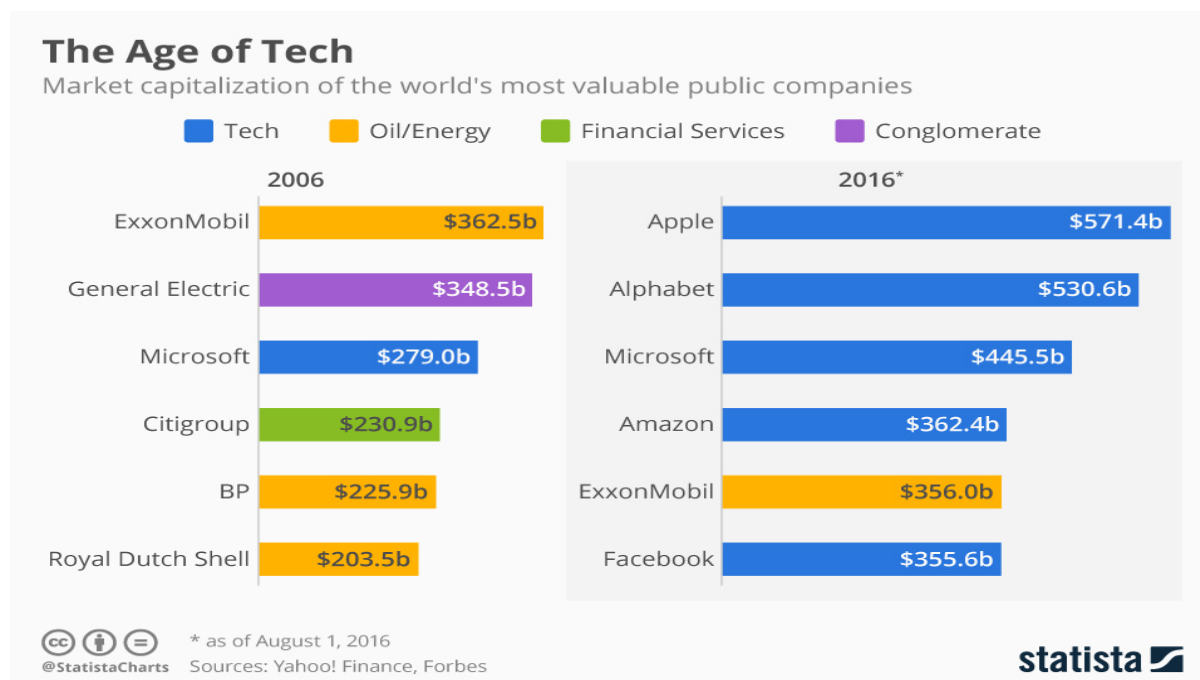


Table: This table shows the rapid rise of Big Tech to the top tier most values corporations

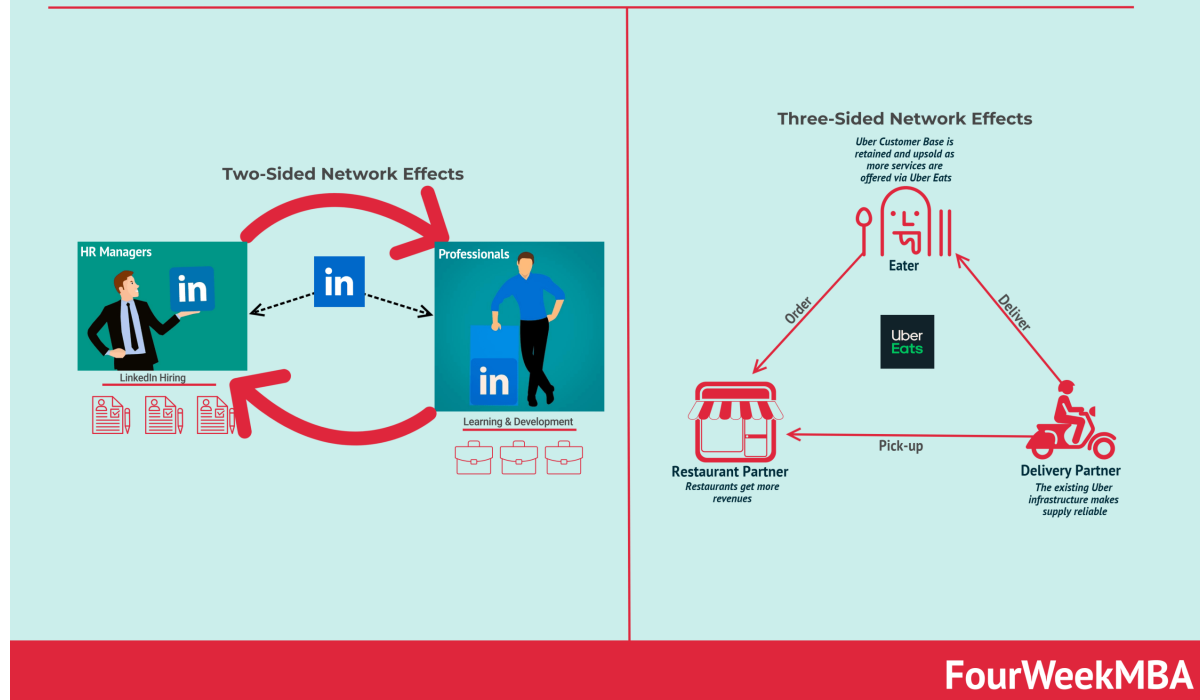
Could 2023 be the turning point of heralding the decline of Big Techs monopoly power as we know it? With multiple regulatory interventions, including breaking ups of the tech giants. As one writes this paper, the collapse of Silicon Valley Bank SVB in early March 2023, ‘the technology bank’, made headlines in the business world, with META laying off another 10 000 employees, again signals the multitude of challenges facing big tech, with public calls for decisive regulatory reforms and interventions *in the public interest*.

5.1 Platforms unique Multisided Market model – A modern day regulatory challenge

A digital platform is understood as a two-sided or rather multisided matchmaker), enabling multiple actors ‘who would otherwise struggle to find each other (sellers, buyers, advertisers etc.)’ (Schwarz 2017,) to connect. In just a few years, digital platforms have gained enormous power, redefining the role of consumers, producers and even property. They increasingly dictate the way the economy is organised, having paved the way for the so-called platform economy. Digital platforms such as America's Amazon, China's Alibaba or Japan's Rakuten were already founded in the days of Web 1.0. Back then, these e-commerce platforms were simply treated as an additional sales channel, having developed into platforms over time.

Multisided Platform Business Model

A multisided platform business model is a company that leverages multisided network effects (coming from two or more sides of the network). Therefore, when one side of the network grows, this makes the overall platform more valuable for the other side of the network and vice-versa, triggering exponential growth for the platform business.



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Platformization reflects a more expansive view of Big Tech as dominating digital infrastructures (e.g., platforms), controlling boundary technologies (e.g., APIs, SDKs), rules and regulations (e.g., contractual terms), and users, competitors, and customers (e.g. advertisers, developers)

The authors thus bring forth a novel concept of modularity necessitates a capacity to integrate other social actors into an ecosystem and to develop techno-economic mechanisms to support this integration and interoperability. The specificity of Big Tech as a techno-economic configuration is their combination of scalability and modularity that enables them to retain control of an ecosystem. As Helmond (2015), Nieborg and Helmond (Citation2019), and others note, this often involves technological devices, applications, and plugins, so-called 'boundary resources'

"Building on these two aspects of Big Tech's techno-economic configuration, they further suggest that an important aspect of Big Tech is the development of 'boundary assets' that help to both constitute an organizational or ecosystem boundary – as a flexible interface, rather than separation – and provide the tools and devices necessary for other techno-economic entities then to cross that boundary."

Challenge 1: Big Tech's Information asymmetries problem and opaque disclosures

According to leading public policy and innovation intellectual, Mariana Mazzucato "The problem is exacerbated by a lack of disaggregated financial disclosures from the Big Tech

companies. Their aggregated disclosures no longer come close to explaining how they operate. Investors and regulators need to know more. These omissions follow from two features of Big Tech's powerful platform business model. First, a platform's utility is often underpinned by "free" or subsidized products that drive user adoption. Even though these products are eventually monetized – either indirectly through advertising or directly through subscriptions, sales, and fees – they do not have to be included in the 10-K as long as they remain largely "free" to the consumer.

This opacity has helped the company avoid regulatory scrutiny while establishing a global foothold in key digital markets. While Big Tech firms sometimes provide monthly active user counts in their earnings calls to investors, these figures are not disclosed systematically in their annual 10-Ks, where the legal onus is higher. A proper disclosure of user "operating metrics" is sorely needed, because these firms' market domination (and related abuses of power) is increasingly of a non-price nature. Central to this dominance is a large user base. (Mazzucato, 2022.)

Mazzucato further explains by providing an example

"A large user base in one product, such as MS Word, can allow a firm to extend its dominance to other markets through bundling (think of MS Teams). Big Tech companies' market power increasingly lies in the "ecosystems" they control, rather than in a single product. That power allows them *to lock in users, squeeze out competitors, and build data fortresses.*

Another dimension that she highlights is the second feature of Big Tech's business model that aids financial opacity is *product diversification*.

"By diversifying their product offerings – often through new product bundles – tech platforms can keep users within their ecosystems, generating more sales. Yet these increasingly diffuse sources of profits are rarely disclosed in their 10-Ks. Although the current "segment reporting" rules were designed to ensure that large, diversified conglomerates release disaggregated financial information, in practice the rules give companies wide discretion to define what counts as an "operating segment." (Mazzucato, 2022)

This flexibility allows Big Tech companies to *hide their financials of some of their leading products*, even those that technically exceed the reporting threshold because they account for 10% or more of total assets, revenues, or profit/loss. Big Tech firms have become so large that even enormous product segments with sales exceeding \$20 billion can be classified in such a way that they do not meet the threshold at all.

The key arguments are that the absence of *detailed financial and operating information means that regulators tasked with identifying possible abuses of market power are effectively*

starting from scratch with each case. To determine a firm's power, regulators must be able to *analyze via reporting disclosures the relationship between prices, costs, and capital outlays;* but they correctly argue that these factors are obscured when financials are *aggregated across products.*

This allows for value-creating activities are routinely blended with zero-sum value-extractive activities. And even though Big Tech companies have used "free" products to become gatekeepers to entire markets, they still are required to disclose only profits and losses; herein lies the 'disclosure regulatory' gap.

Enabling cutting edge legislation that can assist new modes of regulatory disclosures is the European Union's (EU's) proposed new competition law regime - the Anti-Subsidy Regulation. Formally proposed in May 2021 and passed in 2023, it will create mandatory new M&A notification and approval requirements based on a broad new group-wide, global financial metric, "financial contributions," starting with multinationals' 2020 financial years.

Crucially, this will create a more potent and wide-ranging regulatory system that can and will be able to capture- and measure Big Tech true value across subsidiaries and national jurisdictional markets. Can developing world jurisdictions replicate the EU Model?

Challenge 2: Big Tech's Acquisition strategy and 'innovation cooling' effect

Another challenge blocking fair competition and markets is the acquisition strategies of Big Tech. Because large digital platforms are able to imitate innovations quickly, venture capitalists may shy away from investing in companies that directly compete with them. At the same time, the prospect of selling a start-up to Big Tech platforms offers an attractive exit strategy for VCs to recoup their investment. Other things being equal, this prospect likely boosts their investment in start-ups."

The debate is further continued in terms of the VC capital firms strategy and values and that of the start-up and their geographical location. In a review article. A review article by Lerner and Nanda (2020) critically analyzed the state of knowledge about the role played by VC investment to foment innovation. Although the authors recognized the importance of the VC investments to spur innovation, as supported by previous literature, they discussed some limitations of this relationship. First, they argued that a very narrow band of technological innovations fits the requirements of VC investors. These are primarily innovations with a short-term prospect for commercialization. However, such *innovations frequently bring limited societal benefits and makes financial and operational disclosures challenging.*

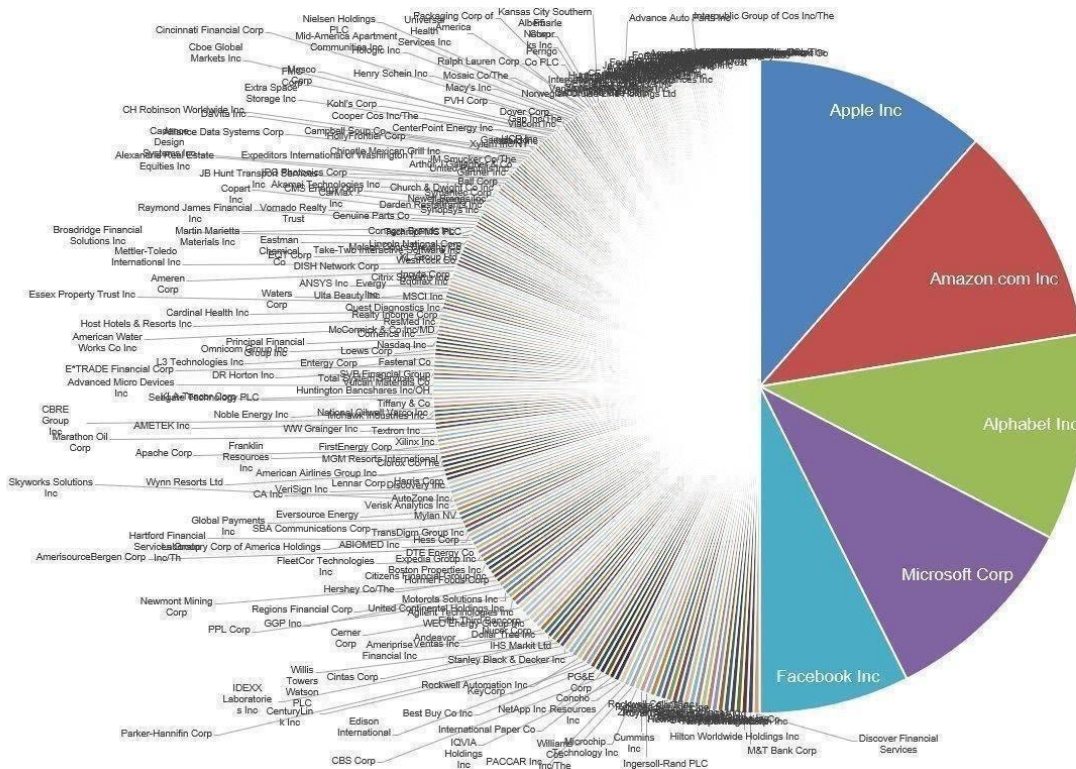


Table 3: Big Tech vs the Rest This graphic poignantly captures in stark visual the dominance of Big Tech vs the rest. The rest are thousands of start-ups that struggle to scale, some finally get acquired out by Big Tech

The authors argue that this 'ambiguous effect' exists in a longer-term strategic perspective as Big Tech acquisitions are a strategy to *reduce the threat that new competitors might emerge and eventually challenge their own business*. If acquisitions reduce potential competition, they may, therefore, reduce the innovation incentives – and competition among incumbent Big Techs.

The policy debate is divided by contradictory assertions. One position emphasizes that Big Tech acquisitions of start-up companies directly and indirectly suppress entrepreneurship and stifle innovation. It is argued that such acquisitions contribute to the creation of “kill zones” by discouraging additional investment by venture capitalists (VCs) in lines of business with a strong presence of Big Tech firms

Section C

6. Competition Policy and regulation remedies and tools

On 13 July 2023, The European Commission EC has made a formal antitrust complaint against Google and its ad business. In a preliminary opinion, the regulator says Google has abused its dominant position in the digital advertising market. It says that forcing Google to sell off parts of its business may be the only remedy, if the company is found guilty of the charges. This would be a significant move targeting the main source of the search giant's revenue, and a rare example of the EU recommending divestiture at this stage in an investigation. The Commission has already fined Google over three prior antitrust cases, but has only previously imposed "behavioural" remedies — changes to its business practices. (The Verve, 14 June 2023)

"Our preliminary concern is that Google may have used its market position to favor its own intermediation services," the Commission's executive vice-president in charge of competition policy Margrethe Vestager said in a statement. In its preliminary findings, the Commission says Google has "abused its dominant positions" since at least 2014 to favor its own ad exchange.

This latest EU fine to look at antitrust and divestiture is an approach that also aligns to the call by Mazzucuto, O Reilly et al for separate financial disclosures as a tool in order to objectively assess Big Tech Multinational and multi subsidiarity structure; and these metrics are crucial in order to achieve optimal regulation and designing remedies in the public interest.

In March 2023, Diane Paredes, writing in the WEF blog in the aftermath of post SVB collapse

"In contrast, reg-tech enables what's known in the industry as 'pull' rather than 'push' information exchange. So, data is pulled from firms, removing the need for reports entirely. This makes financial information exchange faster, more agile and less dependent on supervision or human error. Reg-tech could therefore enable the financial industry to move to a more regulator-led pull-based system, where information is pulled at source, analysed and modelled in real time with future trends projected continuously, ensuring supervision of the industry remains on point at all times."

Here's where reg-tech could play a part, she explains.

"Regulators could have straight access to banks and do a lot of this analysis without notifying the markets or making any kind of panic around it. It would be a very interesting concept for supervision."

The current banking crisis stemming from the SVB collapse is bringing forth the need for instant data driven info and data access, so regulators can be apprised of risk in 'real time, so as to mitigate them spreading. Several publications have argued that policies aimed at addressing risks posed by big techs in areas like *competition, financial stability, operational*

resilience, conduct of business or personal data protection require a specific regulatory approach for big techs over and above activity-based rules.

Current academic research and discourses in competition law is moving beyond the narrow consumer welfare principle (CWP) made prominent by the free-market Chicago school of economics – the proposition that antitrust policy should encourage markets to produce high output consistent with sustainable competition, and low prices. The current market dominance of giant firms such as Amazon, Google, Facebook etc, however, is opening the door to a re-evaluation of this antitrust standard, particularly a reinvigorated antitrust “movement” that incorporates socio-economic goals, such as protecting small businesses, consumer rights, labour rights, climate change issues, promoting national and local data localisation. (Hoverkamp)

6.1 Public Utility regulation - Big Tech as an ‘essential infrastructure’

Recalling this broader set of concerns brings into focus the range of factors at stake when dealing with dominant intermediaries and invites consideration of the degree to which separations in platform markets would also respond to a diverse set of problems.

“A handful of digital platforms exert increasing control over key arteries of American commerce and communications. Structuring access to markets, these firms function as gatekeepers for billions of dollars in economic activity. By virtue of setting marketplace rules for the millions of merchants, producers, and developers dependent on their infrastructure, dominant platforms today “function as regulators.” (Khan, 2018)

According to Lina Khan (2018) who further advocates for the public utility approach

“The tradition of *public utility regulation*—one of the key tools in the antimonopoly tradition—offers a critical foundation for imagining a modern approach to governing speech and assuring a vibrant democracy in the digital age. Historically, the public utility tradition has animated much of the development of the modern regulatory state. From water to electricity to telecommunications, 19th century reformers used public utility oversight—which includes mandates for *fair treatment, common carriage, and non-discrimination* as well as limits on extractive pricing and constraints on utility business models—as a key method to restrain the dangers of private power over critical shared infrastructure.

In summary, the ‘New Brandies’ movement in economic regulation, argue that policy makers must limit the dangers of infrastructural power by *breaking up* dominant firms, imposing *firewalls*, and *structural limits* on the power of these firms that control essential infrastructure. This goes back to the Sherman antitrust model that saw the break-up of AT&T

in the 1980s that led to many smaller telcos. into baby bells, thus fostering competition and innovation in the US.

6.2 Current regulatory trends - Big Techs foray into fintech frontier

In the area of the provision of technology services to regulated financial institutions, most jurisdictions currently lack a specific regulatory approach. In general, risks related to excessive dependence on services provided by critical third parties (like cloud computing service providers) are indirectly addressed under the current regulatory framework for operational risks and, more specifically, outsourcing. These have major implications for cross border data flows, with the EU, G20, WTO and BRICS developing new frameworks for regulations.

Through *supervisory action*, authorities can and should monitor the management of the business relationships of financial institutions with large third-party providers. In some cases, regulators require firms to ensure that their contracts with large tech providers recognise audit powers for the firms' supervisor.

The rapid expansion of Big Techs' activities and foray into the *payments ecosystem* (stablecoin issuance etc). are likely to become regulated in most jurisdictions, these are not categories of traditional sectoral regulatory categories of banking, insurance and investment business. The second reason is a feature of the former, namely the trend towards disaggregation of products and services offered by traditional financial institutions into standalone elements (e.g., lending, digital wallets) that may not be comprehensively regulated in all jurisdictions.

Supervisors of regulated institutions that are members of corporate groups (such as big techs) are required to take a broad perspective on risk by reviewing the activities of the wider group that to perform regulated activities that do not entail risk transformation (such as payment services or wealth management). Thus, firms are also required to obtain a licence and need to satisfy a set of rules that are generally concerned with issues related to conduct, such as investor/consumer protection (BIS, 2022)

Furthermore, there are typically no constraints on the combination of those regulated activities with other unregulated activities within the same group, or with other regulated activities apart from banking or insurance. Certain financial activities, which some big techs perform, may not be subject to specific licensing requirements

Another example is the current European Commission (EC) proposal for a Digital Operational Resilience Act in the EU (DORA) which would impose specific requirements on firms' relationship with critical third-party providers and establishes a regulatory and supervisory regime for those providers that need to be incorporated in the EU. Regulatory developments have also taken place in addressing anticompetitive practices that arise from big tech business models which result in market dominance and excess concentration. How can this be applied to Big Tech Regulation?

In China, the market regulator (SAMR) has undertaken measures to impose ex ante requirements on big techs to prevent market abuse. In the EU, the EC proposal for a Digital Markets Act DMA and the Digital Services Act DSA are ground-breaking, and also establishes a specific pro-competition regulatory regime for big techs (characterised as gatekeepers), which crucially includes obligations on *data use within and data-sharing outside the big tech group*. In the US, several legislative initiatives submitted to Congress aim to achieve the same objectives by proposing various types of entity specific rules.

Overall, the current regulatory framework and recent policy initiatives follow a rather piecemeal approach. Risks are mostly addressed one by one without fully acknowledging the interaction among them as they are all directly linked to the unique business model of Big Techs, which is systemic and multi-jurisdictional. Moreover, except for the initiatives adopted in the area of competition, little action has been taken to address the risks that emerge from the combination of financial or commercial activities that big techs perform through their group entities.

Regulatory and compliance issues such as *operational risk, data misuse or the prudential implications* of the combination of regulated and unregulated activities that big techs perform can hardly be addressed by focusing regulatory attention on individual activities performed by a subset of their subsidiaries in specific sectors. The regulatory perimeter at best extends to a subgroup of entities within the overall big tech group.

As such, the types of regulated entity a big tech has within its group determine not only which sectoral regulations apply but also the regulatory perimeter and the enforcement powers authorities have at their disposal within that perimeter. (Basel BIS, 2022)

7. Proposed remedies and how it may work

Policy and regulatory enforcement can impose public obligations and basic standards of *non-discrimination, divestiture fair dealing, fair pricing, and accountability* over these infrastructural firms - which includes Big Tech as they can be classified as 'dominant data infrastructure providers and owners'.

- a. Separation by size - "breaking up" market dominant firms;
- b. Separation by function (splitting platforms from commerce, for example);
- c. Laws requiring interoperability to mitigate against undue consolidation and merger activity;
- d. Laws prohibiting tying contracts or predatory pricing.

Divestiture or breakup is a mechanism available to competition authorities in various jurisdictions, and could be a required remedy under these policies, which could in turn spur greater innovation and economic creativity in the future. They do acknowledge indeed, structural separations and breakups have in recent decades been disparaged as overly costly and potentially economically harmful, but these critiques are not borne out by the historical evidence.

Non-discrimination requirements could protect businesses from being squeezed out of Amazon or Google search. Price regulations could prevent predatory pricing on online platforms. Portability requirements and interoperability standards could help ensure equal access and ability to exit market dominant platforms and closed tech ecosystems.

In the EU tech platform domain, there have been proposals for example for a “public digital infrastructure” to offset the monopoly power of today’s private infrastructure firms. These are just some of the bold and creative policy proposals that jurisdictions such as the EU are considering within the social market. While the technology is new, this kind of infrastructural power is a familiar problem that previous generations of American policymakers have successfully tackled, deploying a range of tools like breakups and firewalls, structural separations and breakups; public obligations and regulatory standard-setting; and direct public provision and/or the creation of public options.

7.1 How structural separations can help with financial disclosures

Structural separations place clear limits on the lines of business in which a firm can engage. Rather than prohibit particular business practices, separations proscribe certain organizational structures. In antitrust, structural remedies are contrasted with behavioural ones. Lina Khans argument is broken down as follows:

“Whereas behavioural remedies seek to prevent firms from engaging in specific types of conduct, structural remedies seek to eliminate the incentives that would make that conduct possible or likely in the first place. (Khan, 2018)

She argues that because dominant platforms monitor with unrivalled precision (AI) the business activity of third parties while also competing with them, a platform can harvest insights gleaned from a producer at the producer’s expense, and combined problems of discrimination and information appropriation invite recovering common carriage’s forgotten cousin: structural separations. In this view, she is supported by leading think tanks in the US such as Open Markets Institute, Brookings and Demos have been at the forefront in finding-advocating for new- methods in anti-trust law to regulate Big Tech in the digital economy.

They advocate and argue for a rule that no essential infrastructure should be surveillance-based or funded by targeted ads. The Demos submission to US Congressional hearings:

“We argue that privately run communications infrastructure in the hands of tech companies leads to public bads: *addiction, monetization, surveillance*. It does not have to be that way. By limiting this dangerous business practice, we argue that information platforms can be steered to the public good once these incentives are altered”

8. Mandatory Information Disclosures – A new frontier in regulatory governance

This section delves into the emerging area of *mandatory disclosures* that needs updating in the era of the digital economy and one that is cognisant of Big Techs multimodal platform model. LSEs Mazzucuto and the FTCs Lina Khan leading the Institute of Public value has gained leading public intellectual.

“A handful of digital platforms mediate a growing share of online commerce and communications. By structuring access to markets, these firms function as gatekeepers for billions of dollars in economic activity. One feature dominant digital platforms share is that they have integrated across business lines such that they both operate a platform and market their own goods and services on it. This structure places dominant platforms in direct competition with some of the businesses that depend on them, creating a conflict of interest that platforms can exploit to further entrench their dominance, thwart competition, and stifle innovation.”

“Features of modern platforms’ business models, she said, incentivized these companies to prioritize growth over profits, making “predatory pricing” rational. Meanwhile, the fact that Amazon acted both as a seller and the provider of what she deemed “essential” infrastructure meant the company was able to “exploit” product information for anticompetitive ends. (Mazzucuto, 2022)

Separations regimes can limit the lines of business in which a firm can engage, either by proscribing entry in certain markets or by requiring that distinct lines of business be operated through separate affiliates. Previously implemented both as a standard regulatory intervention and key antitrust remedy in network industries, structural separations have been largely abandoned.

“At the same time that lawmakers have weakened or eliminated sector-specific regulatory regimes, judicial interpretation of antitrust law has drastically narrowed the forms of vertical conduct and structures that register as anticompetitive. And when antitrust enforcers have targeted these forms of conduct and structures, they have applied remedies that generally (1) *fail to target the underlying source of the problem* and (2) *overwhelm the institutional capacities of the actors assigned to oversee them*.

She further adds that “Neglecting structural remedies results in both substantive harms and institutional misalignments—effects that are especially pronounced in digital platform markets.

Most Big tech groups have established corporate governance policies that are often a requirement of being listed on an exchange. In most cases, these rules do not contain specialised requirements for financial institutions or other firms with significant financial activities. It would therefore be appropriate to envisage group-wide corporate governance standards that explicitly take into account the specificities of the group structure.

8.1 Taking a leaf from finance sectors twin peaks model:

Requirements on governance for qualifying big tech groups could resemble those already applied to current regulatory categories for financial conglomerates. Existing regimes require governance arrangements at the financial group or conglomerate level to ensure adequate oversight and control of risks throughout the group.

This includes provisions on the a) suitability of *senior management*, b) *group-wide strategies and policies*, c) *risk management* and d) *internal controls*, and e) *reporting obligations*. Over the last few years, some observers have suggested that gaps in the regulatory framework could be addressed by relying increasingly on an activity-based approach and less on entity-based rules.

This notion rests on the idea that regulation should be adjusted in order to avoid a situation in which tech companies could perform regulated activities (or activities that entail the same risks as regulated ones) without the need to satisfy appropriate regulatory requirements. Yet, while activity-based rules are an essential ingredient of the regulatory framework, this approach does not provide for a complete solution.

One of the weaknesses of a traditional financial regulatory system – whether in the US or Europe or globally – is that it is over-reliant on the judgement and competence of bank regulators. Despite digitization, *financial reporting has not changed much in decades*. It is based on a system where central banks monitor and supervise the global financial industry based on reporting that is pushed out by banking firms.

In terms of regulatory and financial discourses, this mechanism can provide sector regulars with more detailed information and financial history, and assist in oversight, and even in anti-competitive cases and remedies.

A good example of new disclosure regulatory approaches is the *EUs new Anti-Subsidy Regulation* formally proposed in May 2021, which will create mandatory new Mergers and Acquisitions M&A notification and approval requirements based on a *broad new group-wide, global financial metric, “financial contributions,”* starting with multinationals’ 2020 financial years. The Anti-Subsidy Regulation creates a unique hybrid of competition and trade law tools to empower the EU Commission (the Commission) to combat distortions of competition caused by subsidies granted by non-EU Member States to companies doing business in the EU. The regulation is driven largely by concerns about non-EU State-owned enterprises (SOEs) using foreign subsidies to compete unfairly in the EU.

What it means? The notification will need to include details of all interactions with governments or government-affiliated entities (*contracts, tax incentives, loans, etc.*) for the past three years, anywhere in the world, covering the target, all JV parents and their group members. Whether or not a notification is in fact triggered, technology companies and investors need to *design and implement new systems to identify and quantify all such financial contributions worldwide*, beginning with 2020.

The EU Commission officials argue that new compliance systems should already be in progress and are unsympathetic to requests for formal guidance, carve-outs or transition periods, even though “financial contributions” is not a concept recognised in international accounting standards. In many cases, designing and implementing the *new compliance systems* will be a multi-month project that should start as soon as possible.

This EU's signature privacy law – the GDPR legislation – is seen as a new regulatory framework in which much of the world will be able to follow and emulate. It makes new layers of data information, its usage and reporting obligatory. With further regulatory and design it can allow regulators more information and providing insight into the various ‘moving parts’ and internal financial subsidies, as well as data flows and their monetisation models of Big Tech.

8.2 Key Issues for developing new disclosures framework of Big Tech sector

As the momentum to create new financial disclosure metric gains momentum and system and regulatory oversight increases, the notion of Regulatory Tech *Regtech* is a niche and growing field. The Basel of International Settlement (BIS) guidelines provides comprehensive regulatory framework that can incorporate Big Tech into the wider finance global regulatory system.

Key issues include clear guidelines on:

- Suitability of board members and senior management;
- Constraints on overlapping boards within the Conglomerate Group;
- Transparency of organisational structure
- Policies to identify conflicts of interest
- Risk management culture
- Internal interdependencies
- Pricing policy for intragroup transactions
- Group-wide conduct of business standards:
- Collection and use of client and user data
- Sharing of data within group and external parties “
- Anticompetitive practices (ex-ante rules)
- Unethical, illegal or discriminatory misuse of platform
- Group-wide operational resilience standard;
- Mapping of intragroup interdependencies

9. Conclusion and Recommendations

As Big Tech giants continue to encroach the public sphere in other ways; they are entering into *bargains with cities, states, and the countries* to provide, partially or fully, *public goods in exchange for access to data*. Google in particular has begun to take over the provision and partial funding of indisputably public infrastructure, under the rubric of Smart City models, thus setting the ‘soft infrastructure’ (ideation, regulations, planning guidelines, etc) on who new smart cities and zones are constructed For instance, Google is currently building a project in Toronto under the auspices of its *Sidewalk Labs* division with plans to directly provide public services such as security, transportation, and public energy systems management’. Facebook’s entry into Telecoms infrastructure and its modest investment and pilot in India’s JIO low-cost telecoms network is a case in point.

These two functions—communications and urban infrastructure—represent critical public functions that are now increasingly being shaped by tech companies in their ‘multistakeholder’, in which they have countervailing power. This degree of private control already introduces a power imbalance that is on its face problematic, signalling and confirming Big Techs move into fintech and public infrastructure and services as a ‘new frontier’.

Policy makers, regulators the world over, leading academics and public interest organisations, NGO’s, students, workers, unions, religious organisations, environmental groups, SMMEs, small scale farmers, start-ups, the media, legislators – “*We, The People*”- *in every nation*, are rightly concerned at Big Tech ubiquitous-pervasiveness power in everyday life – social-economic -political and community. Policymakers, regulators, and prosecutors are undertaking new efforts to properly regulate Big Tech in public interest, as well as to enforce existing legislation in areas where it does exist. New legislation and regulation are emerging in multiple arenas and jurisdictions, including, but not limited to - competition policy, legal liability, cybersecurity, banking and fintech, tax policy, privacy policy, algorithmic accountability, and labour policy – especially regarding gig workers.

9.1 Recommendations for Competition Commission and Regulators

The dominant themes in major policy- political and personal privacy and citizens everyday every minute interaction” with social media is pervasive, distractive, even pernicious in a sense with regarding to declining levels of productivity and range of emotional and mental health issues. At a public level to impacts on infrastructure services (Uber and urban transport) and even real estate markets (AiRnB Amazon), Big Techs (negative) footprints and scars are disrupting long standing social contracts, so vital for progressive *universal income, equality, transparency, inequality* and social democratic models so vital for social stability.

The research article has covered the core areas pertaining to digital regulation and global interconnected and spill overs as well as the sheer scale and dominance of Big Tech and its ‘taking on the state’ paradigm shift is emerging. Authorities the world over aim to preserve

market contestability by strengthening ex post enforcement tools. But they are also developing new entity-based regulation that would constrain business practices of big techs ex ante. It is recommended that South African policy makers and regulators engage in robust discussion on regulation big tech in all platforms and advocate for a social economic public good value of the digital economy, one rooted in our Constitution as well as aspirations of industrial development and a capable developmental state, committed to socio economic rights.

a. Consider a digital market unit: The establishment of a digital markets unit should be considered. given a remit to use tools and frameworks that will support greater competition and consumer choice in digital markets, and backed by new powers in legislation to ensure they are effective. This unit would have three functions.

First, it could develop a *code of competitive conduct*, with the participation of stakeholders. This would be applied only to particularly powerful companies Big tech, those deemed to have 'strategic market status', in order to avoid creating new burdens or barriers for smaller firms.

Competition and sectoral regulators – especially in Telecoms-ICT and Finance-Banking and the Info Regulator should form of a *digital markets unit*, similar to that being recommended by UK regulator. would be charged with assessing anti-competitive behaviour and market power of Big Tech 'across domains', thus providing a 'whole of business integrated view' of Big Tech and its effects on the market and consumers. Crucially enabling greater personal data mobility and systems with open standards where these tools will increase competition and consumer choice and consider universal service obligations. Projects such as Data Transfer Project that includes Microsoft, Google, Facebook and Twitter are small and modest model, but a start.

Open Banking provides an instructive example of how policy intervention can overcome technical and co-ordination challenges and misaligned incentives by creating an adequately funded body with the teeth to drive development and implementation by the nine largest financial institutions.

Third, the *Digital markets unit* would be able to closely monitor Big Techs mergers and acquisitions that can exacerbate this problem. There is evidence that some acquisitions by big techs neutralise competitors – so-called "killer acquisitions" model itself an uncompetitive business strategy that's 'killing off competitors. Such a unit can also advance *data openness* where access to non-personal or anonymised data will tackle the key barrier to entry in a digital market, while protecting privacy. Germany and India and others are considering setting up 'Data Trusts' that will have an inclusive governance and public oversight model; and 'manage and regulate data locally' the objective being that local-national data should also be accessed-used for public and economic development purposes. An example being Berlin Metro can access *Uber driver* data per districts when they're developing new transport routes, labour regulators can monitor social protection of drivers etc,

b. Building an evidence base of data: One possible reason for the lack of consensus around how governments should engage on these issues is the *absence of a conceptual framework* around the value of data, as reflected by the ongoing debate about whether oil or labour is the more useful historical analogue for data's role in the digital economy. In this regard, one can expand on some of the thinking of the Pia Centre for Global Development, A more coherent theory of data's economic value (i.e., data commons') and a means to measure that value would help governments design more effective digital strategies. Developing such a framework will not be easy, however, as it will require finding ways to (1) *estimate the worth of disparate pieces of personal data whose value depends on being combined with other data to produce useful information, and (2) track the value of data across multiple uses, as well as which entities use that where and for what purposes in the internet value chain*

c. Mandatory Financial Disclosures: Big techs have advantages stemming from their user data, leading to vast networks and a huge range of activities. This advantage flowing from data gives rise to the so-called data-network-activities, or DNA, feedback loop. With this, big techs can move very quickly from "too small to care", to "too big to ignore" to "too big to fail". Just four big techs provide nearly two thirds of global cloud services, cryptocurrency, stablecoins, etc which are becoming a critical service for the financial sector. Cloud services certainly bring advantages in terms of efficiency for individual institutions, but the dependence of the entire financial sector on just a few players makes the system more vulnerable to large-scale operational failures, insolvency or cyber-attacks. (BIS, 2021)

Hence, an important priority program is the need for *co-ordination and co-operation* between competition and sectoral authorities (Competition Commission, ICASA) and banking regulators (i.e. SARB, FSCA) and company and tax registration offices (CIPC and SARS).

d. Digital Service Tax for Big Tech- OTT's: In a post Covid recessionary world, and with high debt repayments to multilateral institutions and banks, many African nations are starved of vital revenue streams to fund fiscal and social programs. Digital Services and 'Social Media taxes have been Kenya plans to double the digital service tax (DST) to 3% beginning July this year, as the government taps the growing online economy to increase its domestic revenues and narrow the fiscal deficit. According to journalist

"The DST is a tax on gross transaction values of tech companies within a particular country. In Kenya, East Africa's biggest economy, companies or individuals (non-residents) are obliged to pay it if they "provide or facilitate provision of a service to a user who is located in Kenya." The taxable services, according to the country's revenue authority, include over-the-top services like *video streaming and podcasts, subscription-based media including news, digital marketplaces and downloadable digital content like e-books and films*. Others also include *electronic data management services, electronic ticket booking, online distance learning and the sale, and licensing or monetization of any data collected* about Kenyan users generated from places like digital marketplaces. Overseas companies without offices in Kenya are required to register electronically or appoint a tax representative in the country to file the returns and make payments.

e. Inter-regulatory co-operation information symmetry: Generally multinational corporations MNCs, especially Big Tech have significant financial and cultural power and resources when engaging with policy processes and regulators in various jurisdictions, especially in the Developing South. While they get punished and huge fines in the EU, they often get away in other regions and nations. By employing the best consulting firms, together with their famed lobbying strategies, Big Tech has often ‘out-regulates’ public regulators and authorities. Hence authorities require stronger co-ordination and information and knowledge sharing.

- a. Competition Commission, ICASA, SARS, SARB, JSE, FSCA, Prudential Authority

f.Revisiting Public Utility regulation: The paper has dealt extensively with the trend in revisiting public utility style regulation by describing Big Tech ownership ‘core data infrastructure’ and thus jurisdictions such as the FTC in the US are beginning to revisit tried and tested regulatory tools. The authorities – Competition Commission and ICASA can consider revisiting these tested regulatory tools such as – *interoperability, open access, common carriage*, divestiture and even structural separation as remedies. In addition, new models of universal service obligations can be researched developed.

In the face of these multiple global-regional -national crisis dilemmas and difficulties, resistance is nevertheless being organised. The “Just Net Coalition” offers a good example. It is a network of organizations created in Delhi in 2014 to defend “a just and equitable Internet”. Since then, it has been trying to link “on one hand, civil society actors in different social sectors who are facing digital challenges and opportunities but do not feel well-equipped to deal with them, and on the other hand, digital activists who are inclined to work on issues of equity and social justice but have not had structured opportunities to do so effectively”, all from a North-South perspective

Thus, policy makers and regulators the world over – including South Africa, need to work with the public in order to curtail this encroaching power, and this this means that an inclusive and integrated approach towards economic- competition and sectoral regulation, working with African institutions and those on the Global South in order to promote and preserve the public interest. Another World is Possible.

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Terminology

Activity metrics	A set of metrics that quantify the scale of a company's business and are intended for use in conjunction with accounting metrics to normalize data and facilitate comparison.
Common Carriage	<u>Telecommunications common carrier</u> means any person that owns, operates, manages, or controls any facility used to furnish telecommunications services for profit to the public, or to classes of users as to be effectively available to the public, engaged in the provision of services, such as voice, data, image, graphics, and video services, that make use of all or part of their transmission facilities, switches, broadcast equipment, signalling, or control devices.
Convergence	Digital technology is what allows the convergence of media (from print to television) with telecommunications (fixed or mobile) and computing (hardware and software) to create "something which will be greater than the sum of its parts"
Content moderation	Content moderation is the process of reviewing and monitoring user-generated content on online platforms to ensure that it meets certain standards and guidelines. This includes removing inappropriate or offensive content and enforcing community guidelines and terms of service.
Consumer Welfare Principle	Under the consumer welfare standard, a <u>corporate merger</u> is deemed <u>anti-competitive</u> "only when it harms both allocative efficiency and raises the prices of goods above competitive levels or diminishes their quality". This contrasts with earlier frameworks of antitrust theory, and more recently the <u>New Brandeis movement</u> , which argue that corporate mergers inherently detrimental to consumers by way of diminishing competition.
Creative Commons	Creative Commons licenses give everyone from individual creators to large institutions a standardized way to grant the public permission to use their creative work under copyright law.
Datafication	Datafication is the transformation of social action into online quantified data, thus allowing for real-time tracking and predictive analysis. Simply said, it is about taking previously invisible process/activity and turning it into data, that can be monitored, tracked, analysed and optimised.
Digital Divide	There are two characteristics that define the digital divide, and these include: (1) limited and costly infrastructure and (2) limited digital literacy in low/middle income communities.
Digital Literacy	is defined by United Nations Educational Scientific and Cultural Organisation (2018), as the capability to access, manage, comprehend, assimilate, connect, evaluate and generate information securely. This encompasses terms such <i>computer literacy, ICT literacy, information literacy, and media literacy</i> .

Disclosure topics	A minimum set of industry-specific disclosure topics reasonably likely to constitute material information, and a brief description of how management or mismanagement of each topic may affect value creation.
Interconnection	Interconnection is accepted to be a key factor in the development of competition in the telecommunication industry. In simple terms, interconnection is the set of legal, technical and economic arrangements between network operators that enable customers connected to one network to communicate with customers of other networks.
Interoperability	Interoperability is the ability of different systems, devices, applications or products to connect and communicate in a coordinated way, without effort from the end user. Functions of interoperable components include data access, data transmission and cross-organizational collaboration regardless of its developer or origin.
IP Protocol	
IPR	Intellectual property rights (IPR) refers to the legal rights given to the inventor or creator to protect his invention or creation for a certain period of time. These legal rights confer an exclusive right to the inventor/creator or his assignee to fully utilize his invention/creation for a given period of time
Open Access	Open Access is about creating competition in all layers of the [Internet] IP network allowing a wide variety of physical networks and applications to interact in an open architecture. Put plainly, anyone can connect to anyone in a technology-neutral framework that encourages innovative, low-cost delivery to users. It encourages market entry from smaller, local companies and seeks to ensure that no one entity can take a position of dominant market power.
Non rivalrous	Non-rivalrous goods are <u>public goods</u> that are consumed by people but whose supply is not affected by people's consumption. In other words, when an individual or a group of individuals use a particular good, the supply left for other people to use remains unchanged.
Platformisation	Platformisation is defined as the penetration of infrastructures, economic processes and governmental frameworks of digital platforms in different economic sectors and spheres of life, as well as the reorganisation of cultural practices and imaginations around these platforms

Public Utility Regulation	A public utility is a company that operates as a public-service corporation, and provides essential services to the public such as electricity, telephone service, natural gas, water or postal services. The public utility is typically regulated by the national, state or local government
Net Neutrality	Network neutrality is a complex and controversial topic and is an important part of a free and open Internet. Enabling access, choice, and transparency of Internet offerings empowers users to benefit from full access to services, applications, and content available on the Internet
Network effects	When more people using the platform improves its utility to both the consumers and/or the producers on it, and profitability.
NGN	Next-generation network (NGN) is a body of key architectural changes in telecommunication core and access networks. The general idea behind the NGN is that one network transports all information and services (voice, data, and all sorts of media such as video) by encapsulating these into IP packets, similar to those used on the Internet
Scalability	Scalability is the property of a system to handle a growing amount of work by adding resources to the system. In an economic context, a scalable business model implies that a company can increase sales given increased resources
Segment Reporting	A reportable segment is a business segment or a geographical segment identified on the basis of foregoing definitions for which segment information is required to be disclosed by this Standard. Enterprise revenue is revenue from sales to external customers as reported in the statement of profit and loss.
Start-Up	The term startup refers to a company in the first stages of operations. Startups are founded by one or more entrepreneurs who want to develop a product or service for which they believe there is demand. These companies generally start with high costs and limited revenue, which is why they look for capital from a variety of sources such as <u>venture capitalists</u> .
Technical protocols	Each accounting metric is accompanied by a technical protocol that provides guidance on definitions, scope, implementation, compilation, and presentation, all of which are intended to constitute suitable criteria for third-party assurance.
Web 3.0	Web 3.0, also known as Web3, is the third generation of the World Wide Web. Web 3.0 is meant to be decentralized, open to everyone (with a bottom-up design), and built on top of blockchain technologies and developments in the Semantic Web, which describes the web as a network of meaningfully linked data

10. Appendixes

- a. GAFAM Empire
- b. Big Tech Business Model- in graphs
- c. Standards Foundation Sectoral Disclosure -Internet Media services
- d. UNESCO *MacBride Commission* on Communication recommendations