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A Balancing Act

The Promise and Peril of Big Tech in India

TANDEM RESEARCH

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ABBREVIATIONS

AIOVA
All India Online Vendors Association

API
Application Programming Interface

AWS
Amazon Web Services

B2B
Business to Business

B2C
Business to Customer

CAIT
Confederation of All India Traders

CCI
Competition Commission of India

CCPA
California Consumer Privacy Act

CEO
Chief Executive Officer

FDI
Foreign Direct Investment

GDP
Gross domestic product

GDPR
General Data Protection Regulation

IT
Information Technology

OECD
Organization for Economic Co-operation and Development

R&D
Research and Development

RBI
Reserve Bank of India

SEO
Search Engine Optimisation

UPI
United Payments Interface

US
United States

PROLOGUE

Why we wrote this report

Debates on the power and influence of global technology giants such as Google, Facebook, and Amazon, often referred to as 'Big Tech', are increasingly polarized. These companies are celebrated for their innovative products and services, and the new possibilities they create for citizens, businesses and governments. However, these companies are also criticized for anti-competitive behavior and for undermining democratic processes. While both arguments hold merit, such polarized views can foreclose the possibility of a balanced and nuanced policy debate.

With this report, we seek to find a middle ground—to take a dispassionate view of the impact of Big Tech companies in India and identify policy pathways that can align innovation trajectories with healthy markets, individual freedoms, and societal wellbeing.

Finding this middle ground is particularly important for developing countries like India. Big Tech companies are a part of India's development story—filling critical gaps in state, market and research and development (R&D) capacity. The role Big Tech companies play in India's development story may also imply that the trade-offs for public policy are different from those in industrialized economies.

Big Tech companies are transforming India's digital economy and society in a multitude of ways. Not all of these changes are covered in this report and many require further exploration. The aim of this report is to provide a framework for disaggregating the ways in which Big Tech companies are transforming India and the policies needed to harness the promise of Big Tech and minimize its perils. Frameworks risk over-simplifying a complex and messy reality, but are nonetheless important to make sense of the rapidly evolving landscape of Big Tech in India.

We hope this report can contribute to a more nuanced discussion on Big Tech in India and help inform better policies from both Big Tech companies and government.

Executive Summary

Almost a decade ago, in the wake of the Arab Spring, technology and social media companies were celebrated across the globe as harbingers of new modes of democratic participation and individual freedoms. Cut to the present, and there is growing tech-lash against Big Tech companies, with concerns ranging from market monopolization to interference in democratic processes.

This report unpacks Big Tech in the Indian context. What exactly is Big Tech? Who are the key players? What is their role in India? What are the policy priorities for India?

To answer these questions, we spoke to 40+ thought-leaders in India, including representatives from civil society, Big Tech firms, Indian start-ups, academia, government, regulators, and the media. We supplemented this with a comprehensive review of 400+ academic and literary pieces and several structured discussions on the topic. This work is a culmination of eight months of enquiry.

Commentators have used the label of Big Tech to refer to a handful of large, globally significant technology companies, such as Google, Facebook, Amazon, Apple, TenCent, AliBaba and Baidu; as well as IBM and Microsoft in some cases.[1]

While each company is different, they share four common characteristics:

Data-centric models
The collection, analysis and monetization of data is central to their business models.

Network effects
They have achieved immense scale quickly through network effects. This insulates them from competition, contributes to their size and often results in market dominance.

Infrastructural role
They provide essential market and informational infrastructure for a digital economy and society. This also creates value and dependencies for other players in the market.

Civic Function
Through their consumer facing products that enable essential services like news, commerce and societal interactions, they increasingly perform civic functions.

Together, these four conceptual markers characterize Big Tech as data-driven, large-scale, consumer-facing technology platforms that provide market and informational infrastructures for a digital society, and perform critical civic functions. The combination of these features allows Big Tech firms to exert both market and civic power.

Big Tech, in other words, is a concept rather than a fixed set of companies.

Many of the global technology giants associated with this term—such as Google, Amazon and Facebook have a widespread presence in India. Reliance Jio also displays some of the conceptual markers associated with Big Tech. Thinking of Big Tech as a concept, rather than a static set of companies, also draws attention to the role of the Indian state, since it seeks to leverage data analytics and digital platforms for governance.

Big Tech companies influence our markets and society in four key areas:

1

Market Power

Market operations of global Big Tech companies in India create benefits for consumers and businesses. Many start-ups and tech companies rely on Big Tech companies for digital infrastructure, research, and innovation. However, Big Tech companies are prone to monopolistic and anti-competitive behaviour.

2

Informational Gateway

Social media platforms and search engine operations of Big Tech companies increasingly serve as the primary source of information, news and means of communication for many users in India. Yet, this also gives Big Tech companies inordinate influence in shaping how people access information and communicate with one another, making them arbiters of free speech. Big Tech platforms also contribute to the spread of misinformation and hate speech, while becoming increasingly politicized.

3

Privacy

Big Tech platforms allow for data-based personalization of the internet experience and access to new services. Such benefits however, come at a significant cost to individual and group privacy. Such personalisation also influences individual and group capacities for self-determination.

4

Sovereign Interests

While the Indian State benefits from Big Tech companies' infrastructure and innovation to fill gaps in its own capacity and reach, this also raises concerns around democratic accountability, data sovereignty, the impact on domestic businesses and the distribution of technology gains.

Multiple policy pathways are needed to align Big Tech trajectories with healthy markets, individual freedoms, and societal wellbeing.

Market Power	Informational Gateway	Privacy	Sovereign Interests
Updated competition policy to include data and network effects when assessing market competitiveness and mergers and acquisitions.	**Publisher ethics** for social media companies to act more responsibly for content posted on their platforms, while avoiding excessive censorship.	**Individual and collective rights** for citizens to take decisions about how their data is collected and processed by large tech companies.	**State and market capacity** by investing in education, research, entrepreneurship and other kinds of social capital that can help India manage the downside of Big Tech.
Platform neutrality to ensure that a Big Tech firm that has created a platform infrastructure competes fairly with third-parties making use of the platform.	**Algorithmic audit** to enable independent agencies and civil society to evaluate algorithms used by Big Tech companies.	**Data stewardship** to create new technologies for individuals to safely share their data with businesses, with adequate governance and oversight.	**Equitable taxation** to ensure that developing countries can gain fair and reasonable tax revenue from Big Tech firms rather than lose it to tax havens.
Platform interoperability to enable users on social media, gig economy or similar platforms to interact with their friends and network on other platforms.	**Media literacy** to enable citizens to take more conscious decisions based on information they receive on social media.	**Privacy-respecting business** models that reduce tech firms' commercial dependence on processing of personal data.	**Better cross-border data flows** to ensure that transfer of data outside India does not impede law enforcement and other needs.

While not unique to India, these factors manifest themselves differently in the country. Big Tech companies provide critical digital infrastructure that enables new forms of democratic and economic participation for people and businesses alike. This infrastructure partially compensates for pre-existing gaps in State, market and R&D capacity in India. At the same time, potential harms are amplified precisely because of these existing capacity gaps. Many of the capacities and systems that could help manage, or soften, the harmful effects of some Big Tech practices are still under development.

Big Tech, as a concept, poses a wicked problem for public policy in India, involving complex trade-offs between competing priorities, interests, and values. Therefore, we need to pursue multiple policy pathways to maximize the benefits and minimize the harms of Big Tech companies.

Finding the right balance is ultimately a question of competing public values. It is not a question of right or wrong, nor one that can be fully resolved with more or better evidence.

However, these pathways involve different levels of complexity and subjectivity. Some changes could be driven by a single entity, acting in coordination with others. For example, the Competition Commission of India (CCI) is already considering ways to update competition policy for the digital economy.[2] Other pathways may require concerted action by many public and private stakeholders. For example, regulating speech on social media platforms is a subjective issue that will have far-reaching societal impacts on free speech. Some, like taxation, may even require international coordination.

Policy pathways like data stewardship or platform interoperability will need policy experimentation and a longer term, iterative approach.

Finding the right balance is ultimately a question of competing public values. It is not a question of right or wrong, nor one that can be fully resolved with more or better evidence. A normative framework of values to guide India's digital economy and society, as well as to help navigate between competing interests, can help provide an outline for action and policy.

We propose the following sets of principles:

People-first
Innovation should prioritize individuals' agency, material well-being, autonomy, and democracy.

Regulation for innovation
Regulation will be required to ensure that innovation is aligned with societal goals.

Accountability and transparency
A vibrant public discussion on the role of technology will help navigate the uncertainty that may result from technological innovation.

Protect by default
Technology should protect its users by default to ensure the well-being of each individual, especially vulnerable groups.

Build collective resilience
Society and communities need to be strengthened to collectively maximize the benefits and minimize the harms of technology.

What is Big Tech?

Data-Centric Models + **Network Effects** + **Infrastructural Role** + **Civic Functions**

Why should we care?

	Market Power	**Informational Gateway**	**Privacy**	**Sovereign Interests**
The Promise	Digital infrustructure for other businesses R&D and innovation Funding or acquiring start-ups Representing tech in policy disclosure	Access to information Means to communicate and mobilise Inclusion through access and language	Personalisation of services Wider range of services	Digital infrastructure for public functions Data for social good Connect state to citizens
The Peril	Anti-competitive behaviour 'Kill Zone' for competitors Over-representation in policy discourse	Algorithmic influence over people's choices Ability to moderate content Misinformation Politicisation and identity politics	Extensive, granular data collection Loss of individual agency Honey pot for bad actors	Limited access to data for global south Impediments to law enforcement Tax avoidance

What can we do?

Market Power	**Informational Gateway**	**Privacy**	**Sovereign Interests**
Updated Competition Policy Platform Neutrality Platform Interoperability	Publisher Ethics Algorithmic Audit Media Literacy	Individual and Collective Rights Data Stewardship Privacy Respecting Business Model	State and Market Capacity Equitable Taxation Better Cross-Border Data Flows

Varied & Evolving Context

CHAPTER

Almost a decade ago, during the Arab Spring, social media platforms were celebrated for enabling new forms of democratic participation. One protester even named their newborn child Facebook.[3] Technology companies such as Google and Apple were seen to represent a new era of individual freedom and expression, challenging established institutions of state and corporate power.

Cut to the present, there is a growing backlash against Big Tech companies. Many commentators have expressed concerns ranging from market monopolization to interference in democratic processes.[4] In the United States[5] and Europe,[6] politicians have called for the break up of Big Tech, searching for ways to regulate their power and influence. Donald Trump, President of the United States (US) issued an executive order in May 2020, directing a US regulatory body to revisit the protection that social media companies have from lawsuits against user content on their platforms.[7] This shift demonstrates the evolving narrative around Big Tech.

Technology and society trajectories will differ across contexts, intersecting with local political, economic and cultural systems. The narrative around Big Tech and its impact are similarly likely to vary across geographies, with opportunities and harms manifesting in different ways.

In the West, the birth of a number of tech companies in Silicon Valley was born out of the anti-establishment ideals of the sixties counterculture in the US.[8] The personal computer, as the Pulitzer Prize winning journalist, John Markoff has argued, was underpinned by a revolution for individual rights and expression.[9] Thus, the recent negative discourse around Big Tech in the West has focused on the threat of large technology companies on individual rights and civil liberties.[10]

In India, the conversation has been somewhat different. Here, technological advancement is deeply tied with ideas of nationhood and national advancement.[11] As University of Oregon professor Biswarup Sen argues, the Indian state, after independence, has embraced a philosophy that 'placed technology and scientific research at the forefront of the nation building project.'[12] The relationship between the Indian state and big businesses has also been one of closeness.[13] State support, including protectionist trade politics, has enabled the emergence and sustenance of large businesses.[14]

The tech narrative in India is also shaped by socio-cultural factors: a large and growing youth population,[15] a rapid increase in the number of internet users,[16] many of whom continue to lack access to other essential services, all in the context of a young democracy with varying levels of institutional capacities and readiness. India is also a growing and vibrant hub for entrepreneurship and innovation, with an active and engaged civil society.

These economic, social, demographic, political and technological forces intersect and lead to a complex narrative about large tech companies and Indian society. It is a unique story worth further investigation.

CHAPTER

What Is Big Tech? Four Conceptual Markers

The term 'Big Tech' is often used to refer to a handful of large technology companies, clubbed together as the Big Four—Google, Amazon, Facebook, and Apple.[17] Sometimes, this terminology includes companies like Microsoft, IBM, Baidu, Tencent, and Alibaba.[18] The 'bigness' of these large technology companies is reflected in their market valuations, user base, and range of product offerings.

Infographic (i) & (ii)

Their revenues are higher than the GDP of some countries.[19] However, the term 'Big Tech' has come to indicate more than just scale and financial strength. It also draws attention to their growing political, social, and cultural influence–aspects that are often not shared by other kinds of 'big' businesses.

To help bring structure to this important discussion, we identify four conceptual markers that are shared by Big Tech companies. Big Tech is not a static category—new companies may enter this category just as existing ones may drop out of it. Equally, the salience of these conceptual markers, how they combine and their impact on markets and societies may vary across time and place. Big Tech, in other words, is a concept rather than a fixed set of companies.

World Top Companies by Market Capitalization

In 2009, only three technology companies featured in the top twenty global firms; most of the biggest firms were from the oil, gas and mining sectors. By 2018, 8 technology and consumer service companies featured in the top 20 firms; only 2 from the oil and gas sectors remained.

World's top 20 companies by market capitalization, by sector, 2009 versus 2018
(per cent)

Source: UNCTAD, based on PwC, 2018b.

A few Big Tech companies dominate many important markets

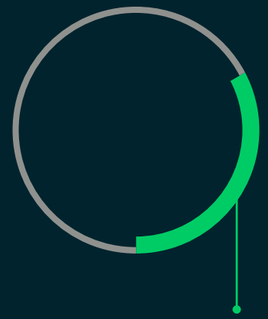
US and China giants share in the global digital services market

Global Internet search market

90%

Google

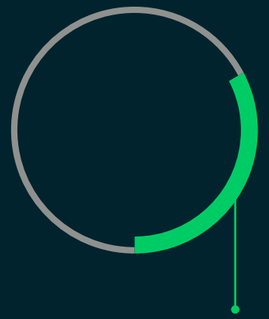
World's online retail activity



> 1/3

Amazon

Global cloud infrastrucure services



> 1/3

Amazon Web Services

Global social media market

66%

Facebook

Mobile payment solution

100% of Chinese markets
We Chat and AliPay

Global active users

> 1 billion

WeChat users

Source: Digital Economy Report, 2019, UNCTAD

Big Tech companies collect and process a large proportion of the world's data.

2.1

Data-centric Models

The collection, analysis, and monetization of data is now central to value creation in the digital economy.[20] Big Tech companies collect and process a large proportion of the world's data.[21] The nature of data collection has evolved over time as the digital touchpoints between users and Big Tech companies have expanded from only computers and mobile devices, to include digital assistants like Amazon's Alexa, Google's Home Mini, and Apple's Siri.[22] This data collection also extends to non-commercial interactions such as search engine queries, social media likes and even items left un-bought in a user's cart.

Big Tech companies leverage the collected data in several ways—from targeted advertising (e.g. Google and Facebook) and optimizing e-commerce operations (e.g. Amazon and Alibaba) to diversifying their portfolio of products and services. Apple stands in slight contrast since its core business model does not depend on leveraging personal data. However, many of the applications it owns collect individual data with the aim of better personalization.[23] Similarly, while Microsoft's Bing and LinkedIn sell ads, the company as a whole is not as dependent on utilization of personal data.

Pulitzer Prize finalist Julia Angwin traces the evolution of this data-centric business model to the early 2000s. She suggests that the bursting of the dot-com bubble led many Silicon Valley companies to search for new business models, leading to the birth of a new strategy based on targeted advertising.[24]

Harvard professor Shoshana Zuboff traces the origins of this data-based business model to Google. She states that 'Google realized that all the 'behavioural surplus' data it was generating, could actually be used as 'prediction products', that could nudge consumers towards certain preferences and habits in a new 'behavioral futures market.'[25] She hypothesizes that once Google demonstrated the commercial value of data, others like Facebook followed suit.

2.2

Network Effects

While most technology companies today employ a data-centric business model, not all can be called Big Tech. Big Tech companies gain immense scale and resilience because they are structured as multi-sided platforms that demonstrate strong network effects.[26]

The more users there are on the platform, the more valuable the platform becomes to other users. More users means more data, which implies a stronger ability to outcompete rivals through better product design and more efficient operations.[27] Many Big Tech companies offer free or discounted products and services to kick-start this cycle and accumulate initial users.[28] Once a platform begins to gain traction, users face a high cost of switching to another service provider. Such network effects give companies a 'first-scaler advantage', allowing them to eventually dominate markets.[29]

Market dominance in one sector also enables Big Tech companies to influence other sectors through vertical and horizontal integration. They can leverage their existing user base and accumulated data intelligence to enter new markets. For example, Google bundles its applications and search engine onto Android phones as default; Facebook is trying to launch its own finance system with the creation of a cryptocurrency, Libra;[30] and Amazon seeks to disrupt the health care sector by entering the online medical supplies market.[31] Operating in many distinct sectors also allows cross-subsidization—the economic losses from a product that has low revenues but many users can be balanced with other arms of the business that are more commercially viable.[32]

Finally, digital monopolies, unlike traditional monopolies, have the kind of network effects that seemingly enables consumer choice. Google Search, for example, presents consumers with a range of product and service choices, while simultaneously funnelling users through its own platform.[33]

Like railroads or other utilities, Big Tech companies provide many essential services for individuals, businesses, and even governments.

2.3 Infrastructural Role

Big Tech companies provide critical market and societal infrastructure. Their products and services have attained such levels of use that they appear to be closer to traditional infrastructure providers in scale, ubiquity, and necessity to everyday life.[34]

Like railroads or other utilities, Big Tech companies provide many essential services for individuals, businesses, and even governments.[35] For example, Big Tech companies provide core market infrastructure such as cloud services, software development kits and other business development tools. A wide ecosystem of businesses and third-party developers benefit from these tools. Similarly, companies like Google and Facebook are part of our everyday informational infrastructure. According to Brooklyn Law School Professor, K. Sabeel Rahman, they facilitate the 'distribution of and access to news, ideas and information upon which our economy, culture and politics depend.[36]

To a significant extent, Big Tech companies have acquired this coveted position through strategic mergers and acquisitions. For example, Google added as many as one new company to its portfolio every ten days in the early 2010s.[37] Facebook has acquired 92 companies since 2007, most notably Instagram and WhatsApp.[38]

2.4 Civic Function

Big Tech companies have assumed a civic role in society through their consumer-facing platforms. Consumers are dependent on these platforms for essential services like news, commerce, and social interactions.[39] This helps Big Tech firms dominate, what Tristan Harris from the Center for Human Technology calls, the 'attention economy'. Through their data intelligence, they can shape preferences and behaviour—to know and influence how people think and interact.[40] This gives them civic power in society.

Martin Moore, director of the Centre for the Study of Media, Communication, and Power at King's College, associates six types of civic power with Big Tech: the power to command attention; the power to communicate news; the power to enable collective action; the power to give people a voice; the power to influence people's vote; and the power to hold power to account.[41] This ability to shape world views and beliefs also distinguishes Big Tech from other forms of Big Business, such as Big Pharma or Big Tobacco.

Despite their financial 'bigness', Microsoft or IBM are often not associated with Big Tech because civic power is an important conceptual marker of Big Tech. These firms are primarily B2B and have not assumed some of the civic roles of companies like Google or Facebook.

Large amounts of data collected by Big Tech make their services more customized and responsive. This increases the platform's attractiveness for users and enhances network effects. Higher user engagement and dependence, in turn, leads to an increasing civic role for these platforms.

2.5

Cyclical Relationship of Conceptual Markers

Together, these four conceptual markers characterize Big Tech as data-driven, large-scale, consumer-facing technology platforms that provide essential market and information infrastructure for a digital society, and perform essential civic functions. The combination of these features allows them to exert civic power alongside market power.

Each of these four conceptual markers is an integral interconnected part of a single moving system, influencing each other in a cyclical movement. For example, the large amounts of data collected by Big Tech make their services more customized and responsive. This increases the platform's attractiveness for users and enhances network effects. Higher user engagement and dependence, in turn, leads to an increasing civic role for these platforms.

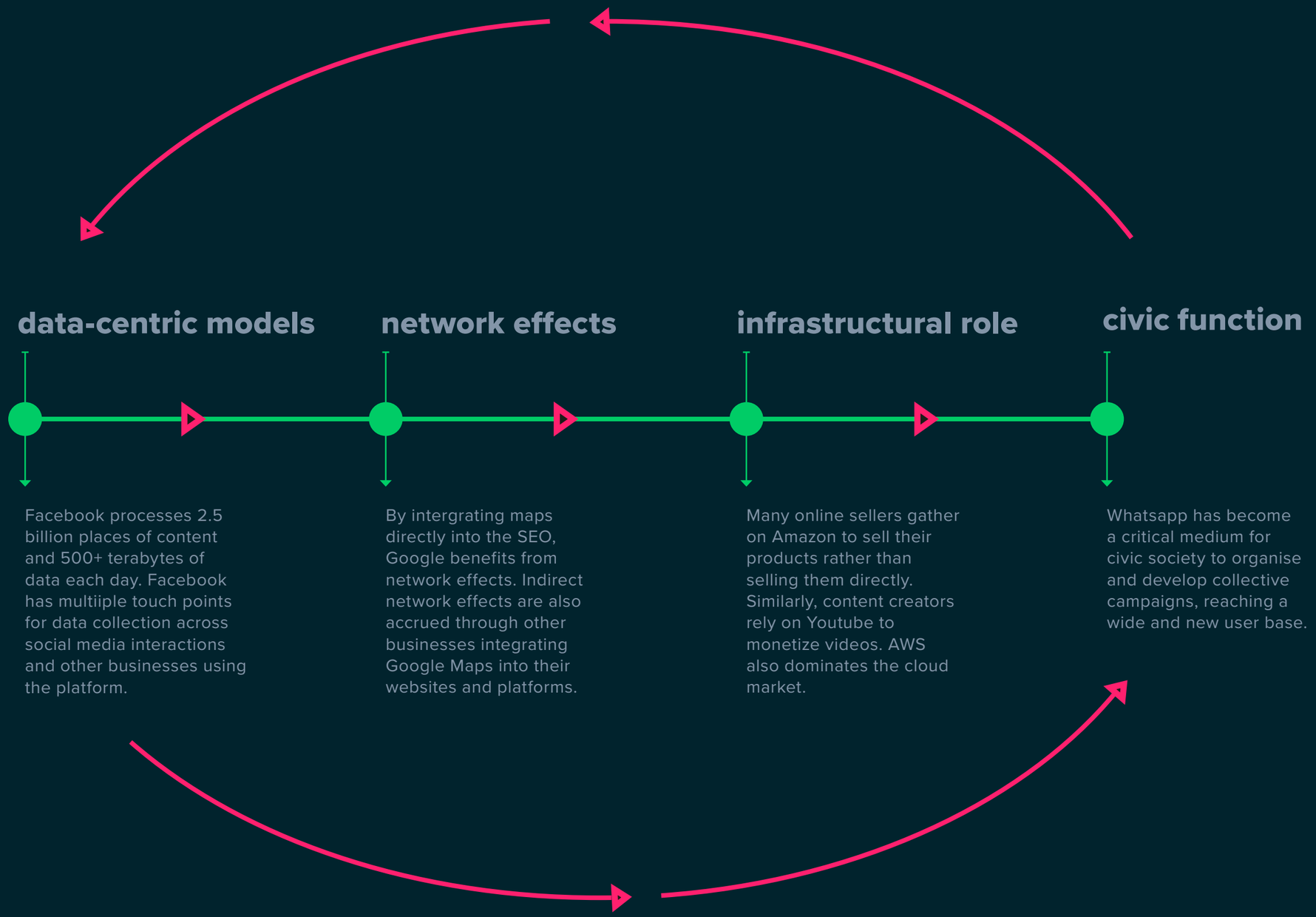
This relationship also works in the opposite direction. The civic power they gain through user attention and public participation, when combined with existing market power, further enhances data collection and aggregation. It also increases the platform's efficiency and public utility.

Infographic (iii)

Cyclical relationship between conceptual markers

These markers exist in a cyclical relationship, building and reinforcing one another.

This diagram draws on examples from Big Tech companies to illustrate each of the markers.



CHAPTER 3

Who are the key Big Tech players in India?

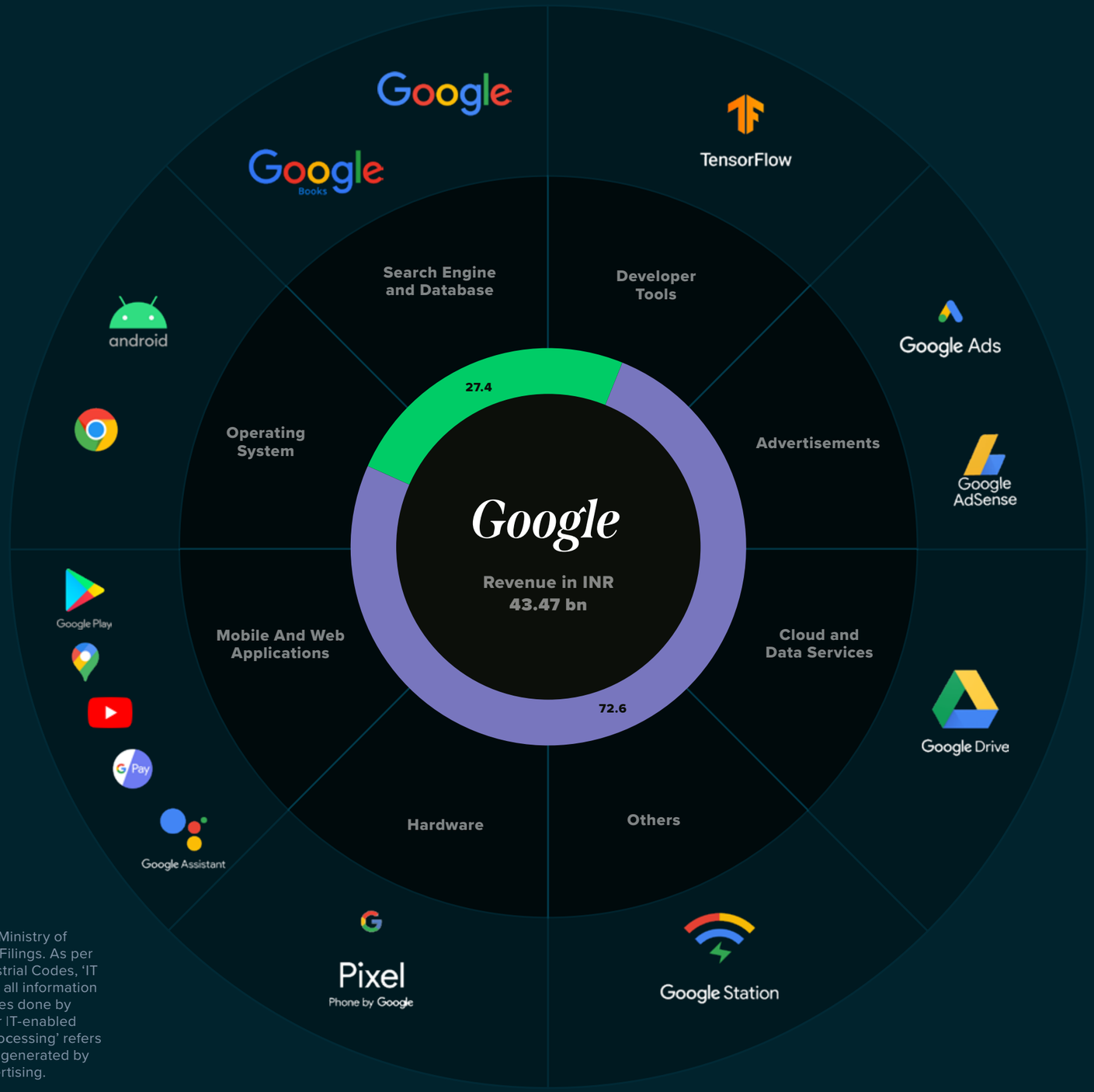
Three of the global Big Tech companies have a widespread presence in India—Google, Facebook, and Amazon. Google products and services are ubiquitous in India. Google Android is a market leader in the mobile operating system market, with 94.45% market share;[42] Google Pay has also clocked more than 300 million transactions in India as of June 2019.[43] India constitutes Facebook's largest market, with more than 270 million total users and 400 million monthly average users for Whatsapp. Amazon also has a large presence, with at least 30% market share[44] in e-commerce and more than 5.5 lakh sellers on its platform.[45] While Apple is considered to be a Big Tech company globally, it has a significantly smaller market presence in India, with less than a 3% share in the smart-phone market.[46] Other foreign companies that display some of the conceptual markers of Big Tech also have a significant presence in India. For example, Walmart is a leader in the e-commerce space, with reportedly 60% market share through its subsidiary Flipkart.[47]

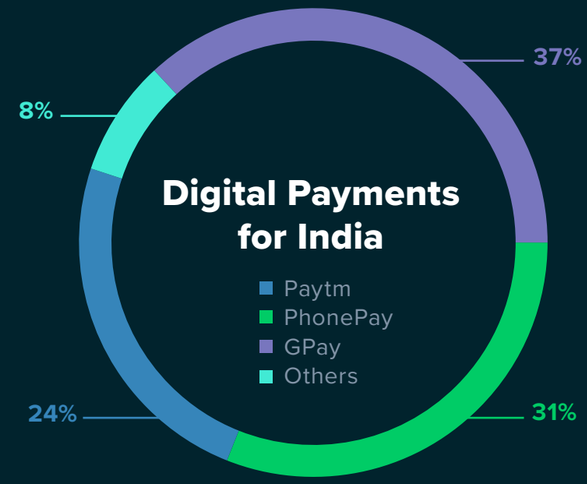
Chinese counterparts such as TenCent, Alibaba and Baidu have also invested in India, funding some of the biggest unicorn start-ups such as Paytm and Ola Cabs. ByteDance-owned TikTok has amassed a huge user base averaging 200 million monthly average users in India and can be said to exert 'civic power' through its 'power to command attention.'[48] At its peak, in 2016, Alibaba-owned UC browser had a 60% market share in India and was used by more than 300 million people.[49] It was the most popular mobile browser in India, but has now been surpassed by Google, leaving UC with only 24% of the market share as of 2019.[50] The UC Browser example shows that firms belonging to this category can change, especially as new competitors emerge in the market. This section outlines the market influence, strategies and investments of Big Tech companies in India.

Big Tech Market Presence in India

Big Tech is a concept rather than a static set of companies. Google, Facebook, Amazon, Walmart-backed Flipkart, and TikTok demonstrate conceptual markers associated with Big Tech.

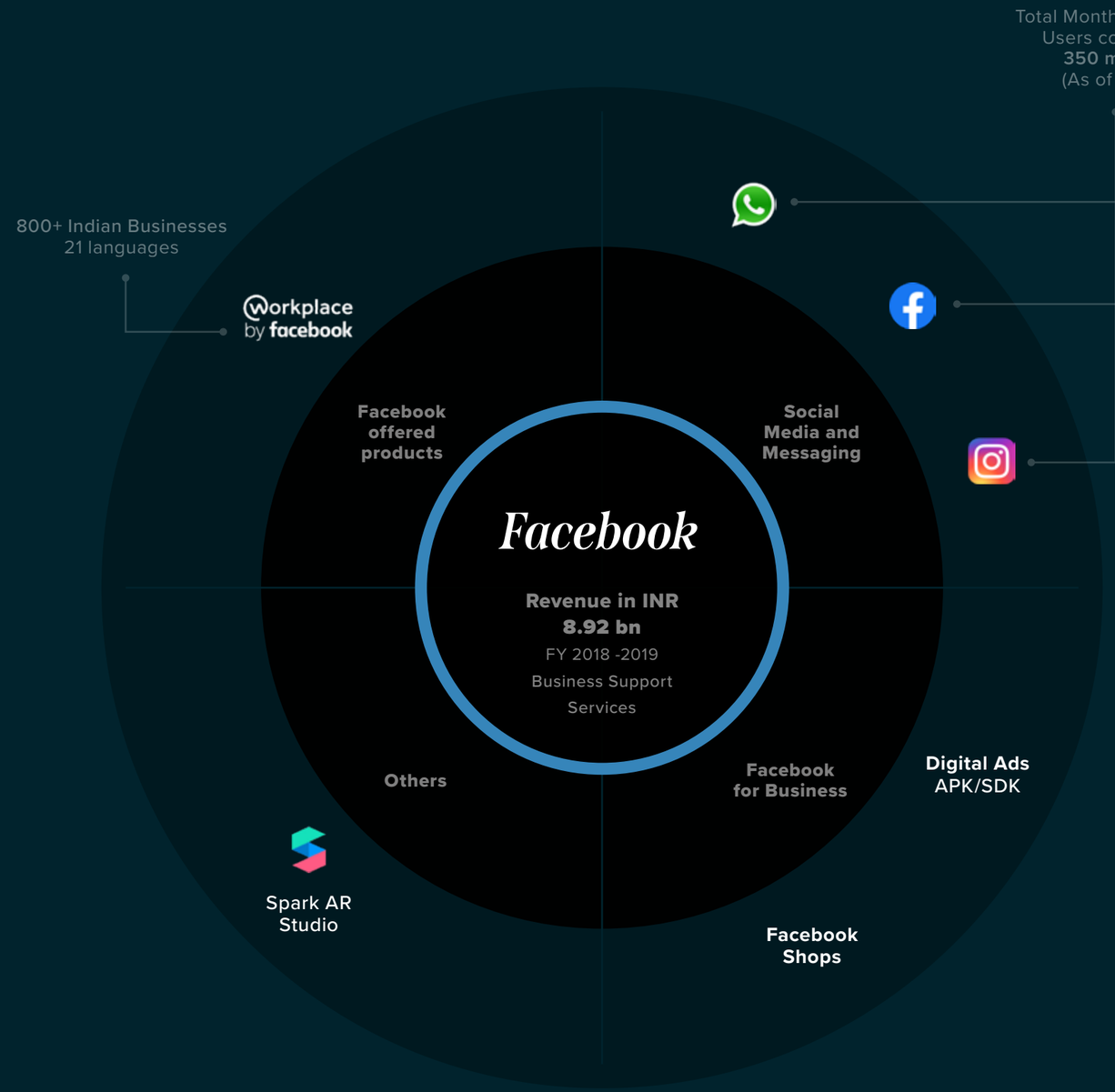
Revenue Source: Ministry of Corporate Affairs Filings



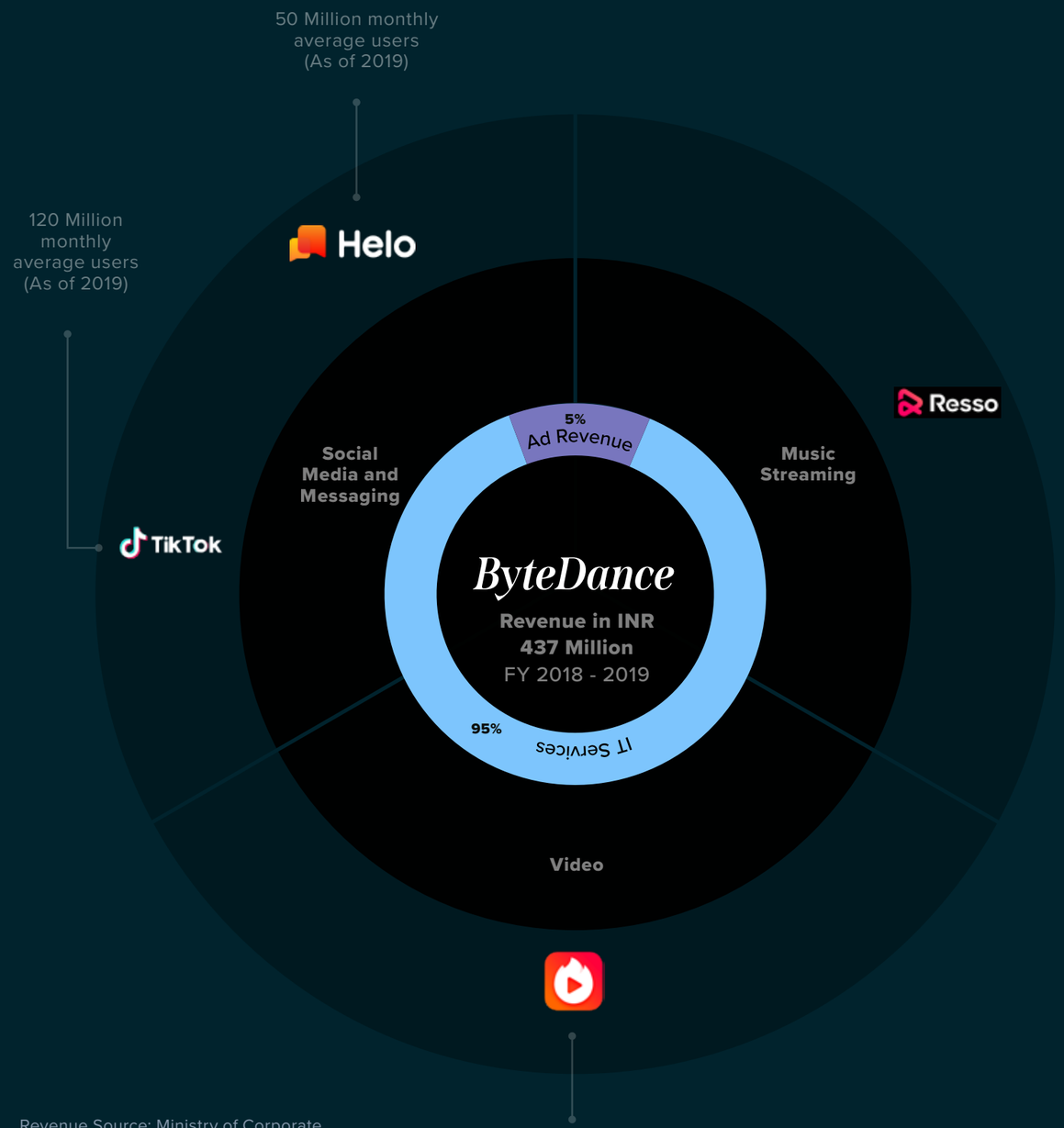


Revenue Source: Ministry of Corporate Affairs Filings. As per the National Industrial Codes, 'IT services' includes all information processing services done by Google, and other IT-enabled services. 'Data processing' refers to all the revenue generated by Google from advertising.

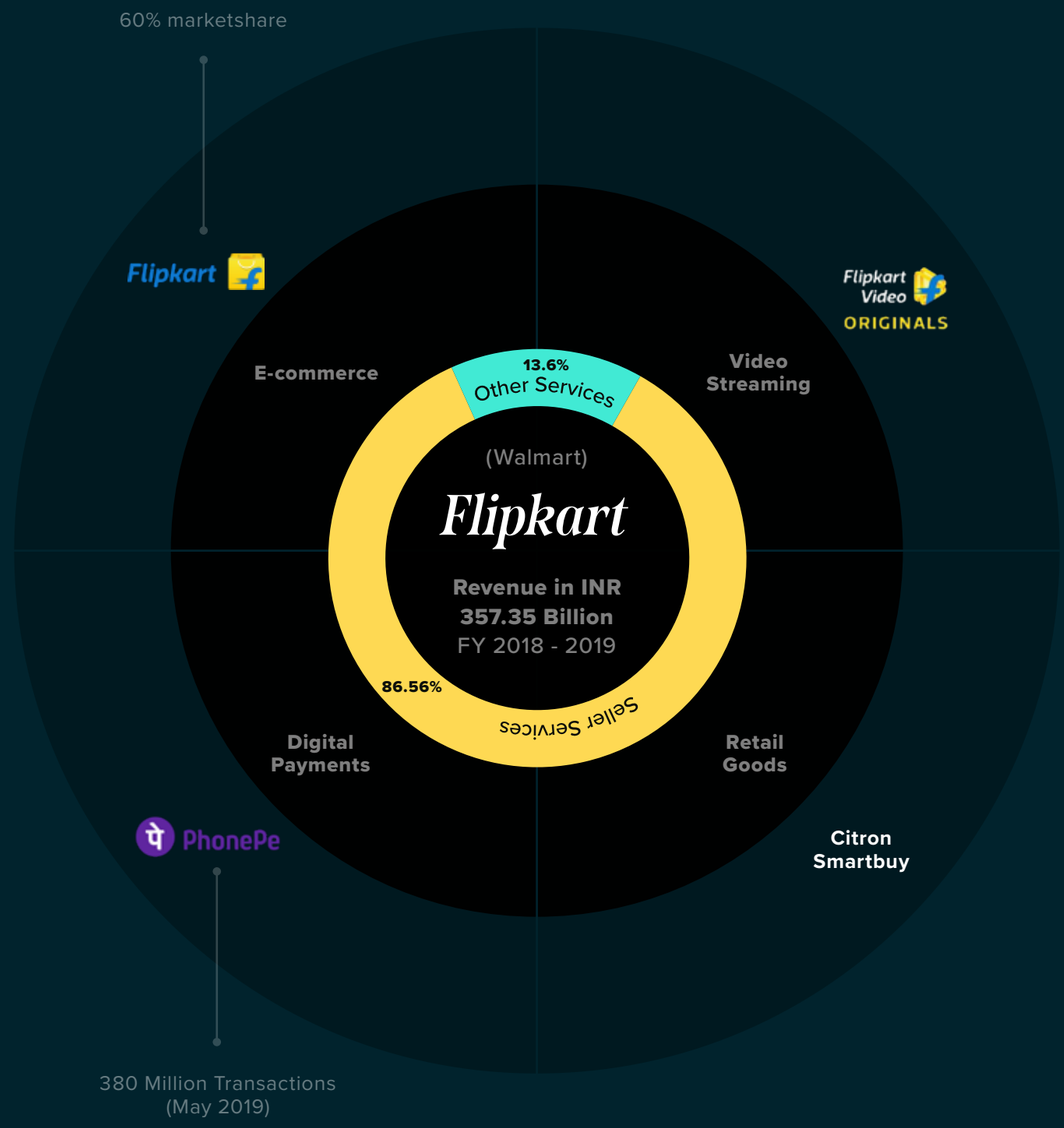
Source: Ramanathan, A. (2019, September 16). In India's digital payments, Google Pay has a Midas touch. Retrieved from https://the-ken.com/story/indias-digital-payments-googles-achilles-heel-turns-midas-touch/



Revenue Source: Ministry of Corporate Affairs filings. Here, business support services encompass support activities provided to businesses.



Revenue Source: Ministry of Corporate Affairs Filings. As per the National Product Classification for Services Sector, Support services (IT services in the infographic) includes all support services provided by ByteDance. Advertising corresponds to the sale of internet advertising space.



Source: Ministry of Corporate Affairs filings. Here, seller services encompass the sale of traded goods on the platform. Other services include marketplace services, logistics services, advertising services, and payment gateway services

3.2

How Big Tech companies are adapting to India

A large and vibrant digital economy is opening up in India due to the proliferation of mobile phones, spread of internet services, a rising youth population and growing adoption of digital services.[51] Currently, there are over 500 million internet users in India, making India the second largest internet user base in the world.[52] Projections indicate that by 2023 India will have more than 900 million internet users, with most of them accessing the internet through vernacular languages and video content.[53] By 2017, the number of Indian-language internet users (234 million) had already surpassed that of English users (175 million).[54] Concurrently, the economies of mid-sized towns and cities are growing and the spread of e-commerce is driving digital initiatives aimed at 'building for Bharat' i.e. the mobile-first, non-English speaking, non-urban internet users in India.

As the number of internet users in India continue to grow, India is rapidly emerging as a significant market for Big Tech companies. For instance, Facebook has 328 million monthly active users (MAU)[55] and a user base of 270 million users in India—the highest in the world.[56] WhatsApp has more than more than 400 million MAU[57] in India—also the highest in the world.[58] Indians account for the highest activity on the Android operating system's official app store, with up to 1 billion app downloads every month.[59]

Big Tech companies have adopted specific strategies for India to benefit from this digital demographic shift and the concomitant socio-economic transition.

i

Provision of digital infrastructure

In 2016, Google launched the Google Station project (now defunct) in India to provide free high-speed public Wi-Fi to more than 400 train stations in India. At its peak, in June 2018, more than eight million people used the service every month.[60] Google also announced plans to launch a second cloud region in India, to strengthen cloud services in India for businesses, hospitals and public sector organizations, amongst others.[61] Similarly, many businesses and government services rely on Amazon's cloud infrastructure.[62] By providing such digital infrastructure, Big Tech companies align themselves with the nation-building narrative around technology in India.

ii

Entry into Fintech

Fintech in India has boomed after demonetization and the launch of UPI. Big Tech companies have adapted their business models to ride this wave. Digital payments are an attractive revenue model for Big Tech companies, especially because per user ad revenue in India is still quite low.[63] Since the launch of UPI, Google Pay has acquired nearly 70 million users and carried out more than 2.5 billion transactions,[64] closely followed by Walmart-owned PhonePe. Whatsapp Pay has been allowed a phased roll-out in India, provided Facebook maintains compliance with RBI's data localization norms.[65] Aside from Amazon Pay, Amazon has also launched an instant zero-interest credit service in India, called Amazon Pay Later.[66]

iii

Emphasis on voice and vernacular services

Several Big Tech companies in India provide services over voice-based interfaces and in regional languages to address literacy-related barriers to digital services. For example, Google's AdSense is available in Marathi, Hindi, Bengali, Tamil and Telugu.[67] In 2017, Google partnered with Reliance Jio to reuse its voice assistance technology to operate on feature phones.[68] The user base of Google's voice search has grown exponentially, with most users searching in Hindi.[69]

iv

Offline and Online

Many Big Tech companies are leveraging offline models of service delivery to effectively reach users in smaller towns and cities in India. For example, Amazon has enlisted small stores as package depots along its distribution network.[70] It is enlisting other small retailers as Amazon learning centres, so that new shoppers can walk into these stores and shop online in an offline setting.[71]

v

Filling infrastructural gaps through auxiliary business expansion

Big Tech companies have added India-specific business verticals to bridge pre-existing infrastructural gaps and serve the Indian market better. For example, Amazon is developing supply chain management and storage capacities,[72] as well as setting up a sorting, grading and packing centre for fruits and vegetables. This will enable Amazon collection centres to source fruits and vegetables directly from farmers and local markets.[73] Flipkart is also building its own delivery network of freelancers to deliver to rural areas and has asked the government for permission to carry out drone deliveries.[74]

vi

Investment in R&D and tech entrepreneurship

Big Tech companies seek to leverage and develop India's large demographic pool for both global and India-focused R&D. In 2019, Facebook re-hauled the structure of its operations in India[75] and decided to focus on bridging the gendered digital divide, encouraging social interventions to boost economic growth in India.[76] It has done so by investing in startups like Meesho, aimed at nurturing female entrepreneurship.[77] Similarly, Google recently established the Google AI Lab, a global research lab that aims to provide opportunities to local Indian talent. The lab will also explore opportunities to leverage Artificial Intelligence (AI) for social good.[78]

CHAPTER

How is Big Tech Transforming India?

Big Tech companies in India have brought benefits to citizens, businesses, and the government alike. These benefits are amplified because Big Tech companies fill critical gaps in state, market, and R&D capacity. Yet, certain features and practices of Big Tech companies result in harms and risks, whose impact in India is also amplified because of the above-mentioned gaps.

Because Big Tech companies in India provide both benefits and harms, they pose a wicked problem for public policy. The term 'wicked problem' refers to a particular type of complex social problem, whose boundaries are hard to define, and which involves complex and interwoven trade-offs. Addressing one part of the wicked problem often creates new issues to grapple with.[79] Further, there is no single solution to the problem; solutions are neither true or false, nor right or wrong. Instead, they involve complex value trade-offs. Solutions to wicked problems depend on how the problem is defined, which is typically a reflection of the world views of different stakeholders, often grounded in moral positions.

Source: Wahl, D. C. (2017, April 24). Facing Complexity: Wicked Design Problems.

4.1

Market Power

Big Tech companies have significant market power because of their scale, financial resources, and interconnectedness with the rest of the ecosystem. They often leverage this market power in a way that brings benefits to the market as a whole. Big Tech companies have created many layers of digital infrastructure for other businesses and have fuelled new business models and innovation. For example, our interviews with technology policy experts and start-ups suggest that many Indian start-ups rely heavily on products and services such as search engine optimization and advertising platforms provided by foreign technology companies, including Big Tech.[80] Similarly, many start-ups rely on backend infrastructural support like AWS and Microsoft Azure for their software products and services.[81]

Many global Big Tech companies fund research and provide business support to start-ups. WhatsApp, for example, has partnered with Invest India for the Startup India-WhatsApp Grand Challenge to address local problems.[82] Both Google and Facebook run accelerator programs for start-ups in India.[83] Apart from generating employment opportunities, such initiatives also help Big Tech firms recruit talent locally and build collaborative relationships within the industry.

Big Tech companies' R&D initiatives are often an important source of technological breakthroughs. For example, many start-ups in India benefit from the deep learning tools and software development capacities developed by Big Tech players.[84]

Big Tech companies' investments in public policy help voice issues and concerns faced by other tech-based businesses. However, this representation at times can be skewed toward interests of Big Tech or foreign companies. Insights from interviews conducted suggest that Big Tech companies also have cultural power within the start-up community, as an aspirational model for new businesses or even as a source of potential exit.[85]

While Big Tech companies clearly create market value as infrastructure providers, investors, and market representatives, the exercise of market power creates an uneasy tradeoff between market dominance and market support. In particular, the actions of Big Tech companies in India lead to three sets of concerns.

First, several stakeholders, including regulatory and industry bodies, have raised concerns around anti-competitive behaviour of global Big Tech companies. For example, the CCI, in early 2019 ordered a full probe into the alleged anti-competitive actions of Google in India, particularly in relation to its dominant market position in the Android market.[86] In the e-commerce sector, both

Several stakeholders, including regulatory and industry bodies, have raised concerns around anti-competitive behaviour of global Big Tech companies.

The activities of Big Tech companies, rather than those of smaller players, often attract the attention of regulators.

the All India Online Vendors Association (AIOVA) and Confederation of All India Traders (CAIT) have filed cases against Flipkart and Amazon, accusing them of abusing their dominant market position, favoring 'preferred sellers' on the platform, and hurting small sellers through discriminatory pricing techniques.[87] Further, sellers add that Amazon is able to leverage access to vast amounts of purchase data to introduce private labels or made-for-Amazon only brands.[88] Dana Mattioli, in the Wall Street Journal reported that Amazon's search algorithm returns favored products and private labels, at the expense of those listed by other vendors.[89]

Smaller domestic firms struggle to compete head-to-head with Big Tech companies. The latter's size allows for greater risk-taking capacity and manufacturing the same products at much higher margins.[90] They also have control over inventory (in case of e-commerce platforms) and have the financial resources to offer deep discounts or zero prices for a sustained period.[91] Since they are platforms, Big Tech companies benefit from the commissions as well as the data from smaller competitors on their platforms.[92]

Some of the home-grown start-ups we spoke to also suggest that they struggle to compete with Big Tech companies because of the latter's large capital investments, data-based intelligence and ability to set up and invest in auxiliary industries.[93] For instance, one of the key pillars of Amazon's competitive advantage in India is its network of large warehouses and ability to invest in auxiliary industries. Amazon India has more than 41 warehouses, with the largest being more than half a million sq. ft in size.[94] Further, data intelligence from its large user base allows Amazon to also stock warehouses according to area-wise customer demands, thereby enabling them to compete with even neighbourhood stores in terms of speedy delivery.[95] In 2019 alone, Amazon infused $631 million into several of its Indian subsidiaries.[96] The ability of Big Tech companies to create auxiliary industries in order to support their operations also creates steep competition for brick and mortar stores who are unable to scale up.[97]

Second, Big Tech companies affect competition by acquiring direct competitors and nascent companies. Columbia Law School Professor Tim Wu highlights how Big Tech companies sometimes use mergers and acquisitions to reduce competition, add talent through acqui-hires, and expand into new sectors and industries.[98] This trend can now be observed in India as well. For example, Google has absorbed promising ventures in the Artificial Intelligence-Machine Learning (AI-ML) space in India.[99] Facebook's activities are also geared towards making it a 'trusted source of information' through strategic partnerships with news and content delivery services, especially in vernacular languages.[100]

Such consolidation or vertical integration (through mergers and acquisitions) by Big Tech companies in the B2C segment has been identified as an important factor, amongst others, that has prompted many Indian start-ups to shift to B2B models.[101] Other factors such as low profitability, lack of patient capital, hefty executive salaries, and issues with business models also have a role to play in this shift.[102]

Third, the activities of Big Tech companies, rather than those of smaller players, often attract the attention of regulators. Resulting policy directives are thus also based on practices of Big Tech companies, often not taking into account the needs of smaller players.[103] While Big Tech companies may have the ability to comply with heavy regulations and policies, many smaller players may not have the organizational or financial resources to comply fully.[104]

4.2 Informational Gateway

Big Tech companies provide the informational infrastructure for India's digital society. Most Indian internet users rely on one or more Big Tech platforms to access information, communicate and participate in political and social life. A recent study conducted by the Reuters Institute and University of Oxford shows that people in India increasingly rely on digital platforms—search (32%) or social media (24%)—as their main way of accessing news online. Only 18% access news directly from traditional media companies or news channels.[105]

Big Tech platforms are thus enabling new forms of democratic participation and inclusion, leveraging the rapid growth in mobile phone usage and internet access in both urban and rural India.[106] This is significant because large parts of the population were hitherto excluded from mainstream political and social discourse due to lack of access or affordability, as well as language barriers. Big Tech platforms have also enabled new forms of two-way communication between the Indian state and citizens, even for citizens who are difficult to reach otherwise.[107] Activists, workers and civil society members can discuss issues and organize themselves through social media forums and groups. This creates an opportunity for a more informed, inclusive, and vibrant public sphere.

Social media platforms have also impacted the ways in which news and information are produced and distributed. For instance, Google launched the News Lab initiative in 2015 to work closely with the journalism industry. News Lab covers a range of services and tutorials on 'on how to better research, report, distribute, and optimize stories for the internet'.[108] Google Trends helps journalists by providing real-time updates on trending topics, arranged by region, country, and trending terms.[109] Media outlets heavily use social media platforms such as Facebook and WhatsApp to distribute news and information.[110]

In the expanding digital landscape of India, access to information is empowering individuals through new forms of communication, solidarity, and agency. However, Big Tech platforms also contribute to a range of societal challenges and risks. While these issues are not unique to India, they are amplified by low levels of education and literacy, a large youth population , high levels of societal heterogeneity and low levels of regulatory capacity.

Big Tech platforms have tremendous power in shaping people's beliefs and preferences, since they are information gateways for much of India's population. This dominance is amplified in India due to the increasing reliance on social media platforms to access print and television news coupled with algorithms often deciding what content people view.[111] For example, Google, with 95% of India's desktop search enquiries, is a gateway to the internet for a vast majority of Indians and has considerable influence over people's beliefs and preferences.[112] Google's search algorithms can be tweaked to alter what users see first,[113] an important consideration since users tend to choose higher-ranked results more than lower-ranked results.[114] A study conducted in India in the run up to 2014 Lok Sabha elections,

Big Tech platforms are not simply publishers, but curators, editors and amplifiers of news and information. They wield immense gatekeeping powers, especially for the millions of Indians coming online for the first time.

showed that search engine manipulation can have a large impact, especially because elections are often won by small margins.[115]

Big Tech platforms can also shape public discourse through their content moderation policies and practices. For example, Facebook and Twitter are criticized for bending to political pressure and biased moderation against certain social groups, such as women and religious minorities.[116] A recent report by Equality Labs, a research organization that focuses on digital security for South Asian religious and cultural minorities, found that Facebook did not sufficiently enforce its own content policies in India. The report highlighted Facebook's failure to permanently delete hateful content that contain calls to violence, casteist slurs, and sexist insults.[117] Further, Facebook has reported a spike in requests for user information and content takedowns by the Indian government.[118] Thus, through search algorithms and content moderation, private actors are shaping the exercise of a constitutionally-guaranteed fundamental right—free speech.

Big Tech platforms have also facilitated the risk of identity politics, leading to unfortunate instances of caste-based violence[119] and mob lynchings.[120] Globally, research has linked such incidents to misinformation, algorithmic amplification, and computational propaganda.[121] A recent report by the EU Disinfo Lab also draws attention to the funding and monetization of disinformation. It uncovers instances in which the Amazon Associates program played a key role in funding disinformation by providing 'a constant flow of monetized links usable by a disinformation actor(s).'[122]

In India, these issues are amplified as they intersect with prevailing socio-economic and cultural factors, including low levels of literacy,[123] a burgeoning youth population and social heterogeneity. Recent studies show that those aged below 20 and above 50 are most susceptible to fake news. Writing for The Hindu BusinessLine, Shriya Mohan argues that for both these age groups, the 'excitement of sharing content' for free on a platform such as WhatsApp, through their first smartphone, often 'proves irresistible'.[124] Similarly, the virality of TikTok content is linked to the cultural context of small towns in India.[125] Journalist Nilesh Christopher observes that in these towns, consumption and distribution of content is often driven by pre-existing caste politics and division along community lines.[126] Observers also link the spread of misinformation to declining trust in established media institutions.[127]

Social media has also become a virtual space for political contestation and mobilization, leading to the increasing politicization of these platforms. Big Tech social media platforms have become instruments and sites of mass dissemination of political ideologies and brandishing of political identities.[128] The 2014 Lok Sabha elections came to be known as 'India's social media election'.[129] Since then, platforms like WhatsApp, Twitter and Facebook are 'the preferred medium' of political messaging across political lines.[130] Many political parties have adopted social media campaign strategies and have set up social media or IT cells devoted to the task.[131] Political parties, candidates and other stakeholders spent $7.74 million to enlist the services of companies such as Google and Facebook in the run up to the 2019 Lok Sabha elections.[132]

In summary, Big Tech platforms are not simply publishers, but curators, editors and amplifiers of news and information.[133] They wield immense gatekeeping powers, especially for the millions of Indians coming online for the first time.

4.3

Privacy

Big Tech companies use data to understand consumer preferences, personalize digital services and recommendations, as well as predict and meet new demand. They also use consumer data to expand the range of services they provide and customize these for diverse user groups based on region, language, age, gender, and so on.

Payal Arora, renowned digital anthropologist and professor at Erasmus University Rotterdam, suggests that such personalization of services can allow users to feel recognized, visible and empowered. Accessible and personalized services are extremely valuable for people who have struggled to be connected, included and made their voices heard.[134]

Access to new types of consumer data is also creating a market for new products. For example, fintech companies are exploring flow-based lending and alternate credit scoring methods using SMS, social media data and GSTIN data. This especially benefits individuals without bank accounts and access to formal credit systems to establish their creditworthiness.[135] While these new uses of data lead to privacy and other concerns, they nonetheless also hold value for those who have otherwise been on the margins of formal banking systems.

The privacy implications of Big Tech companies' use of data have been widely discussed. These issues are not exclusive to Big Tech companies and may even be more pertinent for smaller players with weaker security and privacy architectures. However, Big Tech companies set the standard in many ways, by representing and legitimizing certain practices. For example, Big Tech firms dominate conversations about implementation of data protection laws but researchers have found that they have not adapted to Europe's privacy law adequately.[136] They play an even bigger role in shaping the privacy practices for user data in India due to the absence of enforceable data protection legislation.[137] Further, the proposed data protection legislation in India is likely to increase compliance costs for small businesses.[138]

Big tech firms' data collection practices are both extensive in scope and extremely granular in detail.[139] These concerns are magnified when user data is processed without informed consent. For example, Facebook's privacy policy allowed Cambridge Analytica to access personal information of not just those who downloaded the app, but also of those on their friend lists.[140] The efficacy of privacy policies is especially inadequate in India because of many first-time internet users, lack of digital literacy, and unavailability of these policies in local languages.[141] Research carried out by Dalberg, CGAP, and Dvara Research has shown that most people in India 'had little awareness of why certain types of data was demanded of them, what happened once they gave it, who else it was shared with, where it was stored, how long it was kept for and how it could be retrieved'.[142] The research also showed that people had little awareness of privacy settings beyond mobile phone lock and password protection. Women, in particular, often resorted to self-censorship and withdrew from online participation as the sole strategy to protect their data.[143]

The Indian context also highlights that there is 'no such thing as a neutral user'[144]—privacy concerns and related digital harms manifest themselves differently across social groups. For instance, Bishakha Dutta, Executive Director of Point of View, notes that speech recognition technologies and voice interfaces often don't consider privacy concerns of women. Women may not want to use these interfaces publicly because they might not want to be heard. Similarly, transgender individuals may want to maintain anonymity on Facebook to keep their sexual identity private. However, Facebook's real name policy and matching algorithms make it difficult to stay anonymous on the platform.[145]

Another unique issue in India is that privacy is often framed as a competing priority to development and social good.[146] For example, alternate credit scoring models used by fintech companies rely on multiple data points related to an individual.[147] This means that individuals need to trade-off personal information for financial inclusion. Users do not have full agency over this trade because of unclear privacy policies and the complexity of algorithmic models.[149] For example, research by the Centre for Internet and Society, shows that privacy policies of most fintech companies, which include products of Big Tech firms such as Google Pay, Amazon Pay and PhonePe, often do not explicitly state what kind of sensitive information is being collected or what grievance redressal mechanisms are available.[150]

The troves of data that Big Tech firms collect makes them a 'honey pot' for third party actors and cyber hacks. Despite their efforts, they are not immune to security breaches.[151] For example, WhatsApp confirmed that at least two dozen civil activists, academics, lawyers and journalists were targeted and surveilled by a spyware, Pegasus that exploited vulnerabilities on its platform.[152] Pegasus is a malware that Israel's NSO Group developed, which, when installed on a phone, hoovers all communications (iMessage, WhatsApp, Gmail, Viber, Facebook, Skype) and locations.

4.4

Sovereign Interests

The ubiquity of Big Tech companies in India brings benefits to not only consumers and businesses, but also the government. Big Tech companies augment state capacity through the provision of digital infrastructure, by using data for social good and enabling the state to communicate with underserved populations.

For example, Amazon has been running its public sector programme in India since 2017, helping government agencies and offices to switch to cloud-based systems.[153] It is now an approved cloud service provider for the Indian government.[154] Google, in 2018, partnered with the Ministry of Water Resources to launch a flood forecasting tool that can predict floods with almost 75% accuracy.[155] The initiative uses SMS technology to warn people and provide emergency alerts. Similarly, Facebook has partnered with the National Disaster Management Authority (NDMA) to offer tools that help the latter respond more effectively to natural disasters.[157]

Big Tech firms also work with non-government actors that serve public functions. For example, Facebook, by leveraging its global image dataset through its Data for Good initiative, creates and shares data insights and maps on population density, electrical distribution and disease prevention with the public. Facebook also funds social and policy-oriented research in India.[158]

The growing influence of Big Tech companies also raises several complex questions about sovereign interests. These concerns arise because of the ways in which Big Tech companies' interests intersect with State functions and what this might imply for democratic accountability and sovereign independence.

Access to data is one such issue. Data generated in India is aggregated and processed primarily by companies elsewhere.[159] The value of such data is therefore often perceived to be accruing primarily to Big Tech companies rather than the Indian state and citizens.[160] For instance, 14 out of the 15 data centres owned by Facebook are located in developed countries despite India being Facebook's largest market.[161] The disconnect between the site of data collection and its processing has led to accusations of data colonisation and digital colonialism by reputed Indian stakeholders.[162] This is exacerbated because firms use proprietary software, corporate clouds, and centralized internet services to accrue vast amounts of individual data. This raises complex questions about how and where value capture happens, how these benefits should be distributed, and the impacts for democratic accountability.

This issue has received the attention of policymakers. Piyush Goyal, Minister of Industry and Commerce, argued at the G20 trade ministers meeting in Osaka, Japan that 'countries should have the sovereign right over the data they generate for social welfare and development

Industry players have also expressed concern about the unfair playing field for Indian businesses, arguing that Indian and foreign companies should follow the same rules on taxes, data storage, security, pricing and cooperation with law enforcement.

of its people.'[163] India's Personal Data Protection bill mandates that digital platforms share non-personal data with government agencies for development and planning purposes.[164] While this raises legitimate concerns around privacy and surveillance, it also forces us to ask how the value from Big Tech companies' data intelligence can be distributed more equitably for the benefit of people and communities.

Big Tech companies' role in law and order is another vexed issue. Commentators have expressed growing concerns about the jurisdiction of data stored outside India and the implications for national sovereignty.[165] Existing data-sharing processes between countries are lengthy and cumbersome. The resultant delays in accessing data could have a significant impact on domestic law enforcement processes.[166] Geopolitical rivalries also play a role in shaping this perception. For example, the proliferation of Chinese capital and tech companies in India has raised concerns around national security.[167] In August 2017, for example, the Indian government cracked down on UC browser for allegedly sending user data to remote servers in China.[168] In April 2020, the Indian Government changed Foreign Direct Investment (FDI) norms to prevent investors from neighbouring countries from buying distressed Indian companies.[169]

Industry players have also expressed concern about the unfair playing field for Indian businesses, arguing that Indian and foreign companies should follow the same rules on taxes, data storage, security, pricing and cooperation with law enforcement.[170] Domestic players often frame these interests in nationalistic terms, referring to the imperatives of nation-building and boosting Indian industry.[171]

The call for data localization is one of the ways in which these concerns are voiced. For instance, the RBI, in April 2018 ordered that 'all payment processors need to store end-to-end transaction details and all associated data in India' and that the RBI should have unfettered access to the same.[172] The draft e-commerce policy frames data as a national asset for India, which must be utilized for the development of the domestic e-commerce industry.[173] India's personal data protection bill also mandates that all critical data must be stored in India, and a copy of all personal data must be stored in India.[174] This represents a balancing act by the Indian state—an attempt to retain control over data flows, while also protecting the interests of domestic industry that rely on the free flows of data (e.g. the IT sector). Ultimately, these concerns reflect a growing unease about the enormous power that a few foreign actors have, as well as the challenges faced by the Indian state in regulating them.

The benefits and harms of Big Tech companies are interwoven across the various areas of influence. For example, the market power of Big Tech firms enables them to act as information gatekeepers and set the benchmarks for privacy for the rest of the domestic tech ecosystem. Their market power, in other words, increases their civic power, which in turn reinforces their market power. As Columbia Law School fellow Lina Khan writes, 'If markets are leading us to directions that we, as a democratic society, decide are not compatible with our visions of liberty or democracy, it is incumbent upon the government to do something.'[175]

Is there an Indian Big Tech?

If we conceptualize Big Tech as data-driven, large-scale consumer-facing technology platforms that tend towards infrastructure and exert significant market and civic power, we can argue that no single domestic tech company in India is a Big Tech company yet. This is primarily because domestic tech players have not been able to acquire the ubiquity and reach of global Big Tech companies. Moreover, to speak of an 'Indian' Big Tech itself is problematic, since technology companies often receive foreign equity investments and are owned by foreign economic interests. That said, several domestic companies display some of the conceptual markers of Big Tech, along with the associated promises and perils.

While some of the older and well-established B2B IT services companies are large enough in terms of market valuations, such firms do not use personal data in the same way as Big Tech firms.[176] Nor do they operate as multi-sided platforms and are unlikely to have the same type of civic role as global Big Tech firms. Further, even though many of India's start-ups in the digital ecosystem are consumer-facing platforms that rely on[177] data processing and ad-based revenue models, Indian tech start-ups do not yet show market and societal influence at the same scale as Big Tech. Big Tech players have much bigger data and financial resources at their disposal than any of the Indian unicorns.

Moreover, most tech start-ups do not play an infrastructural role yet and are, in fact, reliant on Big Tech companies for cloud storage and digital advertising.

The one exception is Reliance Jio, which displays many of the conceptual markers of Big Tech companies. Reliance Jio entered the tech sector as a telecom infrastructure provider, investing heavily in building a 4G network and on-boarding millions of new customers (including first-time mobile users) through ultracheap voice and data plans[178]. In 2019, Jio became India's leading carrier in terms of the number of users.[179] Since then, Reliance Jio has been expanding into new business verticals, including media, retail, and fintech.[180]

In 2019, Reliance Jio set up Jio Platforms as an umbrella platform for all the Reliance-owned digital businesses including Reliance Jio,MyJio, JioTV, JioCinema, JioNews, and JioSaavn.[181] In addition to consolidating its numerous web applications into a singular platform, Reliance Jio is also expanding horizontally by adding new portfolios through mergers and acquisitions. Reliance spent nearly $1.3 billion in 2018 to acquire a diverse range of start-ups working on data analytics, AI, Internet of things (IoT), blockchain, as well as vernacular content delivery.[182] As a 2019 article in the national daily Economic Times notes, 'from the project of smart home and smart car to the idea of boosting businesses of small traditional retailers in India, Jio is ambitiously working towards providing India a digital life.'[183]

Media commentaries suggest that Reliance Jio seeks to create a super app-platform, similar to Alibaba's WeChat.[184] While such a super-app could enable new efficiencies for customers and businesses, it would certainly align Reliance Jio even closer with the Big Tech conceptual markers, while raising similar concerns around market dominance, privacy, informational gateway and sovereign interests.

As of May 2020, Jio Platforms was reported to be the fourth largest Indian company by market capitalization.[185] Much of this is on the back of recent global investments—since March 2020, Jio Platforms has attracted more than $15 billion in investments.[186] The largest of these investments was by Facebook, which acquired a 9.99% stake in Jio Platforms, making it the largest minority shareholder. This is also Facebook's largest investment, second only to its acquisition of WhatsApp.[187] As this report went to print, Google also announced an investment of $4.5 billion in Jio Platforms. Qualcomm Ventures also said it will invest $97 million to help Jio Platforms roll out 5G infrastructure.[188]

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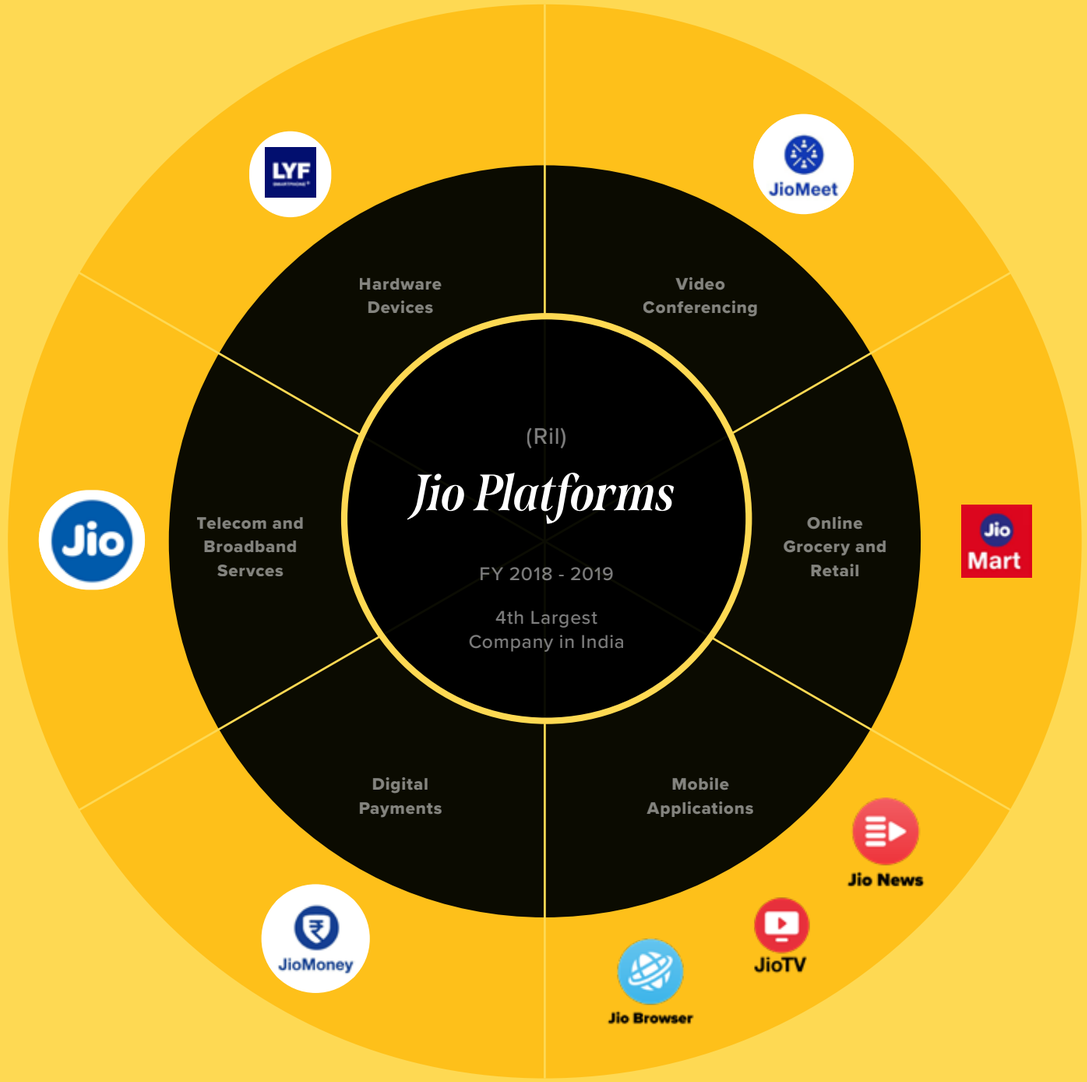

Following the Facebook investment, Reliance rolled out Jio Mart outlets across 200 cities in India, to enable users to purchase groceries and other goods from neighbourhood stores using Whatsapp. JioMart is also expected to facilitate deliveries of Reliance Retail's network of 11784 retail outlets.[189] Jio will be able to use Facebook/ WhatsApp's wide user base to expand its market presence, particularly into rural India, as well as tie-up with India's small mom-and-pop shops. The Facebook-Reliance deal could benefit customers and small businesses, but also raises concerns about market dominance. Data intelligence, network effects and Reliance Jio and Facebooks' dominance in the telecom and social networking services respectively, could lead to anti-competitive practices and outcomes.

Moreover, the deal could help further Reliance Jio's supposed plans to create a super-app platform. A report by Bernstein, a research and brokerage firm, suggests that Reliance Industries and Facebook are looking to build an ecosystem of 10 key services, including retail, payments and advertising.[190] Media reports on the recent flurry of investments into Jio Platform have also attributed this to Reliance Jio's vision of becoming such a super-app platform, similar to other global Big Tech companies. By providing Indian consumers access to everything, from groceries and clothes to banking and home automation via an integrated system running through Jio, Reliance can become an 'everything company.'[191]

Beyond concerns around market dominance and consumer lock-in, the Reliance-Facebook deal may also raise privacy concerns, in case the deal goes on to include data sharing agreements between the two companies. Both Jio and Facebook have considerable user bases in India (over 500 million customers) and multiple data touch-points. A data merger between the two companies could enable the creation of a 'complete portrait of the user'.[192] The CCI has recently approved the deal, which may also encourage other Big Tech companies to pursue deals with telcos in India.[193]

The entry of large Indian conglomerates into the digital economy calls for greater research and policy attention.

Reliance Jio has also released a slew of applications which provide digital content and information. For instance, JioNews brings content from over 150 live news channels, 800 magazines, 250 newspapers, blogs and news websites from India and across the world. The app also allows users to personalize their reading experience by choosing preferences from over 12 Indian languages.[194] As Reliance Jio assumes the characteristics of an informational gateway, it will be important to keep a close eye on its response to key policy debates. In 2018, the Indian government released a draft amendment to the existing Intermediaries Guidelines Rules. Reliance Jio's comments called for greater government oversight in establishing the specific guidelines for the classification of content. On encryption, its submission noted that end-to-end encryptions, 'although perceivably beneficial to users, are detrimental to national interest and hence should not be allowed.'[195]

Reliance Jio has championed data localisation, which is also aligned with the Indian government's policy proposals. Reliance's chairman, Mukesh Ambani, stated in 2019 that 'India's data must be controlled and owned by Indian people and not by corporates, especially global corporations. For India to succeed in this data-driven revolution, we will have to migrate the control and ownership of Indian data back to India–in other words, Indian wealth back to every Indian.'[196] In 2018, it was also reported that the Ministry of Commerce invited Reliance Jio and Reliance Industries to contribute to the draft e-commerce policy.[197]

Reliance Jio's entry into the digital economy calls for greater research and policy attention , as do the investments in Reliance Jio by other global Big Tech companies. The presence of other large domestic conglomerates—with diverse sectoral presence, access to capital, and consumer buy-in also merits research into the growing engagement of big businesses in the tech sector in India.[198]

Indian State Tech

Technology in India has often been associated with the noble goal of nation-building and economic development. The active use of technology by the state to fill existing gaps and meet these objectives is a natural outcome of this mind-set.

This trend has accelerated with the rise of the data-based digital economy. The Indian state is an enthusiastic adopter of new modes of data processing in social welfare and governance via platforms such as Aadhaar and the India Enterprise Architecture.[199] It also maintains essential digital infrastructures such as the India Stack that many private and public enterprises rely on.[200]

This new form of state-backed tech infrastructure, which we call 'State Tech', shares many conceptual markers of Big Tech. It is based on the processing of data, has tremendous market-shaping power, takes the form of digital infrastructure and plays critical civic functions.

There are also noted differences. State Tech is directed towards social services and development needs, rather than private profit. Unlike Big Tech, the natural starting point for the State is its civic functions, rather than that be an outcome of its market role.

The prominence of State Tech calls for greater research about both its nature and consequences. State Tech has created opportunities for inclusion and development. Some issues associated with Big Tech companies, such as unequal competition, privacy, content moderation and algorithmic fairness, are also relevant for State Tech, albeit to a different extent. India needs to identify and address these issues in order to create a safe and empowering digital future for its citizens.

CHAPTER 5

Policy Pathways For India

Evaluating the role of Big Tech companies in India involves weighing multiple competing priorities and values. While Big Tech firms bring significant benefits to India's development story, some of their features and behaviours also have negative consequences on the health of individuals, markets and societies. No single set of solutions can address these negative consequences alone.

Instead, we need a portfolio of strategies, along with space for policy iteration and experimentation. Many of these strategies are about regulating the digital economy more broadly, but with clear implications for Big Tech companies.

The following table gives an overview of the strategies this chapter will elaborate upon.

Market Power	**Informational Gateway**	**Privacy**	**Sovereign Interests**
Updated Competition Policy	Publisher Ethics	Individual and Collective Rights	State and Market Capacity
Platform Neutrality	Algorithmic Audit	Data Stewardship	Equitable Taxation
Platform Interoperability	Media Literacy	Privacy Respecting Business Model	Better Cross-Border Data Flows

5.1 Market Power

Updated Competition Policy

Traditionally, competition policy uses the price charged by a monopolistic business as a proxy for market dominance. This is not applicable for platforms like Google[201] or Facebook that do not charge anything from consumers, but are nonetheless dominant players.[202] This calls for a new approach to competition policy.

First, competition regulators should include indirect costs such as loss of control over data or access to biased information in determining whether consumers are paying a price.[203] Second, regulators should look beyond price and at whether the structure of the market has become anti-competitive.[204] For example, they should look at whether there is a huge barrier to entry for other firms because of a monopolistic business control over data and the network effects it creates.

Similarly, mergers and acquisitions need to be assessed differently. Evaluation of market power of the merged entity needs to incorporate control over data, possibilities of vertical integration, and whether the merger poses a barrier to entry for new firms.

Germany is considering a new approach to competition law, which considers, among other things—(a) direct and indirect network effects; (b) switching costs for users; (c) the economies of scale that may arise as a result of network effects and (d) how access to data affects competition and innovation in the market.[i]

Europe will soon be presented with a 'choice screen' to the default search engine on Android phones/tablets, allowing Android users to choose a search engine of their preference. This is a result of the current tussle between the European Commission and Google on the latter's breaching of antitrust rules through its dominance in the market. For companies to offer their search engine to Android users, they have to participate in an auction led by Google, held every three months.[ii]

Platform Neutrality

Traditional utilities like electricity and railways need to follow certain principles because they provide indispensable infrastructure.[205] Similarly, Big Tech firms provide essential utilities for a digital economy and should adhere to similar principles.

Just like traditional utilities, Big Tech companies should not be allowed to differentiate between consumers that use it, be it individuals or businesses.[206] Such differentiation could take many forms—special access to data, prioritization of search results and allocation of space on feeds or pages. These issues are magnified for Big Tech firms, because they are often both the platform, as well as a player on the platform.

There are ways to ensure platform neutrality. Some commentators have suggested 'breaking up' these companies into their constituent businesses.[207] However, this could come at a significant cost to consumer convenience. A better approach would be for platforms to impose firewalls, i.e. ensuring that their own products compete on an equal footing with those of competitors on the platform.[208] This would mean, for example, that Amazon-branded products compete on equal terms with those of other retailers over the Amazon platform. Government oversight may be needed to ensure that Big Tech firms can't use their control of the platform to disadvantage competitors through means such as predatory pricing, or unreasonable terms of service.

K. Sabeel Rahman, Associate Professor of Law at Brooklyn Law School states that since public utilities serve such an important market function, they are also often expected to incorporate elements of public service.[209] This includes affirmative obligations to serve underserved communities, limits on extractive commercial practices, requirements to protect vulnerable groups such as children, and respect for socio-economic stability of the country.[210] Big Tech firms, in their role as digital public utilities, should consider similar public values.[211]

In the UK, the Digital Competition Expert panel has recommended setting up a Digital Markets Unit, which would, inter alia (a) develop a code of competitive conduct; (b) be responsible for enabling greater personal data mobility and (c) advance data openness and open standards. The panel has also recommended that merger and acquisition policies be updated and be supplemented with an updated antitrust policy.[iii]

France, in 2016, passed a law on platform fairness which mandates that platforms: [iv]

1. Do not change rankings in a way that goes against user interests and do not give preference to their services over those of their competitors;

2. Inform users how algorithms work and flag results that are sponsored;

3. Publish rules around removal of lawful content and not discriminate;

4. Communicate any changes in algorithms/ content policies to suppliers in advance.

Platform Interoperability

Since data is a key resource for Big Tech firms, democratizing access to data will improve the competitive health of digital markets.[212] One such solution is data portability, i.e. allowing users to transfer their data from one platform to another. This feature is now part of most data protection laws, including India's draft bill.[213] However, data portability alone will be insufficient because the individual's network of friends, family, buyers, sellers or followers will still be on the original platform.[214] It could also pose a challenge for privacy as it may result in a person carrying over data belonging to their social network while moving to a different platform.[215]

A better solution might be platform interoperability. Just like a Gmail user can send an email to a user of any other service, platform interoperability would allow WhatsApp users to message Signal users or allow Amazon users to combine their order with items from Flipkart.[216] By doing so, platform interoperability allows consumers to choose whichever platform they like, thereby reducing the weight of network effects. It will also be a boon for other businesses, which will be less dependent on Big Tech firms. It could fuel innovation as follow-on innovators will leverage pre-existing tools to create better products, building off of existing platforms' strengths and allowing users to interact with multiple services at the same time.[217]

Both data and platform interoperability will need to be balanced against factors such as privacy and security of data, the complexity of institutional arrangements required to monitor such arrangements, as well as the longer-term impacts for consumer welfare.[218]

A bipartisan coalition in the US has introduced the Augmenting Compatibility and Competition by Enabling Service Switching (ACCESS) Act, as a response to the current dominance that Big Tech firms have over data in the United States.

Like mobile number portability, it enables users of social media platforms to move their data and even communicate across platforms. The proposal intends to provide start-ups with a level playing field by supplementing data portability with interoperability. It requires that platforms allow users to download their data and transfer it to another service, if desired. It also permits users to authorize access by third-party apps, subject to safeguards.[v]

5.2 Information Gateway

Publisher Ethics

Traditionally, social media platforms have enjoyed varying degrees of immunity from negative consequences of content that users post on their platforms.[219] The prevailing argument is that social media firms cannot be held accountable as they do not publish content, nor do they have editorial control over the content that they host.

However, Big Tech platforms do not play a completely neutral role. For example, Google designs algorithms that define the order in which search results are served,[220] and Facebook takes a call on what user content it should remove, either by itself, or based on complaints.[221] A complete legal exemption from responsibility is therefore no longer sustainable.

Some commentators argue that social media platforms should be treated as publishers.[222] This would involve the kind of regulatory approaches that are used for legacy media, such as print, radio or television. In addition, social media platforms would be expected to comply with the standards for ethics in journalism.[223] One clear implication of this approach is that platforms would heavily regulate political advertising.

Moreover, they would need to set up accountability and transparency measures around their content moderation policies. Democratic and diverse participation in how these policies are framed, and opening them up for public scrutiny can alleviate the risk that excessive content moderation could affect free speech.[224]

The concept of third-party oversight bodies that can advise and set norms for content moderation have been proposed by various civil society organizations. Deemed as Social Media Councils, these bodies would essentially be 'multi-stakeholder accountability mechanisms that would provide an open, transparent, independent, and accountable forum to address content moderation issues on social media platforms on the basis of international human rights standards.' The intention is to constitute them at national and regional levels, to guide social media platforms, and decide individual user complaints.[vi]

Joe Biden, the United States Democratic Presidential Nominee, in an open letter to Facebook, asked the company to take four steps:[vii]

1. To promote trustworthy sources of news on the platform.
2. To remove false, viral information swiftly.
3. To not allow actors in the political landscape to use paid advertising as a means to spread misinformation.
4. To apply voter suppression rules (that prohibit misinformation around how to participate in elections) universally, even to the President.

Algorithmic Auditing

Another approach is to see Big Tech platforms as information distributors, who hold the power to make certain types of content visible (or invisible) over others.[225] These decisions are made by automated algorithms that are not always neutral. For example, Facebook and TikTok algorithms are optimized to increase engagement, and thus amplify content that produce vivid emotions.[226]

Therefore, regulation should focus both on the content shared, as well as the mechanisms through which certain types of content are amplified over others. It should require transparency and accountability in how this happens. Big Tech firms should be required to undertake algorithmic audits by independent authorities and these should be publicly available.[227] There should also be frameworks to identify, assess and penalize harmful algorithmic amplification.[228]

The issues are made complex by the use of Artificial Intellegence for content moderation because its use makes explainability somewhat difficult, if not impossible.[229] To address this, Big Tech firms could have in-country content moderation teams, with representation from a diverse range of social groups.[230]

In 2017, the German Parliament passed a law requiring social media platforms to make provisions for users to report illegal content and compile bi-annual reports on how the complaints were dealt with. The German Broadcasting Authority had also proposed a new law, Medienstaatsvertrag, which imposed diversity obligations on ranking and sorting algorithms of video platforms and media intermediaries (including social media platforms and search engines).[viii]

Media Literacy

Nobel Prize winner Paul Romer contends that shared values and norms are 'commons' that are critical to a democracy and are being eroded by the business models of Big Tech firms. He adds that governments have a duty to prevent this trend.[231]

This can be done in two ways. First, the government could support a large-scale digital literacy program. This is especially relevant in India because of low pre-existing digital literacy. Second, the government or a quasi-government body could support traditional media enterprises, including through public service broadcasting. This second approach is needed because traditional media enterprises have lost advertising revenue to Big Tech firms.[232] Commentators have suggested that the Government can fund these measures through higher taxes on Big Tech firms.[233]

The United Kingdom's National Union of Journalists (NUJ) has requested that the Government treble its tax on Big Tech firms to keep newspapers afloat as advertising revenue drops. Money raised by the proposed higher taxes on technology giants could fund investment into local newspapers to help offset the economic impact of the Coronavirus pandemic.[ix]

In 2019, Australia conducted a Digital Platforms Enquiry, recognising that Big Tech firms have resulted in a loss of advertising revenues for local media outlets. Social media companies are now required to pay for news content shared on their network. [x]

5.3

Privacy

Individual & Collective Rights

Individual data rights like the right to access data and to correct it have now become commonplace. These have been included in almost all privacy laws, including the Indian data protection bill.[234] These laws alone are likely to be insufficient because they rely on informed consent. Research has pointed out that informed consent is difficult in real-life settings due to low levels of literacy and education, the legalese of privacy policies, consent fatigue and ubiquitous data collection.[235] An individual rights-based framework also places an undue onus on users to protect themselves, notice misuse and seek redressal. It is unclear whether people will have the information, awareness, or capacity to take such measures.

Consent-based models should therefore be supplemented with accountability-based models. The latter holds institutions accountable for what they do with individual data and any resultant harm such as financial loss, reputational damage, discrimination and manipulation of choice.[236]

While these are typically incorporated in modern data privacy laws, their efficacy is limited by weak enforcement or wide exemptions.[237] Therefore, we need a strong, independent and accountable Data Protection Authority, with a meaningful role for civil society.

Since an individual might find exercising these laws overwhelming, a broader set of collective rights is also needed. This will allow groups of people to determine how data can be collected, used and monetized—thus enabling a collective determination of the goals and boundaries of the global data market.[238] Collective rights may coalesce on issues like restrictions on mass surveillance and profiling for discriminatory purposes that are fundamental to the health of societies and markets. They help balance the power asymmetry between individuals and institutions, and strive for a just and equitable distribution of data gains.[239] More research is needed on how these collective rights can be made operational.

The California Consumer Protection Act (CCPA) establishes new norms for company accountability. Companies have to make a toll-free phone number and website address available to customers to make information requests. Californians can also opt out of the selling of their personal information. To reinforce this right, businesses have to provide a clear link on their homepage titled ‘Do Not Sell My Personal Information’ that enables the consumer to opt out.[xi]

Multiple class action lawsuits have been filed against companies for violating provisions of California’s new data protection law, the CCPA. Amazon’s Ring, for example, was taken to court for sharing consumer data with third parties without obtaining consent.[xii]

Data Stewardship

In theory, data stewardship models allow users to maintain control over their data and have a collective say in how data is used, while allowing data to also be used for public good.[240] Data stewards decide who has access to data, under what conditions and who can benefit from it. A number of cities, governments and organizations have begun experimenting with data stewardship models.[241] To make these models succeed, we need frameworks to establish trust and accountability and engage the community in determining what constitutes a fair exchange of data. Moreover, these models need to address issues arising from unequal power and representation that other such 'common resource' models are also prone to.

Another problem with data stewardship models is that the range of possible harms is not obvious or even visible to the affected people in many cases.[242] This, once again reinforces the inadequacy of consent based models and need for accountability based models. Therefore, noted academic S. McDonald argues that data stewardship models offer a credible legal container for experimenting with new approaches.[243] They don't fully solve the privacy problem, but do establish a preliminary set of duties and obligations for institutions that use data.

Google-owned Sidewalk Labs sought to develop a data trust as part of its proposal for an urban revitalization project in downtown Toronto. However, a lack of transparency undermined the project. It represents a cautionary tale about the need for meaningful public consultation, the independence of trustees and the structure of data trusts. [xiii]

Privacy-respecting business models

The business models of many Big Tech firms are often in tension with data privacy.[244]

Many commentators have called for alternatives to Big Tech companies' data-intensive, micro-targeted, advertising-dependent business model.[245] One such alternative is a subscription-based model. For example, EU antitrust commissioner Margrethe Vestager suggested, 'I would like to have a Facebook in which I pay a fee each month, but I would have no tracking and advertising and the full benefits of privacy.'[246] Such subscription-based models might make commercial sense; there is very little research on the effectiveness of targeted digital ads on free platforms.[247]

If a full pivot to subscription models is infeasible, Big Tech firms should develop less privacy-intrusive forms of advertising. For example, search engine DuckDuckGo that uses contextual advertising has been making a profit since 2014, while usage continues to grow steadily.[248] Similarly, the New York Times recently shifted its advertising model to comply with the GDPR. It now focuses on contextual advertising and geographical targeting, but has not seen a significant drop in revenue.[249] For these less-intrusive models to become sustainable, privacy regulations need to be supplemented with pro-competition approaches.[250]

German regulators ruled that Facebook will have to stop automatically collecting and combining data from subsidiaries like Instagram and WhatsApp. Instead, it needs to give German users a choice. Such a step prevents companies from building comprehensive user profiles for targeted advertising. Facebook will also be required to also stop linking data from third-party websites or using pixel tracking technologies. [xiv]

5.4 Sovereign Interests

Build state, market and R&D capacity

Improving state, market and R&D capacity in India are important prerequisites for encouraging home-grown tech entrepreneurship and for minimizing the negative consequences of Big Tech firms. As a first step, we need to invest in the analog components of the digital economy—in education, research and other social infrastructure. Policies that ensure affordable, equitable and reliable connectivity will help increase digital inclusion.[251] To help domestic entrepreneurs take advantage of India's digital dividend, we need better policies to boost entrepreneurship, build local and regional platforms, while enabling existing enterprises to take advantage of digital technologies.[252] To manage the downsides of tech, we need better regulatory capacity to both anticipate and alleviate new challenges in the digital economy. These include consumer welfare, data protection and intellectual property.[253] Concurrently, India needs to build cyber security talent and infrastructure to deal with cyber-crime.[254]

European countries, such as France and Germany, are working toward establishing a sovereign European data infrastructure, including data warehouses, data pooling, their own domestic platforms and pan European cloud solutions. Germany also requires certain types of telecommunications metadata to be stored locally for law enforcement purposes. The German Commercial Code requires companies to store accounting data and documents locally. The key to their success is the existence of a strong public oversight mechanism. [xv]

Latin America, Peru, and Uruguay have moved towards imposing digital taxes. It changed the definition of income considered to be of Peruvian origin, to include payments made abroad for digital services provided locally. Uruguay introduced a law in 2017 for determining the share of income of digital platforms that should be of Uruguayan origin.[xvi]

Equitable Taxation

An OECD report from 2018 identified three main aspects of digitalized business that have significant implications for taxation—a) possibility to scale across borders; b) heavy reliance on intangible assets and c) user contribution to economic value through the provision of data. There is currently a mismatch between the data, the value that is created and where profits are taxed.

Governments and commentators from developing countries argue that a fair taxation system would tax Big Tech firms at the point of sale, rather than profit.[255] This would reduce the latter's ability to offshore profits to tax havens like Ireland.

To this end, India had already introduced, in 2016, an equalization levy of 6% on digital transactions of more than $1500.[256] The Finance Act 2020, expanded the levy, to include e-commerce services at a rate of 2%.[257] Moreover, the Indian government is currently looking to set a revenue threshold of $2 million and a limit of 500,000 users above which non-resident technology companies such as Google, Facebook and Twitter will have to pay direct taxes on profits earned locally.[258] These limits are part of the 'Significant Economic Presence' (SEP) [259] concept that was passed under the 2020 Finance Act, although the payment of the levy may be deferred to September 2020.[260]

Better cross border data flows

Managing the flow of data across borders is a complex issue. On one hand, cross border data flows can fuel innovation and efficiency globally. On the other hand, they lead to complex questions related to national security, law enforcement and the ownership of data.

Data localization and limiting cross-border data flows is a policy pathway that is currently being considered in India.[261] Stakeholders arguing for data localization view this measure as a remedy for 'data colonialism' by western companies and governments.[262] They argue that it will boost domestic innovation, enable better law enforcement and protect against foreign surveillance.[263] However, recent studies argue that there is little evidence of the economic benefits that could result from data localization.[264] More research is needed on how best to manage data flows to serve these multiple functions.

New approaches are being explored to regulate cross border data flows based on different policy objectives. OECD has suggested improving interoperability between global data protection frameworks and strengthening co-operation among privacy enforcement authorities. Japan, as the host of the G20 summit in 2019, introduced a concept known as 'Data Free Flow with Trust'. The concept proposed a need for betterment of trust through protection of personal information, intellectual property and cybersecurity; this necessitates that legal frameworks, both domestic and international, are respected in order to facilitate this free flow of data. [xvii]

5.5

A Graded Approach To Regulation

Not all challenges with Big Tech companies are equally complex, nor are all policy pathways equally difficult to implement. Trying to solve the most complex issues first might delay other, quicker fixes.

Therefore, we need to adopt a graded approach to regulation. We see three sets of solutions, which need varying levels of consensus and coordination. These need not be done sequentially and are only meant to provide an approach to think about the policy pathways. Moreover, some ideas (e.g. data stewardship) need space for policy experimentation and longer-term, iterative strategies.

Regulation 1.0:

Some policy pathways associated with Big Tech companies already have a fair degree of consensus on what needs to be done. The main issue is a lack of political will or difficulties with implementation.

These pathways can be driven by a single entity, acting in coordination with others in the ecosystem. Regulating mergers and acquisitions is one such example—the CCI is already considering ways to update competition policy for the digital economy.[265] Similarly, there is consensus on the need for greater transparency from social media platforms—whether for content moderation or political advertising.[266] Big Tech firms can proactively take these steps themselves.

Regulation 2.0:

Other policy pathways are much more contested, with stakeholders approaching the issue with different interests and values. These changes require a structured consultation process, where different stakeholders—Government, Big Tech companies, civil society and others—sit together and try to find a middle ground. The conversation around privacy is a good example—people and organizations attach different degrees of importance to it and disagree about when it should be limited in pursuit of other societal objectives. Similarly, regulating the informational control asserted by Big Tech firms could impinge upon the fundamental human right of free speech. For example, some countries have been calling for backdoors to encryption and improved traceability on social media to help law enforcement.[267] This could have implications on privacy and freedom of expression. Moreover, any undue haste might result in regulations that other stakeholders find difficult to enforce.

Regulation 3.0:

These pathways require international policy coordination and are therefore quite complex. Examples include cross-border data flows and taxation of Big Tech firms. Any unilateral moves are likely to lead to similar or retaliatory measures from other countries that could threaten global digital growth.[268] These pathways therefore require India to participate in global forums to build consensus among other countries that face similar challenges. Any fundamental changes to the structure of Big Tech firms, such as interoperability fall in this category, since these have global ramifications for them.

Ultimately, choosing between these policy pathways is a matter of competing public values, not questions of right or wrong, nor a matter that can be resolved with more evidence alone.

5.6

Conclusion: Principles For Competing Values

The above sections provided a range of policy pathways for addressing the challenges associated with Big Tech companies. Almost all pathways require balancing between competing priorities and interests. Such balancing requires discussions on foundational questions such as the nature of data, whether and how it can be collected and used, by whom and to serve what ends. It also raises questions about the extent of human self-determination; the relationship between state and corporations; as well as the limits of market liberalism.

Ultimately, choosing between these policy pathways is a matter of competing public values, not questions of right or wrong, or a matter that can be resolved with more evidence alone.

We need a normative framework that can help steer between competing public values and guide India's digital economy and society. Values are not themselves detailed guidelines for action, but a way to evaluate various action policies.

People-first

The needs of people and society may not always align with innovation trajectories. Innovation needs to be people-first and needs to prioritize their agency, material well-being and autonomy, along with the values of democracy. When applied to the context Big Tech, this could imply incentivizing the development of privacy protecting business models.

Regulation for Innovation

Regulation may be required to ensure that innovation is aligned with social trajectories. The regulatory models may vary, including self-regulation, co-regulation and command-and-control regulation. In the context of Big Tech, this could imply updating competition policy or mandating platform interoperability.

Accountability & Transparency

Technology affects our society, markets and democracy, in inherently unpredictable ways. Therefore, we need accountability and transparency to ensure a vibrant public discussion on the role of technology. Applied to Big Tech, this could imply mandating algorithmic audits.

Protect by Default

There is no neutral user and the same technology affects different demographic groups in different ways. To ensure the well-being of each individual, technology should protect its users by default. In terms of Big Tech, this could imply establishing collective data rights and developing data stewardship models.

Build collective resilience

Technology does not exist in a void and enters society that is already complex. Society and communities need to be strengthened to collectively maximize the benefits and minimize the harms of technology. In terms of Big Tech, this could imply investing in regulatory capacity and media literacy.

CHAPTER

Epilogue: The Covid-19 Moment For Big Tech

The Covid-19 pandemic has plunged the world into a crisis of unprecedented proportions. Countries like India are faced with not only a health crisis, but also economic and humanitarian crises. Economies, businesses, and communities will take a long time to recover, even by the most generous estimates.[269]

While it is too early to predict how Big Tech companies will fare, the evidence seems to suggest that their influence over markets and in our everyday life will increase further.[270] They have the financial reserves to weather the crisis and a large user base that continues to be dependent on their products and services. Big Tech companies are also emerging as key contributors in managing various aspects of the crisis. An increased role in the Covid-19 pandemic is thus likely to amplify the influence of Big Tech companies. This section uses the framework identified in Chapter 4 to discuss the Covid-19 moment for Big Tech.

Market power

Many businesses across the globe, including technology companies, are struggling with cash reserves to sustain through the economic fallout of the crisis.[271] Some have been forced to lay-off staff to conserve cash.[272] In contrast, Google's parent company Alphabet still had $117 billion on hand at the end of March, while Facebook had more than $60 billion—sums greater than the GDP of several smaller nations—to help them weather the storm.[273] A recent report from CNBC shows that while Facebook, Google and Apple all reported a drop in sales in March, the first few weeks of April already showed signs of recovery.[274] Rather than downsizing, both Facebook and Google have publicly stated that they are looking to expand their teams and are already considering new acquisitions.[275] Similarly, Amazon is considering adding an additional 100,000 employees in America to keep pace with increased consumer demand.[276]

Moreover, the crisis presents new opportunities for technology companies because consumers are seeking contactless, digital, solutions across all domains of economic and social life.[277] Big Tech companies are well poised to capitalize on these opportunities because they have data intelligence, strong network effects and a ready playbook of horizontal and vertical integration through mergers and acquisitions. Amazon, for example launched its food delivery service to meet customer demands during the pandemic.[278] Even other companies that are looking to fast track their digital transformation are increasingly relying on Big Tech cloud infrastructure and digital tools to stay afloat. The market power of Big Tech firms is thus likely to increase and with it, so will concerns about their monopolistic practices.

Information Gateway

Big Tech companies' role as information gateways for a large part of the world's population has also increased with the pandemic. Both Google and Facebook, for example, have reported an increase in the amount of time people spend using their services.[279] Even Governments are using Facebook to live broadcast public messages and engage with their citizenry.[280]

On one hand, Big Tech companies seem eager to act as responsible informational gateways. Big Tech companies have ramped up efforts to contain the circulation of health and other misinformation on their platforms.[281] Google has also pledged $250 million in 'ad-grants' for agencies like the World Health Organization to share public health messages.[282] On the other hand, their role as informational gateways continues to give them inordinate influence in determining what information people are able to access. A recent report in *Politco*, for example, draws attention to how Google's implementation of advertising bans related to the Coronavirus pandemic, under a policy on 'sensitive' topics, ended up blocking government public service announcements.[283] Their role as informational gateways has become even more important in the context of a further decline of traditional media companies, who were already struggling due to the decline in ad-revenue.[284]

Privacy

As businesses, schools, hospitals and entertainment move online, much of this activity is enabled by Big Tech products and services. Big Tech is also enhancing its data intelligence through new users and acquisitions—Google, for example, said that its Google's Meet teleconferencing service adds about about 3 million users per day. [285]

However, the reliance on, and expansion of Big Tech products and services will also result in an increase in their capacities for collecting, analyzing, and monetizing data. This may result in new challenges for the protection of individual and group privacy, particularly as governments and citizens are also more willing to forgo privacy for public health and safety, or other essential services. The European Union, for example, is revisiting its data strategy, concerned that it might bar companies from sharing public health data.[286] Google and Apple's contact tracing tool is seen as more privacy-protecting than the digital tools being used in some countries, though privacy experts warn that it might still reveal sensitive personal information.[287]

Sovereign interests

Governments are also increasingly looking to these technology giants for help in managing the pandemic. For example, many countries are considering replacing their own contact tracing for the solution provided by Google and Apple.[288] In China too, Big Tech companies such as AliBaba and Tencent are working closely with the government to aid in tracking and assessing citizens for contagion risk.[289] In the US, the White House reached out to Google, Microsoft and IBM, even before measures such as shelter-in-place were announced in several states.[290] Similarly, the state of New York recently turned to Google's former CEO Eric Schmidt to help reimagine a post-pandemic technological vision for the city.[291]

It is encouraging to see the private and public sector working together to overcome the crisis. However, a greater dependence on private entities to meet state objectives raises further questions on state capacity, sovereign independence and democratic accountability. For example, while the Apple-Google partnership to provide privacy-protecting software for contact tracing has been lauded by many, European governments have also noted that it reduces their ability to make independent decisions about how best to respond to the pandemic. Governments are having to play by Google and Apple's software usage rules (one application per country) and are reportedly facing difficulties in being able to connect the dots between contacts and carriers.[292]

The prominent role played by Big Tech companies in the pandemic is being mirrored in India as well. Amazon and Flipkart, for instance, have mobilized existing infrastructure to deliver essential goods during the lockdown.[293] The Indian government has also launched a chatbot on WhatsApp to provide access to an emergency helpline and Covid-19 information.[294] Google Maps, in partnership with MyGov and the Smart Cities Mission team, has also adapted maps to surface night shelters and food shelters in at least 30 cities in India.[295] Amazon has set up Amazon Pay for donations, through which users can contribute to the PM-CARES fund and other non-profits via UPI.[296] Data collected through the Aarogya Setu app is currently stored on Amazon's cloud computing service, AWS.[297]

Reliance Jio is also expanding its business offerings in line with consumer needs during the pandemic, with the roll out of JioMart. While many businesses are reeling under the effects of the economic downturn, Reliance Jio has been able to attract a flurry of global investments. These investments are likely to help Reliance Jio have a significant presence across the various levels of the consumer tech stack, from 5G technology equipment to, device hardware and software, to cloud infrastructure. [298]

The current crisis and its fall-out is likely to result in the growth of Big Tech companies' market and civic power. It might give them greater influence in shaping technology and society trajectories in the post pandemic world. This lends further credence to the central argument of this report. Big Tech brings a range of benefits to citizens, businesses and governments, particularly in a developing country like India. But, as the power and influence of Big Tech grows, it is even more urgent to pursue policy pathways that prioritize values of individual and collective autonomy, while enabling greater democratic accountability.

GLOSSARY

Aadhaar
A 12-digit biometric-based identification number issued by Unique Identification Authority of India to the resident of India.

Alternative Credit Scoring
Credit scores are calculated based on data that isn't typically tracked by one of the three major credit bureaus, such as income and payments for utilities, rent, or even subscription services. It also takes into account non-financial details like driving records and employment history.

Algorithm
A mathematical process to solve a problem using a finite number of steps. In computation, an algorithm is a finite sequence of well-defined, computer-implementable instructions, that defines not just what needs to be done but how to do it.

Algorithmic Amplification
It refers to the phenomenon when, due to existing biases within an algorithm, some content receives wider circulation and visibility as opposed to other content.

Algorithmic auditing
A collection of techniques for testing whether an intelligent machine has blind spots or biases.

Attention economy
A marketing perspective which assigns value according to something's capacity to attract 'eyeballs' in a media-saturated, information-rich world.

Behavioural futures market
Coined by Harvard professor Shoshana Zuboff, it refers to a market which trades in prediction products i.e. using behavioural data to create prediction products which anticipate and predict a user's future course of action.

Behavioural Surplus
Also coined by Harvard professor Shoshana Zuboff, it refers to data that emerges as a by-product of a user's interaction with digital systems, such as the number of page views of a particular website by a user, which can then be leveraged for commercial benefit.

Consent Fatigue
A devaluation of consent, as a result a user having to peruse through too many terms and conditions agreements and consent notices.

Content moderation
It is the practice of monitoring and applying a predetermined set of rules and guidelines to user-generated submissions to determine if the communication (a post, in particular) is permissible or not.

Contextual Advertising
Advertising on a website that is relevant to the page's content. It does not require user data to target advertisements.

Cryptocurrency
Refers to a digital or virtual currency designed to work as a medium of exchange. It uses cryptography to secure and verify transactions as well as to control the creation of new units of a particular cryptocurrency.

Data colonisation
A concept which refers to the combination of predatory extractive practices of historical colonialism with the abstract quantification methods of computing, relying on the extraction of data.

Data Intelligence
It is the analysis of various forms of data in such a way that it can be used by companies to expand their services or investments. It can also refer to companies' use of internal data to analyze their own operations or workforce to make better decisions in the future.

Data Localization
The act of storing data on any device that is physically present within the borders of a specific country where the data was generated. Free flow of digital data, especially data which could impact government operations or operations in a region, is restricted by some governments.

GLOSSARY

Data Stewardship
Data stewardship refers to the management and oversight of an organization's or communities' data assets that not only oversee access to data, but the conditions under which data can be accessed and to whose benefit. It is an approach that formalizes accountability for managing information resources on behalf of others and for the best interests of the organization.

Digital colonialism
A conceptual term which refers to the US multinationals' exercise of imperial control at the architecture level of the digital ecosystem: software, hardware and network connectivity, through the use of proprietary software, corporate clouds, and centralized internet services, in countries from the global south.

Digital infrastructure
Refers to foundational services that are necessary to the information technology capabilities of a nation, region, city or organization. These can be purely digital, where each component of the infrastructure is digital, or hybrid infrastructures, which would include traditional physical infrastructures that include added digital components.

Flow-based lending
In contrast to loans offered against assets, flow based lending refers to loans backed by cash flows of a company or an individual.

India Enterprise Architecture (IndEA)
E-Governance standard in India, notified by the Ministry of Electronics and Information Technology (MeitY) as of October 2018. It is a framework that enables the development and implementation of Enterprise Architectures independently and in parallel by all governments and their agencies across India, conforming to the same models and standards.

Informational Infrastructure
Refers to the communications networks and associated software that support interaction among people and organizations and provide access to information. It is useful as a collective term for present networks (i.e. the Internet) and likely future facilities.

Market Power
Traditionally, market power has been defined as the ability of a firm to profitably raise the price of a product or service over marginal cost. However, since in the digital economy many products and services are provided for free, market power is indicated by strong network effects and ability of companies to generate high switching costs as a result of network effects and also cause entry barriers for other players in the market.

Media Literacy
It encompasses the practices that allow people to access, critically evaluate, and create or manipulate any type of media.

Misinformation
The term is used to refer to misleading information created or disseminated without manipulative or malicious intent.

Multi-sided platforms
A multi-sided platform has (a) two or more groups of customers; (b) who need each other in some way; (c) but who cannot capture the value from their mutual attraction on their own; and (d) rely on the catalyst to facilitate value creating interactions between them.

Network Effects
Network effects are a phenomenon whereby an increase in participants or users increase the value of a good or a service. Positive network effects accrue when more usage of a product or service by any users, increases the product or service's value for other users.

Platforms
Intermediary digital infrastructures that enable different user groups - customers, advertisers, service providers, producers, suppliers, and even physical objects to interact.

Targeted Advertising
It is an advertisement technique where advertisements are placed in specific areas of the screen to increase visibility and "clickability" or to give tailor-made ads based on the user's past behaviors and preferences.

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