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India's platform economy and emerging regulatory challenges

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India's Platform Economy and Emerging Regulatory Challenges

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Abstract

The phenomenal rise of the platform economy has reshaped how economies operate across the world. The importance of digital platforms has never been more evident than in combatting the ongoing corona virus (Covid-19) pandemic. Even with the threat of a global recession looming large, technology companies are witnessing a surge in demand for their services. Platforms distinguish themselves from traditional markets by demonstrating speed and scale of innovation and fostering efficient and productive interaction between buyers and sellers. Enterprises using platform-based business models have expanded beyond social media, travel and entertainment to sectors like financial services, healthcare, logistics and transportation. With the objective of building evidence for policy-making in this sector, this study undertakes an in-depth analysis of the impact generated by the platform economy in India, by estimating consumer surplus from the use of platforms, analysing its impact on traditional businesses either by transformation or disruption. The estimated consumer surplus is Rs. 438.75 per individual per month, amounting to a collective annual surplus of Rs. 3620 billion for India. At current exchange rates this would amount to USD 47 billion.

The growth of platforms has also been accompanied by global concern against their anti-competitive practices, the spread of fake news and harmful content, political bias, etc. The paper discusses regulatory changes and areas of concern for market competition, labour and employment, fake news and misinformation, consumer protection, counterfeit goods and data privacy in India.

Keywords: *Platform Economy, Consumer Surplus, Regulation, Disruption*

JEL Classification: *L22, L38, L44*

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India's Platform Economy and Emerging Regulatory Challenges

Rajat Kathuria, Mansi Kedia and Kaushambi Bagchi

1. Introduction

The rising importance of digital platforms has never been more evident than during the Covid-19 pandemic. Even with the threat of a global recession looming large, technology companies are witnessing a surge in demand for their services. For instance, the education sector in India has seen an unprecedented rise in online tutoring. BYJU's has seen a 200 percent increase in the number of new students using its services¹. In fact, the pandemic may have permanently altered the way we transact. According to industry sources, there has been a consistent rise in e-commerce and digital platforms over the last year. Social media usage increased from 150 minutes per day before the first Covid-19 lockdown in March 2020, to 280 minutes per day.² Zoom's web-based conferencing services found itself catering to a market opportunity created by the lockdown to facilitate meetings while working from home, for online classes and for family interactions in times of social isolation.³ The pandemic has not only highlighted the transformational ability of digital platforms but also the extent to which digitisation of traditional industries is possible. The refrain of the internet being the backbone of modern economies has never been more literal.

However, the unbridled rise of tech giants has led to a global backlash against their alleged perpetration of fake news and harmful content, political bias, anti-competitive conduct, tax evasion, etc. Fair Tax Mark, a British organisation that certifies businesses for good tax conduct, assessed the tax payments of the "Silicon Six" – Facebook, Amazon, Apple, Google, Netflix, and Microsoft, and found that over the decade 2010 to 2019, the gap between the Silicon Six's tax provisions and the taxes they actually paid reached \$100.2 billion⁴. Big-tech is also on the hit list of anti-trust regulators. Europe has been the toughest watchdog - Google has been fined over \$9 billion since 2017 for anti-trust violations⁵. Amazon and Apple have been accused of favouring their own products on platforms which are also used by other third-party sellers.⁶ Closer to home, the Competition Commission of India (CCI) in its market study on e-commerce⁷ raised concerns over industry practices that may hinder the realisation of competition in the future. These included the lack of platform neutrality, unfair and exclusive contracts, price parity restrictions and deep discounts. These are tumultuous times for an industry that is still evolving but has clearly disrupted traditional businesses. Must we throw this proverbial baby out with the bath water?

¹ <https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/>

² <https://www.businesstoday.in/technology/news/coronavirus-87-percent-increase-in-social-media-usage-amid-lockdown-indians-spend-4-hours-on-facebook-whatsapp/story/399571.html>

³ <https://gadgets.ndtv.com/apps/news/zoom-houseparty-marco-polo-video-calling-apps-rise-amid-coronavirus-outbreak-report-2201726>

⁴ <https://fairtaxmark.net/wp-content/uploads/2019/12/Silicon-Six-Report-5-12-19.pdf>

⁵ <https://www.wired.com/story/eu-hits-google-third-billion-dollar-fine-so-what/>

⁶ <https://www.nytimes.com/2019/09/08/technology/antitrust-amazon-apple-facebook-google.html>

⁷ Market Study on E-commerce in India, CCI (2020)

Markets which used to be the site of exchanges and interactions between buyers and sellers, regulated by what Adam Smith termed the “*invisible hand*”, have been transformed by platforms where interactions between economic agents are intermediated by algorithms.⁸ Platforms distinguish themselves from traditional markets by demonstrating speed and scale of innovation and fostering efficient and productive interaction between buyers and sellers.⁹ However, legal and economic constructs are still evolving for the platform economy. Regulatory responses suited to traditional industries don’t necessarily apply to platforms. For instance, markets in which digital platforms operate are prone to tipping i.e., falling into a cycle that leads to a single dominant firm and high degrees of market concentration. While there is no single characteristic that makes a difference, a combination of several factors at large scales, warrants a relook at market structure and market power analysis.

Digital platforms are two-sided markets.¹⁰ A two-sided market exists when both buyers and sellers meet to exchange a product or service. The concept of two-sided markets is borrowed from the theories of network externalities and multi-product pricing.¹¹ The presence of network effects implies that platforms become increasingly valuable as more users are attracted to it, creating a self-nourishing and self-perpetuating cycle.¹² Compensation for platforms comes from fees paid by buyers and sellers for using the platform and also from a part of the transactions that the platform enables.¹³ The usage or variable charges levied on end-users impact the willingness of both sides of the market to trade with each other.¹⁴ In two-sided markets, the focus is on the price structure rather than the price levels.

Digital platforms benefit from increasing returns to scale, economies of scope, low marginal and distribution costs and global reach.¹⁵ In traditional markets serving an additional customer entails physical distribution costs. However, in digital markets, particularly those that provide information services, production implies fixed costs but negligible variable costs. This enables digital platforms to expand rapidly. Platforms collect user data and deploy machine learning technologies to gauge consumers’ tastes and preferences and improve the quality of their services. Bigger platforms have a significant advantage over smaller firms as predictive power of algorithmic technologies work better on large datasets. Consequently, larger platforms are able to generate higher revenue by offering targeted advertising services.¹⁶

⁸ Cohen, Julie E. "Law for the platform economy." *UCDL Rev.* 51 (2017): 133.

⁹ Ibid

¹⁰ Scott Morton, Fiona, P. Bouvier, Al Ezrachi, B. Jullien, R. Katz, G. Kimmelman, A. D. Melamed, and J. Morgenstern. "Committee for the study of digital platforms: Market structure and antitrust subcommittee report." *Chicago: Stigler Center for the Study of the Economy and the State, University of Chicago Booth School of Business* (2019).

¹¹ Ibid

¹² Ibid

¹³ Li, Shengli, Yipeng Liu, and Subhajyoti Bandyopadhyay. "Network effects in online two-sided market platforms: A research note." *Decision Support Systems* 49, no. 2 (2010): 245-249.

¹⁴ Ibid

¹⁵ Op cit, 12

¹⁶ Greenleaf, Graham, Anna Johnston, Bruce Arnold, David F. Lindsay, Roger Clarke, and Elizabeth Coombs. "Digital platforms: The need to restrict surveillance capitalism (Australian Privacy Foundation submission

In order to build evidence for policy making on digital platforms, this paper seeks to estimate the consumer welfare generated by the platform economy in India as a measure of impact, understand its implications on traditional businesses either by transformation or disruption and identify regulatory challenges that have emerged from the unprecedented rise of platforms globally, as well as in India. For the purpose of this paper, we limit the analysis of platforms to include two/ multi-sided markets (business as a platform that has at least two distinct user groups), businesses that demonstrate direct and indirect network effects (value of the business is driven by the number of users in the same user group or the number of users in a different user group), businesses that are driven by user (not consumers necessarily) generated content and have an internet-based delivery model. These largely fall into the category of transaction platforms, referred to as multi-sided markets or exchange platforms in the literature¹⁷. Network effects are at the centre of value creation for transactions platforms. Examples include marketplaces for on-demand services (e.g. e-commerce, travel, lifestyle, cab hailing, navigation, entertainment, etc.), social networking and communication services, search services, etc. The scoping excludes innovation platforms such as cloud computing platforms, and operating systems that provide technological building blocks for the development of services and products¹⁸. Majority of the research on innovation platforms adopts an engineering or information systems perspective, while transactions platforms adopt a market-based perspective based on principles of economics that include network effects, economies of scale and scope, etc., which we examine in the paper.

2. The Platform Economy

Platforms are an important part of what is now called the third globalisation, a new paradigm for globalisation itself¹⁹. They are driven by computable algorithms that are different in function and structure, provoking a profound economic reorganization of markets, work arrangements, and more fundamentally value creation in the economy²⁰. Platforms are not only disrupting existing business models such as retail and entertainment, but they have also become a channel for entirely new activities such as social media. The multidimensionality of platforms is reflected in how it has been labelled the creative economy, the gig economy, the sharing economy, the networked economy, on-demand economy, etc. However, none of these accurately sum up the digital platform phenomenon. Companies driving this trend include start-ups, internet giants as well as those belonging to traditional industries that are now embracing the digital ecosystem.

to the Australian Competition and Consumer Commission (ACCC)–Digital Platforms Inquiry–preliminary report." Available at SSRN (2019).

¹⁷ Koskinen, K. Bonina, C. and Eaton, B “Digital Platforms in the Global South: Foundations and Research Agenda” *Development Implications of Digital Economies* Paper No. 8 (2018)

¹⁸ *Ibid*

¹⁹ Kenney, M and Zysman, J. 2016, “The Rise of the Platform Economy”, *Issues in Science and Technology*, Vol XXXII No. 3 Available at <https://issues.org/the-rise-of-the-platform-economy/>

²⁰ Kenney, M. and Zysman, J. 2015, “Choosing a Future in the Platform Economy: The Implications and Consequences of Digital Platforms”, Kauffman Foundation New Entrepreneurial Growth Conference. Available at <https://brie.berkeley.edu/sites/default/files/platformeconomy2distributejune21.pdf>

A KPMG report (2018) pegged the global platform economy at \$7.18 trillion based on market valuations of 242 large platform companies, both public and private, that included super platforms (value over \$250,000 million), elite unicorn (value of \$25,000 million), Unicorn + (value of \$1000 million) and scale up (value over \$100 million). The collective valuation of super platforms, elite unicorns, unicorn plus and scale up platforms was estimated at USD 4.2 trillion, USD 1.4 trillion, USD 794 billion, and USD 23 billion respectively. These companies included internet and software services companies, retail/ e-commerce, social media, search, financial services, media, logistics and transportation.

Indians now download more apps than residents of any other country²¹. It is also home to over 350 million social media users²². The average Indian spends 17 hours on social media platforms each week, more than users in China and the United States. ‘Digital media and Entertainment’ is another fast growing sector, with an estimated market size of USD 23.34 billion in March 2019²³. E-commerce revenue is also estimated to be growing by more than 25 to 30 percent²⁴. The report by McKinsey on India’s Trillion Dollar Digital Economy in collaboration with the government, presented the vision for India’s digital ecosystem and estimated its potential contribution to sum up to USD 1 trillion by 2025, equivalent to 18 to 23 percent of India’s nominal GDP. The micro-level assessment of these impacts has been carried out in a few studies through surveys reflecting consumer preferences for platforms and digital content. For example, the 2019, Asia OTT Research Report found that 25 percent of the Indian respondents wanted to view OTT content for free while another 25 percent selected to pay a lower fee with limited ads. Almost 14 percent opted to pay a higher fee free from ads²⁵. BCG’s 2017 report titled ‘The New Indian: The Many Facets of a Changing Consumer’ tracked the online activity of 35 Indian consumers monitoring their online activities, including their spending, online and offline, across multiple categories over a period of five weeks. While the findings fed as input to companies on devising effective marketing strategies and business models, it also helped defy stereotypes. The study found eight categories of user behaviour which collectively characterized the Indian online user.

From data reported by Tracxn on funding and market valuation of Indian companies, we estimate that the cumulative funding received by 684 platform companies was USD 24.7 billion²⁶ in February 2020. The year 2021 has been very promising for start-up funding. Investors are estimated to have already contributed USD 30 billion into Indian tech start-ups as on October 2021²⁷. Literature on conventional growth multipliers for digital infrastructure suggests that this investment could lead to substantial gains for the economy through direct and indirect multiplier effects. For instance, ICRIER’s macroeconomic model, estimating the impact of investments in digital communications infrastructure in India, finds that a 10

²¹ <https://sannams4.com/digital-and-social-media-landscape-in-india/>

²² <https://www.talkwalker.com/blog/social-media-statistics-in-india>

²³ <https://www.ibef.org/industry/media-entertainment-india.aspx>

²⁴ <https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/digital-india-technology-to-transform-a-connected-nation#>

²⁵ <https://brandequity.economictimes.indiatimes.com/news/media/ott-content-25-indian-consumers-prefer-to-view-for-free/69827598>

²⁶ The data was extracted in February 2020

²⁷ Source Tracxn

percent increase in communications investment has the potential to deliver on average a 3.3 percent increase in India's GDP²⁸. These impacts manifest through four types of effects – (i) construction of the network and its impact (ii) spill-over benefits for enterprises (iii) impact of consumers and household income (iv) increase in consumer surplus²⁹. This macro approach becomes difficult to employ for the new generation of digital services that are mostly zero priced, and therefore not easily measurable³⁰. This has also raised questions on their valuation in the GDP. Professor Sir Charles Bean in his review of UK's economic statistics commented on the inability of national accounts to capture the complete transformation brought about by the digital revolution³¹. The gap between what is measured and what is valued increases as new digitized services are offered for free. The monetary value assigned to such free digital services has been used by researchers to construct an alternative to GDP, which they call GDP-B. These are not based on actual costs but on perceived benefits³².

2.1 Measuring the Impact of Digital Platforms

Consumers rarely spend additional money to use free services offered by a majority of digital platforms. To address this gap between measurement and value, emerging literature considers time spent on the internet to quantify the value of digital services. This is now referred to as the "The Attention Economy"³³. Recent studies use micro data on consumer demand to estimate welfare that such goods bring to the consumer. This is a departure from the macro approach using simultaneous equations popularised by the Roller- Waverman model (2001)³⁴.

Literature on measuring the value of unpriced services is based on both stated preferences and revealed preferences (those that are derived from market transactions)³⁵. In some of the earlier approaches to value the internet using time spent, Goolsbee and Klenow (2006) provided a simple model in which both expenditure and time contributed to consumption of

²⁸ Kathuria, R. *et al*, 2018. "Growth Dividends of Digital Communications" ICRIER and BIF. Available at https://icrier.org/pdf/Digital_Communications.pdf

²⁹ Impact of Broadband on the Economy, Broadband Series, International Telecommunication Union, April 2012 Available at https://www.itu.int/ITU-D/treg/broadband/ITU-BB-Reports_Impact-of-Broadband-on-the-Economy.pdf

³⁰ Brynjolfsson, E. and Hee Oh, J. 2012. "The Attention Economy: Measuring the Value of Free Digital Services on the Internet", Contribution to the Thirty Third International Conference on Information system, Orlando

³¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/507081/2904936_Bean_Review_Web_Accessible.pdf

³² Brynjolfsson, Erik, Collis, Avinash, and Eggers, Felix. "Using massive online choice experiments to measure changes in well-being." *Proceedings of the National Academy of Sciences* 116, no. 15 (2019): 7250-7255.

³³ Brynjolfsson, E. and Hee Oh, J. 2012. "The Attention Economy: Measuring the Value of Free Digital Services on the Internet", Contribution to the Thirty Third International Conference on Information system, Orlando

³⁴ Roller, L.H. and L. Waverman. 2001. "Telecommunications infrastructure and economic development: A simultaneous approach", *American Economic Review*, 91 (4): 909-923.

³⁵ Smith, V.K.1996. "Pricing What is Priceless: A Status Report on Non-Market Valuation of Environmental Resources"

the internet estimates consumer gains³⁶. Their model found that consumer gains from the internet could be more than \$3000 per year for the median person. A new framework adopted by Brynjolfsson and Joo Hee Oh (2012) extend the time and money-based model to incorporate multiple products with varying degrees of substitutability. The model also incorporates data on quality improvements of internet and estimate not only the opportunity cost of time but also the value of time saved due to quality improvements³⁷. Their model estimates the increase in consumer surplus created by free internet services to be over \$100 billion in the US. Some of the other important studies in this area include research by Varian (2006)³⁸, Bughin (2011)³⁹, Arnold et al (2017)⁴⁰, etc. In their most recent paper Brynjolfsson, Collis and Eggers (2019)⁴¹ use massive online choice experiments to measure changes in well-being through consumer surplus. Their survey participants received monetary compensation if they were willing to forego categories of internet services for predefined periods. The study found that their median user needed a compensation of about \$48 to forego Facebook for 1 month.

In this paper, we estimate consumer surplus of Indians using digital platforms. Data for this exercise was collected using a survey questionnaire⁴² from a sample of 1874 individuals in 11 Indian cities⁴³. The face-to-face survey was administered using Computer-Assisted Personal Interviewing (CAPI). Area cluster sampling was adopted to identify target respondents and eligibility of household members was based on a screener questionnaire. The gender composition of the survey (70 percent male) is in line with recent research findings from IAMAI which also finds that the number of monthly active female internet users is half of the male users⁴⁴. Most respondents belong to the age group of 24 – 30 years (24 percent), followed closely by the group of 18 – 23 years (20 percent). 58 percent of the respondents reported being working professionals. The following sub-sections highlight some trends and preferences in platform use as reported in the survey.

³⁶ Goolsbee, A. and Klenow, P. 2006. “Value Consumer Products by the Time Spent Using Them: An Application to the Internet”, NBER Working Paper Series, Working Paper 11995

³⁷ Brynjolfsson, E. and Hee Oh, J. 2012, “The Attention Economy: Measuring the Value of Free Digital Services on the Internet”, Contribution to the Thirty Third International Conference on Information system, Orlando

³⁸ Varian, H. 2006. “The Economics of Internet Search”, Technical Report, Google

³⁹ Bughin, J. 2011. “The Web’s €100 billion surplus”, McKinsey

⁴⁰ Arnold et al. 2017. “The Economic and Societal Value of Rich Interaction Applications(RIAs)”, WIK, available at https://www.wik.org/fileadmin/Studien/2017/CCIA_RIA_Report.pdf

⁴¹ Brynjolfsson, E., Collis, A. Eggers, F. 2019. “Using Massive Online Choice Experiments to Measure Changes in Well-Being”, PNAS

⁴² Please refer to Appendix 1 for the questionnaire

⁴³ The cities included Ahmedabad, Asansol, Bhubaneshwar, Chennai, Delhi, Guntur, Guwahati, Indore, Kolkata, Lucknow Mumbai

⁴⁴ <https://www.livemint.com/technology/tech-news/india-has-second-largest-population-of-monthly-active-internet-users-report-1569500591581.html>

2.2 Consumer Preferences for Platforms and Digital Content in India

2.2.1 Time Spent and Type of Platform

The survey recorded time spent on online platforms in terms of the number of hours spent weekly, for leisure and work across 17 different platform categories⁴⁵. Most respondents reported spending between 20 – 40 hours per week on platform-based activities. **The mean and median values for total number of hours spent on platforms are 33.9 hours and 31.3 hours respectively.** The mean value for reported number of hours spent on platforms for leisure and work are 21.5 hours and 12.4 hours, respectively. The corresponding median values are 19 hours and 12 hours, respectively. In terms of platform categories, *Search Services, Email, Instant Messaging, Social Media, E-Commerce, Fintech* and *Gaming* were the most popular categories, with more than 60 percent of the sample reporting the use of these platforms. The categories *E-Governance, Health, Education & Training* and *Dating/ Matchmaking* recorded the lowest number of users. Respondents reported spending the highest average weekly on *instant messaging* platforms, followed by *social media* and *gaming*. These findings are aligned with App Annie's 'The State of Mobile 2020' report which found that social media and communication apps had the highest share of time spent on mobile apps, followed by entertainment and gaming apps.^{46,47} Figure 2.2 illustrates the sample distribution by the average weekly time spent on leisure and work activities across the 17 platform categories. In general, respondents from non-metro cities reported lower number of hours spent on platforms in comparison to users from metros. However, emerging evidence on digital platform models suggest aggressive targeting of users in tier 2 and tier 3 cities. Platforms such as Ola Cabs⁴⁸, Zomato, Swiggy⁴⁹, Amazon, Flipkart etc.⁵⁰ are tailoring their products and services to the unique preferences of consumers from smaller cities.

⁴⁵ Search, Email, Instant Messaging, Video Conferencing, Social Media, App stores, E-governance services, E-Commerce, Transport & Navigation, Fintech, Food, Travel and Lifestyle, Education & Training, Health, Employment & Recruitment, Media & Entertainment, Dating/ Matchmaking and Gaming

⁴⁶ 'The State of Mobile 2020', App Annie (2020)

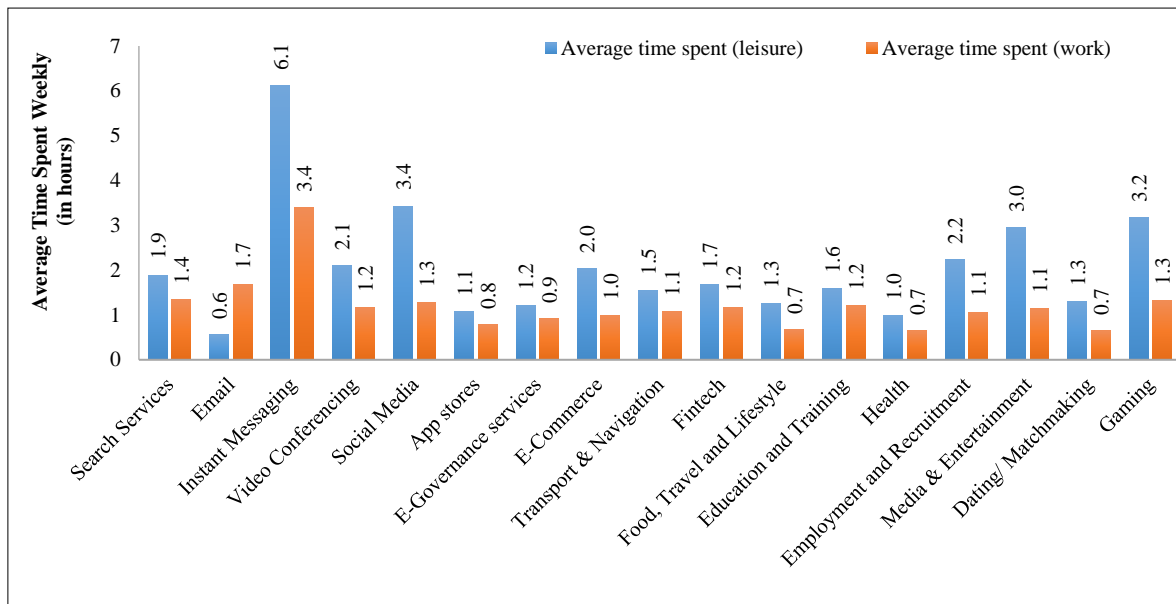
⁴⁷ <https://datareportal.com/reports/digital-2020-global-digital-overview>

⁴⁸ https://www.business-standard.com/article/companies/ola-s-outstation-service-grows-2x-tier-2-cities-contribute-the-most-120010701448_1.html

⁴⁹ <https://inc42.com/buzz/zomato-and-swiggy-fulfil-over-2-3rd-of-all-food-orders/>

⁵⁰ <https://economictimes.indiatimes.com/small-biz/sme-sector/the-kirana-is-a-technology-shop-too/articleshow/73320212.cms>

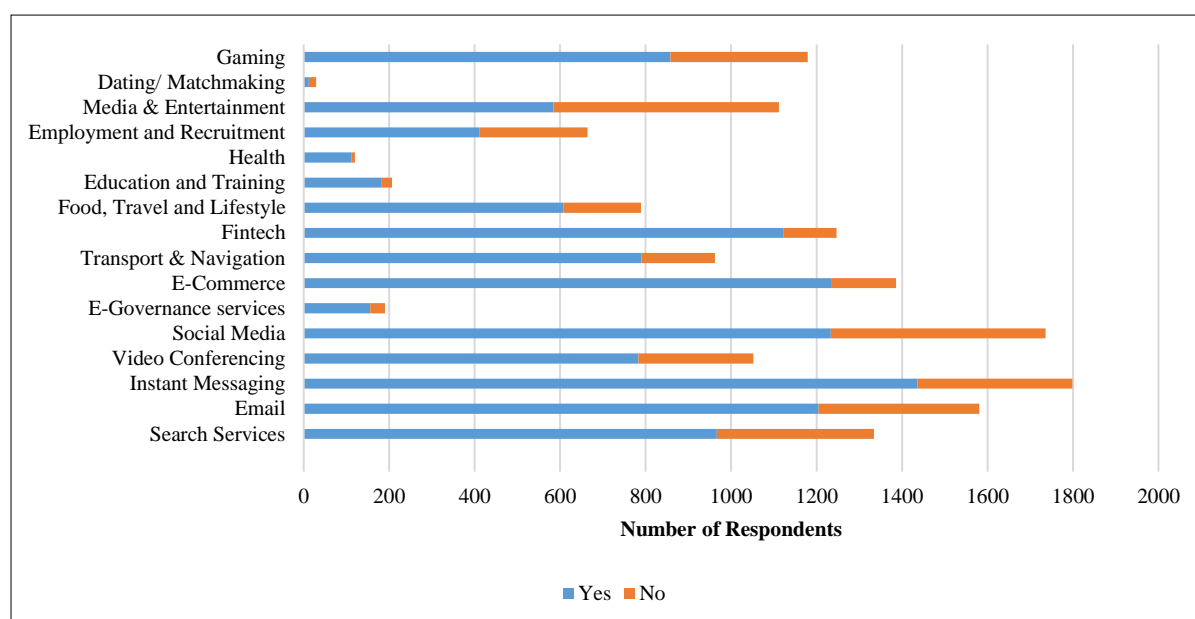
Figure 2.1: Sample Distribution of Average Time Spent Weekly on Leisure and Work across 17 Platform Categories



2.2.2 Digital Platforms versus Traditional Alternatives

The debate over substitutability versus complementarity of digital platforms and their traditional counterparts is still alive, and the survey suggests that it depends on a case-by-case basis. Traditional alternatives would mean using library services instead of search engines, visiting physical stores and malls instead of shopping online, face-to-face meetings instead of video conferencing, etc. In e-commerce, digital platforms score over traditional alternatives with respect to better access, better variety, and often better priced products. On the other hand, some consumers prefer buying from trusted sellers, the physical experience, and the overall convenience of offline retail. Many consumers fall somewhere in the middle, choosing both options. Survey responses on preference for traditional alternatives for different categories of platforms finds an overwhelming majority still preferring traditional alternatives, especially in the case of instant messaging, communication, and social media platforms. This explains how human interactions are still germane to societies and that digital platforms and their services are at best complementary to commercial and social engagements. The use of digital media, often for the lack of traditional alternatives to communicate, saw an overwhelming increase during the pandemic. However, technology is yet not proven to be a ubiquitous replacement for human interaction. For health, education and fintech platforms too, responses show a predominant preference for traditional alternatives.

Figure 2.2: Sample Distribution by the Use of Traditional Alternatives as Against Online Platforms for 17 Platform Categories



Despite continued preference for traditional alternatives, respondents also acknowledged the benefits conferred by digital platforms. Benefits were recorded in the form of (i) decrease in costs (ii) decrease in time spent and (iii) and overall value derived including efficiency, timeliness, quality, etc. In categories where some of these gains were reportedly higher included *transport and navigation*, *video conferencing* *e-commerce*, *e-mail*, and *media & entertainment*. The time and cost savings from the use of digital platforms as reported by respondents is summarised in Table 2.1. **The average time savings on account of platforms every week is 14 hours and the average overall money saved per week is Rs. 401.**

Table 2.1: Weekly Time and Cost Savings

Measure	Weekly Time Savings (in hours)	Weekly Cost Savings (in Rupees)				
		Overall	Discounts/ Cashbacks	Leisure/ ⁵¹ Non-work related	Work ⁵² related	Other ⁵³ sources
Range	68	2650	690	1180	910	450
Average	14	401	82	201	102	16
Median	10	200	40	110	0	0
Inter-quartile Range	14	550	120	280	150	10

⁵¹ For example, savings from cost of commuting to stores, cost of physically going to return products etc.

⁵² For example, savings from reduced travel costs by joining meetings on video conferencing, online advertising and marketing which reduces costs incurred from traditional advertising, reduced infrastructure costs etc.

⁵³ For example, reduced courier charges, subscriptions to newspapers and magazines, commissions to travel agents, movie ticket costs, tuition fees for private tuitions, buying textbooks, etc.

2.2.3 Advantages and Disadvantages of Using Online Platforms

The reported advantages from use of online platforms have been categorized into (i) *less time spent*, (ii) *less cost incurred* (iii) *more customization in products and services* (iv) *more choices* (v) *on-demand availability* and (vi) *the ability to do multiple tasks simultaneously*. Time and cost savings as well as the option of multi-tasking are the top three advantages reported by consumers. Accordingly, online discounts, cashback and convenience were found to be factors driving the use of online platforms. International consumer surveys on the use of online platforms also corroborate our findings that improved convenience and greater choice are the primary advantages to consumers from using such platforms.⁵⁴

Table 2.2: Average and Modal Ranks of Advantages of Using Online Platforms

Advantages	Average Rank	Modal Rank ⁵⁵
Less Time Spent	1.8	1
Less Cost Incurred	2.2	2
More Customization in Products and Services	3.1	3
More Choices	2.8	3
On-Demand Availability	3.2	3
Ability to do Multiple Tasks Simultaneously	2.8	1

Table 2.3: Average and Modal Ranks of Disadvantages of Using Online Platforms

Disadvantages	Average Rank	Modal Rank
Disproportionate Time Spent on Activities	2.0	1
Post Choice Dissatisfaction due to Innumerable Choices	2.1	2
Additional Cost on Online Subscriptions or Increased Consumption Expenditure	2.1	1
Questionable Reliability and Authenticity of Products and Services	2.1	2
Fake News and Misinformation	1.4	1
Others ⁵⁶	1.1	1

The highest ranked disadvantages are *disproportionate time spent on activities*, *additional cost on online subscriptions* and *fake news and misinformation*. Fake news spread rapidly through social networks owing to the ease of sharing and the reach of these sites.⁵⁷ A survey conducted by Statista found that 52 percent Indians accessed news via social media, particularly through Facebook and WhatsApp, and 44.6 percent were unaware of fact checking organisations.⁵⁸ Respondents also said that the ability to make bulk purchases and

⁵⁴ <https://www.oxera.com/wp-content/uploads/2018/07/The-benefits-of-online-platforms-main-findings-October-2015.pdf.pdf>

⁵⁵ We use modal rank to understand which rank was assigned to a particular advantage/ disadvantage by the maximum number of respondents.

⁵⁶ Other disadvantages of using online platforms as reported in the survey include internet connectivity issues and shipping charges.

⁵⁷ https://www.spglobal.com/marketintelligence/en/news-insights/trending/v8tkfkW3utUS7hdxF__fha2

⁵⁸ <https://www.statista.com/topics/5846/fake-news-in-india/>

the increased options on online platforms often led to higher spending and longer hours of browsing. These downsides are reflected in the rankings in Table 2.3. Policy responses to some of these disadvantages will be discussed in Section 4.

2.3 Estimating Consumer Surplus from Platform Use in India

We borrow Goolsbee and Klenow's (GK)⁵⁹ simple utility model to compute the consumer surplus from platform access in India. As is the case in GK, for the purpose of estimation, we consider only leisure time spent on platforms. Existing literature as well as survey findings report that the main cost of consumption in digital platforms is the amount of leisure time spent using the service. The utility function measures consumption in the form of both monetary expenditure as well time spent. Utility can be specified using the functional form in equation (1).

$$\theta(C_1^{\alpha_1} L_1^{1-\alpha_1})^{1-1/\sigma} + (1 - \theta)(C_0^{\alpha_0} L_0^{1-\alpha_0})^{1-1/\sigma} \dots\dots\dots (1)$$

where C_1 denotes money spent on the internet and platform subscriptions and L_1 denotes the proportion of leisure time spent on platforms. All other purchased goods and services we assume form a composite C_0 . L_0 is the time spent on the composite. θ measures the relative importance of platform services compared to the composite bundle and σ is the elasticity of substitution between the internet-enabled platforms bundle and the composite goods and services. Consumers maximize utility subject to the budget constraint expressed in equation (2)

$$P_1 C_1 + F_1 + P_0 C_0 = W(1 - L_1 - L_0) \dots\dots\dots (2)$$

Where W is the income and P_1 and P_0 are the monetary expenditures on platforms and the composite good respectively. F_1 is the cost of subscribing to the internet for the use of platforms. For non-subscription based platform services P_1 will be zero. Solving these equations for optimal allocations, and taking logs on both sides, we arrive at equation (3).⁶⁰ We use equation (3) in a simple regression to estimate the elasticity of substitution.

$$\ln\left[\frac{1-L_1}{L_1}\right] = \ln(A) + (\alpha_0 - \alpha_1)(\sigma - 1) \ln(W) + \sigma \ln\left(\frac{1-\theta}{\theta}\right) \dots\dots\dots (3)$$

$\frac{1-L_1}{L_1}$ denotes the time not spent on platforms relative to time spent on platforms. $\ln(A)$ is the constant across individuals. Therefore, equation 3 is essentially relative leisure time not spent on platforms regressed on income levels.

We first arrive at the time intensities for platform use and consumption of the composite good. Time intensities have been defined by GK as one minus the ratio of direct expenditure

⁵⁹ Goolsbee, A. and Klenow, P. 2006. "Value Consumer Products by the Time Spent Using Them: An Application to the Internet", NBER Working Paper Series, Working Paper 11995

⁶⁰ Technically in equation 3, the left hand side is approximately equal to the right hand side. Following GK, we use this equation for the regression

on the good to direct plus time expenditure on the good⁶¹. We take the value of number of hours worked in a week by an average individual in urban areas from the Periodic Labour Force Survey (July 2017 to June 2018). The reported value is 56.1 hours⁶². Accordingly, the non-sleep leisure hours⁶³ are 56 hours of which 21.4 hours on average are spent on digital platforms.⁶⁴ This is significantly higher than the 7.7 hours reported in GK's reference paper in 2006. For our sample, the average aggregated monthly expenditure on internet connections and platform subscriptions in Rs. 395. Using the estimates leaked from the 2017-18 Consumer Expenditure Survey, this is 13.6 percent of total consumption expenditure in urban areas⁶⁵. Instead, if we use our sample income values⁶⁶ and a marginal propensity to consume of 0.5⁶⁷, the estimate is 10.5 percent. The estimated hourly income for our sample is Rs. 134. Using these estimates, the time value of the composite good is 0.56 while that of digital platforms is 0.97. The corresponding numbers in GK are 0.38 and 1 respectively. It is no surprise that the time intensity of digital platforms is significantly higher than the composite good.

We use a basic regression with demographic controls to estimate equation 3 and the implied value of σ . The usable sample size is 1044 individuals across cities, age groups, gender, and income levels. Table 3.4 below provides the results of the estimated equation. The negative coefficient suggests that individuals with higher incomes are likely to spend more time on platforms. This result is not surprising for India. Digital literacy and access to the Internet as well as smartphones become visible at a certain threshold level of income. However, when incomes are very high and the opportunity cost of time spent on platforms increases substantially, these can become negatively related. Accordingly, the elasticity of substitution, estimated at 0.73 is relatively lower than that estimated in GK, where higher incomes relate negatively to time on the internet. Using the elasticity of substitution⁶⁸, the surplus can be estimated at 1.17 percent of full income, i.e., income plus value of leisure time. In absolute terms the surplus is Rs. 438.75 per individual per month. Converting this to an annual surplus with an estimated user base of 687.62 million platform users⁶⁹, this could mean a collective annual surplus of Rs. 3620 billion for India, at the upper end. At current exchange rates⁷⁰ this

⁶¹ $\alpha_x = P_x C_x / (P_x C_x + W L_x)$

⁶² In our calculations we round this off to 56 hours for ease of calculation.

⁶³ Assuming 8 hours of sleep per day

⁶⁴ We find outlier values where the total hours spent on digital platforms is higher than the total number of non-sleep leisure hours. These are included in reporting the average. But not in the model

⁶⁵ <https://thewire.in/economy/consumer-sending-fall-rural-demand-nso-report>

⁶⁶ The highest reporting is in the range of Rs. 0 to Rs. 30000 per month, this is higher than the reported urban per capita incomes as per MOPSI. <https://www.financialexpress.com/economy/indias-rural-urban-divide-village-worker-earns-less-than-half-of-city-peer/1792245/#:~:text=The%20government%20has%20compiled%20the,a%20question%20in%20Rajya%20Sabha>.

⁶⁷ We borrow from an independent exercise that estimates the marginal propensity to consume using national accounts from 2004-05 to 2018-19. The estimated value was 0.554. The IHDS –II survey in 2011-12 estimated the marginal propensity to consumer for individuals in the 7th decline to be 0.5. There MPC of 0.5 seems reasonable assumption for urban consumers

⁶⁸ The Surplus = $0.5 * L_1 / \eta$ where $\eta = \sigma(1 - L_1(1 - \frac{F_1}{w}))$. This is using the linearized leisure demand curve instead of the log demand curve

⁶⁹ Reported number of internet users in India as of September 2019, TRAI

⁷⁰ INR = .013 USD

would amount to USD 47 billion. A WIK report in 2017, estimated the per capita surplus from the use of interactive digital communication platforms in India to be US \$74⁷¹. Our study reports a surplus of US\$ 68.45⁷² from the collective use of all platforms, though undeniably communications generate a large part of the surplus.

Table 2.4: Estimation of Equation 1.3

$\ln\left[\frac{1-L1}{L1}\right]$	Coefficient	SE ⁷³	R ²	N	Implied σ
Ln(W) with city gender and age as controls	-.109	.043	.05	1044	.73
Ln(W) with city and age as controls	-.109	.043	.05	1044	.73

As GK emphasise in their paper, the model is limited by its assumption on the absence of time intensive leisure substitutes such as watching television. This, as discussed above, has been addressed by Brynjolfsson and Joo Hee Oh by using multiple products across varying degrees of substitutability. However, the requisite data was not available for India at the time of the study. Other assumptions that include valuing leisure at hourly wages, estimates for marginal propensities to consumer and hourly incomes etc. can also weigh on the estimations. The report makes a first attempt at establishing the value of digital platforms in India. The model establishes the accrual of welfare gains from time spent on digital platforms. The next section explains the mechanisms of value co-creation on platforms and the macro level impact on industries including on job creation through a set of case studies.

3. Case-Study Analysis

Digital transformation of industries has led to two complementary activities (i) *rethinking and reshaping of customer value propositions* and (ii) *transforming operating models using digital technologies to enhance customer interaction and collaboration*.⁷⁴ Digital models can be characterised using five components – *value proposition* i.e. the reason a consumer values a product or service and is willing to pay for it; *interface* i.e. the interaction between the consumer and the platform; *service platforms* that enable the delivery of products and services; *organizing model* which is the ecosystem for the creation of products and services and *revenue model* which determines the distribution of revenues and costs among the ecosystem participants.⁷⁵ This is popularly known as the VISOR framework, developed by Omar E-Sawy et al. at the University of Southern California. The approach accounts for key elements such as user experience and user interface, which are not explicitly addressed in

⁷¹ <https://www.broadbandindiaforum.com/files/reports-and-publications/THE%20ECONOMIC%20AND%20SOCIAL%20VALUE%20OF%20RICH%20INTERACTION%20APPLICATIONS%20IN%20INDIA.pdf>

⁷² INR = .013 USD

⁷³ We use robust standard errors to check for heteroscedasticity in the model

⁷⁴ Berman, Saul J. "Digital transformation: opportunities to create new business models." *Strategy & Leadership* (2012).

⁷⁵ Remane, Gerrit, Andre Hanelt, Robert C. Nickerson, and Lutz M. Kolbe. "Discovering digital business models in traditional industries." *Journal of Business Strategy* (2017).

other traditional business models.⁷⁶ We use this framework to illustrate the nature of digital business models across 5 sectors namely *online retail, social media and communications, media and entertainment, on-demand mobility, and digital payments*. We also tabulate the impact of digital platforms on the overall ecosystem, platform users and the traditional industry. While section 2 mostly focused on the impact on consumers, this section expands the scope to include impact on users such as merchants, SMEs, start-ups, etc.

3.1 Online Retail

Online retail in India can be categorised as *domestic or cross-border, Business to Business (B2B) or Business to Consumer (B2C)* and *marketplace or inventory-based*.⁷⁷ The market is dominated by Amazon and Flipkart that currently command nearly 90 percent of the market share.⁷⁸ The rise of B2B marketplaces like Walmart, Metro Cash and Carry, Udaan have been transformational for the sector.⁷⁹ Another recent trend has been the increased uptake of online shopping in tier 2 cities.⁸⁰ According to a recent report by Google, 63 percent of searches related to apparel came from India's top eight cities, and the non-metros were mainly responsible for driving the growth in search queries, with year-on-year growth at 75 percent.⁸¹ Industry projections suggest that demand for online consumers in the future will come from outside big cities.⁸² The market has also noted the success of niche operators such as Grofers and Big Basket which focus on groceries, First Cry and Babyoye that focus on maternity care and baby products, etc. A complementary and competing segment is the rise of social commerce. India's large base of social media users has been found to be a ready market for ecommerce. In 2019, it was the fastest growing segment of India's online retail industry with Meesho, Bulbul and Instagram becoming popular platforms.⁸³ The pandemic also nudged deeper integration between offline and online marketplaces. Many more SMEs registered as sellers with existing marketplaces. While some of this maybe temporary overshooting, it is possible that consumer preferences may have permanently changed, at least in some segments.

⁷⁶ El Sawy, Omar A., and Francis Pereira. "VISOR: A unified framework for business modeling in the evolving digital space." In *Business modelling in the dynamic digital space*, pp. 21-35. Springer, Berlin, Heidelberg, 2013.

⁷⁷ <https://www.export.gov/article?id=India-e-Commerce>

⁷⁸ <https://www.livemint.com/industry/retail/amazon-flipkart-may-face-tough-challenge-in-2020-as-reliance-firms-up-plans-11577594279227.html>

⁷⁹ <https://www.livemint.com/industry/retail/how-b2b-e-commerce-turned-the-corner-1567435471721.html>

⁸⁰ IT-BPM Sector in India, Strategic Review, NASSCOM (2019)

⁸¹ <https://www.thinkwithgoogle.com/intl/en-apac/ad-channel/search/year-in-search-india-insights/>

⁸² <https://www.ibef.org/download/e-commerce-dec-2018.pdf>

⁸³ <https://yourstory.com/2020/03/rise-social-commerce-startups-india-meesho-bulbul#:~:text=Social%20commerce%20startups%20are%20making,are%20shopping%20on%20social%20media.&text=The%20growth%20of%20social%20commerce%20startups%20in%20India%20was%20almost%20inevitable.>

Table 3.1.1: VISOR Framework for Online Retail Platforms

Components	Description
Value Proposition	<ul style="list-style-type: none"> • Digital B2B platforms are consolidating distributors and wholesalers in a single place and removing supply side inefficiencies. • Any enterprise can enlist itself on these platforms with minimum prerequisites such as a PAN number, a bank account and a GST number. • B2C platforms offer convenience, a wide assortment of products in one place and cost savings through discounts.
Interface	<ul style="list-style-type: none"> • Most online retail platforms have both a website and an app. Some platforms like Myntra had initially opted for an app only strategy. • Global statistics suggest that although the number of people visiting websites for online shopping is higher, the engagement on apps exceeds that of websites.⁸⁴ • Apps offer personalised push notifications, the ability to connect at any place and time, better user interface⁸⁵, easier payment through mobile wallets, UPI etc., while websites allow for a richer visual experience on a bigger screen⁸⁶.
Service Platforms	<ul style="list-style-type: none"> • Two categories of service platforms are available for most companies that want to build an online store – <i>hosted</i> and <i>open source Content Management Systems (CMS)</i>.⁸⁷ Creating a platform from scratch is typically not an option unless it is a billion-dollar company.⁸⁸ • Open source platforms are able to support large stores and sophisticated websites, provide better functionalities and more options for customisation. Examples are WooCommerce, Magento, Opencart etc. For some online retail companies, open source platforms become too expensive to maintain, often requiring advanced technical knowledge. • Due to these disadvantages, hosted platforms have become the preferred option as they require lesser maintenance with lower costs, better technical support and lesser operational complexities. Examples are Shopify, Zepo, StoreHippo etc.
Organising Model	<ul style="list-style-type: none"> • Two types of models are prevalent in online retail – <i>marketplace</i> and <i>inventory-based</i>.⁸⁹ • Online retail companies often shift from one type of organising model to another. For example, an online grocery platform in our sample began as a marketplace, but moved to an inventory model. • In the online grocery segment, the omni-channel presence is evident, as they start working with <i>kirana</i> stores i.e. the products are picked up from the local grocery store and delivered within or close to the neighbourhood. New market entrants in this segment such as Dunzo, Swiggy Stores and Zomato Markets operate using this model. Brands such as Decathlon have also introduced omni-commerce, wherein customers can buy online and collect or return products offline. This offers a complete offline to online experience to customers. • The importance of partnerships is most evidently observed in the beauty and lifestyle segment. Nykaa, for example, relies primarily on third-party brands and exclusive tie-ups with high-end brands, and celebrity brands and partnerships.⁹⁰
Revenue Model	<ul style="list-style-type: none"> • Two primary sources of revenue – <i>commissions</i> and <i>advertisements</i>. • Some upcoming companies such as Milk Basket, Country Delight etc. use a <i>subscription-based</i> model. • According to some online retail marketplaces in our sample, the general trend of the sector is that commissions account for a major part of the revenue, while advertising revenue varies from time to time. • Newer ventures and online retail startups that receive funding find it easier to provide discounts.

⁸⁴ <https://www.emarketer.com/content/mobile-web-vs-mobile-app-where-do-shoppers-spend-time-and-money>

⁸⁵ <https://knowledge.wharton.upenn.edu/article/can-an-app-only-e-commerce-model-succeed-in-india/>

⁸⁶ Ibid

⁸⁷ <https://www.socialbeat.in/blog/ecommerce-platform-for-online-store/>

⁸⁸ <https://www.bigcommerce.com/blog/ecommerce-platforms/#what-ecommerce-platform-options-are-there>

⁸⁹ Future of E-commerce: Uncovering Innovation, Deloitte and ASSOCHAM (2015)

⁹⁰ https://the-ken.com/story/purple-ugly-duckling-swan-story/?utm_source=daily_story&utm_medium=email&utm_campaign=daily_newsletter

Table 3.1.2: Impact Generated by Online Retail Platforms

Industry Ecosystem	Platform Users (Businesses and Consumers)	Traditional Industries
<ul style="list-style-type: none"> • Job creation is a major spillover benefit. According to estimates by PwC and NASSCOM the e-commerce sector has the potential to generate over one million jobs by 2023. The market size is expected to exceed USD 100 billion by 2022.⁹¹ • A large online retail platform in our sample claimed that together with its subsidiary platforms and full-time logistics, they support 1.4 lakh employees. They also claimed to have created 6-7 lakh jobs within the ecosystem while supporting MSMEs and artisans. • A large online retail platform in our sample claimed to have approximately 200,000 sellers of which 50 – 60 percent belonged to tier 2 and 3 cities. Their customer base was also predominantly middle-class people from tier 2 cities. Nearly 60 percent of their revenue could be attributed to tier 2 cities. • Local language content and adoption of voice search on platforms has driven the penetration of online shopping in tier 2 and 3 cities. These efforts have made online retail more inclusive. • 28 percent of all search queries are now done through voice, with voice searches in Hindi growing at a rate of 400 percent year-on-year.⁹² • Another contributing factor is infrastructural development such as investment in logistics and efficient delivery and distribution services. • Platforms in the online grocery segment work towards integrating <i>kirana</i> stores, enabling digitalisation and modernisation of their business operations. 	<ul style="list-style-type: none"> • MSMEs and individual artisans/craftsmen can easily enlist themselves on online retail marketplaces and reach a wider customer base. • An online retail marketplace in our sample reported that while they charge commission to brands and sellers as per industry standards, commission charges are often waived off for artisans and individual craftsmen. • According to a grocery selling platform in our sample, funding helped them provide discounts in the range of 15 – 20 percent, and also helped them scale up. This platform also mentioned that based on the volume of sales, they get higher margins from manufacturers and can therefore, provide discounts. • Convenience is a value driver • A B2C platform highlighted the importance of feedback from customers in the development of their platform and for technology driven platforms in general. Their customer insights team helps sellers and producers to predict the demand of particular goods well in advance. The insights team while evaluating the demand takes into consideration consumer preferences, the per capita incomes of different regions and they often suggest that sellers and producers maintain a certain price level. • The management of the back-end supply chains of many of their sellers are also undertaken by the platform itself. • Online B2B platforms have helped in consolidating the distribution channel and removing supply side inefficiencies. • Aspects such as availability of credit, price discovery, logistics etc. have helped retailers and wholesalers earn higher revenues, expand into other categories and increase their profit margins.⁹³ 	<ul style="list-style-type: none"> • In the online grocery segment, funding enables deep discounts and up-scaling for online platforms which is difficult for their offline counterparts. • However, <i>kirana</i> stores continue to have the undisputed advantages of low cost, convenience and personal contact which cannot be replaced by big retailers or online platforms. • An online grocery platform in our sample currently works with nearly 5000 network stores and 85 percent of their deliveries are done by these stores. In their early engagements with <i>kiranas</i>, they helped them with better inventory management and analytics, better supply chain management, lower rates from distributors etc. • <i>Kiranas</i> have lost customers to online shopping and consequentially, also lost market share. There are demographic trends in the use of online platforms in India. For example, for daily shopping needs, <i>kiranas</i> are the preferred option. • <i>Kiranas</i> are adapting to technology. They have traditionally taken orders over phone calls which has now progressed to WhatsApp. Partnerships between online platforms and <i>kiranas</i> has helped increase footfall at these stores by 15-20 percent. • In segments such as apparel and electronics, a large share of purchases has shifted online. According to a B2B platform, customers have begun to use physical stores as experience centres. E-commerce giants are investing in big retail stores and partnering with them to provide customers the complete offline to online experience. • Offline sales and distributions are possibly the most highly affected by digitisation in the B2B domain. According to a B2B platform, disruption in this space is likely to wipe out independent distributors. They anticipate that these distributors will eventually get integrated with digital platforms.

⁹¹ Ibid

⁹² <https://cmo.adobe.com/articles/2019/4/3-trends-shaping-the-indian-ecommerce-landscape.html#gs.sm3lsj>

⁹³ <https://www.livemint.com/industry/retail/how-b2b-e-commerce-turned-the-corner-1567435471721.html>

3.2 Social Media and Communications

India has one of the largest numbers of social media users in the world.⁹⁴ Market forecasts suggest that by 2021, India will have around 448 million social media users.⁹⁵ It is currently the largest market for Facebook, YouTube, Twitter and WhatsApp⁹⁶ and the recently banned TikTok had witnessed a tremendous uptake in India, particularly among first-time internet users from smaller cities.⁹⁷ Other video-based social media platforms such as Roposo, and Mitron have quickly gained ground on the back of the ban. Moreover, demand for local language content has also led to the rise of homegrown apps like ShareChat, Mooshak etc.⁹⁸ Even the bigger platforms like Facebook and WhatsApp have introduced local language features.⁹⁹ Social media platforms have also led to the rise of social media influencers and micro-entrepreneurs who run their businesses on these platforms.¹⁰⁰ Big brands are increasingly turning to influencers for marketing their products. According to a 2018 report by Business Insider Intelligence, by 2022, influencer marketing is estimated to reach between \$5 billion and \$10 billion.¹⁰¹ Different types of social media platforms include blogs, virtual communities, collaborative tagging, media file sharing sites etc.¹⁰² While starting off as completely new markets, social media platforms has impacted the top line for traditional ad publishers. A large part of this market is now completely digital. Advertisements in newspapers and hoardings have taken a hit with the rise of social media platforms, for whom ads are the primary source of revenue. Users' reliance on social media increased manifold during the pandemic. Table 3.2.1 describes the various facets of social media platforms using the VISOR framework and Table 3.2.2 summarises their impact across user, consumers, and traditional industry.

⁹⁴ <https://www.wordbank.com/us/blog/market-insights/social-media-in-india/>

⁹⁵ <https://www.statista.com/statistics/278407/number-of-social-network-users-in-india/>

⁹⁶ Op cit, 97

⁹⁷ <https://yourstory.com/2020/06/tiktok-ban-impact-india-government-china-app-influencer>

⁹⁸ <https://www.linkedin.com/pulse/rise-hyperlocal-vernacular-video-news-apps-india-sajith-pai/>

⁹⁹ <https://yourstory.com/2019/10/vernacular-content-digital-ecosystem>

¹⁰⁰ IT-BPM Sector in India 2019, Strategic Review, NASSCOMM (2019)

¹⁰¹ <https://www.livemint.com/mint-lounge/features/who-killed-the-influencer-1553250409649.html>

¹⁰² Derani, Nor Emmy Shuhada, and Prashalini Naidu. "The impact of utilizing social media as a communication platform during a crisis within the oil industry." *Procedia Economics and Finance* 35 (2016): 650-658.

Table 3.2.1: VISOR Framework for Social Media and Communications Platforms

Components	Description
Value Proposition	<ul style="list-style-type: none"> Allows people to build a network, interact with friends and family, find people with similar interests¹⁰³, seek and influence public opinion, exchange thoughts, share experiences, search for jobs, schedule events, promote brands, receive customer feedback etc.¹⁰⁴
Interface	<ul style="list-style-type: none"> Social media platforms have both websites and mobile apps. Studies show that users prefer an image heavy, visual experience, contrasting colours that highlight key features, overall simplicity in design and consistency between the app and web interfaces, and aesthetics.¹⁰⁵ Other aspects such as a search option enabling the discovery of groups and communities of interest and personalisation are also important.¹⁰⁶
Service Platforms	<ul style="list-style-type: none"> Social media platforms follow a three-tier architecture – client, backend and database.¹⁰⁷ Different types of APIs help in developing various features of a platform such as profile creation, feed, making connections etc.¹⁰⁸ New technologies such as AI targeted marketing and augmented marketing are further transforming this space.¹⁰⁹
Organising Model	<ul style="list-style-type: none"> Different types of platforms have different models. For example, YouTube is built on user-generated content where the end-users are both producers and consumers of the content.¹¹⁰ Platforms like Facebook also enable the development of third-party social networking applications, especially gaming apps.¹¹¹ Handset manufacturers, to drive uptake of their devices are partnering with social networking platforms to bring phones with user interfaces that are especially designed for such services. The rise of influencers has made influencer marketing an important aspect of these platforms, where businesses collaborate with influencers to reach a wider audience.¹¹²
Revenue Model	<ul style="list-style-type: none"> Social media platforms typically earn revenues through advertisements. Other revenue streams include sponsored content, business profiles, selling virtual goods etc. Platforms such as WhatsApp have introduced newer features for businesses like WhatsApp Business that charges a fixed rate to businesses for sending non-promotional messages such as order status, appointment reminders, flight and movie tickets etc. Platforms like MakeyTrip and BookMyShow already use this service in India.¹¹³

¹⁰³ <https://delvalle.bphc.org/mod/wiki/view.php?pageid=65>

¹⁰⁴ Kapoor, Avinash, and Chinmaya Kulshrestha. "Strong Value Proposition through Social Media Tools: A Case of American Express." In *Digital Arts and Entertainment: Concepts, Methodologies, Tools, and Applications*, pp. 901-923. IGI Global, 2014.

¹⁰⁵ Hayes, Jackie R. "User interface design for online social media." (2014).

¹⁰⁶ <https://www.adwebstudio.com/blog/how-does-user-interface-influence-your-social-media/>

¹⁰⁷ <https://yalantis.com/blog/social-networking-app-technology-stack-how-to-develop-social-apps/>

¹⁰⁸ Ibid

¹⁰⁹ <https://www.technology.org/2018/11/17/5-technologies-changing-social-media-for-the-better/>

¹¹⁰ Falch, Morten, Anders Henten, Reza Tadayoni, and Iwona Windekilde. "Business models in social networking." In *CMI Int. Conf. on Social Networking and Communities*. 2009.

¹¹¹ Ibid

¹¹² <https://blog.hootsuite.com/influencer-marketing/>

¹¹³ <https://www.livemint.com/Companies/27gj9YwaNIPYPOLtAffHjM/Using-WhatsApp-to-run-your-business-You-will-have-to-pay-no.html>

Table 3.2.2: Impact Generated by Social Media and Communications Platforms

Industry Ecosystem	Platform Users (Businesses and Consumers)	Traditional Industries
<ul style="list-style-type: none"> • Availability of content in vernacular languages improves accessibility of social media platforms for first time internet users and those from smaller cities and remote areas making the experience more inclusive • Apps that launched in vernacular languages helped democratise the internet.¹¹⁴ • A social media platform highlighted their unique discovery mechanism which helped small scale content creators reach a wider audience, instead of highlighting content that is already popular. • Influencer marketing has taken over and brands have found consumers to be more receptive to promotions made by influencers rather than celebrities on television or other traditional channels.¹¹⁵ 	<ul style="list-style-type: none"> • A social media platform which makes content available in local languages in India highlighted its role in allowing more users to create, share and access content. Women who run small businesses such as tailoring, handicrafts etc. leverage the platform to reach out to potential customers. • Another platform highlighted the opportunity that local language interfaces and content, create for users from small towns and cities – they are able to become content creators and reach a global audience. The platform has also helped small vendors, MSMEs, those running locally popular roadside stalls etc. to reach a wider audience and increase their customer base. • Social media has helped entrepreneurs start businesses and gather a loyal customer base, promote their products and services, engage in and build a relationship with their clients.¹¹⁶ 	<ul style="list-style-type: none"> • Social media has become an important marketing tool for businesses, with advantages over traditional marketing such as lower costs, targeted reach, real-time performance analysis, building conversations with clients and establishing trust. • Social media and influencer marketing has impacted the traditional marketing. However, businesses continue to demand a mix of channels for marketing and advertising.

3.3 Media and Entertainment

The traditional media and entertainment (M&E) industry in India comprises television, print media and films.¹¹⁷ It is expected to grow at a CAGR of 13.5 percent, in 2019 – 24 to reach USD 43.93 billion by 2024.¹¹⁸ IN FY19, digital media was the largest contributor to the growth of this sector, wherein digital M&E platforms grew at a rate of 13.3 percent to reach USD 23.34 billion.¹¹⁹ The most prevalent and popular M&E platforms are on-demand content players which include global service provider such as Netflix, Amazon Prime Video and Spotify, as well as homegrown platforms like Voot, Hoichoi, Saavn, Gaana etc.¹²⁰ OTT players are tailoring their offerings by investing in content in regional languages. OTT players offering local content have lower subscription charges and pose significant

¹¹⁴ <https://yourstory.com/2020/06/tiktok-ban-impact-india-government-china-app-influencer>

¹¹⁵ <https://www.prweek.com/article/1587591/influencer-marketing-taking-traditional-marketing>

¹¹⁶ <https://news.law.fordham.edu/jcfl/2018/11/04/the-rise-of-entrepreneurship-and-social-media/>

¹¹⁷ <https://www.ibef.org/industry/media-entertainment-india.aspx>

¹¹⁸ Ibid

¹¹⁹ Ibid

¹²⁰ <https://www.financialexpress.com/industry/subscription-vod-market-pegged-to-hit-1-5-billion-by-2023-report/>

competition.¹²¹ These platforms have also become a testbed for local talent and industry aspirants. In India, traditional television channels such as Zee TV, Star TV etc. have also ventured into the mobile TV and OTT space over the last couple of years.¹²² Industry stakeholders distinguished between the nature of content between traditional and digital media, claiming that the two parts of the industry are complementary and not always substitutable¹²³. During the Covid-19 lockdown, time spent per user per week on increased substantially for video-on-demand and news apps. Table 3.3.1 describes the various aspects of on-demand OTT platforms using the VISOR framework and Table 3.3.2 summarises their impact across user, consumers, and the traditional industry.

Table 3.3.1: VISOR Framework for Media and Entertainment Platforms

Components	Description
Value Proposition	<ul style="list-style-type: none"> On-the-go access to content, personalised recommendations, variety of curated regional and international content, eliminates the need for storage space and related costs, availability of original and user-generated content.¹²⁴
Interface	<ul style="list-style-type: none"> Desktop and mobile apps, as well as access through their websites. Owing to the uptake of mobile phones and a mobile-first approach in India, players like Netflix also have specific low-cost mobile-only subscription plans.¹²⁵ Content players are also coming up with platform-agnostic service offerings.
Service Platforms	<ul style="list-style-type: none"> Several SaaS based VoD hosting platforms are available for businesses to launch their video or music streaming platforms. Examples – IBM Cloud Video, Muvi etc.¹²⁶
Organising Model	<ul style="list-style-type: none"> App stores and telecom service providers dominate the distribution channels for on-demand content services.¹²⁷ However, innovative models such as reaching a targeted audience through e-commerce, retail and OEM partnerships are picking up. Partnerships with production houses, artists, promotions on social media, developing original content and partnerships with traditional TV distributors are other ways in which OTT players are improving their outreach.
Revenue Model	<ul style="list-style-type: none"> The most popular models are subscription and advertisement-based models. The other model is that of pay-per-view.¹²⁸ Some players have also adopted hybrid monetisation models such as offering limited period trial premium packs for first time users.¹²⁹ VoD services are also bundled with DTH subscriptions.

¹²¹ Entertainment Goes Online: A \$5 Billion Opportunity, BCG (2018)

¹²² Digital Media: Rise of On-demand Content, Deloitte (2015)

¹²³ Industry inputs during stakeholder discussions

¹²⁴ Video on demand: Entertainment reimagined, PwC and ASSOCHAM (2018)

¹²⁵ <https://economictimes.indiatimes.com/industry/media/entertainment/netflix-says-indias-mobile-only-plan-successful-will-test-it-other-markets/articleshow/71629615.cms?from=mdr>

¹²⁶ <https://www.dacast.com/blog/top-5-vod-platforms-online-video-hosting/>

¹²⁷ Ibid

¹²⁸ <https://www.uscreen.tv/video-business-school/svod-tvod-avod-monetization-models/>

¹²⁹ Ibid

Table 3.3.2: Impact Generated by Online Platforms in Media and Entertainment

Industry Ecosystem	Platform Users (Businesses and Consumers)	Traditional Industries
<ul style="list-style-type: none"> On-demand content apps have increased competition among broadcasters. OTT apps are popular in households with WiFi/ broadband connections which are commonly available in metro cities. According to an industry player, this industry has democratised the M&E space, by providing opportunities to new generation production houses, actors, and writers. They also plan to invest more in local production houses encouraging them to improve their content quality and compete with international production houses. According to a record label, digitalisation of the industry has helped reduce piracy and mitigated creative exploitation. The cost of music production has also significantly reduced, from approximately INR 1 – 1.5 lakh for one song to INR 5000 for the same. Number of projects being undertaken has increased for the industry and there is higher outreach for new talent. Due to better targeting, brands have started to shift from traditional platforms like TV, print and radio to OTT platforms. 	<ul style="list-style-type: none"> Personalised recommendations on OTT platforms are a huge attraction point for content consumers. Consumers can access a variety of content anytime and anywhere. It creates a second screen in the household and provides the opportunity to watch at specific times like breaks during work, during commutes etc. There continues to be some scepticism around subscription-based platforms as consumers look for value for money. With the availability of free content, many users still don't want to pay a high premium for content. Digitalisation in the music industry has led to a revenue boom and is open for anybody who can make a video and upload it on specific platforms. 	<ul style="list-style-type: none"> A DTH enterprise highlighted that it has lost subscribers to OTT platforms, but the impact is not very large. DTH and distributors have started bundling their services with OTT subscriptions. The difficulty of changing consumer preferences from TV viewing has worked to the advantage of DTH players. Bundling of services with OTT platforms helps DTH players as the former are still unregulated, while the latter have been affected by TRAI's tariff regulations. The DTH player noted that the fire stick as part of their bundled plans is being branded as their own. They are also teaching consumers how to install it and use it. There is regulatory arbitrage in quality of content. According to BARC, an industry association, TV consumption has been increasing over the last 4 years, both in terms of the number of people with access to TV as well as time spent watching TV. The association also argues that TV viewing can be a more economical choice for middle-class consumers as compared to OTT. Buying a TV is usually a one-time investment as are lifetime DTH connections. TV viewing in India is still considered a social/ family activity. 98 percent households continue to be single-TV homes. In the music industry, digitalisation has led to loss of jobs and opportunities for traditional musicians who are not technologically skilled. In the long run, on-demand OTT platforms and TV are likely to become symbiotic rather than cannibalistic markets in the future.

3.4 On-Demand Mobility

India's on-demand taxi services market is currently dominated by Uber and Ola Cabs.¹³⁰ The market size for taxis in India was estimated to be 1.9 million taxis.¹³¹ The overall taxi market in India, however, is highly fragmented and unorganized, populated largely by individual car owners, taxi agencies, pure-play car rental companies like Zoomcar and players like Meru Cabs.¹³² In terms of registered taxi fleet, unorganized small fleet operators constitute 91 percent of the market.¹³³ According to estimations by Statista, the revenue in this market is going to reach approximately USD 52 billion by 2024, with a CAGR of 19.1 percent between 2020 and 2024.¹³⁴ With the success of Ola and Uber, on-demand mobility is quickly moving from cars to auto rickshaws, motorbikes and cycles. Bike-sharing became an easy sell. Bounce, Yulu and VOGO started docked/ dockless models for bicycle and scooter sharing. It has been a bumpy ride for these start-ups. The ones that survived stuck to multi-modal products and services¹³⁵. Recently cab-sharing companies began offering carpooling. Ola Share, Uber Pool, BlaBlaCar were solutions to maximize company resources that also lowered the cost of commuting for users. Building electric car fleets is next on the agenda for cab aggregators.

The pandemic has not been kind to ride-sharing apps as people fear contracting the virus through the use of shared vehicles. Hygiene concerns dented the businesses of cab aggregators. It is also claimed that in the long run, consumers would find purchasing private vehicles to be a safer option rather than using cabs. This has severely affected the earnings of driver partners. Some drivers are spending far more on petrol/ CNG and sanitisers than they are able to earn in a single day, due to low demand for rides. Though rides have started returning in some cities, rekindling the pre-pandemic momentum seems a while away. Companies during this time segued into related services to utilise resources. For example, Uber Connect was introduced during the pandemic as a doorstep delivery service that became a source of livelihood to the otherwise out of jobs cab-drivers. Table 3.4.1 describes the various aspects of on-demand mobility platforms using the VISOR framework and Table 3.4.2 summarises their impact across user, consumers, and traditional cab companies.

¹³⁰ <https://qz.com/india/1545042/ola-vs-uber-the-latest-score-in-the-great-indian-taxi-app-game/>

¹³¹ <https://mobilityforesights.com/product/on-demand-taxi-market-in-india/>

¹³² <https://redseer.com/articles/online-cab-aggregator-market-trends/>

¹³³ Ibid

¹³⁴ <https://www.statista.com/outlook/368/119/ride-hailing-taxi/india>

¹³⁵ <https://the-ken.com/story/urban-mobility/>

Table 3.4.1: VISOR Framework for Transport/ Cab Aggregator Platforms

Components	Description
Value Proposition	<ul style="list-style-type: none"> Hassle free and on-demand rides at relatively cheaper rates Ability to track the vehicle, estimated fares and ride durations, navigation enabled on the app, rating and feedback system, cashless payments etc.^{136,137} For driver partners, it puts them on the road during peak demand, freedom to choose work hours, a dedicated driver app that keeps track of rides and earnings, getting started as a driver partner and getting customers at no additional cost etc.¹³⁸
Interface	<ul style="list-style-type: none"> Cab aggregators typically have an app-only system, with separate apps for driver partners.¹³⁹ In India, these apps in addition to having navigation interfaces, have also integrated UPI and mobile wallet interfaces in their apps.¹⁴⁰
Service Platforms	<ul style="list-style-type: none"> The technology stack for an app like Uber integrates aspects like geo-location (navigation and device location) using location APIs, push and SMS notifications, payment gateways, and infrastructure and storage.¹⁴¹ Companies like Appdupe also develop ready-made clone app solutions.¹⁴²
Organising Model	<ul style="list-style-type: none"> Cab aggregators typically partner with private car owners. In some cases, Ola Cabs for example, also buys vehicles and leases them to driver partners.¹⁴³ Tie-ups with corporates for business travels, launching specialised services like UberAssist for disabled passengers, acquisitions like that of FoodPanda by Ola, integration of auto rides, rental and outstation rides etc. are some of the ways in which can aggregators organise their businesses.
Revenue Model	<ul style="list-style-type: none"> Platforms like Uber, Ola, MeruCabs etc. follow a revenue model based on the criteria of pay-per-performance. Driver partners are charged a commission on their earnings based on a list of criteria such as base fare, total ride time, waiting time etc. This commission amount varies between 15 – 20 percent of the total fare of the trip. In-cab advertisements, personalised entertainment for commuters are some other sources of revenue. Platforms also resort to surge pricing during peak hours, provide premium car services and varies charges by type of car.

¹³⁶ <https://redseer.com/articles/the-success-of-online-cab-aggregators/>

¹³⁷ <https://innovationtactics.com/business-model-canvas-uber/>

¹³⁸ Ibid

¹³⁹ Ibid

¹⁴⁰ <https://www.livemint.com/Companies/jIjO8ntpcf9td3JqnAh0qI/Ola-integrates-with-UPI-to-simplify-payment-options.html>

¹⁴¹ <https://yourstory.com/mystory/developing-taxi-app-like-uber-know-its-business-mo>

¹⁴² Ibid

¹⁴³ <https://www.marketing91.com/business-model-of-ola-cabs/>

Table 3.4.2: Impact Generated by Transport/ Cab Aggregator Platforms

Industry Ecosystem	Platform Users (Businesses and Consumers)	Traditional Industries
<ul style="list-style-type: none"> • According to a cab aggregator platform, they have formalised intermediary public transport, made the system demand-responsive, consolidated the marketplace, ensured seamless operations, and bridged the first and last-mile connectivity gaps. • Integration of UPI and mobile wallets has facilitated seamless digital transactions. • Although ride-sharing services claim that their incentivisation of carpooling will result in people dropping their private vehicles, shifting to cabs and thus utilising road space more efficiently and reducing congestion, recent studies have shown that these platforms have contributed to increased road congestion and pollution.^{144,145} 	<ul style="list-style-type: none"> • According to a cab aggregator platform, driver partners have become micro-entrepreneurs. • Facilities such as bike-taxis and autos to and from metro-stations have helped make the first and last-miles more economical and convenient. • Cab aggregators work with individual drivers/private car owners, but also with taxi agencies. On the supply side, this has helped increase income of platform users. • Other benefits for driver partners include more control on their time, flexibility, and better work-life balance. Over time driver partners are able to better negotiate their terms of engagement with the platform. • According to a navigation platform, most of their revenue comes from enterprise services, cab aggregators being one of them. 	<ul style="list-style-type: none"> • According to a taxi agency, their business has been hit hard due to the lower ride fares charged by cab aggregators, which at times is half the amount charged by taxi agencies. This has been particularly significant for airport pick-up and drop services. • This agency further noted that long term associations with clients meant that there is more trust in their drivers and services as compared to cab aggregators. The B2B segment, therefore, has been less disrupted due to long-term client relationships and a systematic movement of people.¹⁴⁶ • According to this taxi agency, in terms of hygiene and cleanliness they continue to perform better than cab aggregators. • Another source of income comes in by leasing out the car to international diplomats while their stay in the country. According to them the luxury segment of transport is relatively unaffected by cab aggregators. Being employed with taxi agencies provided drivers with higher income stability as compared to being empaneled with cab aggregators. • Taxi agencies have increased their focus on their B2B engagements, since there are specific client preferences that can be easily fulfilled, despite cab aggregators having entered this space and reduced costs for corporate customers.¹⁴⁷

¹⁴⁴ <https://scroll.in/magazine/891171/have-ola-and-uber-eased-indias-traffic-problems-or-made-them-much-much-worse>

¹⁴⁵ <https://nypost.com/2018/02/25/uber-lyft-drivers-are-making-city-traffic-worse-studies-find/>

¹⁴⁶ <https://www.financialexpress.com/industry/riding-the-corporate-route/1167370/>

¹⁴⁷ Ibid

3.5 Digital Payment Platforms

Digital payment platforms have revolutionized the financial services sector in India. Demonetisation triggered the growth of digital payments in India. The industry has now galloped ahead of internet banking to the rapid uptake of mobile wallets and transactions via the UPI platform. The UPI platform launched by the National Payments Corporation of India (NPCI) introduced interoperability in the sector resulting in 3.4 billion transactions valued at INR 14 trillion in January 2021.¹⁴⁸ Google Pay, Paytm, Phone Pe and government-owned BHIM are some of the top digital payments companies in India. Some platforms such as Paytm also operate as payments banks. To fully reap the benefits of digital platforms, synergies between platforms and the banking sector are imperative.¹⁴⁹ Digital payment companies continue to dabble with ideas on building new lending products or financial services and servicing merchants through new gadgets or point of sales machines. The companies are still burning cash, in the form of discounts and cashbacks to make their products more attractive for merchants as well as consumers. The short-term pursuit is to cut losses and the long-term goal is to turn a profit. Table 3.5.1 describes the various aspects of digital platforms using the VISOR framework and Table 3.5.2 summarises their impact on users, consumers and traditional payment mechanisms.

Table 3.5.1: VISOR Framework for Online Platforms in Financial Services

Components	Description
Value Proposition	<ul style="list-style-type: none">• For customers the value addition lies in convenience of payments, personalisation, digital financial products• Merchants can make use of cheap and convenient software to sell products, they can provide multiple payment modes.¹⁵⁰
Interface	<ul style="list-style-type: none">• Most platforms have app interfaces and are built on technology stacks and APIs.
Service Platforms	<ul style="list-style-type: none">• Most commonly banking-as-a-service platforms which enables the delivery of innovative products and manage the entire banking value chain.¹⁵¹ The market has seen the development and uptake of payments-as-a-platform which has helped reduce make the process less costly and time-consuming.¹⁵²
Organising Model	<ul style="list-style-type: none">• Digital platforms have segued into several related financial services including insurance, credit services, etc. .
Revenue Model	<ul style="list-style-type: none">• Digital payment platforms earn revenue through commissions earned from transactions and interest on escrow accounts¹⁵³

¹⁴⁸ Emerging technologies disrupting the financial sector, PwC and ASSOCHAM (2019)

¹⁴⁹ Unleashing the Potential of FinTech in Banking, Ernst & Young (2017)

¹⁵⁰ FinTech in India Ready for Breakout, Deloitte and IMAI (2017)

¹⁵¹ <https://www.dashdevs.com/blog/the-rise-of-ppaas-preparing-for-the-next-wave-of-fintech-disruption/>

¹⁵² Ibid

¹⁵³ <https://bstrategyhub.com/paytm-business-model-how-does-paytm-make-money/>

Table 3.5.2: Impact Generated by Online Platforms in Financial Services

Industry Ecosystem	Platform Users (Businesses and Consumers)	Traditional Industries
<ul style="list-style-type: none"> UPI revolutionised the payments industry, making it open and competitive. Digital payment platforms help merchants save costs on IT systems and expensive physical networks that can trickle down to customers.¹⁵⁴ 	<ul style="list-style-type: none"> Digital platforms highlighted how their large network of merchants and their years of trust building and seamless services have helped merchants. They also provide dispute resolution mechanisms. Therefore, on the consumer side, they do not have to go through the merchants or the banks and can directly approach the platform in case of any disputes. Platforms that act as intermediaries ensure that merchants do not have to maintain a credit-card database, hold online records of customers' financial information, or ensure data security. These aspects are handled by the platforms, including authentication of customers.¹⁵⁵ Convenience, flexibility, P2P transfers, seamless end-to-end transactions as well as security cover in some cases for unauthorised withdrawals cement trust.¹⁵⁶ 	<ul style="list-style-type: none"> According to a payments platform, unbundling of financial services has led to disruption, where platforms are delivering some services better than banks. Partnerships between the traditional financial services industry and digital platforms has spurred service innovation. Adoption of technology by incumbents has led to seamlessness in the ecosystem. Innovative services such as digital gold which allows customers to buy, sell and store gold on digital platforms and pay only for the delivery of the gold to them. The relationship between the traditional industry in financial services and digital platforms is complementary for the most part. Disruptions pertain mainly to improving convenience and quality of service.

Digital platforms have made considerable inroads into business processes and service delivery. There is consensus on the benefits of disintermediation as well as the efficiency enhancing role of digital platforms. Sectors such as online retail and digital payments have played a huge role in digitization and modernization of traditional businesses. They have created new opportunities for livelihoods, especially in online retail and social media. While most sectors appear dominated by two or three big players, there is a continuous cycle of innovation that emerge from changing consumer preferences or untapped market potential. Despite the presence of big players, new entrants comfortably carve out a niche in the market. Online retail and social media provide several examples. With respect to benefits for consumers, the findings are an absolute match to the results of the survey. It is hard to deny the value created by digital platforms, though in part, it comes at the cost of disrupting traditional businesses. Traditional businesses that have not upgraded or integrated, find the onslaught of digital platforms difficult to survive. There are also relatively resilient components within the traditional business that have been less affected by digital platforms,

¹⁵⁴ <https://www2.deloitte.com/in/en/pages/financial-services/articles/fintech-india-ready-for-breakout.html>

¹⁵⁵ Jones, Russ. "The PayPal Phenomenon: Lessons from the Leading Edge of Online Payments." CommerceNet Security and Internet Payments Research (2001).

¹⁵⁶ Ibid

at least so far. Good examples would be the market for rented luxury cars, sale of drugs for acute illnesses, TV viewing, etc. There is no doubt that the online and physical components of most of these sectors are likely to coexist. Though the equilibrium is hard to predict at this point.

As is the case for most industry, innovation and growth are closely tied to government policy. The government's huge push towards digitization has helped trigger this growth, though its sustained benefits to the economy will require some oversight. Section 4 highlights the regulatory challenges that the growth of these platforms have posed to policy makers.

4. Regulatory Challenges

The ambiguity around a precise definition of digital platforms¹⁵⁷ is perhaps the most jarring of all concerns, paralysing any questions around *what* to regulate.¹⁵⁸ However, through the lens of law, there are three primary concerns - (i) privacy/ data protection (ii) consumer protection and (iii) competition/ antitrust.¹⁵⁹ Platforms' inherent characteristics of *economies of scale* and *network externalities* tip the market towards a monopoly. An alternative view is also that platforms are regulated entities in and of themselves, i.e. they are regulated by users, operators and existing laws.¹⁶⁰ Scholars of competition law also opine that rather than asking whether or not platforms should be regulated, it might be more useful to ask whether governments should regulate *more* of the platform economy and decide the context in which such regulation should take place.¹⁶¹ Besides the three primary areas listed above, platforms also raise regulatory concerns with regard to the spread of fake news and misinformation on social media platforms. Ongoing efforts by companies as well as the government stand insufficient to counter this problem. Secondly, with the rise in online retail, sale of counterfeit goods has found new avenues to reach consumers. This is despite efforts from companies to check proliferation of fake products through their digital platforms. Finally, the platform economy has created a new class of gig workers that do not necessarily fall within the classic employment categories. The government is working towards creating safeguards for the employment of gig workers who may be subject to inadvertent vulnerabilities, given the contractual nature of their employment.

In addition to regulations that are pervasive and apply generally to all digital platforms, sector specific regulations, where necessary, have been promulgated to monitor platform activity. The earliest was a circular by the Reserve Bank of India (RBI) mandating data pertaining to all payments systems to be stored within India in 2018. This was followed by new Guidelines on Regulation of Payment Aggregators ('PA') and Payment Gateways in March 2020. In the

¹⁵⁷ Morton, Fiona Scott, Theodore Nierenberg, Pascal Bouvier, Ariel Ezrachi, Bruno Jullien, Roberta Katz, Gene Kimmelman, A. Douglas Melamed, and Jamie Morgenstern. "Report: Committee for the study of digital platforms-market structure and antitrust subcommittee." *George J. Stigler Center for the Study of the Economy and the State, The University of Chicago Booth School of Business* (2019).

¹⁵⁸ O'Connor, Daniel, and Matthew Schruers. "Against platform regulation." *Draft for Presentation*. September (2016).

¹⁵⁹ Ibid

¹⁶⁰ Ibid

¹⁶¹ Ibid

transport sector, the Motor Vehicles (Amendment) Bill 2019, brought within its ambit cab aggregators and digital intermediaries. The amendments allowed for the government to frame rules on pricing and safety. The Central Guidelines for Aggregators¹⁶², still in draft stage, outlines regulations on surge pricing, verification of drivers using facial recognition, capping of commissions, etc. In December 2018, Press Note 2, tightened regulations applicable to e-commerce¹⁶³. The changes included platform control over the inventory, additional compliances for marketplaces with foreign investments, relationship with sellers, etc. In the wake of the pandemic, the Medical Council of India in partnership with NITI Aayog released the Telemedicine Practice Guidelines¹⁶⁴ under the aegis of the Ministry of Health and Family Welfare. The guidelines address India's long-standing demand for virtual health consultations. Platforms are continuously adapting to these evolving regulations, though some uncertainty looms over their implementation and impact.

In the following subsections we discuss the need for regulations and regulatory developments if any, related to *competition issues, labour and employment, fake news and misinformation, consumer protection, counterfeit goods, and data privacy* in India.

4.1 Competition Issues

The understanding of competition for the platform economy is dramatically different compared to that of traditional industries. Platforms have challenged the neoclassical approach to doing business by prioritising growth over profit maximisation in the short to medium terms.¹⁶⁵ Platforms also demonstrate multi-sidedness like classic intermediaries that benefit from network effects. Platforms also choose to innovate using open external contracts. The markets in which platforms operate exhibit a certain set of characteristics that appear together - *strong network effects, economies of scale and scope, negligible marginal costs, increasing returns to the use of data and low distribution costs*.¹⁶⁶ Models of digital platforms are often winner-take-all wherein the platform owner can appropriate a share of the value created by all its users, and only one or two successful platforms survive in the market.¹⁶⁷

Provision of free goods has thrown up challenges for competition analysis where aspects like quality of service and privacy policy become determinants of market power.¹⁶⁸ In the digital space, the dominant approach to antitrust is still based on consumer welfare analysis, while predatory pricing has received less attention than it deserves.¹⁶⁹ It has been claimed that below-cost pricing on one side of two-sided platforms should not raise alarm about predatory behaviour to exclude competitors and can occur due to consumers generating large network

¹⁶² <https://www.medianama.com/2019/12/223-ola-uber-commission-regulation/>

¹⁶³ https://dipp.gov.in/sites/default/files/pn2_2018.pdf

¹⁶⁴ <https://www.mohfw.gov.in/pdf/Telemedicine.pdf>

¹⁶⁵ Competition Issues in the Digital Economy, UNCTAD (2019)

¹⁶⁶ Ibid

¹⁶⁷ Kenney, Martin, and John Zysman. "Choosing a future in the platform economy: the implications and consequences of digital platforms." In *Kauffman Foundation New Entrepreneurial Growth Conference*, vol. 156160. 2015.

¹⁶⁸ Ibid

¹⁶⁹ Op cit,¹⁶⁷

externalities. When the consumer welfare standard is applied, below-cost pricing entails higher consumer welfare in the short to medium run, until market concentration ensues, and consumers are left with little to no choice in the longer run. Moreover, there is a lack of consensus among competition authorities on the meaning of consumer welfare¹⁷⁰. The European Commission, for instance, includes all businesses, consumers, traders, etc. The Indian Competition Law also includes business users in their definition of consumer welfare. The emerging wisdom suggest that welfare standards should incorporate non-price factors such as consumer choice, quality, privacy, innovation, and future competition.

Globally as well as in India, platform giants have been accused of anti-competitive practices. Platform neutrality has emerged as a core issue with independent sellers raising concerns about platforms' private label products being in direct competition with other brands in the same product categories and platforms having 'preferred sellers' who enjoyed preferential treatment.¹⁷¹ Deep discounts have been another major point of contention between platforms and businesses. CCI in its market study on e-commerce found that online travel agencies and food delivery platforms operating as pure marketplaces offered discounts over and above the price set by the seller/ service provider. Some sellers who participated in CCI's study were of the view that discounts were used as a discriminatory device and higher discounts were given to preferred sellers. CCI further noted in its study that such discounts not only robbed sellers/ service providers of agency and autonomy, but also permanently eroded their brand value. By offering high discounts, platforms influence consumer expectations and sellers are unable to profitably match up in other modes of booking. This creates an artificial price distortion in the market, drives consumers to these platforms and increases sellers' dependence on these platforms.

In two-sided markets, network effects can provide irreversible advantages to a dominant player. Regulating digital markets poses peculiar problems and regulators across the world over including in India are looking at tools that could be employed to prevent adverse effects on competition. Regulators in jurisdictions such as Austria and Germany have updated their merger notification rules to include an additional transaction value threshold of €400 million and €200 million, respectively for a transaction to be notified to the countries' competition authorities,¹⁷² so that prominent acquisitions and combinations do not evade antitrust scrutiny within the country. Apart from updating the existing rules on mergers, the competition authority may also be a need to consider 'privacy' as a form of non-price competition, particularly for industries rendering 'free services' as recognised by courts in Germany,¹⁷³ and legislators in Japan.¹⁷⁴ India has also ordered a prima facie investigation against WhatsApp's new data privacy policy¹⁷⁵.

¹⁷⁰ https://unctad.org/system/files/official-document/ciclpd54_en.pdf

¹⁷¹ Market Study on E-commerce in India, CCI (2020)

¹⁷² <https://www.competitionpolicyinternational.com/eu-new-merger-control-thresholds-in-germany-and-austria/>

¹⁷³ <https://thewire.in/tech/data-oil-competition-commission-india-facebook-whatsapp>, (last accessed on Jun 26, 2020).

¹⁷⁴ <https://www.competitionpolicyinternational.com/japan-watchdog-seeks-tougher-rules-on-consumer-data/>

¹⁷⁵ https://www.cci.gov.in/sites/default/files/SM01of2021_0.pdf

There is debate around whether digital markets will self-correct when competition issues arise. Proponents of self-regulation argue that the costs of over-intervention outweigh the benefits.¹⁷⁶ However, the Stigler Report finds that self-correction is unlikely to manifest in markets dominated by large digital platforms and harms to economic welfare from anti-competitive conduct can be substantial.¹⁷⁷ Accordingly, competition law experts have emphasised on the need for complementarity between *ex-ante* rules and *ex-post* antitrust enforcement, in addition to strengthening core competition law.¹⁷⁸ Any of these methods in isolation is likely to produce inefficient outcomes in fast-moving digital markets.¹⁷⁹ CCI's market study on ecommerce indicates a similar balance by enumerating certain areas of self-regulation by platforms alongside a case-by-case examination of anti-competitive conduct wherever justified. The areas for self-regulation pointed out by the Commission are search ranking, collection and use of data, rating mechanisms, contract terms and discount policy¹⁸⁰. The recent investigation by the House Judiciary's Antitrust Subcommittee is considering a range of forceful options including structural separations.

4.2 Labour and Employment

The employment status of workers for the 'platform economy' has become a significant legal and political issue, globally.¹⁸¹ In many jurisdictions including India worker protections enshrined in statutory labour laws preclude 'workers' hired by platforms.¹⁸² Companies use terms such as 'driver partners', 'independent contractors' to evade obligations to provide workers with employment benefits which may well be a case of 'disguised employment relations'.¹⁸³ Application of traditional tests to determine 'employer-employee relations' in these new-age markets pose complex challenges for regulators as well as legislators.

The Covid-19 pandemic brought issues faced by gig workers to the forefront. Globally, protests by those working in the platform economy are on the rise. According to a report by the European Trade Union Institute, there has been a steady discontent among workers employed by platforms over the last four years¹⁸⁴, with pay being the main cause for protests globally.¹⁸⁵ The situation in India is no different. According to a recent study by the Fairwork Project, some of the best known Indian startups also have poor working conditions for gig

¹⁷⁶ Ibid

¹⁷⁷ Ibid

¹⁷⁸ Furman, Jason, Diane Coyle, Amelia Fletcher, Derek McAuley, and Philip Marsden. "Unlocking digital competition: Report of the digital competition expert panel." *UK government publication, HM Treasury* (2019).

¹⁷⁹ <https://theplatformlaw.blog/2020/05/07/why-is-ex-ante-regulation-of-systemic-online-platforms-needed-on-top-of-competition-law/>

¹⁸⁰ Market Study on E-commerce in India, CCI (2020), Available at https://www.cci.gov.in/sites/default/files/whats_newdocument/Market-study-on-e-Commerce-in-India.pdf

¹⁸¹ Ibid

¹⁸² Fairwork Germany Ratings 2020: Labour Standards in the Platform Economy, Fairwork (2020).

¹⁸³ Brishen Rogers, Employment Rights in the Platform Economy: Getting Back to Basics, Harvard Law and Policy Review (2016).

¹⁸⁴ <https://www.weforum.org/agenda/2020/03/digital-platforms-gig-workers-labour-rights/>

¹⁸⁵ Joyce, Simon, Denis Neumann, Vera Trappmann, and Charles Umney. "A Global Struggle: Worker Protest in the Platform Economy." *ETUI Research Paper-Policy Brief 2* (2020).

workers.¹⁸⁶ In addition to poor working conditions there is also a lack of transparency in the terms and conditions of their ‘employment’ with anecdotal evidence suggesting significant variations in the kind of contracts workers sign.¹⁸⁷ The ‘terms of service’ in these contracts are set unilaterally by platforms and their classification as independent contractors or self-employed individuals deprive them of the right to organise collectively.¹⁸⁸ The promise of flexible working hours and supplementary income lure workers to the platform economy. While they are critical and indispensable for the functioning of the platform, the benefits rarely trickle down.

The new Labour Codes of 2019 define gig workers and ascertain security through payment of minimum wages. The implementation and impact of these laws still need to be tested¹⁸⁹. Remedies in the form of judicial or state government interventions are also likely to help the cause of gig workers going forward¹⁹⁰. In a promising start, Budget 2021-22 announced the extension of social security benefits to gig and platform workers¹⁹¹.

The European Legal Framework for Digital Labour Platforms highlighted that the lack of compliance with labour related, fiscal and social security duties can constitute competitive advantages vis-à-vis their competitors. They evaluate platform mediated labour arrangements to understand how existing legal notions and formats can adapt to new dynamics providing a fine balance between entrepreneurship and worker protection¹⁹².

4.3 Fake News, Misinformation and Content Censorship

The launch of social media platforms and the democratisation of content created a new avenue for fake news. Systemic propaganda abused social media platforms to spread lies and misinformation. Facebook was allegedly used to spread anti-Rohingya propaganda and enable the largest forced human migration in recent history.¹⁹³ The covid-19 pandemic was another reminder of how misinformation plagued daily lives. A report by fact-checking website BOOM finds that fake news related to covid-19 spiked in April following the Tablighi Jamaat incident in Delhi.¹⁹⁴ The website conducted 178 fact-checks since the onset of the pandemic in India and found that 35 percent were fake videos, 29 percent fake images and a similar percentage were doctored messages on issues such as fake diagnosis and treatment, false quotes by celebrities and false lockdown guidelines.¹⁹⁵ Taking cognisance of

¹⁸⁶ <https://qz.com/india/1580172/how-ola-uber-foodpanda-treat-their-contract-workers-in-india/>

¹⁸⁷ <https://www.firstpost.com/india/how-to-ensure-fair-rights-for-gig-economy-workers-new-labour-laws-transparent-contracts-are-the-way-forward-8511791.html>

¹⁸⁸ <https://www.weforum.org/agenda/2019/09/digital-labour-platforms-are-a-double-edged-blade-heres-why>

¹⁸⁹ <https://medium.com/nyaaya/the-law-for-gig-workers-in-india-4163cfaee18b>

¹⁹⁰ Kumar, A.P. 2019, “Code on Wages and the Gig Economy”, EPW Vol. 54, Issue No. 34, 24 Aug, 2019, Available at <https://www.epw.in/journal/2019/34/law-and-society/code-wages-and-gig-economy.html>

¹⁹¹ <https://economictimes.indiatimes.com/tech/startups/budget-2021-indias-gig-economy-workers-to-get-social-security-for-the-first-time/articleshow/80633561.cms>

¹⁹² House Judiciary Committee of US and EU

¹⁹³ Intermediary Liability 2.0 A Shifting Paradigm, sflc.in (March 2019)

¹⁹⁴ <https://www.orfonline.org/expert-speak/how-fake-news-complicating-india-war-against-covid19-66052/>

¹⁹⁵ Ibid

the matter, MEITY requested social media platforms to initiate awareness campaigns, asking users not to upload or circulate false news related to the coronavirus.¹⁹⁶

Government's current responses to tackling fake news include internet shutdowns, blocking content, invoking sedition laws against 'apparent' hate speeches in addition to the current intermediary liability rules¹⁹⁷. The 16th Parliamentary Standing Committee on Information Technology (February 2019) sought responses from both MEITY and Twitter on the issue of '*safeguarding citizens' rights on social/online news media platforms*'. This was on the back of a draft order issued by the MIB in April 2018, proposing to withdraw the accreditation of journalists accused of publishing fake news, among other measures, which was finally withdrawn.¹⁹⁸

4.4 Consumer Protection

Although digital platforms have made consumers' lives much easier, it does not preclude violation of certain consumer rights. Transparency and information asymmetry, lack of dispute resolution mechanisms for domestic as well as cross-border purchases, are common concerns for consumers.¹⁹⁹ In an online peer-to-peer study conducted by the European Commission, 55 percent surveyed consumers reported facing at least one problem over the past year.²⁰⁰ Some crucial concerns included misleading advertisements on online platforms, mystique around algorithms, lack of reliable payment systems, data privacy and protection. Communication to consumers on how information is organised and presented on a platform, and the logic of algorithms can empower them to make informed choices. For example, Booking.com in Germany mentions in its terms and conditions that its default ranking of hotels is based on the commissions paid to them.²⁰¹

The Consumer Protection Act, 2019 was brought into force in July 2020, replacing the erstwhile Consumer Protection Act, 1986 with a view to promote, protect and enforce the rights of consumers.²⁰² It proposes a slew of measures to safeguard consumer rights including introduction of a central regulator (Central Consumer Protection Authority), penalties for misleading advertisements and manipulation of price for goods and services.²⁰³ In order to address the complexities of digital markets, the law has widened the definition of consumers to include any person who buys any good or avails any service, whether through offline or

¹⁹⁶ <https://economictimes.indiatimes.com/tech/internet/it-ministry-asks-social-media-firms-to-remove-false-news-from-their-platform/articleshow/74759612.cms?from=mdr>

¹⁹⁷ <https://www.loc.gov/law/help/social-media-disinformation/india.php>

¹⁹⁸ Bahl, Varun Sen, Faiza Rahman, Rishab Bailey, Sanjana Krishnan, Sahil Deo, and Neha Sontakke. "Internet intermediaries and online harms: Regulatory." (2020).

¹⁹⁹ Consumer Protection in Electronic Commerce, UNCTAD (2017)

²⁰⁰ <https://www.socialistsanddemocrats.eu/sites/default/files/BEUC%20Online%20Platforms%2028%20June%202018.pdf>

²⁰¹ Ensuring Consumer Protection in the Platform Economy, BEUC (2018)

²⁰² <https://www.livemint.com/news/india/consumer-protection-act-2019-comes-into-force-from-today-covers-e-commerce-too-11595245073150.html>

²⁰³ https://economictimes.indiatimes.com/wealth/spend/heres-how-consumers-will-benefit-under-the-new-consumer-protection-act/articleshow/70711304.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

online transactions, electronic means, teleshopping, direct selling or multi-level marketing.²⁰⁴ The recently passed legislation brings within its ambit ‘e-commerce’ platforms. Also, the Consumer Protection (e-commerce) Rules, 2020, under the Act seek to make online retailers more accountable by mandating sellers to provide information relating to country of origin, return, refund, exchange, warranty and guarantee, delivery and shipment, modes of payment, grievance redressal mechanism, payment methods, security of payment methods and charge-back options.²⁰⁵ The rules cover marketplaces working as aggregators, and inventory-led models where the retailer owns the stocks.²⁰⁶ One of the most significant changes likely to have a discernible impact on e-commerce platforms is the introduction of ‘product liability’ presumably implying that e-commerce platforms can no longer escape as aggregators.

4.5 Counterfeit Goods

Globally, the sale of counterfeit goods are growing at 15 percent with total sales amounting to US\$1.82 trillion in 2020.²⁰⁷ In India, a survey undertaken by a social community platform LocalCircle for 2017-18 demonstrated that 38 percent of the consumers out of the total 6,923 respondents were sold counterfeit products from an e-commerce site during the period.²⁰⁸ A report by the office of the US Trade Representative (USTR) placed 38 online marketplaces in India including Amazon India and SnapDeal on a list of ‘notorious markets’.²⁰⁹ The report further cited a 2018 survey which found that 37 percent of SnapDeal’s customers reported receiving a counterfeit product from the platform.²¹⁰ Overall, Indian consumers have reportedly filed 13,993 fraud e-commerce cases since August 2016.²¹¹

India has no specific legislation dealing with ‘counterfeiting’ and pirated goods and as such counterfeiting has largely been dealt by Intellectual Property Laws in the country including trademark (passing off) and copyright (plagiarism) laws.²¹² Traditionally, intermediaries have enjoyed protection from liability under Section 79 of the Information Technology Act (2000) unless the platform has conspired, abetted, aided or induced the unlawful act or failed to remove content/listing upon receiving actual knowledge of such an illegal act.²¹³ Clarifying on the role of ‘platforms’ for sale of counterfeit goods, the Delhi High Court in the case of *Christian Louboutin SAS vs. Nakul Bajaj and Ors* (2018)²¹⁴ has stated that *an online marketplace cannot be absolved of liability if it is involved in one or more activities including*

²⁰⁴ <https://www.lexology.com/library/detail.aspx?g=442106a6-90a9-4a5e-9cf0-89fdbcba03d7>

²⁰⁵ <https://www.livemint.com/industry/retail/e-tailers-must-solve-complaints-ease-returns-under-new-law-11595291505304.html>

²⁰⁶ <https://consumeraffairs.nic.in/sites/default/files/ECommerce%20Rule.pdf>

²⁰⁷ <https://economictimes.indiatimes.com/news/economy/policy/cracking-the-whip-e-comm-policy-to-deal-with-online-counterfeits/articleshow/73717367.cms?from=mdr>

²⁰⁸ <https://www.localcircles.com/a/press/page/counterfeit-fake-product-from-ecommerce-sites-amazon-flipkart-snapdeal#.XxhnjZ4zY2w>

²⁰⁹ 2019 Review of Notorious Markets for Counterfeiting and Piracy, Office of the USTR

²¹⁰ <https://inc42.com/buzz/us-adds-amazon-india-snapdeal-to-notorious-list-for-counterfeit-goods/>

²¹¹ Ibid

²¹² <https://www.khuranaandkhurana.com/infringement-of-intellectual-property-rights/litigation-support/anti-counterfeiting-practice/>

²¹³ https://www.ikigailaw.com/intermediary-liability-evolution-of-safe-harbour-law-in-india-part-i/?utm_source=Mondaq&utm_medium=syndication&utm_campaign=LinkedIn-integration#acceptLicense

²¹⁴ <https://indiankanoon.org/doc/99622088/>

providing transport, warehousing and quality assurance for products listed on the platform, re-packaging the product, advertising and providing authenticity guarantees.²¹⁵ However, the existing laws have been unable to curb the menace of sale of counterfeit goods, especially through digital platforms. Consequently, some sellers such as Amazon have established a dedicated Counterfeit Crimes Unit to check sale of counterfeit goods. Through this initiative Amazon has blocked over 2.5 million suspected bad actor accounts before they were able to make a single product available for sale and blocked over 6 billion suspected bad listings in 2019.²¹⁶ New guidelines in the draft e-commerce policy also propose a set of measures to combat the sale of counterfeit goods²¹⁷.

4.6 Data Privacy

The Supreme Court of India through its landmark judgement in the case of *K.S. Puttaswamy v. Union of India*²¹⁸ declared privacy as a fundamental right, and informational privacy, as a subset of right to privacy.²¹⁹ In this era of big data, platforms amass huge volumes of data often comprising a variety of information fragments, including pieces of information which may not be viewed as ‘private in isolation’ but collectively help create detailed behavioural profiles of individuals.²²⁰ With digital markets here to stay, safeguarding consumer privacy assumes greater significance since any potential breach can lead to significant harm including but not limited to identity theft, financial fraud or disclosure of an individual’s intimate information (health records, sexual orientation, religion etc).

Currently, India is in the midst of finalising a Data Protection Law, the draft bill for which was finalised in 2019, however it is still pending approval. The Personal Data Protection Bill, when passed, would be India’s first cross-sectoral legal framework for data protection in India.²²¹ The legislation has drawn references from Europe’s GDPR which seeks to give its citizens control over their own data by recognising privacy measures such as the right to be forgotten.²²² Similar to the European GDPR, Indian law also envisages compelling tech firms to implement privacy by design, obtain explicit consent for most uses of an individual’s personal data, adhere to principles of data minimisation, and make it easier for people to demand erasure of their data.²²³ While enacting a legislation which protects consumer data is undoubtedly a step in the right direction, experts have cautioned that the draft in its present form allows the Government to exempt itself from rules and may potentially grant the government more control over citizens’ data through expansive exemptions on grounds of

²¹⁵ <https://www.thehindubusinessline.com/opinion/columns/s-muridharan/the-sale-of-counterfeit-goods-is-not-just-an-online-one/article31171431.ece>

²¹⁶ <https://www.thehindubusinessline.com/info-tech/amazon-launches-counterfeit-crimes-unit-to-combat-fraud-on-its-platform/article31912804.ece#>

²¹⁷ <https://www.medianama.com/2020/07/223-second-draft-ecommerce-policy-india/>

²¹⁸ Writ Petition (Civil) No. 494 of 2012

²¹⁹ <https://carnegieindia.org/2019/05/15/will-gdpr-style-data-protection-law-work-for-india-pub-79113>

²²⁰ *K.S. Puttaswamy v. Union of India*, W.P. (Civil) 494 of 2012.

²²¹ Anirudh Burman, Will India’s Proposed Data Protection Law Protect Privacy and Promote Growth, Carnegie India (2020)

²²² <https://www.nytimes.com/2018/05/24/technology/europe-gdpr-privacy.html>

²²³ <https://www.nytimes.com/2019/12/10/technology/on-data-privacy-india-charts-its-own-path.html>

sovereignty or public order.²²⁴ It may therefore be prudent to incorporate appropriate safeguards preventing citizens' fundamental right to privacy in the form of judicial oversight on government access.²²⁵ The government appointed committee on non-personal data has recommended mandatory sharing of non-personal data for the benefit of a larger number of domestic entities. It also recommends the creation of a separate national legislation and a new authority to oversee its governance²²⁶. The final implementation of both legislations will have meaningful implications on competition in the sector.

5. Concluding Remarks

The phenomenal rise of the platform economy has reshaped how economies operate across the world. Business models in the new digital economy have disrupted traditional industries. The Covid-19 pandemic further amplified their centrality to society and commerce. This report presents a two-pronged analysis of the impacts generated by platforms - an estimation of consumer welfare using data from a primary consumer survey and a case study analysis across different sectors of the platform economy. The case studies explain micro-level impacts generated by platforms and highlight disruptions and transformations triggered by platforms.

The quantitative analysis is based on a consumer survey of 1874 individuals in 11 Indian cities. Understanding consumer preferences for traditional alternatives to online platforms formed the crux of the survey. The results revealed a preference for traditional alternatives for different categories of platforms, especially in the case of instant messaging, communication, and social media platforms, reiterating the importance of human interactions. In general, however, consumers agreed to the enormous benefits of digital platforms and acknowledged cost and time savings from the use of platforms as well as overall value derived. The highest benefits were reported for *transport and navigation, video conferencing, e-commerce, e-mail and media & entertainment*. **The average time savings on account of platforms every week was 14 hours and the overall money saved per week was Rs. 401.** Consumer welfare was estimated using the Goolsbee and Klenow's (2006) simple utility model. In absolute terms, **the estimated surplus is Rs. 438.75 per individual per month.** Converting this to an annual surplus with an estimated user base of 687.62 million internet users, this could mean **a collective annual surplus of Rs. 3620 billion for India**, at the upper end. **At current exchange rates this would amount to USD 47 billion.**

The case study analysis highlights the impact of online platforms by illustrating their disruptive impact on traditional businesses as well the emerging synergies between digital platforms and their offline counterparts. We find digital platforms to have made considerable inroads into business processes and service delivery. In addition to the benefits of disintermediation platforms made massive contribution to the digitisation and modernisation of traditional businesses and the generation of new opportunities for livelihoods in different sectors. However, the disruption to traditional industries is undeniable, with businesses that

²²⁴ <https://thewire.in/law/privacy-bill-india-orwellian-state-justice-bn-srikrishna>

²²⁵ <https://thewire.in/law/privacy-bill-india-orwellian-state-justice-bn-srikrishna>

²²⁶ <https://indianexpress.com/article/technology/tech-news-technology/it-ministry-data-sharing-6503927/>

did not pace themselves with technological advancements finding their survival in question. The more resilient components of traditional industries were found in the market for rented luxury cars, sale of drugs for acute illnesses, TV viewing, etc. The complementarity of the online and physical components of most of these sectors was established. Both types of markets are likely to coexist in the future, although the equilibrium would currently be hard to predict.

The growth of platforms has also been accompanied by a recognition of their anti-competitive practices, the spread fake news and harmful content, political bias, etc. Regulatory oversight was therefore, acknowledged as a necessity. Through the lens of law, there are three primary regulatory concerns - (i) privacy/ data protection (ii) consumer protection and (iii) competition/ antitrust. Regulatory review is necessary in the areas of *competition issues, labour and employment, fake news and misinformation, consumer protection, counterfeit goods, and data privacy* in India. From our review of existing regulatory issues and their institutionalised mitigation, it might suffice to say that self-correction in digital markets is a myth, but overregulation can also be harmful. For the percolation of benefits accruing from the platform economy, an approach that combines ex-ante monitoring through a set of predefined guidelines and ex-post enforcement on a case-by-case basis, along with the overall strengthening of laws and regulatory institutions, will create a welfare enhancing ecosystem for the long run.

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Appendix

Appendix 1: Survey Questionnaire

Section A: Respondent Profiling

Respondent's name: _____

RQ1. Respondent's Gender

Male	1
Female	2

RQ2. Respondent's age

Below 13 years	1
13 – 18 years	2
18 – 23 years	3
24 – 30 years	4
31 – 37 years	5
38 – 45 years	6
Above 45 years	7

RQ3. Are you a working professional?

Yes	1
No	2

RQ4. What is your Profession? – SINGLE CODING

Businessperson	1
Self-employed professional (i.e. Doctor/ CA/Lawyer, etc.)	2
Employed with the Private Sector	3
Employed with the Government/ NGO	4
Freelancer	5
Others (Please specify_____)	6

RQ5. What is your Occupation (if you are not a working professional)?

Homemaker	1
Retired	2
Student	3
Unemployed/ Not working	4
Others (Please specify_____)	5

RQ6. Do you own a smartphone?

Yes	1
No	2

RQ7. Which of the following devices do you USE/EXPLORE to access the internet?
[MULTIPLE RESPONSES]

Smartphone	1
Desktop PC	2
Laptop	3
Tablet	4
Notebook	5
Other Devices (Please specify_____)	6

Q8a. What is your monthly expenditure on mobile data/ wifi/ other fixed line connections?
(in Rupees) _____

Q8b. Who pays for your internet connection? (Please select more than one option if you use a shared connection)

- i. Self
- ii. Member of your family
- iii. Employer
- iv. Others (please specify) _____

Q9a. What is your monthly expenditure on service subscriptions? (Eg: Netflix, Amazon Prime, Spotify Premium, gaming or news subscriptions etc.) (in Rupees)

Q9b. Who pays for your subscriptions? (Please select more than one option if you use a shared subscription)

- i. Self
- ii. Member of your family
- iii. Employer
- iv. Others (please specify) _____

RQ10. Do you use platform-based services like ‘Google, Email, WhatsApp, Facebook, Twitter, Google Play store, Apple App Store, E-Commerce websites, Transport & Navigation, Paytm, Zomato, MakeMyTrip, Practo, YouTube, etc.’ on the internet?

(There is a distinction between platforms and apps. For the purpose of this survey, we define platforms by the following criteria – (i) Businesses that demonstrate two/ multi-sided markets (business as a platform that has at least two distinct user groups; (ii) Businesses that demonstrate direct and indirect network effects (value of the business is driven by the number of users in the same user group or the number of users in a different user group); (iii) Businesses that are driven by user (not consumers necessarily) generated content; (iv) Delivered on the Internet; (v) Focus on B to C businesses.)

Yes	1	CONTINUE
No	2	TERMINATE

RQ11. What is your monthly income?

Less than INR 30,000	1
INR 30,000 to INR 50,000	2
INR 50,000 to INR 1,00,000	3
INR 1,00,000 to INR 3,00,000	4
Above INR 3,00,000	5

Section B: Main Questionnaire

The questions in this section pertain to the USAGE AND ACCESS of the internet for work and leisure purposes. NON-WORK/LEISURE PURPOSES INDICATES YOUR TIME 'BEYOND OFFICE/ BUSINESS HOURS'. FOR STUDENTS, LEISURE TIME IS TIME NOT SPENT IN SCHOOL/ UNIVERSITY OR RELATED ACTIVITIES. NON-LEISURE/WORK PURPOSES INDICATES THE TIME YOU SPENT IN YOUR OFFICE/ BUSINESS'. FOR STUDENTS THIS WOULD MEAN TIME SPENT IN SCHOOL/ UNIVERSITY OR RELATED ACTIVITIES. PLEASE KEEP THIS IN MIND, WHILE RESPONDING TO QUERIES. Respondents falling in the category of homemakers/ retired/ unemployed need not respond to the work-based questions.

Q1. Please indicate the AVERAGE NUMBER OF HOURS SPENT on platform- based services on a weekly basis?

Less than 1 hour	1
≥ 1 to < 2 hours	2
≥ 2 to < 3 hours	3
≥ 3 to < 4 hours	4
≥ 4 to < 5 hours	5
≥ 5 to < 6 hours	6
≥ 6 to < 7 hours	7
≥ 7 to < 8 hours	8
More than 8 hours	9

Q2. Kindly indicate the platform-based services that you USE/ EXPLORE on the internet for both work and Non-work/Leisure purposes and the percentage of time spent weekly on each of these services for work and leisure purposes?

Service Type	Code	Do you use this service? (check all that apply)	Weekly Time Spent on non-work/ leisure (% of total time spent on platforms)	Weekly Time Spent on work (% of total time spent on platforms)
Search Services (Google, Yahoo, Bing, Opera, Internet Explorer etc.)	1			
Email (Gmail, Yahoo, Hotmail, Rediff etc.)	2			
Instant Messaging (WhatsApp, Messenger, Slack, WeChat, Line, BBM, Telegram etc.)	3			
Video Conferencing (Skye, WhatsApp video, Face Time etc.)	4			
Social Media (Facebook, Twitter, Instagram, Snapchat etc.)	5			
App stores (Google Play store, Apple App Store, e-Gov AppStore)	6			
E-Governance services (Land Registration, Land Mutation, eProcurement, PDS, License Registration, Certificate Registration, Social Security Transfers, Electricity and water bill payments, etc.)	7			
E-Commerce (Amazon, Flipkart, Myntra, Jabong, Snapdeal, E-Bay, Big basket etc.)	8			
Transport & Navigation (Uber, Ola, Google Maps)	9			
Fintech (Paytm, BHIM, OlaMoney, Gpay etc.)	10			
Food, Travel and Lifestyle (Zomato, MakeMyTrip, Oyo, Swiggy, Urban Clap, Goibibo, BookMyShow etc.)	11			
Education and Training (BYJU's, Udemy, Unacademy, Coursera, etc.)	12			
Health (Practo, Cure.fit, HealthifyMe, 1mg)	13			
Employment and Recruitment (including part-time employment and contractual work/ hiring) (LinkedIn, Naukri, Monster, True lancer, Upwork)	14			
Media & Entertainment (Netflix, YouTube, In shorts, Hot star, Spotify)	15			
Dating/ Matchmaking (Tinder, Hinge, Shaadi.com)	16			
Gaming (Candy Crush PUBG)	17			
Others, please specify _____	18			

Q3. What is the impact on cost, time and overall value from using online platform-based services, as compared to their traditional alternatives? Please indicate your preferences for each category of platforms. We do not need responses for column B. It is a reference list for the respondent to recall use of traditional options versus online platforms. If the respondent has not used a traditional alternative (selects Column C), Columns (D to F) can be skipped.

Explanation for responding to Columns D to F

(Cost savings include (i) availing discounts, cashbacks etc. on online purchases and (ii) reduction in travel costs (eg: commuting to and from stores/ malls/ government offices/ visiting friends and family) or other costs (iii) kickbacks/ commissions to brokers for bookings, government services, etc. Time savings maybe in the form of lesser time spent looking for transport, quicker online searches, lesser communication lags, looking at online ratings of products and services instead of spending time asking friends/ relatives etc. or to be able to multi-task. Value derived from services refers to general improvements in efficiency/ quality such as increased choice, more customization of products, on-demand availability of services, etc.)

(A) Service Type	(B) Traditional Alternative Options	(C) No traditional alternative used	(D) Impact on Cost	(E) Impact on Time	(F) Impact on Value Derived from Service
Search Services (Google, Yahoo, Bing)	a. Library b. Talking to Experts c. Newspapers/ Magazines/ Journals d. Using Directories e. Newspapers/ Journals/ Magazines f. Asking friends/ colleagues		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived
Email (Gmail, Yahoo, msn, etc.)	a. Letter b. SMS c. Voice Call d. Personal Visit e. Facsimile		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived

Instant Messaging (Whatsapp, Messenger, Slack)	a. SMS b. Voice Call c. Letter d. Personal Visit		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived
Video Conferencing (Skype, WhatsApp video, Face Time etc.)	a. Voice call b. Personal visit c. Face to face meetings d. Con		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived
Social Media (Facebook, Twitter, Sharechat, Instagram, LinkedIn)	a. SMS b. Voice Call c. Letter d. Personal Visit e. Appoint marketing agencies f. Place ads in the newspaper		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived
E-Governance services (Tax Filing, Land Registration, Land Mutation, eProcurement, PDS, License Registration, Certificate Registration, Social Security Transfers, Electricity and water bill payments etc.)	a. Personal visit to government offices b. Sending an employee or relative to government offices c. Visiting a post office d. Coordinating with agent/ representative		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived
E-Commerce (Amazon, Flipkart, Myntra)	a. Visit physical stores and malls b. Call friends/ relatives for product reviews c. Place orders over phone calls d. Buy from salespersons		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived

Transport & Navigation (Uber, Ola, Google Maps)	a. Wait at a Bus Stop or other modes of public transportation b. Drive a Car/Bike/ other owned vehicle c. Stop to Ask for Directions / and to Avoid Traffic/ refer to sign boards and milestones		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived
Fintech (PayTM, BHIM, OlaMoney)	a. Cheque/ Demand Draft b. Debit/ Credit Card c. Visit a Bank d. Pay in Cash and wait for change		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived
Food, Travel and Lifestyle (Zomato, MakeMyTrip, Oyo, Swiggy, Urban Clap, BookMyShow)	a. Visit a Restaurant/ Service Centre or Booking Counters b. Place orders over phone c. Check for events in newspapers/ magazines d. Identify a Utility Service Provider e. Use agencies		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived
Education and Training (BYJU's, Udemy)	a. Use text books/ practice books b. Appoint tuition teachers c. Visit a coaching centre d. Ask friends/ family e. Use text books/ practice books f. Appoint training professionals g. Ask experts h. Attend Trainings		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived
Health (Practo, Cure.fit)	a. Ask friends and families for recommendations b. Call a doctor/ paramedic c. Visit a doctor/paramedic		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived

Employment and recruitment (including part-time employment, contractual work/ hiring) (LinkedIn, Naukri, Monster, Truelancer, Upwork)	a. Search newspapers for ads b. Pay visits/ call company HR c. Ask friends/ family d. Go for walk-in interviews e. Contact College Placement Cells f. Ask colleagues/ professional networks		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived
Media & Entertainment (Netflix, Youtube, Inshorts, Hotstar, Spotify)	a. Watch TV b. Visit a Movie Theatre c. Listen to the Radio d. Read the Newspaper e. Use a music player		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived
Dating/ Matchmaking (Tinder, Hinge, Shaadi.com)	a. Ask friends and relatives b. Ask marriage brokers c. Visit a matchmaking agency		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived
Gaming (CandyCrush PUBG)	a. Play board games/ video games with friends and family b. Visit Gaming Arcades c. Play outdoor games		a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived
Others, please specify _____			a. Increase in Cost b. Decrease in Cost c. No change in Cost	a. Increase in Time Spent b. Decrease in Time Spent c. No change in time spent	a. Higher value derived b. Lesser value derived c. No change in value derived

Q4. What are your weekly time and cost savings overall from using online platforms versus traditional alternatives?

a. Time savings (in hours/ minutes): _____

b. Cost savings

Type of cost saving	Amount saved (in percentage of total cost saved or in hours/ minutes)
Cost savings from discounts/ cashbacks	
Cost savings from reduced travel costs saved by cost of commuting to stores, cost of physically going to return products etc.	
Cost savings from travel cost saved by joining meetings on video conferencing, online advertising and marketing reduces costs incurred from traditional advertising, reduced infrastructure costs for online businesses etc.	
Cost savings from other sources (please specify) (Other sources may include kickbacks, commissions, etc. for ticket bookings, services, government utilities, etc.)	

Q5. What are the advantages of using platform-based services? [MULTIPLE CODING]

Less Time Spent	1	
Less Cost Incurred	2	
More Customization in Products and Services	3	
More Choices	4	
On-Demand Availability	5	
Ability to do Multiple Tasks Simultaneously	6	
Others (please specify _____)	7	

Q6. What are the disadvantages of using platform-based services? [MULTIPLE CODING]

Disproportionate Time Spent on Activities	1	
Post Choice Dissatisfaction due to Innumerable Choices	2	
Additional Cost on Online Subscriptions or Increased Consumption Expenditure	3	
Questionable Reliability and Authenticity of Products and Services	4	
Fake News and Misinformation	5	
Others (please specify _____)	6	

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