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Regulating Multi-Sided Platforms: Challenges in the Indian Context

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By Anupam Manur

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Executive Summary

Multi-sided platforms possess unique characteristics that differentiate them from a normal market structure. The presence of direct and indirect network effects, high switching costs, price parity clauses, vertical integration, and differentiated pricing structures between the two sides of the platform are unique to platforms. Further, regular sources of market power such as high entry barriers, predatory pricing, and mergers and acquisitions work differently in platforms than typical market structures. This paper discusses the unique features in detail and attempts to show how it can lead to concentration of market power and cause producer and consumer harm.

The paper also discusses why the competition law in its present state in India is ill-equipped to deal with platform market structures. The traditional tools available with the regulators are not adequate to regulate these anti-competitive features of platforms.

Introduction

Platforms are playing an increasingly important role in the 'new economy'. A platform uses technology to connect two or more economic agents and facilitates exchanges that create value to both parties. The type and number of platforms in the economy have multiplied in the recent years and they are increasingly inviting the scrutiny of regulators.

Regulators across the world are often two steps behind the rapid pace of innovation set by market players. It is even harder in the new economy, which has peculiar characteristics that are distinct from the typical marketplace. Traditional tools available to regulators to check for and ensure competition are often found to be inadequate in the case of platform business models.

India's competition law has not caught up with platform economics and does not clearly distinguish between a typical market structure and the platform market structure. Applying standard criteria to detect concentration of market power will not yield results in platform markets. Thus, many uncompetitive practices in these platforms may go undetected and this can lead to harm for both consumers and producers.

This paper surveys the existing literature on multi-sided platforms and looks at the unique characteristics that can give rise to concentration of market power. In particular, it looks at the existence of direct and indirect network effects, entry barriers, switching costs, price parity clauses, vertical integration, pricing structures between the two sides of the platform, and mergers and acquisition as sources of market power in the platform market model.

What is a Multi-Sided Platform?

A platform uses technology to connect a disparate set of buyers and sellers. The European Commission for Competition[1] (2015) proposed the following definition of online platforms in its public consultation paper: "'Online platform' refers to an undertaking operating in two (or multi)-sided markets, which uses the Internet to enable interactions between two or more distinct but interdependent groups of users so as to generate value for at least one of the groups".

Jean-Charles Rochet and Jean Tirole, among the pioneering researchers in this field, focused on the difference in the relative prices charged to the two sides of the market. They showed that optimal prices, both from the standpoint of profit-maximization and social welfare maximisation, could entail pricing below the marginal cost of provision to one side and above the marginal cost of provision to the other side. Their definition of two sided markets in a paper reflects this emphasis[2] (Rochet and Tirole 2006): "A market is two-sided if the platform can affect the volume of transactions by charging more to one side of the market and reducing the price paid by the other side by an equal amount; in other words, the price structure matters, and platforms must design it so as to bring both sides on board".

Evans and Schmalensee[3] (2012) begin with a working definition of a multi-sided platform as one that "creates value by bringing two or more different types of economic agents together and facilitating interactions between them that make both agents better off". In an earlier paper (2007), Evans and Schmalensee proposed a definition of multi-sided platforms that captures its key features. "A multi-sided platform has (a) two or more groups of customers; (b) who need each other in some way; (c) but who cannot capture the value from their mutual attraction on their own; and (d) rely on the catalyst to facilitate value creating interactions between them." Thus, their focus is on the creation of value by solving a coordination and transaction cost problem between the different groups of customers.

Along with a definition, the European Commission provided taxonomy of different types of online platforms, as shown in Table 1[4] (2015).

There are certain unique characteristics of online platforms that differentiate them from normal market structures. Some of these unique features can become significant sources of market power in the industry, which can lead to harm for both consumers and producers. In the next section, the paper highlights some of these sources of market power for online platforms.

Table 1: Taxonomy of Online Platforms with Examples

Type of Online Platform	Examples
General search engines	Google, Bing
Specialised search tools	Google Shopping, Urban Clap, Google Local, TripAdvisor, Yelp
Location-based business directories or maps	Google Maps or Bing Maps
News aggregators	Google News, InShorts
Online marketplaces	Amazon, Flipkart, eBay, Booking.com
Audio-visual and music platforms	YouTube, Vimeo
Video sharing platforms	YouTube
Payment systems	PayTM, UPI, Apple Pay
Social networks	Facebook, LinkedIn, Twitter
App stores	Apple App Store, Google Play
Collaborative economy platforms	Airbnb, Uber, Ola, BlaBlaCar

Market Power of Online Platforms

The first step towards regulating an industry is to draw out the potential market power of individual players in the industry, the sources of that market power and the potential of this market dominance to cause harm to both consumers and other market players.

Traditionally, market power is defined as the ability of a firm to profitably raise the price of a product or service over marginal cost. However, in the case of platform economies, where many services are provided for 'free', this traditional definition may not prove useful. Some other indicators, however, may prove more useful. Competition authorities can consider a firm's share of the relevant market, direct and indirect network effect, switching costs to alternative firms, entry barriers for new firms into the market, predatory pricing, and the presence of single-homing (customers on one or both sides of the platform using only a single platform) and multi-homing (customers using multiple platforms simultaneously) networks. These shall be discussed in detail in the following sub-sections.

Sources of market power for online platforms

1. Direct and Indirect Network Effects Can Lead to Tipping

Network effects, both direct and indirect, are a source of market power for platforms. Katz and Shapiro[5] (1985) talk about network externalities as a process where the "utility that a user derives from consumption of a good increases with the number of other agents consuming the good". There are network effects if one agent's adoption of a good (a) benefits other adopters of the good (a "total effect") and (b) increases others' incentives to adopt it (a "marginal effect")[6] (Farrell and Klemperer 2007).

In the simplest form, the higher the number of people who use a particular good, the greater the amount of utility that each participant derives. Very few non-platform markets exhibit direct network effects. Most of the products or services that we consume on a daily basis have properties of rivalry. Rivalry is a character trait of a good where the utilisation of a good by one consumer

prevents the simultaneous use or diminishes the utility gained by simultaneous use by another customer.

Language, though not a traditional good or service, is one of the simplest examples of direct network effects. Telephones offer a good example as well. The utility that an individual derives from purchasing a telephone directly depends on the number of other people possessing a telephone.

In two-sided markets or platforms, there are both direct and indirect network effects. Indirect network effects refer to the benefit that one side of the market derives from being on the platform and depends on the number of people on the other side of the market that they can access. For indirect network effects to exist, a market necessarily has to have more than one side to it. Thus, indirect network effects are unique to platforms, which are, by definition, multi-sided.

These indirect network effects can also have strong feedback loops, which reinforce the power of the network effects. Examples of such indirect market effects abound in today's economy. Marketplaces such as Amazon and Flipkart, online ride hailing services such as Uber and Ola have strong indirect network effects. Riders benefit from more drivers on cab aggregator platforms and drivers benefit from each additional rider added to the system. Further, increased number of drivers provide an incentive for more riders to sign up on the platform, as it will reduce waiting time and costs and simultaneously increased riders will incentivise more drivers to join the platform as it will increase the demand for their services.

Indirect network effects can often lead to tipping, which is "the tendency of one (or two) system(s) to pull away from its rivals in popularity once it has gained an initial edge"[7] (Katz and Shapiro 1994). We define tipping here as the degree of market share concentration due to indirect network effects. Tipping can clearly be seen in the operating systems of mobile phones. After the initial competition, eventually, one operating system attracts more users, either because it is bundled with the developer's hardware (such as iPhone) or, as in the case of Android, it adopts an open licensing policy. More software is written for the operating system, which makes it yet more attractive to users, resulting in increased demand, and a growing user base. That is, the network effects lead to a "positive feedback effect". For this to occur, however, the platform must reach a critical mass user base.

Some of the conditions for tipping to occur are:

1. Tipping requires the network operator to adopt a non-co-operative or winner-takes-all (or winner-takes-most) strategy.

2. Tipping can occur when networks are not interconnected, or in the case of indirect network effects, competition takes place between incompatible products, services or technical standards[8] [9] (Mueller 2013) (Katz and Shapiro 1999).

3. In the electronics industry, an exclusive attribute such as proprietary technology, which is incompatible with other potentially substitutable products, provides a necessary (but not sufficient) condition for tipping.

4. High switching costs and significant customer lock-in can create conditions for tipping.

5. Vertical integration and predatory pricing also plays an important role. We will look at these factors later in the paper.

Though, there is consensus among economists that indirect network effects lead to concentration of market power, "it is typically very difficult, if not impossible, to assess tipping directly from field data"[10]. (Dubé, Hitsch and Chintagunta 2010). This is because, in essence, an empirical measure of tipping would need to compare the expected concentration in a market to the hypothetical expected concentration that would arise if the sources of indirect network effects were reduced or eliminated[11]. The authors develop a model to test for tipping in the video game industry and find that "tipping emerges as we strengthen the indirect network either by increasing the utility from software or by increasing the degree of consumer patience. In some instances, this can lead to an increase in market concentration by 24 percentage points or more".

In the online economy, the network effects are accentuated by the use of data and machine learning algorithms. Data network effects "occur when your product, generally powered by machine learning, becomes smarter as it gets more data from your users"[12] (Turck 2016). Google's search engines and Facebook's live feed customising the results based on user's past behaviour are examples of data network effects. In short, "the more users use your product, the more data they contribute; the more data they contribute, the smarter your product becomes (which can mean anything from core performance

improvements to predictions, recommendations, personalization, etc.); the smarter your product is, the better it serves your users and the more likely they are to come back often and contribute more data – and so on and so forth"[13]. This further entrenches the scale effect and increases the tendency of the market to tip.

2. Network Effects Can Create High Entry Barriers

The direct and indirect network effects that are inherent to platforms can create significant entry barriers for rival platforms. Acquiring a critical mass of users on platforms is a key challenge for emerging platforms. This is because emerging platforms and rivals have to scale up on both sides of the platforms in a rapid fashion in order to succeed. This would require significant paid up capital and deep pockets, which small start-ups may not possess.

David Evans[14] (2016) summarises the typical problems faced by a new platform entrant:

> "Multi-sided platforms face a chicken-and-egg problem when they start as a result of what they are trying to accomplish. Consider a platform that is in the business of getting Type As together with Type Bs. Type As may not want to consider the platform unless they know it has attracted Type Bs, but Type Bs may not want to consider the platform unless they know it has attracted Type As. The platform has to figure out a way to get both types of participants on board, in sufficient numbers, to provide value to either".

To further add to the entry barriers, there can be a significant first-mover advantage. If the first-mover can take advantage of the indirect network effects and have a customer lock-in, they get to capture the entire market and make it tough for incumbents. For the entrants to succeed, they will have to offer innovations, product enhancements, higher quality, and steeper discounts.

3. High Switching Costs Cause Consumer Lock-In

Switching costs are the barriers that consumers may face when seeking to switch to another platform. Juxtaposed with high indirect network effects, the

presence of high switching costs can be detrimental towards competition by creating consumer lock-in.

Switching costs, though not unique to platforms, are found to be significantly higher in such markets. For normal products, brand loyalty is a form of switching costs. However, the presence of network effects, both direct and indirect, can lead to much higher switching costs in platforms.

Switching costs include not only the costs of connection to a new network, but also the "opportunity costs that can result from the loss of network effects when customers switch to another supplier"[15] (BKartA 2016). If the user base of the current network is quite large, it will provide further disincentives for users to switch to another platform.

Switching costs on peer platforms include severe social costs, especially the loss of social capital. "Peer providers often invest considerable effort to receive good ratings and build reputation. This is likewise the case for peer consumers, who may invest time and energy to become familiar with the peer platform, its trust mechanisms, write reviews and otherwise engage with the community"[16] (OECD 2016). The loss of social capital while switching to a new peer platform can prove to be a significant disincentive.

Apart from the network effects, there are other factors that determine consumer lock-in to their initial brand choices: the time required to learn and ramp up new systems, brand loyalty enhanced by a reluctance to switch away from a trusted network, and even "buyers' choice under uncertainty"—the rational decision to stick with a known brand that performs satisfactorily[17] (Lobel and Bamberger 2017).

Lobel & Bamberger further elaborate on the nexus between network effect and switching costs and its impact on competition and consumer welfare. In combination, these two factors "reinforce each other to create lock–in because consumers must collectively coordinate a costly switch to benefit from a competitor's network. This can lead to substantial collective inertia that gives a dominant firm the opportunity to increase prices, results in consumer deadweight loss, and potentially decreases innovation and consumer choice"[18].

Klemperer[19] (1987) builds a two period model in a market with switching costs. The author finds that "firms raise their prices in the second period to take

advantage of the fact that their first-period customers have become partly locked in to them as suppliers". Prices are generally higher in the second period than in the first period before consumers have become locked-in to any supplier and higher than any other market without significant switching costs. Firms' profits in the second period, in such a setting, depend on the sales in the first period, and thus, there is fiercer competition for market share in the first period than if they were simply profit-maximising firms.

Both large scale and small scale entry into platforms with entrenched market power is difficult. Switching costs discourage large scale entry by a competitor because the pre-existing network of consumers has switching costs. Network effects discourage small scale entry because a network must achieve critical mass to offer value to users[20] (Farrell and Klemperer 2007).

The European Commission Report[21] (2015) also refers to switching costs for businesses, which has not received much attention in the literature. In a two-sided market, businesses would also face significant switching costs in changing platforms, especially if customers predominantly prefer one platform. For instance, many businesses are completely reliant on Google for directing customers to its site. In this way, the online platforms' business model places them in a position of indispensable trading partner, 'essential facility' or 'gatekeeper'.

The empirical literature on switching costs is a lot smaller and more recent than the theoretical literature. There are only a few studies that attempt to directly measure switching costs. Generally, there is an absence of microdata of an individual customer's purchase history. Where it is available, few studies have been conducting using discrete choice approach to explore switching costs. For instance, Shum[22] (2004) analyses panel data on breakfast cereal purchases, and finds that households switching brands incur average implicit switching costs of $3.43, which is a higher price than any brand available.

However, since switching costs are consumer-specific and not directly observable, and consumer purchase history is not available in great detail, the literature often resorts to less direct methods to calculate switching costs. For instance, Kim et al[23] (2003) uses highly aggregated panel data from the Norwegian banking industry (a Bertrand oligopoly[24]) and calculates the switching costs for bank loans to be 4.12%, which is significant in the sector. There are several other papers that discuss the importance and magnitude of switching

costs in a variety of sectors, such as cigarettes, credit cards, computer software, air travel, supermarkets, electricity suppliers, etc. These are well reviewed in Farrell & Klemperer[25] (2007, 1981).

Of particular relevance to this paper is the combination of high switching costs and indirect network effects on platforms.

Mikołaj Czajkowski & Maciej Sobolewski[26] (2013) from the University of Warsaw conducted a discrete choice experiment on a representative sample of consumers in Poland to identify and measure the switching costs and network effects in mobile telecommunications. The study found that there was a high amount of status quo inertia for the customers. Issues with number portability explained only half of the switching costs. The study found strong evidence that it is the share of a respondent's small group of family and friends that use the same operator, rather than the operator's entire customer base, that determines the strength of the network effect.

Cullen and Shcherbakov[27] (2010) estimate that switching costs for changing mobile service providers in the US was approximately $230, due to bundling of the handset and early cancellation fees. Park and Koo[28] (2016) analyse switching cost in the smartphone handset market. The magnitudes of switching costs of handsets and operating systems (OS) depend on the levels of searching cost, learning cost, and uncertainty when purchasing new smartphones. They find that switching of OSes decreases consumer utility. "Consumers who have experience using a certain mobile OS have a tendency to prefer the same OS when they change smartphones. The switching cost from OS changes increases as application purchasing cost, accessory purchasing cost, and uncertainty from the possibility of additional post-transition payment increase. Moreover, as consumers use various smart devices, including tablet PCs, smart watches, and connected TVs, the OS switching costs will have a more significant effect on the purchase decision for various devices with mobile OS".

4. High Dependence on Platforms Reduce Businesses' Bargaining Power.

When there are high switching costs for businesses due to high indirect network effects, many businesses that rely on platforms end up losing bargaining power. Online platforms could abuse their business powers and the dependence of businesses in a number of ways.

Many platforms put in price parity clauses in its contracts with businesses that sell on the platforms. The online platforms used their market power to "forbid companies from selling more cheaply elsewhere" (including the seller's own website, other platforms, and all offline distribution channels).

Price parity clauses can be of two types: Wide and Narrow. Wide parity clause is where the price that a firm sets on a platform cannot be higher than the price it charges on a rival platform or when it sells directly. The narrow variety clause states that the price on the platform should not be higher than the price at which it sells directly.

These clauses have recently been the subject of many antitrust investigations in Europe and elsewhere. Hviid[29] (2015) has a detail review of many of the recent cases. In response to the investigations, Amazon removed price parity clauses in EU in response to investigations in Europe; Booking.com and Expedia recently made 5-year commitments to not impose wide price parity in Europe; and price parity clauses were made illegal in Austria, France, Germany, and Italy for Booking.com and Expedia.

Platforms generally justify the use of price parity clauses as a means to prevent showrooming—a situation where a consumer searches on the platform, but then buys directly from the seller at a price lower than the platform.

The literature on the competitive effects of price parity clause is limited and inconclusive. The common view is that price parity clauses limit competition between platforms on commission rates, ultimately leading to higher prices being charged to consumers. "When wide price parity clauses are used by platforms, a supplier has to set the same price on all of them as well as on its direct distribution channel. In this case, each platform has an incentive to increase its commission above the 'competitive' level since it does not risk losing market share to its rivals. This ultimately leads to supra-competitive commissions being charged by platforms and thus to higher prices being charged by suppliers to final consumers"[30] (Virge 2018).

A study conducted by the Hunold et al. at the Centre for European Economic Research[31] (2017) analyses the best price clauses (BPCs) or price parity clause of online travel agents (OTAs) using meta-search price data of nearly 30,000 hotels in different countries. The study was able to capture the effects of

Booking.com's abolition of the BPC, which enabled them to isolate the competitive effects of the BPC. The results are fascinating:

1. More hotels started publishing their prices on Booking.com after the removal of the BPC.

2. Hotels that already published their prices on Booking.com did so more frequently after the change.

3. Hotels started charging a lower price on their own website than on Booking.com

In the United Kingdom, the Competition and Market Authority (CMA) conducted a two-year investigation and in March 2015, decided to prevent price comparison websites from using wide price parity clauses in their relationships with private motor insurance providers[32]. "In this report, the CMA concludes that the removal of wide price parity clauses by the leading price comparison websites led to a decrease of about three per cent of the commissions charged to insurance providers"[33] (Virge 2018).

However, as mentioned above, not all of the cases are as clear-cut as the CMA case. A study by Johansen and Vergé[34] (2017) showed that price parity clauses need not cause higher commission fees and final prices. Instead, they find that "they may simultaneously benefit all the actors (platforms, sellers and consumers), even in the absence of traditional efficiency arguments".

5. Vertical Integration can Violate the Neutrality of the Platform

Many technology platforms use their market power to engage in vertical integration, whereby the platform, which acts as a marketplace also, acts as a competitor on the very platform. E.g.: Amazon, the marketplace, and Amazon, the retailer, on the very same marketplace. The company being a player on its platform is not anti-competitive by itself. However, this can lead to conflict of interest and incentives for the platform to favour its own business.

After vertical integration, the platform has an incentive to exclude other competitors. This exclusion can be carried out explicitly through the delisting of certain suppliers from the platform or carried out more subtly in the form of

higher commission fees to the supplier and through manipulation of rankings on the customer's side.

The first example of this occurring was the Microsoft case, where the Department of Justice sued Microsoft for illegally thwarting competition in order to protect and extend its software monopoly. Microsoft forced computer makers to include Internet Explorer as the default web browser in the host Windows operating system. The Windows OS was seen as a platform where third-party software developers could compete but the bundling of Explorer was responsible for Microsoft's early victories in the browser wars, as every Windows user had it as the default web browser. It was also alleged that Microsoft manipulated or altered its application programming interfaces (APIs) to favour Internet Explorer over third-party web browsers[35] [36] (Manur 2018) (U.S. V. Microsoft 1999).

There are plenty of examples with regard to vertical integration. When Apple started offering Apple Music, it imposed higher commission rates and restrictive conditions on its rival Spotify[37] (Crook 2016). Julia Angwin and Surya Mattu of ProPublica "looked at 250 frequently purchased products over several weeks to see which ones were selected for the most prominent placement on Amazon's virtual shelves — the so-called "buy box" that pops up first as a suggested purchase. About three-quarters of the time, Amazon placed its own products and those of companies that pay for its services in that position even when there were substantially cheaper offers available from others"[38] (Angwin and Mattu 2016).

Amazon has been accused of using the platform as a laboratory for its retail arm. It would let retailers innovate and compete against one another, and then cherry-pick the best products for themselves and capture the value. A study by Feng Zhu and Qihong Liu[39] (2016) identified 164,000 products sold exclusively by third-party retailers and not by Amazon. Ten months later, it was found that Amazon had started to sell around 3% (some 5,000) of these items. As expected, the items sold by Amazon were the default result on the search page.

Google has been accused of violating the platform neutrality principle on more than one occasion. The European Commission for Competition found Google guilty and levied a $2.7 billion fine. Google vertically integrated and started its own comparison shopping site. It then lowered the ranking of rival comparison shopping site results, which resulted in a decrease of 20% traffic to these sites.

Simultaneously, Google showed the results from its site Google Shopping at the top of the page[40] (Federal Trade Commission 2015).

These practices of vertical integration and violation of platform neutrality can have severe consequences for consumers and businesses that operate on the platform. Unfair platform-supplier relationship can cause:

1. Reduced innovation and increased prices: For instance, Wen and Zhu[41] (2017) find that after Google's entry into a specific app category on Android Google Play Store, affected developers reduce innovation and raise the prices for the affected apps.

2. Limited consumer choice: Zhu and Liu[42] (2016) find that the entry of Amazon on the platform discourages small third party sellers from growing their businesses and offering new products on the platform.

3. Degradation of the quality of the platform: Luca et al[43] (2016) demonstrate the reduced consumer welfare when Google promotes own content ahead of other platforms on its search engine.

6. Platforms Cross-Subsidise Between Different Sides Based on Elasticity

The demand for one group in a two-sided market largely depends on the demand by the other group and this has some interesting implications for pricing structure. Platforms would have to balance the prices between the two groups. If they charge a higher price for Group A, they would be discouraged from joining the platform. This would, in turn, discourage Group B from joining the platform as well, since they would have access to fewer Group A participants. Thus, platforms may choose their pricing strategies based on the relative elasticities of the two groups. Prices on both sides of the market depend on the joint set of demand elasticities and marginal costs on each side.

> "For instance, in any market, prices typically fall as the price elasticity of demand increases, but in a two-sided market the effect can be even larger: The low price on one side not only attracts elastic consumers on that side but also, as a result, leads to higher prices or more participation on the other side. The increased value extracted from the other side

> magnifies the value of having consumers on the first side, which leads to a yet bigger price decrease and quantity increase for the side that experiences the increase in elasticity"[44] (Rysman 2009)

If Group A, say consumers, have a highly elastic demand curve, it would behove the platform to charge a very small fee or even offer the service for free and compensate it by charging a higher fee to Group B, say sellers. In certain cases, platforms are also known to reward one group for participating on the platform and subsidising it by charging a higher fee to the other group.

In the case of multiple competing platforms, the effect of participation of one side on the other is even more pronounced. When two platforms are competing on prices to customers and sellers, if one of the platforms decreases the price it charges to customers, it attracts customers from the other platform and simultaneously decreases the value of the rival platform to sellers. This will attract the sellers to come to the platform with lower prices to customers. The platform can even charge a higher price to sellers as it is now providing access to a larger customer base[45] (Rysman 2009).

The magnitude of this effect depends on whether the two sides of the market are single-homing (using a single platform) or multi-homing (using multiple platforms). If both the customers and sellers are multi-homing, i.e., they use multiple platforms, competition can be healthy and no single platform will have significant market power. However, if one side, say customers are single-homing, then, the platform has a monopoly over access to those customers. Hence, platforms will compete aggressively on the side that has single-homing and will charge monopoly prices to the side that is multi-homing[46] (Armstrong 2006).

In such a situation, competition between firms can have a large effect on the side that uses a single platform and nearly no effect on the side that uses multiple platforms. Payment card pricing, for example, has increasingly favoured consumers by giving rewards and discounts, whereas, they charge a fixed merchant fee.

The risk of tipping is far greater in cases where there are customers who are single-homing, than multi-homing. "Although single-homing intensifies the competition for single-homing users, it also raises the barriers to market entry. This also applies to networks that cause high switching costs due to their

resulting links with specific individual users and can thus have a strong lock-in effect. In such cases new suppliers may have to poach users from the platforms or networks already in place. Moreover, for platforms the incentive to conclude exclusivity agreements with single-homing users can increase, a development which would facilitate or secure concentration in the market"[47] (BKartA 2016)

Finally, in order to capture the market on one side and attract large enough numbers on the other, there is a high probability of the occurrence of predatory pricing, where an intermediary lowers price early in the product life cycle and raises it after having established a base.

Similar to normal single side markets, predatory pricing can be detrimental to competition in a multi-sided platform. A platform can drive rivals out of business by lowering the price to one or more groups that it serves. After driving a rival out of business the platform, like a single-sided firm, could raise prices and reduce subsidies thereby recouping its losses.

However, standard tests that measure predatory pricing are useless in the context of platforms, as the tests are based on the assumption that profit-maximizing prices are never below marginal cost. For multi-sided platforms, though, the economic model could be one of charging a price lower than the marginal cost (free or even a negative price).

Predatory pricing crucially exploits the presence of indirect network effects on multi-sided markets and the need to achieve critical mass. "By charging unprofitably low prices (including providing subsidies in kind) a platform could make it difficult for a rival that cannot match these low prices (or subsidies in kind) to obtain a critical mass of customers"[48] (Evans and Schmalensee 2012).

Examples from the Indian context and elsewhere reveal how many of the online firms are willing to suffer deep losses in the primary period by practicing predatory pricing, with a hope of recouping losses later. The global taxi company Uber made worldwide losses in the first half of 2016 of US$ 1.27 billion. Its Indian rival company, Ola, reported a net loss of Rs.7.96 billion ($127.8 million) in March, 2015. Similarly, the firm One97 Communications, which owns PayTM, reported a loss of Rs.15.49 billion ($233.8 million) in March, 2016[49] (Parsheera, Shah and Bose 2017).

7. Mergers and Acquisitions can Increase Indirect Network Effects

Any analysis of mergers and acquisitions between platforms should keep in mind a few general principles[50] (Evans and Schmalensee 2012). First, the standard tools of analysing the competitive effects of mergers and acquisitions would not be helpful in the case of platforms, mainly due to the failure to account for the interdependence in demand among the multiple sides. A complete model would require including the firm's demands, both cross price effects and indirect network effects.

Second, mergers of multi-sided platforms will increase the indirect network externalities by increasing the size of all customer groups. This could lead to efficiency gains that could offset the potential price increases.

Third, in order to evaluate the welfare effects of mergers of platforms, it is important to consider the impact on all the sides. "A merger could benefit consumers on one side but harm those on the other side and the net effect of the merger across all customer groups could therefore be positive or negative" (ibid). Just focusing on consumer welfare, as most competition authorities do, will not be enough. It could well be that other small businesses who are on the other side of the platform could get hurt. Thus, the concept of harm needs to expand to businesses or producers as well as consumers.

Fourth, it is important to look beyond just monetary threshold to scrutinise mergers. Under the current system, only those mergers above a particular monetary value get picked up by antitrust authorities for review. However, the monetary value of a deal may not always provide a good proxy about the underlying value of the company. This value may be derived either by future potential, the network and the data that it possesses. Thus, it could make sense for the agencies to automatically review any deal that involves exchange of certain forms (or a certain quantity) of data. If these principles were used, Facebook's acquisition of WhatsApp and Instagram would have come under greater scrutiny[51] (Khan 2017).

A specific issue with regard to ownership of the platform economies that needs greater attention is the common ownership of competing firms by a single investor or a group of investors. In such situations, the investor(s) potentially lose when one of the firms attempts to increase sales through reducing prices, as it would come at the cost of the competing firm in which they have invested.

"The incentive therefore would be to keep market-wide prices high rather than trying to capture the market share of other"[52] (Parsheera, Shah and Bose 2017). Azar et al[53] (2018) show that common ownership of competing airline firms in the US could lead to a price increase of 3-11%.

In the taxicab aggregator market, Tiger Global has invested in Ola in India, Didi in China, and GrabTaxi in Singapore. Later, in 2015, it acquired a stake in Uber technologies, the rival firm in all these markets, which has led to concern about the potential conflict of interest. Other examples include the investment by Norwest Venture Partners in Quikr and Sulekha (online classifieds) and Sequoia's investments in Zaakpay and Citrus (online payment gateways); Grofers and Peppertap (online grocery delivery); TinyOwl and Zomato (online food delivery) and Practo and 1mg (online doctor search)[54] (Parsheera, Shah and Bose 2017).

Approaches to Competition Enforcement in India

The gap between regulators and the rate of innovation by firms in the new economy has widened. The pace of decision making by competition authorities and the technical expertise available with them is not adequate to assess the competition issues arising in the platform markets. "The mismatch between law time—time taken by authorities in deciding a case—and new-economy real time, can cause the ultimate findings to become irrelevant or ineffectual" (Bose & Parsheera, 2017) [55].

In India, though there have been a few anti-trust cases against platforms, the Competition Commission of India (CCI) has dealt with these cases using the same approach as it would against a non-platform market. By analysing the different cases that have come up in front of the CCI, Bose and Parsheera have summarised the general approach of the CCI in applying competition laws to platforms and network industries.

The first step that the CCI undertakes when a case comes up is to define the relevant market—both product market and geographical market. Once this is done, the CCI will check whether a player has a dominant position – a position of strength that allows a firm to "(i) operate independently of prevailing competitive forces; or (ii) affect its competitors, consumers or the relevant market in its favour"[56].

The competition law is quite clear that allegations of abuse of dominance can only be made once dominance of the firm in the relevant market is established. This is unlike the antitrust laws in the US, where the Sherman Act enables the regulator to take measures based on an attempt or a conspiracy to monopolise. Thus, in India, competition authorities can act on abusive practices by dominant firms, only once dominance is established[57]. This can prove problematic in platform markets, where due to indirect network effects and high switching costs, the damage done to competition by a dominant firm cannot be undone ex-post facto. Any punitive measures, such as fines, cannot reverse the market tipping towards a dominant player.

Though the competition law in India explicitly prohibits predatory pricing, the method it uses to detect the unfair trade practice is inadequate in networked markets. When a firm is selling its products at a price lower than the marginal cost of production, it comes under the radar of the CCI for predatory pricing. However, since data on marginal cost is not easily available, the CCI uses average variable cost as a proxy for marginal cost. For platforms, however, there is usually high initial fixed cost and low variable cost thereafter. This enables many platforms to engage in predatory pricing, without grabbing the attention of the CCI.

Finally, even though collusion, where rival firms enter into agreements to reduce competition, is seen unfavourably by the CCI, the competition law does not target common ownership of rival firms. The question of investor behaviour arises in situations where "the investors hold shares in competing companies, hence facilitating active collusion or reducing their incentives to compete; and in case of investor-facilitated buyouts that reduce the number of players in the market"[58].

Conclusion

Throughout the paper, we have seen that the traditional tools available with regulators are not adequate to detect uncompetitive practices in platform market models. This can lead to concentration of market power in the relevant markets and cause producer and consumer harm. This paper lists the various unique characteristics of platform market structure that can cause such a concentration, which the regulators should actively track.

Based on these unique characteristics, this paper stresses the need to revisit the approach to competition policy in India. There is a need for expanding the scope of competition policy to include platform businesses and specifically change the tools required for detection of anti-competitive practices.

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