The Digital Market Competition with Multisided Markets: A Case of Indian E-Commerce

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I. The Context of the Study

Digital platforms are one of the key developments in facilitating industry 4.0 and are at the center of the multifold benefits the consumers derived through this. With 644 million E-com users in 2021, India is the second largest behind China in terms of E-com users[1], which indirectly indicates the potential of Indian market and how crucial for the top e-com players to establish their business in India. With the tremendous growth of ecommerce business in India, the Department for Promotion of Industry and Internal Trade (DPIIT) has come up with a draft E-Commerce Policy in February, 2019 with an aim to ensure fair competition and level playing field to all stakeholders in the sector. The draft regulations underline the prominence proposed to be given to the domestic industry and the non-discrimination of small and medium enterprises/sellers in this business.

Prevalence of (i) network effects (ii) high sunk costs and low marginal costs and (iii) multi-sided markets makes high entry barriers to the new players to successfully enter into the market. Network effects increase the value of the platforms as the number of users increases. With the increase in the number of online customers, the number of sellers will also increase and vice versa (ii) high sunk cost and low marginal costs (UNCTAD, 2019) occurs since the major cost of operation is the platform creation and popularizing it among the stakeholders. Algorithms is the key tool through which the major decisions and processing undertaken by these platforms. This involves high investment in the initial stage of operation with high uncertainty over the success of the platform. Apart from this, successful operation of any platform depends on the efficient marketing and the service delivery to make it popular among customers. (iii) Presence of multisided markets enable the platforms to generate income from multiple

[1] Based on Statista Database.

channels, and thereby sustain profitably in the market even if it is creating losses in some areas of operation. Hence, it is possible for the incumbents to sell products at a loss to drive out the new entrants, thereby high entry barriers exist with the co-existence of huge sunk cost, lower marginal cost, network effects.

Competition assessment in traditional markets is based on the consumer welfare approach, which consider lower prices or increased quality of products at the same price as an indicator of increased competition. However, in online markets pricing decisions are not only based on the traditional demand supply determination as the revenue generated through selling the product is only factor, which is linked to the registered seller of the product. The platform generates revenue from multiple sources such as various marketplace commissions, marketing support, advertisement and so on. Companies with high network effects generates more revenue from multiple channels. Multiple revenue sources enable the platforms to offer lower prices and also provide various offers and discounts, which further increases their sales, and revenue generation through other channels. Here, the consumer welfare must be much higher than the traditional mode of purchase due to the well-known convenience effects of online platforms in the context of modern lifestyles. Nevertheless, the offline sellers of the same products may not be able to provide additional offers and discounts due to the absence of multisided markets. This creates competition concerns since the level playing field is disrupted.

Nevertheless, it is possible that such offers and discounts may be an initial tactic to gain market control. When the platform becomes a major player, it may charge higher prices for the goods and services or the platform may discontinue the additional offers provided, which may adversely affect the consumer welfare. Additionally, it may also hike the commission rates for sellers registered with the platform. After a point, the online sellers may not be able to bargain without having other equally placed platforms with high network effects. This is to be viewed from the background that the customers are increasingly shifting from offline to online market due to the modern living conditions and convenience.

In India, the e-commerce market is highly concentrated towards the top players. As per media reports, Flipkart and Amazon has more than 10 crore registered customers each. Amazon has more than 10 Lakhs registered sellers in December 2021, out of that 90 percent belongs to small and medium business (SMBs). As on September 2021, the seller base of Flipkart is 3.75 Lakhs, which is also planning to increase the presence of large number of SMBs. These statistics reflects on the huge network effects as well as the need to protect the interest of small and medium sellers. The draft E-Commerce Policy also mentioned about the possible of high prices on advertisement with high network effects, which occurs since '*a few social media platforms and search engines control the potential access to customers. Create monopoly and high prices, and entry barriers exists for the new entrants and start-ups to use advertisement*'. Existence of big data and network effects enable the top e-commerce firms charge high for advertisements. In this context, this paper address the extent of multisided markets in Indian e-commerce and the related issues. The paper is structured as follows. The second section discuss the data and methodology followed, the third section discuss an overview of Indian e-commerce market, third section illustrates the concept of multisided markets and how it is dealt by the competition agencies. In the fourth section we shall provide the available empirical analysis on the multisided markets using various cases studies and the fourth section concludes with policy inferences.

II. Data and Methodology

Data on E-commerce market is collected from various secondary databases such as Statista, India Brand Equity Foundation (IBEF) and the PROWESS IQ database of Centre for Monitoring Indian Economy (CMIE). Under trading category for wholesale and retail trade, PROWESS covers 7959 companies.[2] Out of this, majority (91 percent, 7302 companies) are engaged in wholesale trade and the number of retail companies are 653, which makes only 8 percent of the total. Other four companies are included from non-trade categories such as travel, communication since they are involved in E-commerce. Out of the total 7959 companies, 75 are online trading companies, which

[2] These are the companies registered with BSE/NSE. Otherwise trading consists of large number of unorganised sector companies. Though the coverage of offline trading companies are less due to the extreme presence in the unorganised sector, for online trading, the data cover most of the online trading platforms. Since online platforms are a relatively new phenomenon, PROWESS was not following an appropriate classification for this. Online platforms are engaged in different types of business, and thereby these companies were classified under different activities. We have reclassified these list of firms by including all major top e-commerce players in India. Data was not available for many top firms. We acknowledge the timely support received from CMIE to include many of these missing firms in the database.

are used for analysis. In addition, we have collected information from the Annual Reports of various selected companies to decompose their various channels of revenue generation. In order to understand the extent of multisided markets, we have decomposed the channels of revenue generation from online trading activities and the revenue received through advertisement and such additional activities.

III. The Concentrated Structure of E-Commerce Market in India and the Globe

The value and volume of E-com transactions are tremendously increasing across the world, which in turn opens up large opportunities for the E-com players in India. As per the data available from Statista Digital Market Outlook, the number of E-commerce users in India is around 644 Million in 2021, which makes an E-commerce penetration of 46 percent. This indicates 46 percent of Indian population makes online purchases. It is highly significant in the internet penetration of 61 percent. Globally, UK has the highest internet penetration rate of 92 percent and the E-com penetration of 86 percent. In terms of the number of E-com users, India is the second largest after China. Global revenue generated through e-com business is around US$2.5 trillion, out of which China topping the list with US$1,111Bn followed by US, Japan, UK and Germany. In terms of revenue generation India's position is 8th in the world. As per the data from India Brand Equity Foundation (IBEF), the Net sales from E-commerce is around US$46.2 Billion in 2020. The top 100 online stores in India registered a net sales growth of around 91 percent.

Figure 1: E-com users and Ecom Revenue Generation across the Globe

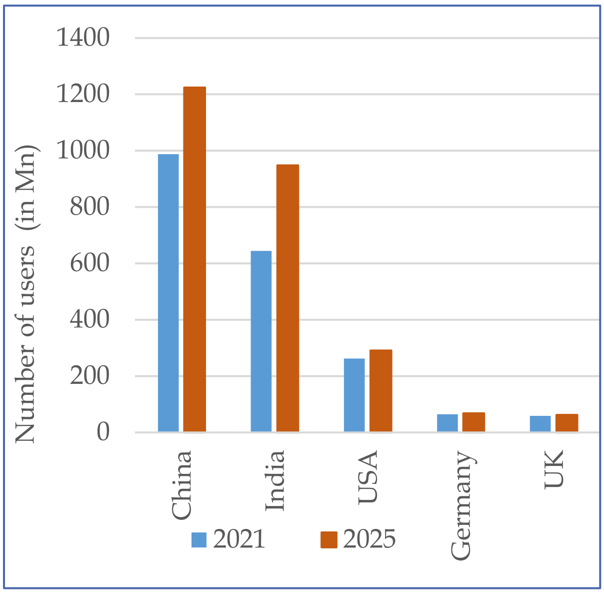
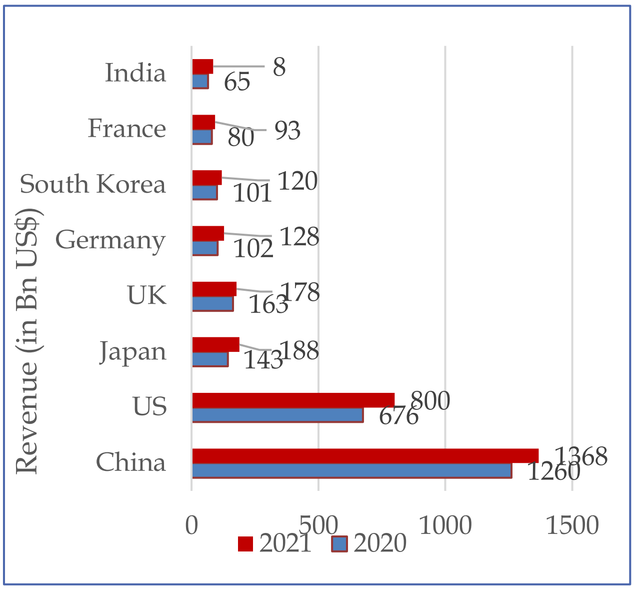


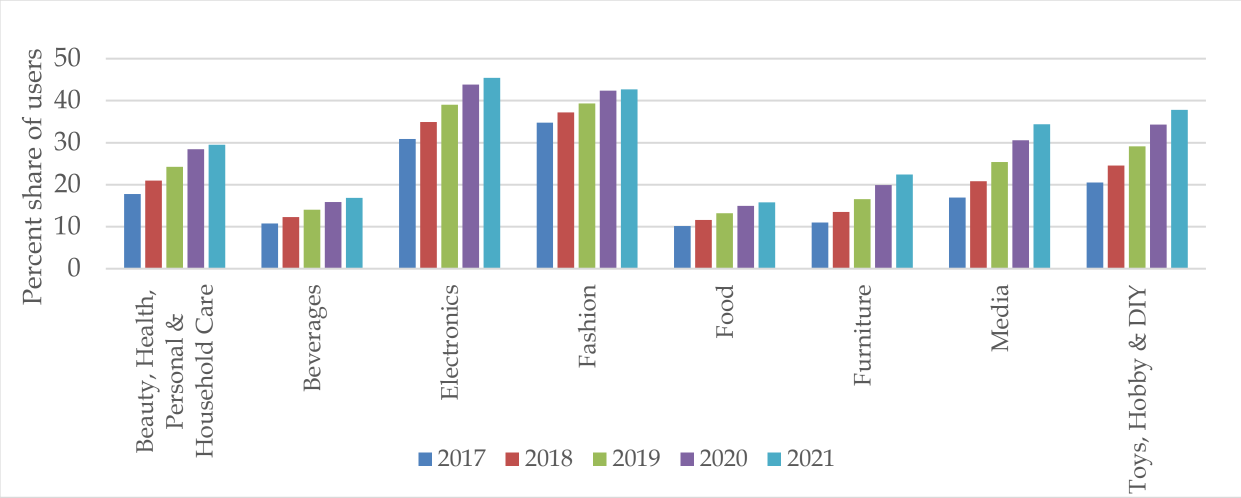
Figure 2: E-com Revenue Generation across the globe



Source: Calculated using Statista Database

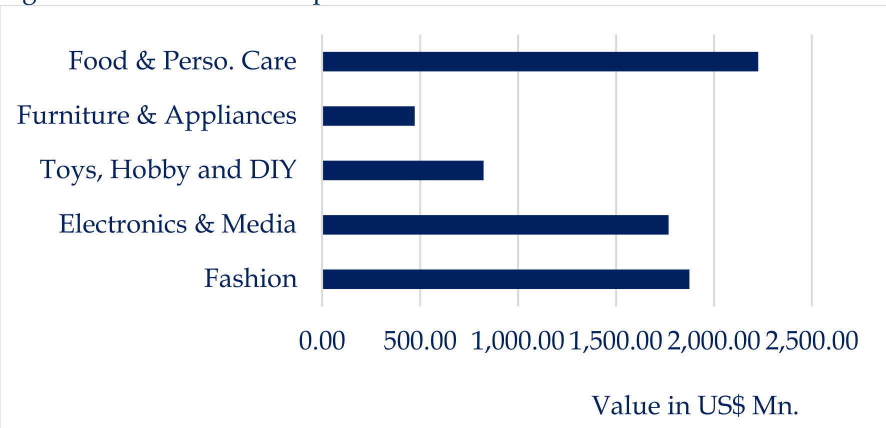
It is important to note that the customer base increased for all categories of products over the last five years (Figure 1 and 2). Electronics, toys, fashion etc., has been some of the top areas attracted customers, which has been clear from the Global Consumers Survey undertaken by Statista GCS as well. GCS underlines the top online consumption segment in India is clothing followed by footwear, consumer electronics and food items. In terms of the value of sales of the top 100 E-com companies, food and personal care has been the top product categories consumed followed by clothing and electronics (Figure 3). Such a shift in the mode of purchase also bringing implications not only on the producers but also on the whole supply chain management and sales including the associated employment structure.

Figure 3: Share of E-com users in India across Various Categories during 2017-21



Source: Calculated using Statista Database

Figure 4: Sales Value of Top 100 E-com firms in India



Source: Calculated based on ecommerce DB, Statista Database

It is worth noting that though China and India are the top customers of E-commerce in terms of number of users and revenue generation, US companies top the global retail trade. Out of the top 50 retail companies across the world, 17 are US based with a share of 56 percent of the total revenue generated by the top 50 companies in 2020 (Table 1). German companies are the next in the list with 4 companies constituting 13 percent of the revenue generated. France also has 4 companies, but their revenue share is only 6 percent. China has a presence with 2 companies. Nevertheless, none of the Indian companies appear in the top 50 list. Seven out of the top 10 companies belong to US. Walmart, Amazon, Costco Wholesale Corporation are the top American companies followed by Schwarz of Germany. Walmart alone accounted for 16.4 percent revenue share (US$ 560 Bn) in 2020. Based on the ecommerceDB data (2021) of Statistica too, it is evident that, there has been a steep rise in the growth of net sales of the top 100 Indian e-com companies. From 2018 to 2020, a high growth rate of 91 percent is registered.

Table 1: Location and Revenue Share of Top 50 Retail Companies in the World

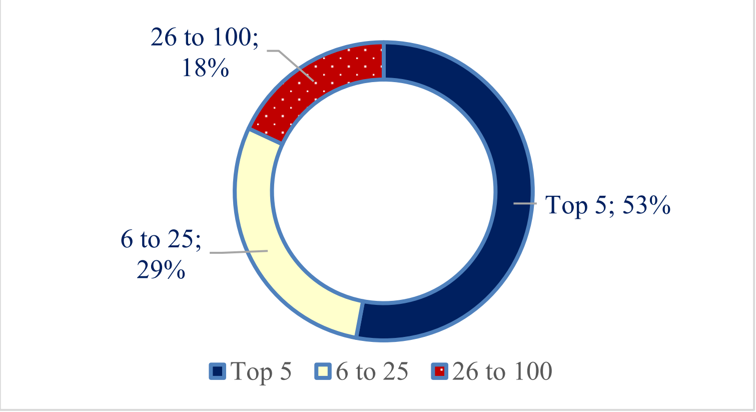
Country	No. of Companies	Retail Revenue Share (%)
US	17	55.8
Germany	6	12.9
France	6	6.0
Australia	4	4.3
UK	3	3.9
China	2	3.8
Japan	2	3.7
Netherlands	1	2.5
Canada	2	1.8
Switzerland	2	1.6
Spain	2	1.5
Russia	1	0.8
Hong Kong	1	0.7
Portugal	1	0.6
Total	50	100

Source: Calculated using Deloitte data accessed through Statista Database, 2022.

In India too, very a concentrated picture of E-Commerce business is observed. Top companies control the major share of E-commerce business in India. An estimate based on the top 100 E-com companies in India reveals that, the Top 5 companies has a market share of more than 53 percent in the e-commerce market (Figure 5). And that of companies positioned from 6 to 25th is around 29 percent. The rest of the firms has got only 18 percent market share (ecommerceDB, Statista, October 2021). In order to understand the firm level characteristics of online platforms, we have used PROWESS IQ database,[3] the following are the observations based on this.

It is evident that not only the share of online business has been tremendously increasing but also the market share of the top E-commerce companies are also increasing. Online trading was only one percent of the total in 2015, which increased to 6.2 percent in 2021 (Figure 8). In a similar manner the market share of top four E-commerce companies increased from 82.7 percent in 2015 to 90 percent in 2021. Hence it is clear that the market share of E-com companies are very high ever since the flourishing of online platforms. As new companies are entering into this market and enhancing competition, one would normally expect a decline in their shares, which is not happening to the four firm concentration ratios. Despite the increasing four firm concentration ratios, the competition between the top firms are increasing over time. It is seen that Flipkart[4] was having around 67 percent share in 2015, which was continuously declining over the years and became 51 percent in 2021 (Figure 6). Whereas that of Amazon[5] has been increasing from 14 percent share in 2015 to 37 percent in 2021. This is clearly indicating the tight oligopolistic competition between the top two firms in the sector. Cloudtail which was a joint venture of Amazon and Catamaran Ventures engaged in trading within the Amazon platform, has been gaining high market share. It was having 7 percent market share in 2015, which became 16 percent in 2021. It is interesting to observe that Cloudtail generated more revenue than that of Amazon Seller Services during some years.

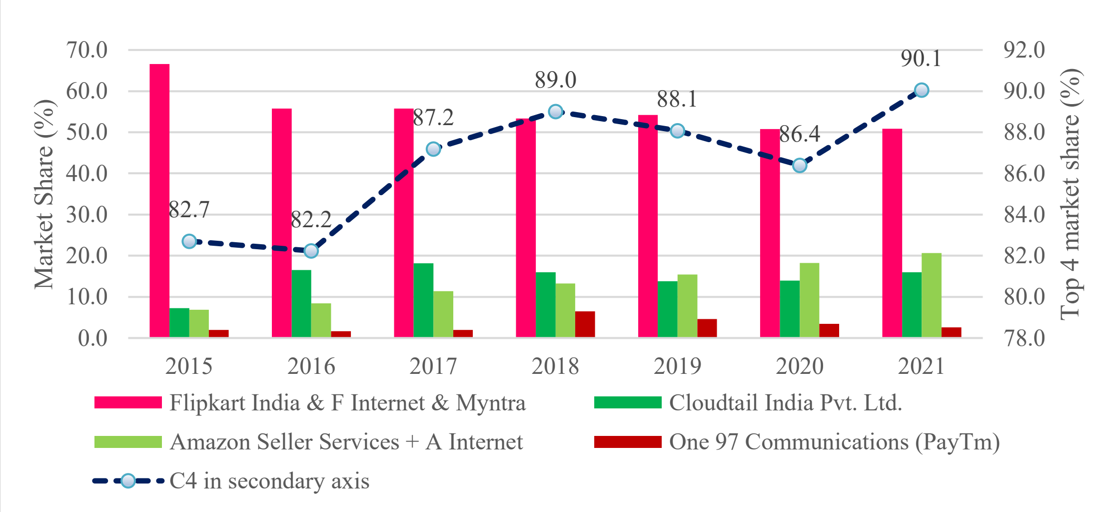
Figure 7: Market Share based on Net Sales (US$ Mn)



Source: Based on ecommerceDB, October 2021

[3]Discussed the details on PROWESS companies under Data and Methodology section.
[4] Including Myntra and Flipkart Internet Services.
[5] Including Amazon Internet Services and Cloudtail.

Figure 8: Sales based Market Share of Top Companies



Source: Calculated using PROWESS IQ, CMIE

IV. Multisided Markets and Competition Assessment

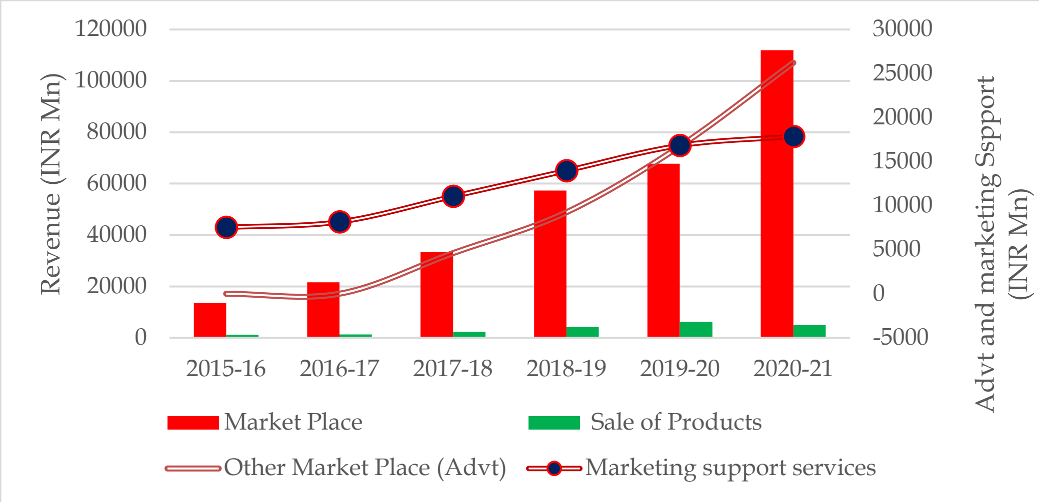
The pioneering work on multi-sided markets were developed by Charles Rochet and Jean Tirole (Rochet and Tirole, 2003; as in Evans and Schmalensee, 2007), which was not directly linked to the antitrust issues. The term 'two sided markets' was used for 'the business which cater to the two independent group of customers'. And the market was defined loosely. Filistrucchi (2018) discussed the concept of multisided markets, and suggested an acceptable definition as, "two sided market is a market in which a firm act as a platform and sells two different products or services to two groups of consumers, while recognising that the demand from one group of customers depends on the demand from the other group and possibly, *vice versa.*" Normally, the relevant product market for competition assessment is decided based on the demand and supply side substitutability. Here multi-sided markets alter the normal demand conditions since the demand for one side of the platform (eg. products) increases with the presence of more suppliers. Consequently, the pricing decisions are independent of the traditional demand and supply conditions existing in the market, which makes the online prices attractive especially in the initial stage of operation. Such a lower level pricing normally less than the cost of production/service drives out other service providers in the market, which enables them to establish monopoly power. At the point these firms starts to charge higher prices.

Multisided Markets and Related Party Transactions

In order to understand the significance of multisided markets, we have conducted a case study on one of the top e-commerce providers in India., i.e., Amazon Seller Services, using their Annual Reports from 2015. It is observed that market place service is only one channel of revenue generation. As per our estimates, in 2015-16 market place service constituted 61 percent of the revenue generation, which is 69 percent in 2020-21 (Table 2, Figure 12). Advertisement has been an important source of revenue generation to Amazon Seller Services, which is increasing over the years from 9.4 in 2017-18 to 16.2 in 2020-21. This has been captured as other marketplace services. Here, the revenue is generated based on the number of clicks and impressions by the users. Hence as the number of users increase, revenue generation from this source will also increase. Further marketing support was having a 34 percent revenue share in 2015-16, which is gradually came down to 11 percent in 2020-21. This leading e-commerce firm in India generates more than 28 percent of the revenue from advertisement and marketing together, which indicates that even if there is any loss or less profit in the product market sales, it can compensate with the strong presence of multisided market. This also enables the platforms to offer discounts and offers for selling various products which is not affordable to the offline sellers, particularly the unorganized shop keepers.

Data on another top internet service provider also shows the revenue received from marketing support is increasing. This demonstrates the importance of multi-sided markets in revenue generation. It is also clear that the related party transactions are very strong. Revenue generated from related parties through marketplace services is 23 percent of the total revenue generated by this company. If one includes the marketing and other services provided to the related parties, the revenue share goes up to 36 percent in 2021. This needs to be viewed in conjunction to the proposed draft E-Commerce Policy that, the online platforms should not discriminate the sellers in favour of one or few sellers/traders registered. This is to protect the interest of the domestic business including MSMEs and start-ups for whom it is not possible to have country wide distribution network. In future, we need to look at the specifics of such transactions to see whether they are creating unfavourable conditions to the sellers in the respective sector. Furthermore, we need to develop a suitable revenue reporting strategy for e-commerce companies in the context of multisided markets.

Figure 9: Multisided Market for Amazon



Source: Author's calculations based on Annual Reports, various years.

Table 2: Amazon Seller Services (Percent Share (%)

Category	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Market Place Service	60.9	69.0	67.7	75.5	62.5	69.1
Other Market Place Service	0.0	0.0	9.4	12.2	15.4	16.2
Marketing support services	34.0	26.1	22.4	18.4	15.5	11.0
Royalty revenues	0.0	0.6	0.9	1.0	0.9	0.7
Sale of Products	5.1	4.3	4.7	5.6	5.7	3.0
Total revenue from operations (sales)	100.0	100.0	100.0	100.0	100.0	100.0

Source: Author's calculations based on Annual Reports, various years.

Presence of Major (Dominant) Customer(s)

As discussed earlier, there has been concerns on the presence of preferential sellers within the platform, for which the platform can give preference while displaying the products and thereby the preferred sellers can increase the sales through better appearance in the platform. According to media reports, only 36 sellers (0.01%) accounts for 66% trade of Amazon (Economic Times Report, April 16, 2021), which indicates No level paying field. There is no publicly available data on the major sellers registered in the platforms. Nevertheless, as per the available information, one major customer contributed 18.10 percent of revenue on account of marketing support provided by Amazon in 2019. The same figures for 2018 was 22 percent (Annual Reports 2020). In 2016 and 2017, the revenue share of top two such customers were 49 percent (Table 3). Out of this, one was a related party, whose' share is around 33 percent. It is important to note that, the revenue received for marketing from the top customers were higher than that of marketplace service (Annual Report, 2018).

Table 3: Role of Major customer of Amazon SS

	Marketing	Marketplace	Total
2016	33.20%	15.90%	49.10%
2017	25.60%	6.50%	32.10%
2018	21.80%		21.80%
2019	18.10%		18.10%

Source: Author's compilation, based on Annual Reports, various years.

Cloudtail, which has been the JV of Amazon Asia Pacific Resources Ltd was appearing in news frequently due to it the allegations of indulging in anticompetitive practices along with Amazon. The platform selling fee paid by Cloudtail was Rs. 9808 Mn in 2019, which increased to Rs. 19931 Mn in 2020 (Annual Report of Cloudtail, 2021). A rough comparison with Amazon Seller's marketplace revenue would come around 18 percent in 2020, from 15 percent in 2019. Hence Cloudtail was generating good revenue through the platform of Amazon. All India Online Vendor Association filed a case against Amazon and its affiliates on this issue.

Table 4: Related Party Transactions of Amazon Seller Service

Related Party Services	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**
Marketplace services	16.1	6.9	5.0	12.5	16.9	22.5
Other marketplace related services (advt)	0.0	0.0	0.1	0.1	0.3	0.4
Marketing support services	34.0	26.1	22.4	18.4	15.5	11.0
Royalty revenues	0.0	0.6	0.9	1.0	0.9	0.7
Total Related Party Service	**50.0**	**33.6**	**28.4**	**32.1**	**33.6**	**34.6**
Sale of products to related parties	0.9	0.4	1.3	1.1	1.7	1.6
Misc	5.1	4.3	0.1	0.0	0.0	0.0
Total Related Party	**56.1**	**38.2**	**29.8**	**33.1**	**35.3**	**36.2**
Total revenue from operations (sales)	100	100	100	100	100	100

Source: Author's compilation, based on Annual Reports, various years.

Related Party Transactions has been very strong for Amazon Seller Service Ltd. Around 36 percent of its revenue generation in the year 2021 has been attained through related parties. Out of this, a major portion of revenue has been generated through marketplace service and marketing support provided to the related parties. It is visible from the Table 4 that the revenue generation through advertisement is less for related parties, whereas marketing & market place service is more important for them. This might be indicating the free advertisement and promotion undertaken by Amazon to its related parties too, which is not clear from the available information.

V. Concluding Observations and Policy Points

Prevalence of high sunk cost, network effects and multisided markets makes the e-commerce sector unique for competition assessment. During the recent years, there has been a sharp increase in e-commerce transactions in India. The study observed that, Indian top online platforms are highly concentrated, despite the strong presence of offline markets. The value and volume of E-com transactions are tremendously increasing across the world, which in turn opens up large opportunities for the E-com players in India. It is worth noting that though China and India are the top customers of E-commerce in terms of number of users and revenue generation, US companies top the global retail trade.

The e-commerce sector in India has been facing various competition issues with the increase in the high valued start-up acquisitions and the drastic increase in the online trading activity in the country. We have conducted a case study on one of the top e-commerce providers in India using their Annual Reports from 2015 in order to understand how strong is the presence of multisided markets in the Indian e-commerce sector. It is observed that market place service provides them only 69 percent of the revenue generated in 2021. This leading e-commerce firm in India generates more than 28 percent of the revenue from advertisement and marketing. Data on another top internet service provider also shows the revenue received from marketing support is increasing. This demonstrates the importance of multi-sided markets in revenue generation. It is also clear that the related party transactions are very strong. Revenue generated from related parties through marketplace services is 23 percent of the total revenue generated by this company. If one includes the marketing and other services provided to the related parties, the revenue share goes up to 36 percent in 2021. This needs to be viewed in conjunction to the E-Commerce Policy that, the online platforms should not discriminate the sellers in favour of one or few sellers/traders registered. This is to protect the interest of the domestic business including MSMEs and start-ups for whom it is not possible to have country wide distribution network.

From the policy point of view, there are several things to be modified in the sector including the proper protection of the consumer interests while using various digital market services. The study brings out the fact that multisided market and related party transactions are strong in the sector. In future, we need to look at the specifics of such transactions to see whether they are creating unfavourable conditions to the sellers in the respective sector. Most of the top E-commerce firms are not reporting these data separately, which makes the estimation difficult. We need to develop a suitable revenue reporting strategy for e-commerce companies in the context of multisided markets. As we evolve an appropriate e-com policy, we should also make it mandatory for firms to report revenue generated from various channels, data on sellers registered in each platform and their sales revenue and so on. Ownership and transfer of data at the time of M&As, particularly the domestic firms acquired by foreign firms, and the data transfer conditions prevailing to be ensured. This study is only an initial step, which needs to be extended to other areas.

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