

## Supply Chain Challenges in Business Aggregation during COVID-19 Pandemic

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### Abstract

This research paper focuses on the key challenges faced by companies during the covid-19 era. The author has highlighted the supply chain challenges faced by the companies are: supply shocks, demand shocks, aftershocks and new normal. Paradigm shift in the consumer behaviour also discussed with 3Ps (price, promotion and portfolio). Secondary data and expert opinions were gathered and discussed. The author has selected three aggregator businesses i.e taxi aggregator business, food chain aggregator business and agricultural produce aggregator business for discussion. The author has also highlighted the aggregation theory. In this context companies like Ober, Ola, Fast Track Taxi, Zomato, Swiggy, Dunzo, ITC, Abiona, MyVishwa Technologies and Ninjacart and their business practices are also discussed. Business leaders' opinions and the studies conducted by BCG, PWC, KPMG and Accenture are also highlighted. This paper also explains the demand planning during uncertain times. Technology is the key to manage the business in short run. The importance of Machine Learning (ML) & Artificial Intelligence, Data Science and Predictive Analysis are also discussed.

*Keywords: Aggregator business model, covid 19 pandemic, new normal, online market place*

### Introduction

An aggregator business is essentially an intermediary that utilizes information, communication and technology (ICT). The length of the supply chain (supplier, manufacturer, distributor, retailer and customer) associated with channel partners decides the profit of the company. So, the aggregator business will cut supply chain cost and increase the company's profit (Meliala, et al, 2018). In many ways, covid-19 pandemic have affected all sectors across the globe. The implications of covid-19 pandemic are short supply of materials including the essential food items, irrational behaviour from customers, stock piling, panic buying, social / physical distancing, work from home (WFH)/ remotely working, new normal, masking, sanitization at individuals, lockdowns, focus on essentials- core etc. The key impact of covid-19 – extended lockdown with more than half the world asked to sit at home (R.Saxena, 2020). According to

Saxena (2020), the key marketing challenges during times of disruption are: geopolitical, demographic- ship, socio-economic, global mobility of factors of production and technology – centrally focussed. Social media daily usage has increased from 3.13 hours to 4.39 hours and numbers also increased to 3.80 billion.

During this time, there is a paradigm shift in the ‘ABC’ of customers in terms of ‘Attitudes- what they believe, Behaviours- what they want and Consumption- what they want (AbheekSinghi, 2020). According to Abheek, digital usage has increased and ‘social ‘apps have gained a lot. The BCG study findings are 57% are avoid going to shops in hyper malls, 52% prefer to buy from a nearby shop (minimizing)

### Supply Chain Challenges

Supply chains are facing lot of challenges, as the world grapples with the human and economic crisis unravelling before everyone. According to Seifert (2020), the important supply chain challenges are shown in table 1.

Table 1 Key supply chain challenges

Sl.No	Supply Chain Challenges	Details
1	The Supply Shocks	There were disruptions to the availability of finished goods and intermediate goods to the manufacturing companies. About 60% of the parts are supplied by Chinese suppliers to the US companies. More than 40% of electrical equipment’s are imported by Indian companies from China. The demand for cycles has risen worldwide, and manufacturers are ramping up production and retailers are facing stock out situations.
2	The Demand Shocks	Supply chains have been experiencing something completely new due to lockdowns and other its associated crisis. In India, particularly in Bengaluru, the demand for cycles have surged up to 400%. The demand is spurred by people cycling to keep fit during the pandemic and also considering social distancing by avoiding bus travels.

3	The After Shocks	Bullwhip effect in the supply chains. It describes the way in which demand spikes tend to amplify as they move up the chains.
4	The New Normal	Inventory bounce in the supply chains. When demand reaches a new steady state level, at that point, production actually increases a bit to match the new demand.

### **Managing stock out, an opportunity**

The shrinking of the supply chain footprint dynamics may accelerate as companies seek a different a cost / resilience trade-off and look to localize production and sourcing. There is a shift to localization from globalization. No more low cost supply, but a reliable supply. Further, companies like L’oreal and Coty in healthcare products and some of the Indian companies in alcoholic drinks segment have stepped up and repurposed production facilities intended for fragrances and has sets in order to produce hand sanitizers. Other examples are Bharat Electronics Ltd., Mahindra& Mahindra and Hindustan Computers Ltd., (HCL) have started manufacturing ventilators- a lifesaving medical equipment for meeting huge demand during pandemic times.

### **Business Aggregation**

Aggregator Business Model is a network model where the firm collects the information about a particular good / service providers, make the providers their partners and sell their service under its own brand. Since the aggregator is a brand, it has to provide services which have uniform quality and price. This is done by signing up a contract with partners. The goods /service providers never become aggregators’ employees and continue to be the owners of the good/service provided. Aggregator just helps them in marketing in a unique win-win way. A typical aggregator business model is shown in Fig. 1

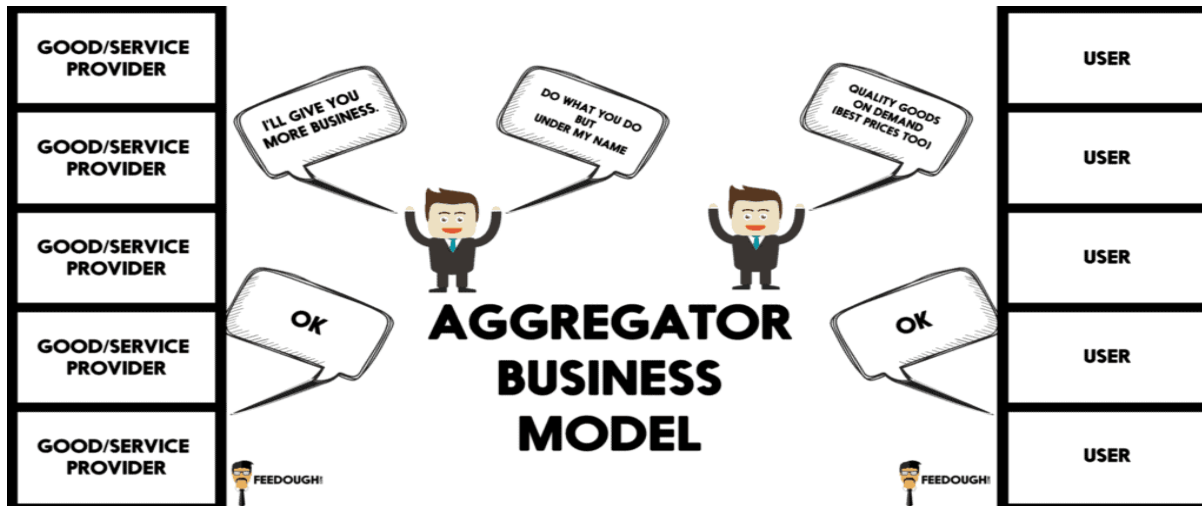


Figure 1 Aggregator Business Model

The aggregator business model runs on a twofold customer’s strategy where the service consumers as well as the goods / service providers act as the customers of the company. The brand is built in such a way so as to attract both of the parties to use this platform rather than the competitors. The characteristics of aggregator business are: i. Industry, ii. Partnership model, iii. Brand, iv. Quality, v. Contract, vi. Type of business model adopted, vii. Pricing, and viii. Competition.

### Theoretical Framework

The value chain for any given customers market is divided into three parts: suppliers, distributors and customers / users. The fundamental disruption of the internet has made distribution (of digital goods) free, neutralizing the advantage that pre-internet distribution leveraged to integrate with supplies. Secondly, the internet has made transaction costs zero, making it viable for a distributor to integrate forward with end users / consumers at large scale (Ben Thompson, 2017). Example, taxi aggregation business, Uber previously, taxi companies’ integrated dispatch and fleet management. Then, Uber modularized fleet management by hiring with independent drivers. Uber has integrated dispatch with customer management, enabling it to scale worldwide. Figure 2 shows the aggregation theory during the pre-internet and internet era.

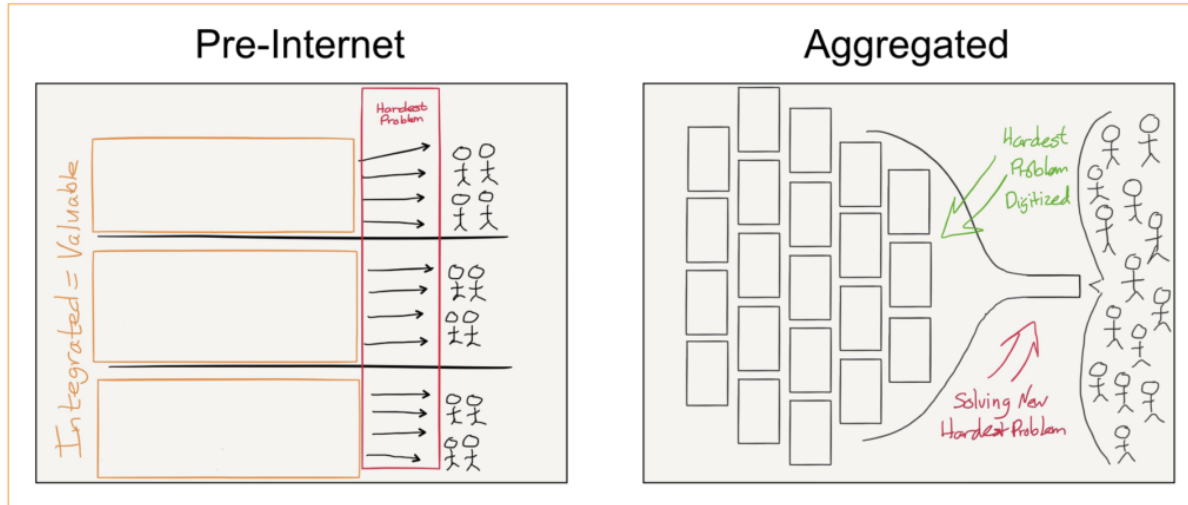


Figure 2 Aggregation Theory during pre-internet and internet era.

## Literature Review

Literature review was conducted by reviewing papers published in ScienceDirect, InderScience Journals and also study reports of KPMG, PWC, Boston Consulting Group (BCG) and Accenture.

Key requirements of aggregators business are: branding terms, the standardized quality by the aggregator, the commission (Uber business model), Take-up-rate (Oyo business model). The goods / service providers play a vital role in the aggregation (Uber business model). The partners' quote the minimum price at which, they will operate and aggregators after adding up the take – up-rate, quote the fixed price to the customers (Oyo business model). Taxi aggregators have adopted revenue sharing model (Fast Track Taxis). According to Vaidya (2020), key challenges of demand planners are: immediate reaction to adjust and forecasts in the short run. Companies should adopt 'Tower Concepts' by taking inputs from both internal and external. Artificial Intelligence (AI), collaborative decisions and multiple scenarios. Three Ps (3Ps) are important, i.e price, promotion and portfolio planning during the times of uncertainty.

Aggregators are different from a market place. Examples, Amazon, Alibaba, Flipkart and Myntra. These companies are e-Retailers. Other examples are: Zomato, Swiggy and Dunzo, these companies are food chain / restaurant e-tailers. They operate on commission basis. Table 2 shows the leading business aggregators and their domains.

**Table 2 Leading Business Aggregators and Their Domains**

Sl. No	Industry / Segment	Business Model Adopted	Name of the Companies
1	Transportation / People	Commission basis and revenue sharing basis	Ober, Ola, Fast Track Taxis
2	Hospitality / Hotels	Take-up- Rate	Airbnb to hotels, Oyo for hotel rooms.
3	Restaurants / Food Chain Retail	Operates on commission basis or adding delivery charges on price.	Zomato, Swiggy and Dunzo.
4	Agricultural products / Vegetables, Fruits		

## Research Methodology

In this study, the traditional aggregator business model was considered. Secondary data along with experts' opinions were considered for discussion. In transportation industry- people transportation, in Food retail chain- e-retailer food chain and agricultural products - vegetables, fruits and milk products aggregator businesses are considered for analysis. The key challenges faced by these aggregator businesses are also analysed in detail.

## Discussion

### i. Taxi Aggregator Business

The global aggregates markets size value at USD 432.5 billion in 2018 and is expected to grow at a compounded annual growth rate (CAGR) of 6.5% from 2019 to 2025 ( BMR, 2020). The taxi market in India is estimated at USD 9 billion, the organized sector constitutes around 6% revenue share of the overall market. The taxi market in India is highly fragmented and unorganized. Aggregator are a new phenomenon driven by rise of start-ups like Ola, Taxiforsure, Meeru, Easy Cabs, Fast Track taxis, Ober etc. The leading players in this segment are shown in Figure 3.

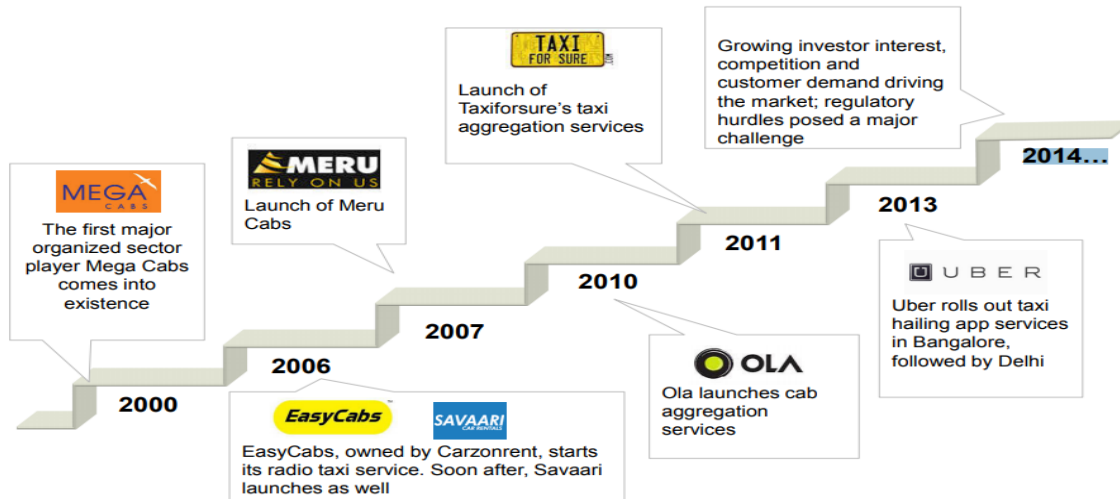


Figure 3 Taxi Aggregators in India

The various elements of online market place with reference to taxi aggregators business are depicted in Table 3.

Table 3 Online Market Place- Taxi Aggregators Business

Sellers		Buyers
Cars, trips deliveries, riders & cars, taxi aggregator, service agents, delivery/ food/ grocery, medicines, and e-Commerce.	-----> Available of platform 24x7 Balancing between demand & planning Ensure compliance & safety Insights to individual consumer Behaviour to serve better	Drivers, categories

(Source: Vaidya, 2020)

**ii. Food Chain Aggregator Business**

Zomato, Swiggy and Dunzo are delivering wide range of premium food products, including tomato ketchup, mayo, pasta, pizza, olive, biryani, fruit drinks, and other meal items. These companies also have tie ups with Spencer Mart, Reliance Fresh and Deln Monte Store etc for delivering groceries in major cities in India. Typically, online platforms charge 20-25% of order

value as commission, depending on multiple factors like brand, exclusivity and consumer reach. Mother Dairy tie ups with Zomato to drone deliver fruits, vegetables in National Capital Region (NCR).

In Chennai, Swiggy, Zomato, and Dunzo companies are engaged in delivery of milk, vegetables and fruits to houses. In fact, Aavin has signed a contract with Swiggy to deliver their milk packets to house hold units on daily basis in Chennai. Aavin is the trademark of Tamil Nadu Co-operative Milk Producers' Federation Limited, a Tamil Nadu-based milk producer's union. Aavin procures milk, processes it and sells milk and milk products to consumers all over Tamil Nadu. Swiggy and Zomato have started doorstep delivery of alcohol in Jharkhand.

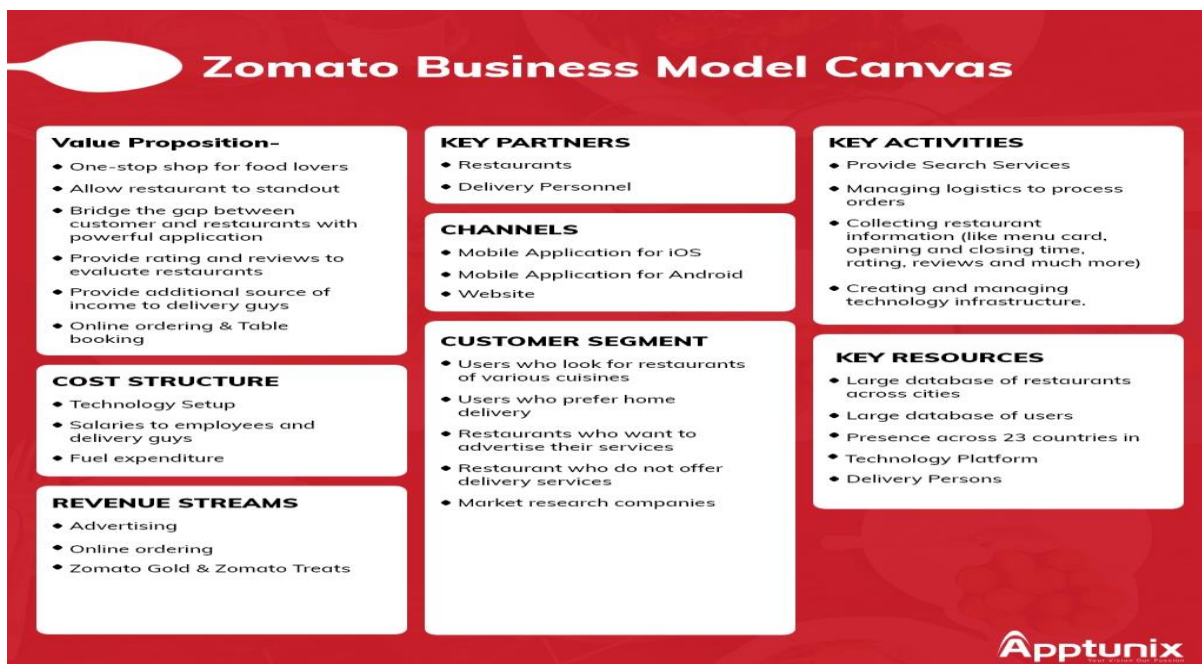


Figure 4 Zomato Business Model

Figure 4 shows the business model of Zomato and how revenue is generated in online food chain through mobile Apps. They are collecting delivery charges 20-40% of the order value from their customers.

### Food delivery in India via drones

According to Director General of Civil Aviation (DGCA) Zomato, Swiggy and Dunzo can start testing food delivery via drones. In this connection, Zomato has successfully completed a test delivery using drones in India. Figure 5 shows food delivery via drones.





Figure 5 Food delivery via drones

### iii. Agricultural Products Aggregator Business

Indian Tobacco Company (ITC) is planning to create export-oriented fruit and vegetables clusters grasping the opportunities through contract farming. According to ITC, International buyers were diversifying their sources of supply in the wake of the pandemic. Figure 7 shows the imitative of ITC.

Aibona a start-up firm, uses data science to provide farmers with precision agriculture while also aggregating demand by working with small retailers. The start-up, which means works with 400 farmers in the Nilgiris belt and 250 retailers largely in Bengaluru. Now, this company is aiming to serve 2000 farmers and 1000 small retailers.

MyVishwa Technologies, a Pune based start-up has launched 'Farm Org' an aggregator portal for farmers, wholesalers, retailers and customers. This is not an e-Commerce site as there will be no transition or delivery process involved. This form says that is to establish a direct link between the buyer and the seller and cut the cost from 'farm to fork'.

Ninjacart is India's largest fresh produce supply chain company. They source fresh produce from farmers and deliver them to business within 12 hours. Driven by cutting edge technology, they

source fresh produce from 20,000 farmers and sell to 60,000 businesses, across India.

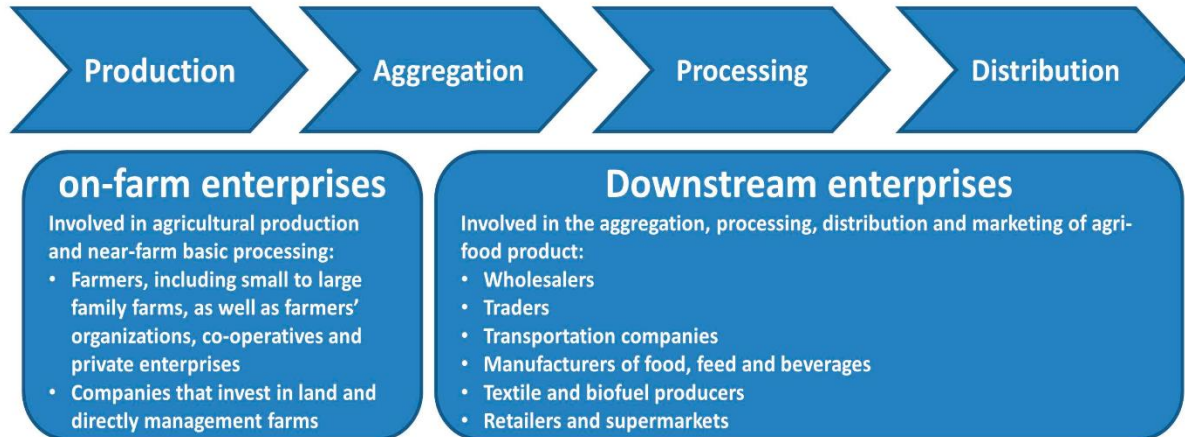


Figure 6 Food Retail Chain

Figure 6 shows the food chain for sustainability. The main components in food chain are: production, aggregation, processing and distribution.

### ITC Initiative in Agricultural Produce Aggregator Business

Indian Tobacco Company (ITC) has adopted cluster model by creating three in various parts of India within a year. Not only chillies, tobacco, vegetables, but also rice and wheat for the export market also. Examples: organic farming, contract farming and e-Choupal initiative.



Figure 7 ITC Initiative in Agricultural Produce Aggregator Business

### Conclusion

In this study, the author has discussed the business challenges faced by the people and business firms during the ongoing covid-19 era. Key supply chain challenges during uncertain times such

as supply shocks, demand shocks, aftershocks and new normal are also highlighted. The author has analysed based on the inputs received from domain experts including three important aggregator businesses viz taxi aggregator business, food chain aggregator business and agricultural produce aggregator business. Uber, Ola, Fast Track, Zomato, Swiggy, Dunzo and ITC, Aibona, MyVishwa Technologies & Ninjacart were discussed. This paper also explains the demand planning during uncertain times. Technology is the key to manage the business in short run. The importance of Machine Learning (ML) & Artificial Intelligence, Data Science and Predictive Analysis. Every company should 'Adapt and Evolve' strategy as part of their businesses. Business experts have opined that people will try to travel less and also to have their travel arrangements in post covid-19 scenario, online business will go up, kirana stores will perform better than hyper market malls, and shortage of man power will become a great concern.

Business leaders have also opined that the businesses should be resilient with latest thinking and embracing new insights from the world (KPMG, 2020). Businesses must navigate the financial and operational challenges of covid-19 while rapidly addressing the needs of their people, customers and suppliers (Accenture, 2020). According to PWC study report (2020), six key areas of focus for organizations are: crisis management & response, workforce, operations & supply, finance & liquidity, tax, trade & regulatory, and strategy & brand.

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