Growth of Food Tech: A Comparative Study of Aggregator Food Delivery Services in India

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Abstract

The purpose of this paper is to study operating practices that make tech companies tick in the growing food delivery service sector in India. The food delivery market is valued at over ₹12 billion as of 2016, where upwards of 7 % market share now reserved for online food delivery services. As opposed to 'Delivery as a Service' companies, aggregator delivery services generate a platform for consumers to navigate through a variety of restaurants hosted on it, discovering restaurants and placing orders manually. This study compares growth and operating strategies of four such aggregator food delivery companies in a booming Indian market (Swiggy, Zomato, FoodPanda, and TinyOwl). The market is expected to grow 40 % annually owing to a larger disposable income from a wealthier middle class (also with long, erratic working hours). Growing incomes have encouraged the creation of an increasingly health-conscious middle class, desiring meals which may substitute nutritional values of home-cooked meals. Aggressive growth strategies have not been as rewarding elsewhere in the food-service industry (with multiple grocery-delivery services scaling down operations in 2015-2016). However, the future seems brighter for the online food industry, as India catches up with developed markets (where online food orders take upwards of 30 % of market share).

Keywords Food Delivery, Aggregator Services, Swiggy, Zomato, FoodPanda, TinyOwl,

1. Introduction

In this case study, the potential of a growing market in the one of the largest economies in the world is analyzed. Grocery shopping, meal planning and cooking is now considered a chore by a good proportion of the growing Indian middle class, causing a surge in demand for services that free them of such inconveniences. Upwards of 50,000 restaurants in India provide home delivery, and are often only able to see marginal profits from their take-away sectors. This indicates a high potential in a relatively untapped market.

Figure 1 shows the relationship between key sectors involved in food-delivery sectors. Fast Food 1.0, the simple takeaway/delivery sector has seen huge drops in margins. With the growth of IT infrastructure and spread of internet in the Indian subcontinent, recent years have seen the introduction of two more sectors:
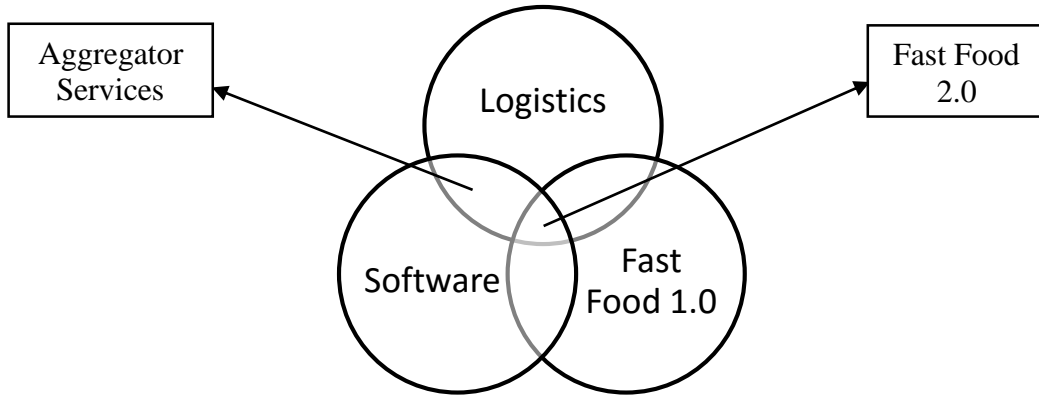
Figure 1: Structure of food services

a) Aggregators: Provide a platform for customers to discover restaurants, with the ability to navigate through menus of different cuisines. They manage the delivery segment as well, and charge per order commission (10-15%). They are highly scalable and have all experienced remarkable growth in the Indian sector (TinyOwl, Zomato, Foodpanda and Swiggy). However, they also take on a significant operational load- couriers' hiring and training, maintaining equipment, etc.

b) Fast Food 2.0: These services opt for a full integration of the process: An in-house app is developed where consumers can order a limited range of meals. These meals are reheated in their own fleet of cars as orders come in, and delivered in about 15-20 minutes. Here, choice is given the backseat in favor of convenience. These services are yet to catch footing in India, but command a growing market share in North America (Sprig, Maple, SpoonRocket etc).

Figure 2: Timeline of Food-Tech services in the Indian sector

Figure 2 depicts the timeline of entry of food technology services in India. The aggregator services started with the entry of global player FoodPanda in 2012. TinyOwl and Swiggy entered the space in 2014. Zomato was founded as a restaurant delivery platform in 2008, but expanded into the delivery space with Zomato Order in 2015. There were players in the FF 2.0 (Fig 1) market as well, with Holachef entering as a home-chef marketplace model.

2. Objectives
(1) Understanding differences in operational models of four major Indian players in the aggregator food-tech sector with a comparative analysis
(2) Using quality tools to isolate reasons for failure of the TinyOwl model (and success of the others)
(3) Developing a line of action in fields where there exists scope of improvement.

3. Methodology

A variety of quality tools have been applied to the problem of interest. The study starts with a SWOT analysis that outlines the features of the food-tech market in India. A comparison of business models is done qualitatively and quantitatively with financial data. Root causes for problems in such startups are segregated with an Ishigawa diagram. These tools are used in conjunction to develop a set of recommendations for the industry.

4. Discussion

a) SWOT analysis

This section will analyze the viability of the current market with a SWOT analysis (Table 1). Marquee investors (Sequoia Capital, Temasek, among others) are headed for a cash freeze after 3-4 years of consistent overvaluation. The SWOT analysis will aim to predict a burst in the food bubble in India.

Table 1: SWOT analysis of aggregator services in India

STRENGTH	WEAKNESS
1. Ability to alter UI based on changing customer requirements. 2. Service is delivery centric; hence can always guarantee minimum delivery time plus added services like GPS, etc. 3. Ability to provide multiple cuisines at one stop- thus fulfilling the consumer's inherent need for choice. 4. Ability to devise their own delivery radius- consequently upping margins, while reducing variation due to external situations (eg. Traffic).	1. Operational difficulties of post order customer service- hassles of phoning call centers to have issues addressed. 2. Margins per order received extremely thin. 3. Big hire and fire culture, teams not loyal enough 4. Excessive costs into marketing and discount coupons- resulting in negative margins for first few years. 5. Taste and quality of food not in their hands. 6. Highly dependent on restaurants to deliver to execute a smooth delivery experience for the consumer. 7. Consumer views experience driven—a small mistake could drive the customer away.
OPPORTUNITIES	THREATS
1. Thousands of restaurants in each city, and hundreds of cities to expand in. The growth could be exponential. 2. Use of payment forums like PayTM, and other convenient modes of payment in order to provide further incentives to the consumer. 3. Representation of various small scale restaurants without delivering facilities, or those that can't take orders online. 4. Convenience being the need of the hour for the present consumer.	1. Excessive amounts of competition laden with investments worth hundreds of millions of dollars dividing the market. 2. Fraudulent restaurants using discounts provided by start-ups to earn an easy buck. 3. Increasing costs of fuel, resulting in increasing operational costs. 4. The realization that the reason most families wouldn't eat at home is to spend quality time together outside, rather than order at home. Hence, the target market greatly reduces. 5. Service provided, i.e. food delivered, has an expiry date. Most food goes cold after

	an average of 60 minutes. Hence, any delays caused due to eternal reasons reduce customer satisfaction and increase overall execution related costs.

The SWOT analysis reveals that the biggest weakness of a growing market of food startups in India is the low margins per order. The costs associated with food packaging and delivery are increasing by the day, but increasing costs to consumer means losing market share in a competitive marketplace. Customer retention is a big challenge for the future, which can be achieved only with innovation. The primary opportunity here is the demographic these models appeal to. Most of the Indian food structure is disorganized and do not adhere to any food standards. Such marketplaces appeal to a growing urban middle class, which forms both a source of strength and opportunity. Long term scalability and sustainability should be the key focus alongside innovation.

b) Analysis of business models

Table 2: Business model details of the four cases

Swiggy	Zomato Order
• Hyper-local delivery service • Operates own delivery fleet (~2700 delivery personnel as of 2016) • No delivery charge above minimum order amount • Almost 20% commission on every order • Implementing 'Surge Pricing' and 'Cloud Kitchen' models	• Derivative of its parent restaurant-finder service; Huge head start with massive consumer base • Third party logistics for delivery • 10-15% percent commission plus delivery fee charged to restaurant • Phasing into model where restaurants manually confirm orders before they are processed • Planning differential commission
Current status: Expanding and raising capital	**Current status**: Good position with revenue growing at 210% a year and orders increasing exponentially
FoodPanda	**TinyOwl**
• Aggregates restaurants on platform and offers delivery service (similar to Swiggy but on much larger scale) • Commission of 8-11% from restaurants • Upto 40% of the revenue may be from delivery services (where partner restaurants do not have delivery facilities. • Moving to other revenue sources, such as sponsored links •	• Aggregator service with third party logistics handling delivery • High cash burn on customer acquisition • Revenue from 10-20% commission charged to restaurants
Current status: Forced to cut cash-burn on discounts and advertisements; mass layoffs	**Current status**: Struggling to stay raise capital; scaled down operations to two cities; mass layoffs

Table 3: Comparative Analysis based on 2014 data. 'COD' refers to Cash on Delivery functionality.
The App rating refers to the average rating of the mobile application on Google Play Store. '-'implies
no data available. (

Parameter	Swiggy	Zomato Order	FoodPanda	TinyOwl
App Downloads	1,000,000+	100,000+	5,000,000+	500,000+
App Rating	3.8/5	3.6/5	3.9/5	3.7/5
Number of Cities	8	15	104	25
Number of Restaurants	5000+	40000+	5,000+	4000
Employees	450	160	1300	400
Royalty Charges	20%	12%	12%	10-20%
Delivery Charges	₹30 (On orders below ₹150)	Nil	Nil	Nil
Minimum Order	None	Depends on restaurant	Depends on restaurant	Depends on restaurant (Around ₹150)
Web/App Based	Both	Both	Both	App only
Order Tracking	Yes	No	No	Yes
Modes of Payment	COD, Online	COD, Online	COD, Online	COD, online
Fiscal Loss (2014-2015)	₹ 2.1 Cr	_	₹ 36 Cr.	₹ 25 Cr.
Amount Raised (2014-2015)	₹ 114 Cr	_	₹ 110 Cr	₹ 138 Cr

Table 2 compares the business models of the four companies in question. These companies constitute the biggest chunk of the food delivery market in India. However, two of these companies (Swiggy, Zomato Delivery) have seen extremely favorable growth, FoodPanda is seeing fairly good returns, while TinyOwl is tanking. Table 3 compares quantitative data which serves to act as a tool for growth evaluation and customer satisfaction.

There are concerns about the food bubble in India being ready to burst. There is a very thin margin of operations (1-2%), which makes running operations very difficult in the current climate. Table 3 shows the

fiscal loss for these companies in 2014-2015. However, in the Indian context, these startups do operate on losses as they are responsible for changing the ecosystem in the initial phases of growth. The cash flows that can be generated in a market like India in a few years after aggressive growth can offset all these losses. India is being represented as a winner-takes-all market, and this pushes VC's and investors to pump in money aggressively. This condition has been referred to earlier as the Fear of Missing out (FOMO). However, increased pressure from VC's has caused young startups to incentivize customers and increase markets where he can find these consumers. These require cash burn and over-hiring, a problem discussed in the TinyOwl context in the next section (see Fig. 7).

   c)   Success of the Swiggy and Zomato Delivery models
A simple aggregator model has been explained with the aid of Fig. 5. These services operate on Kaizen principles and adopt 'Just in Time' (JIT) strategies to maximize savings. These savings prove to be crucial when margins are low. The profit margin is very small per sale, however, the total revenue increases due to the large volumes of sales. This is explained via a breakeven analysis plot in Fig. 4. The goal of such startups should be to constantly regulate and reduce the variable costs (Operational costs, as in Fig. 5), while maximizing revenue earned.
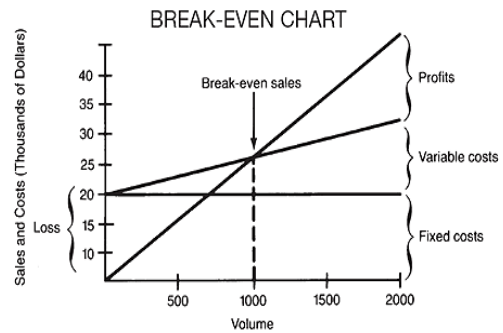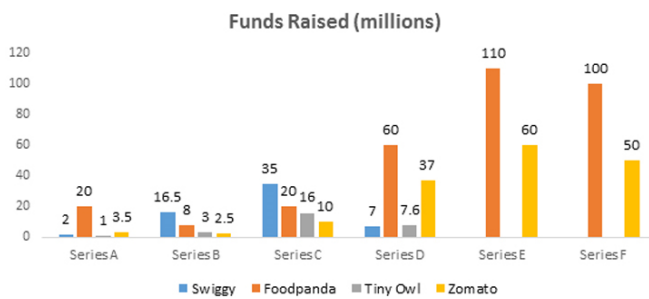

*Figure 3: Comparison of funds raised in millions of rupees (Series A to Series F) for Swiggy, FoodPanda, TinyOwl and Zomato since set-up. Retrieved from (*Next Big What 2015*)*

Figure 4: Simple break-even analysis. Retrieved from (FAO Repository 2012)
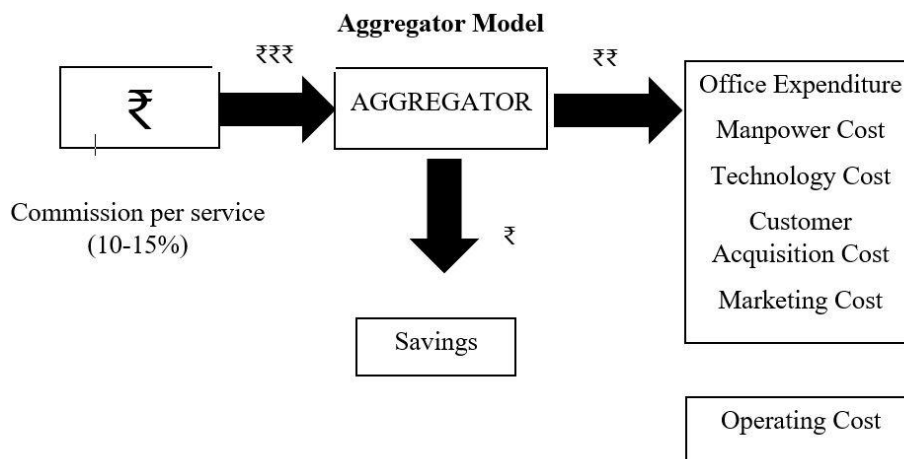

Figure 5: Overview of the aggregator business model

Optimization and change in strategy will prove to be the key for such organizations in a market falling short of investments. Comparison of the business model revealed some favorable practices that have allowed the three companies discussed in this section to last and grow. Such practices have been analyzed with due recommendations:

- Surge pricing by Swiggy: A model is being proposed where a delivery charge of ₹20 will be levied on orders placed on festivals, holidays or rainy days (when most delivery staff are unavailable). Swiggy's peers in the United States charge $3-7 per delivery (DoorDash). Hence, if a delivery costs ₹50 and a 10% commission on a ₹300 order earns the company only ₹30, there is a cash burn (Sayan Chakraborty May 2016). Hence, companies must realize when to move from customer acquisition mode

- Cloud Kitchens by Swiggy: Another model involves the set-up kitchens in places where partner restaurants lack a physical presence, but have potential to lure in consumers through the app (no dine-in facility). Cloud kitchens cut a large amount of operational costs, and allow a large portion of revenue generated by the kitchen to be redirected to Swiggy. This is a profitable avenue and has increased investor confidence in the company.

- Correct marketing of USP: Swiggy has managed to set a differentiator, which happens to be a live tracking service of delivery through routing algorithms. Their delivery personnel carry one order at a time which ensures consumers get reliable and quick deliveries. This has been marketed to the Indian consumer, which has caused a lot of consumers to flock to the company. Others in this segment have not been able to do so, often getting lost in the competitive sector. Similarly, an advertisement of delivery within 37 minutes is a differentiating factor for them in this space.

- Curbing over-hire: Zomato laid off a large number of employees, however without creating a bitter environment and strengthening investor confidence. 40% of the restaurants on Zomato accounted for over 90% of traffic. The company "had to rethink our processes to make sure that the frequency of their data updates go up in multiples for the top 40% of restaurants. This led to a cut in about 60% of their content teams across the world." Over-hire is a common money-pit in early startup culture, in part due to investor pressure and wild business projections. This hire-and-fire culture has left a sour aftertaste in the food-tech community. Figure 6 shows the employee strength of the four companies.
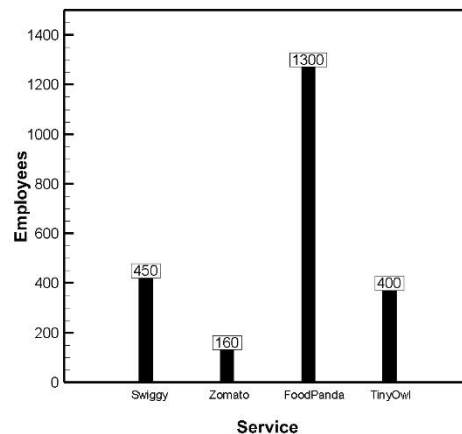

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Figure 6: Comparison of employee strength. Large employee-to-restaurants covered ratio indicates potential of an over-hiring situation and requires utilization of IT infrastructure to automate processes

- Differential commission by Zomato: Another proposed model where the exact size of commission fee will be based on feedback from customers. In the case of a five star rating, Zomato will take a 7.5% commission fee. That cut could rise to a maximum of 15% for the

lowest customer feedback. Hence, this attempts to quantify and reward good customer feedback and quality, which serves to be a good differentiator.

- Swiggy Express: An initiative (in the pilot stage) that aims to deliver food within 15-20 minutes. Precooked food from partner restaurants is put into hot boxes and on receipt of the order, is dispatched directly, making sure hot food reaches the customer within 15-20 minutes. This reaches out to a market of consumers that prefer quicker deliveries.

Figure 3 compares the funds raised from Series A to Series F for the four companies. FoodPanda leads investor funding due to its global reputation and has received funding till Series F. Notably, investors and VC's recognize the growth potential of this sector, they have pumped in nearly $5 billion in India-based start-ups, a growth of 125% over 2014. This translates into almost $100 million moving in every week into start-ups. (Nasscom Report 2015)

    d)   Failure of the TinyOwl model

The startup (whose model is discussed in Table 2) originally operated in six cities: Mumbai, Bangalore, Delhi NCR, Chennai, Hyderabad and Pune. But the company decided to scale down operations to just two cities. Some of the possible reasons for a model failure are detailed here:

- Huge acquisition costs: As traditional knowledge in the food-tech sector suggests, initial cash burn marketing tactics should be used to bring in consumers and make presence visible. However, TinyOwl spent a huge amount of money on customer acquisition causing huge cash burn.
- Dish-based aggregation failure: TinyOwl introduced a dish-based aggregation system (the app would display a particular 'dish of the day', followed by the places which served that dish). The attempt tanked with only three orders a day. This was attributed mainly to a lack of data analytics and artificial intelligence unable to gauge or handle the consumer market.
- Area-based aggregation failure: Introduction of a model that on an order of say coke, fries and burgers, would get all three from different restaurants. The scalability of the model was under question. The large logistical costs of the move were unrecoverable.
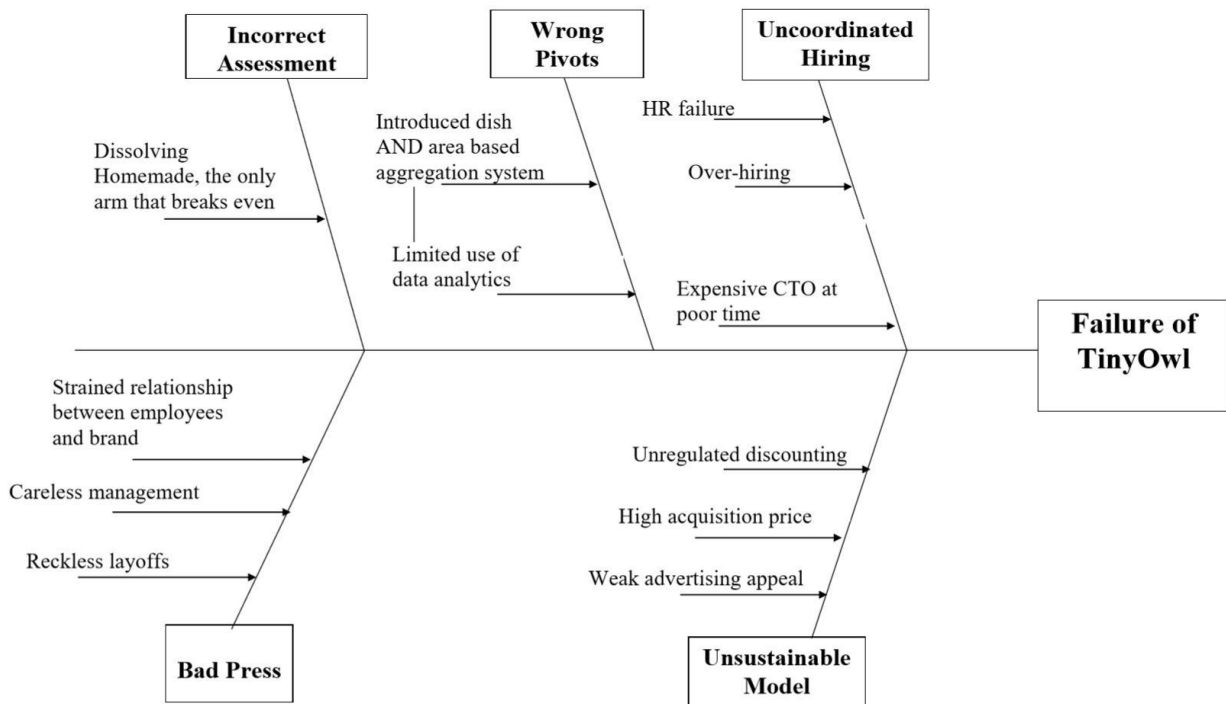

Figure 7: Ishikawa diagram for TinyOwl

- Dissolution of only profit making arm: Homemade was TinyOwl's amateur chef aggregation business and an entry into Fast Food 2.0. The only competition at the time was Holachef, and it was the only profit making arm of the parent company.
- Sudden retrenchment and failure of HR policy: Layoffs of more than half the workforce and giving out post-dated checks to employees created a bitter aftertaste. The bad press surrounding the mismanagement of employees did not help TinyOwl's case.
- Competition: At the time of TinyOwl's entry, rival aggregator Foodpanda started heavy discounting (including discounts of ₹250 for a minimum order of ₹400). TinyOwl was not able to keep up.

The root causes of these problems are analyzed in an Ishikawa diagram in Fig. 7. A lot of these problems eventually have the root cause of financial mismanagement. Heavy cash burn without due regard to sale economics will eventually sink such low-margin companies. TinyOwl had young entrepreneurs at its helm. Such entrepreneurs often realize that the key is to create a sustainable business. First round funding is relatively easy, but the next round of funding is not that easy to come by until and unless the company does not prove that its business model is inherently strong.

4. Conclusions

This paper outlines the business models of the top four food aggregator services in India as a case study analyzing the initial phases of startups in a growing market. These aggregator services run into an intial loss due to focus on customer acquisition, growth and changing the ecosystem of the market. However, with heavy support from VC's and investors, these startups can suspend focus on profit building.

With a funding freeze in India, it is important for the business model to be sustainable to receive more rounds of funding. This requires optimization of the entire process, which involves decreasing cash burn and increasing the economic outlook of sales. Four distinct models: Swiggy, Zomato Delivery, FoodPanda, and TinyOwl are compared in the study to determine correlations between success of the growth model and how the company operates. A combined result of a SWOT analysis along with a comparative analysis of models found that there are a few bottlenecks to early food aggregator services.

a) Scalability: Capital heavy models with high customer acquisition costs are unsustainable
b) Innovation: Lower profit margins necessitate the need for innovative product strategy that helps cut costs and build customer bases
c) Cash-burn: Investor pressure to achieve growth causes startups to start cycles of cash-burn through over-hire and heavy discounting

The TinyOwl model was prey to all three of the bottlenecks mentioned above, causing heavy cash-burn rate, ultimately scaling down of the business to just two cities in India. These errors are common to a lot of other spaces (including grocery delivery) in India (and abroad), and this paper manages to isolate the root causes for the same.

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