

The Bits and Bytes of Food: Study of Emerging Internet-based Food Businesses

By

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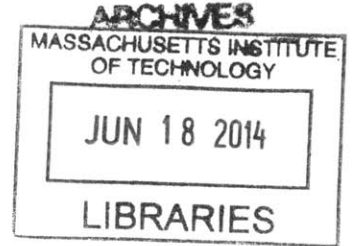
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ABSTRACT

As is the trend with a lot of industries, businesses in the food industry are also experiencing a shift towards the online world. This shift is driven by increasing convenience and popularity of doing business over the Internet and supported by rapid technological proliferation. The consumer-interfacing food value chain that includes consumer packaged goods brands, supermarkets and retail stores and restaurants and food service outlets is increasingly experiencing the emergence of many interesting internet-based business models. Many traditional business models across this value chain are facing competition from these disruptive online models that have the potential to redefine the existing way of doing business in the food industry.

Built around important trends like growth in mobile devices, crowd sourcing, online marketplaces etc., consumers have welcomed these emerging online food businesses. Companies like Grubhub Seamless have successfully leveraged the growing use of smartphones while Instacart has gained popularity for applying crowd sourcing to grocery deliveries. Yet other startups have latched-on to the trend of changing consumer lifestyles and preferences. Pre-packaged grocery delivery services like BlueApron and Plated target working professionals with time constraints who aspire to cook and eat healthy food. The growing consumer interest has also attracted investors to this space over the past couple of years.

There are currently more than 300 companies that offer products and services in the online food industry. With a large selection of offerings and business models, it is important for consumers, entrepreneurs and investors to understand the value proposition and future potential of these models. The thesis aims to address this by studying emerging or startup online food businesses with a focus on the consumer segment. The study relies on a framework that is based on inputs from existing investors, entrepreneurs and current thinking on internet-based businesses. The analysis also applies the platform concept to different segments of the online food industry. Understanding the dynamics of platform markets, which includes identifying key participants and drivers of adoption, will provide additional insight to entrepreneurs and investors. Lastly, the study is my attempt to understand the online food industry from the perspective of a potential entrepreneur and explore possible startup ideas for a future venture.

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Introduction to Online Food Businesses

Internet-based food companies or online food businesses, offer a range of products and services over the Internet for both consumers and businesses. For consumers, these Internet-based food companies offer improved service and convenience through electronic commerce of groceries and takeout-food or through other products and services that help consumers discover, cook and learn more about food. For businesses which typically include grocery and consumer packaged goods manufacturers, supermarkets or retail chains and restaurants, online food businesses support business objectives of increasing topline, optimizing operations as well as providing better products and services to their customers. The key value-add that online food businesses offer to different food chain participants is:

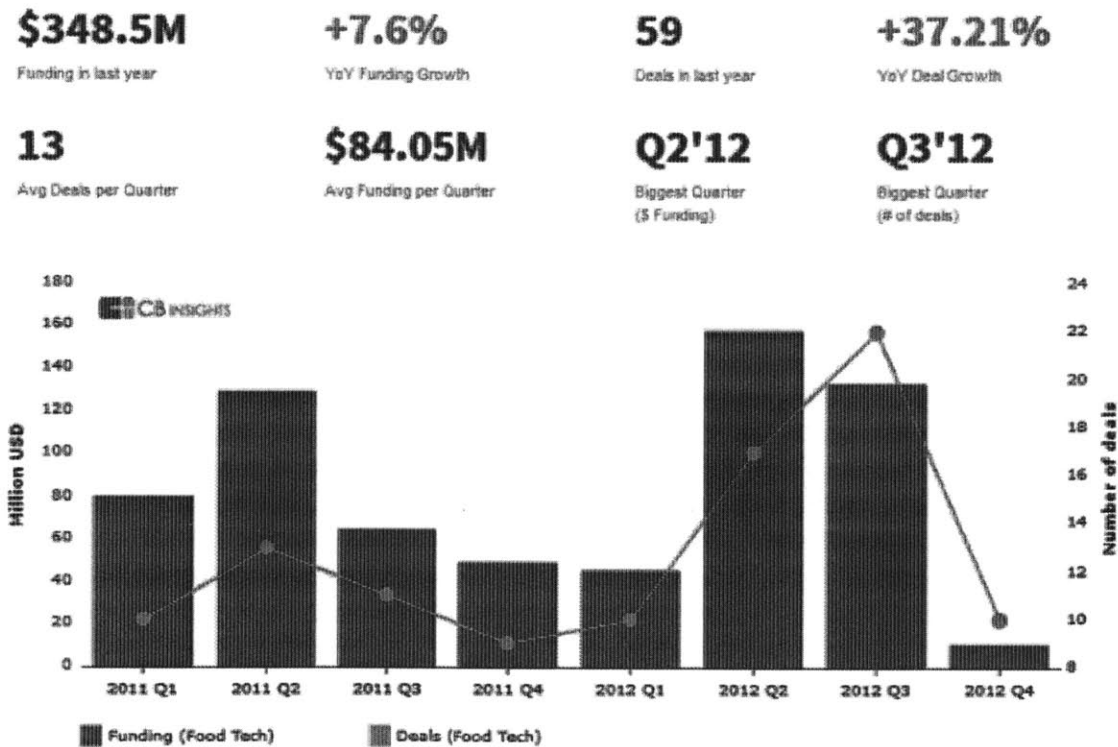
- Production/ Manufacturing (Produce, Consumer Packaged Goods (CPG), Groceries): Additional channels for sale, Improve scale and reach, Increase customer loyalty
- Retail and Distribution (Supermarkets, Departmental stores, Food/ CPG brands): Additional channels for sale, Increase customer loyalty, Attract new customers
- Food Service (Restaurants, Other eating establishments, Professional Chefs): Increase topline, Target new customers, Improve service and efficiency and offer convenient ways of consuming products.
- Consumption (Consumers and Businesses): Convenience, Discovery, Improved service, Better deals

Online food businesses have been popular since the dot-com bubble (Weber, 2011 and Hoge, 2014) but most were unable to survive the downturn that followed. In the past few years however, entrepreneurs and investors have taken a keen interest in this business again. Currently, there are more than 300 companies that provide food-related products and services over the Internet (Rosenheim Advisors, 2012) in the U.S. alone. Globally as well, there are a large number of online food companies and in fact one of the first few startups in this space was established in Sweden around 2007 (Almberg, 2012). Miggasfrid, a startup that delivers pre-packaged grocery bags was setup by Kicki Theander who identified the need of young professionals and busy parents for home-cooked food. She started delivering these pre-packaged grocery bags to households for a periodic subscription fee. The grocery bags were filled with relevant ingredients required for several dinners and helped customers save time and effort in purchasing these groceries themselves. In addition, it also allowed customers to explore new recipes and provided easy access to good quality and healthy home-cooked food. The service turned out to be quite successful and the company today has revenues of around \$13M in Sweden alone. The company operates in more than 70 municipalities across Sweden, Norway, Denmark, Germany, and Belgium. Miggasfrid has also spawned other similar services across Europe. Linas Matkasse, a similar service based in Sweden has revenues in excess of \$50 M in 2011 (Haeger & Nilsby, 2013).

Online food businesses in the U.S. comprise of a mix of startup and established firms. Rosenheim and DeSilva have developed an extensive listing of the various segments of the online food industry (Rosenheim Advisors, 2012). They have divided the market into 23 segments based on key offerings and listed several players that compete in each space. As we shall see further in the thesis, many of these firms operate with a

variety of innovative and often-disruptive business models. The products and services on offer cut across traditional value chains and help provide great value to most if not all participants in the food industry. While it is still very early to assess the long-term potential of some of these models, investors have certainly welcomed these unique businesses that aim to leverage the Internet to transform the traditional food and food service value chain. In 2012, almost \$350 million was invested in web and mobile-based food businesses as seen in Figure 1 below. These investments have been made across different segments like grocery retail as well as many new models like restaurant searches, reviews and recommendations and restaurant food ordering and delivery (CB insights, 2013).

Figure 1: Statistics on Financing and M&A deal data



Source: CB Insights, Industry Analytics

As seen from the type of funding – mostly early round like seed and series A, many of these businesses are fairly new. The deal sizes have typically been small and most deals have been less than \$5 million in size as seen in Table 1 below.

Table 1: Statistics on average deal sizes

Deal sizes	Seed/ Angel	Series A	Series B	Series C	Series D	Series E+
% of deals	46%	27%	16%	7%	3%	2%
Average deal size (\$M)	1.09	3.79	13.52	34.75	34.5	50
Deal growth (yoy)	110%	57%	-43%	300%	0%	-100%

Source: CB Insights, Industry Analytics

As seen in the discussion above, the online food industry in the U.S. is fairly new and has seen incredible entrepreneurial and investor interest in the recent past. As a result of this, many new and interesting business models have emerged. The main objective of the thesis is to study these emerging business models and adopt a common framework to evaluate them. While the assessment enables us to compare different models, it also helps identify potential opportunities and future challenges specific to each business model. This will be of key interest to current and new entrepreneurs as well as to investors. The study also applies the platform concept to different segments of the online food industry which is a unique approach to look at these business models. Understanding the dynamics of platform markets, which includes identifying key participants and drivers of adoption, will provide useful insight for entrepreneurs and investors. Lastly, the study is my attempt to understand the online food industry from the perspective of a potential entrepreneur and explore possible startup ideas for his future venture.

The first few chapters of the thesis introduces the industry and proposes a few approaches to analyze online food-based business models. This consists of discussions on different frameworks that will be used later in the study. The next few chapters talk about different segments of the online food industry and contain analysis of emerging business models. The last chapter of the thesis consolidates the analysis and summarizes findings. Given that the food market is fairly large and diverse, the study limits its scope to internet-based food businesses that are primary consumer-driven. It also focuses only on startups that are based in the U.S. This distinction has been adopted while segmenting the market as well as while identifying different business models in each segment.

The emerging Food Industry is quite complex due to the diverse nature of the products and services it offers. Traditional classification into a specific industry or sector is therefore, not easy. However, to study and better understand different business models it is necessary to categorize them. One way of doing this would be to segment based on the target market. The following segmentation is based on insights gained form various articles, food reports and analysis of companies.

- Grocery and produce: Online grocery e-commerce and related products and services
- Food service and delivery: Restaurant and other food service related products and services
- Consumer and Social food networks: Food-based social communities

Analysis Framework

Business Model Analysis

With more than 300 participants in the online food economy, there are a large number of business models that are currently competing for investor, consumer and business attention. It is therefore important to evaluate some of these online food business models to understand their future potential. The following section attempts to identify key themes that may be useful towards building a successful online food-based business. These themes have been distilled from an extensive secondary study of numerous reports, blogs, news articles and published interviews with entrepreneurs, investors and food experts. In addition, primary interviews with investors and entrepreneurs also provided key inputs.

A large number of the 300 odd online food-based businesses are startups. In his paper on evaluating startup ventures, Professor Cusumano identifies a list of eight parameters that can be used to assess new ventures. These parameters have been consolidated along with inputs from investors in food startups and secondary research to come up with a few factors that determine business model attractiveness.

1. High Scalability – Is there low customer acquisition cost?
The ability to find paying customers, retain and grow their numbers is an important success factor. Low customer acquisition cost in case of a consumer oriented business or a low selling cost in case of an enterprise business is key to ensure faster scale up.
2. Compelling offering – How engaged are customers?
Based on the type of market served, the offering needs to be aligned with an existing customer pain point. Targeting a specific pain point leads to higher customer engagement and results in a “must have” offering. For e.g. OpenTable, the restaurant table reservation service, addresses the customer need of hassle free booking by offering a one-stop solution that provides access to a large number of restaurants. In the case of businesses, the offering needs to have a strong value proposition of either helping the business increase topline or help optimize costs.
3. Growth and profit potential – Is there a large profitable market?
Growth and profit potential is directly linked with the market opportunity and revenue model. As is the case with internet-based business models in other sectors, common revenue models include commissions, subscriptions, transactions and/ or advertising. Each of these or a specific combination of these can lead to different growth and profit prospects based on market attractiveness conditions.

Business models across different segments have been evaluated based on the above parameters and rated on a ✓+, ✓/✓+ and ✓ scale. These ratings are based on my understanding of different business model after an extensive secondary study and a number of primary interviews with investor and entrepreneurs.

Introduction to Platforms

A large number of Internet food based companies are based on multi-sided markets or networks. In most cases, these companies operate in two-sided markets consisting of the consumers and businesses or restaurants. In order to assess different business models, it is important to understand the dynamics of these markets. In their paper on strategies for two-sided markets, Eisenmann, Parker and Alstyne classify products and services that bring together groups of users in two-sided networks as platforms. They further add that platforms provide the infrastructure and rules that facilitate transactions between the two groups and often rely on either physical products or providing services. A few examples in the context of online food are listed below. Goldbely is a startup that connects customers with unique gourmet food from select restaurants across the US. The service provides customers delivery of selected items from these restaurants and in turn also helps popularize and increase sales from these restaurants. Another similar platform concept is that of Seamless Grubhub, which provides an online service, that connects customers with local restaurants for food delivery.

A key feature of platforms is the aspect of network effects, where significant value is added as more users join either side of the market. In the case of Seamless Grubhub, more users prefer to use the service when more restaurants are listed and more restaurants are incentivized to join with increasing users. Platforms also typically incentivize one side of the market and make money from the other side. Again for services like Seamless Grubhub, users have free access to the vast listing of restaurants but restaurants are charged listing fees and/ or transaction fees based on successful order booking.

Platforms can create immense value for both sides of the market as well as for the platform provider. It appears certainly worthwhile to assess the platform potential across different segments in the food industry.

Platform Analysis

Platform offering are very popular in online businesses. Companies like Amazon and eBay have been very successful in exploiting the benefits of platform offerings. While building an online platform that brings together buyers and sellers through a software code sounds seductively simple, its success depends on various factors. The two key themes that will be discussed through this study include the decision between a reseller and multi-sided platform model, and whether the platform market has the potential for a single player to dominate. Both these themes are discussed below and wherever applicable, have been applied to different contexts in the online food industry. The first major aspect of creating successful online platforms is the decision between a reseller or multi-sided platform model. In a reseller model, businesses control all characteristics of the product including price and inventory that typically results in higher capital and operating costs. On the other hand, in the multi-sided platform model, buyers and sellers are simply brought together without controlling or owning the offerings being sold (Hagui and Wright, 2013). Multi-sided platform are very appealing to startups due to low entry barriers. However, this model may not guarantee success in all markets. In their paper, Hagui and Wright discuss the characteristics of both these models and come up with an list of factors that can contribute towards a successful reseller based platform.

- Presence of significant economies of scale
- Opportunities to create and extract more value by bundling or selling complementary products
- Ability for buyers to derive significant benefits from aggregation
- Opportunity to create a better buyer or seller experience by taking control of transactions
- Requirement to protect buyers from sellers or vice versa
- Existence of disproportionate information or bargaining advantage on any side.

Understanding the applicability of the above factors to the context of different segments in the food industry will be useful to ascertain reasons of success of any particular platform model. These factors can also help identify potential opportunities in the market as well as challenges that platform players might face in the future.

Another useful way to assess the platform potential is based on the Winner Takes All Or Most framework (WTAoM) (Eisenmann et al. (2006) and Cusumano (2010)). As stated in the above discussion on platforms, network effects lead to a virtuous cycle increasing benefits to platform providers. In markets having competing platforms, this may lead to winner-take-all battles. Players in such markets therefore need to clearly understand whether their market can accommodate multiple platforms. The following three factors typically determine whether a single platform (winner take all) is likely to dominate.

- Strong network effects
Positive network effects have the ability to create extraordinary returns for platform providers. Strong network effects also make the product or service more valuable to all sides of the market. A great example of a platform that created strong network effects and a more compelling offering to all users is the Microsoft Windows operating system. The platform allowed complementors to develop software that could run on Windows which attracted more users to the platform. This further made the platform more attractive to developers and new users creating positive network effects.
- Limited differentiation between competing platforms
In cases where majority of the market has similar requirements and there are limited niche or differentiation opportunities available, a single platform is highly likely to dominate. Again replying on the Windows example, in the initial years there was limited difference between competing operating systems like Macintosh. In fact, many would argue that the Macintosh was superior to Windows. Still, by and large there seemed to be limited differentiation between competing operating systems, atleast around the 90s and early 2000s. This led to Windows dominating the operating system market and Macintosh was popular only in a few niche segments.
- Multi-homing is rare
Homing refers to the requirements of a platform user to be affiliated to the specific platform and includes all costs related to adoption and maintenance. Homing on multiple platforms is rare in situations when there are high costs of affiliation ensuring stickiness towards a specific platform. In the case of operating systems, the cost of maintaining more than one system was high and users

typically chose the one with the most complements (software) and best price (Cusumano, 2014). This led to the increased adoption of Windows.

Players in platform markets need to anticipate these dynamics for effective decision-making. For WTAoM markets, this could mean possibilities that range from fighting to sharing the platform.

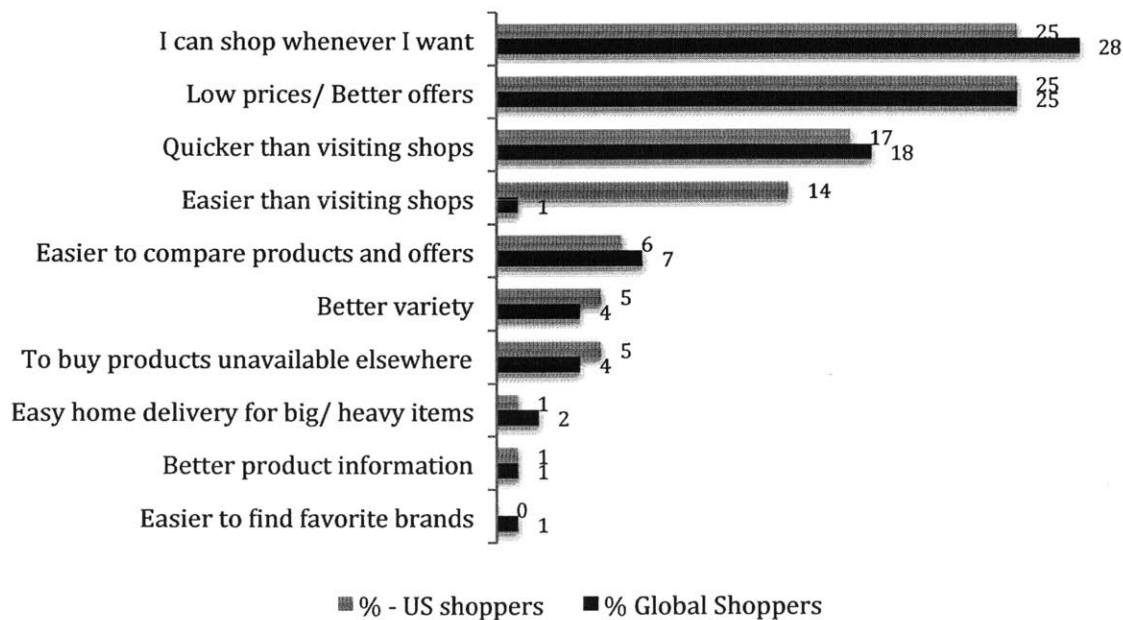
The above discussion helps look at useful ways to evaluate internet-based business models and understand platform dynamics in different markets. The online food industry has a large number of startups and business models that are fairly unique and untested. Comparing and contrasting these models will provide useful input to entrepreneurs, managers and investors and enable them to better understand strengths and possible risks of each model. In the case of platform markets understanding market dynamics holds the key to decision making. The aspects that emerge from the above discussions would be applied to various segments of the Online Food Industry in the sections that follow.

Grocery and Produce

Online grocery and produce businesses offer products and services that enable users to buy and sell through the Internet. These businesses frequently engage multiple user groups across both business-to-business (B2B) and business-to-consumer (B2C) segments. Specifically to the B2C segment, which is the focus of this study, these multiple user groups include supermarket and retail stores, consumers, CPG brands and advertisers.

B2C e-commerce is a fast growing segment expected to account for almost US\$1.2 trillion sales globally (Statista). Of this market, around 30% alone is generated in the United States. The key reasons for this large growing market is the range of benefits e-commerce provides when compared to shopping in physical stores. In a recent survey, online shoppers cited cost effectiveness, convenience and efficiency as the key reasons for preferring to shop online (Figure below). (“Understanding how US online shoppers are reshaping the retail experience”, PWC).

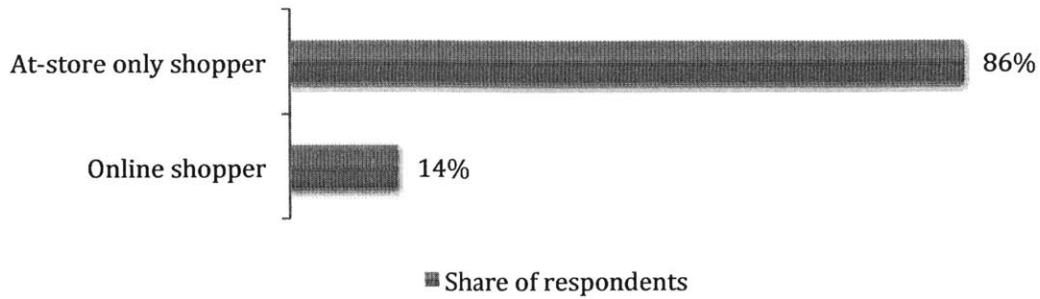
Figure 2: Factors favoring online shopping



Source: PWC

Online grocery market is a key segment within the B2C e-commerce space. Grocery e-commerce is currently growing at a much faster rate (9x) as compared to the traditional grocery business (Rothschild, E-Commerce: A Source of Growth for CPG?, 2013). Going forward as well there is expected to be significant growth in this space since only around 14% shoppers in the United States currently shop for groceries online (Figure 3 below).

Figure 3: U.S. distribution of in-store and online grocery shopping 2012



Source: Statista

While the primary offering of online food businesses in this industry is e-commerce of grocery and produce, there are a number of related sub-segments as well. These are built around the e-commerce industry and are gaining traction as well. The major sub-segments related to online grocery and produce are:

- Grocery e-commerce
- CPG/ Retail: Coupon Loyalty and other services which include
 - o Coupon distributors and aggregators
 - o Loyalty reward program services
 - o Mobile coupon services
 - o Grocery product guide and discovery services

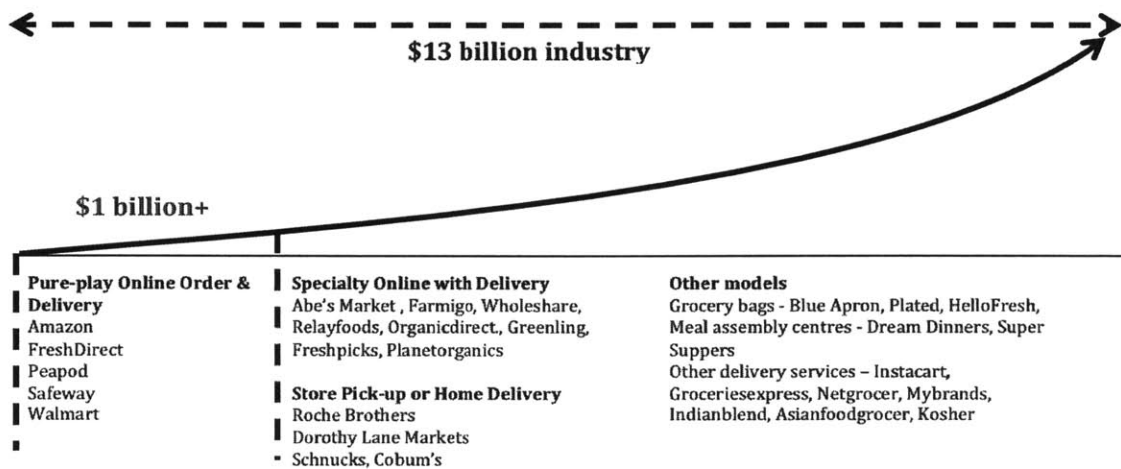
The following sections assess each of these sub-segments to understand different business models and the value proposition offered by startups. As seen in the analysis, many of these models are proving disruptive to existing businesses, primarily in the grocery e-commerce market. An analysis of the long-term potential of some of these models is also of considerable interest and forms part of the discussion in the following pages.

Online Grocery Services

The online grocery market, which includes the sales of all food and beverage products, was estimated to be around \$15 billion in 2013 (Hartman Group, Forrester Research, 2013). As compared to the overall U.S. food retail sales which is often estimated to be at least \$ 500 billion in size, the share of online sales is currently quite low (around 3%). The complexity in the business (perishability, long tail nature of products) along with the legacy of the failures of large online grocery businesses in early 2000's could be possible reasons for the low penetration. Over the past few years however, there has been increasing activity in the online grocery market with many large and small companies taking interest in this space.

Online grocery businesses operate primarily as marketplaces for sellers and buyers. They offer listing services to sellers and provide access to customers and delivery services. The largest businesses in this space include pure-play online order and delivery based businesses like Amazon, Freshdirect, Peapod, Safeway and Walmart. Currently these businesses account for a small fraction of the total grocery transactions online (Figure below).

Figure 4: Online grocery's long tail



Source: The Online Grocery Opportunity, The Hartman Group

The bulk of the market is composed of a large number of diverse pure-play shippers as well as brick and click online businesses. These businesses focus on niche or specialized operations. For e.g. Abe's Market is an e-commerce marketplace which only lists natural and organic products from select sellers. Farmigo, Wholeshare and Relayfoods are a few examples of online grocery businesses that seek to connect small-scale local and regional producers directly with end consumers. Instacart is another example of a niche online grocery delivery service that offers to deliver groceries from nearby supermarkets within the hour.

Due to the complex nature of this market, firms adopt unique business models to cater to specific needs of their target audiences. Pure play online order and delivery

businesses typically operate primarily as resellers. They manage and control all aspects of the business – inventory, pricing, delivery and customer relationship. Their suppliers gain by having an additional channel to sell and their customers gain through convenience and ease of shopping. Large firms like Amazon, Peapod, Walmart, Abe’s market etc. operate on this model.





Most of the smaller players and other startups operate with many unique and innovative models. Some of these are briefly discussed below.

- **Pre-packaged grocery delivery services:** Based on the reseller model but providing a vastly different offering to customers is the pre-packaged grocery delivery service. Startups like BlueApron, HelloFresh, Plated etc. deliver select groceries which are ingredients for high-quality curated recipes and contain portions for multiple meals along with step-by-step cooking instructions. The target market for these startups is primarily working professionals with limited time and a keen interest in cooking and eating healthy food. Currently BlueApron is one of the largest such service that delivers to around 80% of the country.
- **Crowd-sourced grocery delivery:** Instacart is a startup operates on a relatively novel concept in grocery e-commerce. Based on an innovative asset-light business model, Instacart seeks to disrupt the pure play e-commerce model by just offering delivery services. The company relies on a network of crowd-sourced delivery agents to shop and deliver customer grocery lists. The concept has found traction in a number of cities and Instacart has plans to deploy this to other deliveries as well.

These innovative business models have been made possible due to certain fast-emerging trends. The whole crowd-sourcing space made popular by AirBnB, Zipcar and Lyft is expected to make a profound impact on many traditional industries. With respect to the online grocery market, logistics is one of the most important elements of the business model. Crowd-sourcing different segments of the logistics value chain could well disrupt this traditionally asset-heavy industry. Instacart, the startup described above, has had early success in the form of rapid expansion to more than 10 cities in less than four years. Amazon, the pure play online grocery retailer adopts in-house logistics and has been able to scale its services to only two cities in the U.S. after almost 5 years of operations. Despite this early success however, the feasibility of managing a large crowd-sourced operation can only be ascertained with time.

Each of the different business models is built around a unique offering. In order to bring out the differences, it is useful to compare these models with the pure play online grocery delivery model of Amazon.

Table 2: Online grocery services

			
<ul style="list-style-type: none"> • Available in 2 cities • Delivery time 8-12 hours 	<ul style="list-style-type: none"> • Available in almost all states, 6000 subscribers • Delivery once a 	<ul style="list-style-type: none"> • Available in 30 states with more than 90 franchisees 	<ul style="list-style-type: none"> • Plans to be available in 10 cities by end of 2014; Currently 440

	week (Options of number of meals)	<ul style="list-style-type: none"> Typically available once every week (Options of different meal quantities) 	<ul style="list-style-type: none"> customers, 20 employees Deliveries available every hour, scheduled times till 11 pm
<ul style="list-style-type: none"> Reseller model – control over inventory, prices, customer relation Offers a vast range of products/ SKUs Asset heavy; Investments in warehouses, delivery systems 	<ul style="list-style-type: none"> Reseller model – control inventory, price of package, customer relation Offers very specific SKUs (recipe-based) Limited investments in assets; common warehouse can serve multiple cities 	<ul style="list-style-type: none"> Reseller model – Control inventory, price of package, customer relation Offers very specific SKUs (recipe-based) Asset heavy; new catering kitchens required in each location 	<ul style="list-style-type: none"> Multi-sided platform model – no control over inventory, prices; Partnerships with major retailers Controls customer relation No/ limited investments in assets; Mostly operational investments in delivery, S&M
<ul style="list-style-type: none"> \$299 per year Prime Fresh subscription includes delivery 	<ul style="list-style-type: none"> \$18 minimum per week for 2 meals Subscription plans available 	<ul style="list-style-type: none"> Minimum \$130-150 for a weekly family meal for 3-4 members Subscription plans available 	<ul style="list-style-type: none"> Delivery charges - \$7.99 for one hour delivery; For orders less than \$35, \$15 for one-hour delivery \$99 for one-year subscription with free deliveries
<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Total investment of \$38 million to date; 2013 revenues of \$10 million 	<ul style="list-style-type: none"> Franchise model; around \$300k startup costs 	<ul style="list-style-type: none"> Total investment of more than \$10 million

Source: Company website, CrunchBase

Business model assessment

Many of the innovative startup models described above are gaining traction in the market. As seen in the table above, investors have bet significant amount of investments on these potentially disruptive business models. In order to assess if these models can have a significant impact on the online grocery market, it will be useful to assess their relative strengths and limitations. The analysis framework discussed in the above section is used to evaluate the pre-packaged grocery bag service (BlueApron), Meal Assembly Centre service (Dream Dinners) and the Crowd-sourced delivery service (Instacart).

Table 3: Business model assessment - Online grocery services

Business models	Pre-packaged grocery bags (PPGB)	Meal assembly centres	Crowd-sourced grocery delivery
High Scalability - Is there low customer acquisition cost?	✓+ Low acquisition cost with no direct sales team; online marketing collaterals, joining and referral discounts	✓ Target customers in specific catchment around meal assembly center; franchisees focus on marketing/ sales and customer acquisition	✓/✓+ Low acquisition cost with no direct sales team; Online marketing collaterals, joining and referral discounts May need sales team for partnerships with retailers/ other businesses
Compelling offering - How engaged are customers?	✓ Novel offering though not a “must have”; Provides healthy home cooking, hassle-free grocery shopping	✓/✓+ Concept of community cooking has high retention rates although not a “must have” Saves cost, hassle-free grocery shopping	✓+ Novel offering focuses on customers with time-constraints; High retention rates observed
Growth & Profit potential - Is there a large profitable market?	✓+ Limited target market with focus primarily on high income customers Subscription model with high margins due to bulk purchase, increasing benefits from scale Growth through new signups and new geographies	✓/✓+ Focus on cost savings; large target market Subscription model with high margins although limited benefits from scale due to independent operations Growth through setting up new centres; high investment	✓/✓+ Broad range of customers; large target market Subscription model but margins may be limited since only value-add is fast and convenient deliveries Growth through new signups but require increased delivery/ shopping agents

Based on the above assessment, the PPGB service has a few advantages in benefiting from its growing scale. The growth and profit potential also appears to be higher for this model. On the other hand, the PPGB service does not appear to be a “must have” for the target segment and faces stiff competition from restaurants and other food service establishments. The other models might find it more challenging to scale, specially the crowd-sourced delivery service since signing more customers is relatively easy but managing large-scale operations could get extremely complex. Despite this, all

the above models have seen considerable success in the market, especially since their ability to scale up compares favorably with pure play online grocery players.

Platform potential assessment

Pure play online grocers benefit from network effects. As seen above, a few startup-based online food models have seen early success and seem to have a strong potential to disrupt pure play online grocery models. As discussed earlier, Abe's market is one such example. This e-commerce platform brings together sellers of natural and organic products with customers. The model works similar to any e-commerce transactions and provides listing and delivery services. The company does not yet have any complementors but similar to Amazon's product advertising API, could make use of its vast listing of organic and natural products to attract developers. Instacart is another great example of a crowd-sourced delivery platform that brings together grocery retailers (sellers) and customers (buyers). It also attracts complementors in the form of personal shoppers who are paid a commission on every delivery. The service can be extended to any type of deliveries and could potentially include a host of other partners.

Applying the Hagui Wright framework to the online grocery industry, we find that the market seems more suited for a hybrid approach which is similar to Amazon's current model which is a mix of reseller and multi-sided platform. This is because online grocery has a long tail (only few type of products are sold in large quantities with others being low volume) which can be effectively dealt with through a hybrid model. This involves controlling pricing and inventory for few items and giving away this control for the rest. Groceries also have the issue of perishability, which further creates complexity in deciding between reselling and being a multi-sided platform. Aggregating perishable products as in the reseller model creates great economies of scale but it also exposes the reseller to significant risks related to unsold inventory and spoilage. Therefore, although the reseller model improves buyer experience considerably (by aggregating and acting as a single vendor), a hybrid model seems more applicable to retailing of perishable products.

An alternate model that a few companies have explored is being a reseller for select items. The pre-packaged grocery bag service and meal assembly centers are essentially resellers but they offer select items for purchase which all come together based on the recipe which provides an added experience to the consumer. These businesses provide benefits of convenience and providing an opportunity to cook and learn new recipes to the consumer by aggregating select products. In turn they also cover the perishability aspect by dealing in very few products, which can then be easily managed. Instacart is another example of such a reselling arrangement. The startup offers select items from nearby supermarkets on its site and provide quick delivery for these items. Though not a traditional reseller since it does not assume pricing and inventory control, it creates scalability to restricting the products it sells and retail stores that it provides access to.

Next, considering there are several online platform businesses, it would be useful to understand if the online grocery market is a WTAoM market. The WTAoM framework discussed earlier is applied to the context of online grocery market to ascertain if there is potential for a single or few platform providers to dominate this market.

- Strong network effects: Yes

As seen in some of the platform examples, an increase in the number of users on any one side of the market attracts other users. For example, in the case of Instacart this is especially evident since a higher number of possible deliveries also attracts a higher number of sellers as well as personal shoppers (complementors).

- Little differentiation among competing platforms: Maybe
While the basic offering of any platform provider is the same (online grocery shopping), there are a lot of variations in the value proposition to cater to specific audiences. For example, Abe's market focuses on organic and natural products while Instacart focuses on expediting deliveries from specific partner retailers.
- High cost of multi-homing: Maybe
There are limited homing costs that establish and maintain user affiliation to a particular platform. For the most part, users can easily switch between platforms. In a few cases however, the platform provider charges an upfront subscription fee that anchors the user to that platform. Although not substantial, this subscription fee can discourage users from multi-homing. Instacart for example, charges an \$99 subscription charge to its users apart from also charging a pay-per-use fee of \$5-7 depending on the total order value.

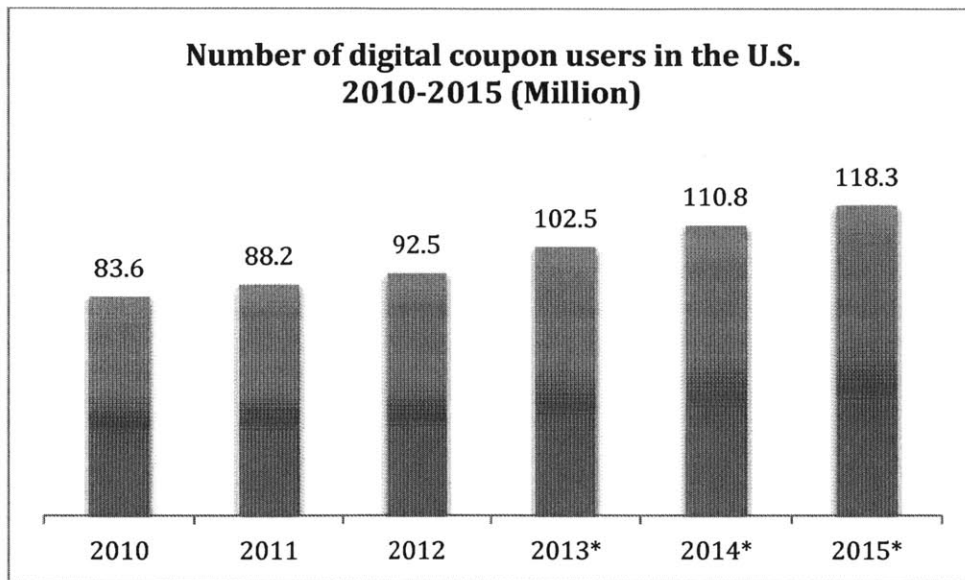
In summary, based on the above assessment it seems unlikely that in the existing scenario, a single platform provider could dominate the online grocery market by providing a multitude of offerings. Going forward however, with some of the platforms maturing and evolving their business model, it might be difficult for users to multi-home which could polarize them towards a particular platform provider. A few potential options to enable this to happen could be:

- In the case of crowd-sourced delivery platform, extending groceries shopping to other similar frequent purchases like take-outs from restaurants and charging a significant access fee could potentially anchor users to the same platform.
- Increasing the cost of multi-homing for any one side of the market. Focusing on increasing homing costs for sellers could be an attractive option to anchor them to a particular platform. However in this case, there needs to be a strong value proposition offered to the seller.

Grocery/ CPG: Coupon and Loyalty Services

With roughly 98 million Americans scouring the Internet for coupons weekly, the digital couponing arena is a large, popular and growing market (PRWeb, 2012). The total number of coupon users in the United States over the next few years is expected rapidly increase.

Figure 5: Number of digital coupon users in the U.S. (in million)



Source: Statista

Growing trend of mobile couponing is expected to drive this growth in the market for digital coupons.

Coupons offer consumers discounts and other benefits and in return coupon providers who are primarily CPG brands and retailers seek to better engage with these consumers. The business of coupon and loyalty services is based on engaging consumers with special discounts, making their grocery shopping easier and less time consuming while in turn helping retailers and brands better target customers, run focused promotion campaigns and obtain data on shoppers' habits and preferences.

Coupon delivery services are essentially digital platforms that connect consumers with coupon providers like retailers and CPG brands. They provide services related to both online and offline grocery shopping. The most basic online service offered is distributing coupons or discount offers to customers thereby incentivizing them to purchase a particular brand or shop at a retailer store. The online service typically gets paid as a commission when users redeem coupons or click on ads to buy discounted products (Gonsalves, 2012). Players in this space distribute coupons by directly delivering them to their users and also displaying them in the form of advertisements through web, mobile and social channels along with a network of third-party websites or publishers (Coupons.com, prospectus). In addition to basic coupon delivery services, a few businesses also offer advanced solutions built around managing coupons like marketing planning tools, mobile ecommerce, display tools, analytics supporting marketers etc.

Large players in the coupon and loyalty services business, like Coupons.com, operate across a range of consumer industries. They provide coupon delivery services and display advertisements through a network of third-party websites or publishers. Coupons.com deals with over 2,000 brands from more than 700 CPG companies, retailers operating more than 58,000 stores across North America and consumers who made an average of 17 million monthly unique visits to Coupons.com and other sites. The company generates revenue when users activate coupons or coupon codes for redemption. It also earns revenues from display advertisements on its own website as well as third-party websites. It does incur distribution expenses by needing to share some of its revenues with its distribution partners – retailers and publishers.

While the basic model of Coupons.com remains the same for other players, many startups in this space have developed innovative models of approaching users. These companies provide different services that offer a better user engagement with the brand being promoted. A great example of this model is Swagbucks, which engages users by making them watch brand-specific videos, answer polls, play games, search for stuff, take paid surveys etc. and rewards users with coupons or other benefits. Others startups like Ibotta allow users to scan their grocery receipts from a large selection of grocery chains for cash back after completing certain game-based activities similar to Swagbucks (Perez, 2012).

The emerging trend around Gamification has spawned a new class of businesses that operate on this concept to provide product specific information that increases brand awareness, aids decisions or educates users. Gamification relates to bringing in elements of a game to enhance user experience and reward specific behavior. Since brands typically seek to promote user awareness through promotions or trials, Gamification provides an innovative approach to better engage with users through activities around a game-based environment like surveys, trivia questions, videos etc. for discounts or gift card rewards. The a few examples of popular offerings from some startups around this concept include




- In-store map and product search coupled with targeted offers for in-store shoppers (e.g. Aisle411, Aislefinder)
- Discover new products through sample boxes (e.g. Blissmo)
- Product specific reviews through searches, bar-code scans (e.g. Consmr, Delectable, Vivino)
- Food recommendations (e.g. Fooducate)

Attracting users through discounts and gifts allows these startups to collect useful user information that is valuable to CPG brands or retailers. This user information (location specific information or preferences regarding new products or brands) aids retailers or brands to better target and influence prospective shoppers. For example, Aisle411 is an application that helps shoppers find what they are looking for in the store (down to the specific section of aisle) and get rewarded for it (Penny Salz, 2011). When the user seeks information based on a search query, the application delivers relevant coupons and promotions. At the same time, the user also has the option of knowing reviews about the product by scanning its bar code. The social element of the application is based on sharing activity details and earning points or rewards in return. Aisle411 has partnered with a number of retailers that provide location-specific information about their

stores that is then shared with the users. The business model is based on monetizing reward redemption through a commission or a flat charge. Aggregate shopper data can also be monetized to understand shopper characteristics and behavior.

Many of startups discussed above have been quite successful and have managed to achieve significant scale in a very short time. The following compares a few innovative startup models in this space with the traditional coupon delivery service model.

Table 4: Coupon and loyalty services

		
<ul style="list-style-type: none"> • Connects users with brands/ retailers through coupon redemption • More than 6 million unique visitors in 2013 	<ul style="list-style-type: none"> • Connects consumers who are willing to perform actions with businesses (e.g. CPG brands) that benefit from those actions. • More than 6.5 million users, \$35 million in revenues in 2012 	<ul style="list-style-type: none"> • Allowing users to scan their grocery receipts with follow-on activity like polls, trivia questions, watching video etc. • More than 500k users in less than four months
<ul style="list-style-type: none"> • Generate revenue from brands through coupon activations; partners with retailers and publishers to increase presence 	<ul style="list-style-type: none"> • Charge businesses for providing user engagement; Reward users for actions through gift cards (e.g. one survey = 20 swagbucks and around 500 swagbucks = \$25 gift cards) 	<ul style="list-style-type: none"> • Collects user shopping data and links it with user data to provide useful insights to brands • Each task provides \$0.25 to \$0.75 in terms of cash back • Partnership with a number of large retailers, CPG brands

Source: Company website, Crunchbase

In this model, typically the channel partners (retailers and the network of publishing websites) who play their role in popularizing the model are incentivized to join the platform. The startup models in this space (e.g. Swagbucks) also have a similar model with customers being marketers at any business and users being attracted to perform specific activities through a large number of incentives typically in the form of gift cards.

Business model assessment

In order to assess the relative strength of the novel Gamification-based model with the traditional coupon and loyalty service business model, it will be useful to employ the analysis framework discussed earlier.

Table 5: Business model assessment – Coupon and loyalty services

Business models	Online coupon and loyalty services (e.g. Coupons.com)	Gamification-based coupon and loyalty services (e.g. Swagbucks, Ibotta)
High Scalability - Is there low customer acquisition cost?	✓ Direct sales team and significant promotion spending to target retailers and CPG brands and establish	✓ Direct sales team required since customers are typically retailers and CPG brands
Compelling offering - How engaged are customers?	✓/✓+ Novel offering for users by converting paper coupons to digital; Service has limited ability to differentiate apart from scale advantages to users Increases redemptions and easy to track which is beneficial for both users and brands Widely accepted at retailers and online partners	✓/✓+ Better customer engagement due to game-based activities along with hassle-free cost savings; although advantage over regular online coupon service may not be significant Brands and retailers obtain better insights from user data Significant value (savings) for users due to reward potential; Game-based interface further keeps users interested
Growth & Profit potential - Is there a large profitable market?	✓ High operating costs (S&M and technology) Leading players yet to breakeven Non-subscription model, target specific campaigns for brands Large user and partner base provides great network benefits; Second revenue stream based on online advertisements Growth through acquiring new CPG customers and new geographies	✓ Huge growth of users can potentially lead to higher revenues from businesses High future costs due to higher rewards to users and limited monetization of customer data are potential risks (the company paid \$18M in 2013 and \$54M over their lifetime) Growth through converting new CPG brands; non-subscription revenue model is another risk factor

The key difference in the two models is the compelling offering provided by Gamification-based startups which appears to be an attractive method of engaging users. Although these startups are relatively new to the market, they have managed to obtain significant scale in a very short time as compared to the traditional online coupon and loyalty service providers. For example, Coupons.com is more than ten years old and has revenues of around \$120 million whereas Swagbucks’ new activity-based redemption model is barely five years old and has already scaled upto revenues in excess of \$50 million (Crunchbase).

Platform potential assessment

As seen in the discussion above, coupon and loyalty services typically offer a digital platform for users. They bring together consumers, brands and advertisers,

retailers and a range of content publishers. These platforms have strong network effects since a growing base of users attracts more retailers and CPG brands which in turn attracts more users. Operating primarily as multi-sided platforms, these businesses have shied away from the reseller model that is adopted by companies like Groupon and LivingSocial in the similar deals industry. Applying the Hagui Wright framework to the coupon platform market, the reseller model does appear to be attractive since it can provide better experience to consumers by aggregating all the coupons that they need based on their specific requirements. However, most of the players in this industry have a value proposition that supports CPG and other brands by facilitating their promotion campaigns and providing them crucial information regarding consumer preferences. Also, the benefit to consumers is not just through savings but also in the form of information and reviews regarding the product they intend to purchase. This is very different from a coupon-reseller model which is based entirely on savings from consumers and a commission-based model for the platform provider as seen in the example of Groupon.

Further, the existence of platform offerings in the coupon and loyalty services space warrants an assessment to understand if this market is a WTAoM market. The WTAoM framework discussed earlier is applied to this to ascertain if there is potential for a single or limited few platform providers to dominate this market.

- Strong network effects: Yes
As seen in some of the platform examples above, an increase in the number of users on any one side of the market attracts other users.
- Little differentiation among competing platforms: No
The basic offering of any coupon platform operator is to provide consumers the benefit of savings and learning more about the product while in turn obtaining information useful for brands. Coupons.com has been successful in leveraging its scale, but it has not been able to completely capitalize since there exist several more compelling models that provide a better experience to both sides of the market (e.g. game-based activities for consumers and more granular information for brands), as seen in the case of successful startups like Swagbucks.
- High cost of multi-homing: Maybe
With a major benefit from coupon and loyalty services based on saving money for users, there appears limited incentive to choose between platforms. Users tend to enroll across multiple platforms to benefit from all. The cost of multi-homing is restricted to the effort required in signing up for multiple services. However, with significant scale, platform operators can force users to affiliate themselves with a single platform due to access to a large portfolio of coupons.

In summary, based on the above assessment it seems unlikely that in the existing scenario, a single platform provider could dominate the coupon loyalty service market. However, as discussed above, there appears to be a slight potential for a popular platform like Swagbucks to dominate if it is able to scale up rapidly and cause users to choose its platform over rival platforms. This can be achieved by promoting repeat usage through additional benefits that incentivize consumers to use a single platform or by offering brands certain schemes that increase their affiliation.

Food Service and Delivery

Food service and delivery is a large market in the US. The overall US restaurant market for food and drinks is around US\$ 661 Bn in 2013 with more than two-thirds being contributed by eating establishments (Statista, 2013). This market consists of many sub-segments like full-service restaurants, bars and independent restaurants all of which have seen significant growth over the past few years.

Online food businesses are mainly focused on this market and add value to both food service establishments and the end consumer. In case of the former, these companies offer services across the food service value chain aimed at increasing sales or optimizing operations. Some examples include providing reservations services, deliveries services, POS solutions and marketing and analytics support. For the latter, these businesses offer convenience and improve the dining and takeout experience.

The online market for dining and takeout services attracts the most interest among startups and investors primarily due to the large market potential. There is also evidence of increasing consumer interest to shift their takeout transactions online which is backed by an increase in share of independent restaurants registered for online takeout services. This share was estimated to be around 8% and has been consistently growing over the past few years (based on the number of restaurants registered with the largest company offering this service, Grubhub Seamless). In addition to delivery, allied services like reviews and reservations also provide significant value to both consumers and restaurants. Although these services account for a small share of the overall revenues, these are very popular with both restaurants and consumers. Based on the types of services offered by companies in this segment, we can broadly segment this market as follows

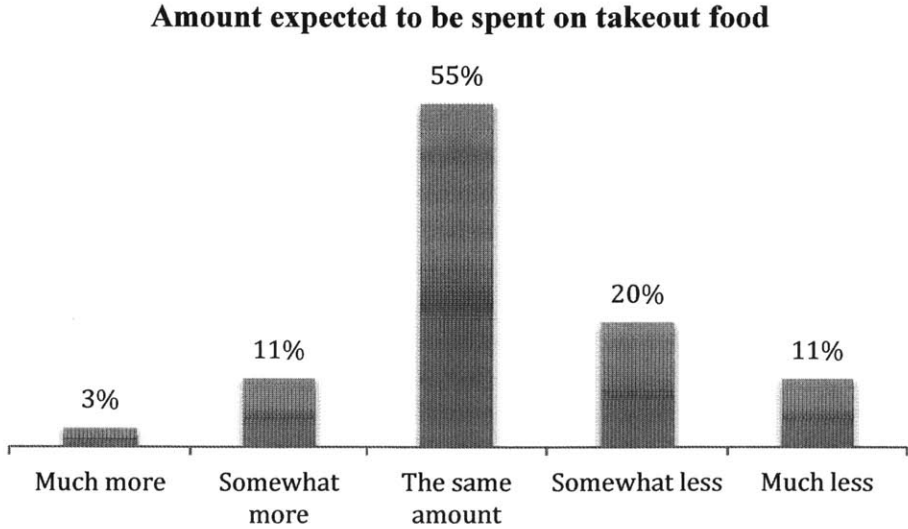
- Online ordering and delivery
- Restaurant search and reservations
- Restaurant coupons, deals and loyalty reward programs
- Restaurant management solutions

Online Ordering and Delivery

Online ordering and delivery businesses provide an online platform that connects food service outlets with diners (consumers and businesses) for pick-up and takeout orders. Food service outlets or restaurants typically gain through an increase in orders generated without incurring additional costs since most of these services work on a freemium model (providing basic services for free and charging for premium services). Food deliveries and related customer service typically continues to be handled by individual restaurants themselves. On the other hand, diners seek a simple, convenient and transparent takeout ordering solution and get the convenience of having the option of a surfing through a large number of restaurants on their personal devices.

The primary market on the food service outlets side of the business consists of independent restaurants that account for around 61% of all US restaurants (Form S-1, Grubhub Inc.). According to Euromonitor, independent restaurants generate around \$200 billion in sale and around a third of this can be attributed to takeout's. Going forward, driven by convenience and increasing awareness, overall spending on takeout food is expected to increase. According to a survey by American Express, around 70% of respondents are expected to spend the same or more amounts on takeout food in the future.

Figure 6: Spending trends on takeout food



Source: American express

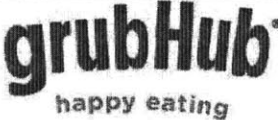


The business model for ordering and takeout marketplaces is typically based on charging commission (typically percentage based) on transactions. While there are no listing or subscription fees for restaurants and diners (freemium model), each transaction attracts a commission ranging from 5% to 15% which is charged to restaurants. These commissions aim to compensate the platform providers for providing access to a large customer base. The diners are charged delivery fees which is typically given directly to

the restaurants. Startups in this business had initially experimented with the subscription model based on periodic payments from restaurants for listing services. This model found limited traction since most restaurants preferred commissions based on transactions.

Large companies like Grubhub continue to operate on a freemium model but also charge for premium search listings. This service attracts higher commissions or even fixed periodic payments. Food service outlets are typically given the option of choosing their level of commission rates, at or above the company’s base rates, to affect their relative priority in search algorithms.

The food delivery service is quite popular with startups and accounts for one of the largest number of successful players in the online food industry. A few popular examples include – Seamless Grubhub, Eat24, EatStreet, foodtoeat.com (ordering from foodtrucks), Foodler, JustEat (global site that operates in over 10 countries), Mealao, Tapingo (focus on university campuses), Waiter, Snapfinger etc. A few variations of transaction-based business model are also gaining traction. Some of these innovative models are compared below.

Table 6: Online ordering and delivery services

		
<ul style="list-style-type: none"> • Presence across 600 cities in the US • Around 3.4 million active users have access to 28,800 restaurants • Connects consumers with food service providers for food ordering and delivery 	<ul style="list-style-type: none"> • Present across 5 cities; founded in 2012 • Provides platform for users to order food and merchandise deliveries • Network of crowd-sourced agents hired for delivery, trained and considered for assignments based on previous performance and customer reviews 	<ul style="list-style-type: none"> • Present across three cities • Provides a few curated options mostly from restaurants that do not offer delivery
<ul style="list-style-type: none"> • Users not charged listing fees, transaction based commission of around 5% to 15% • Higher listing attracts higher commission 	<ul style="list-style-type: none"> • Typical fees of \$5 - \$20 are charged per delivery • More than 20,000 deliveries processed each month 	<ul style="list-style-type: none"> • Delivery charges \$10 from users; commissions from restaurants may also be considered
<ul style="list-style-type: none"> • Investments of around \$84 million and \$51 million in Grubhub and Seamless respectively • Merged entity is a publicly traded firm 	<ul style="list-style-type: none"> • Investments of around \$23 million 	<ul style="list-style-type: none"> • N/A

Source: Company website, CrunchBase

As seen above, with a large number of players this market is fast becoming extremely competitive. Many large delivery companies are moving to consolidate their network of restaurants by offering solutions that help customers manage their operations better and provide greater value. For example, Grubhub provides a tablet-based application that enables restaurants to better manage online orders by enabling restaurants to view and accept orders in real time. The company is also testing a driving application that allows restaurants and customers to track deliveries in real time. On the other hand, startups in this space are employing innovative business models to compete with these large established players. A key trend that many have weaved into their business model is the concept of the crowdsourcing. Crowdsourcing refers to obtaining required services from a large number of people who are typically not employed by the firm. Based on a model of crowdsourced delivery agents, some of these companies have been able to offer a differentiated service and gain the advantage of scalability. Postmates is a great example of this model.

Business model assessment

As seen above, the food delivery market is attractive and growing. With a number of interesting business models competing in this segment, it will be interesting to compare different approaches to identify relative strengths and weaknesses of different models. The following assessment compared the traditional online restaurant ordering and delivery model with the potentially disruptive crowdsourced delivery model.

Table 7: Business model assessment - Online ordering and delivery services

Business models	Restaurant ordering and delivery (e.g. Grubhub)	Crowd-sourced delivery (e.g. Postmates)
High Scalability - Is there low customer acquisition cost?	✓/✓+ Direct sales team needed to sell to restaurants and B2B customers; Need to work with restaurants to integrate internal systems to support online ordering Limited promotion required for online B2C customers	✓/✓+ Direct sales team needed to sell to restaurants; Need for integration with restaurants internal systems Limited promotion required for online customers
Compelling offering - How engaged are customers?	✓+ For restaurants, premium model provides additional channel for sale For consumers (B2C and B2B) value proposition includes discovery, convenience and customer service	✓/✓+ Delivery adds great value to restaurants along with listing services For online consumers, offering provides quick, hassle-free experience Limited choice with select restaurants on offer
Growth & Profit potential - Is there a large profitable market?	✓+ With increasing scale, value proposition becomes more compelling for consumers Large market for takeout's (350,000 restaurants) Increasing scale is profitable since expenses do not increase	✓/✓+ Significant potential for growth in target market which includes high-income professionals with time constraints Target market is small, mostly in cities with large professional workforce with limited restaurant

	proportionately with volumes	delivery options Increasing scale could lead to higher S&M and operations costs which would grow as a % of revenue. Limited benefits from network effects.
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The crowd-sourced delivery model is able to create a differentiated offering targeting specific restaurants (with no delivery) and consumers (who need fast and guaranteed delivery services). The traditional online ordering and delivery service caters to the wider market and based on the success of companies like Grubhub Seamless, seems to appeal to both restaurants and customers. For such services, the market for both consumers and businesses is large and attractive and will continue to provide adequate growth opportunities.

Platform potential assessment

According to Grubhub Seamless, one of the largest players in this space, the food delivery service creates a powerful two-sided network that creates additional value for both restaurants and diners as it grows. Such businesses seem to have a tremendous advantage of strong two-sided network benefits. With an increase in the number of restaurants, the ordering platform becomes more compelling for consumers and an increase in consumers leads to higher volume of orders which makes it more compelling for restaurants.

Innovative models that seek to provide delivery services on the platform to restaurants that do not offer such services offer additional benefits to users. Postmates is a great example of such a service which can typically be extended to delivery of any product/ merchandise.

The discussion on the comparison between the reseller and multi-sided platform model is also applicable to the food delivery segment. A number of characteristics based on the Hagui Wright framework strongly align this to the multi-sided platform model. Due to the nature of preferences for takeout food and the options provided by restaurants, the distribution of specific products carries and extremely long tail. Reselling therefore is extremely difficult due to the practical absence of scale economies. The aggregation of products also does not provide any material advantage to consumers since typical order sizes are small. More importantly, given the perishable nature of these products, reselling would involve a fair bit of processing or storage which would lead to significant complexities and require a whole new set of capabilities. While a multi-sided platform model appears to be an obvious choice, a few startups have tried a hybrid option which has worked for them. Postmates and Caviar have arrangements with very specific restaurants and list only specific items from the menu. These items are priced differently from the regular menu which provides an added margin to the platform provider (Postmates and Caviar). Their service is given priority at these restaurants due to which they are able to guarantee fast delivery. This may not be a traditional reseller model but it seems to have enabled these companies to offer a differentiated product and compete with large players like Grubhub Seamless.

Further, considering the above multiple platform offering, it would also be useful to understand if the food service ordering business is a WTAoM market. The WTAoM framework discussed earlier is applied to ascertain if there is potential for a single or a few platform providers to dominate this market.

- Strong network effects: Yes
Increase in number of users on any one side (restaurants or consumers) does make the platform more compelling for the other side.

- Little differentiation among competing platforms: Maybe
Despite similarities in different business models, as seen by some of the startup models discussed above, they do appear to be opportunities to differentiate.

- High cost of multi-homing: No
For both consumers and food service outlets, there are no/limited costs of multi-homing. Since most platforms provide a freemium offering, food service outlets can list across platforms though this might get difficult if the popularity of one platform rises. Consumers on the other hand do not have any cost associated with specific platform and are free to switch across platforms.

In summary, based on the above assessment it seems unlikely that in the existing scenario, a single platform provider could dominate the food delivery service business. Going forward however, with some of the platforms growing in scale and popularity, consumers and food service outlets may tend to home in on one platform. Companies may need to proactively attract users to stay on their platform by incentivizing frequent use on the consumer side or make platform charges more attractive for restaurants.

Restaurant Search and Reservations

One of the most popular online businesses based on food service is that of restaurant search and reservation. The most ubiquitous names associated with food-based businesses are Yelp and OpenTable. These are possibly one of the first few startups to popularize the concept in the US. While Yelp provides restaurant reviews, OpenTable helps users reserve tables at restaurants. Following the success of these firms, a number of other players currently operate in this market and mostly provide applications for their users. An integral theme for many of these new companies is based on social content generated by friends, critics or chefs and includes restaurant reviews, opinions and experiences (e.g. Yelp, Chewsy) or simply photos (e.g. Foodspotting). Many of these services are provided in the form of mobile applications which also seek to Gamify the experience through rewards and incentives based on check-ins, reviews, feedbacks and social media posts. For restaurants, these businesses have also started providing applications to manage reservations and to support marketing initiatives.

Early movers in this segment of the online food industry have managed to create large successful business model. OpenTable, as described above is one of the largest players providing online restaurant reservations. The company's main business is providing restaurant reservation services and also has applications targeted to manage restaurant front-end processes. The company supports around 31,000 restaurants across the globe and its primary revenues come from reservations and subscription fees. It charges each restaurant \$1 for booking made on its website and a smaller amount for booking made through its application directly on the restaurants website. It also charges restaurants a subscription fee (around \$200 per month) for access to its reservations management software along with one time hardware fee (around \$1200), installation fee and training fees (around \$700). With a large number of reservations made on OpenTable, the company has a strong bargaining position with restaurants. It also has entered into partnerships with Facebook, Zagat, Yelp, Tripadvisor, Yahoo, Urbanspoon and around 600 other affiliate websites that allow users to make reservations using OpenTable's system. The significant monopoly that the company enjoys has in recent years been challenged by a new startup that seeks to challenge the almost 90% share they have in this market (Matthew Sonnenshein, 2013). Reservation Genie and Urbanspoon (Rezbook) offers similar services like OpenTable, but hope to increase user engagement by combining restaurant marketing initiatives with reservations to incentivize users, affiliates and concierges to make reservations on its site. While the offering might not be very different from OpenTable's, it will be interesting to see if these new players are able to challenge the status quo.

Similar to OpenTable, in the restaurant search space as well, there are startups that are challenging Yelp's dominance in the market. Yelp focuses on ad listing for revenues and generates eyeballs by engaging users through restaurant of business reviews or information. Although Yelp also charges businesses a transaction fee for any transactions that take place over its site, this forms a small share of its overall business. Yelp in turn also provides a few services that help bridge this gap between awareness and transaction on its site. Zagat has been fairly successful in providing great value to users who look for authentic reviews and information about restaurants. It charges users for these reviews and does not list advertisement around its content. Others like Tripadvisor and Urbanspoon also have a fairly loyal following among users.

A smaller segment within the restaurant search and reservation segment is that of personalized restaurant discovery. Businesses in this segment primarily focus on mobile applications that enable users to experience, create and share personal experiences. These can be dining, food or other related experiences and manifest themselves through one of the many online social tools – status updates, check-ins, reviews, posts, blogs, pictures etc. Sometime referred to as location-based social networks, startups in this space have a revenue model built on charging merchants on a cost-per-action basis for their location specific ads. Their gamification-based experience incentivizes users to use their service which pulls merchants eager to promote their brands and products. A few examples of startups offering restaurant discovery include Citymaps, Foursquare, Spotsetter and Sosh.

CityMaps is an example of a hot startup in this space. CityMaps creates maps that show where local businesses and points of interest are located. Visitors can also see Tweets, tips from location-based social network Foursquare, and deals from local businesses via providers such as Groupon and LivingSocial (Wailing Wong, 2012). In addition to this, CityMaps also allows users to create personal maps based on their favorite places – restaurants, bars, shopping places etc. creating social maps sharing dining, entertainment and shopping experiences. These can be shared with friends and family through easy to search maps. The startups business model is not only based on advertisement revenue when users click on promotions offered by various merchants but also on licensing crowd-sourced maps to hospitality and other businesses.

Business model assessment

The two prominent players in the restaurant reservation and booking space enjoy a strong presence in the market. Being early movers, both OpenTable and Yelp have moved to consolidate their share in individual markets and have managed to keep away competition. It will be interesting to understand the attractiveness of their business models and assess strengths and limitations.

Table 8: Business model assessment – Restaurant reservation and search

Business models	Restaurant reservation (OpenTable)	Restaurant reviews and recommendations (Yelp)
High Scalability - Is there low customer acquisition cost?	<p>✓/✓+</p> <p>Direct sales team required to sell to restaurants; Integration with existing system required Online partnerships result in large increase in customers (e.g. Yelp, Zagat, Facebook etc.)</p>	<p>✓/✓+</p> <p>Primarily advertisement focused model; Direct sales team needed to sell and maintain relationship with more than 70,000 businesses as well as to convert from free listing to paid services</p>
Compelling offering - How engaged are customers?	<p>✓+</p> <p>For restaurants, access to large number of users, range of customizable solutions (For Walk-ins or reservation focused restaurants); Strong customer retention Strong value proposition with a</p>	<p>✓+</p> <p>Access to large volume of eyeballs (Yelp attracts around 86 million unique visitors to its website) and large number of customer reviews Premium model - Free listing services on Yelp and premium services for targeted search</p>

	large number of restaurants (25,000 in the US), convenience (directly through mobile device, no phone calls) and free to use, loyalty programs (DiningRewards); High user retention	advertising, offers etc. (Around a million local businesses have yelp pages) For users, access to reviews and details on a large number of businesses at one location
Growth & Profit potential - Is there a large profitable market?	<p style="text-align: center;">✓+</p> Recurring revenue model; Monthly software subscription fee coupled with pay-for-performance per seated diner fee Increase in diners leads to increase in revenues with limited cost increase Revenues have increased from around \$70 million to around \$190 million and operating margins have increased from 27% to 45% between 2009 to 2013 Subscription model with high margins due to bulk purchase, increasing benefits from scale Growth through new signups and new geographies	<p style="text-align: center;">✓+</p> Recurring revenue model; monthly fees for advertising and other services Increased conversion from free to paid services requires marginal increase in costs; Need to focus on conversions by addressing business challenges better Large target market for advertisements – Across verticals with restaurants contributing to around 20% of total business Growth through signing up new users, increasing conversions, ensuring higher review contributions

Based on the above assessment, OpenTable’s model appears to be marginally more attractive since its revenue model is similar to software subscription business with the benefit of pay-for-performance per seated diner. Yelp on the other hand adopts the Premium model and faces challenges in converting its customers from the free to premium services.

Platform potential assessment

Both OpenTable and Yelp have a platform offering which bring together users and businesses. In the case of OpenTable, the different network groups consist of diners and restaurants with more restaurants attracting more diners and vice versa. OpenTable incentivizes diners to register on their service by offering free access to restaurant listing and reservations. It charges restaurants for listing services and software solutions that help them better manage these reservations. Yelp on the hand brings together people connect with local businesses. Its platform offering is based on promoting users to write more reviews, add photos and tips. A higher number of reviews helps expand the content on the platform which draws in more traffic. This increase in traffic draws in more local businesses that seek to advertise to these users thereby leading to a virtuous cycle.

The argument between reseller and multi-sided platform model can be applied to OpenTable and Yelp. In the case of OpenTable, providing a multi-sided platform appears more relevant as compared to the reseller model. A key difference with respect to other

segments discussed earlier is that providing reservations is a perishable service. Services can not typically be resold and hence a multi-side platform model works best for OpenTable. The same is also applicable in case of Yelp. Further, as in previous segments, it will be interesting to assess the potential of a single dominant platform in the restaurant reservation and recommendation space.

The WTAoM framework discussed earlier is applied to this context below.

- Strong network effects: Yes
As seen in both the above examples and from the success stories of OpenTable and Yelp, there appear to be powerful network effects that attract users to the platform. Complementors in the form of affiliate websites or partners that list OpenTable or Yelp on their websites play a significant role in propagating this effect.
- Little differentiation among competing platforms: Yes
In both cases, there does not appear to be a significant difference in the offerings from players that compete with OpenTable and Yelp. A few competitors of OpenTable offer the same service at a more competitive price whereas in case of Yelp, there are services that claim their reviews are of a better quality. In all these examples, there doesn't seem to be a compelling difference in the offering.
- High cost of multi-homing: Yes
For users, while there appears to be limited homing costs to establish and maintain affiliation, the significant volume of listings does make it easier to use one platform. The primary benefit for them is the extensive range of restaurants and other businesses that are accessible through both these platforms. As a side benefit, these businesses also attract users through incentives like loyalty points (OpenTable's dining points). This further enforces an affiliation with these platforms. From the point of view of restaurants and other businesses, there does appear to be a barrier associated with moving to other platforms. Given that both these models have been around for quite some time, they have the advantage of scale and moving to a competing platform could disincentivize businesses from trying out new platforms. However, there is potential for competition which already has a significantly large user base to use its scale and move into any of these markets. Yelp for example aims to attack OpenTable's reservation market. After recently acquiring a restaurant reservation focused startup, it plans to deploy reservation service in addition to reviews. This directly challenges OpenTable's value proposition since Yelp has a large user base and most users already use Yelp's service for obtaining reviews.

In summary, with the large scale of the existing platform providers, the possibility of winner take all situation is likely to emerge in this segment. It appears quite unlikely that a new player may disrupt OpenTable or Yelp's business model. Challenges however may arise as these players seek to envelope the adjacent market and Yelp currently is positioned attractively for this move. In response, some of the potential options that can be explored by OpenTable include (based on Eisenman, Parker, Van Alstyne, Strategies for two-sided markets):

- Potentially change to a different business model: Leverage relationships with consumers and restaurants to offer new services like restaurant ordering and delivery that charges even the consumers for the service offered

- Find partners: Finding a large strategic partner can help provide great support towards potential threats from rival platforms. For example, OpenTable can continue exploring its strategy of partnering with other large players like Facebook, Google, Yahoo etc.

Restaurant Loyalty Services

Businesses providing loyalty and reward services to restaurants and other food service companies are very similar to online grocery loyalty service providers. As discussed earlier, coupon and loyalty services help companies lower customer acquisition costs by better engaging existing and new customers with targeted promotions. They also help obtaining valuable insights from customer data.

In the case of restaurants, the typical benefits from loyalty services include:

- Increasing engagement through targeted promotions – Turning new customers into regulars, Increasing frequency of visits, Increasing ticket averages etc.
- Digitally connecting with customers for reviews and feedbacks
- Customer acquisition support and monitoring results

The trend of offering loyalty programs is not new for food service restaurants. While most of the large food service chains operate loyalty programs, the concept is fairly new in the case of independent restaurants. On an average, it is estimated that around 30% of all restaurants offer some form of loyalty program (Prilliman, 2013). The National Restaurant Association has observed an increase in loyalty offering in around 56% of family restaurants and 69% of fine dining establishments. Despite this increase in loyalty offerings, customers have not caught on to these programs. In a study by Deloitte, only 50% of survey respondents said they belong to at least one restaurant program, a much lower rate compared with those of other sectors, such as airlines (78%) and hotels (70%).




Among diners who belong to at least one loyalty program, the survey points out that nearly 74% indicate that they do not participate in their favorite restaurant's program, either because they say one is not offered or they are simply not sure whether one is available. These respondents rate food quality and service as the top factors that influence choice of restaurants and only 25% of the respondents list loyalty programs their top factor in selecting restaurants.

The large size of the food service industry in the US (More than US\$600 billion), has attracted many players who provide loyalty services across markets as well as others that focus primarily on food service establishments. Typically, cross-market loyalty service providers like LivingSocial, Groupon, FourSquare focus on deals and coupons to attract diners to food service establishments. Others like Belly and FrontFlip focus on restaurants by offering an integrated loyalty program that other services like promotions, customer management etc. as well.

The target market for these players largely remains independent restaurants since many multi-location food service chains run their in-house loyalty program (e.g. Starbucks). The Starbucks program is one of the earliest loyalty programs and has seen considerable success. The program aims to integrate mobile payment with its loyalty offering providing Starbucks customer purchase data and making it easier for its customers to access its reward program. The standalone loyalty services like Belly and FrontFlip target independent restaurants and food service establishments by offering digital programs that allow customers to earn points across many merchants. They also Gamify the user experience for increased traction. These companies also use data obtained from customers to provide better customer insights to these independent food service establishments that help support their marketing campaigns.

The basic business model of these firms is based on fixed charges or commissions based on loyalty program redemption (e.g. FourSquare, Groupon). Customer data is leveraged to a great extent to provide subscription-based services (e.g. Belly, FrontFlip) that can help improve customer engagement. The following table compares some of these business models:

Table 9: Restaurant loyalty services

		
<ul style="list-style-type: none"> • Around 45 million registered users, 1.5 million merchants and more than 60,000 developers have used foursquare location data for their applications • Provides location-specific advertisement, performance tracking, and loyalty redemption services 	<ul style="list-style-type: none"> • More than a million active users and around 5,000 merchants across the US use the Belly application • Focus on small businesses; Provides customer loyalty program (Bellycard) offering customized rewards, Gamified user experience and social media integration 	<ul style="list-style-type: none"> • More than 700k mobile users and 2k restaurants and retail outlets • Provides a mobile application-based loyalty program that supports digital promotions for businesses along with Gamified user experience • Focus on large national businesses and restaurant chains
<ul style="list-style-type: none"> • Pivoted from gamification-based check-ins (customers promoting restaurants) to local information-based service (Restaurants promoting to customers) • Revenue model based on per-action; Every or check-in on ads/ coupons generate \$0.50 to \$3 	<ul style="list-style-type: none"> • Subscription-based model that provides a software that helps design, distribute and track loyalty programs for business; Monthly charges start at \$79/ month (includes hardware for restaurant front-desks that customers can use and avail loyalty rewards) 	<ul style="list-style-type: none"> • Subscription-based model with monthly charges of around \$125/ month for software that runs integrated loyalty programs (Front Flip codes are displayed on table cards and receipt backs which customers scan for loyalty rewards)
<ul style="list-style-type: none"> • Investments of around \$121 million • Source: CrunchBase 	<ul style="list-style-type: none"> • Investments of around \$25 million • Source: CrunchBase 	<ul style="list-style-type: none"> • Investments of around \$8 million • Source: CrunchBase

Source: Company website, CrunchBase

All the three startups provide a similar offering for restaurants and consumers. They incentivize users to share their location-based information in return for loyalty rewards. This customer data is then used to provide services to restaurants that help them run their loyalty programs better. The FourSquare model is slightly different from Belly and FrontFlip in that it enables users to provide reviews and other social content that can be shared. It also initially targeted users but has now pivoted to a more business-oriented approach (similar to the Yelp model). Belly and FrontFlip on the other hand focus on

businesses and drive users to adopt their application based on loyalty incentives that are typically earned during visits to food service establishments. Both seem to have a similar offering though they currently focus on different markets.

Business model assessment

Since some of the established coupon delivery service models have already been studied earlier, the innovative business models adopted by FourSquare and Belly (also FrontFlip) has been compared below.

Table 10: Business model assessment – Restaurant loyalty services

Business models	Social activity-based loyalty services (e.g. FourSquare)	Integrated loyalty services (e.g. Belly/ FrontFlip)
<p>High Scalability - Is there low customer acquisition cost?</p>	<p style="text-align: center;">✓/✓+</p> <p>Direct sales team required to sell to businesses, ad agencies and other advertisers Customer check-ins helps create domains for businesses making it easier to generate leads and convert businesses User generated social content helps drive adoption Developers also use the FourSquare API to increase user awareness that helps target more businesses</p>	<p style="text-align: center;">✓</p> <p>Direct sales team to sell to small businesses and convince them of value proposition (hardware and software); Impact of network benefits helping support adoption Social integration with users helps drive awareness and word-of-mouth that further drives adoption through network effects</p>
<p>Compelling offering - How engaged are customers?</p>	<p style="text-align: center;">✓/✓+</p> <p>Location-based advertising helps businesses attract users in the vicinity; customer data also help provide rich insights on new and existing customers Gamified/ mobile experience for users attracts more businesses and users through network effects Large number of registered users but is available only when customers check-in</p>	<p style="text-align: center;">✓/✓+</p> <p>Affordable solution for small businesses (Starts at \$79 per month); Bridges gap between in-store visits and allows merchants to build and maintain lasting connection once they leave Available only to in-store customers when they use the application Gamified/ mobile experience for users that incentivizes use through loyalty rewards</p>
<p>Growth & Profit potential - Is there a large profitable market?</p>	<p style="text-align: center;">✓+</p> <p>Subscription-based revenue model for supporting integrated loyalty program and using customer data to provide increased insights Advertisements from local businesses based on location-inputs</p>	<p style="text-align: center;">✓/✓+</p> <p>Subscription-based revenue model; monthly fees for software and data analytics support; Customer data provide more insights but restricted to in-store customers Growth through higher business</p>

	<p>Growth through higher business signups and scaling to new cities which may require a larger team and resources</p> <p>Additional model of monetizing API's could also provide additional growth opportunities</p>	<p>signups and scaling to new cities which may require a larger team and resources (plans to target large retail outlet chains for higher growth)</p>
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Although its advertising model requires a number of sales resources for scaling up, the FourSquare model appears to be already enjoy a large number of users which significantly help address initial adoption and drive growth on the basis of network benefits. The revenue model also provides a higher opportunity for growth with more potential revenue streams (e.g. advertising of customer location data). On the other hand, Belly's focused approach on the restaurant segment could help retain customers due to its ability to customize its offering for specific needs. Going after additional segments (as is currently being explored by the management team at Belly) could lead to loss of this advantage.

Platform potential assessment

Similar to the reseller and multi-sided platform discussion in the grocery coupon and loyalty services segment, a reseller model is more attractive since the value proposition to both consumers and customers is not just cost savings but also providing information and creating more engagement respectively. As in previous segments, it will also be interesting to assess the potential of a single dominant platform in the restaurant loyalty space. The WTAoM framework discussed earlier is applied to this context below.

- Strong network effects: Yes
As seen in both the FourSquare and Belly model, there appear to be powerful network effects between users and businesses. In the case of FourSquare complementors in the form of developers and external websites that use the API for check-in provide added benefit to the site by increasing its user base.
- Little differentiation among competing platforms: Maybe
The basic service offered by both the competing platforms is more or less the same although FourSquare also offers advertising on its platform. While the large scope of services by FourSquare certainly seem attractive, focusing on only the small businesses and creating a customizable product for them to manage their loyalty program has helped Belly create a differentiated offering.
- High cost of multi-homing: Maybe
With no upfront payment, the cost of businesses to shift between platforms is limited. However, depending on the number of users already using a particular platform, it might be difficult for businesses to shift to a new platform for fear of losing customers. For users also while there are limited homing costs the value of obtaining access to a large volume of restaurants incentivizes affiliation. Further, the fact that many of these businesses also retain consumers through loyalty programs and other benefits could also result in additional bias towards a specific platform.

In summary, it seems unlikely that a single player will dominate the restaurant loyalty platform segment.

Restaurant Management Solutions

Restaurant management solutions provide point of sale software that helps restaurants run their establishments better. The software solutions that these businesses provide include

- Handling checks/ payments effectively by partnering with major payment processors and providing added value to restaurants by managing loyalty/ gift cards, gratuity, bill splitting etc.
- Managing ordering, menus and communicating with the kitchen
- Simplifying other restaurant processes like staff management, payroll, performance management etc.
- Provide services like online ordering, creation of branded website, managing loyalty programs, managing reservations etc.

Players typically provide an integrated offering (hardware, software, connectivity, customer support, data analytics support, payment support and loyalty management) which include most or all of the above services (e.g. Breadcrumb, Leaf, Instore, Gopaygo, ShopKeep, Swipely, Touchbistro, Revel, Ziosk) or focus on specific services like payment solutions (e.g. Square, Kuapay, RAIL, Tabbedout).

Since these services are provided through an application or software, most of business models are built on licensing fees, subscription revenue or service/ maintenance revenue (e.g. Breadcrumb by Groupon or Leaf). Some also offer the freemium model to increase adoption (e.g. Ambur). Along with the software, some of these businesses also provide hardware for restaurants staff to use (POS) as well as customers for menu displays and ordering (e.g. ElaCarte, Leaf). Specific to payment, many also charge food service establishments on a per transaction basis (e.g. Breadcrumb). In return they manage funds for the restaurant and directly deal with payment gateways and processors. Many of these companies also offer APIs to developers to create an ecosystem of useful applications for food service companies. There are numerous companies that offer these services to restaurants. Many large players in the online food space have made investments in these companies – Grubhub, OpenTable, Groupon etc.

A smaller but interesting segment within restaurant payment services is that of mobile payments solutions or mobile wallets. Payment solutions are most critical to food service establishments and are currently the most competitive market in this space. Players that provide payment solutions also tend to offer these services across markets. Mobile wallets or mobile payment solution providers seek to replace traditional cash/ card payments and consolidate different payment mechanisms as well as loyalty cards. Square, one of the earliest startups to offer payment solutions to small retail outlets currently targets customers that do not currently use credit card payment solutions. With a simple hardware and low processing fees, (Square charges 2.75% processing fee or \$275 fixed fee per month) Square ensures next day deposits for businesses with no upfront charges. Although the Square solution does not directly compete with credit card services (since it focuses on non-users), the innovative mobile wallet solutions aim to disrupt the existing credit card dominated transaction market.

Many large (e.g. Google, Intuit, PayPal, Verifone, NCR Corporation) and small (e.g. LevelUp, Clinkle) players are adopting new and innovative technologies and business models around this service. For example, Google has adopted the NFC technology (inductive coupling) with plans to continue its advertisement-based, zero-

charge-to-users business model. On the other hand, Clinkle plans to handle transactions via high frequency sound to directly connect with existing payment hardware and bypass the need to install new infrastructure with different merchants. It also plans to avoid commissions and focus on making money through incentives and marketing. LevelUp, another startup that focuses on using the QR code technology, adopts a very similar approach (company websites).

While the market is large and has not faced any significant disruption in a long time, it is challenging to drive adoption since none of these technologies offers consumers or users convenience over existing cash or credit use. The zero commission charge might influence merchants to adopt these technologies but there is still a lot of ground to cover before they get convinced about the benefits of a new technology. To circumvent the large investment required in sales & marketing, innovative approaches adopted by startups include partnerships with large companies (e.g. Kuapay with the sole Chinese payment processor) or new channels (e.g. Clinkle targets universities just like Facebook did).

Business model assessment

The most prevalent models in this market are based on players offering integrated solutions and others that offer only mobile payment-based solutions. A few innovative startup models described above have managed to gain considerable traction in the market. In order to assess if these models can continue to create value for users and investors, it will be useful to assess their business models based on the analysis framework discussed earlier.

Table 11: Business model assessment – Restaurant management solutions

Business models	Integrated restaurant management (e.g. Leaf, Instore)	Payment services (e.g. Square)
High Scalability - Is there low customer acquisition cost?	<p style="text-align: center;">✓</p> Direct sales team required and significant promotion spending to target restaurants and food service establishments; Off-the-shelf h/w and s/w not easily customizable to different environments	<p style="text-align: center;">✓/✓+</p> Limited direct sales effort since most customer signups are online; Payment services can be directly ordered online and can be setup with minimal effort
Compelling offering - How engaged are customers?	<p style="text-align: center;">✓+</p> A one-stop-shop solution for all restaurant processes makes offering compelling; High level of integration with internal processes leads to increased customer engagement Tiered pricing plans provide flexibility Limited propensity to shift services due to setting up costs	<p style="text-align: center;">✓/✓+</p> Focus on making payments extremely efficient makes for a compelling offering; Most players offer next day payments which are critical to a lot of small businesses Premium model; charge per transaction with ease of setup makes customers engaged Additional services around data, loyalty programs provide increased value Need to integrate and run two separate softwares (Restaurant POS and payment)

<p>Growth & Profit potential - Is there a large profitable market?</p>	<p style="text-align: center;">✓/✓+</p> <p>Subscription based model; Periodic revenues with low operating costs of managing continued services (payment of partner fees like telecom services) leading to high operating margins Despite large opportunity for expansion in the food service market, need for additional resource investments to sign up new businesses Churn possible risk but typically difficult for customers to switch due to substantial setup investments</p>	<p style="text-align: center;">✓/✓+</p> <p>Transaction based subscription model; Operating cost of managing continued services might be high (due to low margins on small transactions) and for customer service Increase in users might not lead to scale benefits since even with a high volume of transactions it might be difficult to reduce processing fees Churn risk also high with significant competition and low setup costs</p>
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As seen above, providing payment solutions (without new payment technology and using existing payment services) is a highly scalable business. However, with limited scale benefits, the growth and profit potential seems less promising. On the other hand, providing integrated POS solutions to restaurants, despite not being very scalable, does provide sustainable growth and profit potential with increasing scale.

Integrated POS solution providers offer a host of services to restaurants and food service establishments. Currently, the business model aggregates services from multiple vendors (hardware, payment services, connectivity etc.) and package these into a POS software that is offered to customers. While players are trying to connect these POS solutions with users by offering applications that can be used for loyalty programs or direct payments, these services are not necessarily typical platform offerings.

Social Food Networks

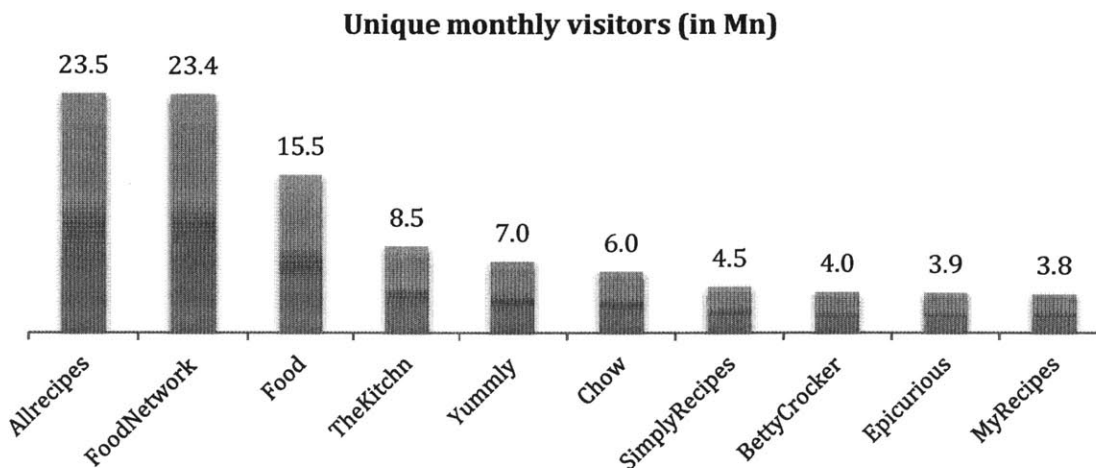
A small but fast-growing segment in the online food economy is based on creating online social food networks. Primarily consumer-focused, these online food companies are generally web and mobile-based service providers that help consumers discover and learn more about food. Many of these create social food communities for consumers with a range of offerings that include content in the form of recipes and tutorials, social food sharing and many others. These social food networks have been segmented under the following

- Recipes and Cooking Communities
- Other Food Communities

Recipes and Cooking Communities

Recipes and cooking communities provide information and content to discover and learn about food. These online sites or applications provide recipes, menus, and food-related articles and guides on travel, holidays, parties, healthy cooking etc. The most popular websites on food recipes based on user traffic are listed below:

Figure 7: Most popular food recipe websites



Source: eBizMBA, 2014

Most of these websites have a large database of user-generated recipes, tips or other food-related content that is shared online. This time-tested approach seems to have worked for them since some of these websites have also been around since the dotcom era. Over the past couple of years however, a number of innovative startups have also launched similar content-based websites. These firms use a number of different approaches to generate food-related online content. Some of these are listed below (Gould, 2011).

- Aggregating best recipes from food bloggers across the world (e.g. FoodPress)
- Crowdsourcing recipes through social networks and communities (e.g. Food52 and RecipRelay)

- Aggregate online recipes through better search approaches (e.g. Yummly adopts a semantic search approach)
- Combining gamification with recipes (e.g. GourmetLive)
- Social popularity to provide curated, high quality recipes (e.g. Punchfork)

With a value proposition revolving around content, most business models in this segment are based primarily on advertising. However, as with most content-based online businesses, recipe website or food-based online content is very challenging to monetize. Innovative startups are experimenting with the advertisement-based model and trying to provide more value to advertisers through granular user-specific information. This could lead to improved targeting for brands. Apart from the advertising model, a few other non-advertising models that players have experimented with include

- Conversion of recipes to shopping lists and focusing on grocery incentive and loyalty commissions (e.g. Ziplist). Recipe sites working around this concept convert recipes into shopping list or items left in the pantry into possible recipes. The shopping list can then be used to influence purchase through loyalty and reward points which can be monetized with brands and retailers.
- Paid access to recipe website APIs to allow easy integration of all content and apply it to specific use cases (e.g. Punchfork, Yummly). The startup provides access to its recipe database through an API which developers use to increase the value of their applications. In return the access to the recipe API is charged. Punchfork was acquired by Pinterest in 2013 and subsequently shut down.
- Monetise recipes based on sponsoring brands (e.g. Recipay, Youmiam). Typically recipe platforms create and source recipes that include sponsoring brands who provide a monetary incentive in return for getting included in the recipes. In some cases, the incentive is passed on to users that contribute with the recipe that consists the sponsoring brands. Sharing incentive is aimed at increasing engagement and is backed by an approval process to determine if the user is entitled to the incentive (Vaz Moco, 2013)
- Offering a freemium model with a subscription packages for premium tools like interactive menu planner, nutrition search and mobile access (e.g. Allrecipes.com)
- Charging for mobile apps (e.g. Spinning meals)

Business model assessment

Some of the innovative models in this space have been assessed below to understand their potential to continue creating value for customers and users. The business model analysis framework has been used for this.

Table 12: Business model assessment – Recipe and cooking communities

Business models	Loyalty program linked (e.g. Ziplist)	Recipe aggregation (e.g. Punchfork)	Sponsoring brands (e.g. Recipay)
High Scalability - Is there low customer acquisition cost?	✓/✓+ Online advertising model with limited cost of customer acquisition Users are directed to the site from recipe publishers, bloggers	✓/✓+ Mostly online selling since target customers are developers; Limited direct selling costs	✓ Direct sales team required to sell to brands, advertisers and retailers Limited selling costs to users
Compelling offering - How engaged are customers?	✓+ Provide advertisers specific user information related to food preferences Offers time saving to users since content can be saved across publishers Conversion to shopping lists and access to reward coupons also helps save time and money Reached 2 million users in 2012	✓/✓+ User information related to food preferences enables user-specific advertisements for customers Aggregating and rating most popular recipes and allowing developers to easily integrate these recipes into websites/ apps Premium model with various usage rates provides different options for developers	✓/✓+ Unique offering that engages users by incentivizing recipe sharing Novel advertising approach for brands, advertisers but may not be very attractive since users forced to use specific brands leading to doubts on content quality
Growth & Profit potential - Is there a large profitable market?	✓ Growth dependent on increase in users which is dependent on greater access to partner content Non-subscription model with high competition for user eyeballs from other recipe sites Insights from user data might not be very valuable to publishers and advertisers	✓/✓+ Follow both advertising and API-revenue models Limited market for API's and growth dependent on number of interest from recipe website and app developers and not on growth in users Premium model with subscription revenues provides greater high margins	✓ Large potential advertising market Revenue model based on advertising revenues and directly linked to user growth Ensuring quality and determining if users are entitled to rewards could lead to potential scaling challenges

As seen in the assessment above, although most of the recipe-based online models have an attractive offering, the growth and profit potential seems uncertain. The most attractive model seems to combine advertising with additional revenues streams of API charges and premium content related to recipes (e.g. menu planners, nutrition search etc.). Startups have realized that advertising model will remain the main revenue stream

and therefore aim to provide user specific information to advertisers for more targeted advertisements.

Platform potential assessment

Online food content sharing businesses have characteristics similar to other platform offerings. They connect users through a food community and also bring in advertisers and maybe developers in some cases as well. Largely based on attracting users through content, the concept of reselling does not apply to these businesses. However, it will be interesting to assess the potential of a single dominant platform in this market. The WTAoM framework discussed earlier is applied to this context below.






- Strong network effects: Yes
Similar to other social networks, food-based communities have a strong affiliation among users as evidenced by the large number of monthly users to any website. The higher number of uses also attracts higher number of advertisers providing network benefits to the platform provider.
- Little differentiation among competing platforms: Yes
The basic offering from different players is similar, if not the same. Users are provided access to content with minor variations in the approach to this content (grocery lists, menu planners etc.). Advertisers on the other hand get access to eyeballs and specific user information.
- High cost of multi-homing: No
There is no cost for user affiliation to any food-content website. There are also limited barriers to switch between different sites apart from being a part of the community which makes users prefer a particular site but does not dissuade them from using any others.

Limited barriers to switch between different food content sharing platforms and the absence of homing costs will likely lead to a fragmented market. It is therefore unlikely that a single dominant player will emerge in the food content sharing space.

Other Food Communities

Food based online and offline communities bring together users associated for a specific food-related activity. Startups in this space provide a platform offering specific services like food-based jobs, home-dining experiences, food-based tours etc. In the process, these platform create communities based on a common requirement. A few examples of these communities are given below:

Table 13: Other food communities

	<p>Offer a marketplace that brings together passionate cooks with adventurous eaters who seek authentic and social dining options by offering home-cooked meals in a cook's home. The concept is similar to the AirBnB model and is applied to home dining.</p>
	<p>Provide access to a community of local chefs who, for a set price per guest, create a menu, bring the food and prepare restaurant-style food at the users home.</p>
	<p>Enable curated home-dining experience by letting users define their food preferences and then provide a list of chef-prepared family dinners that the user can order which are then delivered on a weekly basis.</p>
	<p>Provide food tours and culinary experience which feature marquee food with social dining experience.</p>
	<p>Access to job search engine designed to link people in search of meaningful food-related work with food-based businesses. Also provide professional networking services for the food, beverage and hospitality industry.</p>

Source: Company website

Each of these platforms leverages emerging trends in the form of crowdsourcing, mobile technology and social content. These startup business models are all quite unique and it will be interesting to assess these innovative models based on our assessment framework. Since the food tour and culinary experience and job search are commonly seen models, these have not been evaluated below.

Table 14: Business model assessment – Other food communities

Business models	Home-dining marketplace (e.g. Feastly)	Marketplace for chefs (e.g. Kitchit)	Chef-prepared meals (e.g. Gobble)
High Scalability - Is there low customer acquisition cost?	✓/✓+ Significant promotion required, though primarily online, for creating awareness and generating signups form both parties (users and home chefs) Need for screening home-chefs and users	✓/✓+ Significant promotion required, though primarily online, for creating awareness and generating signups form both parties (users and chefs) Need for screening home-chefs and users	✓ Significant promotion required, though primarily online, for creating awareness and generating signups form both parties (users and chefs) Need for screening chefs and providing central kitchens
Compelling offering - How engaged are customers?	✓ Eating a home cooked meal while meeting new people is a novel offering but not very compelling for most people; Quality and service of home cooked meals is uncertain Numerous dining out options already available to customers Access to more business for professional and home chefs	✓/✓+ Offers convenience for home parties and events along with curated chef-cooked dining experience at home Slightly premium-prices and quality as well as service is uncertain Access to more business for professional and home chefs	✓ Compelling offering to provide chef-cooked home meals, though slightly premium-prices Quality and service is uncertain Access to more business for professional and home chefs
Growth & Profit potential - Is there a large profitable market?	✓ Large market for offering that combines dining with and meeting new people but competes with restaurants Growth from higher volumes since revenue model is based on a commission charged per transaction High scalability from network effects with potentially high margins Increase in volume will mean screening more chefs and customers; Potential risk include bypassing the platform, retaining users and regulatory risks (typically associated with any shared economy)		✓ Large market for take-outs which is primary market; although more expensive than regular take-outs Subscription revenues with potential risk of retaining users Growth from higher volumes but benefits from network effects but somewhat limited; More chefs or meals increases costs Increase in volume will mean screening more chefs; Potential risk include retaining users

As seen above, both the marketplace models seem fairly attractive and although there might be challenges around total addressable market size, the potential risks can

create significant challenges. If these risks are managed at a reasonable cost then these models might be quite successful in the future.

Platform potential assessment

Based on the discussion above, online food communities are primarily platforms that bring together buyers and seller. With respect to all the marketplace businesses, the multi-sided platform is more relevant than the reseller model since the product (home-cooked food) or service (chef's) is perishable. The same arguments regarding perishability are applicable to this segment as well. As was the case in other segments, it will be interesting to assess the potential of a single dominant platform in this market as well. The WTAoM framework discussed earlier is applied to this context below.

- Strong network effects: Yes
- Similar to other social networks, communities related to home-dining benefit from strong network effects. A larger number of users attract more home or professional chefs to the platform and vice versa.

- Little differentiation among competing platforms: Yes
The basic offering from different players is similar, if not the same. Most of these platforms offer a guaranteed service in the form of pre-screened chefs, pre-approved menus and chef reviews.

- High cost of multi-homing: No
Users, both consumers and chefs, can access all available alternatives since there is no homing cost associated with any offering. There are also limited barriers to switch between different sites apart from being a part of the community which makes users prefer a particular site but does not dissuade them from using any others.

Limited barriers to switch between different platforms and the absence of homing costs will likely lead to a fragmented market. It is therefore unlikely that a single dominant player will emerge in home-dining marketplace.

Findings and Implications

The consumer online food industry is a fast growing and exciting space characterized by an assortment of startup firms with unique offerings and business models. A common theme that emerges across different segments of this industry is the growing impact of important trends. Most, if not all of the innovative business models in the study can be attributable to these trends. These models have the potential of causing major disruptions in the market with huge implications for consumers, players and other stakeholders in the industry. For entrepreneurs and investors, it is therefore critical to gain a keen understanding of these emerging trends.

- **Rise of online marketplaces**

A large number of online businesses in the food industry are based on the marketplace concept. While some of the larger businesses can be equated to be food-specific Amazon's and eBay's, others are more food-service focused models that have grown from already successful businesses in other industries. Often providing benefits of low investment and operating costs, the marketplace model has seen considerable success in the food industry. Grubhub Seamless is a great example of a startup based on a marketplace model of bringing together diners and food service establishments. Positive network effects inherent to any online marketplace led to the company acquiring significant scale in the restaurant ordering and delivery segment in a short period of time.

- **Mobile growth**

Growth of mobile users has led many startups to innovate and leverage the growing popularity of this trend. For example, the convenience and ease of access to the Internet has allowed businesses based around coupon delivery services to develop an offering that provides value to users in the form of discounts or cash backs and advertisers in terms of detailed location-based user information for targeted advertisements. Similarly the business model around restaurant reviews popularized by Yelp gained scale on the back of growth in smartphone users.

- **Shared economy**

Despite its increasing regulatory challenges, shared economy is here to stay because of the incredible benefits it is able to deliver to different user groups. In the case of the food industry, online platforms like Feastly or Cookening have elevated the home dining concept to a shared platform by allowing professional and amateur chefs to provide home cooked meals to consumers. Initially popularized by tourists who were seeking to experience a more authentic local culture, this sharing of the kitchen is fast gaining popularity with other segments of consumers as well.

- **Crowdsourcing**

The concept of crowdsourcing has made a great impact on industries that are traditionally asset-heavy. In the case of online grocery delivery, Instacart has applied this concept to provide deliveries through crowd-sourced delivery agents. This model, based primarily on variable costs, was able to provide instant scale to this startup which plans to expand presence to 10 cities after just two years of being in business. This when AmazonFresh still struggles to offer same day grocery beyond Seattle and Los Angeles even after more than 5 years in the business (Sahagian, 2014).

- **Gamification**

Another trend increasingly gaining popularity in consumer markets is Gamification. This concept is based on employing video game-based features and other benefits to incentivize users towards actions like social media posts, feedbacks etc. Loyalty program services like CityMaps and Aisle411 which help businesses distribute loyalty coupons to promote their brands are based on this concept.

The study also evaluated business models of large and small as well as early-stage and established companies in the online food industry. A summary of various models and their assessment is given below.

Table 15: Summary of business model assessment

Segment/ Business model	Scalability	Compelling Offering	Growth & Profit Potential
Grocery and Produce			
Pre-packaged grocery bags	✓+	✓	✓+
Meal assembly centers	✓	✓/✓+	✓/✓+
Crowd-sourced grocery delivery	✓/✓+	✓+	✓/✓+
Online coupon and loyalty services	✓	✓/✓+	✓
Gamification-based coupon and loyalty services	✓	✓/✓+	✓
Food Service and Delivery			
Restaurant ordering and delivery	✓/✓+	✓+	✓+
Crowd-sourced restaurant delivery	✓/✓+	✓/✓+	✓/✓+
Restaurant reservation	✓/✓+	✓+	✓+
Restaurant reviews and recommendations	✓/✓+	✓+	✓+
Social activity-based loyalty services	✓/✓+	✓/✓+	✓/✓+
Integrated loyal services	✓	✓/✓+	✓/✓+
Integrated restaurant management	✓	✓+	✓/✓+
Restaurant payment services	✓/✓+	✓/✓+	✓/✓+
Social Food Networks			
Recipe sites based on loyalty programs	✓/✓+	✓+	✓
Recipe aggregation	✓/✓+	✓/✓+	✓/✓+
Recipe sites based on sponsoring brands	✓	✓/✓+	✓
Home-dining marketplace	✓/✓+	✓	✓
Marketplace for chefs	✓/✓+	✓/✓+	✓
Chef-prepared meals	✓	✓	✓

As seen above, each segment has a number of attractive models that are potentially scalable, have a compelling offering and a high growth and profit potential. By consolidating learning's from different segments, the study identifies key features of successful business models. The evaluation also compares different models and maps key risks and challenges. These findings are useful for entrepreneurs to consider while conceptualizing the business model for their products or services. I also hope to apply

these learning in the future to any potential business idea related to the online food industry. The following summarizes some of these key findings.

- **Importance of low customer acquisition costs**
Businesses which primarily focus on online users have a lower customer acquisition cost as compared to B2B oriented businesses. In this regard, even online marketplaces where the primary customers are businesses face a challenge scaling up. For e.g. As seen in the case of restaurant management software and coupon delivery segments, the need for a direct sales team is a challenge in scaling up.
- **Scale up challenges in asset-light models**
The drawback in some of the asset-light models is that the value proposition is not always very compelling to the larger market. Initial focus on the beachhead market provides growth but in many cases the product might not be very acceptable in the larger market. In the case of the home-dining marketplace, there certainly exists a market among tourists for qualified home chefs but the need for such an offering in the larger market is uncertain.
- **Higher consumer willingness to pay based on a compelling offering**
For the most part, the value proposition of different startups across the three segments seems to target a specific need and provides value to users. In most cases, these startups engage users through time or cost saving and convenience. As seen in the case of startups that have successfully signed up users and raised funding, consumers are willing to pay a premium for different products and services. For example, Postmates and Instacart provide fast deliveries of takeout food and groceries respectively and charge the users for this service.
- **Importance of subscription-based revenue models**
Across segments, the business models that seem profitable in the long run typically have a subscription based business model. In most cases, these subscription-based businesses are highly profitable with low recurring costs. The most important among these recurring costs are the sales & marketing expenses since other operating costs of maintaining incremental users of the software or online marketplaces is negligible. Business models with low customer acquisition costs therefore have a great advantage over others. A great example of this is the business model of OpenTable. The other prevalent business model that is based on a commission per transaction is highly dependent on volume growth. Companies based on this may model face challenges towards rapid scale up unless they are based on a platform offering providing positive network effects.
- **Dependence on multi-sided platform model**
The study also helped understand the importance of platform offerings in the online food industry. As seen in different segments and business models, the perishable nature of the food industry aligns itself better with multi-sided platforms. The hybrid model appears to be applicable in a few segments but most successful businesses are based on the multi-sided platform model.
- **Limited potential of WTAoM**
Combining the above assessment with the evaluation from the WTAoM framework, we find that the online food industry does not typically lend itself to WTAoM situations. Apart from restaurant reservation and integrated restaurant

management service space, the other platforms do not typically have high homing costs which leads to increased switching and lower affiliation towards a particular platform. A great example is the restaurant reservation segment where new entrants are trying to make inroads but are yet unable to challenge the dominance of the largest player – OpenTable. As seen in many other industries however, increased threat of envelopment from players in other segments could be a potential challenge for OpenTable. For the rest of the online food industry however, the potential of a single player dominating remains low. It can be expected that the online food industry will continue to remain fragmented and could see the entry of many more players with innovative and potentially disruptive models.

In conclusion, the study allowed a deeper exploration of a fairly nascent industry. The emerging trends that were identified are likely to be major drivers of consumer preferences in the future. Understanding these trends along with knowledge of key success factors will hopefully allow existing and would-be entrepreneurs to develop increasingly successful and more innovative business models. I remain hopeful of being closely associated with this process and wish to continue contributing to it in my own small way.

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