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Analyze O2O Mode in Catering Industry from the Perspective of Supply Chain

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Abstract

With the rapid development of network technology and the fast change of business environment, the advantages of the Internet platform and disadvantages of traditional pattern in catering industry become clearer and clearer. Therefore, O2O mode in catering industry, which combines the catering industry with the Internet platform, is come up with. Both the catering industry and the e-commerce are the service industry, which has the nature of customer-oriented, however, whether the combination of them has a good development, still depends on the reasonable degree of the O2O mode in catering. By means of building model, this paper analyzes the business model to explore the problems existing in O2O mode in catering industry from the perspective of product flow, information flow and cash flow. Finally the paper provides a countermeasure of macroscopic level to optimize the O2O mode in catering industry, and I wish this paper could bring some enlightenment of systems level to related practitioners.

1. Introduction

1.1. Research Background

Discussing based on the background factors model innovation in catering industry: Chinese catering industry had fallen in a trough of most slow growth in 2012, which made the catering businesses be eager to have a new change to solve the dilemma. This new change includes the model innovation in catering industry [1]. According to the material collected, in the end of 2012, the number of domestic group-buying websites had exceeded 3000, and the proportion of catering industry is 50%. Generally, the group-buying project in catering industry has good development and high returns, such as Dianping and Fantong [2]. Despite the rapid development of group-buying over a period of time, at the end of 2013, the amount of group-buying website was eliminated by about 75%. The low technical threshold and the homogeneity-oriented competition, as well as the poor user experience, become the biggest questions in group-buying mode. Nowadays, the number of enterprises in catering industry applying group-buying mode isn't many, and the pattern is basically formed. The Dianping has amalgamated with Meituan, which makes the overall market share increased significantly. But the market still exist other powerful competitors, such as 58 group-buying, Baidu Nuomi. Therefore, how to adjust the group-buying model to obtain steady profitability and market expansion is still a question worth considering.

After the emergence of group-buying mode, two forms of the O2O model in catering industry has appeared: takeout platform and enterprise one-stop. The emergence of new

forms has changed product flows, information flows and capital flows in the business model, but there are still bottlenecks.

1.2. Current Status of the Research

According to the source of literature, the domestic research on O2O mode in the catering industry mainly comes from the commercial journals, namely, information, logistics and financial and brand management periodicals. The standpoints of the relevant research are quite different, however, there is no scholar who has the systematic analysis of the O2O mode in catering industry from the perspective of commodity flow, information flow and capital flow.

The quantity of foreign literature about online to offline is quite few. By searching "group-buying", we get content mainly about analyzing group-buying mode from the perspective of consumer. For instance, Jeff Jianfeng Wang put forward the viewpoint that the essence of group-buying is focusing on consumer needs across the brand and lifestyle [3]. Benjamin, Edelman, etc., have an insight into the sustainability of the Groupon business model by analyzing discounted coupon services [4]. The foreign literature did not propose a direction for improvement in takeout mode and enterprise one-stop mode.

2. O2O Mode in Catering Industry

2.1. The Concept of O2O in Catering Industry

The concept of O2O was first proposed by Trialpay founder in August 2010, which aroused the close attention of domestic information media and heated discussions among many entrepreneurs and scholars. Even though this concept was first proposed abroad, the foreign academic literature rarely discuss about the concept of "O2O" or "online to offline", and focuses on the retail multi-channels. Multi-channel refers to businesses provide consumers with product or service through more than one channel. Combining with offline channels and online channels, is a multi-channel [5]. Kristina believes that the main reason why retailers build online shops is advantages of online sales channel and multi-channel become more and more remarkable [6]. For retailers, O2O mode, based on Internet, is form of multi-channel integration which has a better online promotion and a drive to promote store sales offline [7]. Overall, the abroad description of O2O conforms to the definition proposed by Fitzgerald, namely, using the advantages of the online platform to drive offline transactions and remedy its shortcomings [8].

There are many domestic definitions of O2O. Yaofeng Huo [9] and Dongzhen Li [10] think that O2O is outcome of the combine online business opportunities with the Internet. In this mode, attracting consumers to accomplish the task and complete the payment online, finally get service or products offline. Guizhen Hu believes that O2O is a closed cycle connecting online and offline. On the one hand, introduce users to consume product or service offline through internet

marketing, on the other hand, buy the product or service again via the Internet through consumers' offline experience. Bo Zhang point out that the O2O mode includes lots of categories, such as online to offline, offline to online, offline to online and then to offline, online to offline and then to online [11].

This article defines the O2O mode in catering industry, which is combining the opportunities of online business with the Internet in the catering industry, and makes the Internet be the trading platform.

2.2. The Type of O2O in Catering Industry

Based on the situation of the commercial market, the O2O mode in catering industry can be divided into the following three types:

1) O2O mode of group-buying

This model is the earliest model of combining domestic catering industry with O2O. This model often attracts users through concessions, to achieve the effect of restaurant brand marketing, thereby leading the users to restaurant offline. This model is represented by Meituan and Dianping, and the first typical group-buying model is Groupon.

2) O2O mode of takeaway platform

Comparing with the group-buying model, the biggest advantage of this model is users' transfer dining sites, which makes catering businesses avoid the limitations of stores' small size and low conversion rate. Therefore they take full advantage of potential productive capacity. Such model is represented by ele.me and Meituan takeaway, which receive a lot of capital recently and then develop rapidly [12].

3) Enterprise one-stop O2O mode

In this model, an enterprise needs to complete all processes, such as food procurement, food production, system information processing and autonomous distribution. Generally, the enterprise is restaurant chains. For they has a good grasp of standard technology, they have large potential capacity of production. Secondly, the restaurant chains have enough funds to develop system independently. Finally, the restaurant chains applying O2O well can benefit many branches, decrease the marginal cost. This model is represented by Haidilao Hotpot, KFC and so on [13].

3. Business Model and "Three Flows" from the Perspective of System

With the constant innovation and optimization of business models, scholars have different definitions about business model. Amit & Zott believes that the business model is configuration of the various elements and will maximize its business capabilities by coordinating and optimizing of different elements. Vitale proposed business model is the concept of enterprise suppliers, customers and partners and their relationships, and study the overall integration of the product flow, information flow and capital flow from the perspective of system [14]. Based on the above scholars' viewpoints, this paper analyzes the business model from the

perspective of system, namely, product flow, information flow and capital flow.

Among them, product flow refers to the movement of the material form of the product in the region, involving procurement, production, warehousing and transportation. And its highlight is get most economic effects of involved process. Information flow is key of supply chain, which controls the operation of product flow and capital flow. For example, logistics information controls the product flow. Capital flow refers to capital exchange with the transactions between members of the supply chain, and the capital flow is often controlled by the product flow and the information flow.

4. O2O Model in Catering Industry Comparing to the Traditional Model in Catering Industry

4.1. Comparison Based on Product Flow

In the traditional model in catering industry, the product flow is shown in figure 1. Product flow of O2O mode is the same as the traditional model in catering industry.

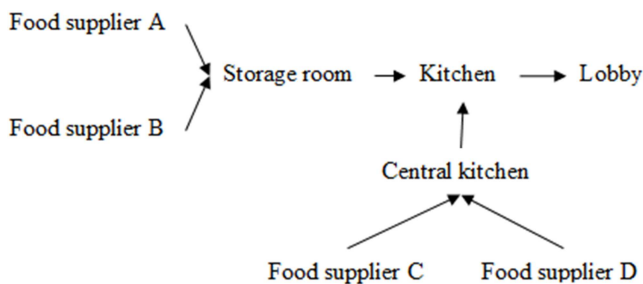


Figure 1. Product flow of traditional model in catering industry.

As takeaway platform and enterprise one-stop belong to takeaway category, they have same process in product flow. In the takeaway category, the product flow is shown in figure 2.

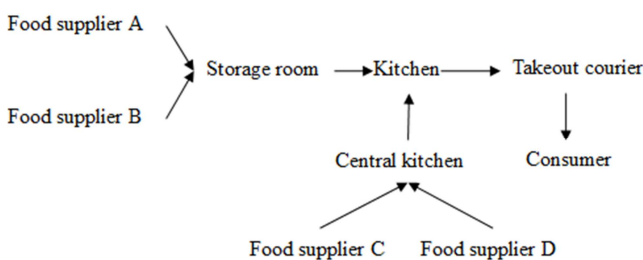


Figure 2. Product flow of O2O mode of takeaway category.

Takeaway enterprises applying traditional offline model, will reduce distributing link of delivery courier to the user's final meal place.

4.2. The Problem in Product Flow

The links of purchase, storage, transport not in strict control will cause food safety problems or poor taste, so O2O model should use more advanced system and make all aspects be in intelligent control, and finally improve the structure of

product flow.

Comparing with the traditional model, the O2O model exists many problems in the link of delivery: The delivery time and the quality of distribution service. For instance, having not good grasp of relationship between retention rate of takeaway O2O channel and delivery time, frequent takeaway's lost in delivery process. Such problems can be solved by upgrading service using transactions data from system, namely, improving the efficiency of the product flow.

4.3. Comparison Based on Information Flow

With the development of Internet, the amount of data is constantly increasing, and the value of it is immeasurable. Therefore, information flow plays a more important role in the supply chain in such an era.

In information flow, the arrow direction indicates the direction of the information transmission. As shown in Figure 3, in the traditional model, the information flow doesn't include the Internet system platform. However, in the O2O model in catering industry, the platform can serve as a traffic portal. It can obtain not only users' transaction information, but also dig deeper information by analyzing users' browsing, clicking or other behaviors. As shown in Figure 4, the trait information is the new information which is generated by users when they use platform and when the platform is used, such as the users' behavior information and the preferential information in platform. What's more, comparing the O2O model in catering industry with the traditional one, we can find that the identity of consumers is more abundant. The user can experience additional information service. Finally, the platform can act as an information intermediary and transfer the transaction information to catering merchants, and it can provide information service for them according to a large amount of users' data. Even if the platform act as a "intermediary", catering merchants and users can still transfer interim information throughout the transaction process, and it will not reduce the efficiency of the transaction.

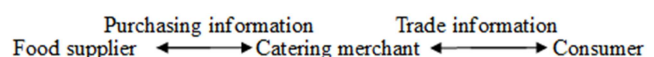


Figure 3. Information flow of traditional model in catering industry.

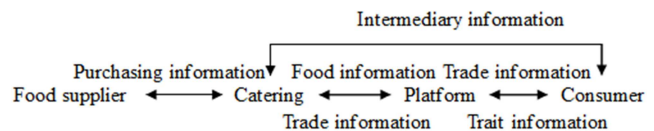


Figure 4. Information flow of O2O model in catering industry.

The diagrams above briefly describe the flow of information between participating members in the supply chain. In order to describe further the flow of information about online marketing, online payment, evaluation services and customer diversion in the Internet system, and considering the importance of Internet platform marketing, this paper establishes a closed loop model, which is about information flow of marketing in the O2O model in catering industry (Figure 5).

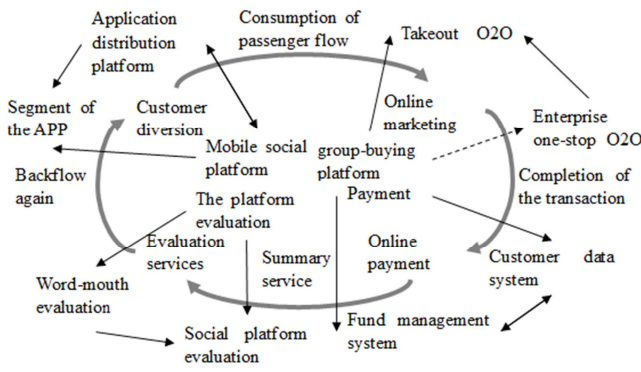


Figure 5. Information flow of marketing in the O2O model in catering industry.

The model includes information flow related to online promoting offline, offline promoting online and the transaction payment. In this model, consumption of passenger flow, completion of the transaction, summary service and backflow again are the four links, which play an important role in the business model. The triangle closed loops surrounded by the four links are information flow of the corresponding link. The following are the comparison of the four links with that of the traditional model:

1) Customer diversion

Importing flow is the basis for gaining profit in the e-commerce business model, so a large number of customer flow is the prerequisite for profitability. For the O2O model of catering industry, there are three main sources to access user traffic on the Internet: Application distribution platform, which has the evaluation of different application information; The segment of the APP, the user often decide to download based on the evaluation information of application distribution platform or other channels; Mobile social platform, you can enter the APP download page or jump to the app store to download APP by clicking on the preferential information which shared in the platform,

2) Online marketing

This link refers to catering merchants through marketing platform to release marketing information to facilitate the process of transaction. In the O2O model of catering industry, there are three types of marketing platform: takeout O2O platform, enterprise one-stop O2O platform and group-buying platform. Analyzing the characteristics of catering merchants who apply the three kinds of O2O model, we can know that catering merchants who use group-buying platform can also use takeout O2O platform. However, considering financial strength and constraints of size, they may not always adopt the enterprise one-stop O2O platform. Catering merchants who use enterprise one-stop O2O platform to marketing can also be helped by takeout platform which has a huge source of traffic. But they usually don't marketing by discount in takeout platform because they are able to develop systems and the fund can play their own productivity potential with the help of takeout platform. In some rare cases, this kind of enterprise will passing location information to users through the group-buying platform, but they will not participate in discount activities (so the arrow line of group-buying platform

to enterprise one-stop O2O platform is dashed). In the traditional model, catering merchants can only carry out marketing through the distribution of leaflets.

3) Online payment

This section refers to the payment process of the transaction, which marks the completion of the transaction. Online payment is essential for the O2O model. First, it is difficult to calculate volume of transactions on the platform, and it will lead to a decline in platform revenue. Secondly, O2O model will be a network marketing platform only if there is a lack of online payment, because the backflow closed loop of online and offline can't be formed. The user interface can transmit commodity and price information to the fund management system and customer data system to make more detailed financial statements for catering merchants, and it can make use of user commodity information, discount information and payment information to make more accurate marketing plan for them. In the traditional model, catering merchants can't fully know about their current situation of marketing status and capital development, and it will be harder to make corresponding countermeasure [15].

4) Evaluation services

High quality products or services can bring good experience to users, and after customers have satisfied experience, their good evaluation information can promote consumption. However, the bad evaluation will bring certain losses to the enterprise. The form of evaluation is not only about filling in the evaluation of orders after the transaction, but also including the word-of-mouth evaluation in offline and viral spreading in online, and it also including the evaluation about the publication form of social platform status information [16]. The interaction of three evaluation forms is platform evaluation information can lead to word-of-mouth evaluation and the information dissemination of social platform evaluation form. The content of word-of-mouth evaluation and social platform evaluation can promote mutual information of dissemination. Because the platform evaluation information is made by the people who have experienced it, the other two kinds of evaluation information will not have an effective impact on them. In contrast, in the traditional model, catering merchants are difficult to use evaluation information for marketing.

4.4. The Problems in Information Flow

In allusion to the closed loop model of marketing information and the information flow graph under different models that we have built, the information flow of three kinds of business models in our study still exist the following problems in varying degrees:

1) The structure of the information flow is too single, and the member can be restructured according to the innovation of the business model

The Internet platform has gathered a large number of user data and business data, but the value of these data is not fully reflected. At present, the catering industry O2O model has the problem of homogenization. Most enterprises do not fundamentally realize the reorganization of business model

information flow, which wastes a lot of information assets. For example, working with rural electronic commerce, docking suppliers and catering merchants; Working with the snack and drinks manufacturers, carrying out advertising marketing on takeout packaging.

2) The utilization rate is not high enough and homogenization of competition is serious

According to the data of Xingnuo company, the Eleme and Meituan are in the competitive period, 26% of users use Meituan and Eleme in a same day. If the distribution of preferential information is more diversified, and the platform retains the unique marketing trend, the sustainability of the platform will be stronger.

4.5. Comparison Based on Cash Flow

The cash flow direction of business model in the traditional catering industry is opposite to the products or materials (Figure 6). However, the O2O model of catering industry are not suit for it (In order to better highlight the key link of cash flow under the research model, all models are simplified. The cash flow of merchants land rent and utilities are omitted). In Figure 8, the upper part is the cash flow under the platform which has independent distribution, and the following part is the cash flow under the merchants who distribute by themselves or cooperate with the third party platform. In addition, in the cash flow chart which is under the group-buying model (Figure 7) and takeout O2O model, the sales expenses are defined as the total income of the platform minus the commission charged by the platform to the catering merchant or the marketing cost.

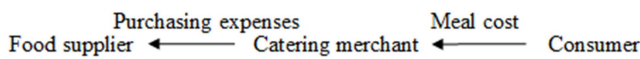


Figure 6. Cash flow of traditional model in catering industry.

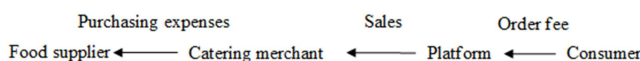


Figure 7. Cash flow of group-buying model in catering industry.

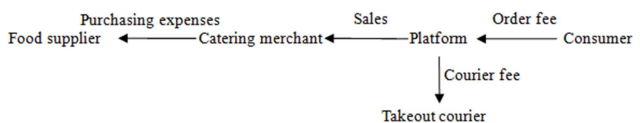


Figure 8. Cash flow of takeout O2O model in catering industry.

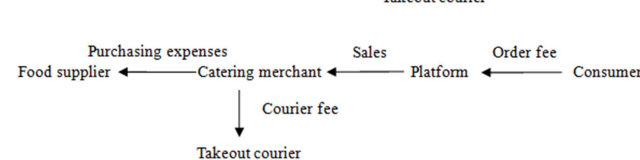


Figure 9. Cash flow of enterprise one-stop model in catering industry.

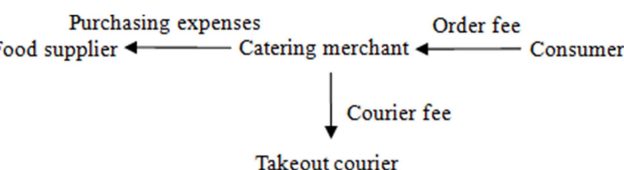


Figure 9. Cash flow of enterprise one-stop model in catering industry.

Comparing the diagrams above, we can find that O2O

model under group-buying has one more member of Internet platform than the traditional one, and O2O model under takeout platform has two more members of Internet platform and takeout courier, O2O model under one-stop enterprise has one more member of takeout courier. All the three models require funds to maintain the operation of the information system, including online marketing, technicians and other expenses. In addition, the two models under takeout platform need express service. Therefore, comparing with the traditional catering model, the O2O model of catering industry has more links on expenses. And it makes the new model to generate profits and maintain the normal operation of the cash flow more difficult.

4.6. The Problems Existed in Cash Flow

Once the cash flow of enterprise has problems, the entire business model will be difficult to maintain. On April 2016, the takeout platform of "master of smell" is forced to withdraw from the market due to the breaking of capital chain. In the farewell letter of the CEO Fan Xinhong, he has mentioned that the distribution mode has found the most economical way to achieve, but there need more traffic to import and optimization of product portfolio, and the new round of financing problems make it impossible to continue. At the same time, he says the depletion of funds is the main reason for withdrawing from the takeout market [17]. For the O2O model of group-buying and takeout platform, the main problems of cash flow are following:

1) The sources of funds are too single. It depends on venture capital too much, and financing methods are not flexible enough

Both O2O model of takeout and group-buying have experienced the stage of consumption of capital in exchange for the market expansion. For example, if you buy 24 coupons in the group-buying market, the old shareholders divestment without notification and don't agree with the new round of financing, it will lead to cash flow problems, and it will be unable to operate finally.

It is obviously not safe enough to only rely on venture capital to obtain the enterprise operating funds. In the financing phase, a variety of unexpected situations should be considered, so the financing should be combined with many factors of the enterprise and make a preparation plan.

2) The profit model is single, and the revenue capacity of platform is not strong

The sources of funds for the two models are the acquisition of the financing and profits, while the profit is achieved by a clever profit model. However, because the business content tends to be the same and the members of the fund flow are the same, the structure of the cash flow is too single.

The enterprise which implements one-stop O2O model generally have a certain brand size, and it has a certain foundation in the market share, so there is not so much demand for capital.

5. Research Conclusions

In view of supply chain, this paper establishes a simplified

model to analyze the business model and explores the optimization strategy of business model. We conclude that the O2O model of catering industry should be improved from these aspects: Firstly, how strict is the product flow control determines the basic quality of the food and service. In the product flow, improving the flow mode and flow speed of the product flow is the key point of controlling the business model. Secondly, the information flow contains rich business information. Clicking on the browse information can not only enhance the user experience and increase business volume, but also can promote the optimization of the marketing mechanism of the business model, and it can achieve the realization of online and offline traffic. In information flow, it is the further optimization direction to connect different information to the most suitable role and select the appropriate matching method. Thirdly, the flow direction and the ratio of cash flow determines the stability and sustainability of the business model. For the O2O model of catering industry, if we just simply copy mode, the cash flow will be too simple, so the business model is difficult to get the recycling of funds, after all the number of parties involved of the cash flow is limited. To optimize the profit mechanism of the business model by adding the flow link of cash flow is the new direction of the development of O2O model in the catering industry in the future. For example, opening part of the data or giving special resources to let enterprises pay money to participate in the business model. Updating the business model in this way can not only attract the user but also reduce the operation cost of business model [18].

I don't know about the related foreign enterprises enough, so I haven't analyzed the related business models of abroad. Throughout the full paper, there exists the following limitations: First, a simplified approach was used to establish the relevant model of product flow, information flow and cash flow without further describing the details of the three streams. Second, the commercial data that I have is limited. The operation data of enterprises and business planning under each model is difficult to obtain, so I can only point out the direction of O2O model optimization in catering industry, and can't give quantitative operation plan.

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