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The Current State of Online Food Ordering in the U.S. Restaurant Industry

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Abstract
A study of 372 U.S. restaurant operators (of all sizes) that accept takeout orders found that about one-quarter of those surveyed have adopted online ordering. Just over one-fourth of those surveyed use some form of online ordering. These restaurateurs have been pleased with the technology, and all of them indicated that online ordering has met or exceeded their expectations on ROI. Although convenience and control are both drivers of the move toward online ordering, this study found that consumers and operators differed on the ranking of those two factors. Operators thought that consumers like online ordering for its convenience, but an earlier study of consumers found that what they like is control over the ordering process. Contrary to some reports, the restaurants in this study did not find substantial increases in average check, but they did report considerable increase in order frequency. For this sample, the top benefit of online ordering was a savings in labor, since employees are not tied up on the phone or at the counter. Order accuracy was another benefit cited by these restaurant operators.

Keywords
restaurants, online ordering, technology

Disciplines
Business | Food and Beverage Management | Hospitality Administration and Management

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by Sheryl E. Kimes, Ph.D.
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The Current State of Online Food Ordering in the U.S. Restaurant Industry

by Sheryl E. Kimes

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Sheryl E. Kimes, Ph.D., is Singapore Tourism Board Distinguished Professor of Asian Hospitality Management at the Cornell University School of Hotel Administration, where she has also served as interim dean (sek6@cornell.edu). In teaching restaurant revenue management, yield management, and food and beverage management, she has been named the school’s graduate teacher of the year three times. Her research interests include revenue management and forecasting in the restaurant, hotel, and golf industries. She has published over fifty articles in leading journals such as Interfaces, Journal of Operations Management, Journal of Service Research, Decision Sciences, and Cornell Hospitality Quarterly. She has served as a consultant to many hospitality enterprises around the world, including Chevy’s FreshMex Restaurants, Walt Disney World Resorts, Ruby’s Diners, Starwood Asia-Pacific, and Troon Golf.

The author would like to thank the Center for Hospitality Research for funding this research, the sponsorship of Nation’s Restaurant News in supporting this study.
A study of 372 U.S. restaurant operators (of all sizes) that accept takeout orders found that about one-quarter of those surveyed have adopted online ordering. These restaurateurs have been pleased with the technology, and all of them indicated that online ordering has met or exceeded their expectations on ROI. Although convenience and control are both drivers of the move toward online ordering, this study found that consumers and operators differed on the ranking of those two factors. Operators thought that consumers like online ordering for its convenience, but an earlier study of consumers found that what they like is control over the ordering process. Contrary to some reports, the restaurants in this study did not find substantial increases in average check, but they did report considerable increase in order frequency. For this sample, the top benefit of online ordering was a savings in labor, since employees are not tied up on the phone or at the counter. Order accuracy was another benefit cited by these restaurant operators.
Online food ordering is growing in popularity among both consumers and restaurants, because it can benefit all concerned. Consumers are embracing online ordering because of its ease, speed, and precision,\(^1\) while restaurants see the potential for increased revenue and fewer errors—and they are responding to obvious consumer demand. This study builds on two previous CHR reports on online ordering. In the first report, Phillip Laqué and I provided an overview of online ordering and its current adoption in the largest 326 restaurant chains in the U.S.\(^2\) In the subsequent report, I presented the results of a consumer study on online ordering adoption and attitudes.\(^3\)


I will start by providing a brief overview of online ordering and distribution channels and then discuss the potential advantages and disadvantages of using various online channels for ordering. Subsequently, I will present the results of a survey of U.S. restaurant operators on takeout and delivery ordering that was conducted in conjunction with Nation’s Restaurant News. I will conclude with a discussion of guidelines that operators can use to help establish a successful online ordering system.

Online Ordering
Restaurants can offer online ordering through their own website or app, through a multi-restaurant site or app (e.g., Snapfinger, campusfood.com), by text, or through Facebook. Online ordering has been associated with increased revenue, improved capacity management, improved productivity, and improved transactional marketing and customer relationship management, but some operators have expressed concerns about increased costs, an overloaded kitchen, reduced service quality, and possible commoditization.\(^4\) One of the objectives of this study was to empirically test these claims so that restaurant operators can make more informed decisions on whether to offer online ordering.

In the first report of this series on online ordering, co-author Philipp Laqué and I found that 23 percent of the 326 largest chains in the U.S. offered online food ordering, and we pointed out that many restaurants experienced increased sales as a result of accepting online orders.\(^5\) Online ordering was most frequent in the fast-casual segment (48.5% of all restaurants) and the quick-service segment (22.0%). Pizza (60.7%) and sandwich (61.9%) chains were most likely to accept online ordering, and Mexican restaurants are also active in this area (44.4%).

In the second part of this series on online ordering, I studied customer reaction to online ordering.\(^6\) I surveyed a sample of 490 internet users and found that slightly under half of them have ordered food online, by mobile app, or with a text message. The chief reason for online ordering given by those who had ordered (users) was that they gain convenience and control. The major factor that inhibits those who had not ordered via an online channel (non-users) was a desire for interaction (although technology anxiety is also a factor). Users were on balance younger than non-users, and users generally patronized restaurants more frequently than non-users. Italian food, particularly pizza, was far and away the most commonly ordered category. The single most important attribute of online ordering was order accuracy. That was followed by convenience and ease of ordering. Despite the availability of the internet and phone apps, the most common ordering channel was still the telephone call (53.7 percent). Online ordering is growing, though, as the users said they placed a little over 38 percent of their orders on the restaurant’s website or app.

The Study
In this study, I wanted to compare the experiences of operators who had offered online ordering with the commonly claimed advantages and disadvantages of online ordering. In addition, I wanted to compare operator perceptions of what customers think about online ordering with what customers say they think.

To do this, I worked with Nation’s Restaurant News to distribute an online survey to a sample of their subscribers who were known to own, operate, or manage restaurants that were likely to offer takeout or delivery (and they could not take the survey if they did not fit those criteria). The survey was launched in May 2011, and a total of 372 completed responses were obtained. I will first provide a

\(^4\) For a more thorough discussion of this, please refer to Kimes and Laqué, 2011.

\(^5\) Kimes and Laqué, op.cit.

\(^6\) Kimes, op. cit.
demographic profile of the respondents, and then I’ll review how operators are using online ordering and assess the impact that it has had on restaurant performance. Finally, I will compare how operators think customers react to online ordering with what customers actually do think.

**Demographic Profile**

About two-thirds (65.1%) of the respondents were from quick-service, fast-casual, or casual restaurants, with less than 2 percent from fine-dining restaurants. The most popular cuisine offered was American and the average check per customer was under $20.

Respondents were fairly evenly split between chains (55%) and independents (45%). Nearly two-thirds of the chain restaurant respondents (63%) worked at the corporate level and had over 100 restaurants in their chain. The majority of independent operator respondents were either owners (54.8%) or general managers (23.1%). Most respondents operated restaurants with sales volumes under $3 million per year (chains, 71.3%; independents, 79.0%). The respondents were primarily male (85.0%).

Looking at respondents’ takeout or delivery operations, they were asked to indicate what proportion of revenue was generated from eat-in sales, takeout, delivery, and catering. For this sample, takeout, delivery, and catering accounted for about one-third of revenue, and about two-thirds of that “order out” revenue came from takeout (Exhibit 1).

I also asked questions about how their customers ordered their takeout and delivery orders. Over half (52.4%) of orders were placed by phone and another 40.8 percent were from walk-in business. Less than 10 percent of all orders were taken online (Exhibit 2).

In addition, I analyzed the percentage of respondents who used each distribution channel (Exhibit 3). As expected, the large majority of respondents had ordering capabilities by phone (88.7%) and walk-in (93.3%). About a quarter (22.9%) took orders through their own website, 6.7 percent through a multi-restaurant site, 3.3 percent from mobile.

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**Exhibit 1**

**Percentage of revenue from eat-in, takeout, delivery, and catering sales**

- Eat-in
- Takeout
- Delivery
- Catering
- Other

Based on a survey of 372 restaurants that offer takeout or delivery.

**Exhibit 2**

**Percentage of orders taken through various distribution channels**

- Phone
- Walk-in
- Restaurant website
- Multiple-restaurant website
- Mobile app
- Text
- Facebook

Based on a survey of 372 restaurants that offer takeout or delivery.
apps, 1.8 percent by fax, and 1.4 percent through Facebook. Overall, 26.9 percent of respondents offered some sort of online ordering option.

Respondents from pizza restaurants were the most frequent users of online ordering (46.6%) followed by respondents from sandwich (37.9%), Mexican (36.8%), and Asian (36.4%) restaurants (Exhibit 4). Online ordering was most prevalent in the fast-casual (37.5%), casual (29.2%), and quick-service (26.9%) segments (Exhibit 5). There were no significant differences in online usage between respondents from chain restaurants and those from independent restaurants. Respondents from urban locations were more likely to offer online ordering (36.9%) than those in sub-urban, small town, or rural locations.

I also asked respondents to indicate (on a 1 to 5 scale, where 5 = very important) the reasons why they thought customers ordered food for delivery or takeout. The most common reason given was convenience (4.54) followed by speed (4.33), order accuracy (4.32), ease of use (4.26), and credit card acceptance (4.14) (Exhibit 6).

In the following section, I delve further into the approaches used by the respondents who offer online ordering.
24.8%; one to two years ago, 30.5%). About one-fifth (20.6%) had been offering online ordering capabilities for over four years. (Exhibit 7).

Most respondents (78.0%) used an outside vendor to develop their systems. Of these respondents, about 60 percent managed their online site, while the remaining 40 percent used an outside vendor to manage their online ordering. The majority (91.0%) of respondents had funded their online ordering system through cash on hand. The most common payment system was a monthly fee (37.6%), followed by a per transaction fee (17.7%) and percentage of order amount (15.6%).

About half (49.6%) of users have their online ordering system directly integrated with their point-of-sale system (POS). Other common methods of relaying the order to the kitchen were fax (15.6%), IP printer (14.9%), and email (13.5%) (Exhibit 8).

Productivity. While offering online ordering should reduce the number of employees required for order taking, some operators have expressed concern about the potential impact on staffing in other parts of the restaurant. Respondents were asked to indicate the impact online ordering had on staffing levels. In general, respondents reported little changes in staffing in the front or back of house, but indicated that they had experienced a decrease in staffing needs for order taking (22.8%) and an increase in delivery staffing (24.4%) (Exhibit 9).

Another concern of online ordering is that it may overload the kitchen, but that is mostly not the case. Online ordering had little impact on the kitchen for most respon-
dent, although 23.0 percent of respondents indicated that at times their kitchen was overloaded. Another 5 percent reported that they had a separate production line for their online orders (Exhibit 10).

One way of managing kitchen capacity is to use a metering system to limit the number of orders at any one time. About 35 percent of respondents used a metering system that tracked the volume of their online orders. About two-thirds of those who used a metering system used these systems to notify their customers when their order would be ready. About a quarter of respondents offered a separate pickup window for online orders.

Revenue. Online ordering has been said to generate incremental revenue by (1) increasing order frequency, (2) having a higher average check, and (3) increasing order volume. I wanted to see if operators had experienced the claimed benefits.

Order frequency. On average, operators who used online ordering saw an increase in order frequency, most commonly for takeout orders (42.5%), but also for delivery (28.5%) and catering (14.2%) (Exhibit 11).

Average check. In a press report, restaurants using online ordering reported an average check increase of 25 percent primarily due to successful upselling.\(^7\) I did not find that here. While operators reported that their average check

for online orders was higher, the percentage increases were relatively modest (i.e., takeout, 2.3%; delivery, 1.9%; catering, 1.0%) (Exhibit 12).

**Order volume.** The boost in online selling seems to come from volume. Restaurants using online ordering reported more frequent orders and increases in group and catering orders because of the ease of placing an order. On average, operators had an increase in order volume. That average broke out as follows. About a third (29.1%) reported an increase in order volume, 26.8 percent said that their service had improved, and another 32.3 percent indicated that they had experienced both increased sales volume and increased service (Exhibit 13).

**Marketing.** Online ordering can provide restaurant operators with key customer information that can be useful for developing promotion strategies, including targeted promotions designed to build off-peak demand, specials aimed at certain customer segments, and couponing strategies. About one-third of respondents had offered online promotions and another third said they were working on it. Of the respondents who had offered online ordering promotions, one-half (52.4%) stated that these promotions worked better than their regular promotions.

**Customer satisfaction.** Some operators have expressed concern that online ordering may result in lower customer satisfaction since the ordering process may be seen as too impersonal. (Additionally, there was concern about the potential impact of an overwhelmed kitchen on customer satisfaction.)

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**Exhibit 11**

**Effect of online ordering on order frequency**

- **Takeout**
  - Increased: [Graph Data]
  - Same: [Graph Data]
  - Decreased: [Graph Data]

- **Delivery**
  - Increased: [Graph Data]
  - Same: [Graph Data]
  - Decreased: [Graph Data]

- **Catering**
  - Increased: [Graph Data]
  - Same: [Graph Data]
  - Decreased: [Graph Data]

**Exhibit 12**

**Effect of online ordering on check average**

- **Catering**
  - >20% lower: [Graph Data]
  - 10-20% lower: [Graph Data]
  - 5-10% lower: [Graph Data]
  - Same: [Graph Data]
  - 5-10% higher: [Graph Data]
  - 2-5% higher: [Graph Data]
  - More than 20% higher: [Graph Data]

- **Delivery**
  - >20% lower: [Graph Data]
  - 10-20% lower: [Graph Data]
  - 5-10% lower: [Graph Data]
  - Same: [Graph Data]
  - 5-10% higher: [Graph Data]
  - 2-5% higher: [Graph Data]
  - More than 20% higher: [Graph Data]

- **Takeout**
  - >20% lower: [Graph Data]
  - 10-20% lower: [Graph Data]
  - 5-10% lower: [Graph Data]
  - Same: [Graph Data]
  - 5-10% higher: [Graph Data]
  - 2-5% higher: [Graph Data]
  - More than 20% higher: [Graph Data]
satisfaction, but the finding that online ordering generally does not overwhelm kitchens makes that concern moot).

Respondents were asked to indicate the impact that online ordering had on customer satisfaction (Exhibit 14). Over one-third (36.0%) stated that they had experienced an increase in customer satisfaction and 22.0 percent said there had been no change in customer satisfaction. The remainder of respondents said they could not tell.

Financial. While some trade articles have discussed the revenue increases associated with online ordering, others have expressed concern about the associated costs. Respondents were asked to indicate whether the return on investment (ROI) on online ordering had met their expectations. One-half of respondents said that the ROI of online ordering was exceeding their expectations and another 45.5 percent said that it had met their expectations (Exhibit 15).

Open-ended comments. Respondents who had used online ordering were asked two open-ended questions on what they liked the most and liked the least about online ordering. Approximately 80 percent of respondents who had used online ordering provided responses.

The most frequent benefit seen with online ordering was labor savings (38.1% of all comments). Respondents mentioned “not having to have labor tied up on the phone,” “no staff time being used,” and how “it reduced labor on the
Exhibit 16
Positive open-ended comments regarding online ordering, by category

Exhibit 17
Negative open-ended comments regarding online ordering, by category
Along with labor savings, respondents mentioned the increased accuracy of online orders (21.4%) and the enhanced convenience for the guest (19.1%). Other perceived benefits included easier order processing (13.7%), enhanced marketing opportunities (11.4%), and a higher average check (8.4%) (Exhibit 16).

The most frequent negative comments about online ordering were less guest interaction (22.0%), technology issues (17.1%), and guest errors (16.3%) (Exhibit 17). A number of respondents mentioned that they felt that were going through "growing pains" and that the issues they had experienced would go away with time.

Non-Online Users
I also wanted to find out the reasons why non-users were not offering online ordering capability and whether they planned to do so. The top reasons given were that they felt that their customers preferred to talk with someone at the restaurant (28.0%) and that they liked having a personal connection with their customers (27.1%) (Exhibit 18).

Nearly half of the non-users (46.2%) had plans to develop online ordering systems within the next two years. About 20 percent of respondents were currently developing their online ordering capabilities and another 11.8 percent planned to begin online ordering in the next year.

What Customers Think
Respondents were asked a series of questions on how they thought their customers perceived online ordering. These questions were similar to those I asked earlier this year in a consumer study,8 since I wanted to compare the responses of the operators and customers.

The questions were divided into six basic categories: perceived control, perceived convenience, need for interaction, technology anxiety, customer satisfaction and future intention to use online ordering. I compared the responses of users and non-users and also compared the operator responses with those of the customers.

Perceived Customer Control
Well-designed self-service ordering systems give customers substantial control over the pace of their transaction and allow them to limit the amount of personal interaction they

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8 In January 2011 I conducted an online survey of 470 consumers who had ordered food for takeout or delivery during the previous year. The survey included a variety of questions on respondents’ food ordering behavior, several items on their use of various ordering methods, and a series of questions designed to measure perceived control, perceived convenience, need for interaction, technology anxiety, satisfaction, and intent to use the self-service technology or recommend it to others. For the full set of questions used, please see Kimes 2011 (op.cit.).
Comparison of customers’ and operators’ ratings of online ordering characteristics

<table>
<thead>
<tr>
<th>Restaurant status</th>
<th>Rater</th>
<th>Control</th>
<th>Convenience</th>
<th>Need for Interaction</th>
<th>Technology Anxiety</th>
<th>Behavioral Intentions</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Online Ordering</td>
<td>Customer</td>
<td>2.903</td>
<td>3.644</td>
<td>3.575</td>
<td>2.783</td>
<td>2.907</td>
</tr>
<tr>
<td></td>
<td>Operator</td>
<td>3.491</td>
<td>3.938</td>
<td>3.859</td>
<td>3.364</td>
<td>3.688</td>
</tr>
<tr>
<td>Online Ordering in Operation</td>
<td>Customer</td>
<td>3.556</td>
<td>3.985</td>
<td>3.355</td>
<td>2.740</td>
<td>3.736</td>
</tr>
<tr>
<td>Average</td>
<td>Customer</td>
<td>3.261</td>
<td>3.831</td>
<td>3.454</td>
<td>2.760</td>
<td>3.361</td>
</tr>
</tbody>
</table>

Perceived Customer Convenience

Perceived convenience of a self-service system also leads to an increase in both adoption and satisfaction. In this instance, the definition of convenience is related primarily to access convenience and transaction convenience.

Online operator users felt that customers believed that online ordering offered enhanced convenience (Operator users, 4.24; Operator non-users, 3.94). These numbers were significantly higher than the convenience scores for consumers (Customer users, 3.99; Customer non-users, 3.64) (Exhibit 19).

Perceived Customer Need for Interaction

The downside of self-service technology occurs with people who have technology anxiety and those who need human interaction. Meuter et al. have shown that these factors can affect adoption of self-service ordering and satisfaction with it. Customers who evaluate service quality based on interactions with employees may not want to use self-service ordering.

Operators who did not use online ordering thought that customers had a significantly higher need for interaction than did operator users (Operator users, 3.52; Operator non-users, 3.86). Again, these numbers were significantly higher than the consumer results on the need for interaction (Customer users, 3.36; Customer non-users, 3.58) (Exhibit 19).

Perceived Customer Technology Anxiety

Customers who are uncomfortable with technology may be reluctant to try using an online self-service site because they may be afraid of getting tangled up in the technology. Operators who did not use electronic ordering felt that customers were more anxious about technology usage than operator users (Operator users, 3.19; Operator non-users, 3.36). Once

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13 Collier and Sherrell, op.cit.

14 Meuter et al. (2005), op.cit.


more, these numbers were significantly higher than the customer results (Customer users, 2.97; Customer non-users, 2.43) (Exhibit 19).

What Drives Customers to Use Online Ordering?
I developed four regression models to determine (a) what operators (both users and non-users) think drives customers to use online ordering and (b) what customers (both users and non-users) think would make them want to use online ordering (Exhibit 20).

All four models had good explanatory power (R-squared ranged from approximately 0.50 to 0.68), but the results diverged between operators and consumers. While perceived control and convenience were significant factors driving potential usage for all four groups, they played different roles for operators and customers. Operators (both users and non-users) indicated that they thought increased convenience was the top factor driving customers to use online ordering, but customers (both users and non-users) indicated that perceived control was the more important factor.

None of the four groups considered technology anxiety to be a significant factor driving use or non-use of online ordering. Not surprisingly, a higher need for interaction was associated with a lower intent to use online ordering for three of the groups (operator non-users, customer users, and customer non-users), but operators who offered online ordering did not consider customers’ need for interaction to have a significant effect on their intent to use online ordering.

Discussion
Nearly all operators who use online ordering indicated that their ROI has met or exceeded their expectations. This increased ROI stems not only from the revenue gains associated with the higher frequency of ordering, the higher average check, and the increased order volume, but also from the cost savings associated with reduced staffing. This, in conjunction with the positive impact on customer satisfaction and ability to launch successful promotions, has caused users to be happy with their decision to offer online ordering.

While online ordering has been successful, several issues remain. For example, about a quarter of respondents said that their kitchen is sometimes overloaded during peak periods. Some operators have managed this by putting in a dedicated production line for online orders. Other restaurants have installed metering systems that allow them to track order volume and to notify customers of when their order will be ready. In the open-ended comments, about one-fifth of respondents expressed concern about the problems associated with less guest interaction and others talked about technical glitches that occurred from time to time. That said, operators who use online ordering have been quite pleased with it.

Even non-users are planning on offering online ordering: over three-quarters of respondents who do not currently offer online ordering plan to begin offering it in the next two years. When non-users were asked to indicate reasons why they did not offer online ordering, the top reasons had to do with the reduced customer interaction. While online ordering certainly results in reduced guest interaction, this fear may be a bit exaggerated since operators think that guests desire more interaction than guests actually do.

Results from both this study and the previous report on customer attitudes towards online ordering indicate that perceived customer control and convenience are the most important things driving consumer intent to use online ordering. As mentioned above, operators think the convenience associated with online ordering is the most important factor affecting customer usage, but customers feel that perceived control is more important.
Specific suggestions on how to increase perceived control and convenience were given in my earlier CHR report, and I will summarize them here.

Perceived control can be increased by allowing customers to order whenever they want, wherever they want, and whatever they want (as in being able to customize their order). Perceived control can also be enhanced by allowing customers to choose their payment and delivery method. Customers also want to know that their order will be accurate, that their personal details will be secure, and that their order will be ready when promised. Virtual shopping carts, confirmation emails and texts, progress reports, and delivery time estimates can help reassure guests that their order is in process and secure.

Perceived convenience can be enhanced by making sure your online ordering system is easy to use and navigate. About one-quarter of the operators also enhanced the convenience of online ordering by offering a separate pickup line for online takeout orders.

Operators in this study thought that customers wanted more interaction than customers actually do want. That being said, customers who do not yet use online ordering have a higher need for interaction than those who use online ordering. If you decide to offer online ordering, you might want to consider offering a virtual chat capability on your website or even use a call center to take your orders.

Conclusion

In conclusion, online ordering has been adopted by about a quarter of restaurants that offer delivery and takeout, based on this set of respondents. Online ordering users have been pleased with the technology and all indicated that online ordering has met or exceeded their expectations on ROI. The proven ability of online ordering to increase order frequency, order volume and average check in conjunction with its ability to lower labor costs offers great potential for the restaurant industry—and almost certainly will become a feature that most customers expect to have available to them. Setting aside customer expectations, the advantages of online ordering (improved order accuracy, improved productivity, and enhanced customer relationship management abilities) will probably offset the costs and operational challenges for most restaurant types.

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17 Kimes, op. cit.
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