

Practical application of cutting-edge technologies through cloud kitchen and some actual digital technologies to attract more consumers and improve the dining experience

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Abstract:

The restaurant's focus is still on the dining experience since there is still no substitute for the bond that exists between each diner and the chef, as well as the restaurant's setting, ambience, music, and staff. Yet, that wasn't my only encounter. Dining at the restaurant itself or in another location is now possible thanks to a menu on a QR code, communication with the chef on Zoom, the ability to choose dishes and place orders via an app, and more. The food and restaurant industry (F&B) has been negatively impacted by the outbreak for over two years. Many technological solutions, such as contactless ordering, online sales management, developing a delivery App, and others, have lately entered the market in an effort to assist the F&B business in overcoming the epidemic. A "virtual restaurant," or "cloud kitchen," is a takeout-only setup. The rapidly expanding food delivery network serves as a foundation for the cloud kitchen's development platform. Applications for ordering food act as middlemen between customers and restaurants, providing meals at customers' requests and being a major factor in the rapid growth of cloud kitchens. This idea originally surfaced in early 2010, purely as a means of helping eateries make more money. The product had through a development process with steady stages, but it had not yet found momentum with the market at that point.

Keywords: restaurant, menu, technology, business.

DOI: [10.24297/j.cims.2023.4.1](https://doi.org/10.24297/j.cims.2023.4.1)

1. Introduction

Vietnam's D'corp R-Keeper statistics claims that although there are already more than 500,000 food and beverage establishments in the nation, street food and tiny businesses still account for around 80% of the market. Just 15% of all restaurant chains are high-end ones with investment. As many small restaurants would have to close as a result of the epidemic, it is anticipated that this market will be reconfigured when it has passed. Yet, restaurant business models offer the

flexibility and ability to make technological investments. It's possible to achieve sustainable development. Several experts in Vietnam think that in order to survive the pandemic, the restaurant industry will have to learn to adapt and recover rapidly. They think that the digital environment is the best place to find solutions to this issue. Kantar (2020), the average revenue growth of the Vietnamese online meal delivery industry would reach 28.5 percent annually and reach \$449 million by 2023. Also, restaurants use technology based on the on-demand concept, enabling them to serve consumers on demand, whenever and wherever they are. The F&B enterprises congregate in these common kitchens, but the food is not served there and then; rather, it is delivered to the residence in response to particular app orders. The adaptability of this approach enables the participating cooks to concentrate only on food quality without worrying about shop decorating costs or space requirements. Under this strategy, centrally located teams of chefs may provide a wide selection of meals to eateries looking to extend their food delivery service or to companies who only have mobile applications as their primary way of operation. The cloud kitchen model is a business that investors find appealing throughout the globe. CNN reports that a US-based firm called CloudKitchens has obtained a financial investment of more than \$400 million. While Rebel Foods brand runs "cloud kitchens" for more than 3,000 online eateries in 35 locations in the second-most populated nation in the world, Reef Company (USA) is producing meals from thousands of parking lots.

2. Literature review

A theoretical information system in the shape of a model, the triangle technology acceptance model directs people to utilize the technology and approve its usage. The last step of a user's technology use is when they actually use the system. Habitual behavior is one of the components of how humans use technology. Regime and daily repetition have an impact on this behavior. Davis (1986) developed the Tam technology acquisition model based on the principle of rational action. This model was created using the technology reception model, which directly addresses the issue of forecasting an information system's or computer network's capacity for reception. The triple technology acceptance model was born with the aim of predicting the acceptability of a tool type and specifying the modifications that must be introduced into the system. Only then can it be accepted and trusted by users. This model also shows that the acceptability of an information system is determined by two basic factors: perceived usefulness and perceived ease of use. Creator of the Tam technology acceptance model, asserts that a person's performance as well as their attitude have a role in how they utilize a system and how much of an influence the system has on them. As a consequence, even if an employee doesn't

agree with an information system, there's a good chance they'll still utilize it since they know it will increase productivity and, ultimately, efficiency at work. The technology acceptance model also makes a link between the system's usability and how helpful people consider it to be.

3. Research Methodology

Research, synthesize data from both local and international sources, compare and contrast information, and poll consumers to see how often they use technology to order meals at restaurants. Market research reveals the benefits and drawbacks of adopting cloud kitchens in 2023.

4. Research result and discussion

Table 1. The general information

Information		Quantity	(%)
Gender	Male	200	62,5
	Female	150	46,875
Food ordering app	Grab food	100	31,25
	Now	150	46,875
	Foody	30	9,375
	Baemin	20	6,25
Total		320	100

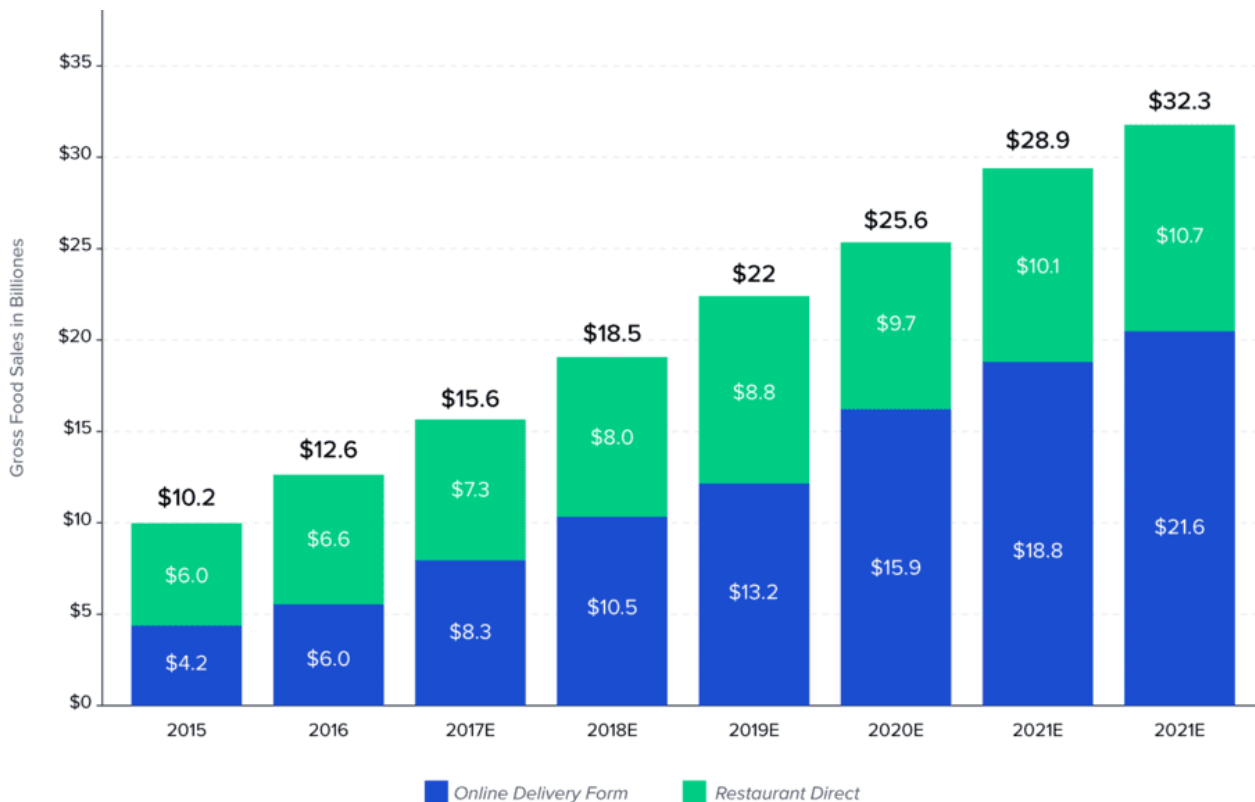
The report states that the male gender received 200 votes, or 62.5% of the total, while the female gender received 150 votes, or 46.875%. The 100 survey samples, or approximately the Grab food delivery app, made up 31.25% of the total. The app now has 150 votes, which is 46.875 percent of the total. Foody is second with 30 surveys, which is 9.375 percent, and Baemin is third with 20 surveys, which is 6.25 percent.

Table 2. The benefit of using a cloud kitchen

No	Benefit of using	%
1	in line with the trend of eating during the epidemic season	89%
2	reach more customers	87%
3	investment optimization	79%
4	flexibility in business	74%

The arithmetic issue for the hotel and restaurant sector during the epidemic era has been very successfully handled by Cloud Kitchen. Also, a lot of eateries are struggling with a severe income issue. Several restaurants and cafes were forced to close as a result of this circumstance. The Cloud Kitchen approach was created specifically to concentrate on distribution. As a result, cafes and restaurants may minimize their renting expenses. Just an area of 15 to 25 m² will do. Just 2–5 chefs are required each kitchen. The management organization will handle order reception and delivery. The amount of patrons wanting to eat at a restaurant is the key issue. And Cloud Kitchen will provide you with an internet marketing solution to assist you resolve this issue. The best option that can draw customers in a meaningful way. Of sure, there will be a rise in the number of applications. Also, this allows eateries avoid making substantial expenses in physical promotion. In contrast to typical restaurants, cloud kitchens just require a specialized cooking area for the chefs to prepare meals. Because it is not constrained by the aforementioned variables, cloud kitchen may adjust its operations as needed without caring about its staff, surroundings, or location. Cloud kitchen is one of the best solutions for putting up a restaurant model because of its quick operations, cheap risk, and quick return. Analysts in the food and beverage (F&B) sector have noted that firms are now attempting to reduce operational expenses, and that cloud kitchens assist in the elimination of many expensive expenditures from restaurant design to management to money. a worker's pay. Lastly, cloud kitchens provide restaurants more access to consumer data by utilizing third-party delivery applications to compile vital data on consumer behavior, eating preferences, and trends. Restaurants may use these data to simplify and improve operations for more effective operations.

Figure 1. Compare direct food purchases made by consumers to internet ordering



Source: Q&Me (2020)

Technology is always evolving and has numerous intelligent uses. Online transactions may be handled fast for both ordering and paying. 51% of consumers placed meal orders online or through apps in 2019. The percentage increased to 82% throughout the outbreak. Also, this is a good way to make use of the enormous delivery labor that exists now. Business models must adapt to this transformation in order to survive. So many companies began to expand their service offerings. That marks the start of "cloud kitchen" operations' online ordering system. You can't overlook this model because it is affordable and easy to handle and operate.

5. Recommendation

Virtual kitchen operations and scalability are greatly influenced by technological progress and the digitization trend. Restaurants must provide smooth system integration because the majority of orders are currently submitted and processed through online delivery service providers. This is necessary to prevent any disruptions to the order receiving process, and collecting payments while effectively running the kitchen. Also, restaurants must think carefully about picking the best point of sale (POS) systems. Modern POS systems not only receive and

send orders, but they also deliver crucial information on diners' behavior. Restaurants may grow operations, create effective strategies, and ultimately optimize revenues by knowing client wants. Brands must assess which platforms are most effective in increasing their consumer base, increasing exposure, and increasing revenue. Online meal delivery services can be helpful in the early phases of growing, but restaurants can also use other sales channels to increase revenue without having to split earnings. The largest sources of the issue of global food waste are thought to be stores and restaurants. The first step in establishing sustainability in the food and beverage industry is to invest in and develop environmentally friendly business models. This is also a strategy to win over customers. Following the SOP is essential for the long-term success of your cloud kitchen business. Well-defined SOPs may assist delivery-only restaurant businesses fulfill specified service requirements by standardizing their key activities. The delivery process may be greatly streamlined and the consistent norms that are crucial for company success can be developed by implementing a specified formula. The first margins for food delivery firms are quite modest. While working with third-party platforms enhances the possibility that a customer would place an order, it also comes with a large charge that reduces profit margins. The viability of a cloud kitchen is therefore greatly dependent on menu planning and price. Consider elements including demand, food prices, and menu enhancement by order volume when determining menu pricing techniques. Similarly, if the circumstance warrants it, you might remove underperforming goods, propose menu changes, or decide on a discount.

6.Conclusion

The F&B industry's growth trend and the success of a restaurant's operation are both now significantly influenced by technology. Restaurants have become the principal application for a variety of cutting-edge technologies in the real world thanks to the deployment of contemporary 5G networks and a number of practical digital technologies, increasing their potential. attracting more consumers and improving the eating experience. Due to changes in consumer behavior, demographic variables in Vietnam's big cities are also assisting the shared kitchen concept. Even if the Covid outbreak is stopped, more interested parties are expected to invest in the shared kitchen market as consumers increasingly choose to dine at home or have lunch at work. In the near future, when consumers won't need to go to the restaurant directly to eat, cloud kitchen is a very intriguing business model that will revolutionize the food and beverage industry in Vietnam. Savor the meal that the restaurant's chef prepared. Instead, they only need to place an order for food, which will be brought to them wherever they are, whenever they want, and from a variety of cuisines, from fast food to fine dining. This model will succeed in

the future since it is really optimum. In the near future, the communal kitchen is predicted to take off as an essential step to support the growth of the food delivery e-commerce sector.

Conflict of interests

None

Acknowledgement

I value the expertise and involvement of the clients and specialists who contributed to the success of this project.

References

1. Lo, J. S. K., Tavitiyaman, P., & Tsang, L. W. S. (2023). Millennials' perception of safety and hygiene measures, perceived health risk, satisfaction and behavioural intention at upscale restaurants amid COVID-19 pandemic. *Journal of China Tourism Research*, 1-29.
2. Nam, J., Kim, S., & Jung, Y. (2023). Elderly Users' Emotional and Behavioral Responses to Self-Service Technology in Fast-Food Restaurants. *Behavioral Sciences*, 13(4), 284.
3. Tokkozhina, U., Mataloto, B. M., Martins, A. L., & Ferreira, J. C. (2023). Decentralizing Online Food Delivery Services: A Blockchain and IoT Model for Smart Cities. *Mobile Networks and Applications*, 1-11.
4. Filimonau, V., Alghoory, H., Mohammed, N. K., Kadum, H., Qasem, J. M., & Muhialdin, B. J. (2023). Food waste and its management in the foodservice sector of a developing economy: An exploratory and preliminary study of a sample of restaurants in Iraq. *Tourism Management Perspectives*, 45, 101048.
5. Javed, A. R., Ahmed, W., Pandya, S., Maddikunta, P. K. R., Alazab, M., & Gadekallu, T. R. (2023). A Survey of Explainable Artificial Intelligence for Smart Cities. *Electronics*, 12(4), 1020.
6. Liu, Y., Liaqat, A., & Monroy-Hernández, A. (2023). Should Policymakers be Involved? Understanding the Opinions and Needs for Independent Food Delivery Platforms in the United States regarding Public Policy. *arXiv preprint arXiv:2303.15415*.
7. Chang, K. C., Cheng, Y. S., Hu, S. M., & Kuo, N. T. (2023). Exploring Enablers of Contagious Content for Dining Blogs: An Integrated Approach by Using Content Analysis and Interpretive Structural Modeling. *Journal of Theoretical and Applied Electronic Commerce Research*, 18(1), 668-688.

8. Ahmed, S., Al Asheq, A., Ahmed, E., Chowdhury, U. Y., Sufi, T., & Mostofa, M. G. (2023). The intricate relationships of consumers' loyalty and their perceptions of service quality, price and satisfaction in restaurant service. *The TQM Journal*, 35(2), 519-539.
9. Sha' ari, N. S. M., Sazali, U. S., Zolkipli, A. T., Vargas, R. Q., & Shafie, F. A. (2023). Environmental assessment of casual dining restaurants in urban and suburban areas of peninsular Malaysia during the COVID-19 pandemic. *Environmental Monitoring and Assessment*, 195(2), 1-13.
10. Ma, F., DiPietro, R. B., Li, J., & Harris, K. J. (2023). Memorable dining experiences amidst the COVID-19 pandemic. *International Journal of Contemporary Hospitality Management*, 35(3), 871-892.
11. Lyu, C., Jiang, Y., & Balaji, M. S. (2023). Travelers' Psychological Ownership: A Systematic Review and Future Research Agenda. *Journal of Travel Research*, 00472875231151395.