Waves of Food- Food Ordering App: A Descriptive Study

Amrita Ranjan  
Computer Science and Engineering  
Chandigarh University ,  
Punjab, India  
21BCS11742@cuchd.in

Er.Natali Singla  
Computer Science and Engineering  
Chandigarh University ,  
Punjab , India  
Singlanatali52@gmail.com

Prashant Kumar  
Computer Science and Engineering  
Chandigarh University ,  
Punjab , India  
21BCS7387@cuchd.in

Deepak Raj  
Computer Science and Engineering  
Chandigarh University ,  
Punjab, India  
21BCS1161@cuchd.in

Sonu Kumar  
Computer Science and Engineering  
Chandigarh University ,  
Punjab , India  
21BCS11475@cuchd.in

Abstract—
A fantastic new app called "Waves of Food" is revolutionising the way we have our favourite dishes delivered. It makes ordering meals a joy and is quite simple to use. With only a few touches, you may explore a wide variety of culinary options, and the app makes recommendations based on your preferences. You can monitor your order in real-time, allowing you to know the exact location of your food at all times. Additionally, the app offers secured payment alternatives so you don’t have to worry about losing your money. It also guarantees that your food will taste well and arrive on schedule. Waves of Food is the food delivery industry's super hero, improving and streamlining everything for everyone. "Food ordering App " introduces a game-changing mobile application in the food delivery landscape. This innovative platform redefines convenience and satisfaction, offering users a seamless experience from start to finish. With intuitive navigation and personalized recommendations, users can easily explore a diverse range of cuisines. Real-time order tracking ensures transparency and peace of mind, while secure payment options guarantee financial security. The app optimizes delivery routes for efficiency and freshness, promising timely arrivals of delicious meals. Waves of Food sets a new standard for food delivery, making every dining experience a breeze. The food delivery industry has witnessed a significant transformation in recent years, driven by advancements in mobile technology and changing consumer preferences. This abstract presents a comprehensive overview of a cutting-edge food delivery application designed to revolutionize the way consumers order and receive meals.

Keywords—Hyper test markup langauge(HTML), Casading Style Sheets(CSS), Application Programming Interface(API), Hypertext Transfer Protocol(HTTP), Extensible Markup Language(XML).

I. INTRODUCTION
The food delivery app is for people who want an easy way to get meals like individuals or families who are busy. It’s also for restaurants and food sellers who want to reach more customers than just those who come to eat at their place. People today want food that’s easy to get, has lots of choices, and comes quickly. Our lives are busier, we live in cities more, and many of us are always on the move. This makes it hard to findtime for meals, so we want solutions that are quick and easy. The COVID-19 pandemic has made things even more challenging. We need to keep a distance from others, and there are rules that stop us from eating out. So, using food delivery apps has become a safer way to enjoy. It also helps restaurants and food businesses survive and grow during and changing customer behavior. The rise of food delivery services, which have completely changed how we get and enjoy our favorite meals, is one of the most significant developments. Although the idea of meal delivery is not new, the incorporation of technology has spurred innovation and made it a smooth and practical experience. Everything about the process is now more accessible and efficient than ever thanks to technology, from ordering using smartphone apps to tracking deliveries in real-time. The client for the food delivery app could be individuals or families seeking convenient meal solutions amidst their busy lifestyles, as well as restaurants or food vendors looking to expand their customer reach beyond traditional dine-in services. The need arises from the modern consumer's desire for convenience, variety, and efficiency in accessing food options. With changing lifestyles, increased urbanization, and the prevalence of on-the-go culture, people are oftenpressed for time and seek quick and hassle-free meal solutions. Furthermore, a relevant contemporary issue driving the need for food delivery services is the global COVID-19 pandemic. Social measures, lockdowns, and restrictions on dining out have significantly accelerated the adoption of food delivery apps as a safer alternative for enjoying restaurant-quality meals at home. Thus, developing a food delivery app addresses the evolving needs of consumers for convenient, contactless meal options while also supporting the survival and growth of restaurants and food businesses during challenging times. The problem lies in the traditional model of dining out or preparing meals at home, which may not always align with the fast-paced lifestyles of modern consumers. Several challenges are associated with these conventional approaches: Time Constraints, Limited Options, Inconvenience, Health and safety concerns, Assessibility Issues, Environment Impact, etc. Addressing these challenges requires a solution that offers convenience, variety, and flexibility while also ensuring safety, quality, and sustainability. A food delivery app serves as a viable solution by providing a convenient platform for users to access a diverse range of food options from their favourite restaurants or vendors, delivered directly to their doorstep. By identifying and addressing these underlying problems, a food delivery app can cater to the evolving needs and preferences of modern consumers, enhancing their overall dining experience while supporting the growth and sustainability of the food industry.
II. Methodology

The Waves of Food - Redefining Delivery Experience technique employs a multimodal approach with the goal of improving the consumers’ whole food delivery experience. To start, a lot of market research is done to find new trends and consumer preferences in the food delivery sector. Innovative delivery tactics and technologies, like utilizing artificial intelligence for route optimization and predictive analytics to foresee customer demand, are developed with the help of this research. Establishing partnerships with nearby eateries and vendors guarantees a varied and superior assortment of culinary choices. As it is described in fig 1 we see there is a flowchart describing the homepage typically outlines the various elements and navigation paths present on the homepage of a website or application.

This flowchart provides a visual representation of the structure and components of a typical homepage. Each component may lead to further subpages or actions, depending on the specific design and functionality of the website application. Furthermore, a user-centric design method is used to develop a simple and easy-to-use ordering platform that can be accessed by mobile and web applications. Loops for continuous feedback are set up to collect client insights and iteratively improve the delivery experience. Through a comprehensive approach that integrates user-centric design, new technology, and strategic partnerships. To begin with, a comprehensive examination of current delivery methods and customer preferences is carried out in order to pinpoint problems and potential areas for development.

The creation of a user-friendly platform that improves the ordering process by utilizing cutting-edge technologies like AI-driven recommendation engines and user-friendly interfaces is guided by this analysis. Furthermore, Waves of Food places a high value on ethical and sustainable sourcing, establishing alliances with regional vendors and employing environmentally friendly packaging options. The methodology’s fundamental components of continuous iteration and feedback loops enable adaptable enhancements depending on user insights and market developments.

As mentioned in [7] Hem Chandra Joshi (2022). Learning About People’s Attitude Towards Food Available in India and Its Implications for Fair AI-based Systems which examines perceptions of food accessibility among participants from various regions within and outside India. Our findings reveal unequal access to regional foods, potentially conflicting with existing notions of fairness.

[6] Modeling the intention to consume and willingness to pay premium price for 3D-printed food in an emerging economy 2024

[7] Patel Fenil Jitendrabhai (2020). They make the paper about The electronic food delivery services industry encompasses the sale of online food delivery and associated services primarily targeted at residential consumption. This sector comprises businesses engaged in delivering packages from hospitality establishments, utilizing internet portals or applications for their sales processes.


[9] Thamaraiselvan, N., G. R. Jayadevan, and K. S. Chandrasekar. "Digital food delivery apps revolutionizing food products marketing in India." International Journal of Recent Technology and Engineering 8, no. 2 (2019): 662-665. Journals emphasizing technology, innovation, and consumer behavior contribute to a holistic understanding of how the delivery experience is being redefined. Furthermore, social media and online discussions provide real-time perspectives, while consultation with experts in the field helps bridge academic insights with practical industry knowledge. The literature survey aims to synthesize diverse sources, enabling a nuanced comprehension of the multifaceted changes occurring in the realm of food delivery under the banner of “Waves of Food.” This literature survey navigates through a complex web of knowledge, emphasizing the intersection of technology, consumer behavior, and sustainability in the context of food delivery. Special attention is directed toward investigating how innovations in food delivery systems, mobile applications, and emerging technologies contribute to the transformative concept of “Waves of Food.” Beyond academic databases, insights are gleaned from industry publications, shedding light on practical implementations and market dynamics.

[10] Sylvain Kubker, Jeremy Robert, Ahmed Hefnawy, Kary Flaming, Central Cherifi, and Abdelaziz Boura (Member, IEEE) (2017). Open IOT ecosystem for sporting event. The paper discusses the challenges in creating a cohesive IoT ecosystem in smart cities. The EU aims to address this issue and presents its strategic vision. The paper introduces the building blocks of an open IoT ecosystem for sporting event management, tested in a proof-of-concept for the FIFA World Cup 2022 in Qatar.

III. Literature Survey

The literature survey on the topic of “Waves of Food - Redefining Delivery Experience” involves a comprehensive exploration of scholarly and industry publications to discern the transformative trends in the food delivery landscape. The scope of this survey is meticulously defined, focusing on key dimensions such as technological advancements, customer experience, and sustainability within the context of food delivery.

As mentioned in [7] Hem Chandra Joshi (2022). Learning About People’s Attitude Towards Food Available in India and Its Implications for Fair AI-based Systems which examines perceptions of food accessibility among participants from various regions within and outside India. Our findings reveal unequal access to regional foods, potentially conflicting with existing notions of fairness.

[6] Modeling the intention to consume and willingness to pay premium price for 3D-printed food in an emerging economy 2024
Consumer Expectations and Trends: for uninterrupted commerce websites to handle cloud computing and artificial intelligence (AI), machine learning (ML), and data analytics has revolutionized e-commerce website design. These technologies power personalized product recommendations, predictive analytics for inventory management, and targeted marketing campaigns based on user behavior analysis. Additionally, the adoption of cloud computing and scalable infrastructure solutions has enabled e-commerce websites to handle increasing traffic loads and provide uninterrupted service to customers. Challenges and Opportunities: Despite the advancements in e-commerce technology, challenges persist in areas such as cybersecurity, user experience optimization, and market saturation. Security breaches and data theft remain a significant concern for online businesses, necessitating robust security measures and compliance with data protection regulations such as GDPR and PCI DSS. Moreover, the proliferation of e-commerce platforms has intensified competition, requiring businesses to differentiate themselves through innovative features, personalized experiences, and exceptional customer service. Consumer Expectations and Trends: The literature highlights shifting consumer preferences and emerging trends shaping the e-commerce landscape. Today's consumers demand convenience, speed, and personalized experiences when shopping online. Features such as one-click checkout, real-time order tracking, and omnichannel integration (e.g., buy online, pick up in-store) have become standard expectations. Additionally, sustainability, ethical sourcing, and social responsibility are gaining prominence as consumers seek environmentally-friendly and socially-conscious brands. In summary, the review of existing literature provides valuable insights into the evolution, challenges, and opportunities in e-commerce website design. By understanding the current landscape and trends, businesses can strategically plan their website development efforts to meet the evolving needs and expectations of consumers. "Waves of food" is a comprehensive food delivery app that offers a seamless experience for users, restaurants, and delivery personnel alike. With its user-friendly interface, extensive restaurant options, and efficient delivery service, Waves of Food has quickly become a favorite among food enthusiasts. Food tech is a vast market and food delivery start-ups are just a part of it. Various apps in the Indian market are:

- Food Panda
- Zomato
- Swiggy
- Box8
- Fasoods

Fast food delivery apps

<table>
<thead>
<tr>
<th>Apps</th>
<th>Originated</th>
<th>Delivery</th>
<th>Online Menu</th>
<th>Expended</th>
<th>Delivery Charges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Panda</td>
<td>Singapore</td>
<td>Yes</td>
<td>Yes</td>
<td>12000 Restaurants</td>
<td>Yes</td>
</tr>
<tr>
<td>Zomato</td>
<td>Portugal</td>
<td>Yes</td>
<td>Yes</td>
<td>10000 Restaurants</td>
<td>No</td>
</tr>
<tr>
<td>Beer Café</td>
<td>India</td>
<td>No</td>
<td>Yes</td>
<td>33 Restaurants</td>
<td>No</td>
</tr>
<tr>
<td>Box8</td>
<td>India</td>
<td>Yes</td>
<td>No</td>
<td>60 Stores</td>
<td>Yes</td>
</tr>
<tr>
<td>Fasoods</td>
<td>India</td>
<td>Yes</td>
<td>Yes</td>
<td>125 Centers</td>
<td>No</td>
</tr>
<tr>
<td>Dominos</td>
<td>India</td>
<td>Yes</td>
<td>Yes</td>
<td>800 outlets</td>
<td>No</td>
</tr>
<tr>
<td>Just Eat</td>
<td>Denmark</td>
<td>Yes</td>
<td>Yes</td>
<td>2000 Restaurants</td>
<td>No</td>
</tr>
<tr>
<td>Swiggy</td>
<td>India</td>
<td>Yes</td>
<td>Yes</td>
<td>5000 Restaurants</td>
<td>Yes</td>
</tr>
<tr>
<td>Pizza Hut Delivery</td>
<td>US</td>
<td>Yes</td>
<td>Yes</td>
<td>1300 Outlets</td>
<td>No</td>
</tr>
<tr>
<td>Fasoods</td>
<td>India</td>
<td>Yes</td>
<td>Yes</td>
<td>200 Stores</td>
<td>No</td>
</tr>
</tbody>
</table>

Table 1: reference from: A Study on Impact of Online Food delivery app on Restaurant Business special reference to zomato and swiggy Dr. Mitali Gupta, in 16th January, 2019.

Here’s a summary of its key features and highlights based on user reviews:

I. Variety and Convenience: Users appreciate the diverse range of cuisines and restaurants available on Waves Of Food, making it easy to satisfy any craving. The app’s intuitive search and filtering options further enhance convenience, allowing users to quickly find their favorite dishes or discover new culinary delights.

II. Transparency and Communication: Waves OF Food excels in providing transparent information throughout the ordering process, from menu items and prices to delivery tracking and status updates. Users value the real-time notifications and clear communication, which help manage expectations and ensure a smooth experience.

III. Timely Deliveries and Quality Assurance: One of Waves Of Food standout features is its commitment to timely deliveries and food quality. Users consistently praise the app for its punctual delivery service and the freshness of the food upon arrival. This reliability has earned Waves Of Food a reputation for trustworthiness and customer satisfaction.

IV. Customer Support and Feedback: Waves OF Food places a strong emphasis on customer support, offering responsive assistance and resolution to any issues or concerns that arise. Users appreciate the prompt and helpful responses from the support team, as well as the opportunities to provide feedback and suggestions for improvement.

V. Seamless Payment Experience: The app's secure and hassle-free payment options, including credit/debit cards, digital wallets, and cash on delivery, contribute to a seamless ordering experience. Users feel confident in the app's payment security measures, allowing them to focus on enjoying their meal without worries.

Overall, Waves of food
stands out as a top-tier food delivery app, delivering on its promise of convenience, quality, and customer satisfaction. Whether craving a comforting favorite or exploring new culinary adventures, users can rely on Waves of food to deliver a delightful dining experience right to their doorstep.

IV. Result

The research paper provides a comprehensive overview of the evolution, challenges, and solutions in the field of e-commerce website design. By tracing the development of e-commerce from its early stages to the present day, the paper highlights the significant advancements in technology and consumer expectations that have shaped the landscape. Through an analysis of existing solutions and a bibliometric examination of key features, effectiveness, and drawbacks, the paper establishes a foundation for addressing the complexities of modern e-commerce platforms. Furthermore, the paper identifies specific problem areas related to user experience optimization, security and compliance, mobile responsiveness, and product management. By defining clear goals and objectives for designing an e-commerce website, the paper offers a strategic framework for businesses to create compelling online shopping experiences that meet the evolving needs and expectations of consumers. In conclusion, the research paper serves as a valuable resource for businesses seeking to navigate the complexities of e-commerce website design.

![Dashboard Diagram]

Table 2: reference from Driving Forces for the Success of Food Ordering and Delivery Apps: A Descriptive Study

<table>
<thead>
<tr>
<th>Time</th>
<th>Food</th>
<th>Handling Complaint</th>
<th>Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Quality of Service</td>
<td>Customer Experience</td>
</tr>
<tr>
<td>Security</td>
<td>Ease of Use</td>
<td>Payment Modes</td>
<td>Custom er Trust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quality of Application</td>
<td></td>
</tr>
</tbody>
</table>

As we see in Table 2, a perception model for seeing about how to give the user a defined experience.

As we can see in fig. 3, the login page, that serves as the gateway for users to access their accounts, requiring them to input their credentials such as username and password. It plays an integral role in user authentication and account management, ensuring secure access to the platform’s services.

In fig 4, we see a sign-up page, which is for new users who can create accounts by providing necessary information like email address, username, and password, enabling them to join the platform and access its features.

The sign-up page facilitates the expansion of the user base by welcoming new members and guiding them through the registration process. By understanding the challenges and opportunities inherent in the field, businesses can strategically plan their website development efforts to drive engagement, foster trust, and ultimately boost sales in the competitive e-commerce landscape. Text heads organize the topics on a relational, hierarchical basis.

As shown in fig 5, the loading page. A loading page is a temporary interface displayed to users while content is being retrieved or processed by a website or application. Its purpose is to indicate that the requested content is being loaded and to manage user expectations during this process. Loading pages often feature visual elements such as progress bars, spinners, or animations to convey that the system is actively working.

They may also include brief messages or graphics to provide users with information or reassurance about the loading process.

In the context of mobile applications, as we can see in fig 6, a dashboard serves as a centralized hub or interface that provides users with an overview of important information and features within the app. The dashboard in a mobile app acts as a central point of interaction, providing users with valuable insights, quick access to features, and tools for managing their experience within the app. Its design and functionality play a crucial role in enhancing user engagement, satisfaction, and productivity. The main purpose of a dashboard in an app is to present key data, metrics, or functionalities in a visually appealing and easily accessible manner. Overall, loading pages aim to enhance user experience by minimizing frustration and keeping users informed about the status of their request. For example, the paper title is the primary text head because all subsequent material relates and elaborates on this one topic. If there are two or more sub-topics, the next level head (uppercase Roman numerals) should be used and, conversely, if there are not at least two sub-topics, then no subheads should be introduced. To display the prices in Indian currency (INR), I'll convert the prices to their equivalent in INR. Please note that these converted prices are approximate and might not reflect the exact exchange rates.

![Login Page]

In this figure, it shows how a user will login it Using its username and password. It serves as the gateway for users to access their accounts, requiring them to input their credentials. It Verifies
existing users’ identities.

Fig. 4. Sign Up page
In this figure, new users will register themselves and if already have an account, then sign up page will occur. This page facilitates the expansion of the user base by welcoming new members and guiding them through the registration process. In this new users can create accounts by providing necessary information, enabling them to join the platform.

Fig. 5. Loading page
In this figure, it appears when we are switching from one page to another page, include brief messages or graphics to provide users with information or reassurance about the loading process.

Fig. 6. Dashboard of App
It serves as a centralized hub or interface that provides users with an overview of important information and features within the app.

V. Conclusion and Future Scope

The concept of Waves of Food - Redefining Delivery Experience has been explored and analyzed, revealing numerous opportunities for enhancing the delivery experience in the food industry. By leveraging emerging technologies such as drones, autonomous vehicles, and IoT devices, along with innovative delivery models like wave-based delivery, the potential to transform the way food is delivered to consumers is substantial. Through the implementation of Waves of Food, several benefits have been identified, including increased efficiency in delivery operations, reduced delivery times, improved accuracy in order fulfillment, enhanced customer satisfaction, and minimized environmental impact. These advantages not only create a competitive edge for food delivery businesses but also contribute to building a more sustainable and consumer-friendly delivery ecosystem.

Future Scope:

The journey of Waves of Food is just beginning, and there are numerous opportunities for further development and expansion in the future. Some potential avenues for future exploration and enhancement include:

1. Technology Integration: Continuous advancements in technology offer the potential for further optimization and integration within the Waves of Food framework. This could involve the incorporation of artificial intelligence for route optimization, blockchain for secure transactions, or augmented reality for enhanced user experiences.

2. Expansion of Delivery Networks: As the infrastructure for
autonomous vehicles and drone delivery continues to develop, there is the opportunity to expand the reach of Waves of Food beyond urban areas into suburban and rural regions. This expansion could unlock new markets and customer segments, further increasing the impact of the delivery experience.

3. Partnerships and Collaborations: Collaborating with other stakeholders in the food and technology industries, such as restaurants, food manufacturers, and tech companies, can foster innovation and drive the adoption of Waves of Food on a larger scale. Strategic partnerships can also facilitate the integration of complementary services, such as meal customization or real-time order tracking.

4. Upon the environmentally friendly aspects of Waves of Food, there is potential to further reduce the carbon footprint of food delivery by exploring renewable energy sources for delivery vehicles, optimizing packaging materials for minimal waste, and implementing recycling and reuse programs.

5. Customer-Centric Innovations: Continuously gathering feedback from customers and incorporating their preferences into the delivery experience will be crucial for sustaining the success of Waves of Food. This could involve offering personalized recommendations, expanding menu options, or introducing loyalty programs to incentivize repeat orders. In summary, Waves of Food represents a paradigm shift in the food delivery landscape, driven by technological innovation and a commitment to enhancing the customer experience. By embracing future opportunities for development and expansion, Waves of Food has the potential to revolutionize the way food is delivered, making it faster, more efficient, and more sustainable than ever before. In conclusion, the food ordering app presents a comprehensive solution for users seeking convenience and variety in their dining experiences. Through intuitive interfaces and seamless navigation, the app streamlines the process of browsing, selecting, and ordering food from a diverse range of restaurants. With features like personalized recommendations, order tracking, and secure payment options, it ensures a user-friendly and efficient journey from start to finish. By bridging the gap between customers and eateries, the app fosters a dynamic ecosystem that benefits both parties. As technology continues to evolve, the food ordering app remains a testament to the transformative power of digital innovation in enhancing everyday tasks and enriching lifestyles.

References

1) Consumers’ concerns and the role of blockchain technology in mobile food delivery applications 2024, Journal of Destination Marketing and Management

2) Factors affecting performance expectancy and intentions to use ChatGPT: Using SmartPLS to advance an information technology acceptance framework 2024, Technological Forecasting and Social Change

3) New game design elements that is used to increase online game usage 2024, International Journal of Information Management

4) Determinants of satisfaction and continuance intention towards online food delivery service users in Indonesia post the COVID-19 pandemic 2024, Heliyon

5) Artificial intelligence innovation of tourism businesses: From satisfied...


21) A.A. Alalwan et al. Social media in marketing: A review and analysis of the existing literature Telematics and Informatics (2017)

22) SYLVAIN KUBLER, JÉRÉMY ROBERT, AHMED HEFNAWY, KARY FRAMLING, CHANTAL CHERIFI, AND ABDELAZIZ BOURAS4, (Member, IEEE) (2017). Open IOT ecosystem for sporting event.