

## How FreeTechCafe Helped to Develop Flydel-Unique Online Food Delivery Solution

### **Abstract:**

The rapid development and innovation in software technology and its deep penetration in every industry have revolutionized how businesses operate. Apart from that, whether we know it or not, our daily life is also highly dependent on modern cutting-edge gadgets and software applications. Previously time-consuming chores have been reduced to digital checklists and can now be finished in minutes. In this context, Online food delivery services have contributed to a revolutionary movement in the food sector over the past several years.

Online food delivery sector has expanded at an exponential rate due to the convenience of having meals delivered straight to your door. The demand for cutting-edge software has grown in tandem with the popularity of online food delivery services.

This case study will talk about how FreeTechCafe has understood the critical challenges of the client and developed a unique food delivery application to cater to future needs. It will also discover the customized strategies and methodologies that came to be a smart, innovative, efficient, and conscious application.



### **Partner:**

FreeTechCafe Technologies is the new-gen market leader in providing automation services and technical support. They provide one-of-a-kind, industry-specific solutions to businesses all around the world and have been doing so for more than seven years. They invent what you envisage by bringing to life some of the most innovative custom-designed web and mobile applications. Their in-depth knowledge of cutting-edge technologies like process automation, mobile, and web app development, the internet of things, artificial intelligence, machine learning, and cloud computing helps provide unique solutions to customers.

### **The Client:**

The client is one of the fastest growing restaurant chain in India. With more than 50 outlets all over India, the company is well versed in delivering high quality foods which is loved by its wide customer base. Having a solid presence in food franchise industry for more than half a decade, the company wanted to expand its area of operations. Moreover, in this tech-driven era, the client wanted to boost its online presence and therefore, wanted to develop a food delivery application combining with cloud kitchen franchise model. This will help them to reach more customers and generate more revenue without incurring much expense.



## **The Product Flydel:**

Flydel is an online food delivery application with features to cater to every need of customers. Conceptualized in November 2021, when the world was still very new to the post-pandemic way of living, it was like other online food applications. But the ultimate aim is to be the first-of-its-kind food application with a new business model and design architecture. Its unique franchise business model has made this application one of its kind.

## **The Challenges:**

### **Struggled to attract customers:**

Post-pandemic, the online food delivery company was struggling to attract customers. Due to several other established organizations, it was highly difficult to gain the trust of the users.

### **High competition:**

As there were several well-known online food companies already existed and operated around brands, there was tough competition, leaving little to no space for local establishments. It was very difficult to penetrate the market and grow.







### **Difficult to manage high traffic:**

Managing customers during high traffic is a major challenge in this industry. Existing online food apps often struggle to maintain fast service during peak hours, impacting user satisfaction. Sudden surges in demand can cause system chaos, making it difficult to handle orders, inventories, and products effectively.

### **Slow map updates:**

Most of the conventional delivery apps use google maps to get the correct user location, calculate the fastest delivery path, and provide live delivery updates and tracking. These services of google are costly and even unable to query more than the throttle set by Google and this forced to reduce the map update frequency. This was creating customer frustration and, in turn, business loss.

### **Inefficient and costly readymade products:**

During the inception of Flydel, similar kinds of products were available in the market. But the cost was as high as 40% more than the actual cost, and despite such a high price, those were lagging some of the key features and performance. It created a crisis of efficient and cost-effective products.

### **High maintenance:**

Due to high availability concerns, maintenance and support charges were significantly higher, with the added risk of suspension of services.



## Goals:

The main focus of this project was to develop a food delivery app that would reach people who required premium delivery services quickly. In addition to this, the customer also wanted to support local businesses.

- Considering the market dynamics, another goal of the client was to create a tailored application in a quick manner. The delivery time was only 8 months, with one milestone delivery every 2 months. The project aimed to offer a competitive edge to the client in the industry.
- Looking into the vast opportunity, the aim was to offer a highly scalable product. As the business increases, the application should offer better service and experience to its users in high-traffic scenarios. Apart from this, with a larger franchise model, more customers, delivery partners, and users, the app must be responsive and efficient.
- This project targeted to develop such an efficient and multi-operational application that can also cater to branding and marketing needs. This means that the business owners will focus on the core activities of the company, and the application itself can take care of the other aspects.

- Apart from the above, the partners aimed to offer exceptional user experience by incorporating advanced features such as multi-lingual support, weather monitoring, and customized notifications in the application.

## **FreeTechCafe's Solution and Methodologies**

### **Involving Local players:**

To simplify the process, local cloud kitchens were incorporated and could bring out up to ten brands from a single kitchen. Later the deliveries were assigned based on the region and location. On the one hand, it empowered the local players and also helped to deliver food faster. Additionally, FreeTechCafe strategically selected tier 2 and tier 3 cities to support the business in those cities in terms of franchise and restaurants.

### **Dual Business Model:**

FreeTechCafe helped to establish a dual-business model, which was a win-win situation for both the cloud kitchen and the online food client. This model allows them to establish a distributed business architecture, and the partnering franchise owners get a two-fold income- one from their cloud kitchen through the application and multiple hotels of their franchise.





### **Stakeholder management:**

Another significant approach that was implemented was defining clear-cut roles and responsibilities of every channel partner. Stakeholders were clearly informed about their roles and responsibilities to avoid any ambiguity.

1. End User (Both Mobile and Web App)
2. Partners / Restaurant,
3. Delivery Executives (Mobile App)
4. Distributors or Franchise Owners
5. Admins

### **Multi-database application:**

To make the application more responsive and efficient, FreeTechCafe developed the product using three different types of databases- MySQL, Redis, and ElasticSearch. This design ensures the application delivers great performance even during high traffic. All types of data related to active order and user authentication or managed in Redis. Restaurant list, menu / catalogue, geo fencing is managed in elastic search, and MySQL database is used as data backbone

### **Introducing Geo-spatial Mechanism:**

FreeTechCafe integrated a Geo-spatial Mechanism into the application to ensure accurate and real-time location tracking. This high-accuracy system updates every ten seconds, enabling delivery executives to access precise location information easily. It facilitates real-time tracking for producers and users during pickup or delivery.





### **Inclusion of Microservices Architecture:**

To make the system scalable and flexible at the same time, FreeTechCafe used 24 different micro-services in this application. These micro-services were applied for different functions and then connected together on role based gateway. This helped to manage massive data & activities while at the same time improving efficiency.

### **Results and Advantages:**

**Cost savings:** As the delivery partners and producers get perfect location and real-time updates, the cost is significantly reduced to just a third in terms of logistics of what it would've been.

**Enhanced customer management:** Improved efficiency allowed the system to accept and process more than one lakh requests per hour with standard server infrastructure, increasing customer delight and revenue.

**Improved flexibility:** The unique franchise model elevated flexibility at every point. The online food company gained more customer base with little expense, and the cloud kitchen partner was also exposed to a larger source of income.







**Easy maintenance and zero downtime:** The microservice architecture approach guaranteed better performance and higher precision in maintenance. As different microservice works separately and finally connected to the gateway, any changes need to be made only to the sub-applications during maintenance. Even if a service fails, it can be accessed and repaired one at a time while the rest of the application continues to function without any hindrance.

**Better customer experience:** With advanced features like multi-language support, a weather monitoring system, Integrated payment gateways, and more, this unique application offers an exceptional user experience, which ultimately lifts the revenue.

**Other noteworthy advantages:**

- The implementation of multi-language support facilitates and encourages greater regional accessibility, benefiting both partners and users.
- The weather monitoring system plays a crucial role in determining delivery costs, anticipating potential delays, and temporarily suspending services during severe weather conditions.



- All stakeholders are able to perform their designated roles using a standard Android or iOS system that is compatible with the application. The web provides a means of accessing it without any additional infrastructure prerequisites.
- The system has been integrated with a notification feature that provides real-time updates via email and SMS.
- The payment gateways have been integrated to facilitate the seamless processing of all types of payments in India.
- The standard resource server configuration is capable of managing a maximum of 3000 orders per minute.
- All stakeholders can benefit from zero infrastructure costs.

### **Final Thoughts:**

Flydel aided an online food delivery company in overcoming operational challenges and enhance efficiency. It exemplifies the success of integrating cloud kitchens and digital delivery systems in the franchise model. The application manages orders even during peak traffic, tracks deliveries, facilitates communication, handles inventory, and offers an administrative interface.

FreeTechCafe developed a unique product in 8 months, continuously exploring new opportunities. Flydel improved delivery process transparency and customer satisfaction, giving the online food delivery company a first-step advantage in the market.

