

ABSTRACT

Cloud-Based Restaurant Management System

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The restaurant industry is constantly evolving with innovative technologies to help better cater towards consumers' preferences. The COVID-19 pandemic has played a significant role in shaping these consumer preferences. According to a survey by Bluedot, the pandemic has reduced the time a consumer is willing to wait for food from 10 minutes to 6 minutes. Currently there are many restaurant management solutions such as the Presto tablet, DoorDash, Uber Eats, OpenTable, and Toast, each with similar and varying functions. Consumers often must shuffle through multiple applications for food whether it be for dine-in, takeout, or delivery. 52% of consumers surveyed by the National Restaurant Association would like to see restaurants incorporate technology to make ordering and paying easier. Restaurants are often deterred from investing in these solutions for reasons such as cost of and ease of use, but to stay competitive, restaurants have no choice but to invest. According to research done by Toast, the average restaurant today offers five different ordering paths and seven different service models, with 74% of restaurants expected to increase their technology budget in 2023.

This project's purpose is to develop the foundations for an all-in-one restaurant management Software as a Service (SaaS) application backed by artificial intelligence to improve consumer experience and restaurant service quality. The application will utilize a microservice architectural style to ensure scalability and availability. While the concept of the application is not novel, it seeks to address some of the shortcomings of current solutions such as the need for multiple applications each with a different purpose. Additionally, a new challenge for the restaurant industry partly due to the COVID-19 pandemic is addressed: labor shortages. This application will hopefully serve as a good foundation for future expansion to further cater to the needs of not only restaurants, but any business, and most importantly, consumers.