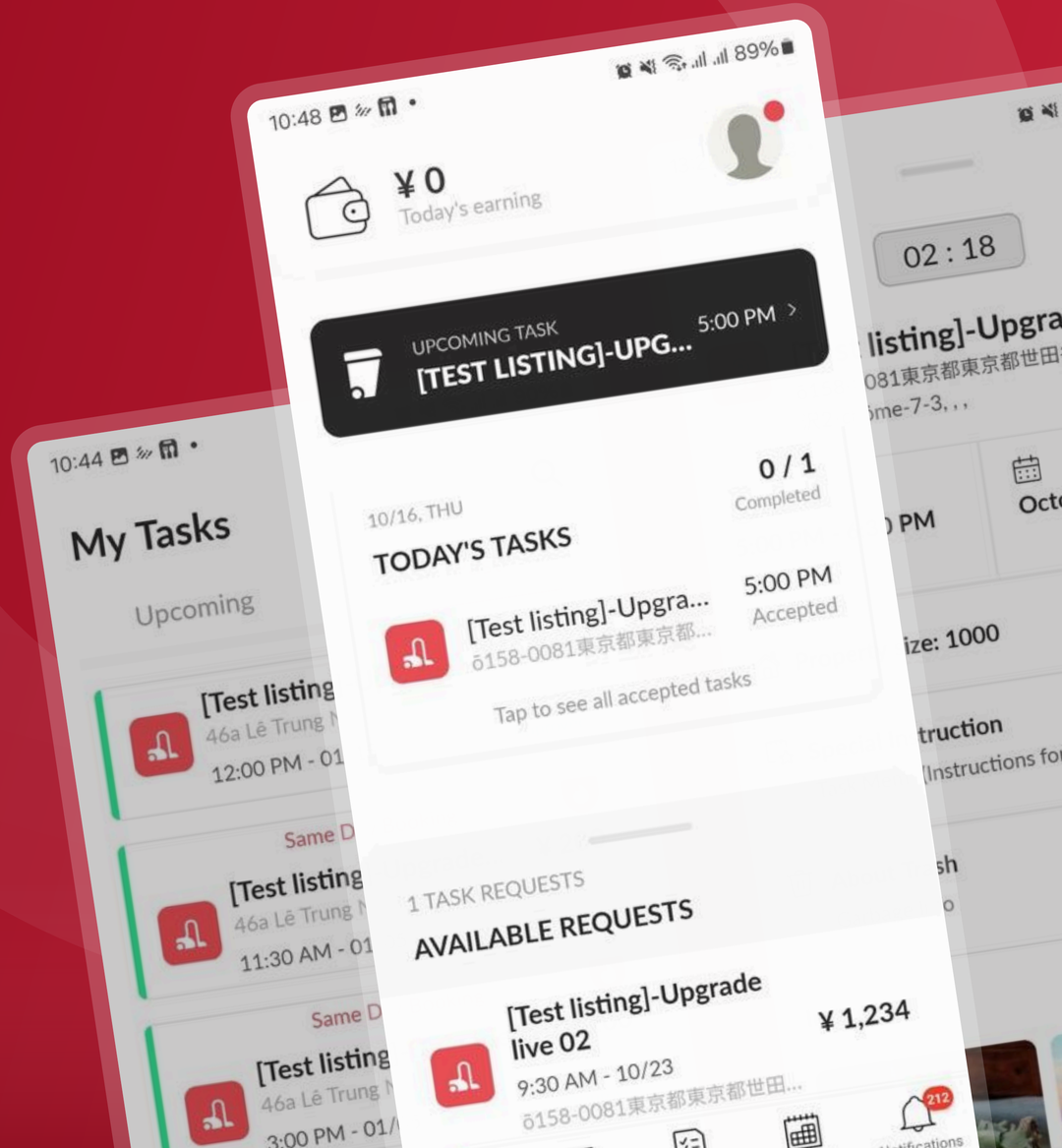
NUS Technology

CASE STUDY

Automating Hospitality: A Case Study on the Zens Ecosystem and NUS Technology’s Innovative Partnership

Client: **Unito**



Overview

The project was born from the vision of its founder, Ryoma, who saw a future where managing short-term rental properties was effortless. He saw firsthand how property managers were overwhelmed by the manual, repetitive tasks required to provide a great guest experience—from juggling bookings on multiple platforms like Airbnb and Booking.com to coordinating cleanings and managing key handovers. His goal was to create a fully integrated ecosystem that could automate the entire property management lifecycle, from booking to check-out.

- Industry
  Hospitality Tech / Property Management
- Market
  Japan
- Frontend
  jQuery, React, React Native, iOS
- Backend
  Ruby on Rails
- Database
  PostgreSQL
- Infrastructure
  AWS
- Integrations
  Airbnb API, Beds24 API, RemoteLock API, AWS Rekognition

THE CHALLENGE

A Fragmented and Labor-Intensive Workflow

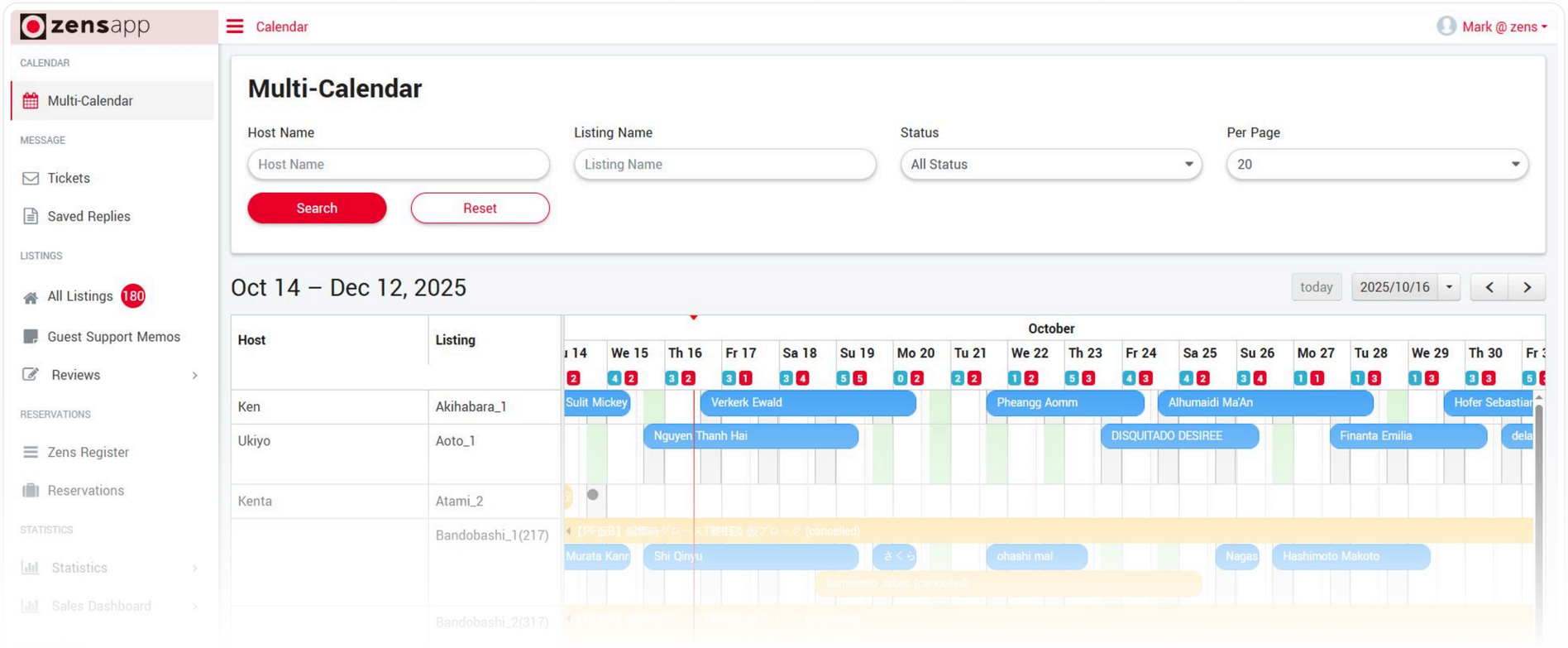
Without a unified system, property managers were buried in administrative work. Every booking required manual data entry, personalized guest messages, scheduling cleaners, and arranging check-ins. This fragmented process was not only time-consuming but also prone to human error, leading to double bookings, missed cleanings, and a disjointed experience for guests.

The core of their vision depended on aggregating booking data from major platforms, but they faced a critical initial obstacle: at the project's inception, Airbnb, the largest platform in the industry, did not offer an official API. This meant there was no standard way to programmatically access booking information, manage messages, or sync calendars, which put the entire project at risk.

THE SOLUTION

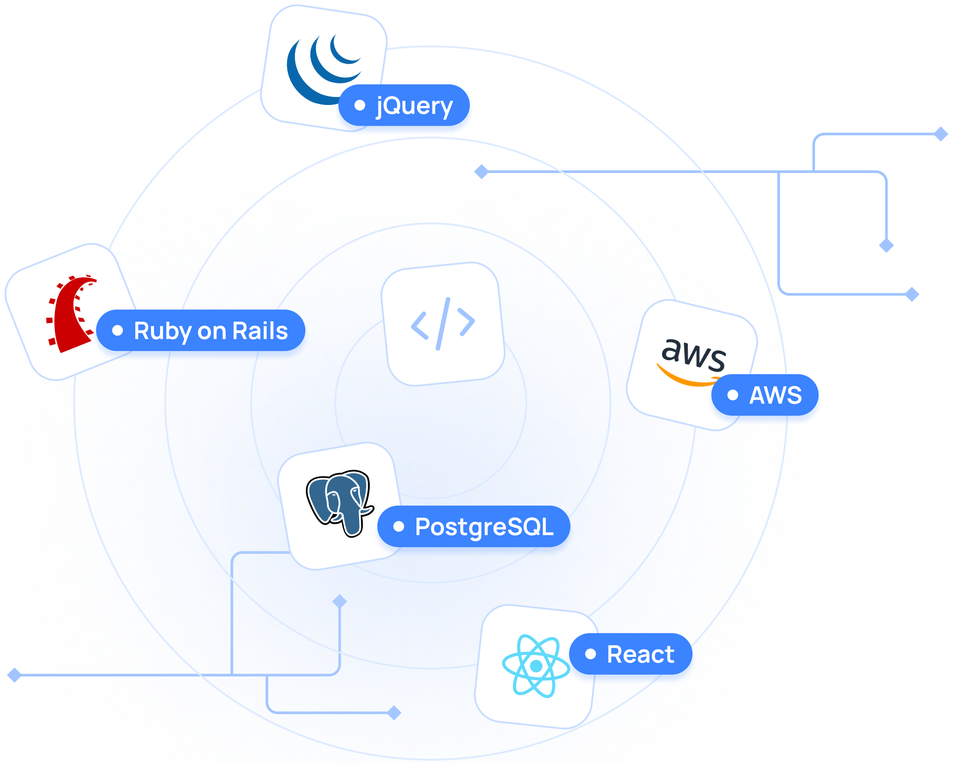
An End-to-End Automation Ecosystem

NUS Technology was brought in not just as a developer but as a strategic innovation partner. Working closely with Ryoma and his team, NUS Technology devised a plan to overcome the API challenge and build out the comprehensive Zens ecosystem. The entire project was managed remotely, utilizing an Agile methodology to ensure the flexibility needed to navigate a complex and evolving technical landscape.



Technology Stack & Architecture

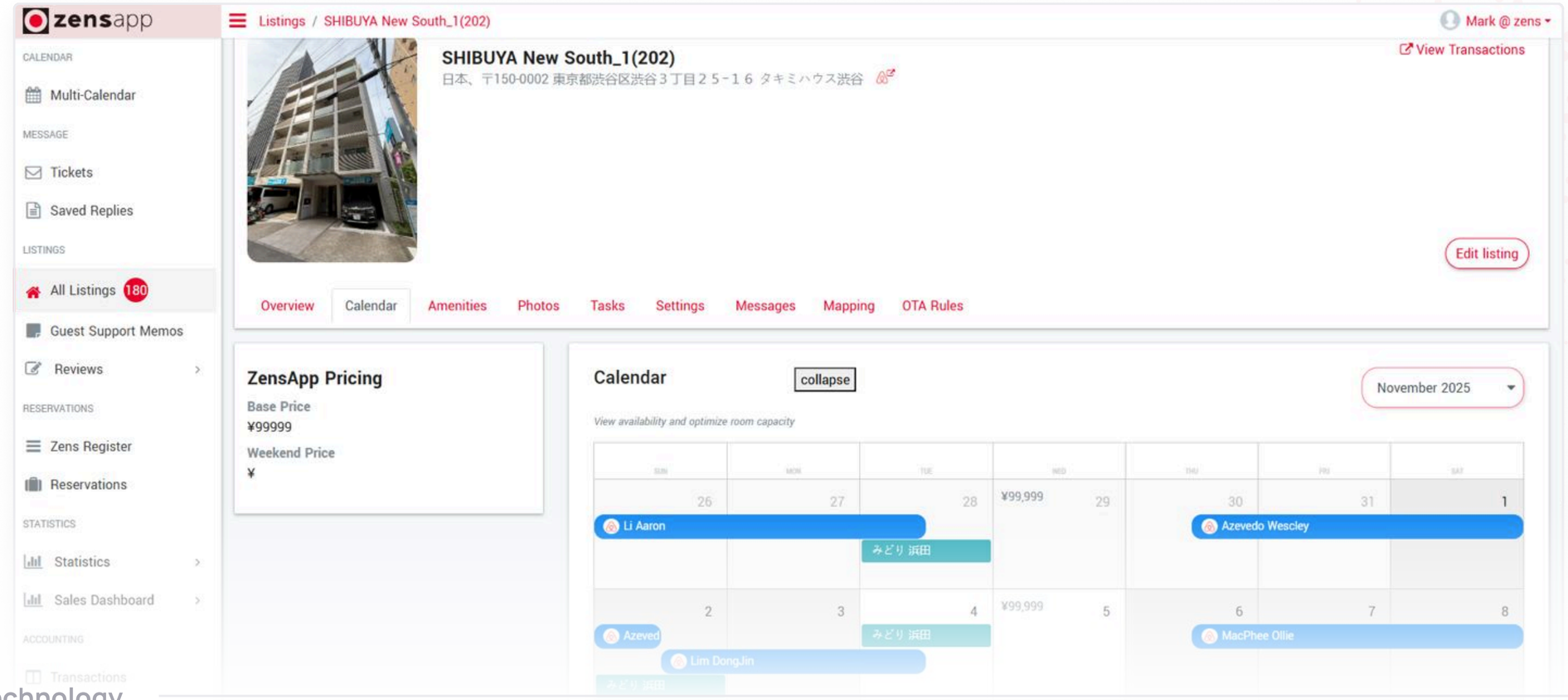
To support a multi-faceted ecosystem, the NUS team chose a powerful and scalable tech stack. **Ruby on Rails** was selected for the backend of all applications, providing a stable and secure foundation for the entire platform. The frontend was tailored to each product's unique needs: **jQuery** for the internal ZensApp dashboard, **React** for the interactive ZensTablet interface, and **React Native** and native **iOS** for the ZensWork and ZensTablet mobile apps, enabling robust performance. The entire infrastructure was built on **AWS**, ensuring high availability and scalability to support a growing client base.



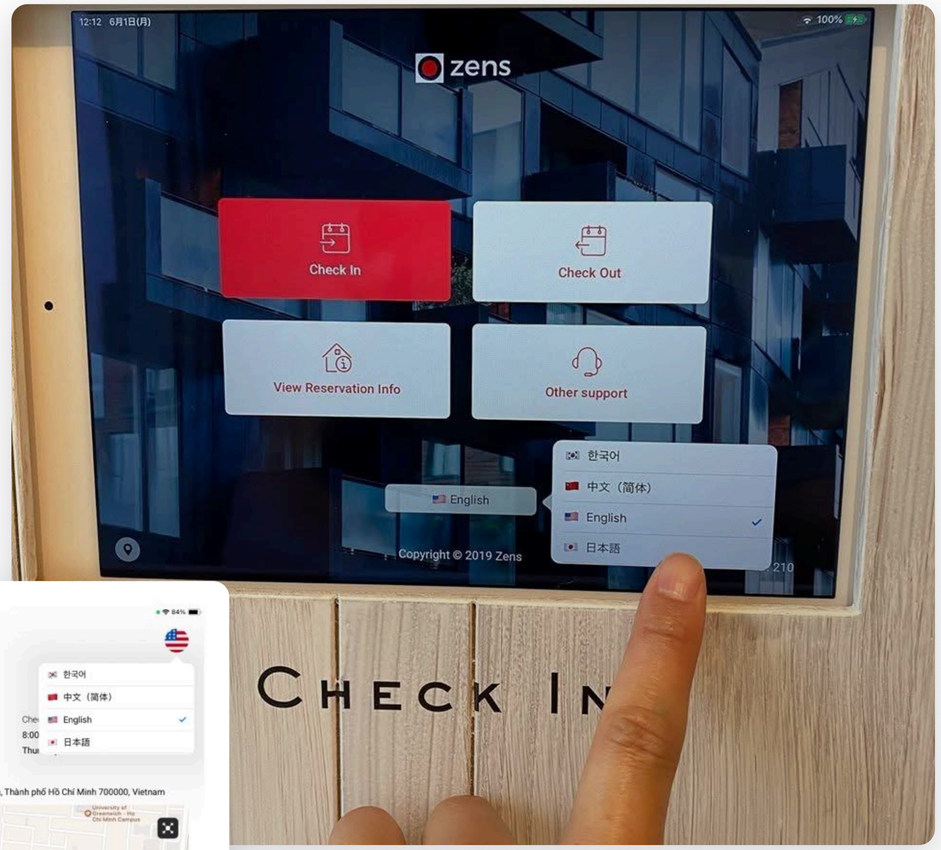
User-Centric Design

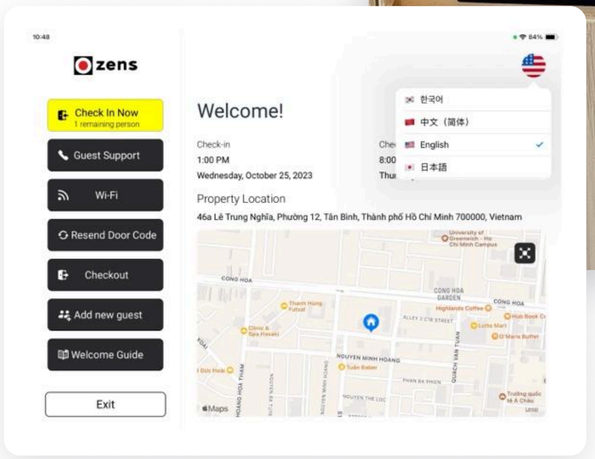
The Zens ecosystem was designed with distinct user experiences in mind:

- **ZensApp (For Property Managers):** A centralized command center that aggregates bookings from all channels.
  It provides managers with a comprehensive overview of operations, automates guest communication, and seamlessly integrates with the other Zens products.

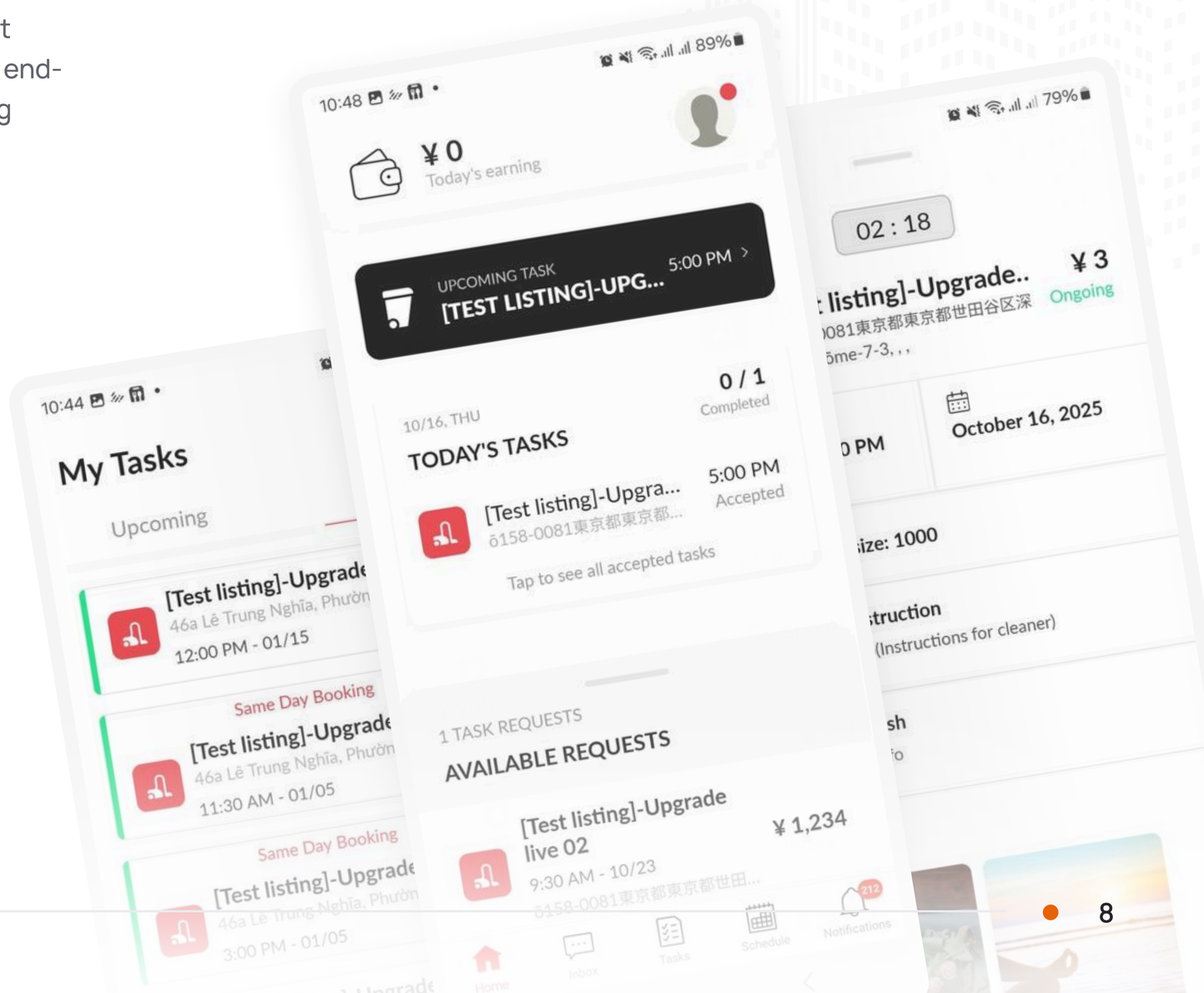


- **ZensTablet (For Guests):** Mounted at the property entrance, this tablet offers a futuristic, frictionless check-in experience. Using **AWS Rekognition**, it allows guests to check in via facial recognition, enhancing security and convenience.





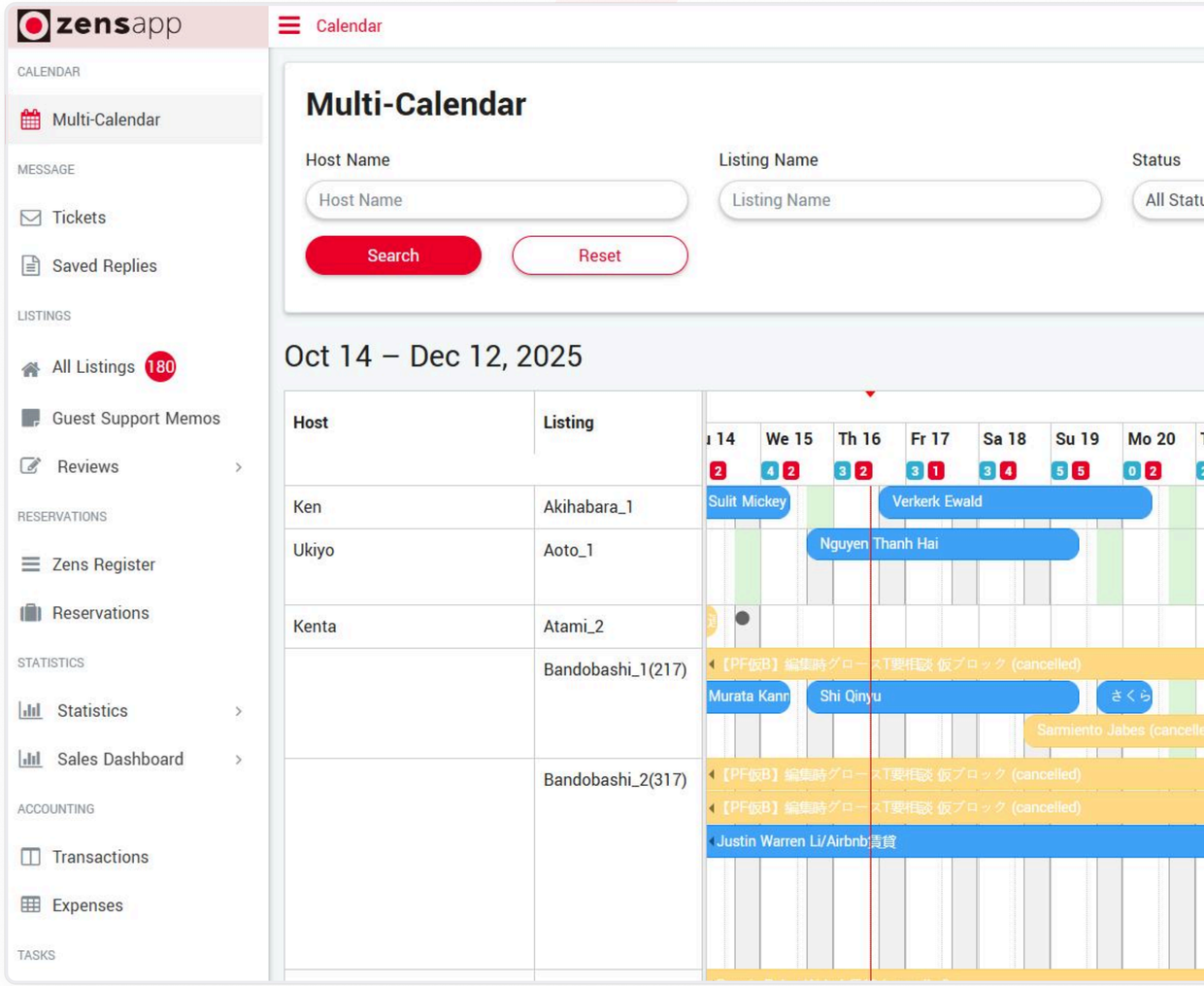
- **ZensWork (For Cleaning Staff):** A streamlined mobile app that automatically assigns cleaning jobs to staff based on booking end-dates. It provides all necessary details for each job, eliminating confusion and ensuring properties are always guest-ready.



Overcoming Technical Hurdles

The most significant challenge was the lack of an Airbnb API. To solve this, the NUS team engineered a sophisticated and resilient **web crawler**. This custom solution successfully navigated Airbnb's platform to extract booking details, host information, and even manage the message inbox. This innovation was the key that unlocked the potential of ZensApp, allowing it to function as a true central hub.

When Airbnb eventually released an official API, the system was seamlessly migrated, demonstrating the team's foresight and adaptable architecture. This solid foundation allowed for the integration of other cutting-edge technologies, including the **RemoteLock API** to generate unique, time-sensitive door codes for each guest and passport scanning technology to auto-fill guest registration forms.



THE RESULT

A Revolution in Property Management

The launch of the Zens ecosystem transformed property management for its clients. The platform delivered immediate and impactful results:

Drastic Reduction in Manual Work

By automating booking aggregation, guest messaging, and cleaner assignments, managers saved countless hours of administrative work, allowing them to focus on growing their business.

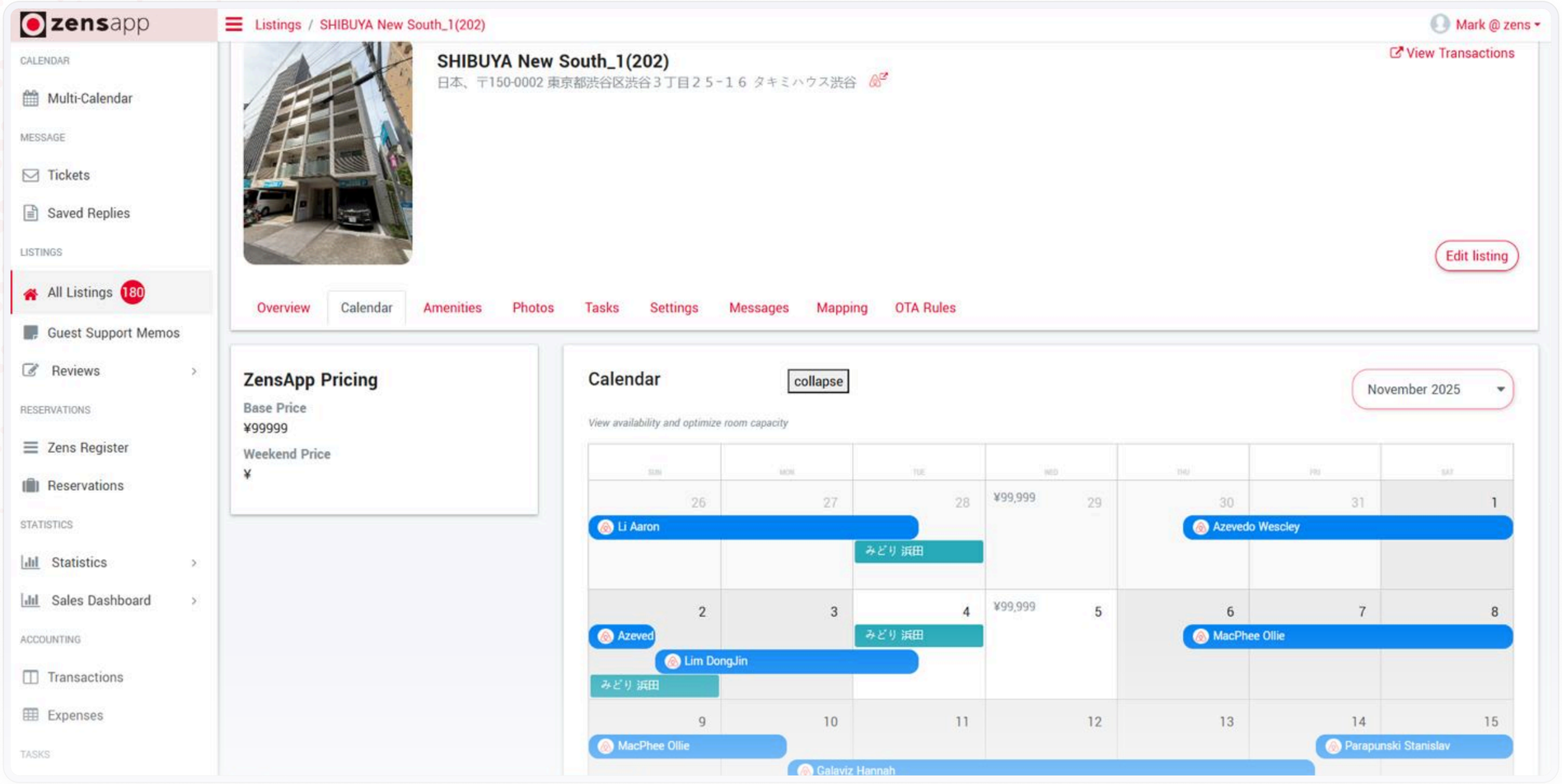
Enhanced Guest Experience

Guests enjoyed a seamless journey, from receiving automated instructions and pre-registering with ease to keyless entry and futuristic facial-recognition check-in.

Increased Operational Efficiency

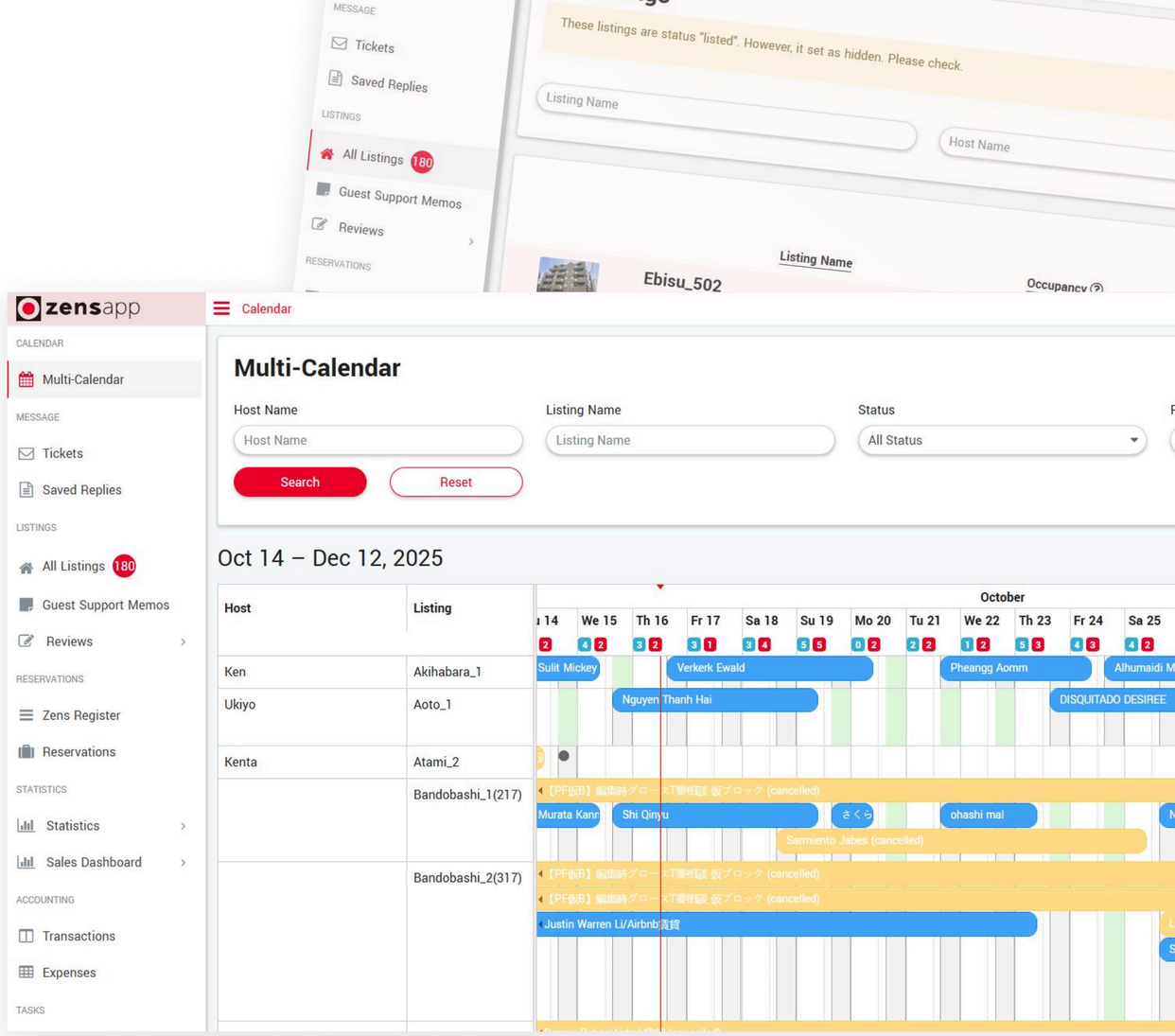
The automated workflow eliminated human error, prevented double bookings, and ensured 100% timely turnovers, improving operational reliability and guest satisfaction.

By partnering with NUS Technology, Unito successfully turned a bold vision into a market-leading product suite. This case study is a testament to NUS Technology's ability to solve complex technical challenges with creative solutions and deliver a robust, scalable, and revolutionary platform.



Conclusion

The successful partnership between Unito and NUS Technology highlights how innovative problem-solving can redefine an industry. By refusing to be blocked by the initial API limitation and instead engineering a creative workaround, they laid the groundwork for a truly comprehensive automation platform. The Zens ecosystem demonstrates NUS Technology's capability not just as a software developer, but as a technology partner capable of co-creating a complex, multi-product solution that solves critical business needs. Zens is now perfectly positioned to continue its growth as a leader in hospitality and property management automation.



THANK YOU

For Reading Our Case Study

Contact Us

Website
https://www.nustechnology.com/

Office Address
Level 3 & 3B, Scetpa Building, 19A Cong Hoa Street, Bay Hien Ward, Ho Chi Minh City, Vietnam

Email
info@nustechnology.com

Phone Number
+84 28 6296 7087

NUS Technology