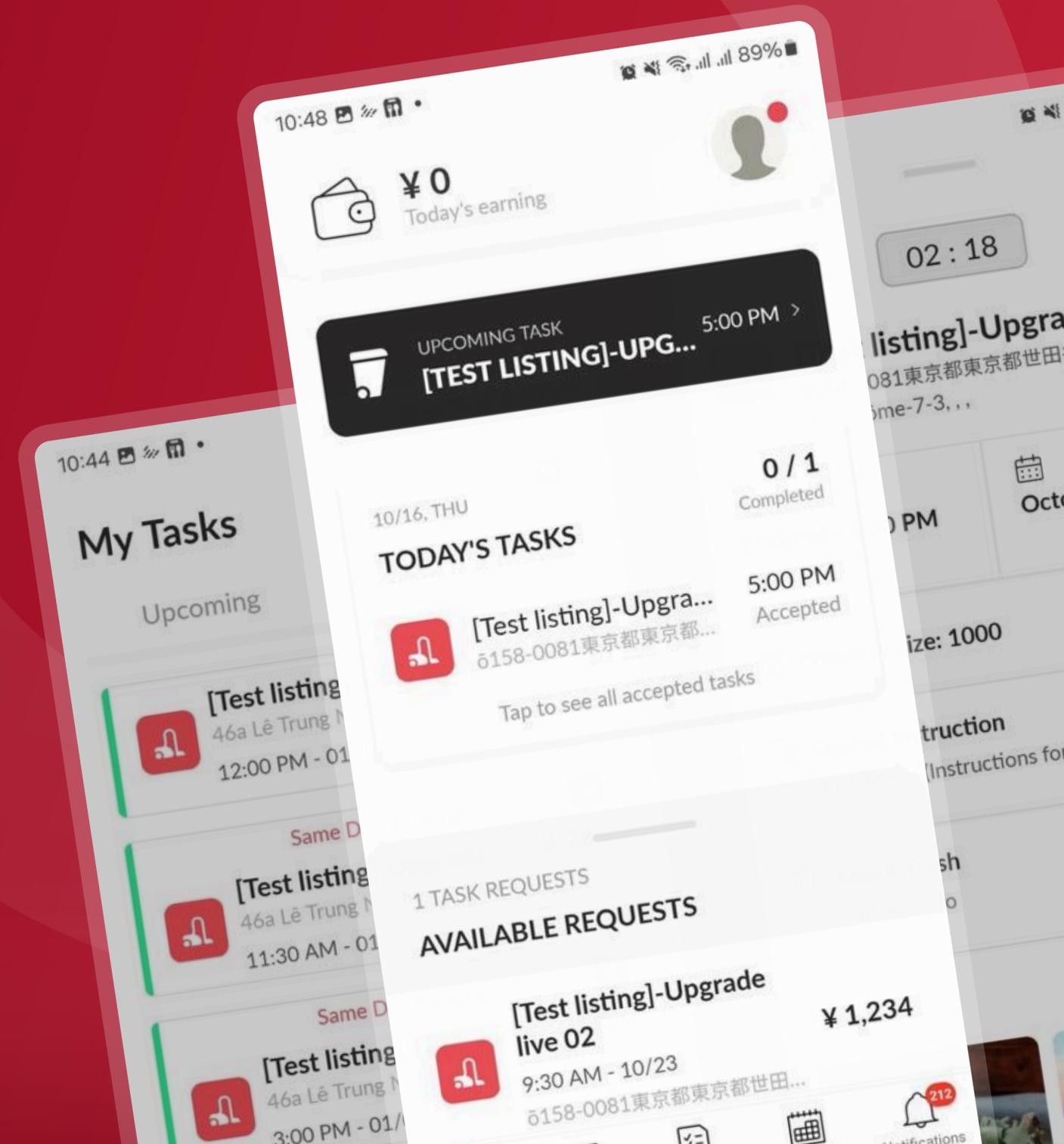


CASE STUDY

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.

The screenshot displays the 'zensapp' Multi-Calendar interface. The top navigation bar includes the 'zensapp' logo, a 'Calendar' menu, and a user profile 'Mark @ zens'. The left sidebar contains navigation options: CALENDAR (Multi-Calendar), MESSAGE (Tickets, Saved Replies), LISTINGS (All Listings with 180 items, Guest Support Memos, Reviews), RESERVATIONS (Zens Register, Reservations), and STATISTICS (Statistics, Sales Dashboard). The main content area is titled 'Multi-Calendar' and features search filters for Host Name, Listing Name, Status (set to 'All Status'), and Per Page (set to 20). Below the filters, the calendar view shows the period from Oct 14 to Dec 12, 2025, with a current date of 2025/10/16. The calendar grid displays reservations for various hosts and listings, including Ken (Akihabara_1), Ukiyo (Aoto_1), Kenta (Atami_2), and Bandobashi_1(217) and Bandobashi_2(317). Reservations are represented by colored bars with names like Sulit Mickey, Verkerk Ewald, Pheangg Aomm, Alhumaidi Ma'An, Nguyen Thanh Hai, DISQUITADO DESIREE, Finanta Emilia, Hofer Sebastian, Murata Kanr, Shi Qinyu, さくら, ohashi mal, Nagas, and Hashimoto Makoto. Some reservations are marked as cancelled.

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.

The screenshot shows the ZensApp interface for a property manager. The top navigation bar includes the ZensApp logo, a menu icon, and the current listing name 'SHIBUYA New South_1(202)'. The sidebar on the left contains navigation options: CALENDAR (Multi-Calendar), MESSAGE (Tickets, Saved Replies), LISTINGS (All Listings 180, Guest Support Memos, Reviews), RESERVATIONS (Zens Register, Reservations), STATISTICS (Statistics, Sales Dashboard), and ACCOUNTING (Transactions). The main content area displays a listing for 'SHIBUYA New South_1(202)' with a photo and address. Below the listing is a pricing section and a calendar view for November 2025 showing bookings for various guests.

ZensApp Pricing

Base Price
¥99999

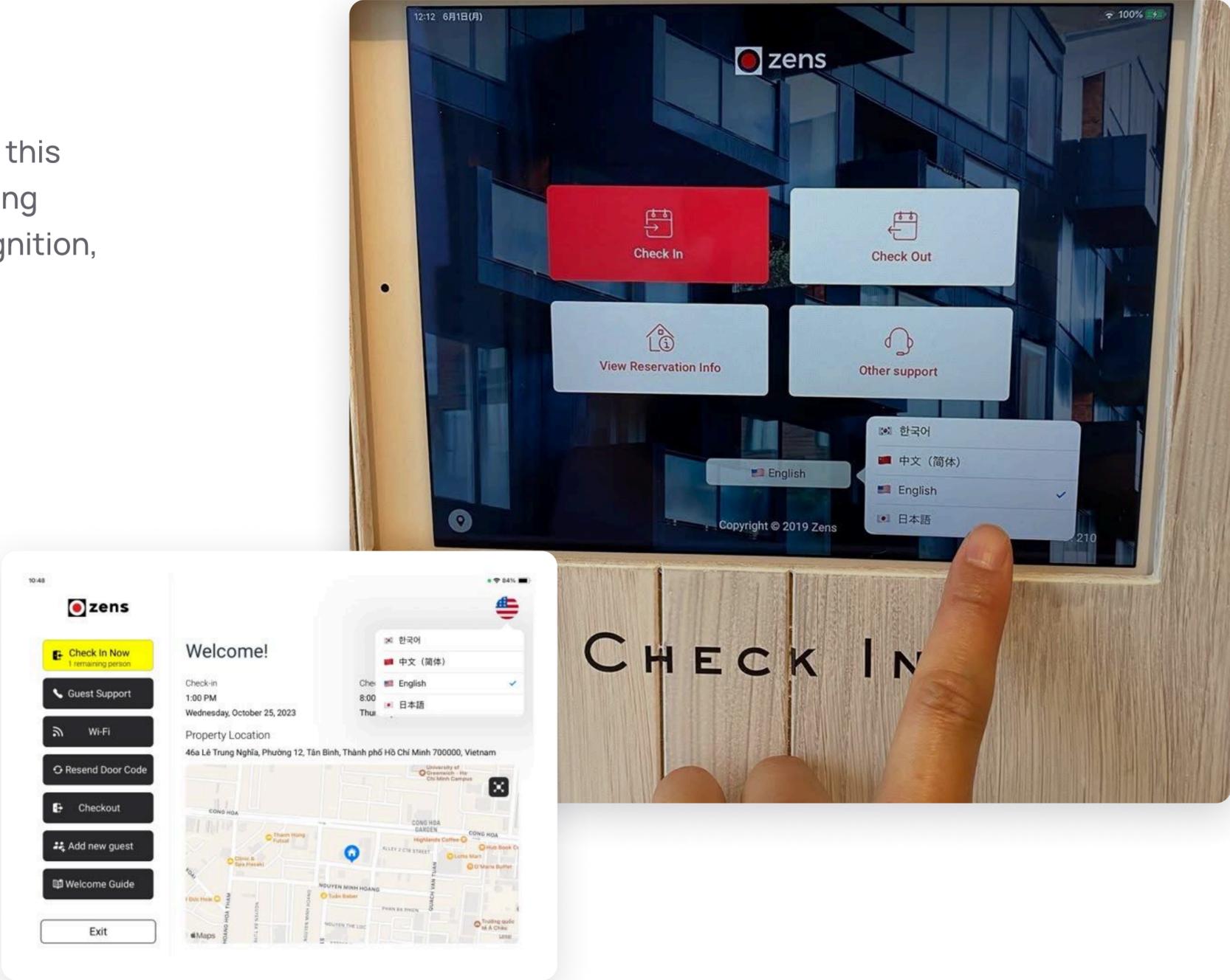
Weekend Price
¥

Calendar (collapse) November 2025

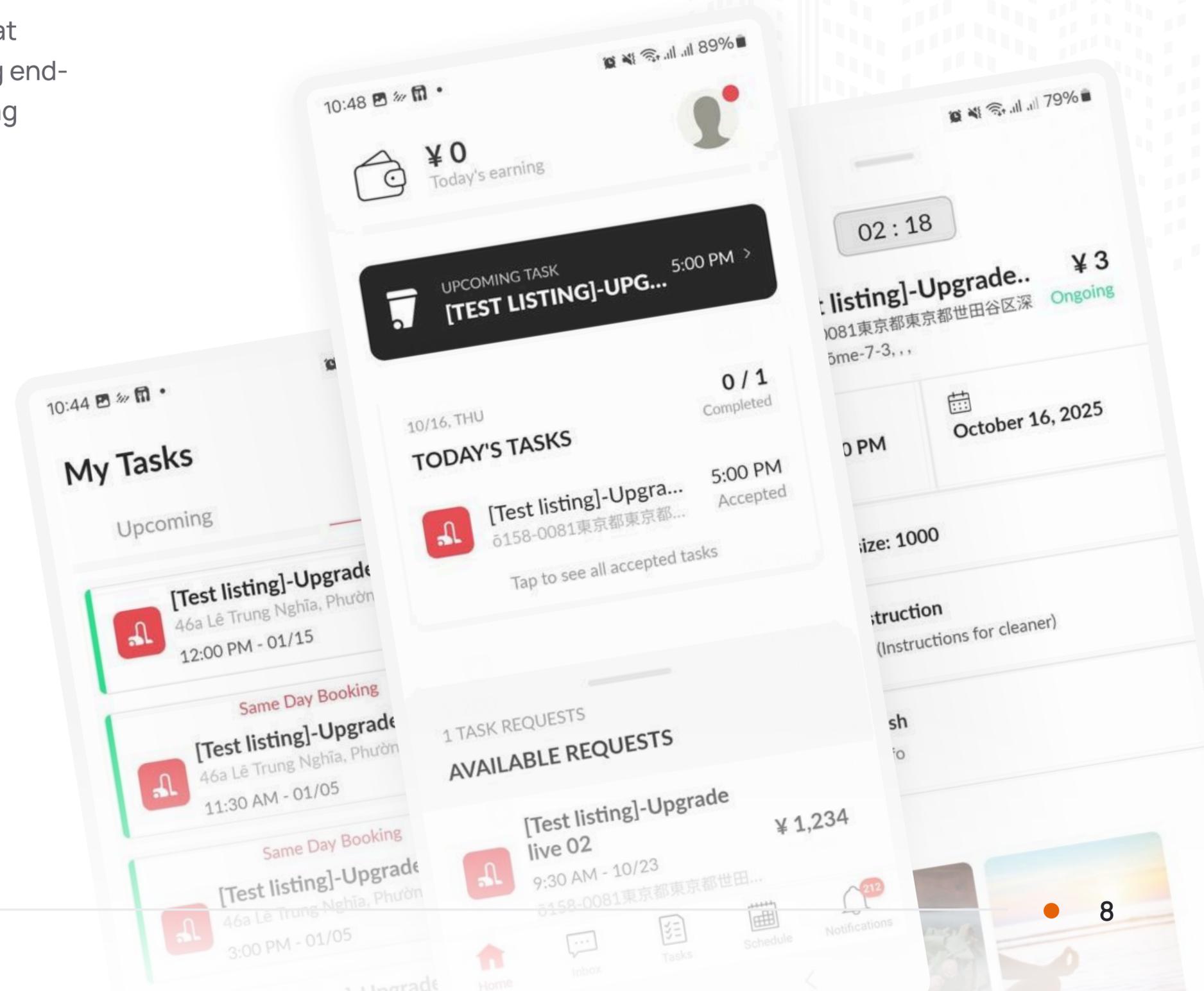
View availability and optimize room capacity

SUN	MON	TUE	WED	THU	FRI	SAT
26	27	28	¥99,999	29	30	31
		みどり 浜田			Azevedo Wesley	1
2	3	4	¥99,999	5	6	7
		みどり 浜田			MacPhee Ollie	8
		Lim DongJin				
		みどり 浜田				

- **ZenTablet (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 screenshot shows the 'zensapp' interface with a 'Calendar' view. The sidebar on the left contains navigation options: CALENDAR (Multi-Calendar), MESSAGE (Tickets, Saved Replies), LISTINGS (All Listings 180, Guest Support Memos, Reviews), RESERVATIONS (Zens Register, Reservations), STATISTICS (Statistics, Sales Dashboard), ACCOUNTING (Transactions, Expenses), and TASKS. The main content area is titled 'Multi-Calendar' and features search filters for Host Name, Listing Name, and Status. Below the filters is a calendar grid for the period 'Oct 14 – Dec 12, 2025'. The grid shows bookings for various hosts and listings, with dates and names of guests. For example, Ken has a booking for Akihabara_1 on Oct 14 (Sulit Mickey) and Oct 17 (Verkerk Ewald). Ukiyo has a booking for Aoto_1 on Oct 16 (Nguyen Thanh Hai). Kenta has a booking for Atami_2 on Oct 14. Bandobashi_1(217) has a cancelled booking on Oct 14 (Murata Kanri) and a booking on Oct 16 (Shi Qinyu). Bandobashi_2(317) has cancelled bookings on Oct 14 and Oct 15, and a booking on Oct 16 (Justin Warren Li/Airbnb賃貸).

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.

zensapp Listings / SHIBUYA New South_1(202) Mark @ zens

SHIBUYA New South_1(202)
日本、〒150-0002 東京都渋谷区渋谷3丁目25-16 タキミハウス渋谷

[View Transactions](#) [Edit listing](#)

Overview **Calendar** Amenities Photos Tasks Settings Messages Mapping OTA Rules

ZensApp Pricing
Base Price ¥99999
Weekend Price ¥

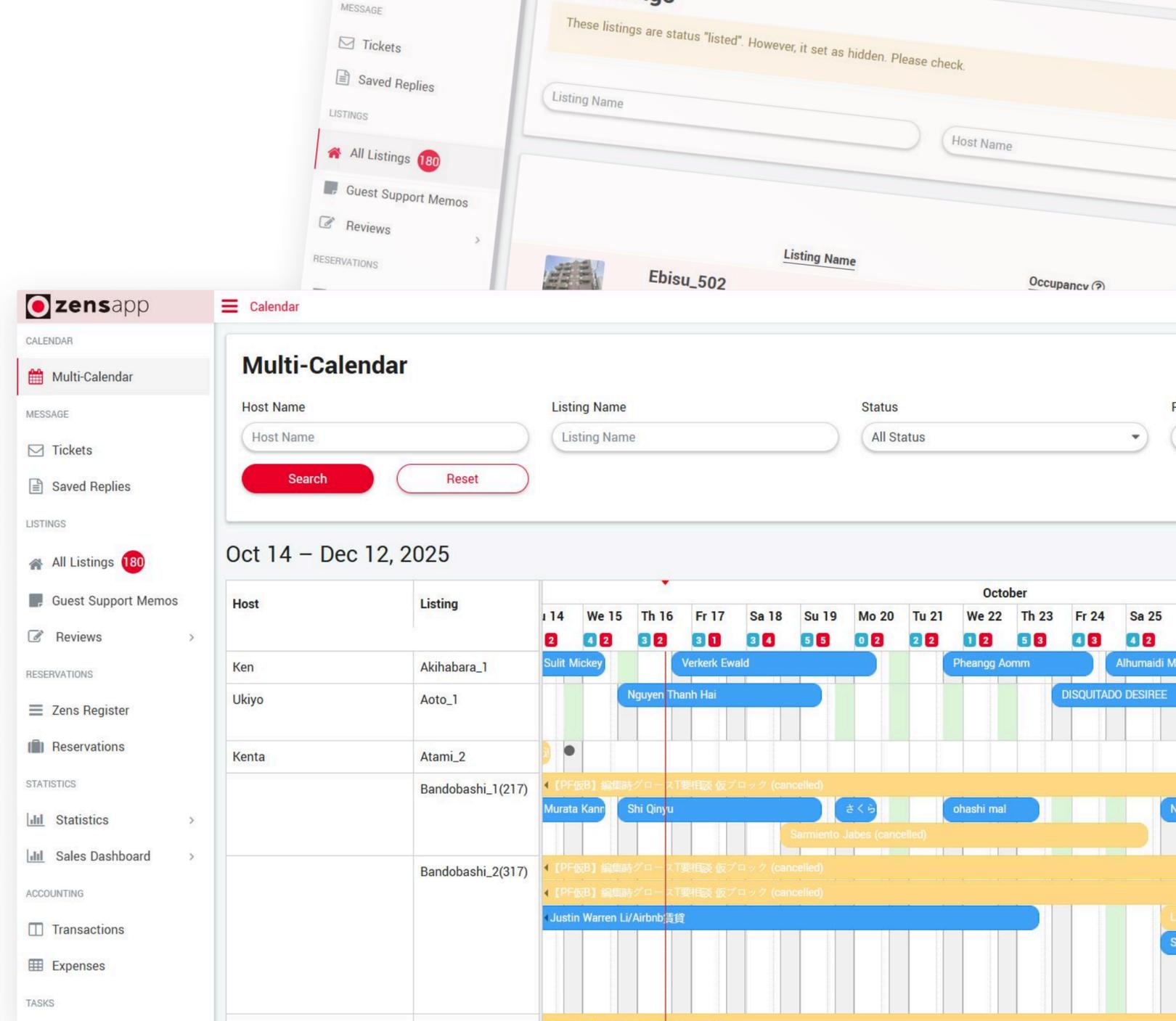
Calendar collapse November 2025

View availability and optimize room capacity

SUN	MON	TUE	WED	THU	FRI	SAT
26	27	28	¥99,999	29	30	31
Li Aaron		みどり 浜田	Azevedo Wesley			
2	3	4	¥99,999	5	6	7
Azevedo		みどり 浜田	MacPhee Ollie			
Lim DongJin						
9	10	11	12	13	14	15
MacPhee Ollie		Galaviz Hannah		Parapunski Stanislav		

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