

Shanghai Kaijing is Optimizing Operational Efficiency for LaoXiang Chicken Catering Co. with an AI-Powered Automated Checkout Platform

Shanghai Kaijing's end-to-end digital checkout solution, Canteen, is helping a major Chinese quick service food chain improve store performance, customer experiences, and profitability leveraging Intel® processors, technologies, and support.



About Shanghai Kaijing

Founded in 2006, Shanghai Kaijing Information Technology Co., Ltd is a leading IT solutions provider for the fast-moving consumer goods and chain industries. Recognized as a high-tech enterprise by the Shanghai Municipal Science and Technology Commission, Kaijing serves Fortune 500 multinational enterprises, offering strategic consulting, system development, and continuous innovation. With a focus on traditional retail intelligent upgrades, Kaijing holds proprietary expertise in neural network, machine vision, face recognition, and image recognition technologies. This innovation-driven approach positions Kaijing at the forefront of reshaping the retail landscape. Their comprehensive suite of services caters to diverse client needs, ensuring sustainable growth strategies and adherence to industry standards. From customized consulting to product life cycle support, Kaijing is dedicated to delivering quality and innovation to its valued partners.

Keeping Up with Digital Transformation in Food Retail Environments

In today's digital landscape, businesses must keep pace with new technology advancements to stay competitive, meet and exceed evolving customer expectations, and drive process improvements that boost their bottom line – the retail industry is no exception.

- Conventional manual checkout processes within food retail environments, including cafeterias and quick-service restaurant chains, have proven to be time-consuming, costly, and inefficient.
- Poor visibility into operations and inventory leads to wasted resources, stock shortages, and suboptimal performance.
- Lack of understanding around customer preferences and behaviors can result in long checkout queues during peak hours, misplaced investments, and poor customer experiences.

To remain competitive, food retailers recognize the need to optimize their operations, minimize costly errors and waste, and provide a seamless dining experience that customers anticipate. As customer expectations continue to rise, embracing digital solutions becomes paramount for achieving success in the food retail marketplace.

LaoXiang Chicken Catering Co., a prominent Chinese food chain, was looking to strengthen their competitive edge with an end-to-end digital solution. They wanted the ability to track store performance across a growing number of locations, improve checkout experiences, and optimize their inventory management. Their current methods of operation were no longer enough to stay ahead, and they would need help to achieve their ambition of providing quality food to people across the globe.

Challenge: Tracking Performance and Maximizing Resources Across Store Locations

LaoXiang Chicken Catering Co., a quick-service restaurant chain, faced a series of obstacles as they looked to increase their store presence throughout China. Their challenges included:

1 Managing operations at scale:

Effectively managing and gaining holistic understanding of operations across a vast network of over 2,000 locations without diminishing service quality had been a difficult pursuit for LaoXiang Chicken. This challenge was further compounded by the company's ambitious expansion plans, aiming to grow its count to an impressive 10,000 stores while ensuring operations continue to run smoothly across the board.

2 Increasing profitability:

Quick-service restaurants often experience slim profit margins due to considerable expenditures on food costs, rent, and usually the most substantial operating expense: human labor, typically accounting for about 30% of monthly revenue.¹ An expanding number of stores also meant that an increasing amount of food waste was becoming a costly error, eating into the profit margin of each location.

3 Improving customer experiences:

Maintaining consistent and efficient performance across a growing number of restaurants during expansion can be difficult. Ensuring customers receive a consistent and positive experience regardless of where they dine is critical for LaoXiang Chicken. Issues like slow service, long checkout lines, inconsistent food quality, and unhygienic dining areas lead to unfavorable dining experiences and can diminish brand reputation and loyalty if left unchecked.

4 Enhancing operational transparency:

LaoXiang Chicken aimed to identify their highest and lowest performing stores across China with the goal of using these benchmarks to strengthen any operational deficiencies. Improving transparency would allow the company to pinpoint the specific areas contributing to low performance and facilitate prompt corrective action to ensure operations at each location are fully optimized. Yet, relying on manual methods to monitor and improve operations across stores is not only costly and highly inefficient, but also represents a nearly impossible task for humans to do at scale.

To overcome these challenges, LaoXiang Chicken Catering Co. needed a powerful digital solution with AI capabilities.

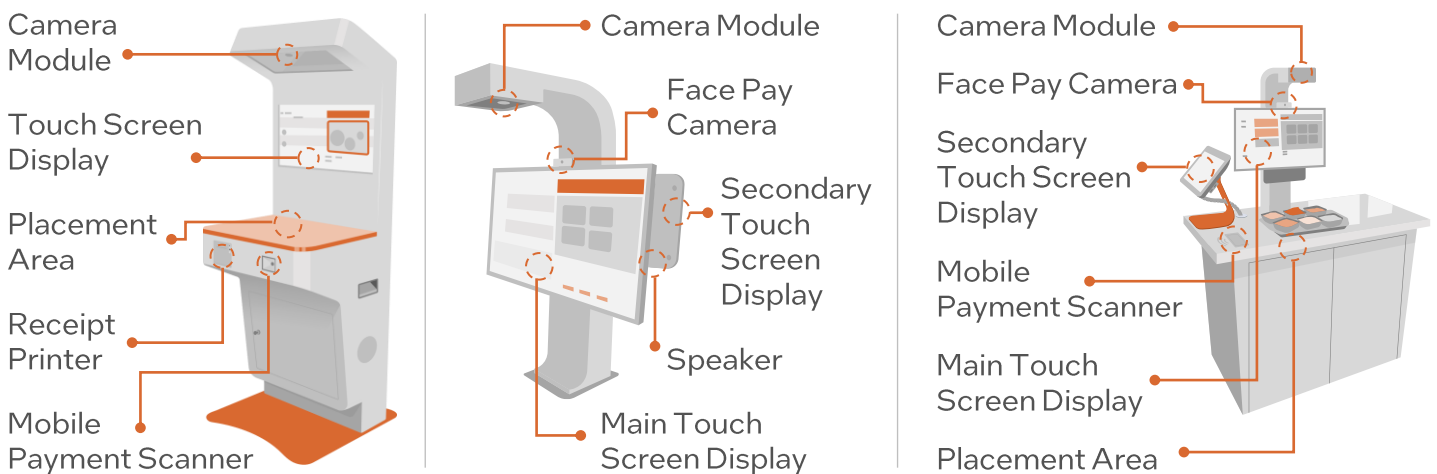


The Shanghai Kaijing Solution: Solving Strategic Challenges for Food Retailers


In the rapidly evolving landscape of digital transformation, Shanghai Kaijing Information Technology Co. has emerged as a frontrunner with their groundbreaking Canteen solution, a holistic end-to-end digital retail platform. This innovative solution enables cafeterias and food retailers to streamline their operations and transactional processes by utilizing AI technology. It comes equipped with everything needed to automate checkout services, improve inventory management, and monitor in-store processes. With a centralized management system, retailers can monitor performance and operations at scale.


Powered by Intel® Core™ processors and optimized with the Intel® Distribution of OpenVINO™ toolkit, the automated checkout solution harnesses the power of Intel® technology and AI to revolutionize the way the operations, transactions, and customer experiences are managed.


The Shanghai Kaijing solution was a clear choice for addressing the issues facing LaoXiang Chicken. The catering company began deploying the solution across an increasing number of their restaurant locations.





Going beyond just an automated checkout system, the Canteen solution helped LaoXiang Chicken Co:

 Reduce checkout time length with real-time, automated, AI-powered product SKU identification and transaction bill generation, reducing the need for manual checkout tasks and streamlining the customer experience.

 Predict peak dining times by analyzing customer flow patterns, enabling managers to understand traffic trends, proactively prepare for customer surges or down times, and make informed operational and resource adjustments.

 Minimize food waste with effective inventory management, ensuring stores optimize stock levels based on accurate consumption pattern forecasts.

 Improve quality control and compliance with standard operating procedures by analyzing surveillance video files to perform AI-driven checks related to food quality, kitchen hygiene, and adherence to safety regulations during off-hours.

 Empower management with a high-level overview of performance metrics across store locations, identifying weak areas of operations so necessary adjustments can be prioritized and promptly addressed.

An important factor that sets the Canteen solution apart is its accessibility. Unlike many AI solutions that require extensive data science expertise, the Kaijing solution is user-friendly and requires minimal setup, averaging a training time of only 2.5 hours for new customer datasets². This empowered LaoXiang Chicken Catering Co. to harness the power of AI without the need for specialized knowledge or exorbitant costs, a critical feature when utilizing the solution across an extensive network of stores. As the menu changed and new SKUs were introduced, there was no need for constant model retraining. The caterer could simply position the item under the solution's camera, and the model would fine-tune itself to classify a new SKU in 10 seconds or less². This streamlined approach empowered LaoXiang Chicken to expedite the rollout of new offerings while simultaneously minimizing operational overhead.

“

We started deploying an AI cashier system since 2020 and so far, nearly 300 stores are using it. Kaijing's AI cashier has significantly reduced labor costs and improved checkout efficiency by 60%-80%. More importantly, it also solved the issue of customer loss due to long waiting lines, and therefore increased our sales.”

— Head of Digital Growth for LaoXiang Chicken Catering Co.

Results: Proven Success Leads to Continuing Deployments

Initially, LaoXiang Chicken Catering Co. piloted the deployment of Shanghai Kaijing's Canteen solution in 20 store locations. The remarkable impact of this trial led the catering company to expand its deployment to over 300 shops and counting, yielding even more significant results:

- 1 \$450 reduction in labor costs per store per month for each employee no longer assigned to manual checkout responsibilities.
- 2 60%-80% improvement in checkout efficiency, eliminating customer loss due to long lines.
- 3 10% sales increase per store per day.
- 4 ~\$38,700 average profit increase per store per year.

The solution not only streamlined operations and reduced costs across an expanding number of stores but also provided invaluable insights into customer behavior and preferences, fostering customer-centric adjustments. This led to improvements in product offerings, as well as enhanced efficiency in operational procedures, such as employee scheduling and table turnover. By harnessing behavioral and customer-staff interaction analytics, the LaoXiang Catering Co. management was able to effectively examine in-store behavior patterns. This, in turn, empowered store operators to make informed, data-driven decisions that closely matched real-time shopping trends, resulting in a substantial boost in sales across all locations.

Overall, the platform aided strategic decision making, contributing to revenue growth and consistently improved customer experiences across locations. Because of the success they've had with this platform, LaoXiang Chicken Catering Co. is now seeking to deploy the Canteen solution across an even greater number of stores.

Intel® Technology Optimizes the Performance of the Canteen Solution

Intel technology plays a pivotal role in optimizing the performance of Shanghai Kaijing's Canteen solution with the following ingredients:

- Intel® Core™ processors serve as the computational powerhouse behind the Canteen solution. They provide the high processing power required for real-time SKU identification, recognizing items within 0.1 seconds at an accuracy rate of 99%, facilitating an average checkout time of 3 seconds².
- The Intel® Distribution of OpenVINO™ toolkit empowers the Canteen solution with advanced computer vision capabilities. Customers who want the dual capability of payment via facial recognition as well as the AI cashier service require multiple AI engines to run on the same hardware. This is achieved by running the AI checkout service on the Intel® Distribution of OpenVINO™ toolkit and plugging in an additional low-cost GPU to run the facial recognition feature, allowing for flexible deployment options based on individual needs.
- The Intel® oneAPI Video Processing Library plays a critical role in the Canteen solution's video analysis capabilities. It enables advanced access to specialized media hardware, plus encode, decode, and video processing features on Intel® GPUs, allowing AI-driven quality and compliance checks to run during off-hours.

Collectively, these Intel® technologies enhance the performance of Shanghai Kaijing's innovative Canteen platform, helping users remain competitive in the era of digital transformation within the food retail industry.

Data-Driven Insights Help Retailers Optimize Operations and Improve Customer Satisfaction

The Shanghai Kaijing Canteen solution represents a transformative leap forward in the food retail market, offering users a holistic end-to-end platform for managing store operations. By harnessing the power of AI technology, this innovative solution not only streamlines operations and reduces costs but also significantly enhances the customer experience, thereby fostering loyalty and driving profitability overall.

The Canteen solution success story with LaoXiang Chicken Catering Co. is a tangible demonstration of the real-world impact of accessible and comprehensive AI solutions. These solutions empower businesses to thrive in an increasingly competitive marketplace. Shanghai Kaijing's commitment to embracing innovation and pioneering the integration of AI continues to shape the future of restaurant operations, setting new standards for operational efficiency and customer satisfaction in the food retail industry. Shanghai Kaijing is proud to partner with LaoXiang Chicken Catering Co. and is excited to continue working towards their goal of providing their quality and affordable food to people all over the world.

Visit the [Shanghai Kaijing Website](#) to learn more and book a demo today.



Learn More

To learn more about the Shanghai Kaijing Canteen Solution visit:

- [The Shanghai Kaijing Website](#)
- [Shanghai Kaijing Canteen Solution Example Page](#)
- [Shanghai Kaijing Canteen Product Page and Demo](#)

To learn about Intel® technologies visit:

- [Intel® Core™ Processors Product Page](#)
- [Intel® Optimization for PyTorch Introduction](#)
- [Intel® oneAPI Video Processing Library Product Page](#)
- [Intel® Distribution of OpenVINO™ Toolkit Product Page](#)



Sources

1. [The Complete Guide to Restaurant Profit Margins](#), Lightspeed, 2023
2. Data from internal tests results of Shanghai Kaijing. Intel does not control or audit third-party data. Please review the content, consult other sources, and independently confirm if the data provided is accurate.

Notices & Disclaimers

Intel is committed to respecting human rights and avoiding complicity in human rights abuses. See Intel's [Global Human Rights Principles](#). Intel® products and software are intended only to be used in applications that do not cause or contribute to a violation of an internationally recognized human right.

Intel technologies may require enabled hardware, software or service activation. No product or component can be absolutely secure. Your costs and results may vary. Intel does not control or audit third-party data. You should consult other sources to evaluate accuracy. Code names are used by Intel to identify products, technologies, or services that are in development and not publicly available. These are not "commercial" names and not intended to function as trademarks.

You may not use or facilitate the use of this document in connection with any infringement or other legal analysis concerning Intel products described herein. You agree to grant Intel a non-exclusive, royalty-free license to any patent claim thereafter drafted which includes subject matter disclosed herein.

© Intel Corporation. Intel, the Intel logo, and other Intel marks are trademarks of Intel Corporation or its subsidiaries. Other names and brands may be claimed as the property of others.