WHITE PAPER



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The Fresh Revolution in Unattended Retail

Overcoming fresh food access barriers through autonomous merchandising

By **Mike Smith** | Contributing writer, Kiosk Marketplace

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Fresh food is not always available where consumers need it most. Airports, hospitals, college campuses, hotels, office buildings, military bases and casinos often face limited foodservice options because traditional outlets require full staffing, dedicated physical space, standard operating hours and strict safety protocols.

This creates a practical gap: consumers want fresh meals, snacks and beverages around the clock, while operators lack the labor or space to support another staffed outlet. Autonomous merchandising offers a direct solution.

The Challenge of Fresh Food Access

Providing fresh food in an unattended environment requires more than basic refrigeration. Products must maintain appropriate temperatures, inventory must be tracked and transactions must be carried out securely.

Temperature control is a primary obstacle in high-traffic, open-air or smart-door environments. Structural Concepts identifies and ensures maintaining continuous temperatures below 40 degrees as a critical requirement for unattended fresh-food merchandising.

Labor presents another constraint. Traditional foodservice depends on employees to prepare, stock, monitor and sell products. In locations demanding 24/7 access, maintaining round-the-clock staffing is rarely cost-effective.

The result is a familiar tradeoff: consumers have limited fresh options, while operators miss potential revenue they cannot efficiently capture through conventional channels.

Closing the Operational Gap

While needs vary by location, the underlying challenge remains constant. A late-shift hospital employee, a college student studying late or an airport traveler in transit all require food when cafeterias and restaurants are closed.

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Autonomous merchandising decouples product availability from continuously staffed physical locations. Structural Concepts' Autonomous Retail Merchandiser (ARM) platforms—including the ARM XL and ARM SLIM—are built to deliver secure, unattended access to fresh food across various space constraints.

The ARM platform integrates secure product access with multi-option payment hardware, supporting:

- Integrated membership accounts
- Credit and debit cards
- Work, student, and military IDs

Food safety remains central to the design. The ARM platform prioritizes temperature management and physical security while operating with low energy consumption and minimal maintenance requirements.



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Using Data to Manage Inventory

Autonomous merchandising extends beyond point-of-sale automation. Real-time purchasing data gives operators actionable visibility into consumer preferences, enabling smarter stocking and category management decisions.

Market research reinforces this shift toward cashless, contactless retail—including a McKinsey finding that 38 percent of college students desire 24/7 dining access. Ease of use remains a primary driver of contactless adoption.



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Target Applications

Autonomous merchandising targets environments where consumer demand is high but traditional foodservice footprint is limited. Key sectors include:

- Higher education, healthcare facilities and military bases
- Airports, hotels, stadiums and casinos
- EV charging stations, coffee shops, company and business campuses

The overarching objective is clear: enabling operators to provide fresh food in locations and at times that conventional foodservice cannot serve efficiently.

Autonomous merchandising combines refrigeration, secure access, payment technology and unattended retail into a single platform. For operators, that means fresh meals, snacks and beverages can be offered around the clock without adding staff or building another outlet. For consumers, it means a hospital employee on the late shift, a student studying late or a traveler in transit can find fresh food after cafeterias and restaurants have closed.

ABOUT THE SPONSOR:

Based in Michigan, Structural Concepts designs and manufactures refrigerated and heated food merchandising equipment—including full service and self-service display cases, grab-and-go units, countertop merchandisers and custom displays. The ARM series expands this core equipment expertise into modern autonomous retail environments.

To explore Structural Concepts' autonomous retail and food merchandising portfolio, visit structuralconcepts.com to view installations, product videos and case studies.

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