Why Cellular Access is Critical for Retailers:

Improving Operational Efficiency with Connected Technologies

Modern brick-and-mortar retailers are constantly driven to keep costs down by reducing waste, improving efficiency, and effectively managing their workforce. Changes in retail technology, employee expectations, and how consumers shop are forcing retailers to rethink their approach to managing operations. As margins continue to erode due to fluctuating inventory costs, rising wages, and the capital needed to keep up with technology, retailers are reconsidering their approach to communications, automation, and modernization. With miles of cable running through ceilings and many systems requiring dedicated network infrastructure, managing retail technology has become a tangled web. On top of this complexity is the need for simplicity to reduce the training burden and retain employees. With competing realities, a fresh strategy is needed to meet the demands of modern store management.

Retail Insight

A recent survey shows that retailers agree that in managing their workforce:

- they want to use consumer-grade mobile devices throughout store operations
- the new generation of store employees want to use the same technologies in their jobs as they do in their daily lives
- they want to implement "BYOD" – Bring Your Own Device to their store environment.

Beyond connecting employees with store systems, retailers are challenged to keep the operations systems connected to each other to manage, monitor, and optimize processes and applications for:

- Inventory Control, Stocking, and Warehouse
- EFTPOS, both primary and backup
- Equipment and Environmental Monitoring
- Safety, Security, and Shrinkage Control

Source: rsrresearch.com Why The Retail Store Won't Survive As A 'Tech-Free Zone' - RSR Retail Systems Research Consumer Study, November 2023 (n=1132)

The smartphone is central to the technological transformation of the customer experience– it is the device of choice for shoppers, and therefore is key to in-store satisfaction. The smartphone is what consumers use to engage with other in-store technology (e.g. apps, retail media networks) and makes those systems more effective in terms of delivering expected ROI. And, simply put, smartphones don't work when they are not connected.

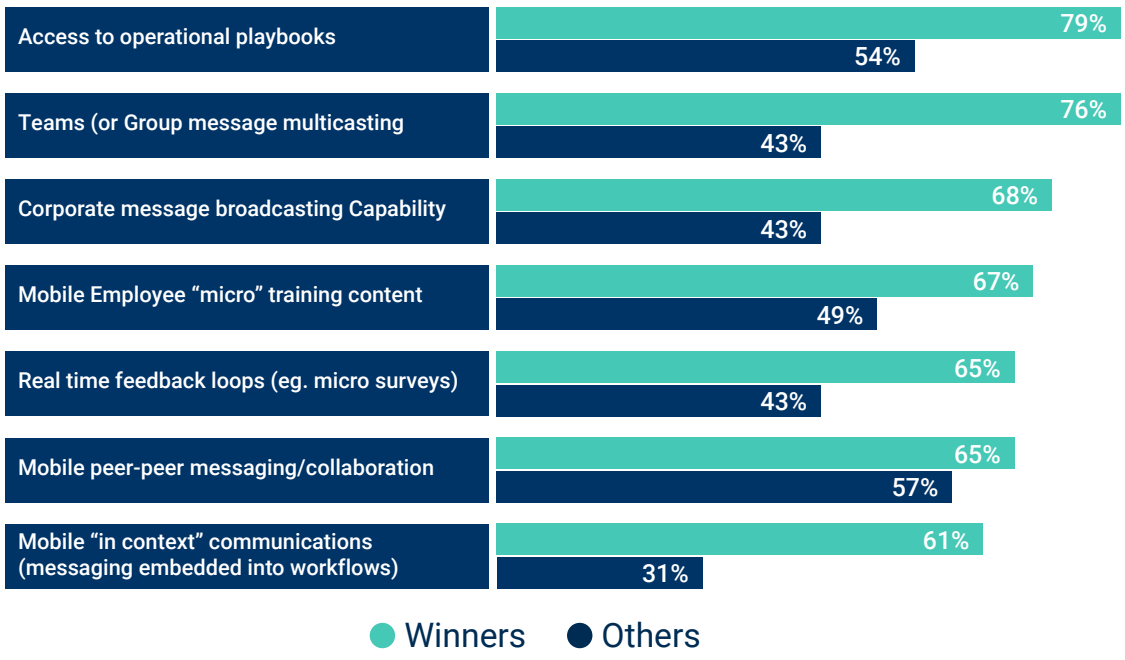
Technology and Connectivity to Drive Down Operational Costs

In transforming retail operations through technology, the smartphone has become the device of choice for store employees. Underlying support for smartphone technology thus plays a part in employee satisfaction and retention, while reducing training costs. And smartphones don't work when they are not connected to the cellular network. Retailers can invest in a Distributed Antenna System (DAS) to address dead zones in their stores and ensure reliable cellular network coverage for all employee and operational devices.

There are significant benefits to installing a DAS beyond providing reliable coverage. The same cellular signal that smartphones need to connect to applications and monitoring equipment can also help simplify device management, speed technology deployment, and drive operational efficiencies. The ease of using highly reliable, always-on cellular connectivity reduces the IT burden on operations and keeps capital costs down.

Newly available technology allows retailers to leverage their indoor cellular coverage infrastructure to serve double duty as an IoT sensor network – with or without private networking enabled. These modern solutions elevate Distributed Antenna Systems (DAS) from a basic cell phone signal booster to a two-way connectivity core capable of supporting high-speed store applications and equipment monitoring, as well as data transfer.

The Winners' Advantage:
High Value Employee Communication Technologies

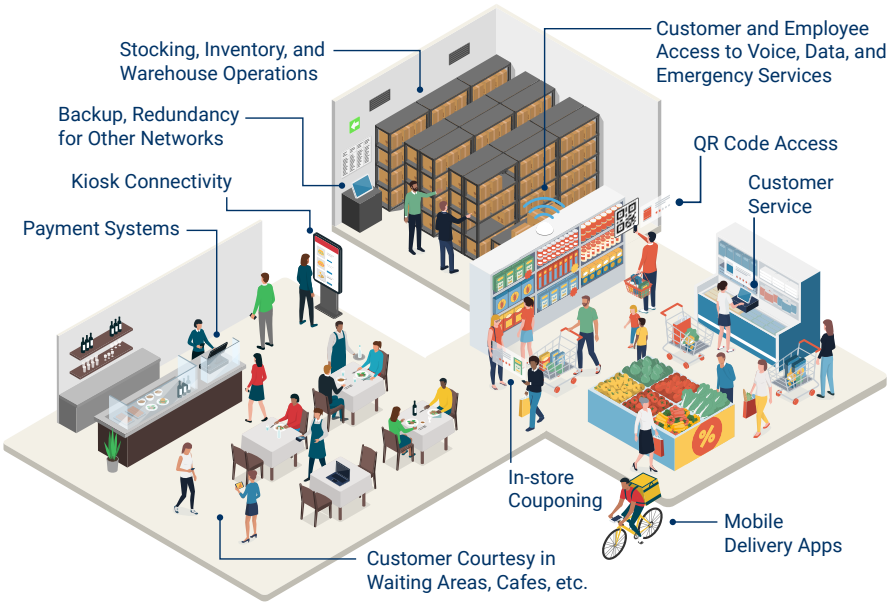


Connecting Employees: A Clear Competitive Advantage

Winning retailers know that mobile technologies give them an advantage over their less successful peers. The types of "high value" employee communications that winners are using to outpace their competition include:

On their own time, employees expect their smartphones to have a reliable signal and be connected anywhere. This is because Mobile Network Operators have invested hundreds of billions of dollars building robust networks to deliver seamless connectivity for cellular devices. Unfortunately, both modern and older, historic buildings, can block these signals and affect smartphone use. The solution for retailers is an in-building cellular DAS that brings the macro network inside, allowing emplyees and customers to stay connected and productive as they move around throughout their day and use their own device. From the parking lot to the store, and then around the store, out for break, and back to work, connected employees are "always on."

“Mobile-First” Mindset Drives Efficiency



Don’t forget your charging stations and delivery areas

Tangible Improvements for Operations

People and systems work better when connectivity issues are solved:

- PoS Systems, Self-Service Kiosks, Concessions, etc. stay online with reliable service = less risk of downtime, fewer “tech” issues, and reduced staffing needs
- Employees, Contractors, Delivery Teams, and Security Staff can move throughout the facility and always be connected and reachable = less turnover, fewer logistics issues, better safety and security
- Screens, inventory control systems, and other connected devices don’t need separate wiring
- store layout is optimized for shoppers and to drive sales, not to accommodate tech
- deployment of new technology is sped up with connectivity handled
- Future-ready for IoT / AI Sensors
- leverage DAS to enable a phased-in, time-is-right approach

low-cost service model = lower capital risk, ability to pick and choose what makes sense

Justifying an Investment in Cellular Coverage: Operational Pain Points

A retailer with poor connectivity faces multiple operational challenges, including:

- Limited online ordering, click-and-collect, mobile ordering or self-checkout services
- Inventory management – Delayed stock updates lead to overstocking or out-of-stock situations
- Poor integration of in-store and online sales –returns and promotions are inconsistent
- Difficulty in implementing AI & automation – Smart solutions, self-checkout, digital shelf labels, or AI-based recommendations don't function smoothly
- Inability to leverage data analytics – Real-time insights into sales trends and customer behavior
- Slower adoption of new retail tech – Smart checkout, AI-driven personalization, and IoT-based tracking become difficult to implement
- POS system failures – Cash registers and barcode scanners may be slow or disconnected
- Employee communication breakdowns – Messaging, task management apps, and VoIP unreliable
- Delayed supplier coordination – Restocking processes slow down due to lack of real-time data
- Ineffective environmental monitoring increases spoilage and drive-up operational costs

For the purpose of demonstrating the strong ROI, we have used general data provided by customers and industry bodies, along with available surveys. Additionally, we use reasonable averages and assumptions for attributes such as store size, revenue per store, cost and efficiency to create our example grocery retailer 'Standard Store'. Base data as follows:

- Example based on a grocery store
- Store size – c. 100,000ft^2 (9,290m^2)
- Revenue per store c. US$50m
- All other data from industry reports

From our analysis, using the Standard Store as noted, we expect an % uplift that can be attributed to the impact of connectivity on operational improvements and the cascading benefits to the business. Read on to understand the sources of and means for achieving this ROI.

Expected Cost Savings from Secure, Reliable, Seamless, and Integrated Connectivity

Cost Savings - DAS Monitoring of Fridges & Freezers

Number of refrigeration units per store	40
Time to perform manual check (min)	.05
Number of times to monitor per day	4
Minutes/day to monitor refrigerators	**80**
Mins./check of admin, preparation and data sync.	15
Number of times to monitor per day (admin)	4
Total mins. of admin and prep per day	**60**
Total mins check and admin/prep per day	2.33
Hourly labor cost for check and admin/prep	$15.00
Total daily cost	**$35.00**
Saving/day in reduced goods spoilage *Ind. est. 3% total shrinkage - 16.7% improvement assumed*	**$691.02**

Enabled Real-Time (RT) Inventory Management

Number of checkout transactions per day	1,800
Average transaction value	$76.78
Total daily revenue	**$138,204.00**
% of revenue labor cost - industry avg 12%–18%	12.0%
dollar labor cost	**$16,584.48**
% of labor associated with inventory 30%–50%	30.0%
dollar labor cost associated with inventory	**$4,975.34**
% potential saving with RT stock visibility 15%–30%	15.0%
Potential saving/day from RT inventory	**$746.30**

Shelf Restocking Efficiency Improvements

Number of checkout transactions per day	1,800
Average transaction value	$76.78
Total daily revenue	**$138,204.00**
% of revenue for labour cost of restocking 1.5–3	1%
% of revenue of stockroom handling 0.5–1	0.5%
% of revenue for shrinkage from poor restock 0.5–1	0.5%
Total cost per day	**$2,764.08**
% saving in faster restocking 15–20	15%
% saving from reduced manual adjustments 10–15	10%
% saving in shrinkage improvements 20–30	20%
Potential saving/day from stock efficiency	**$414.61**

Total Potential Cost Reduction

Refrigeration Monitoring	$35.00
Reduced Shrinkage	$691.02
Sheld Restocking Efficiency	$414.61
Enabled RT Inventory	$746.30
Total/day/store potential cost reduction	**$1,886.93**

Total Annual Estimated Increase All Categories

Note: Based on 6 days/week for 52 weeks, Less 6 days public holidays

Total 306 days	**$557,401.68**

Improving Operations with Connectivity

A. Improved Inventory Management

Implementing an integrated connectivity strategy that enhances connectivity for all operation devices, such as handheld scanners, RFID, and IoT sensors leads to lower overstock and reduced waste. This integrated enhanced connectivity provides three key benefits to our example grocery store:

- Revenue increase from reduced stockouts
  Better connectivity enables real-time inventory tracking, leading to fewer stock-out situations and, therefore, fewer lost sales opportunities. Retailers using real-time data, enabled by pervasive, secure and reliable integrated connectivity, report between 1-3% increase in sales.
- Reduced overstock and waste
  Poor inventory visibility leads to overordering of perishable goods. Improved cellular (private and public) as part of a reliable IoT connectivity strategy allows improved demand forecasting and automated alerts. Grocery stores typically experience 2-5% shrinkage (spoilage + theft) that, with better tracking and environmental monitoring can reduced by 20-30%.
- Increased Labor Efficiency
  Faster scanning and data synchronization reduce time spent on manual stock checks. Shelves are restocked 15-20% faster with real-time stock alerts, while fewer manual adjustments saves 10-15%. Table 2.

1-3% INCREASE IN SALES
Revenue increase from reduced stockouts

20-30%
Reduced overstock and waste

15-20% INCREASED EFFICIENCY
Faster with real-time stock alerts

B. Equipment and Environmental Monitoring

The U.S.A. Food and Drug Administration requires that grocery stores maintain refrigerator temperatures at or below 4°C to ensure the safety and quality of food products. In addition, grocery stores must establish standard operating procedures for refrigerator monitoring and typically require the temperature of refrigerators to be monitored 2-4 times per day and logged along with the date/time at which the measurements were taken and if any corrective actions were needed.

The measurement of the temperature of refrigerators is a great example of a task that can be automated with the help of a sensor-enabled DAS. As a DAS has antennas deployed throughout a store, for example, it means that wireless sensors can be connected to an edge server to collect such data. The estimated annual cost saving for a grocery store implementing automatic logging of refrigerator temperatures can be calculated as shown.

The Solution: Bringing Cellular Service Into the Store

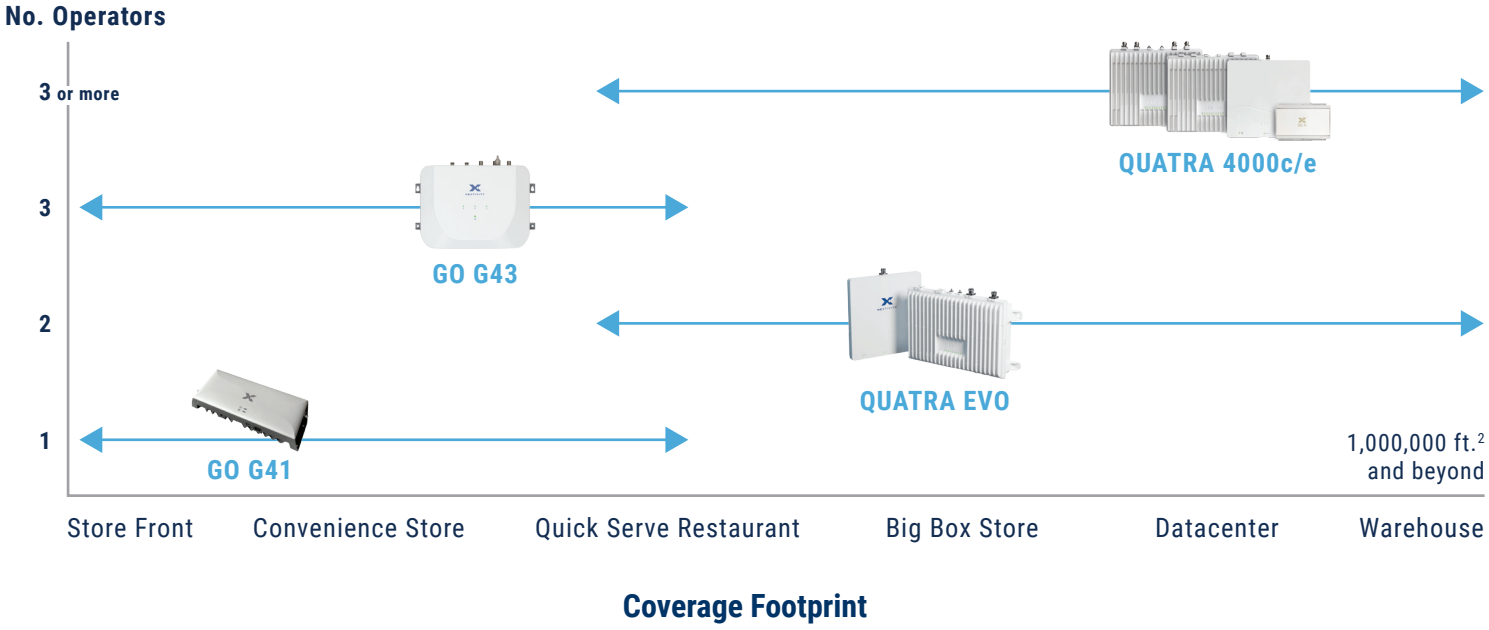
Nextivity brings reliable cellular signals from all network operators to every part of a building. From convenience stores, fuel stations, and quick-serve restaurants to the largest warehouses and distribution centers, we deliver hassle-free coverage solutions that drive in-store sales, speed transactions, and support operations.

Our CEL-FI GO G43, which covers smaller spaces, and can beinstalled in a day with minimal disruption to your business. For larger spaces, and for retailers looking for scalable coverage solutions that can support private networking and IoT sensor integration, the CEL-FI QUATRA 4000 product line offers maximum flexibility and functionality. All our systems are managed remotely for easy maintenance and optimization - with no drain on internal IT teams.

Unique to Nextivity is our ability to execute large-scale projects for geographically diverse entities, including multinationals. Whether you have one location or thousands, our extensive network of expert installers are ready to fix your cellular issues and deliver a network infrastructure that allows you to Do More with DAS.

CEL-FI In-Building Cellular Coverage Portfolio

Solutions for Every Building — All Operators. Any Size



Do More with DAS

Nextivity has patented, pioneering technology built into our solutions that support private 5G and IoT sensor networks. This enables you to justify the investment in coverage by increasing the utility of the system.

You can use a private cellular network to increase data security, run automated systems in warehouses, connect terminals and kiosks, and offload critical transactions to increase reliability.

With an IoT network, you can attach panic buttons to improve worker safety, set up environmental monitoring, increase food safety, and reduce shrinkage from all sources. Our experts will help you integrate sensors into your existing alarm and notification systems for a seamless transition.

Successful Retailers Connect Operations

Nextivity has been providing in-building cellular DAS to enterprise customers since 2010. As smartphone use has exploded, employees are demanding to fluidly integrate their work and personal technologies. Modern successful retailers are adapting by providing seamless cellular coverage to staff, then leveraging that infrastructure to improve operations throughout the store.

Nextivity has installed tens of thousands of systems in retail locations around the world. We are proud to serve the connectivity needs of our customers. Our systems are improving retail operations for:

- Many of the 10 largest retailers in the world
- Two of the largest global apparel/footwear specialty retailers
- Dominant regional supermarket chains across North America, Europe and Oceania
- Global and regional customers in home improvement and electronics
- The showrooms of global luxury and sports car brands
- Well-known, highly regarded brands in fashion, beauty and high-end furnishings

Our customers include connectivity in their strategic plans and consider it a competitive advantage. We welcome the opportunity to demonstrate how Nextivity can support your growth plans with affordable, hassle-free Intelligent DAS and IoT sensor networks.

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