NorthStar

WHITE PAPER

Every machine in your kitchen has something to say.

Walk-ins, fryers, ovens, hoods and the POS can all report what they're doing in real time. Here is what the Internet of Things means for restaurants today, where it pays off first, what it costs you to ignore it, and how to connect it without opening new doors to attackers.

21.1B

CONNECTED IOT DEVICES WORLDWIDE

IoT Analytics, 2025

86%

OF QSR AND FAST CASUAL LEADERS INVESTING OR PLANNING TO IN IOT

MachineQ, 2026

49%

HIT UNPLANNED EQUIPMENT DOWNTIME

MachineQ, 2026

5 to 7x

ENERGY PER SQUARE FOOT VS. OTHER COMMERCIAL BUILDINGS

ENERGY STAR

INSIDE

The Connected Restaurant: Understanding IoT

01 What IoT means now

02 Four places it pays off

03 The cost of not knowing

04 The POS at the center

05 Every device is a door

06 Getting started

EXECUTIVE SUMMARY

IoT stopped being a buzzword. It's a line item.

When this paper first ran, the Internet of Things was mostly smart speakers and science-fiction promises. Today there are more than 21 billion connected devices worldwide, and restaurant kitchens are full of equipment that can report its own temperature, runtime and health.[1]

Operators are paying attention. In a 2026 survey of more than 400 quick-service and fast casual leaders, 86% said they are already investing in IoT or plan to within two years, to monitor equipment, automate compliance and manage multiple locations.[2]

01 WHAT IOT MEANS NOW

Sensors, a connection and someone who acts on it.

The idea is simple. Put a sensor on something that matters, connect it to the network, and send what it sees to software that can spot a problem and tell the right person. The value isn't the sensor. It's the decision it makes possible, and how fast.

The idea isn't new either. ATMs were among the first connected machines, and the term "Internet of Things" dates to 1999. What changed is the price. Cheap sensors, reliable Wi-Fi and cloud software put it within reach of a single restaurant. Analysts expect 39 billion connected devices by 2030.[1]

HOW A CONNECTED KITCHEN WORKS

Without the sensor, the first sign is spoiled product at 6 a.m. With it, the problem is fixed before anyone opens the door.

02 FOUR PLACES IT PAYS OFF

Start where a problem costs you the most.

Cold storage

Sensors in walk-ins and reach-ins log temperatures around the clock and alert staff before food crosses into the danger zone. Paper logs become automatic records.

FOOD SAFETY

Cooking equipment

Connected fryers and ovens track cook times and oil life, and can pace production to what the POS says is coming, so food is fresh when it's ordered.

QUALITY

Equipment health

Runtime and performance data flags a compressor or fryer that's starting to fail, so it gets serviced on your schedule, not in the middle of the dinner rush.

UPTIME

Energy

Monitoring on HVAC, hoods, lighting and refrigeration shows what runs when nobody needs it. Refrigeration is typically a restaurant's biggest electricity load.[3]

COST

03 THE COST OF NOT KNOWING

Downtime, waste and energy add up fast.

$1K to $5K

Revenue lost per hour of equipment downtime, estimated by nearly a quarter of operators

MachineQ, 2026

17.9%

Foodservice's share of 70 million tons of U.S. surplus food

ReFED, 2026 report (2024 data)

Up to 10x

Energy per square foot at high-volume QSRs vs. other commercial buildings

ENERGY STAR

Only **14% of operators** surveyed use IoT for temperature monitoring today, yet that group reported the highest confidence that food safety tasks were being done right.[2] That's the easiest first win on the list.

Records matter more every year. The FDA's Food Traceability Rule covers restaurants that handle certain high-risk foods, with compliance now set for **July 20, 2028**.[4] Digital records beat clipboards when an inspector asks.

04 THE POS AT THE CENTER

Your POS is the most important connected device you own.

Every order is a signal. The POS knows what was ordered, when, from which channel and how long it took to reach the guest. Connected to the kitchen and the rest of the restaurant, that data tells you what to prep, when to drop the next basket and which ticket is about to run late.

It's the same idea as a temperature sensor, pointed at speed of service. Tablets at the table, kiosks, handhelds and order-ready screens are all connected devices feeding the same stream of data.

HOW NORTHSTAR HANDLES IT

NorthStar KitchenAI turns POS order data into kitchen performance you can act on, like on-time rates by order, daypart and location.

910 orders, 154 late. In one real NorthStar dataset, 78.7% of orders were on time. Knowing which 154 missed is where improvement starts.

05 EVERY DEVICE IS A DOOR

Connect everything, expose nothing.

Every sensor, fryer and thermostat on your network is a computer, and many ship with default passwords and old firmware. Attackers know it. Verizon's 2026 Data Breach Investigations Report found **31% of breaches** started with an exploited vulnerability, now the most common way in.[5] A cheap sensor on the same network as your payment system is an open invitation.

- **Separate the networks.** IoT devices, guest Wi-Fi and payments each get their own.
- **Change every default password** before a device goes live.
- **Keep firmware updated,** and retire devices the maker no longer supports.
- **Know what's connected.** Keep an inventory of every device and who can reach it.

Data you act on

THE ONLY IOT THAT MATTERS

A sensor nobody watches is just an expense.

The payoff comes when the right alert reaches the right person in time to fix it. **Start with the decision, then buy the device.**

06 GETTING STARTED

Connect one thing well, then the next.

The restaurants that get value from IoT don't wire up everything at once. They pick the problem that costs the most, prove it at one location and grow from there.

- ✓ **Pick one problem first:** cold storage, downtime or energy.
- ✓ **Decide who gets the alert** and what they do when it fires.
- ✓ **Pilot at one location,** measure, then roll out.
- ✓ **Build the network first,** with IoT on its own segment.
- ✓ **Choose devices that integrate,** not another island of data.
- ✓ **Tie it to the POS** so kitchen data and sales data line up.
- ✓ **Keep digital records** ready for inspectors and audits.
- ✓ **Work with a partner** who has connected restaurants before.

SOURCES

1. IoT Analytics, State of IoT 2025, October 28, 2025.
2. MachineQ (a Comcast company), *2026 Restaurant Readiness: Ops Meets Tech*, survey of 400+ U.S. QSR and fast casual leaders by Censuswide, via Computer Weekly, January 27, 2026.
3. ENERGY STAR for Small Business: Restaurants, U.S. EPA.
4. U.S. FDA, FSMA Food Traceability Rule; compliance date July 20, 2028. ReFED, *2026 U.S. Food Waste Report* (2024 data).
5. Verizon, *2026 Data Breach Investigations Report*, via CyberScoop, 2026.

NorthStar

TALK TO OUR TEAM

Kitchen data and sales data, on one platform.

CBS NorthStar is a restaurant POS and order-management platform built for QSR and full-service operators: iPad-based Order Entry POS, payments, kiosk, customer-facing display, loyalty integrations and third-party delivery on one platform, backed by hands-on rollout and support since 1994.

(800) 551-7674 · info@cbsnorthstar.com · cbsnorthstar.com

#findyournorthstar