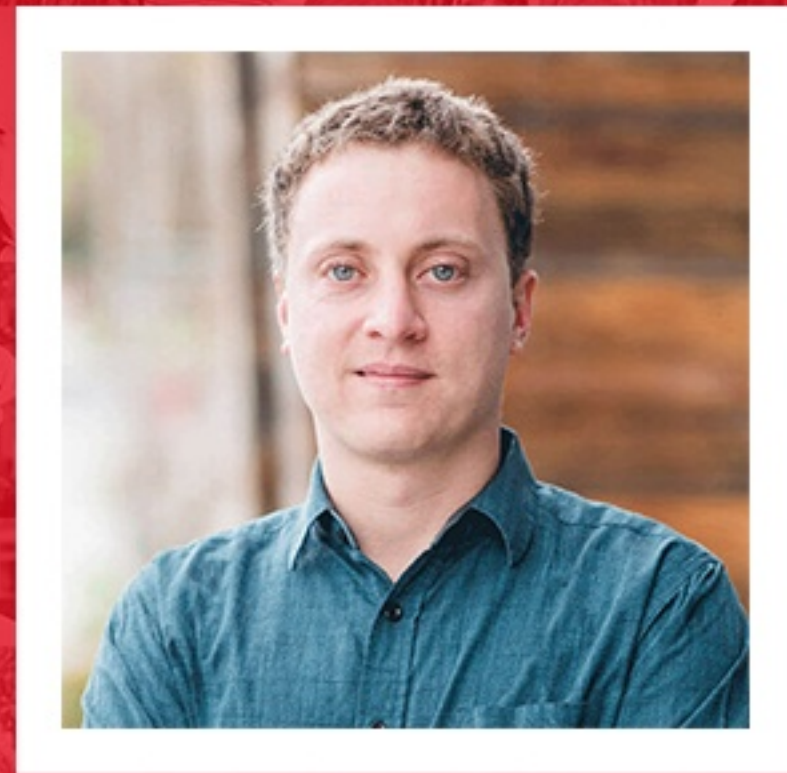


**REAL PEOPLE  
MAKE UP LIFE SAFETY**

**DEFINING THE FUTURE  
OF LIFE SAFETY**

**IOT/CLOUD SERVICES ROUNDTABLE**



**DANIEL PRICE**  
CEO + CO-FOUNDER  
BREADWARE

# Agenda

- About Breadware
- Internet of Things (IoT) Overview
- State of Technology in Fire Safety
- Opportunities/Challenges for IoT
- Open Table Conversation

# Breadware Overview

- Help businesses to plan, build, launch, and implement IoT technology
- Best IoT Development Solution
- Startup of the Year Nevada
- 100 IoT projects
- 10,000,000 deployed IoT units
- Customers include: Target, Gates, Facebook, Bemis, San Jamar, Caesars Entertainment



Our 3 brands



IoT Consulting & Engineering



LEADING IOT PRODUCT INNOVATION

**TOOLBOARD**

IoT Marketplace



BUSINESS NETWORK OF IOT  
KNOWLEDGE AND RESOURCES

**Interrupt**

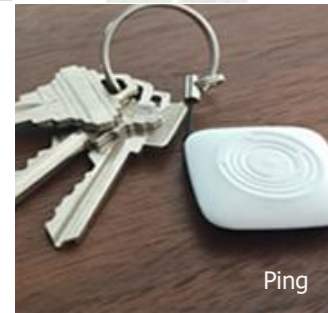
Community & Events



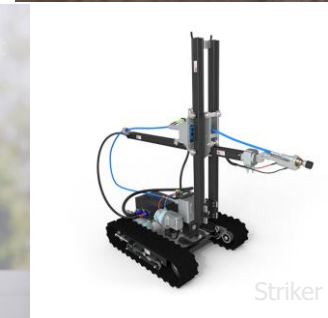
BRINGING THE WORLD OF IOT  
TOGETHER



Smart Building



Industrial IoT



Smart Home



Digital Health

# About Me

CEO of Breadware

- ❖ Tech company dedicated to helping business plan, build, and launch IoT products
- ❖ Offices in CA, NV, and India

Frequent speaker on IoT

- ❖ TEDx, Future Forum, Interrupt, many national trade conferences

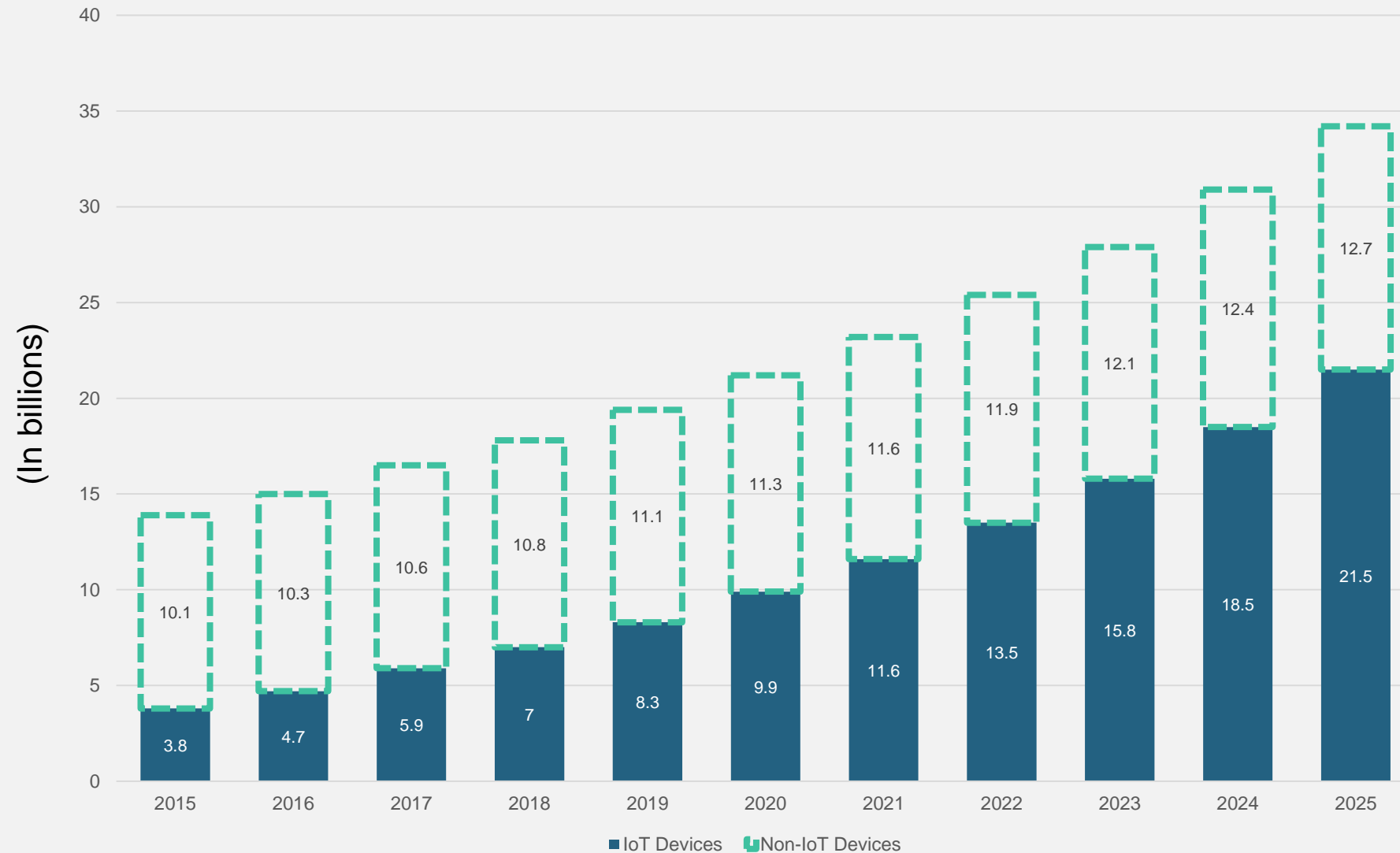
8 patents

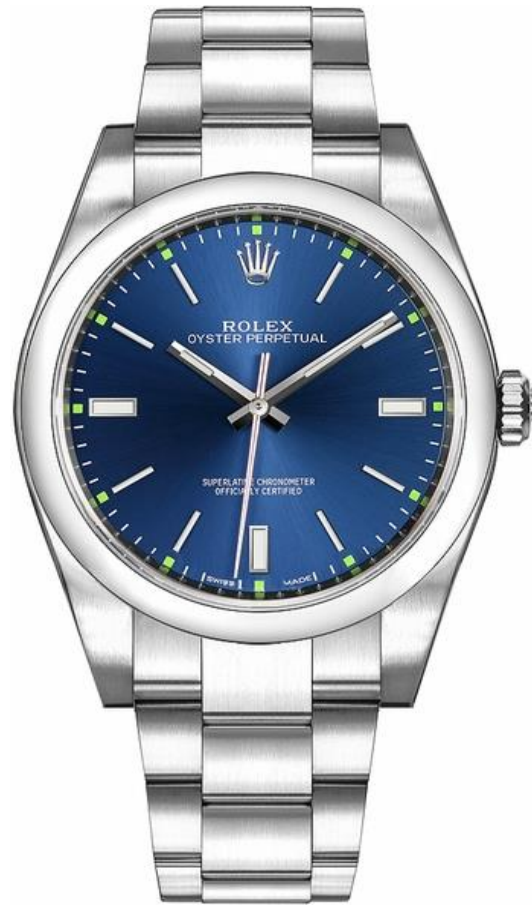
4 degrees – From Oxford and UC Berkeley

- ❖ MBA
- ❖ Biomedical Engineering
- ❖ Electrical Engineering
- ❖ Computer Science



# Total Number of Active Device Connections Worldwide





Apple now  
owns the  
world's  
**best selling**  
watch brand



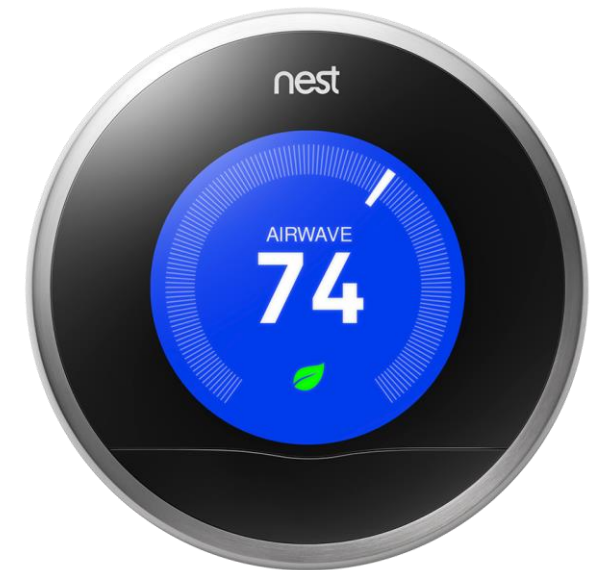
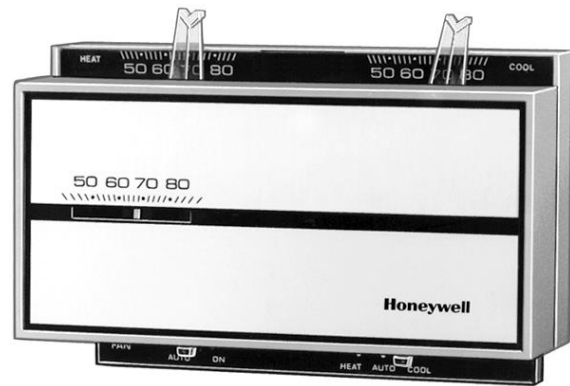




Bird became  
fastest **\$1B**  
**company**  
in under 1 year  
from being  
founded



Nest acquired by  
Google for  
**\$3.2B**  
less than 4  
years from  
launching

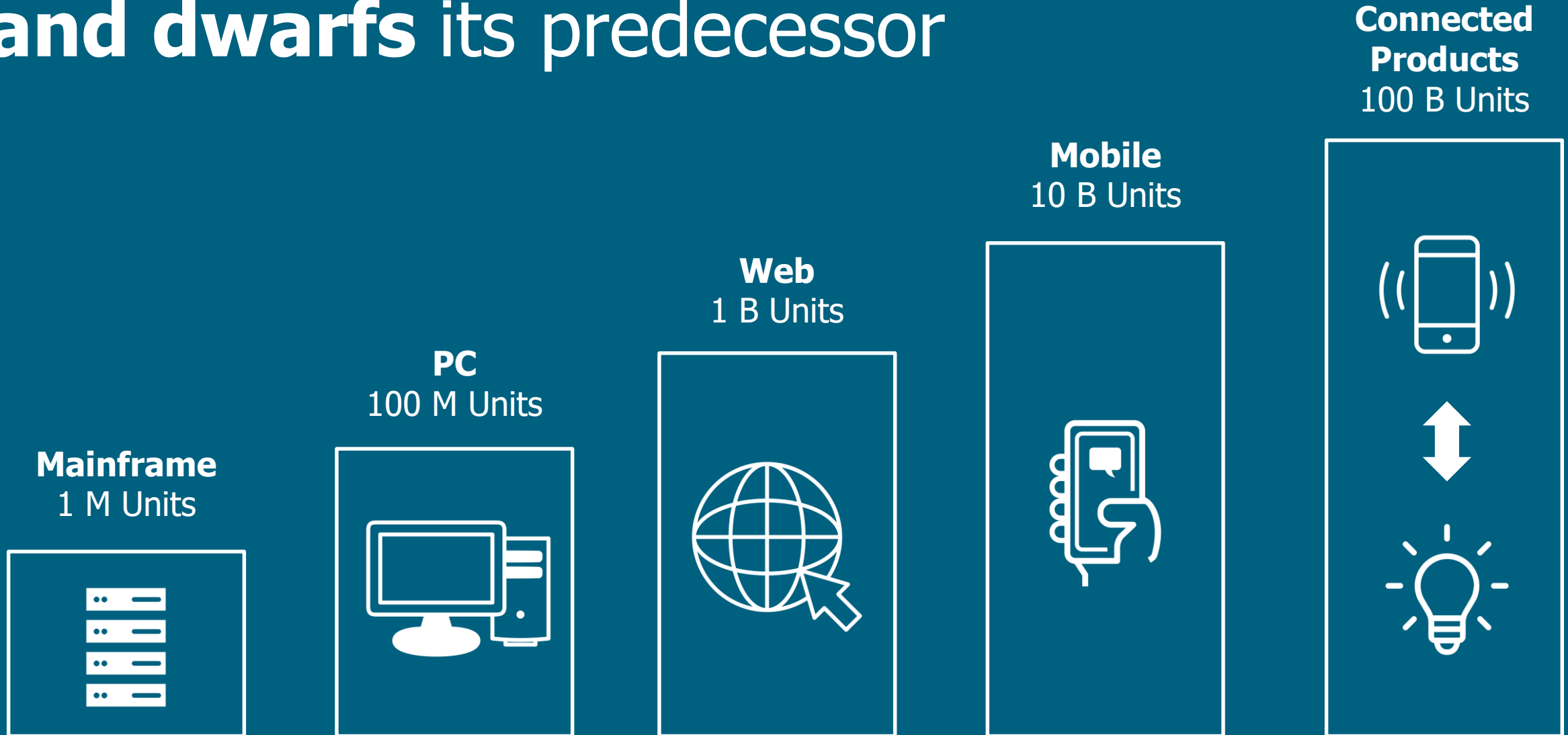


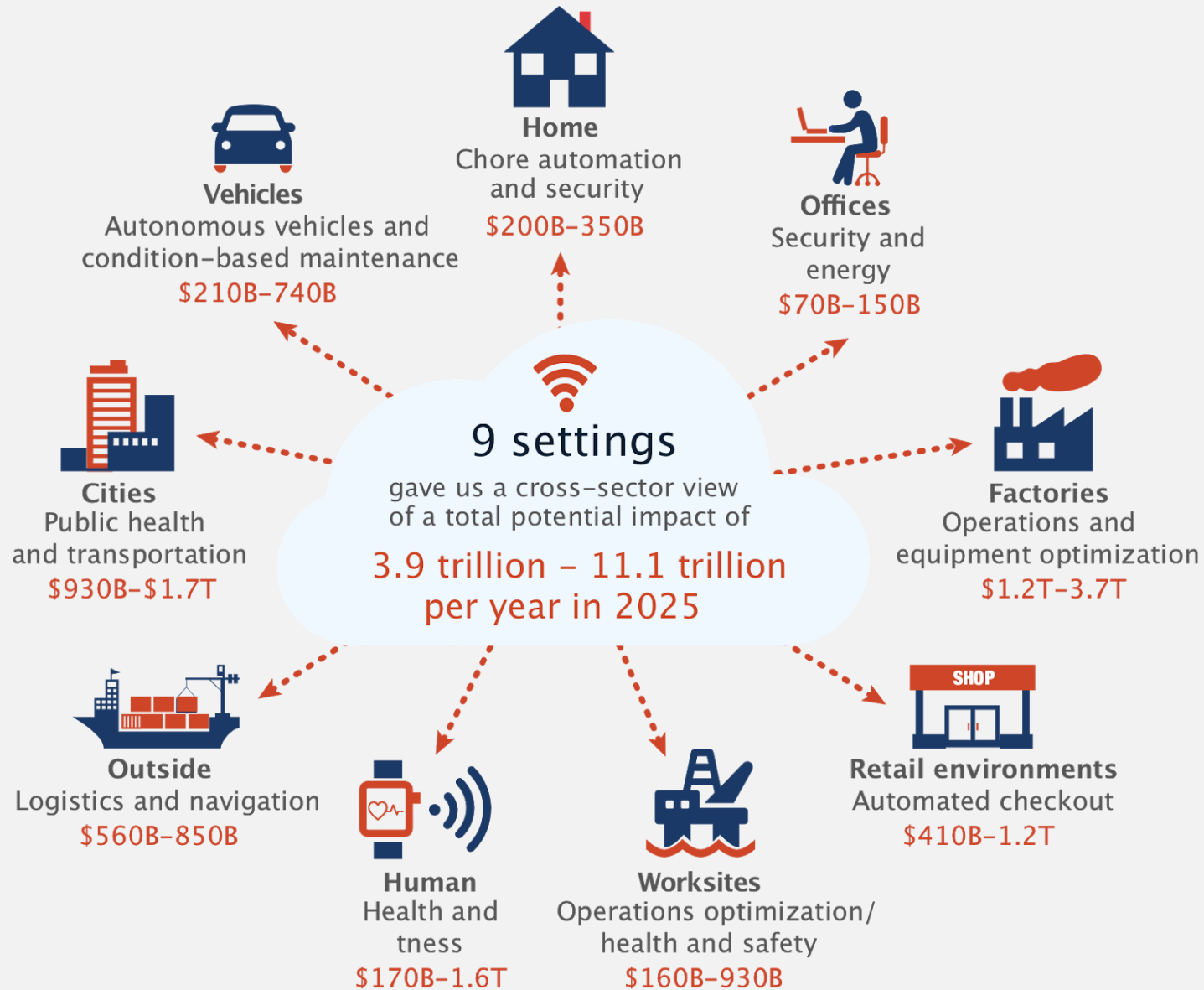


Where can new connectivity and new models bring **life safety** systems?



# Each computing wave **disrupts** **and dwarfs** its predecessor

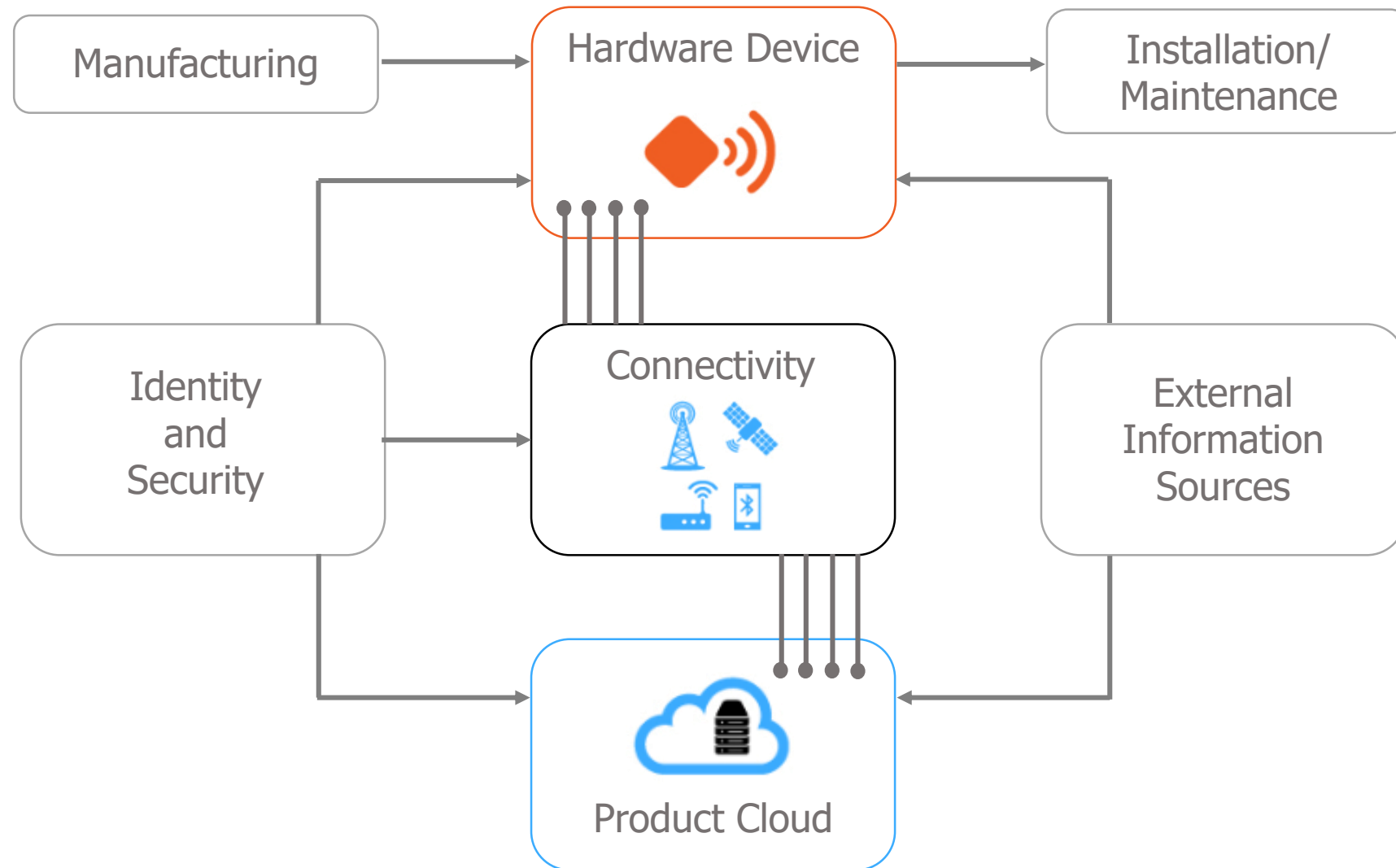




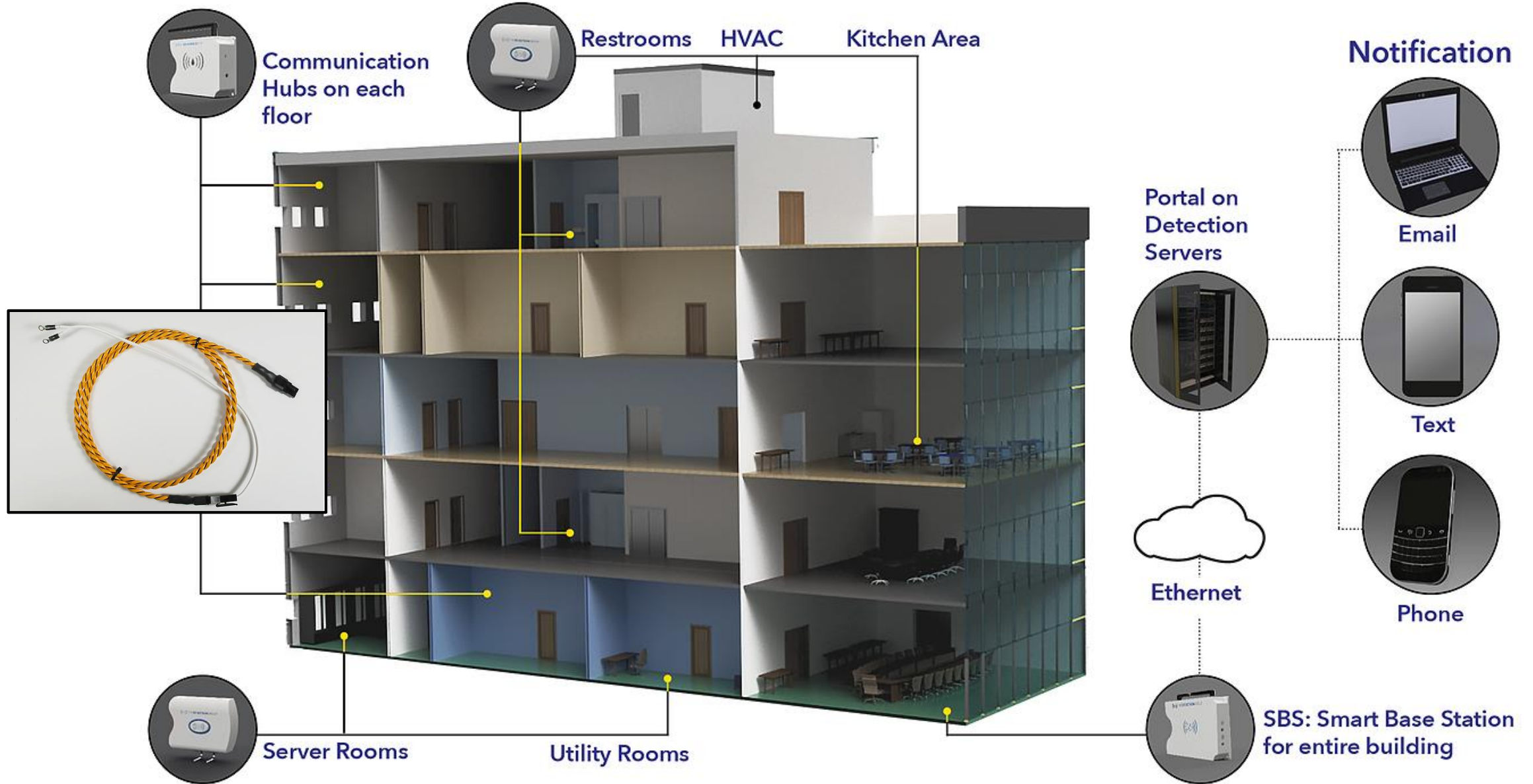
# The state of Life Safety

- “Neighbor industries” of HVAC, lighting, and physical security seeing \$150Bn in opportunity in IoT
- Pressure to implement new technologies in life safety systems, but lack of clarity on how/where to focus
- Regulatory standards provide constraints on innovation rollout
- But opportunities are significant for those who can get this right
  - Reduced system installation costs
  - Reduced operating & services costs
  - More efficient and safe systems in event of alarms/fires
  - Improved safety for first responders
  - New, highly profitable business models

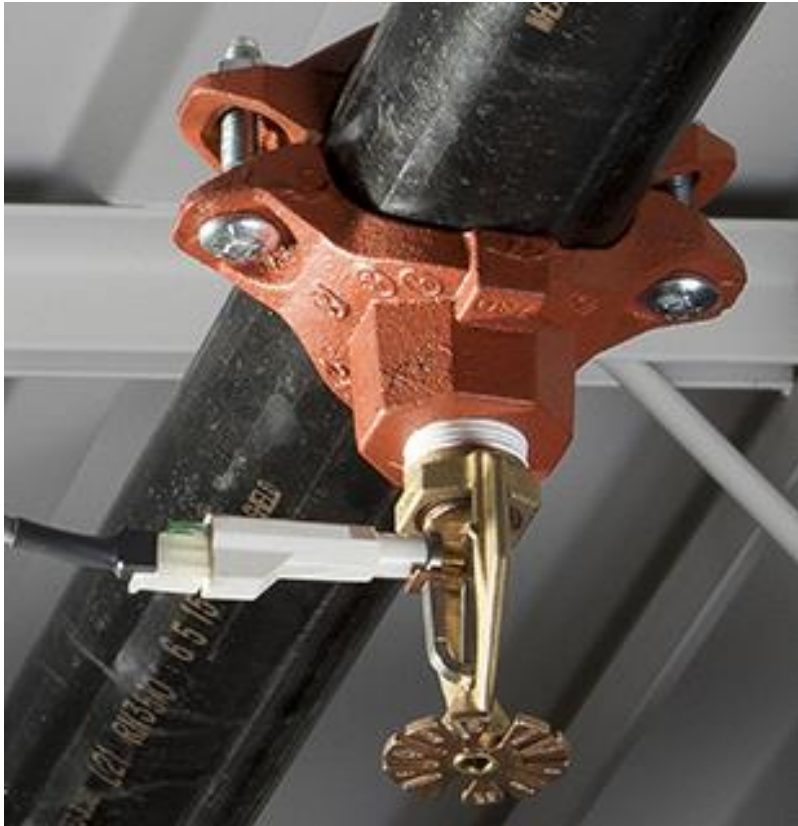
# The Anatomy of an IoT System



# ((( ))) THE DETECTION GROUP







Electric Sprinklers



Smart Risers



Remote Testable Valve

How Smart  
Fire and  
Life Safety  
Systems  
Create  
Safer, More  
Intelligent  
Buildings

BY THOMAS BEARE

# BEYOND



# THE CODES

The smart-building approach, however, takes advantage of an open, integrated ecosystem that enables all systems to connect via an integrated building management system (IBMS).



**Thomas Beare**  
Segment Head  
Siemens Fire and  
Life Safety

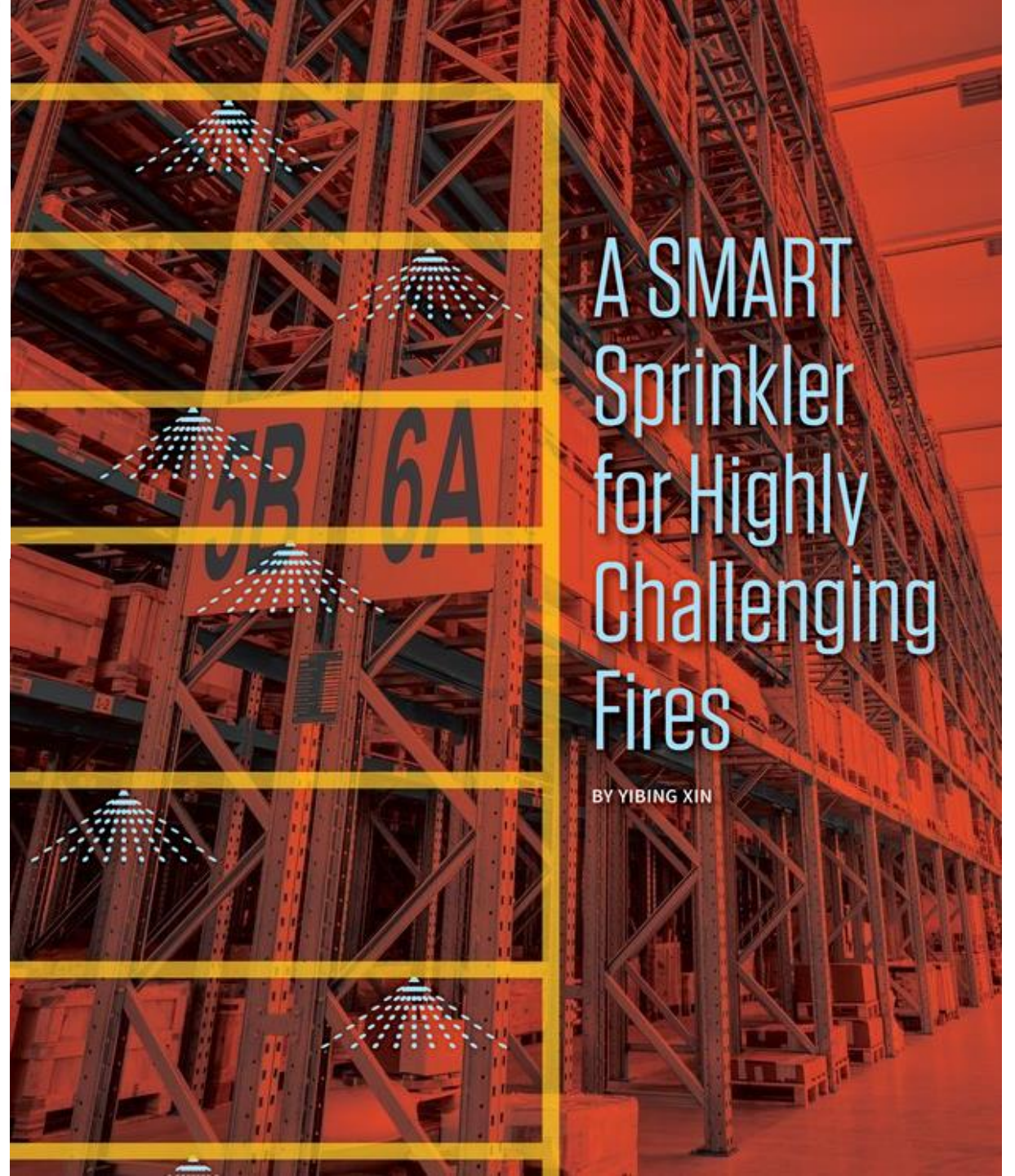
← Traditional sprinkler activation  
↓ SMART sprinkler activation



“FM Global Research explored the notion that the greatest strength of traditional sprinklers is their essential problem: shared detection and actuation mechanisms.”



**Yibin Xin**  
Staff VP,  
Research Group Manager,  
Fire and Explosive Protection  
FM Global



# A SMART Sprinkler for Highly Challenging Fires

BY YIBING XIN

NIST Special Publication 1191

# Research Roadmap for Smart Fire Fighting

Summary Report

“...incredible opportunities based on **harvesting new knowledge** to make the tasks of fire fighters more effective and efficient...”



**Casey C. Grant, PE, FSPPE**  
Executive Director  
Fire Protection Research  
Foundation

# Challenges Facing IoT in Life Safety Systems

- AHJ acceptance
- Stakeholder “upskilling”
- Business model ... where’s the ROI?
- Security of system
- Multi-stakeholder collaboration
- Control of system and ownership of data
- Validity of data
- Interoperability of data ... can we play nice with IT

# Standards to Keep an Eye on

NFPA's regulates minimum acceptable criteria, it doesn't limit what's possible

- NFPA 25
- NFPA 72
- UL 2900

NFPA 3 Standard for Commissioning of Fire Protection and Life Safety Systems  
NFPA 4 Standard for Integrated Fire Protection and Life Safety System Testing  
NFPA 75 Standard for the Fire Protection of Information Technology Equipment  
NFPA 76 Standard for the Fire Protection of Telecommunications Facilities  
NFPA 99 Health Care Facilities Code  
NFPA 101 Life Safety Code  
NFPA 730 Guide for Premises Security  
NFPA 731 Standard for the Installation of Electronic Premises Security Systems  
NFPA 950 Standard for Data Development and Exchange for the Fire Service  
NFPA 951 Guide to Building and Utilizing Digital Information

# IoT Roundtable

Risks?

Code Implications?

Challenges?

Opportunities?

Smart Products Today?