
AWS
re:Invent

IOT291-L

# Connect today, transform tomorrow with AWS IoT

Dirk Didascalou
VP, AWS IoT
Amazon Web Services

AWS re:Invent

© 2020, Amazon Web Services, Inc. or its affiliates. All rights reserved.

If you knew the state of every *thing*
and could reason on top of that data…

What problems would you solve?

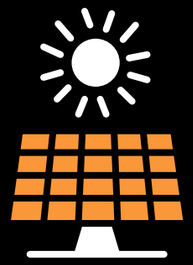
# AWS IoT customers solve problems in all sectors



# What customers are doing with AWS IoT



Increased productivity



Energy management



Remote healthcare



Connected vehicles



Higher crop yield



Inventory tracking



Enhanced safety



Smart home

# What customers are doing with AWS IoT



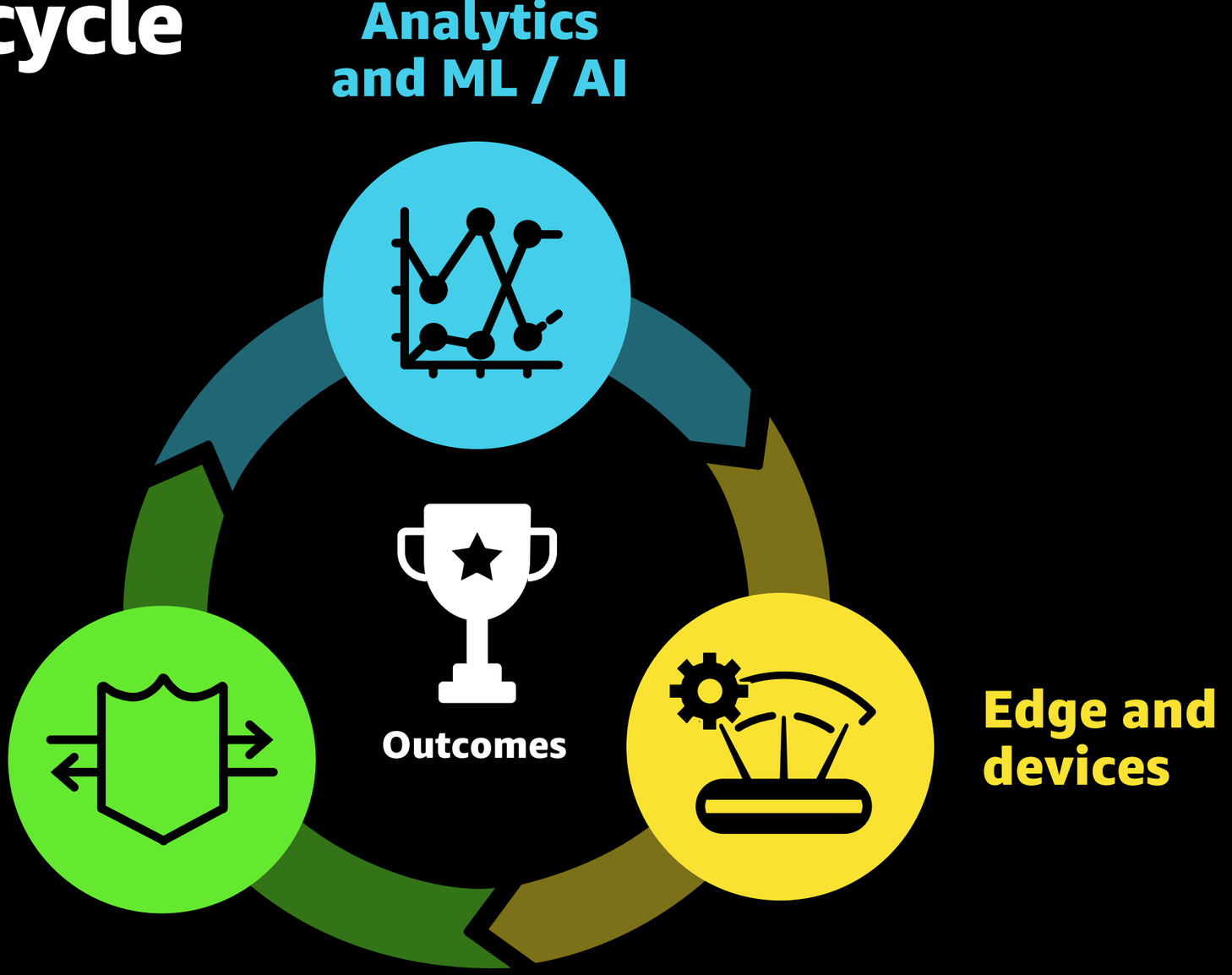

## Operational efficiency

IoT data decreases OpEx

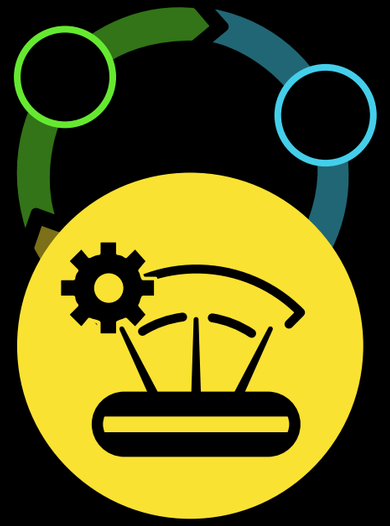
## Revenue growth

IoT data drives business growth

# IoT virtuous cycle

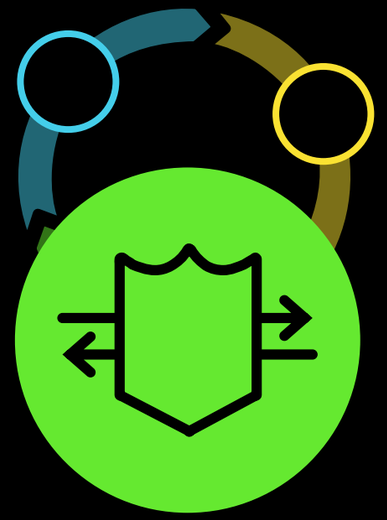


# Edge and devices



- AWS IoT Greengrass
- FreeRTOS
- AWS IoT Device SDK
- AWS IoT Device Tester
- AWS RoboMaker
- AWS Snowball Edge
- AWS Storage Gateway
- AWS Outposts
- AWS Wavelength

# Connectivity and control



AWS IoT Core

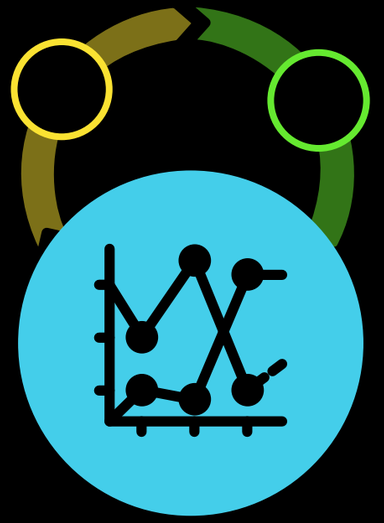
AWS IoT Device Management

AWS IoT Device Defender

Amazon Kinesis

AWS Identity and Access Management (IAM)

# Analytics and ML/AI

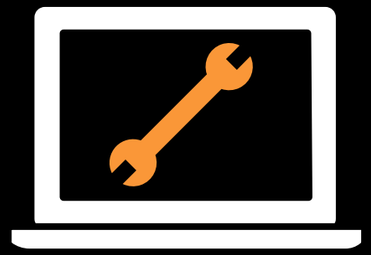


- AWS IoT SiteWise
- AWS IoT Analytics
- AWS IoT Events
- AWS IoT Things Graph

- Amazon SageMaker
- Amazon Athena
- Amazon QuickSight
- Amazon RDS
- Amazon Timestream
- Amazon DynamoDB
- Amazon S3

# Achieve business outcomes faster

Build



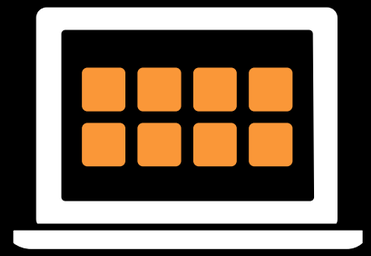
**AWS IoT Services**

Engage



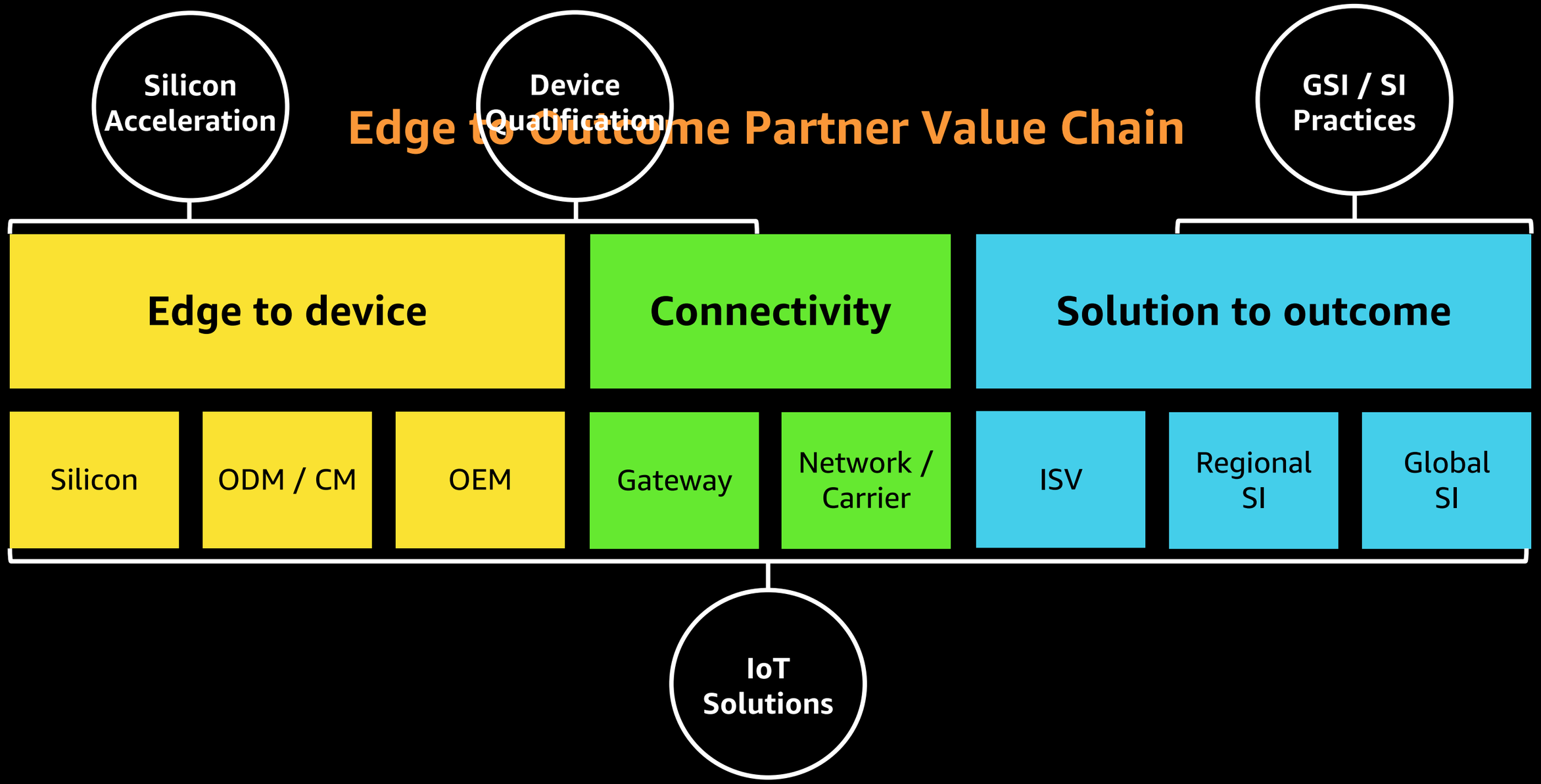
**AWS Partners**

Deploy



**Ready-made solutions**

# AWS IoT partnership approach



# AWS IoT Edge-to-Outcome Community

## Analytics and ML / AI

### Global systems integrators

accenture, TCS, wipro, Cognizant, TensorIoT, HCL, slalom, Persistent, Tech Mahindra, TATA Consultancy Services, Deloitte., Infosys

### Regional systems integrators

KLIKA·TECH Global IoT Solutions, OST, tuya, LUXOFT, Crayon, FUJISOFT, KOLON BENIT, eCloud valley, trek10, ONICA, splunk>, mobiquity, SIEMENS ADVANTA, OBLIVION Cloud Control, solstice, vertex, Atos, UPTAKE

### Independent software vendors

SAP, ThingLogix, HITACHI Inspire the Next, 47 Lining, BSQUARE, SIEMENS, falkonry, devicepilot, infor, modjoul, DOMO, edgeIQ, Bright Wolf, ptc

### Network / carrier

twilio, Ayla Networks, verizon, QUECTEL, SORACOM, aspentech, at&t, ASAVIE, eseye, amdocs, EMnify

## Connectivity and control

### Gateway

technicolor, inductive automation, ADLINK, Cirrus Link Solutions, DELL EMC, ADVANTECH, SIERRA WIRELESS, Lenovo, 1NCE, FOGHORN, kepware, RIGADO, acer

## Edge and devices

### OEM / ODM / CM

twisthink, Hewlett Packard Enterprise, MOXA, libelium, ONLOGIC, GE, DIGI, rexroth A Bosch Company, CloudRAIL, BOSCH, muRata Innovator in Electronics, JABIL, Shoreline IoT, SERCOM, FOXCONN, Laird Technologies

### Distributors

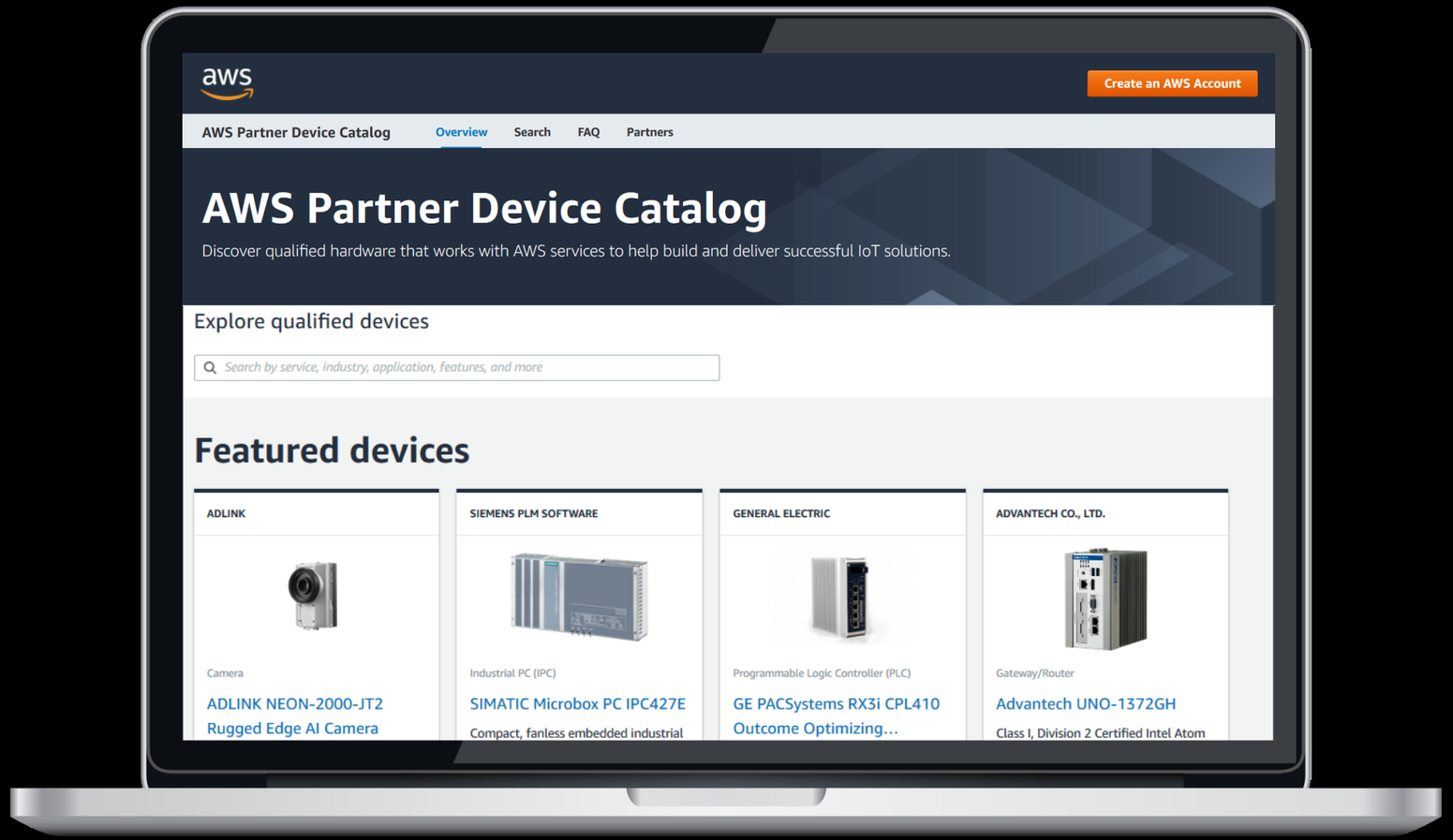
ARROW ELECTRONICS, INC., MACNICA

### Silicon

NXP, ST, GigaDevice, intel, Infineon, Qualcomm, nuvoTon, Microchip, ICTK holdings, XILINX, ESPRESSIF, NVIDIA, RENESAS, MEDIATEK, CYPRESS Embedded in Tomorrow, NORDIC Semiconductor, Texas Instruments, REALTEK

aws.amazon.com/iot/partner-solutions

# AWS Partner Device Catalog




devices.amazonaws.com

---

Development Kit

Sensor

Gateway / Router

Asset Tracker

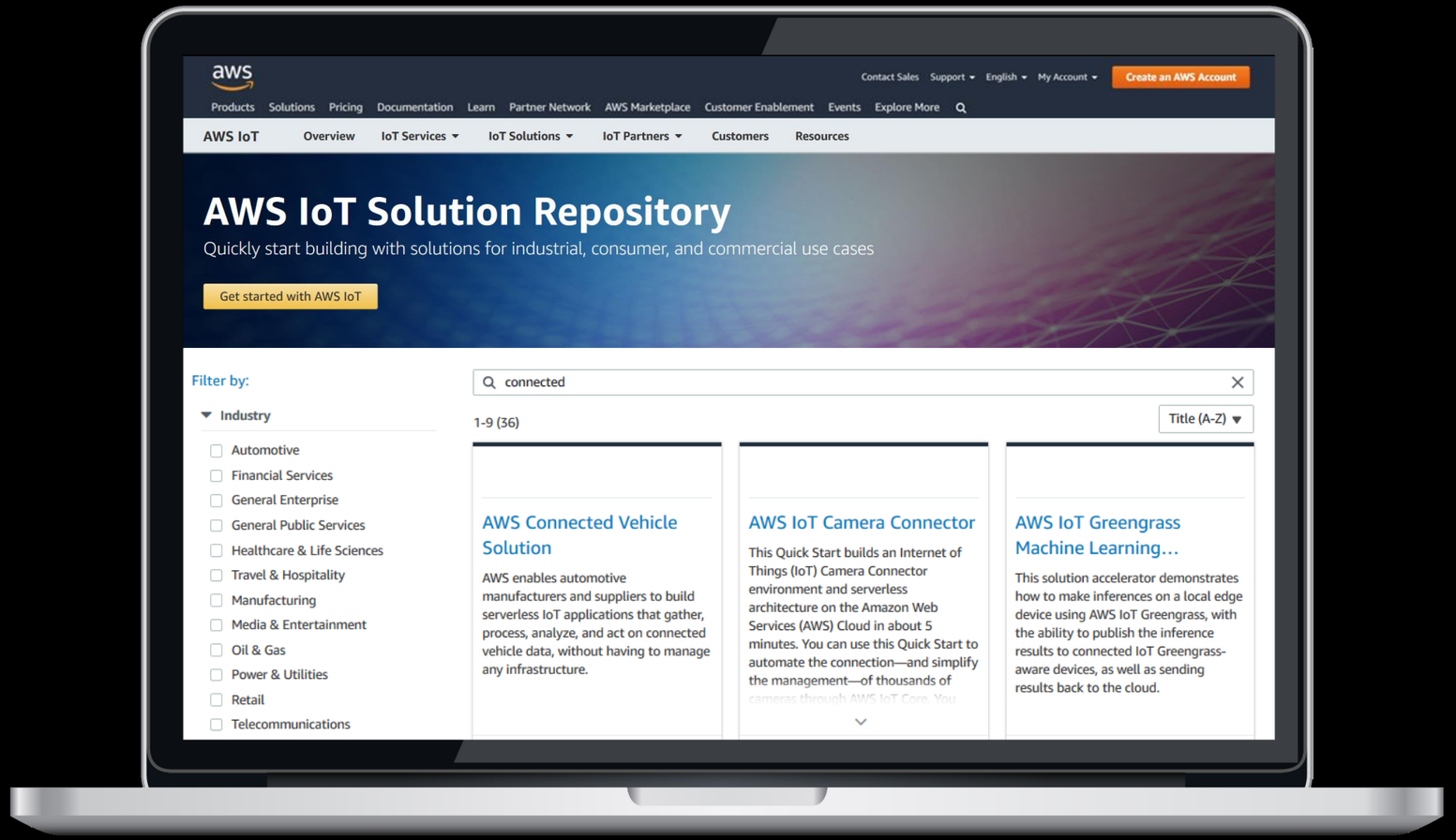
Industrial PC

Camera

Cellular Modem

...

# AWS and Partner IoT solutions




- Connected Factory
- Supply Chain Asset Tracking
- Energy Management
- Camera Connector
- Asset Management
- Connected Vehicle
- Asset Condition Monitoring
- …

aws.amazon.com/iot/solutions

AWS for Industrial: aws.amazon.com/industrial

# Connect today

AWS re:Invent

© 2020, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# Customers choose AWS IoT

**10s of thousands**



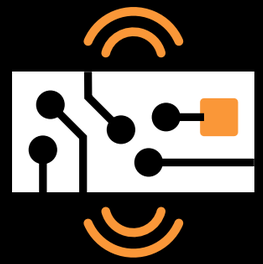
Customers

**>90%**



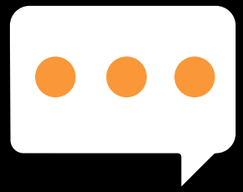
Fortune 100 use AWS Partners and solutions

**>½B**



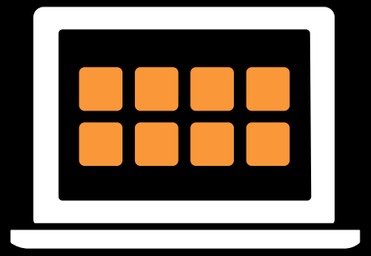
Active endpoints / month

**>½T**



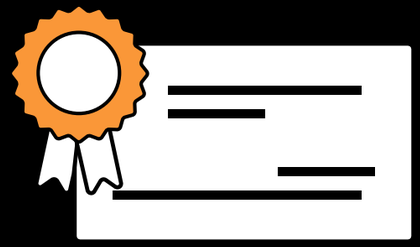
Payload messages / month

**>300**



AWS and Partner IoT solutions

**>500**

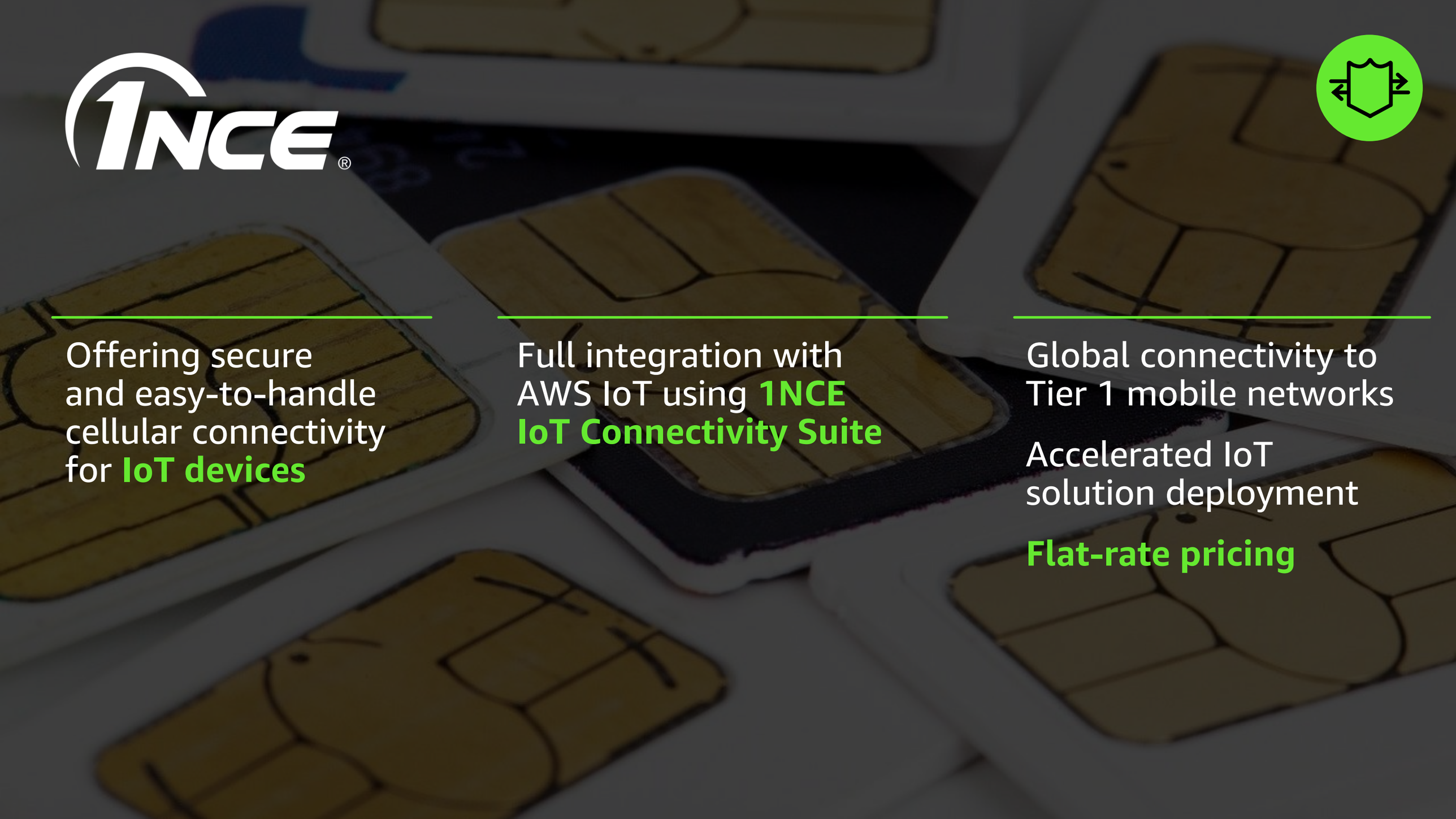


Qualified partner devices

**#1 Real-time OS**




**4x** Segment market share vs. next-closest competitor



Offering secure and easy-to-handle cellular connectivity for **IoT devices**

Full integration with AWS IoT using **1NCE IoT Connectivity Suite**

Global connectivity to Tier 1 mobile networks

Accelerated IoT solution deployment

**Flat-rate pricing**


1NCE®
Exclusive offering only at AWS Marketplace
Global connectivity
+
Up to 100* SIMs
+
Free of charge 12 months
+
50 MB inclusive
Upgrade to flat rate pricing
$10 / 10 yrs / 500 MB possible at any time
Get your SIM: aws.amazon.com/marketplace/pp/B08LXZTNWJ
* Contact 1NCE if you need more

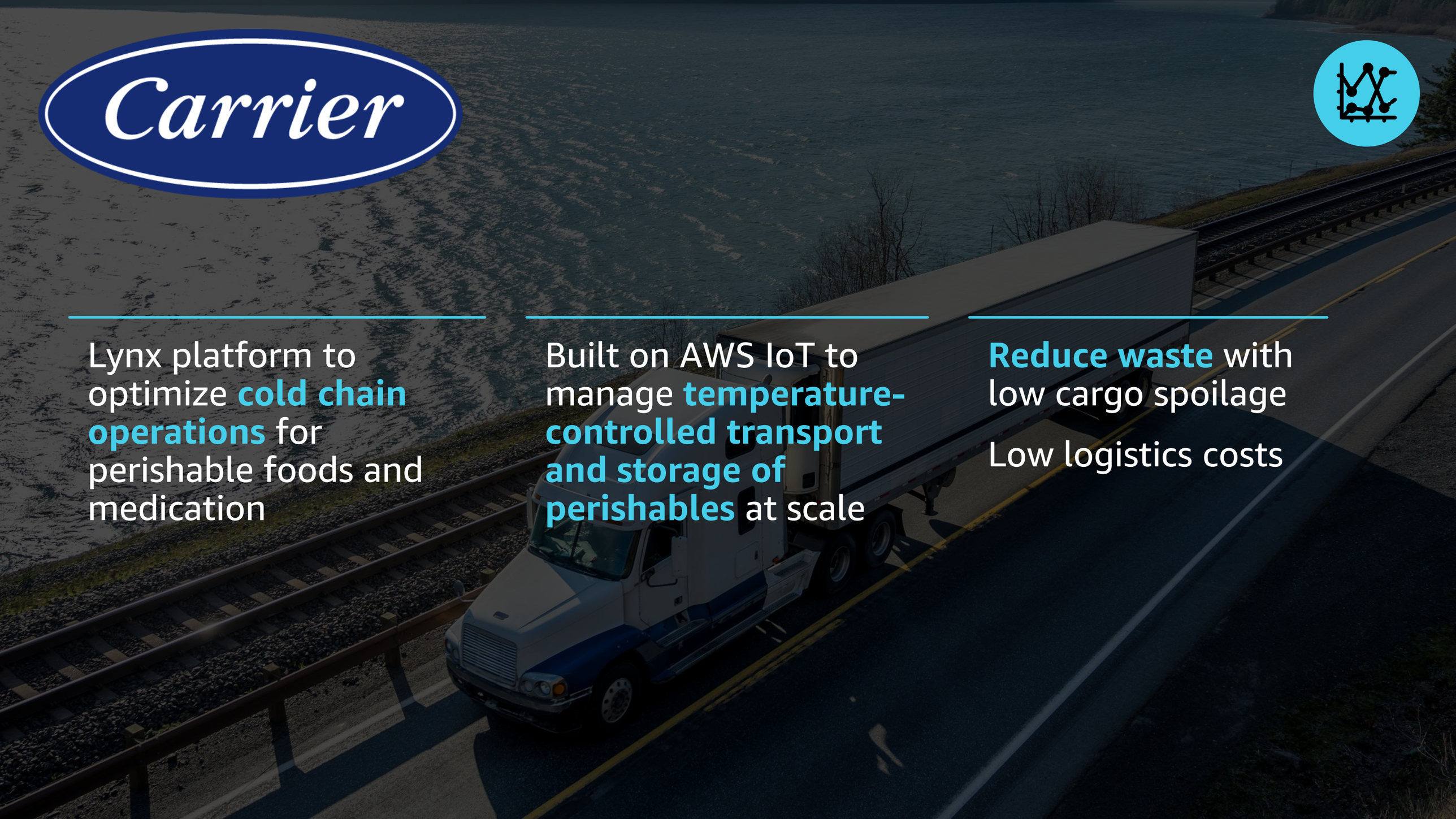
Lenovo

**Commercial IoT management platform** for intelligent solutions

Built on AWS IoT to monitor at scale across **millions of devices and billions of messages**

**Uniform management** offers multiple solutions in one platform

Maximize uptime and ROI




Lynx platform to optimize **cold chain operations** for perishable foods and medication

Built on AWS IoT to manage **temperature-controlled transport and storage of perishables** at scale

**Reduce waste** with low cargo spoilage

Low logistics costs

# HITACHI

## Inspire the Next

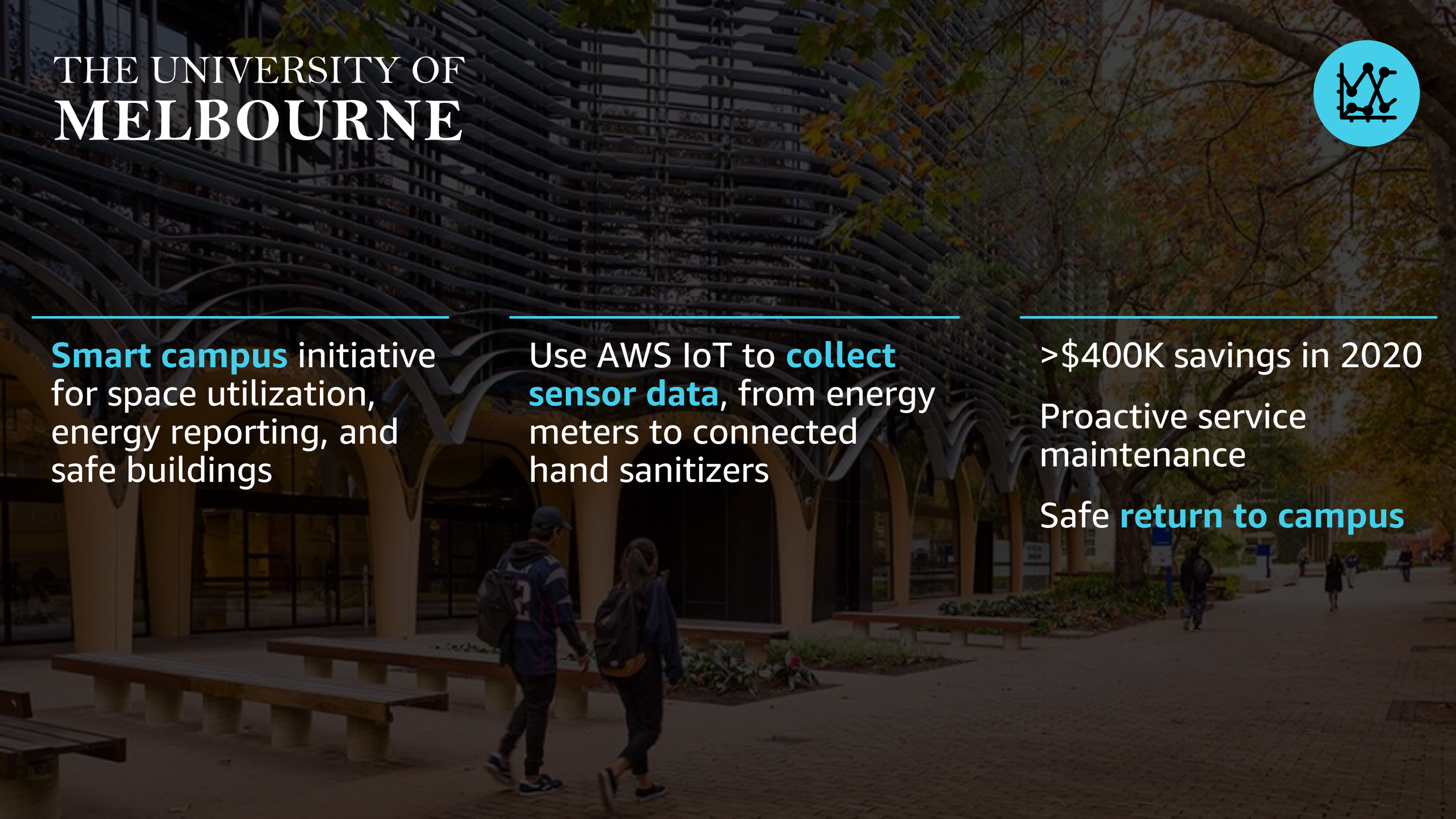
A **leader** in the 2020 **Gartner Magic Quadrant** for Industrial IoT Platforms

Lumada can be deployed with AWS IoT services to deliver **advanced digital industrial solutions**

End-to-end customer experience (from design to solution) makes it **easy to adopt IIoT solutions**

Reduce energy costs, identify equipment issues, and improve product quality

*Gartner does not endorse any vendor, product, or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner's research organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.*



THE UNIVERSITY OF MELBOURNE

**Smart campus** initiative for space utilization, energy reporting, and safe buildings

Use AWS IoT to **collect sensor data**, from energy meters to connected hand sanitizers

>$400K savings in 2020

Proactive service maintenance

Safe **return to campus**

# Transform tomorrow

AWS re:Invent

© 2020, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# A customer-centric roadmap

## Connectivity

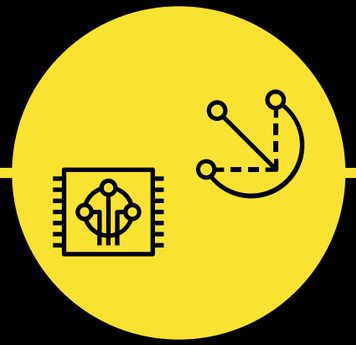
iRobot



**2015 / 2016**
AWS IoT Core

## Edge

enel

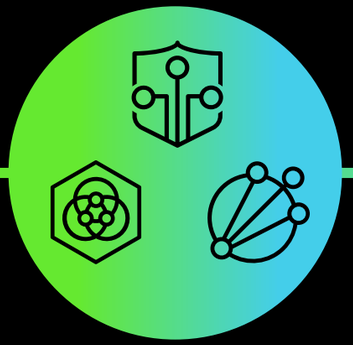


**2016 / 2017**
AWS IoT Greengrass

FreeRTOS

## Control and analytics

PHILIPS



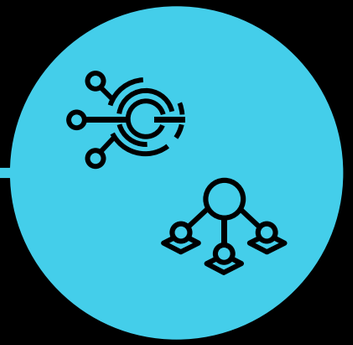
**2017 / 2018**
AWS IoT Device Management

AWS IoT Device Defender

AWS IoT Analytics

## Analytics / industrial

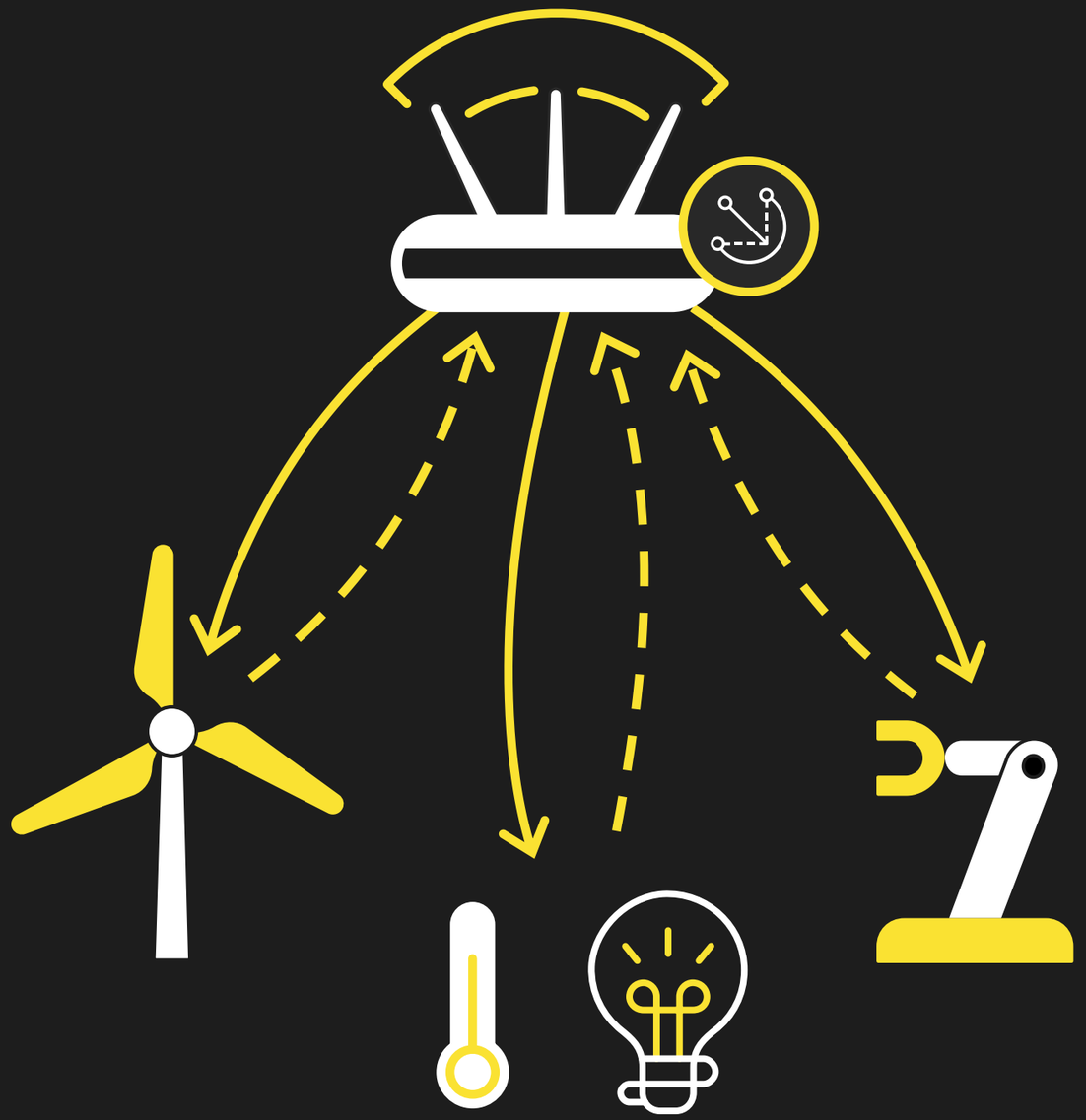
Bayer CropScience



**2019 / 2020**
AWS IoT Events

AWS IoT SiteWise

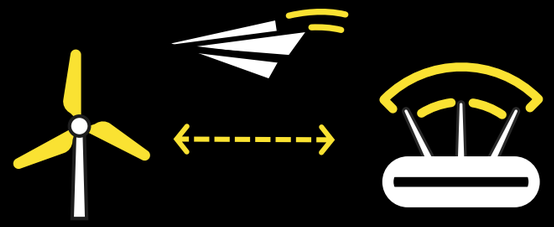
# How can I easily build and manage IoT device software at the edge?



# AWS IoT Greengrass



Security and
AWS Secrets Manager



Local
Messaging



Local
Actions



Container Support




Stream Manager

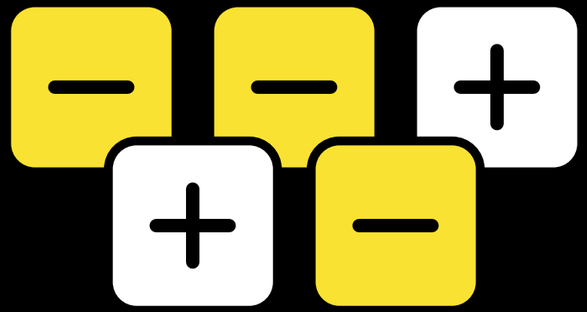


ML Inference

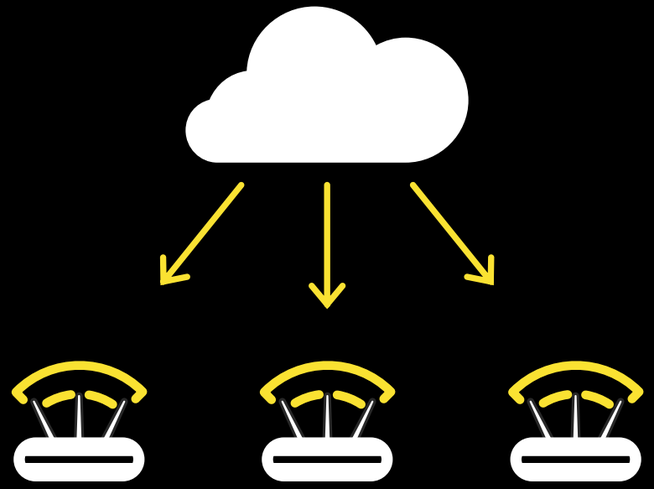
# AWS IoT Greengrass 2.0

NEW FEATURE

A flexible edge platform to easily build, deploy, and manage device software across millions of devices



Completely modular

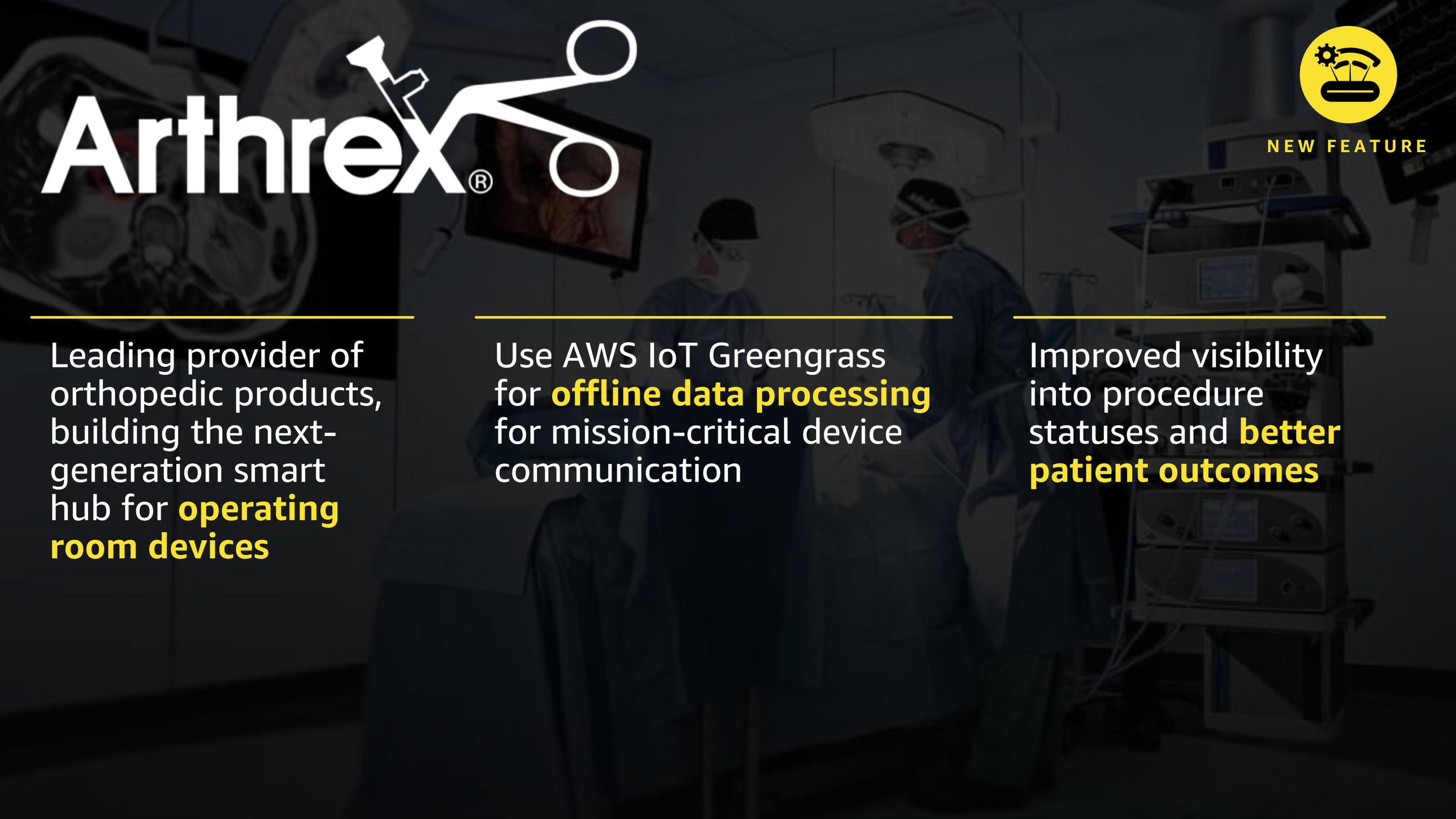


Deploy device software at scale



Locally deployable and configurable

**New! AWS IoT Greengrass is now open source!**




NEW FEATURE

Leading provider of orthopedic products, building the next-generation smart hub for **operating room devices**

Use AWS IoT Greengrass for **offline data processing** for mission-critical device communication

Improved visibility into procedure statuses and **better patient outcomes**

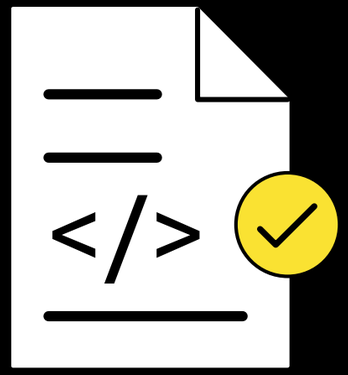
# How can I ensure my FreeRTOS libraries are maintained and secure?



# FreeRTOS long-term support (LTS)

NEW FEATURE

Get predictability and feature stability for two years
with FreeRTOS LTS libraries




Feature
stability



Security updates and
critical fixes



Updateable, secure
connectivity

solshare

NEW FEATURE

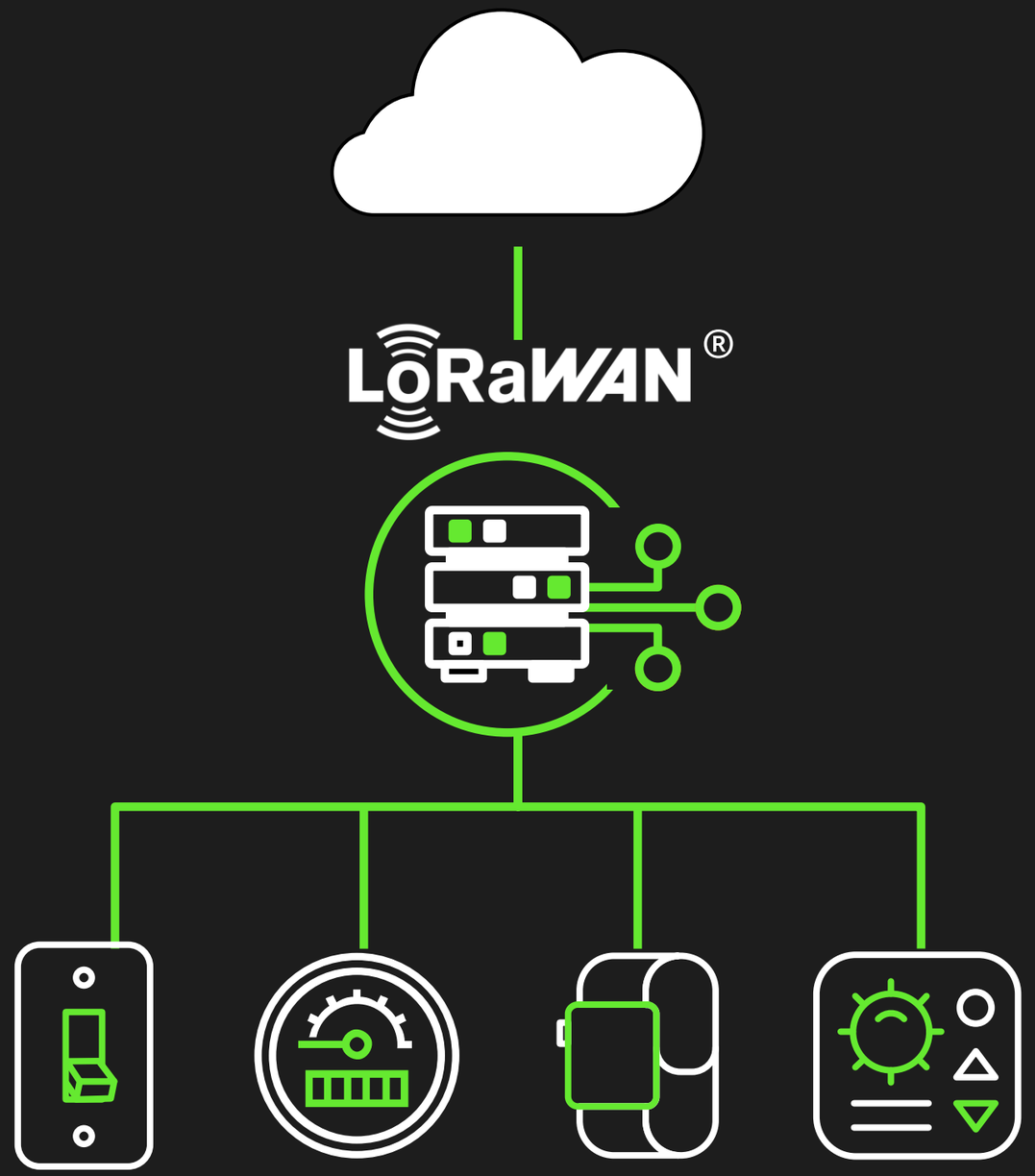
SOLshare pioneered a **peer-to-peer solar energy** trading microgrid, supporting affordable electricity for Bangladesh communities

Use FreeRTOS LTS on constrained MCUs for **microgrid logic connecting securely** to AWS IoT Greengrass and AWS IoT Core

Managing a fleet of peer-to-peer microgrid devices

Gathering telemetry data for **advanced analytics**

# How can I easily connect LoRaWAN devices to AWS?

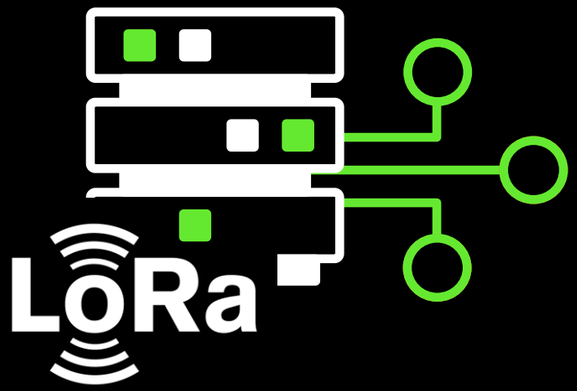



LoRaWAN® is a mark used under license from the LoRa Alliance®.

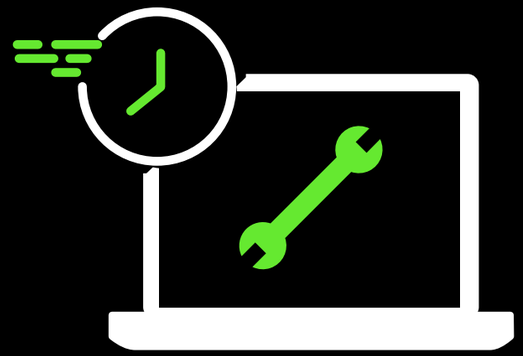
# AWS IoT Core for LoRaWAN

NEW FEATURE

Connect LoRaWAN devices to AWS IoT Core without developing or operating a LoRa Network Server




Managed LoRa Network Server



Fast application development



Best-in-class pricing



ComplianceMate™

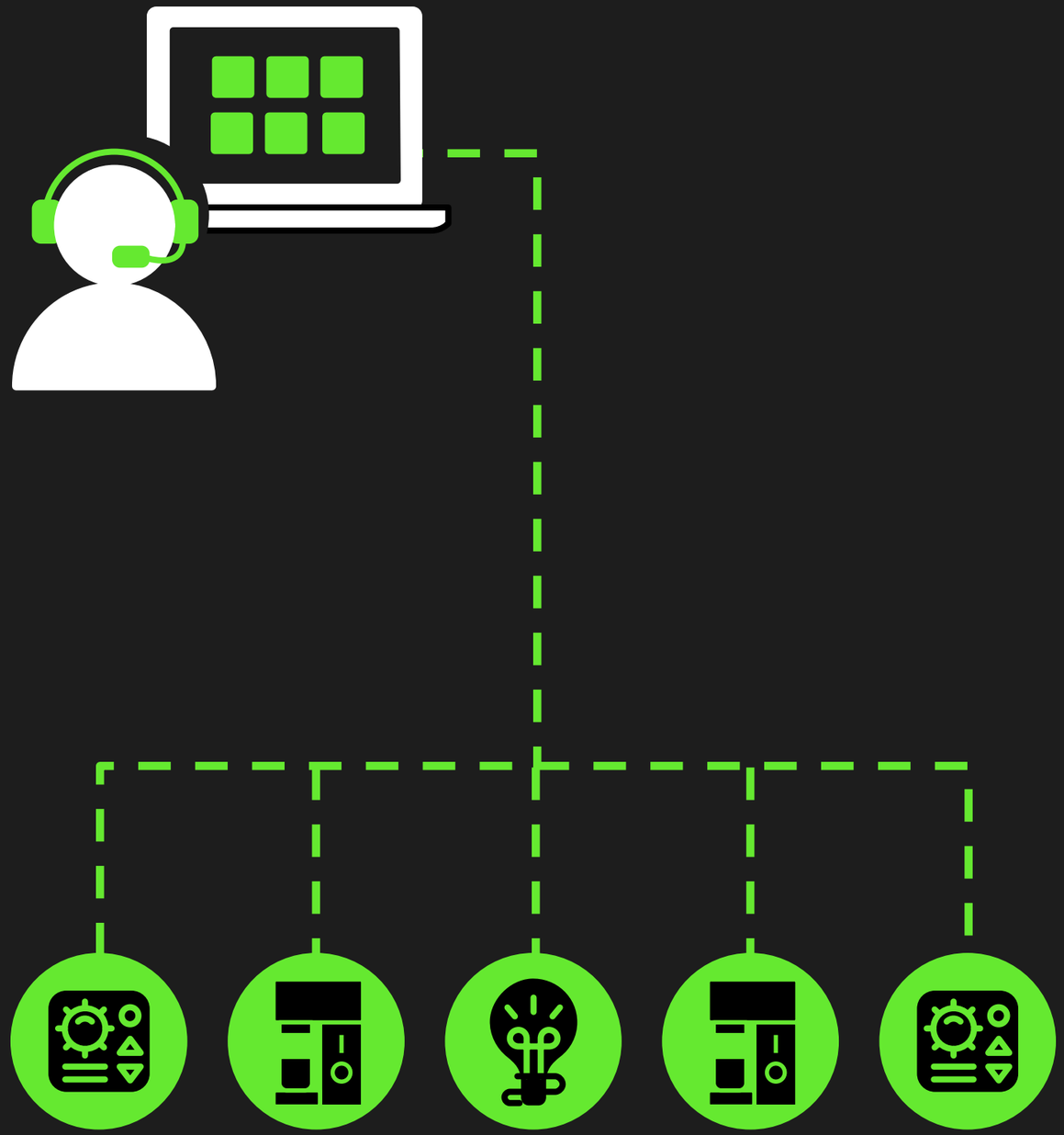
NEW FEATURE

Allow restaurants, convenient stores, and hospitality to **monitor and maintain compliance** to food safety regulations of perishable goods

Use AWS IoT Core for LoRaWAN to **connect temperature sensors** in restaurant refrigeration and freezer units

Ensures **customer food safety** while reducing risk of food perishing

# How can I quickly monitor and troubleshoot my IoT fleets remotely?



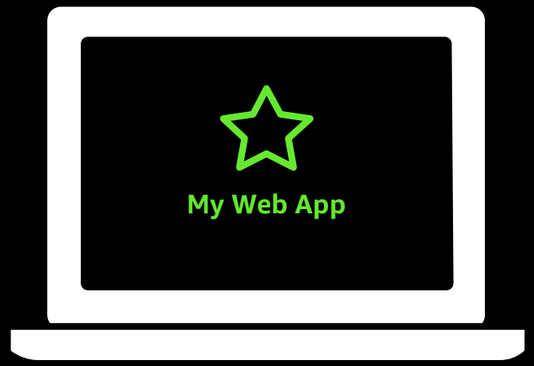
# Fleet Hub for AWS IoT Device Management

NEW FEATURE
PREVIEW

Fully managed web application to view and interact with your device fleets connected to AWS



Integrate with existing identity systems



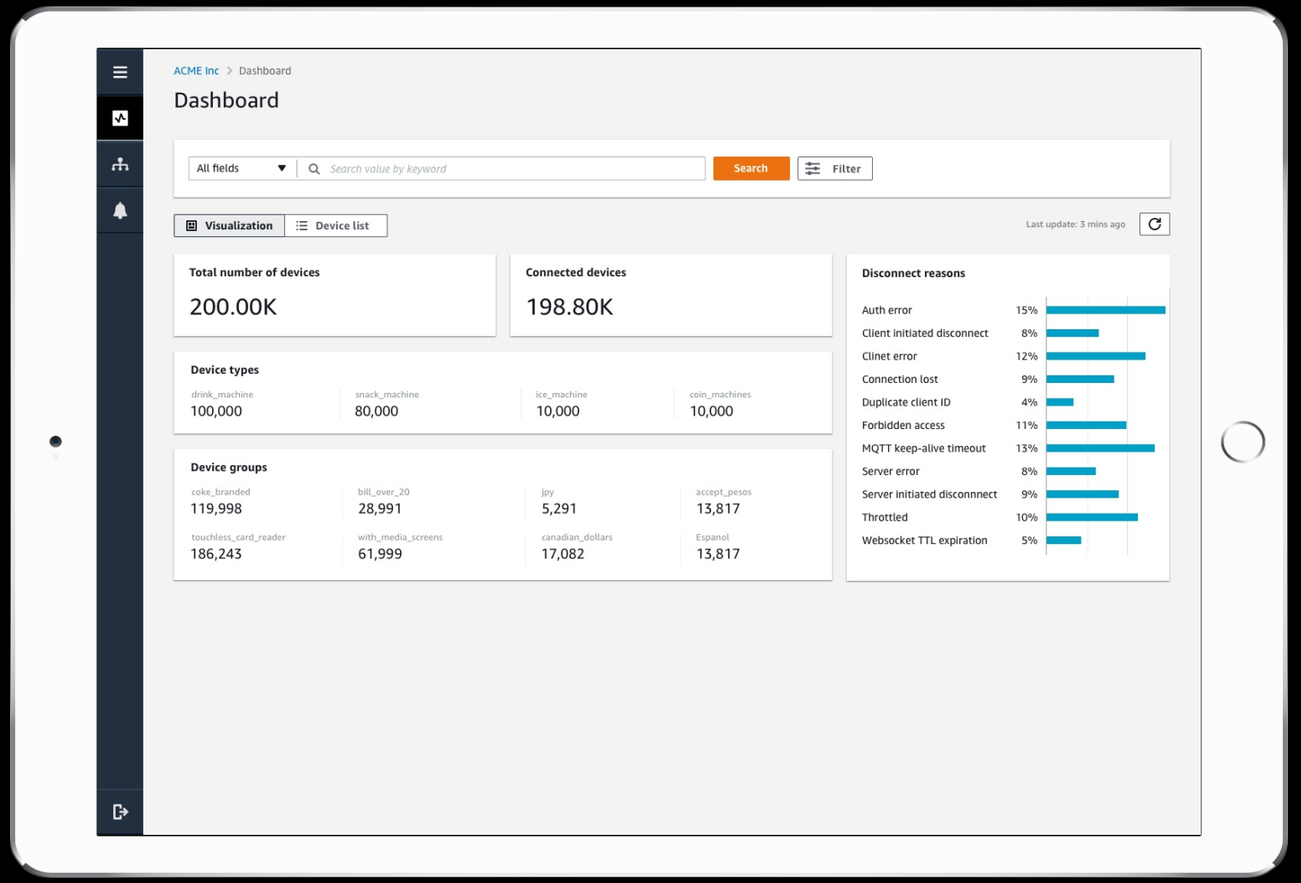

Deploy in minutes with no code



Interact with your fleets

# Fleet Hub for AWS IoT Device Management

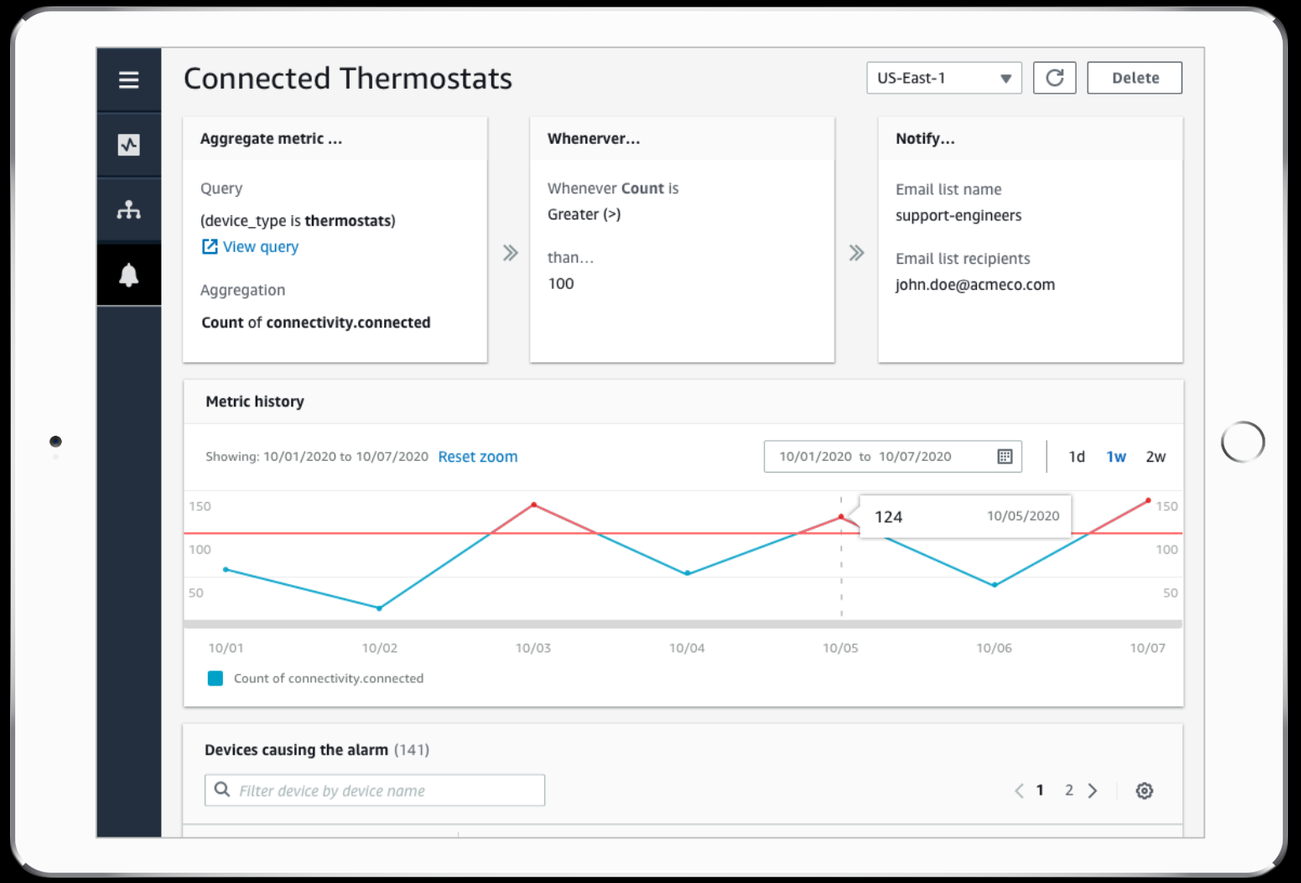
NEW FEATURE PREVIEW




aws.amazon.com/iot-device-management

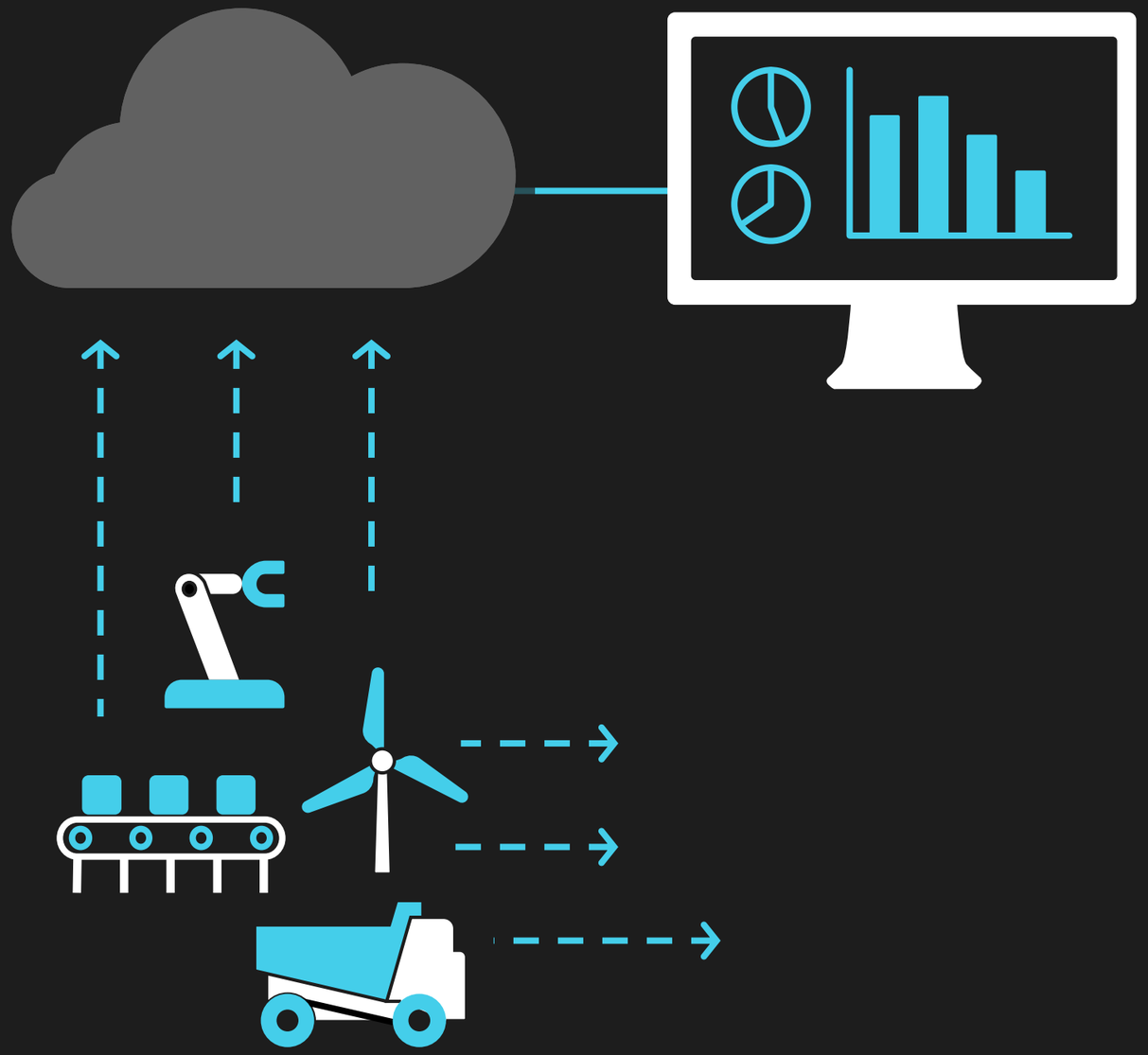
# Fleet Hub for AWS IoT Device Management

NEW FEATURE PREVIEW




aws.amazon.com/iot-device-management

# How can I monitor my industrial assets?



# AWS IoT SiteWise Edge

NEW FEATURE
PREVIEW

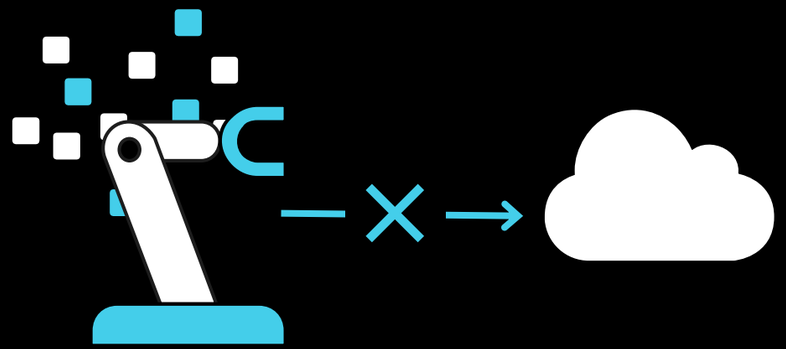
Collect, process, and visualize equipment data on premises, even when disconnected, before sending it to AWS Cloud destinations



Local data collection and processing



Locally monitor and visualize assets



Disconnected operation with consistent asset models

Runs on third-party gateways, AWS Outposts, or AWS Snow Family

# More great new AWS IoT features



AWS IoT

EduKit



AWS IoT Core

Apache Kafka Actions & AWS VPC Actions for Rules Engine



AWS IoT SiteWise

Alarms*

Grafana Plugin



AWS IoT Device Defender

ML Detect*

Custom Metrics



AWS IoT Events

Alarms*

*NOW IN PREVIEW

# VOLKSWAGEN

GROUP

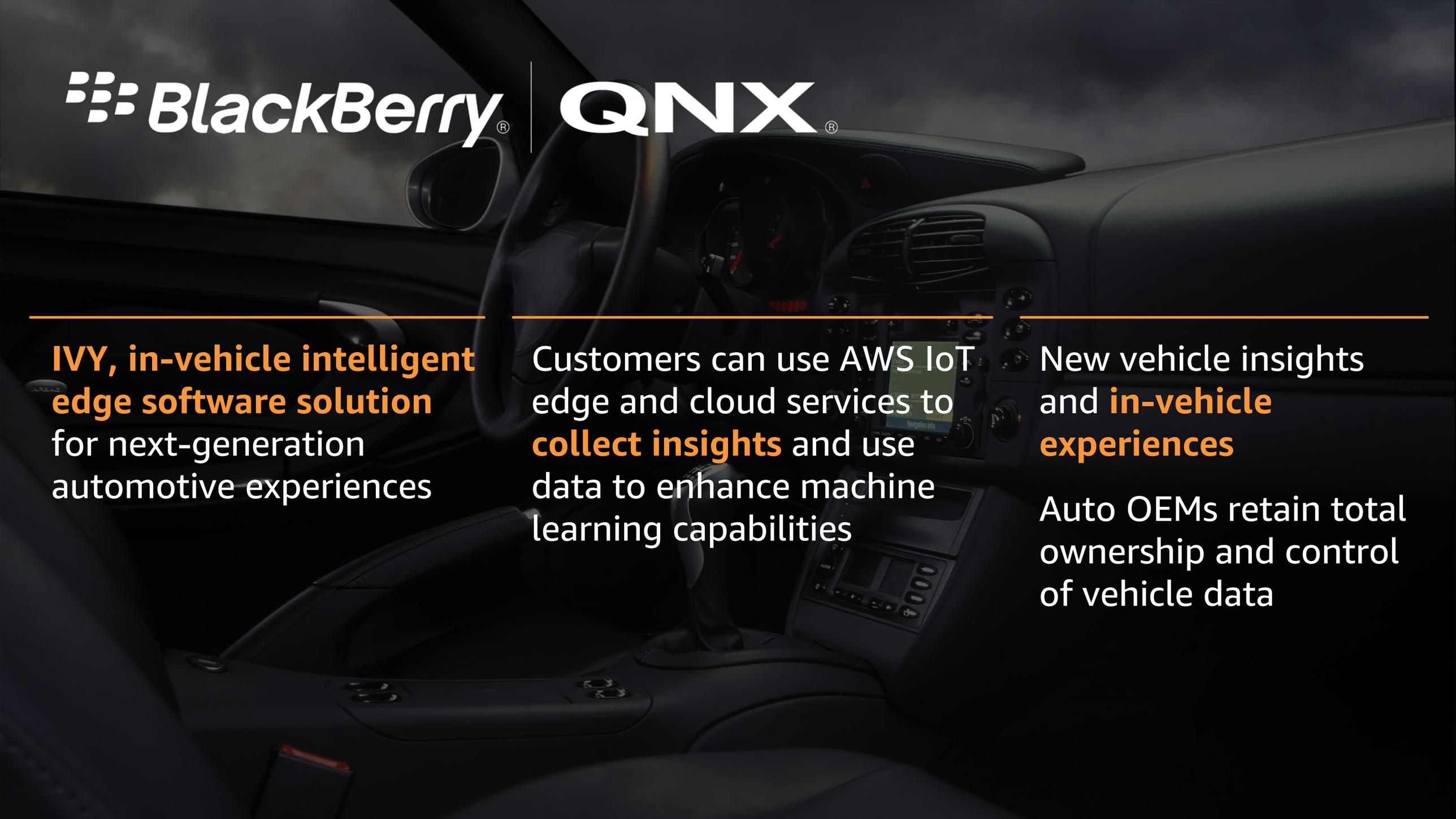
One of the largest Industry 4.0 projects – **Digital Production Platform** – key lever to boost plant productivity by 30%

**A global platform** built using AWS IoT, combining data from machines, systems, and plants

**Production and supply chain use cases** across 120+ plants

Costs savings of several billion euros expected

Integrating suppliers and partners worldwide




**IVY, in-vehicle intelligent edge software solution** for next-generation automotive experiences

Customers can use AWS IoT edge and cloud services to **collect insights** and use data to enhance machine learning capabilities

New vehicle insights and **in-vehicle experiences**

Auto OEMs retain total ownership and control of vehicle data

# Vector

AWS re:Invent

© 2020, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# Vector New Energy Platform

Simon Mackenzie
Group Chief Executive - Vector

Nikhil Ravishankar
Chief Digital Officer - Vector

AWS re:Invent

© 2020, Amazon Web Services, Inc. or its affiliates. All rights reserved.

# Vector: creating a new energy future

- On the New Zealand stock exchange, market cap $4.4B
- Majority owned by community trust – Entrust, ensuring alignment between customers and shareholders
- Operate in NZ, Australia, Pacific Islands



**REGULATED 60%**

vector electricity

vector gas

**UNREGULATED 40%**

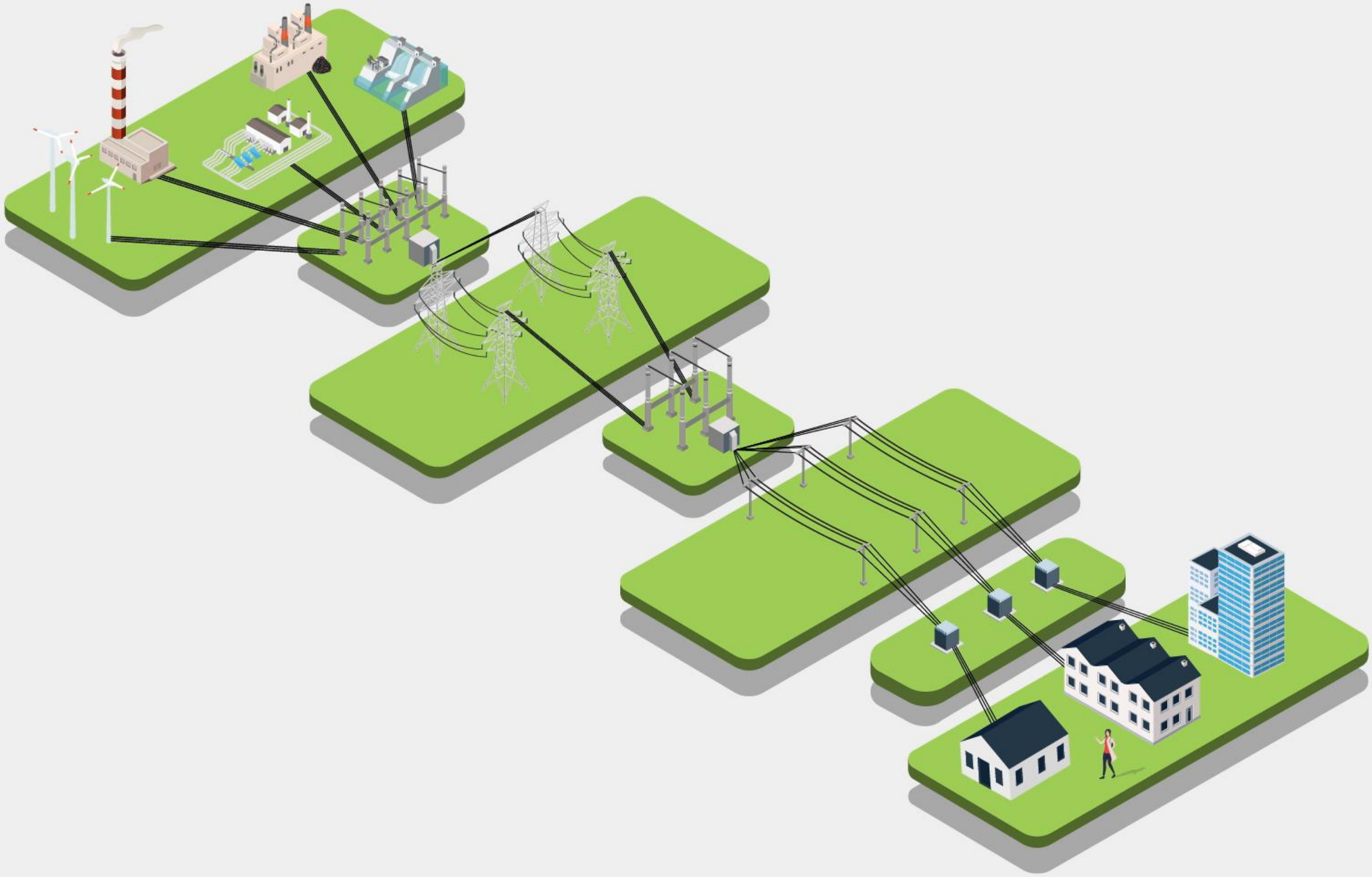
vector technology services

vector powersmart

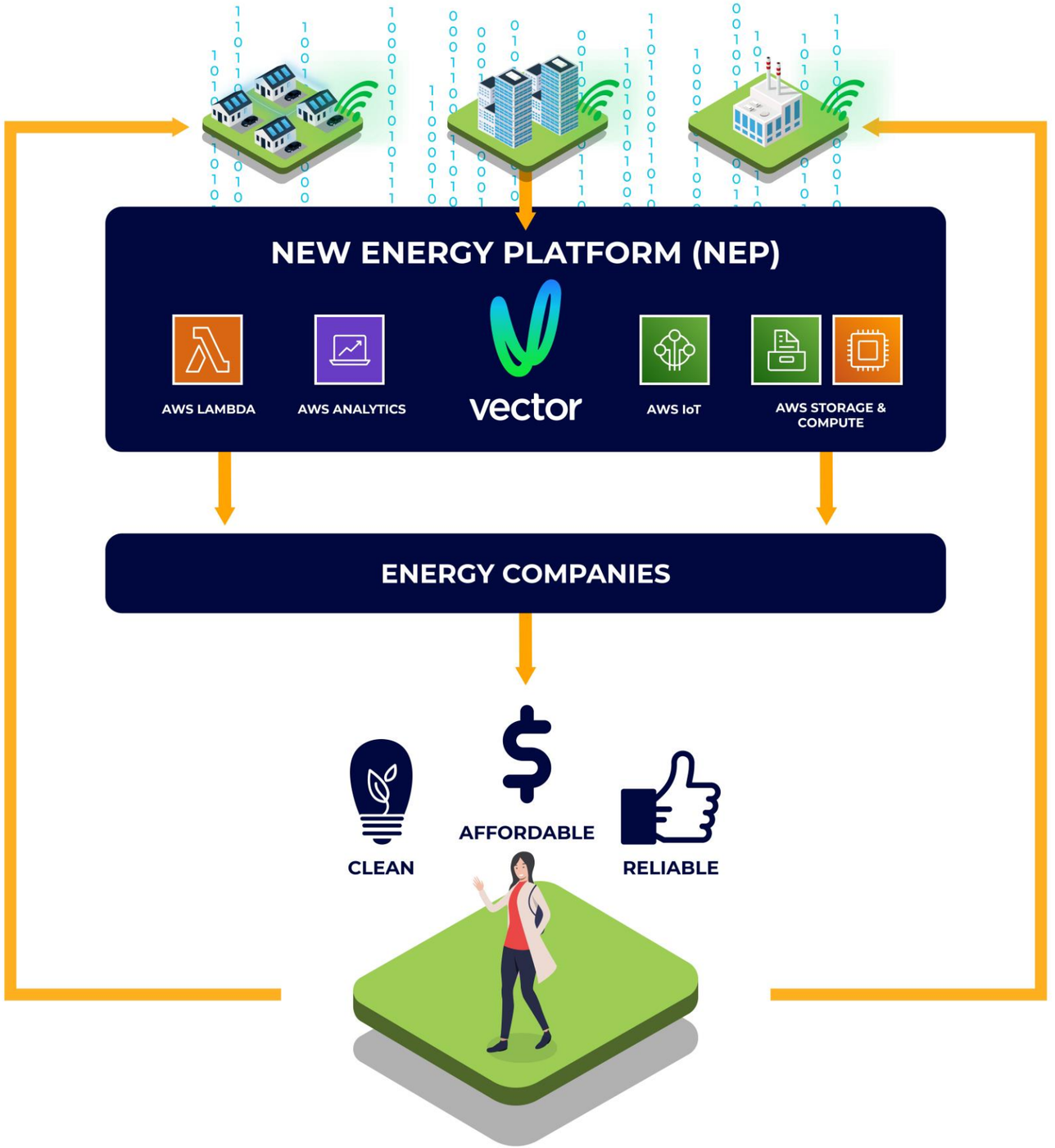
vector fibre

vector metering

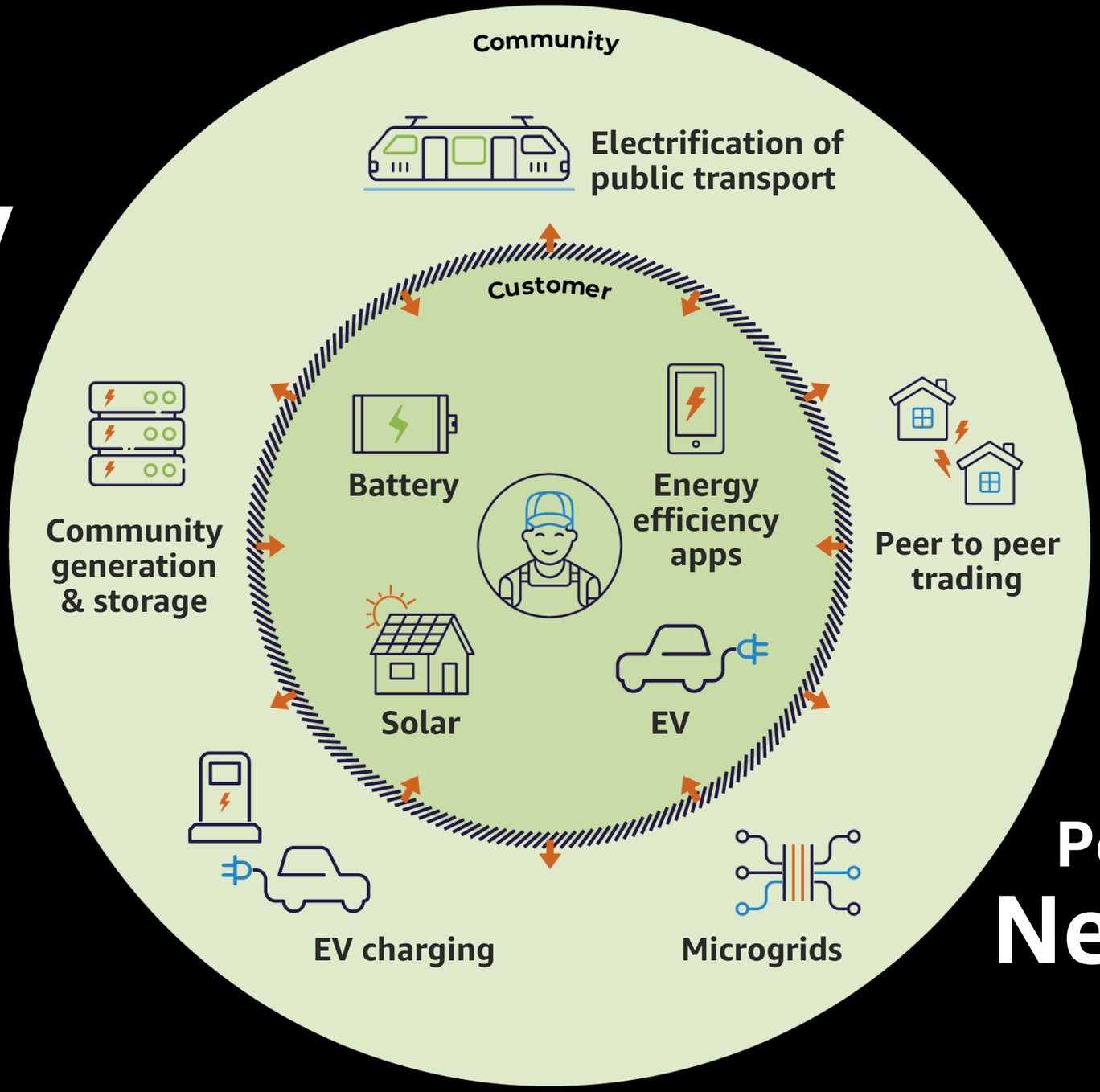
vector ongas



# The New Energy Platform



# A New Energy Future




Powered by the **New Energy Platform**

# Thank you!

Simon Mackenzie

Group Chief Executive, Vector

Nikhil Ravishankar

Chief Digital Officer, Vector



© 2020, Amazon Web Services, Inc. or its affiliates. All rights reserved.

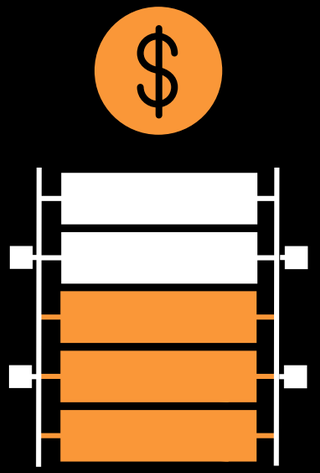
# What sets AWS IoT apart?

## Trust your fleets and data are secure



Most secure cloud and edge

## Pay for what you use



Automated scaling with serverless

## Whatever, whenever, wherever

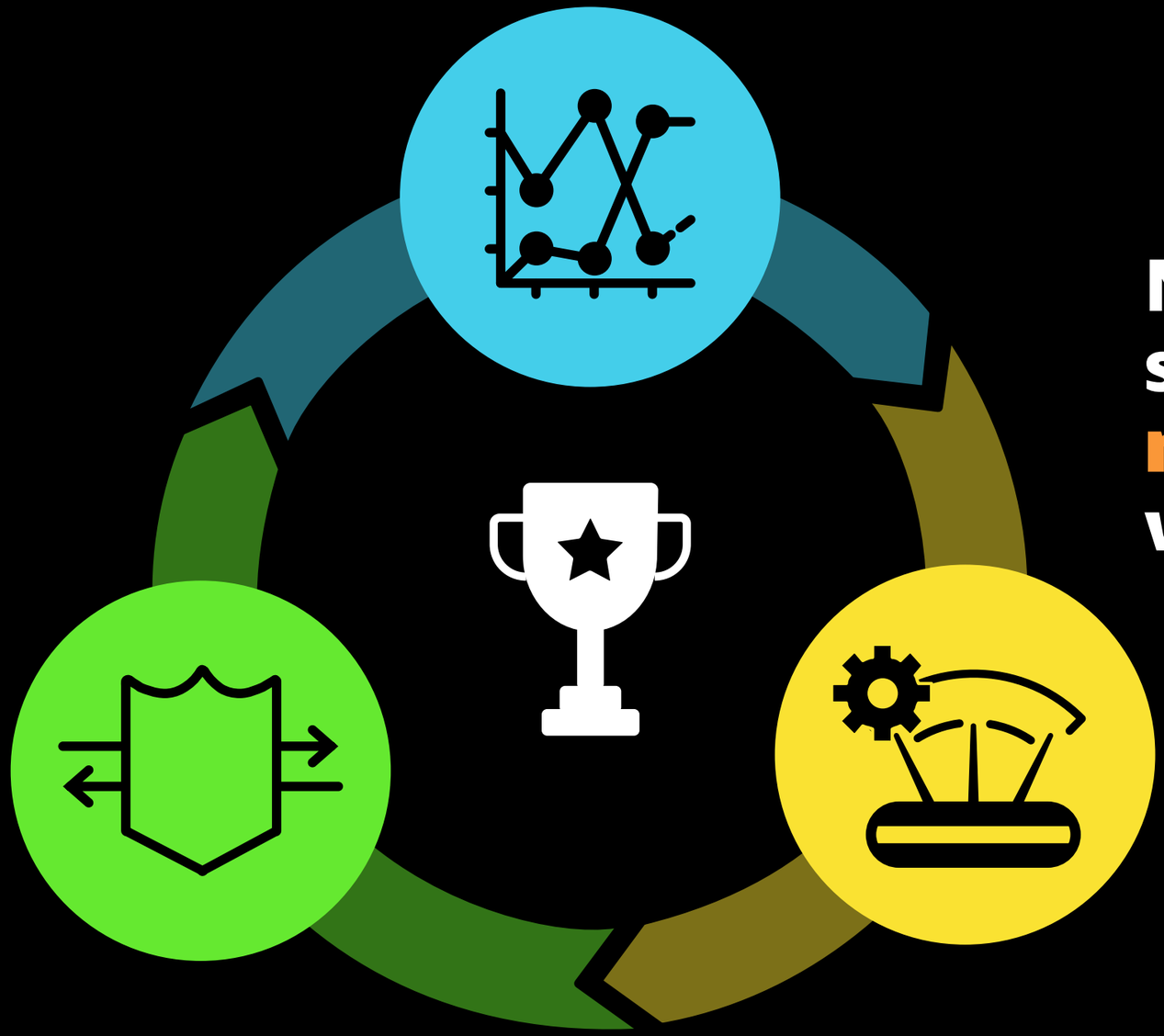


Broadest and deepest edge to cloud offerings

## Accelerate your digital journey




Unmatched experience, maturity, and reach



**Now that you can know the state of every *thing*, and can reason on top of that data, what problems will you solve?**

aws.amazon.com/iot

reinvent.awsevents.com/iot

# Thank you!



AWS re:Invent

© 2020, Amazon Web Services, Inc. or its affiliates. All rights reserved.



# Please complete the session survey

AWS re:Invent

© 2020, Amazon Web Services, Inc. or its affiliates. All rights reserved.