



# A world where virtually everyone and everything is intelligently connected

First-to-Market with Hyperconverged Multiaccess Edge-to-Cloud Computing

April 2024

**Moving the Cloud & AI to the Device Edge**

**CONNECTIVITY + COMPUTING + SECURITY + EDGE AI**



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# Founded by Industry Pioneer who Led the Digital Transformation of the Cellular Industry at Qualcomm with Continued Innovations in 2G / 3G / 4G / 5G

OMNINET

QUALCOMM

dot  
Dot Wireless



NextWave  
WIRELESS

IPWireless  
A NextWave Wireless Company

packetvideo

**Allen Salmasi**

**Veea Founder, Chairman & CEO**

*A 40-year history of innovations across every generation of wireless industry*

- ✓ OmniTRACS – Mobile Satellite Data Com & Position Reporting 1983
- ✓ Qualcomm Founded 1985
- ✓ 2G (CDMA) - Americas & Parts of Asia 1989
- ✓ 3G (CDMA / TD-CDMA) - 1st Global Standard / Smartphone 1990s
- ✓ MVNO Networks with MCI 1990s
- ✓ 4G (OFDMA) - WiMAX >> LTE / Global Standard 2010s
- ✓ Industry 4.0 Smart Solutions - **Veea was formed** 2014
- ✓ Veea / iFREE Global SIM & Smart Shopping Cart Collaboration 2017
- ✓ 5G FWA & Cloud-based Virtualized Software Environment 2020
- ✓ Converged Wired & Wireless Networks – CableLabs & Liberty 2020
- ✓ Hyperconverged Edge-Cloud Computing Networks 2021
- ✓ Edge AI-driven hyperconverged network solutions 2022

# Senior Leadership



Janice K. Smith  
Chief Operating Officer



Mark Tubinis  
Chief Commercial Officer



Rich Kerr  
Senior VP Product Development



Jeff Friedman  
Chief Financial Officer



**veea** 40 Years of Major Contributions to Wireless Industry Developments from 2G to 5G and IoT

## World-class Management, Engineering & Solution Delivery

- Industry-wide recognized expertise
- First all IP-based packet-switched cellular network equipment with first to market with 4G chipset and user devices (i.e., TD-CDMA, WiMAX & LTE)
- First "Wireless Internet" networks for Deutsche Telekom in Eastern Europe
- First major public safety network after 9/11 in New York metro area (NYCWiN) with Northrop Grumman
- Widely adopted reference designs for most 4G/5G small cells manufactured by major ODMs



# Board Members



**Allen Salmasi**  
*Chairman & CEO*



**Joël André Ornstein**  
*Vice Chairman of the Board*



**Dr. Hen Suh Park**  
*Director*



**Cyril Abecassis**  
*Director*



**Douglas Maine**  
*Director*



**Srinath Narayanan**  
*Director*



**Michael Salmasi**  
*Co-Founder & Director*



**Ryan Pohlman**  
*Board Observer*

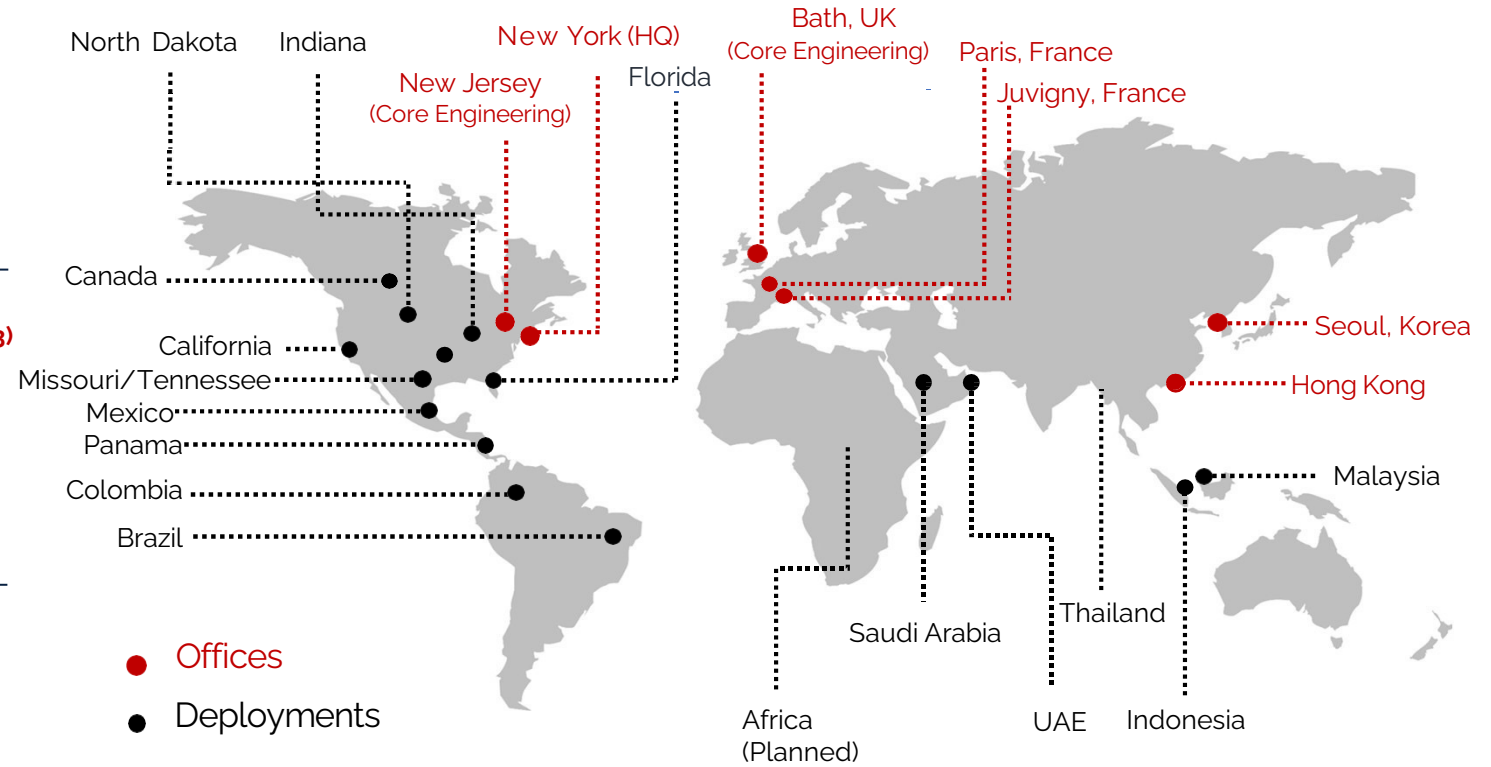


# Veeta: At a Glance

Pioneering Digital Transformation at the Edge

<b>2014</b> Year Formed	<b>HQ: New York</b> Engineering Centers • Iselin, New Jersey • Bath, UK	<b>103</b> Patents Granted 33 Pending & Provisional
<b>Major Strategic Shareholders</b> • NLabs Inc. • Korea Information & Communications Co • Sony Corporation • EdgeWater Capital	<b>&gt; \$200m</b> Total Capital Raised	<b>&gt; \$1T</b> <sup>(1)(2)(3)</sup> <sup>(4)(5)</sup> SAM
<b>~14,000</b> Units shipped to Enterprise Customers in Several Market Segments Through Dec 2023	<b>&gt; \$9m</b> 2023 Revenue  <b>\$46m</b> 2024E Revenue	<b>Increasing Recurring Revenue</b> with ePaaS

## Offices & Deployments Worldwide



(1) State of the Edge: [venturebeat.com/business/state-of-the-edge-report-projects-edge-computing-will-reach-800b-by-2028/](https://venturebeat.com/business/state-of-the-edge-report-projects-edge-computing-will-reach-800b-by-2028/)  
 (2) Global Broadband Services Market Grows: [stratinsresearch.com/press-release/global-broadband-services-market-growth](https://stratinsresearch.com/press-release/global-broadband-services-market-growth)  
 (3) <https://www.maximizemarketresearch.com/market-report/global-5g-fixed-wireless-access-market/26925/>  
 (4) <https://www.cisco.com/c/en/us/solutions/collateral/executive-perspectives/annual-internet-report/white-paper-c11-741490.html>  
 (5) <https://www.gsma.com/newsroom/press-release/new-gsma-study-operators-must-look-beyond-connectivity-to-increase-share/>

Gartner  
veea  
Leading Smart Edge Platform  
2023

Gartner  
veea  
COOL VENDOR  
2021

**Recognized Leading Smart Edge Platform**  
Gartner - Edge Management and Orchestration, 25 July 2023

**Edge AI Software Market Will Exhibit Huge Growth by 2031| Top Players are: Veeva Inc., Foghorn Systems Inc, IBM ...**  
Global Edge AI Software Industry Market Research Report

# Veea is Pioneering a First-to-Market Category: Hyperconverged Networks and Secure Edge-to-Cloud Computing ...in One Turnkey Solution and Platform!



# Initially Targeting Four Primary Market Segments That Scale Rapidly

*Focus on the primary markets have already created opportunities (extensions) in related industries*



## 1 **Broadband for Unserved & Underserved Communities**

### **AI-Assisted "ISP-in-a-Box"**

**Channel Partners:** MSOs, MNOs, ISPs, Rural Telcos, Utilities, ONE Amazon

With Optional Value-Added Services

- Tele-Education
- Tele-Health
- Tele-Training
- Smart-Farming and Precision Agriculture
- Renewable Energy
- Internet of Forest



## 2 **Smart Buildings - Energy & Building Mgmt Systems**

### **Real Estate ESG & IoT**

**Channel Partners:** Honeywell Tridium, ESG Data Providers, Smart Cities

Veeva Edge Platform uniquely supports "containerized" Honeywell Niagara Building Management System (BMS) with largest US market share.

Turning commercial buildings into monetizable nodes for energy management & carbon footprint reporting



## 3 **Smart Retail**

### **Edge Advertising**

**Channel Partners:** TROLLEE/ iFREE Group, Qualcomm, UMobile, Xingtera

Infrastructure for Next-Gen Retail Solutions:

- Offering integrated with iFREE Smart Shopping Cart
- Micro location-based marketing
- Real-time pricing / incentives
- Just-in-Time programmatic and/or targeted advertising
- Footfall analytics



## 4 **Public & Private 5G/IOT Networks, Industrial IoT**

### **Private Edge Cloud/Network**

**Channel Partners:** CFE Mexico, Star Group, Celona / NTT Data, Xingtera

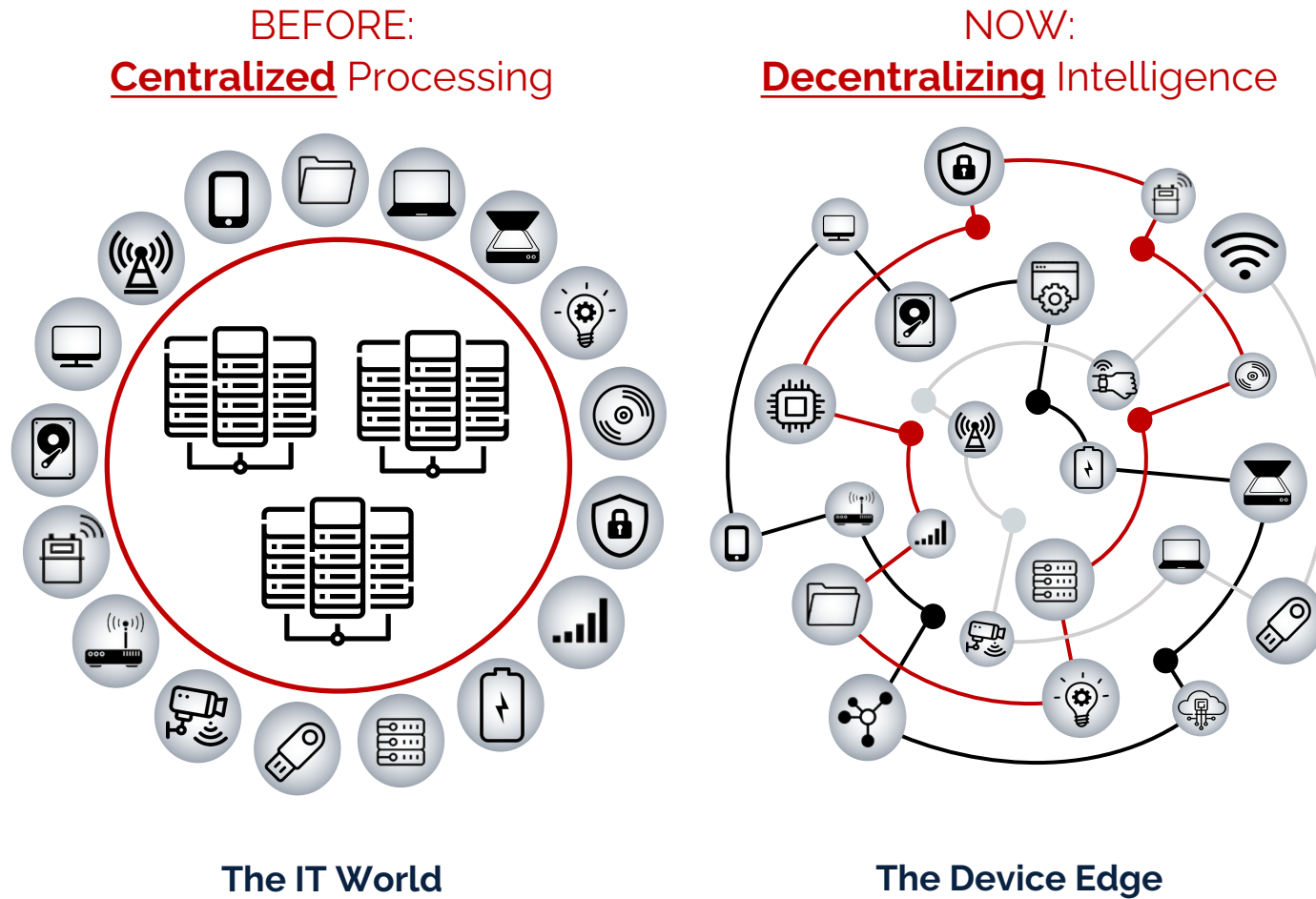
Private distributed clouds and networks for B2B and B2B2C offerings of private 4G/5G networks

Fixed Wireless Access (FWA) with dedicated peer-to-peer connections over wired or wireless connections between user devices anywhere in the world



# AI is Driving the Move to Compute Everywhere... Not Just in the Cloud or Datacenters

*Data needs to be processed where it primarily proliferates and is captured - at the Edge*



**In 2018:**

**10%** of Enterprise-Generated Data was Created & Processed at the Edge



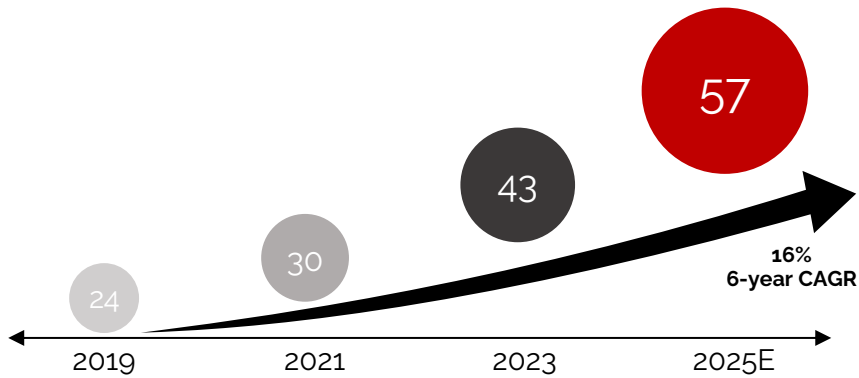
**By 2025:**

**75%** of Enterprise-Generated Data is Projected to be Created & Processed at the Edge

# Massive Opportunity for Providing EDGE Connectivity + Compute + Security

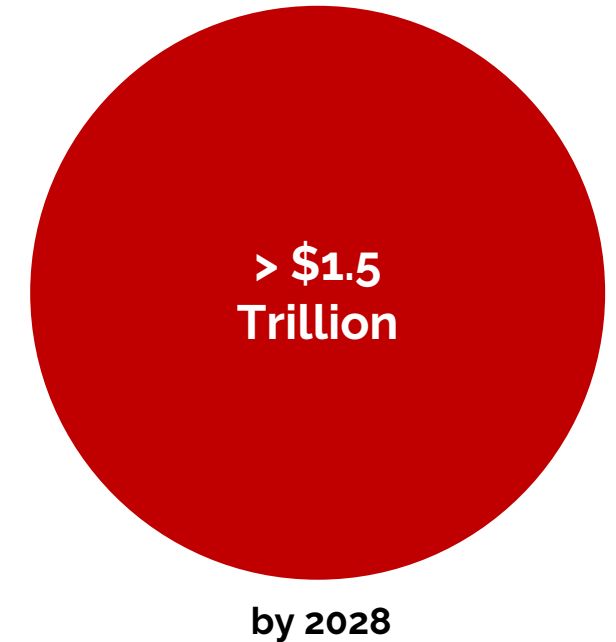
*Huge proliferation of Edge devices and data collected away from data centers and the Cloud*

## Massive Increase in Number of Edge Devices (bn)<sup>1</sup>



*Edge AI Software Market Will Exhibit Huge Growth by 2031 | Top Players are: Veeva Inc., Foghorn Systems Inc, IBM ...*  
Global Edge AI Software Industry Market Research Report<sup>2</sup>

## Edge Computing Market<sup>4</sup> with Fixed Wireless Access<sup>5</sup>

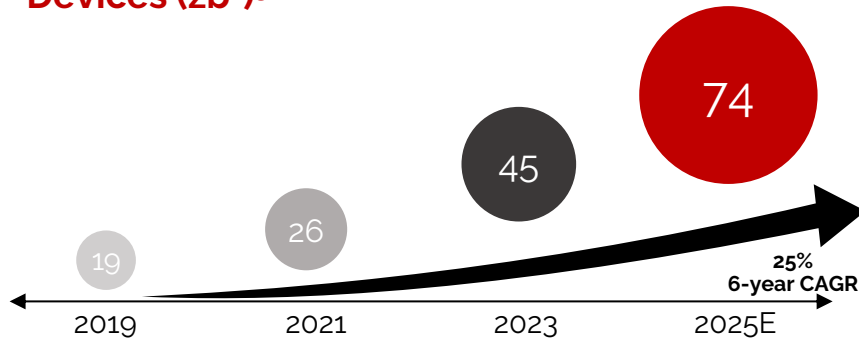


*Edge AI Market to Hit \$66B by 2030 at CAGR of 21.0%*  
Grand View Research

*Over the next five years, Edge Computing with Edge AI will become the **battlefront for innovation and mind share** relating to smart, connected, digital transformation of every business.*

Gartner

## Massive Increase in Data Generated from Edge Devices (zb\*)<sup>3</sup>



\* zettabyte is one billion-trillion bytes or 10<sup>21</sup> bytes

1 "2021 Update – Global Internet of Things (IoT) Devices Forecast, 2020 – 2026", Frost & Sullivan  
 2 <https://www.digitaljournal.com/pr/news/prwirecenter/edge-ai-software-market-will-exhibit-huge-growth-by-2031-top-players-are-veeva-inc-foghorn-systems-inc-ibm>  
 3 "Worldwide Global Data Sphere IoT Device and Data Forecast, 2021–2025", IDC  
 4 State of the Edge: <https://venturebeat.com/business/state-of-the-edge-report-projects-edge-computing-will-reach-800b-by-2028/>  
 5 Global Broadband Services Market Grows: <https://stratinsresearch.com/press-release/global-broadband-services-market-growth>

# Connectivity / Compute / Security Solutions Have Been Mainly Focused on Bloated Data Centers and the Cloud

## What Existing Solutions Offer

### Impractical & Hard to Implement

- ⚠ Point products requiring expert integration
- ⚠ Compute done in Cloud makes real-time processing difficult and limits AI
- ⚠ Black-box solutions with no programmability or software customization
- ⚠ High power consumption
- ⚠ High costs to operate and maintain

## What Edge Use-Cases Need

### Practical & Easy to Implement

- Ⓜ Hyperconverged Architecture
- Ⓜ Real-time ops /decision making (without sending data to the Cloud)
- Ⓜ Platform compute/programmability  
Readily customized for use case
- Ⓜ Power / thermal efficiency
- Ⓜ Simplified, Reliable and low-cost implementation and maintenance

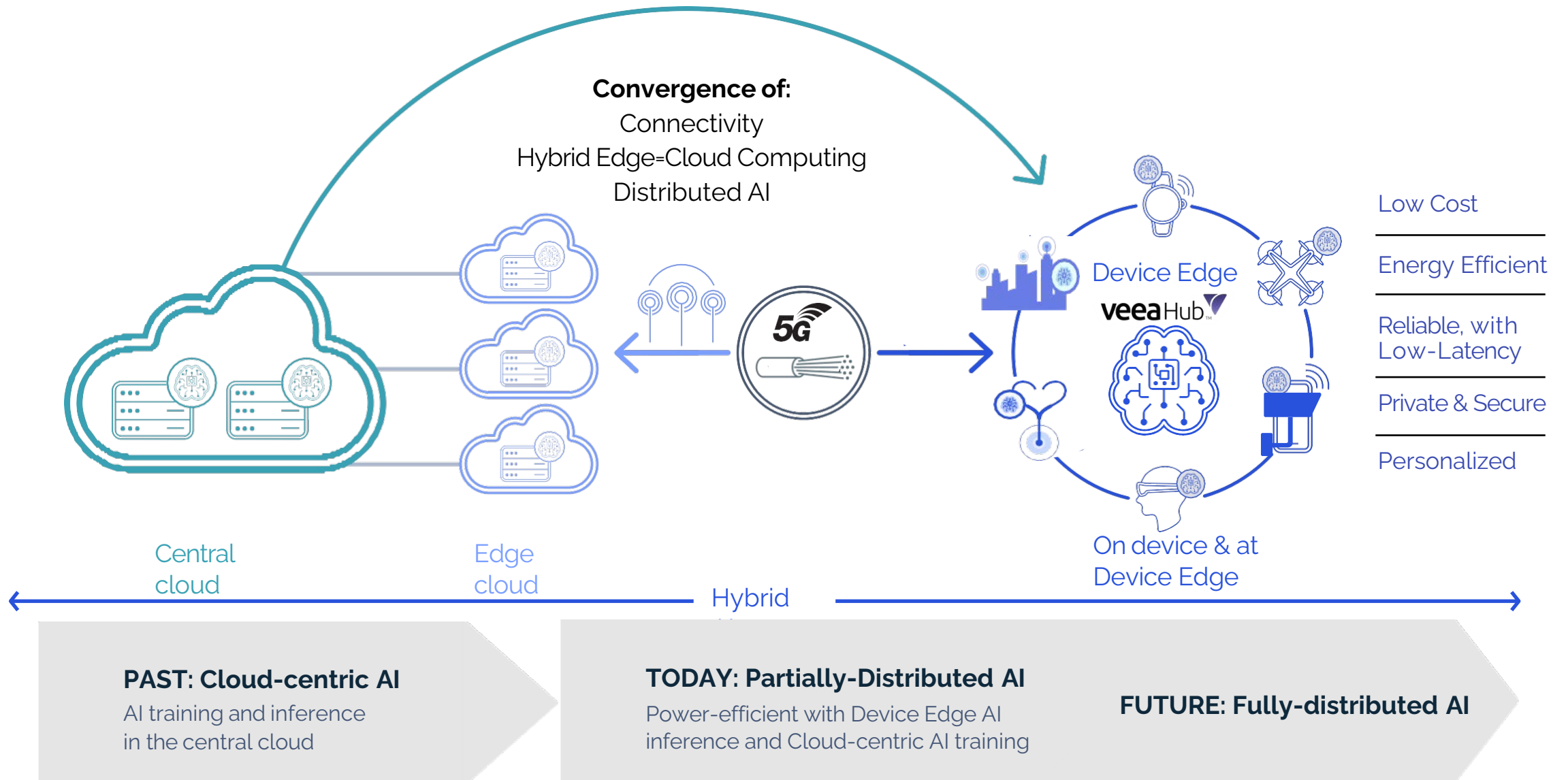


### Edge-AI Use Cases



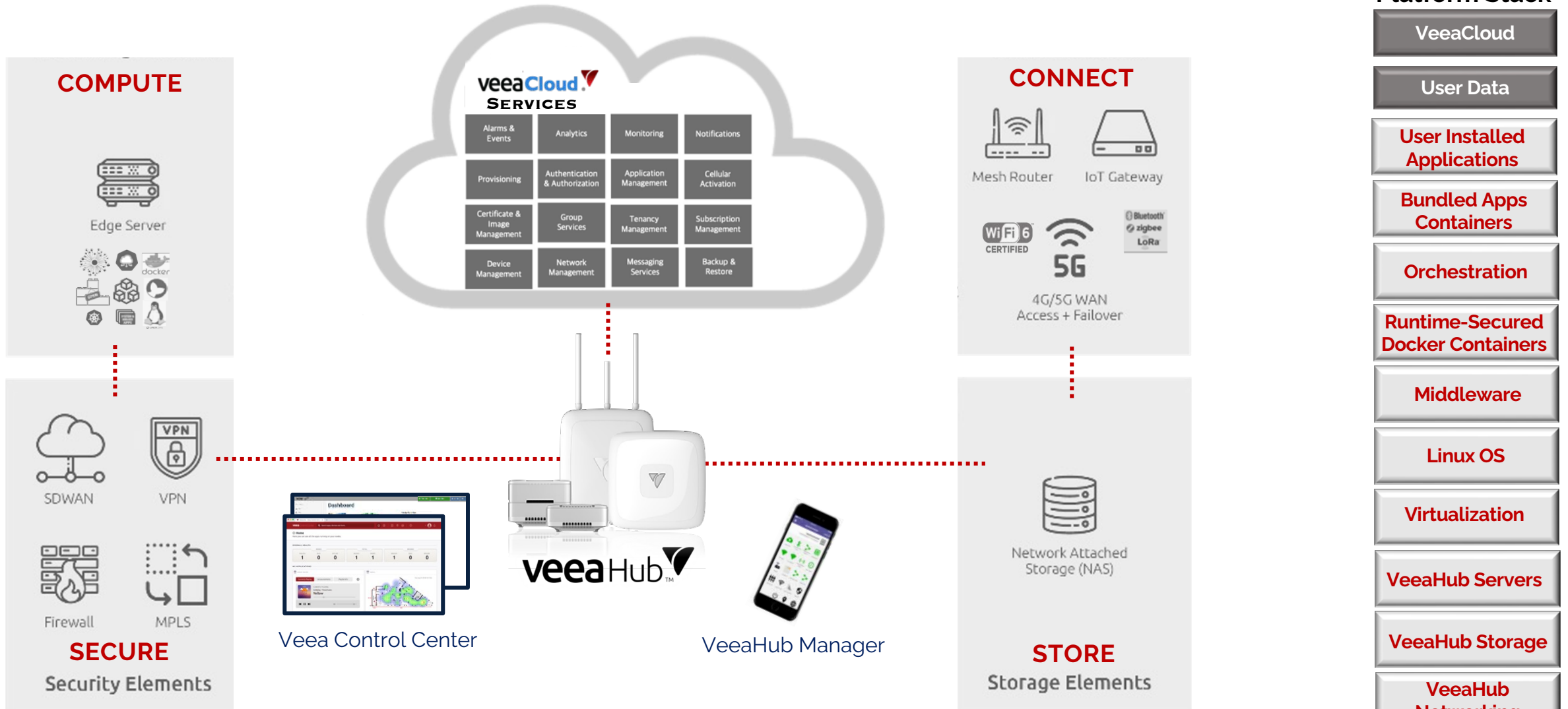
# Veeva is Accelerating the Move of AI Processing to the Device Edge

*Unlocking the data that will fuel our digital future and Generative AI*



# Veea Solves the Need for Connectivity + Compute + Security at the Edge

*Integrated-platform increases ecosystem value over time*



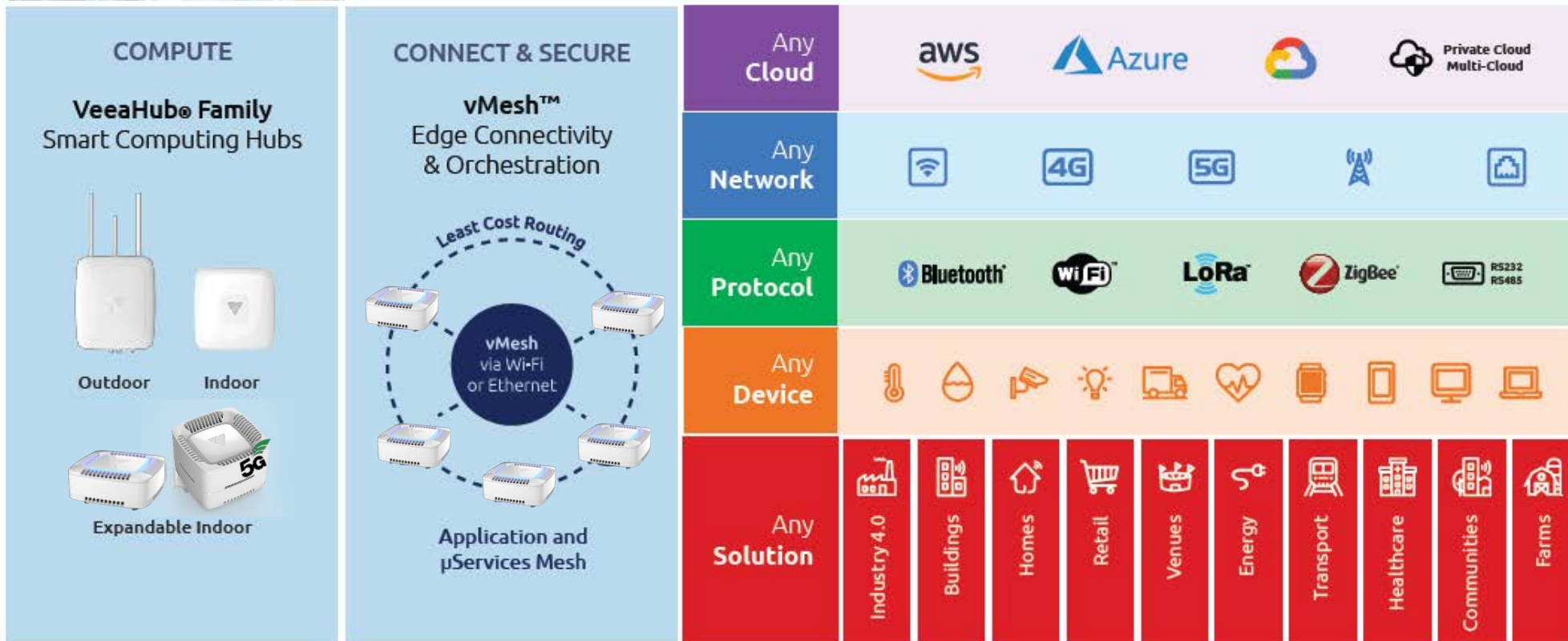
# Veeva's Secret Sauce #1: Ability to Create a Private Network: "Cloud-in-a-Box"



**Veeva® Platform**  
Edge Orchestration  
and Management  
Web • iOS • Android

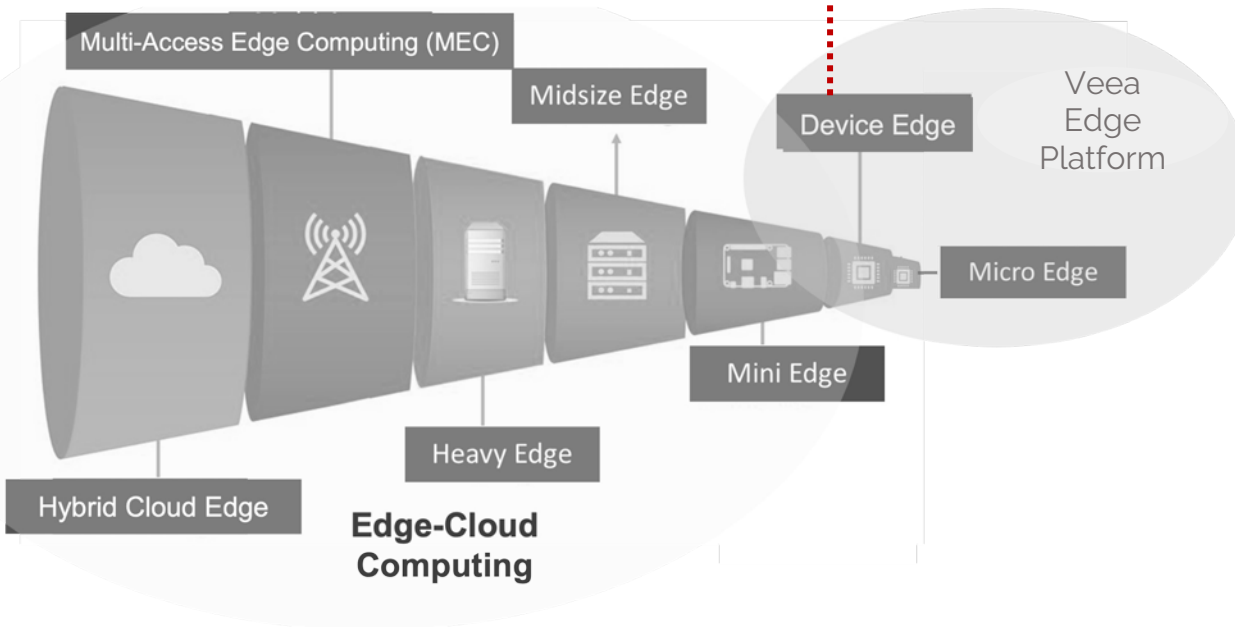
## New Product Category

Includes a range of highly unique and monetizable cloud-managed AI-driven applications and value-added services

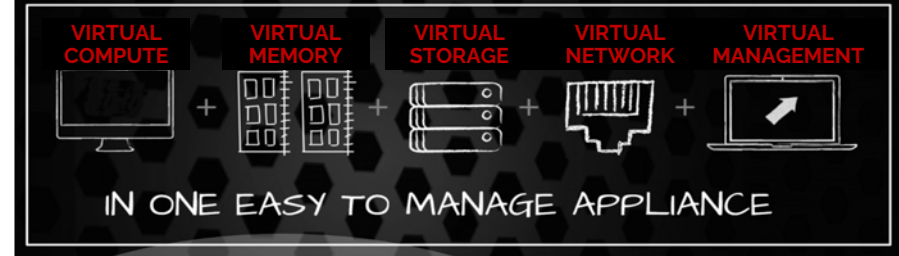


# Veea's Secret Sauce #2: Architected for Hyperconvergence at the Device Edge

## The Cloud to Edge Continuum



## Edge-to-Cloud Hyperconverged Infrastructure

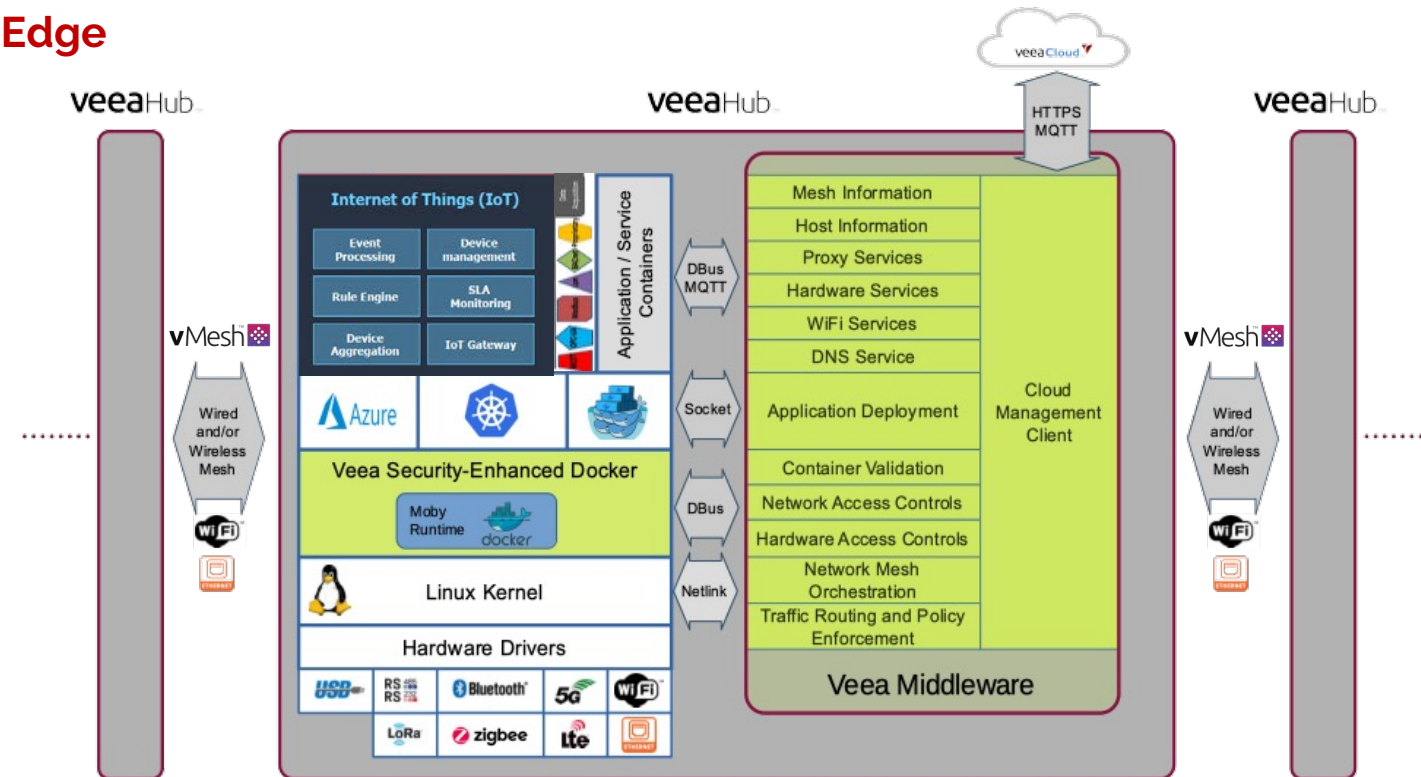


- Veeahub products' Linux Server provides for a **Virtualized Software Environment** with cloud-native containerized apps
- Wireless and Wireline Communications in one **Virtual Network** enabled by 5G Wireless-Wireline Convergence ("5G WWC" standards)
- Computing and Communications in one **Virtual System**
- Converged cellular-like **Managed Wi-Fi** Solution

# Veeva's Secret Sauce #3: VeevaWare Software Platform Enables Critical Apps Running Independently at the Edge

## Distributed Micro-Cloud Computing at the Device Edge

- Linux server with high-performance quad-core CPU and virtualized software environment
- API and microservice driven software architecture >> cloud-managed apps
- Hardware Abstraction Layer (HAL) with microservices and an API in multiple languages
- Patented "Secured Docker™" container for apps to run in a trusted execution environment
- Supports Microsoft Azure IoT, AWS IoT Greengrass V2, and other Cloud-based Apps at the Device Edge
- Novel Wi-Fi connectivity mesh ("vMesh"): provides for a computing mesh, an application mesh, a microservices mesh, and an AI-driven Edge Intelligence Mesh



Edge Computing and Cloud Computing in one  
**"Virtual Compute"** environment across edge to cloud resources  
 with Kubernetes K3 <> K8 orchestration

Portable middleware runs on many ARM core-based hardware

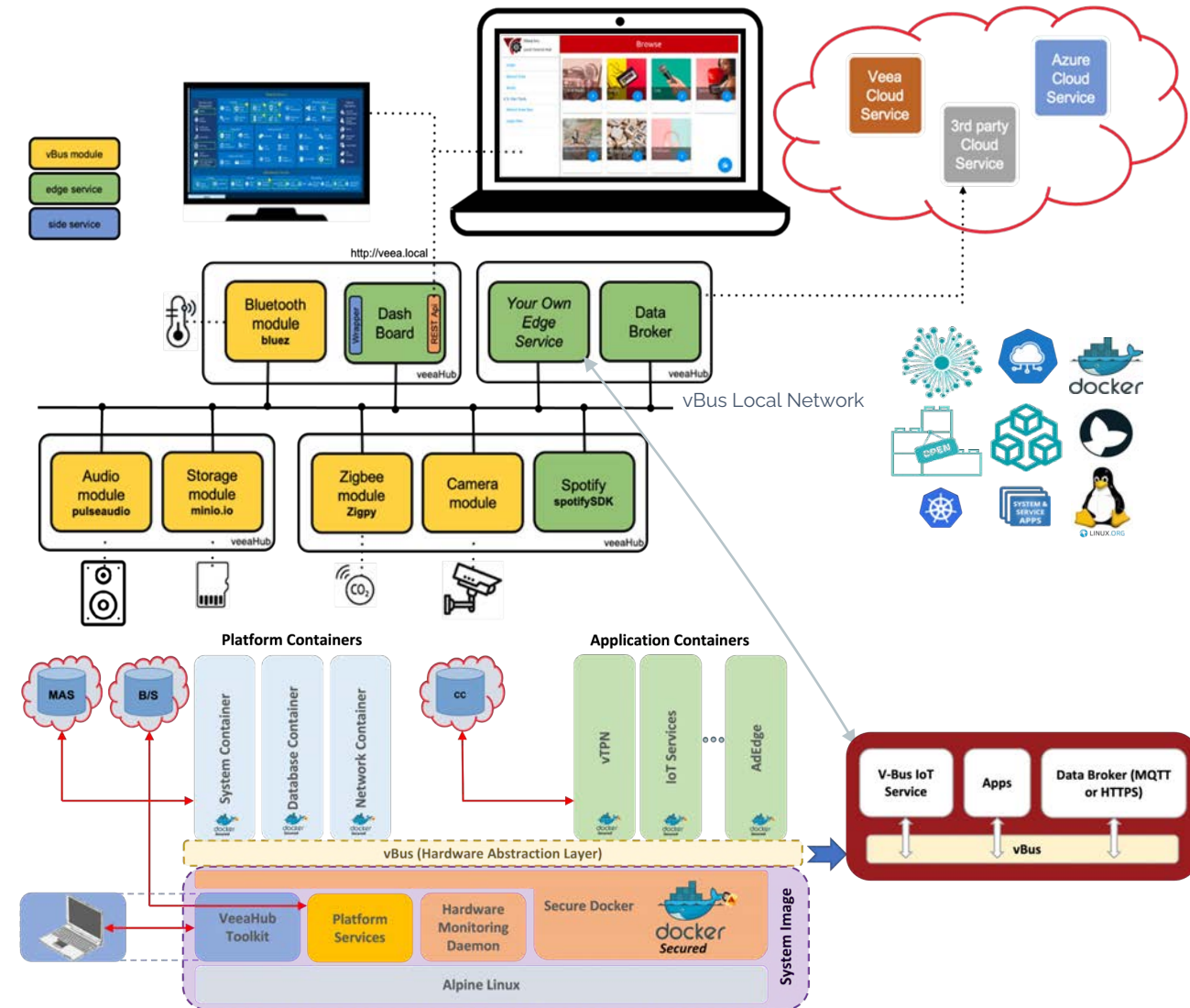


# Veaa's Secret Sauce #4: Container-level Open Software Development Environment Extended to a Very Large Developer Community

**Veaa Developer Portal** with advanced self-serve tools to develop Cloud-managed apps ([developer.veea.com](http://developer.veea.com))

Tapping into **a large existing developer base** through extensions of Veaa's Developer Portal to third-party platforms:

- **Mysten Labs'** Sui is a horizontally scalable blockchain supporting a wide range of dApp development at low cost
- **mimik** offers a runtime environment designed to perform in a distributed environment, utilizing computing resources available in devices, like smart phones, tablets, IoT devices, and laptops
- **Builder.ai**® is an AI-powered composable software platform
- **Sway AI** No-Code Workbench with intuitive drag-and-drop development platform to craft, deploy, and monitor sophisticated machine learning workflows and AI applications
- **New Native** is an organization empowering AI-native economy, with the ultimate goal of accelerating innovation



# Veeva's Secret Sauce #5: Network Slicing Across Local Area Networks (LANs)

*Extends 5G network slicing from Wide Area Networks (WANs) to LANs*

## Groundbreaking virtual Trusted Broadband Access (vTBA)

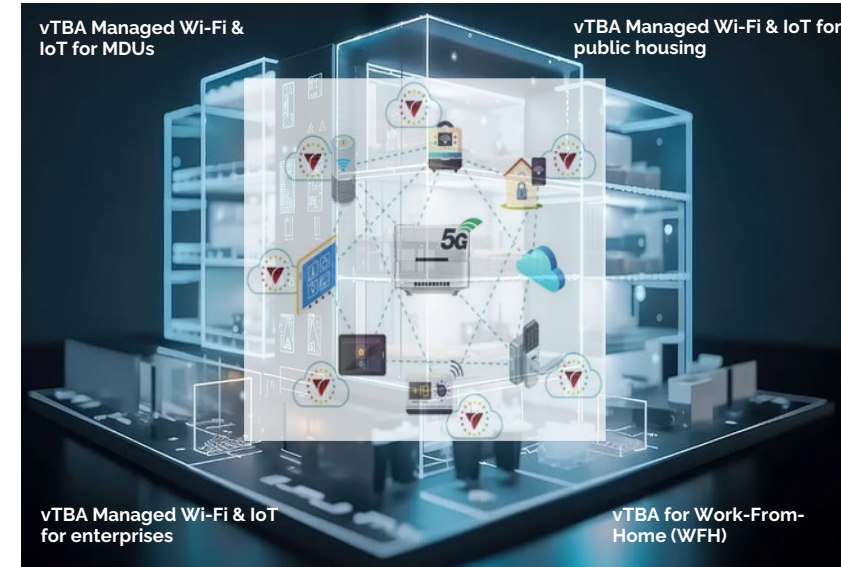
- ✓ Co-developed with CableLabs (Global Cable Industry R&D Labs).

## Offers "cellular-like" network-managed Wi-Fi/IoT devices with

- ✓ Provides for network-managed Wi-Fi/IoT services per device with priority of service, connection speed, usage limits, etc., more securely through their LAN devices.
- ✓ Device designation into Trust Domains with embedded Zero Trust Network Access (ZTNA) for secure i) connectivity and ii) running of Apps,
- ✓ Private networks with direct device connectivity between designated devices, IoT sensors and machines across Wide Area Networks (WANs) and/or Local Area Networks (LANs) served by VeevaHub products,
- ✓ Subscription services for network-managed Wi-Fi/IoT devices,
- ✓ Facilitates convergence of Wi-Fi/IoT protocols with 5G, wireline and HFC (cable networks) with network management via 5G Core Network.

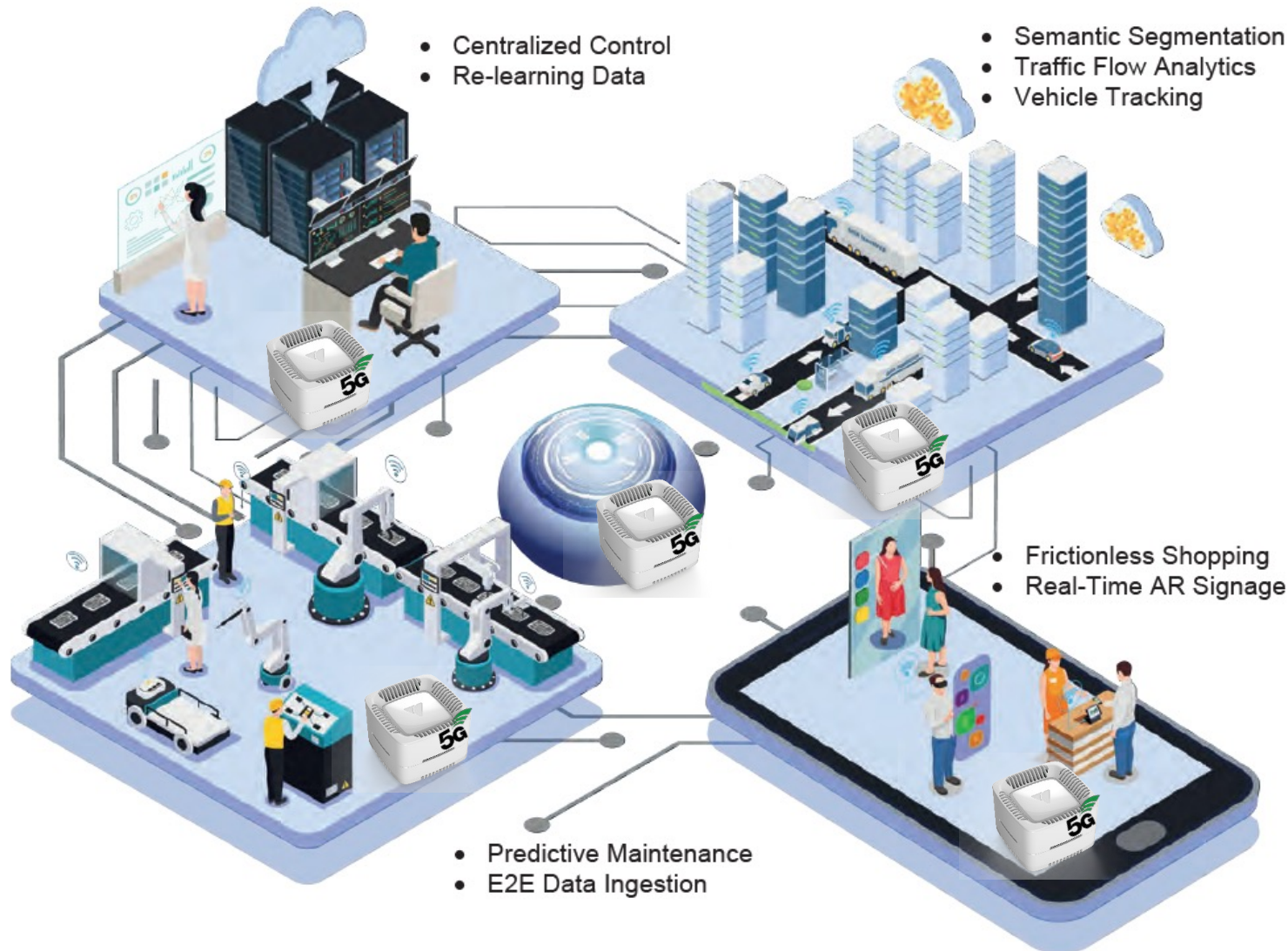
## Global roaming across VeevaHub products

- ✓ A "private network LAN", formed by VeevaHub units create an "edge- cloud" that together with other VeevaHub-based edge-clouds at other locations produce a wide area distributed cloud.



# Veeva's Secret Sauce #6a: Ability to Run Transformative AI at the Edge

*Where it can make the biggest difference today*



## Data Collected by Sensors at the Edge

AI / ML Run Models at the Edge

Data Doesn't Have to be Sent to the Cloud

Low Latency Processing

Real-Time Decision Making

**Unlocks the True Potential for AI**

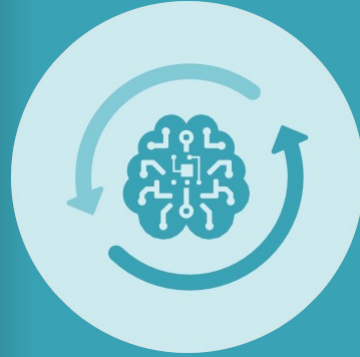
# Veeva's Secret Sauce #6b: Enabling AI On-Device Learning

Edge Computing & AI together will drive transformation across industries



## Few-shot learning

Adapt the model to a few labeled samples  
("Yesterday")



## Continuous learning with unlabeled data

Use unlabeled data to do unsupervised learning  
("Today")



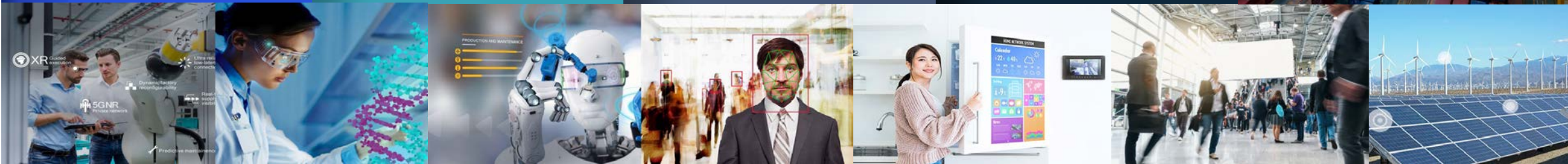
## Federated learning with blockchain

Federate learning at scale and address deployment challenges  
("Tomorrow")



## Low-complexity on-device learning

On-device learning to improve efficiency  
("Next Week")



# Veeva's Secret Sauce #7: Apps & Services Accelerating the Edge Ecosystem



**IoT Gateway** and Development Tools – Standalone or **Integrated with Microsoft Azure IoT & AWS IoT Greengrass V2**



**4G/5G SD-WAN** Dual-WAN Fixed Wireless and Wired Broadband Access (optional simplified SASE solution)



**vTBA** (virtual Trusted Broadband Access) - Network-Managed Broadband Access, over Virtualized Private Networks, with the Ability to Offer Subscription Services for Wi-Fi & IoT Devices



**vTPN** (virtual Trusted Private Network) – Securing Data-in-Motion and Data-at-Rest with Cybersecurity protection (SASE)



**VeevaConnect** Private Network UCCaaS (See [vREO1](#))



**Real Time Location Services (RTLs)**, Location Based Services (LBS) with Virtual Beacons, Indoor Intelligence



**AI & Vision Analytics** - No-Code AI, visual platform and Digital Twins



**AdEdge** (DOOH RTLs-based Proximal Advertising Platform)



**TROLLEE** Smart Shopping Cart  
[TROLLEE Product Demo video](#)



**Honeywell Niagara** Integrated Building & Energy Management Systems



**Smart Spaces Automation**



**Home Assistant**



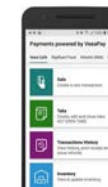
**Helium & Blockchain Framework**



**Distributed Edge Storage, Advanced AR with Glasses**



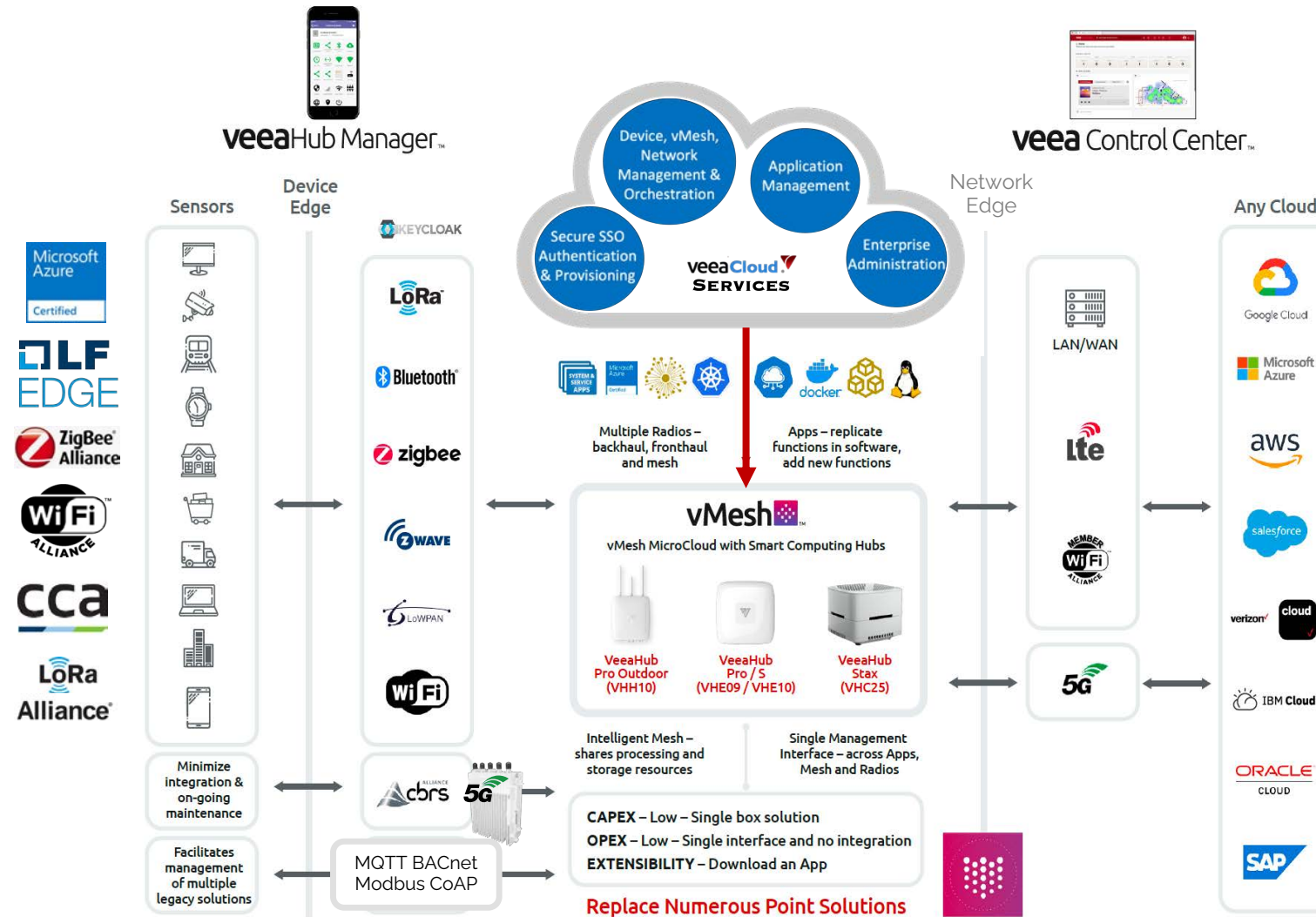
**IPTV, EdgeCDN, WebRTC, Multicast Streaming, etc.**



**3<sup>rd</sup> Party Mobile APP Enablement**

# End Result: An Unparalleled Turnkey Cloud-to-Edge Solutions Platform

*Veea Edge Platform with 5G & AI holds the same promise as the smartphone did for personal computing*

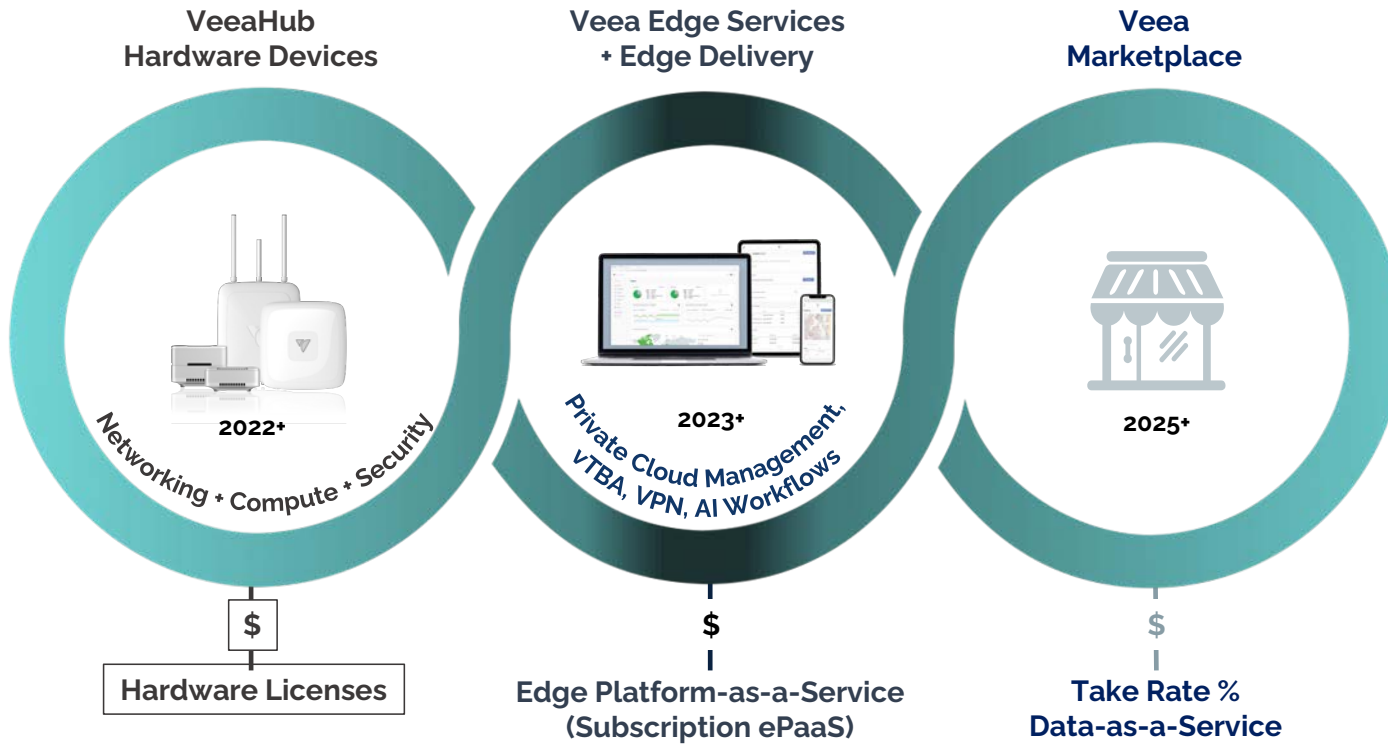


## Core Benefits

- Minimize latency and raw data transport to the Cloud,
- Privacy, security, data ownership and context awareness,
- Fault tolerance for mission critical and other edge applications
- Private micro "data center" with wired and wireless coverage
- Fixed line and 4G/5G broadband services
- Optional integrated small cell private 5G network expansion
- Gateway/Edge Device for Microsoft Azure IoT and AWS IoT Greengrass apps

# Veea Monetizes Every Part of the Value Chain Directly and Through Partners

*Integrated-platform increases ecosystem value over time*



## Revenue growth drivers:

App Marketplace for 3<sup>rd</sup> party apps

Scales as ecosystem grows

Edge AI, Analytics & Business Intelligence

Scales as deployed service usage grows

## Veea Technology & Channel Partners



- Near-term revenues supported by existing customer and partner pipeline
- Hardware will be manufactured by ODMs in 2025/2026 based on licensed reference designs developed by Veea

- Recurring revenue for software and services grows rapidly as the installed base grows
- Gross-Margin accretion expected as economies of scale achieved

# Veeva is Leading the way in “Solutions”-as-a-Service Categories at the Edge

*Served by VeevaHub Product Portfolio and Veeva Edge Platform*

## **Hardware-as-a-Service Categories Incorporated into VeevaHub Products\***

- Edge Computing for Apps & Services
- Public & Private Network Connectivity
  - Residential & Enterprise
  - Last Mile Solutions for Optical Fiber, 4G/5G FWA, Satellite
  - IoT Use Cases
- Multi-Protocol IoT Gateway Services
- Hyperconverged Networking (new category)
- Managed Cellular-like Wi-Fi Access (new category)
- Edge Device Security & Application Cybersecurity
- Distributed Edge Storage & CDN

## **SaaS Categories Enabled Through Applications Developed by Veeva & Partners\***

- Building & Energy Management Systems
- Edge AI (new category)
- Smart Retail with Smart Shopping Cart
- Precision Agriculture & Smart Farming
- AI-assisted Edge Service Automation
- Location-based Advertising (e.g., Digital Signage, Hospitality Service Automation)
- Edge Data & Device Management with Connectivity, Application, Microservices, Edge Intelligence Mesh
- Digital Twins

\* Cloud & Local Management included with a Developer Portal



# Major Markets Served to Date

*Veeva is Transforming Entire Industries One-Vertical-at-a-Time ([explainer video](#))*

- **Cost-effective last mile solutions** with value-added services for Internet connectivity optimally suited for
  - One-third of the world's population that is unserved or underserved ([https://youtu.be/y\\_IDmW30Ljl](https://youtu.be/y_IDmW30Ljl)),
  - Tele-education, tele-medicine, tele-training, smart farming and precision agriculture, environmental and natural disaster monitoring and management, AI-assisted renewable energy management, sustainable fishing, and much more,
  - Internet of Forest in partnership with O.N.E. Amazon ([https://youtu.be/y1fN1R-u\\_6M](https://youtu.be/y1fN1R-u_6M))
- **5G-based broadband connectivity solutions for service providers** including AI-assisted “ISP in a box” with value-added services, managed Quality of Service (QOS) and security services (<https://youtu.be/1Y7n33Ha3ms>).
- **Smart Building solutions** together with the most comprehensive and widely adopted Building and Energy Management System (BMS/EMS) worldwide (<https://youtu.be/6J5EKNWPaTw>).
- **Food security and safety** for the entire planet with a highly advanced precision agriculture and smart farming solution with Internet of Things (IoT), AI, data fusion and data management (<https://www.veea.com/microclimates>).
- **Smart Retail** centered on a groundbreaking Smart Shopping Cart and an AI-driven advertising platform (AdEdge) developed by Veeva for contextual location-based promotions (<https://youtu.be/OkHhb96zHso>).
- **Private distributed clouds for B2B and B2B2C offerings** enabled through secure and personalized private networks providing for dedicated peer-to-peer connections over wired (i.e., cable or optical fiber) or wireless (i.e., 4G or 5G) connections between user devices located anywhere in the world (<https://www.youtube.com/watch?v=LzaS055dqsw>).
- **Digital transformation and Industrial IoT (IIoT) solutions** for Smart Warehouses, Smart Campuses, Smart Cities, Smart Construction, Smart Mining, and many more (<https://www.rcrwireless.com/20230419/private-networks/att-mexico-qualcomm-partners-test-private-5g-networks> and for private 5G network: [https://youtu.be/x20UT\\_EytvY](https://youtu.be/x20UT_EytvY)).



## Appendix

**Current Most Impactful Veea Projects Worldwide**

# Veea Brings a Cost-Effective Connectivity Solution to the Unserved World

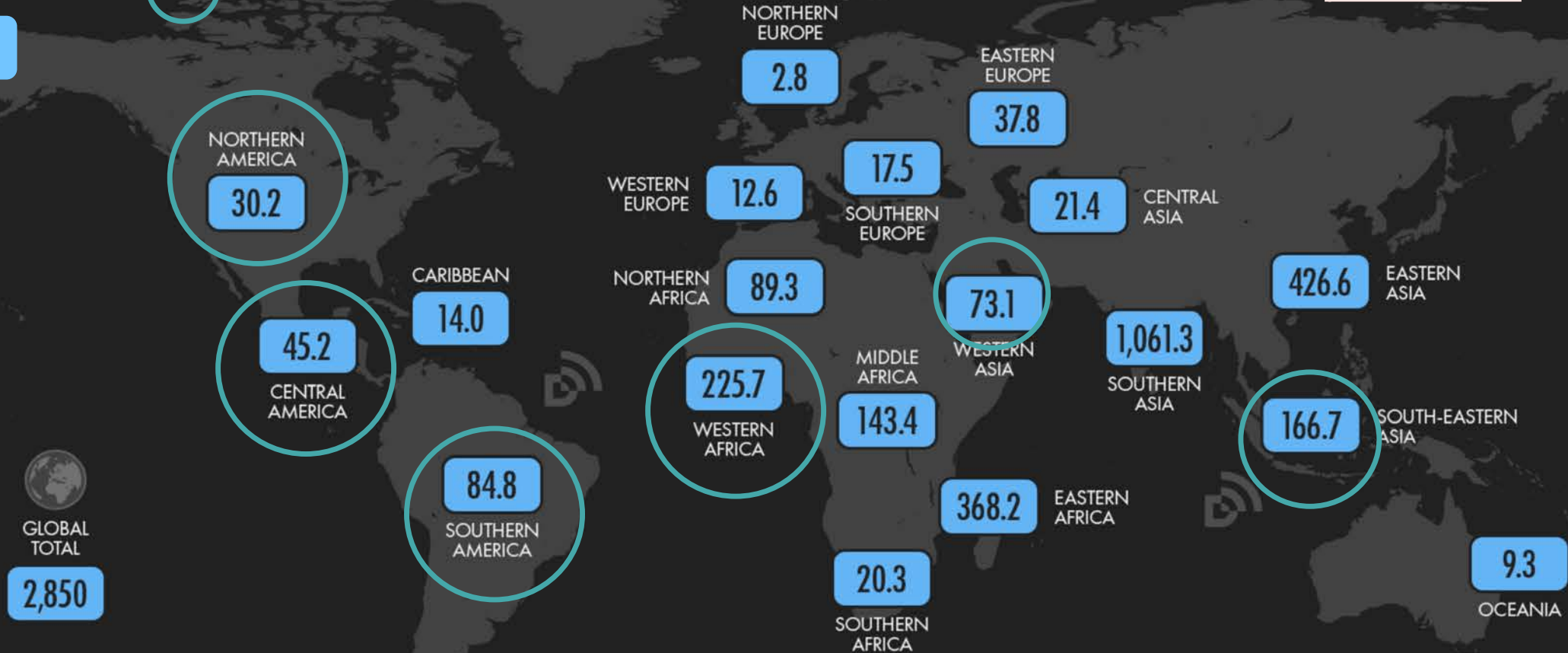
JAN 2023

## UNCONNECTED POPULATIONS

NUMBER OF PEOPLE (IN MILLIONS) WHO DO NOT USE THE INTERNET

Active Project Areas

625



Source: ITU/World Bank **GLOBAL OVERVIEW**  
<https://OurWorldInData.org/technological-change>  
<https://datareportal.com/reports/digital-2023-global-overview-report>

# The world has a food problem



Over **820 million** people worldwide suffer from hunger \*



More than **2 billion** people lack vital nutrients



**70%** more food is needed by 2050



Climate change and challenged resources challenge even our **current farming** yields

World will need to produce about 98 percent more food by 2050 to feed an estimated 9 billion people.\*\*

**Veea Edge Platform is expected to provide coverage to millions of farms surrounding the rural communities for precision agriculture and smart farming over the 2-3 years**

\* <https://www.who.int/news/item/06-07-2022-un-report--global-hunger-numbers-rose-to-as-many-as-828-million-in-2021#:~:text=The%20number%20of%20people%20affected,away%20from%20its%20goal%20of>

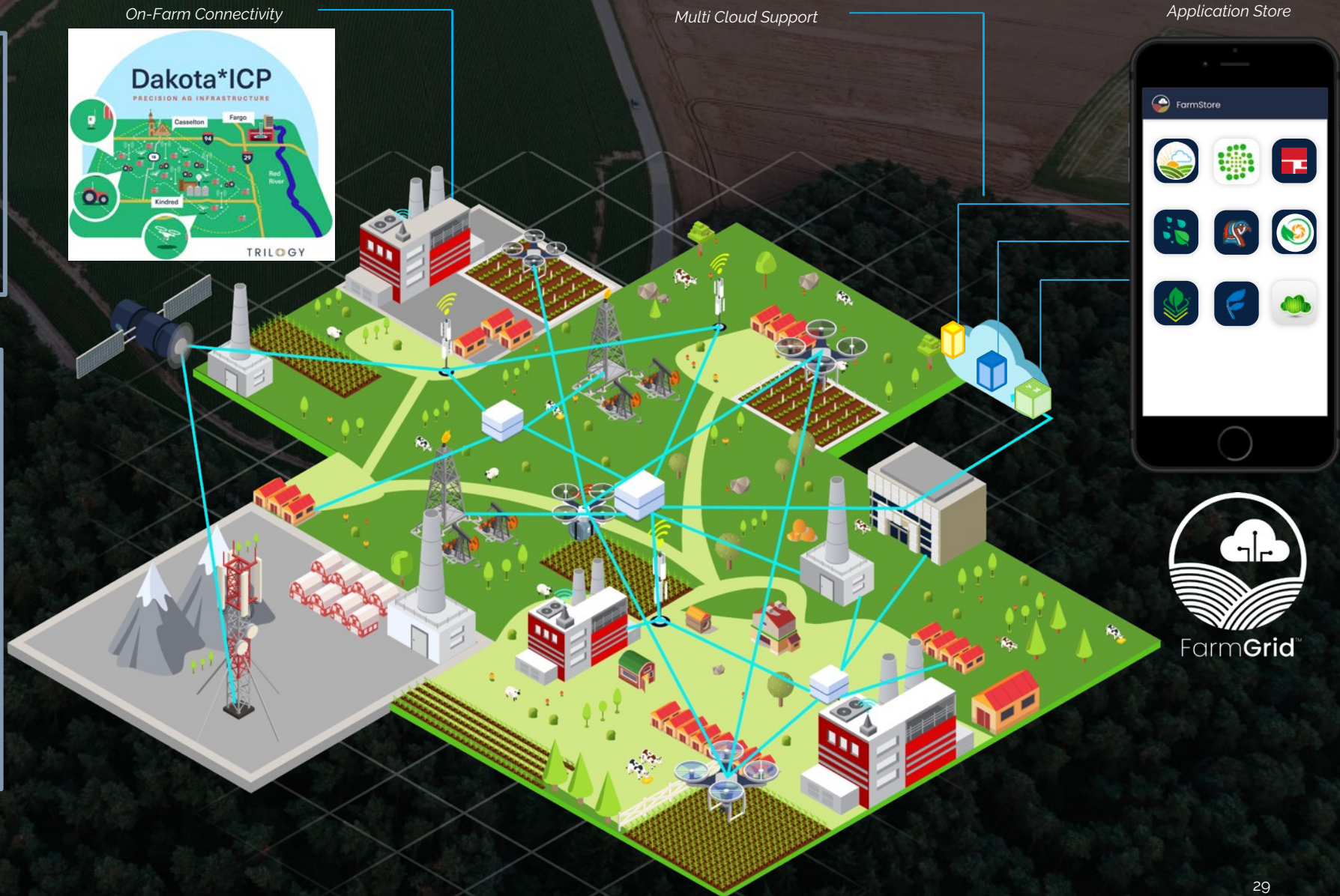
\*\* [https://www.fao.org/3/ca9692en/online/ca9692en.html#chapter-Key\\_message](https://www.fao.org/3/ca9692en/online/ca9692en.html#chapter-Key_message)

\*\* <https://www.undp.org/sites/g/files/zskgke326/files/2022-01/UNDP-Precision-Agriculture-for-Smallholder-Farmers-V2.pdf>

# A Smart Agriculture Infrastructure Deployment Model for Rural Communities and Two Million Farms in the US

Veea is providing network and value-added solutions to its channel partners, including major cloud service providers, IT solutions and services companies and several rural telcos, in the US to roll-out broadband connectivity with a variety of services

Veea Edge Platform Brings Broadband, Edge-Cloud Computing, Wi-Fi & IoT Connectivity, Machine Learning and AI, Distributed Edge Storage & Data Management, Full Stack Security, Containerized Apps, Edge-Cloud Computing Resource Orchestration & Automation, Commodity Exchange Platform with Leading-edge Blockchain, and more, Combined with Capabilities of an Ecosystem of World-class Partners.



# Climate Change Projects and Opportunities in Americas, Asia and Africa

*Contributing to the efforts in saving our planet from climate change*

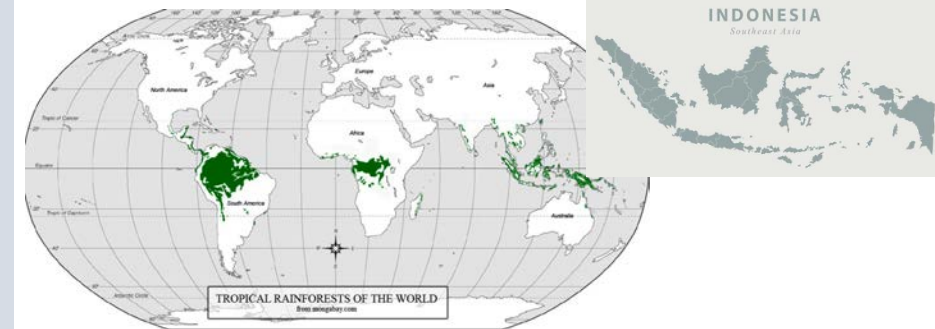
**Veea is working with ISPs, Philanthropic Foundations, NGOs, farm cooperatives and operators in the US, Colombia, Mexico, Brazil, Indonesia, Malaysia, Thailand, Philippines and Western Africa to bring broadband services, precision agriculture, tele-education, tele-health, IPTV, and others to empower the farmers & Increase food supplies**

- Transforming the Amazon biome into a digital asset security for sustainable environmental impact through a partnership with O.N.E. Amazon, AECOM, MIT Media Labs, Colombian government, USAID, Goldman Sachs, UN agencies and others.
- Monitoring the rainforest with Internet of Forest (IoF) and while delivering economic and social benefits to farmers and rural communities.
- Addressing the global food security crisis by helping farmers to increase their crop yields and reducing post harvest losses.
- Live demonstration at Biodiversity COP 16 in Colombia in October 24' and G20 Summit in Brazil in November 24' with live demonstrations of IoF and various value-added services.



## Veea provides:

- direct-to-device Internet connectivity with a sustainable business model,
- value-added services such as precision agriculture, tele-education, tele-health, tele-training, IPTV & ESG
- unified edge-to-cloud computing, AI & data analytics



**O.N.E. Amazon:** <https://oneamazon.com>

**Colombia Projects:** <https://www.oneamazoncolombia.com>

**Explainer video:** [https://youtu.be/y1fN1R-u\\_6M](https://youtu.be/y1fN1R-u_6M)

# Building the Internet of Forests (IoF)

*Veeva enables the IoF solution with hyperconverged Edge Computing infrastructure*

- The IoF architecture is based on large-scale LoRaWAN networks, utilizing sensors developed by MIT Media Labs and others, delivered through LoRaWAN gateways of VeevaHub products along with machine learning and AI to monitor key variables within the rainforests.
- By understanding rainforest environments, we can help communities better manage their resources and activities, create systems that optimize natural resource use by corporations and governments, improve environmental health and enhance forest resilience.
- The report introduces a five phase technological roadmap for building infrastructure that will allow for the monitoring of hundreds of thousands of rainforest hectares.
- Allen Salmasi serves as Chairman of IoF Working Group.

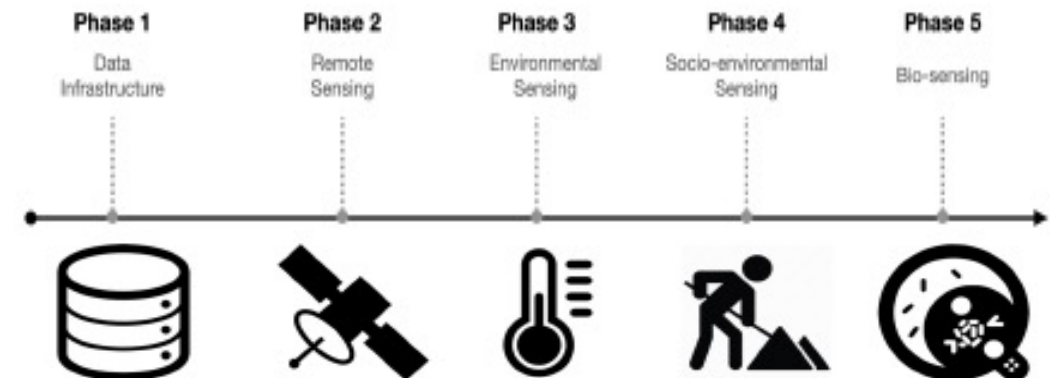
**Phase 1** - Data Infrastructure: Central to the phase is the installation of a database and server services which are required to properly store and handle information coming from sensor nodes.

**Phase 2** - Satellite images and drone images can be used within machine learning frameworks that can help to calculate biomass density, deforestation patterns and over all health of tree canopies.

**Phase 3** - Environmental Sensing: Historical data of environmental sensor stations will act as a reliable tool to study how segments of land evolve during long periods of time.

**Phase 4** - Socio-environmental sensing encompasses a distributed network of low-cost, low-power sensors.

**Phase 5** - Bio-sensing can enable deeper assessment about molecule-level insights. Bio sensors can be used to detect and understand presence and change of specific pollutants and bacterial compositions within the environment.



# AI-Driven Neural Network for Our Planet

*A highly valuable open-source complement to IoF*

## The Enterprise Neurosystem

- An open-source AI research community, founded on the principle that all the species and ecosystems on this planet are part of a single system.
- Developing a global-scale AI network.
- 190 participants from over 30 companies and academic institutions.
- Stanford SLAC, UC Berkeley, EY, Google, Microsoft, IBM Research, Intel, Meta, Veea, Reliance Jio, Seagate, Verizon and Yahoo!
- The Enterprise Neurosystem lends direct support to leading international climate organizations like the UNFCCC TEC and CTCN, and AIM For Climate, the international initiative for climate-smart agriculture and food systems, sponsored by the United Arab Emirates and the United States.
- Supporting hundreds of climate projects.

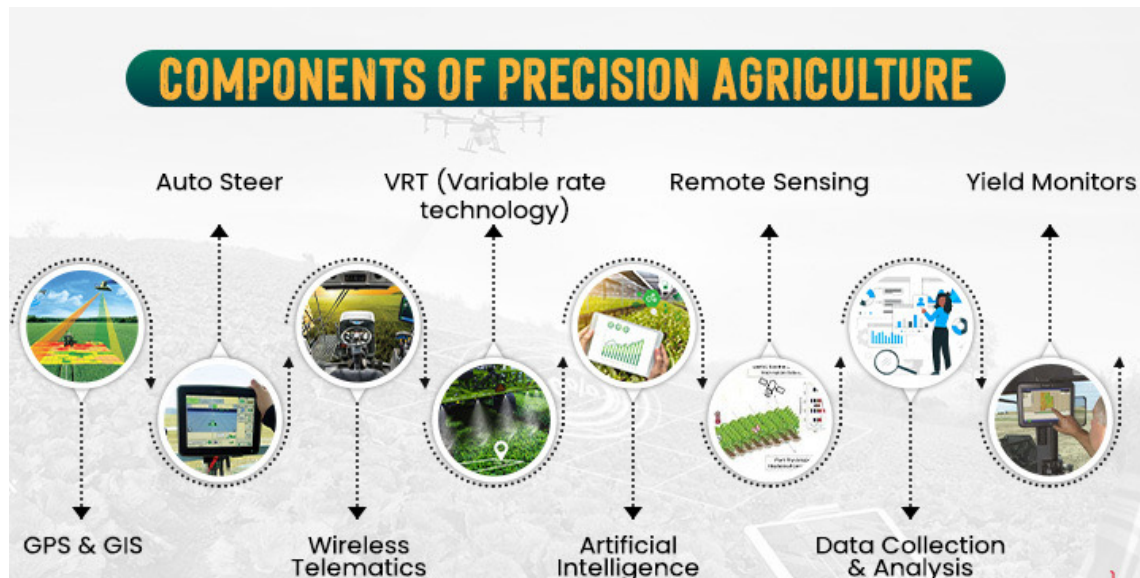
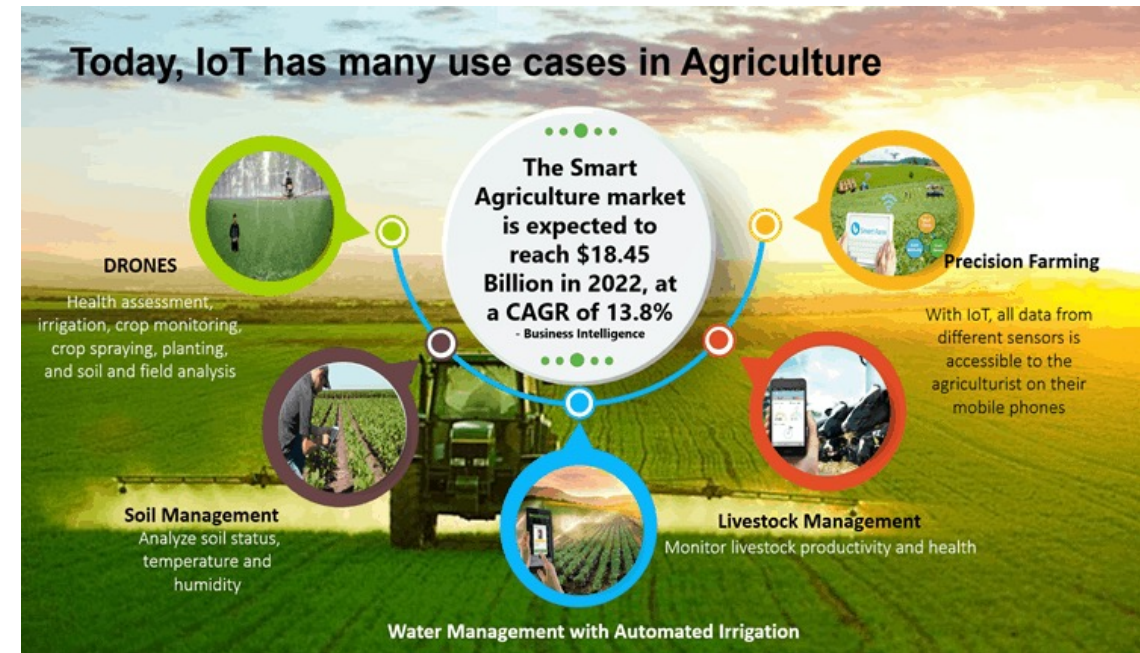




# Veaa Edge Platform Provides for Critically Needed Solutions

- Tele-education, tele-training and tele-health to make the farming community more productive and healthier
- The global crisis in food supplies,
- Energy management,
- Environmental monitoring and reporting,
- Natural disaster monitoring, prevention and recovery,
- Ecological crisis management and much more.

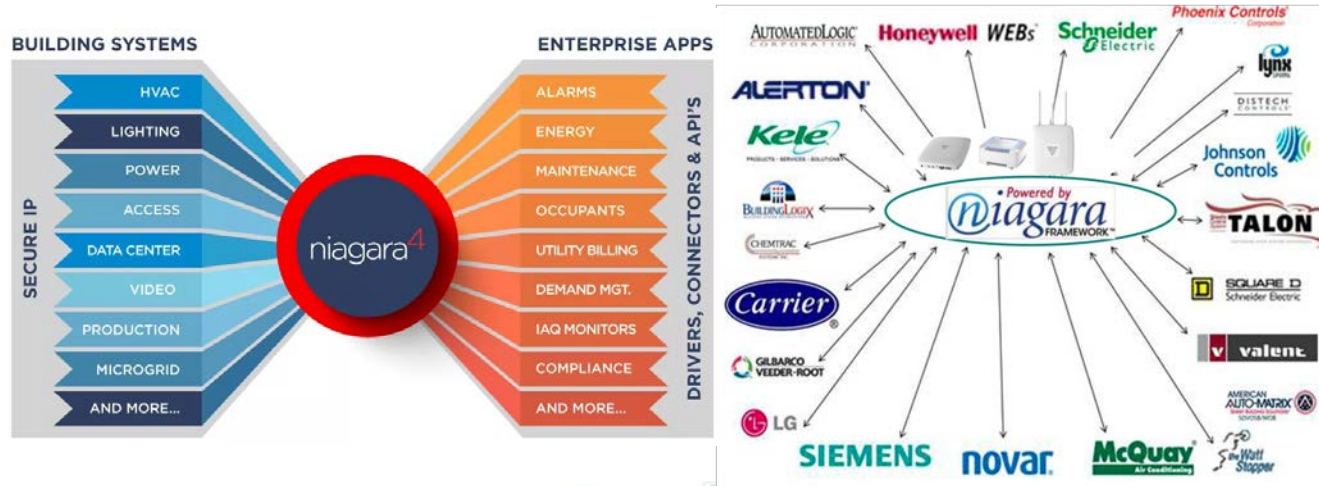
Peter Drucker famously said, **“If you can't measure it, you can't manage it.”**



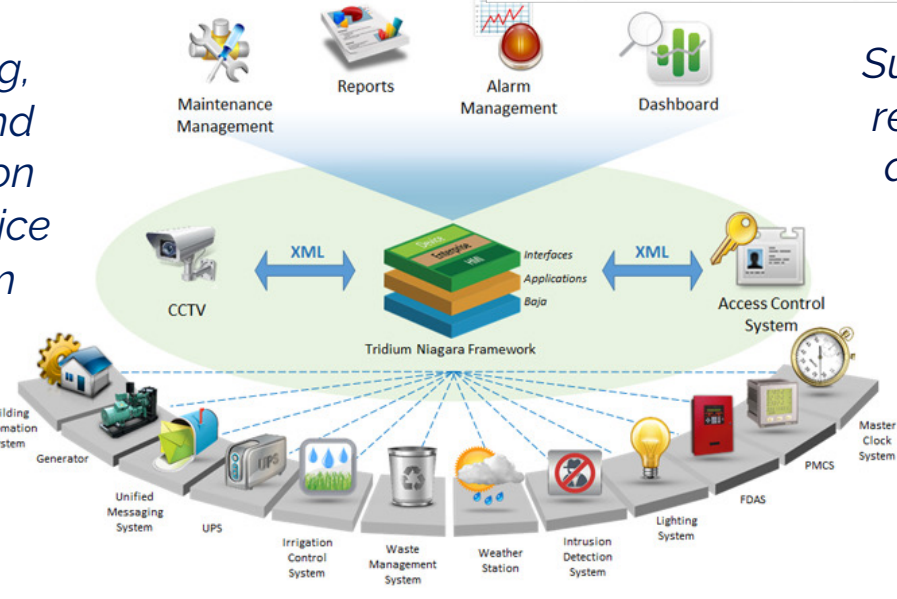
About 90 percent of the world's farmers are smallholders, owning less than two hectares of land. Smallholder farmers are expected to play a crucial role in this. Already, an estimated 80 percent of the food produced in Asia and sub-Saharan Africa comes from small farms.

# Containerized Honeywell Niagara Framework Enabled by VeevaHub products

The only wired and wireless BMS/EMS solution supporting the full range of IoT and smart building protocols and use cases



Monitoring, control and automation of any device or system

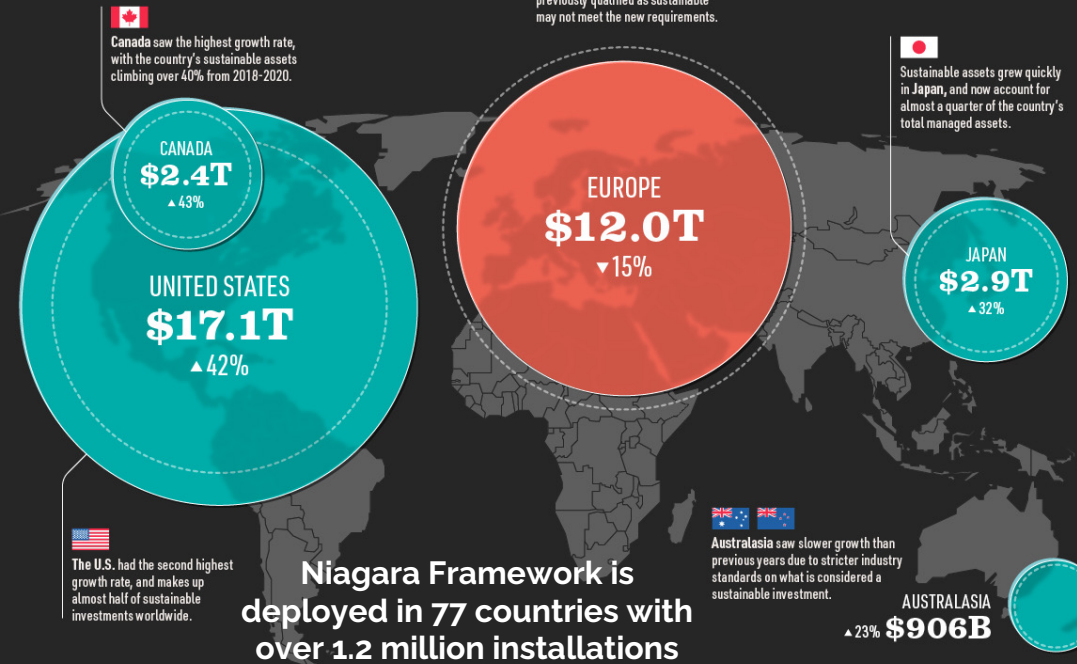


Sustainability reporting for all systems within the building

## SUSTAINABLE INVESTMENTS WORLDWIDE

Global sustainable investments grew 15% from 2018-2020, reaching a total of \$35.3T.

How do sustainable assets break down across the 5 major markets, and which regions are seeing the most growth?



Niagara Framework is deployed in 77 countries with over 1.2 million installations

# Creating a profitable business while saving our planet

*We retain the required technical capabilities to address many of the global challenges resulting from the current climate emergency, pressing social issues, food insecurity, water pollution and essential health services most efficiently:*

- ✓ *“Last-mile” Internet connectivity for everyone and everything (IoT) in unserved and underserved regions of the world*
- ✓ *Tele-education with wide-area delivery of stored content at the edge*
- ✓ *Tele-healthcare*
- ✓ *Tele-training*
- ✓ *Precision agriculture and Smart Farming*
- ✓ *ESG and affordable renewable energy solutions*
- ✓ *Real-time monitoring of weather and air quality*
- ✓ *Monitoring and prevention of water pollution*
- ✓ *Forest preservation solutions (fires, timber poaching, animal tracking, deforestation monitoring, etc.)*
- ✓ *Natural disaster monitoring and prevention*
- ✓ *Smart Waste Management*
- ✓ *Sustainable fishing, feed management and precision fisheries*
- ✓ *Maritime monitoring in coastal areas*
- ✓ *Green supply chain management*



***The unique solutions developed by Veeva deliver on the 2030 Sustainable Development Goals (SDGs) established by the United Nations across the board.***

***Edge Computing with affordable wide area connectivity, content delivery, IoT and Edge AI help us to meet SDGs.***

