DEFINITIVE LOGIC

A Definitive view of the edge of technology

…when you're powering mission support outcomes at the edge of technology

Michael Conlin, Chief Technology Officer

Digital Transformation in Government

Context

- New consumer experiences
  ⇨ new citizen expectations
- New fiscal year
  ⇨ new budgets
- New Congressional sessions
  ⇨ new laws
- New Administration priorities
  ⇨ new policies

Vectors of Change

- Shifting people & culture from experience-centered to evidence-centered
- Shifting processes from manual handoffs to digital integration
- Shifting policy from static to dynamic
- Shifting partners from banal to break through
- Shifting tech portfolio from tightly coupled to plug-and-play platforms

Outcomes

- public health & safety
- economic growth
- social welfare
- racial justice
- environmental stewardship
- human dignity
- equity
- investment in future generations

Innovation & your tech² platforms

Taking mission support to the next level

Context

- OMB A-11 Sec. 280
- Bridging the physical and the digital
- Evidence-Based Decision Making
- President's Management Agenda
- Federal Data Strategy

Changes

- Evidence-centered decisions at the speed of relevance
- Attracting digital natives
- Agile, flexible capital planning
- Predictive decisions, automated Interventions
- Data leakage & mosaic effects

Goals

- Access to innovation ecosystems & data
- Reduced friction
- Hyperscale capacity
- Accelerated learning curves
- Effective complexity management

Tech² Strategy – plug-and-play plaltforms

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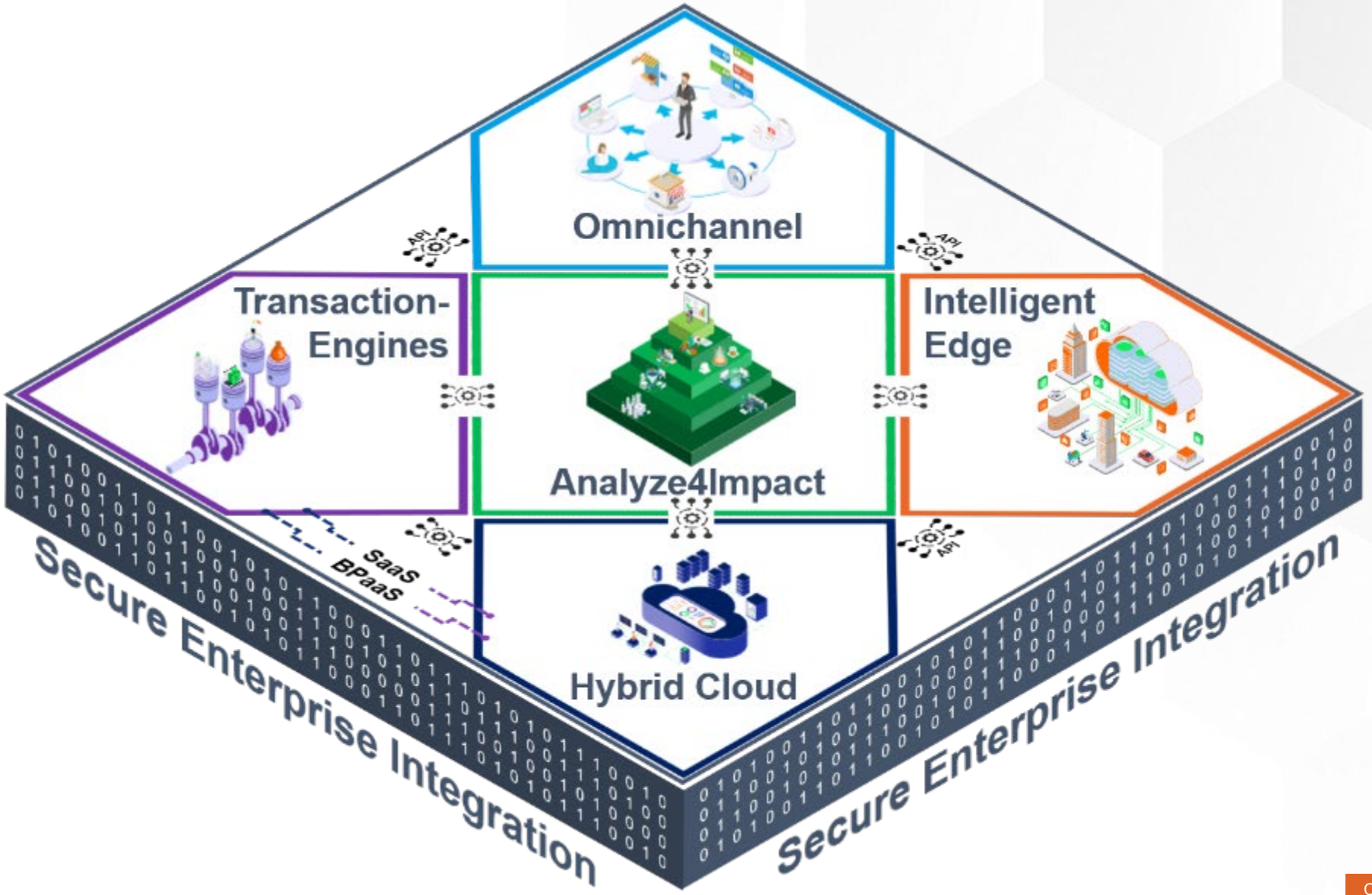


What is the IntelligentEdge?

Future Mode of Operations:

- Data engineering for SCADA and sensors
- Algorithm deployment pipeline for NPUs/TPUs/A14s
- Common utilities for date/time/geospatial stamping
- Training quality datasets
- Culture of evidence-based decision making

Preventing data gravity before it happens…. because distance is measured in milliseconds

Where is the edge of tech for the IntelligentEdge?

Today's bleeding edge

1. Internet of things (IoT)
2. Drone management
3. Digital sensors
4. Digital SCADA
5. Smart buildings systems integration

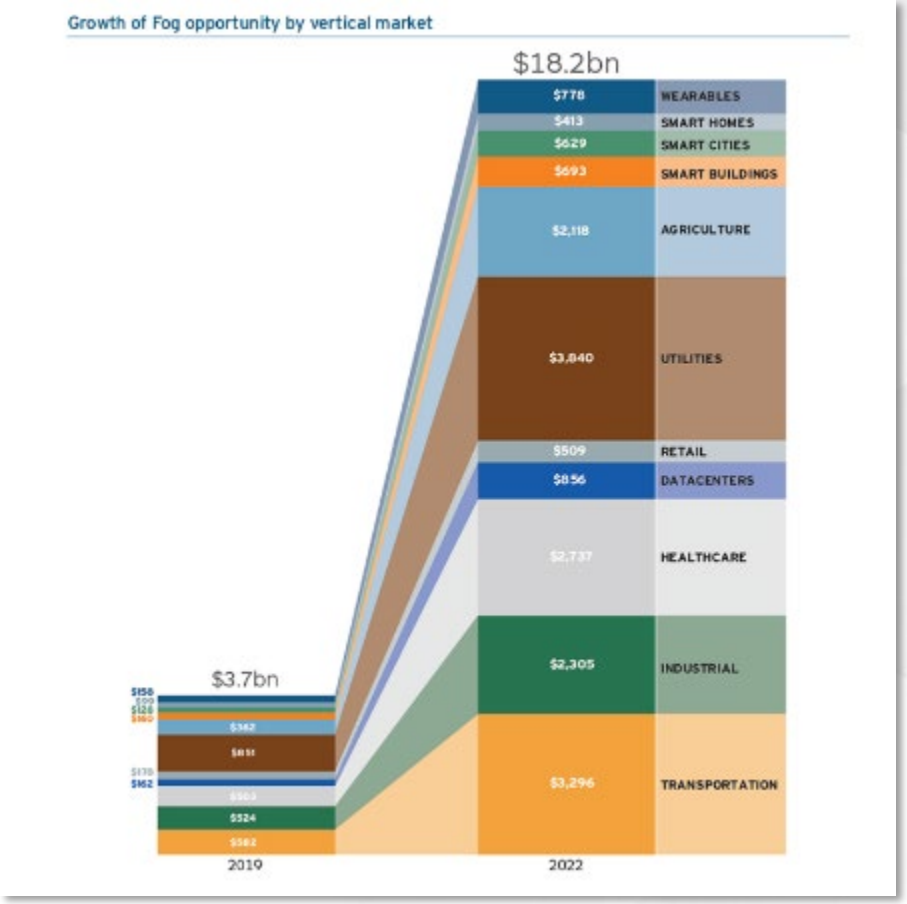
Tomorrow's bleeding edge

1. Neural processing units (NPUs/TPUs/etc)
2. Geo-enabled visualization
3. Qbits
4. 5G implementation services
5. Edge computing, analytics & design services

Why the IntelligentEdge matters

Meanwhile…out in the real world

- The edge computing market was **$500 B** in 2020
- **50 B** IoT devices were in use in 2020
- The global smart cities market will be **$237.6 B** by 2025
- The emotion-detection and -recognition market was **$12 B** in 2018; will be **$90+ B** by 2024
- **1.4+ B** devices will have Neural Processing Units (NPUs) in them by 2024



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Source: 451 Research; ZDNet https://www.zdnet.com/article/edge-computing-the-state-of-the-next-it-transformation/

How will you leverage the IntelligentEdge in the future?

Looking at the geographic edge of your enterprise, where would real-time image recognition improve operational performance?

With occupancy levels of your office buildings fluctuating due to the pandemic, are you able to optimize your HVAC and utility spending?

Which of your campuses and facilities are experiencing drone incursions, and would benefit from drone suppression / management capabilities?

Do you have a real-time geolocation view of your vehicle fleet and its level of utilization?

Are your facility LANs secure enough to prevent a target-like cyber attack?

Which workers in your field force could perform better if supported by augmented reality?

Who are the major IntellegentEdge players?

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Wearables

Connected Home

Connected Car and Fleet

IoT Infrastructure & Sensors

UAV/Drone

Healthcare

Retail

Industrial IoT (IIoT)

Smart Utilities & Energy

Who are the major IntellegentEdge players?

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Industrial 3D Printers

Carbon, Desktop Metal, VELO, XJET, NORSK TITANIUM, NUBURU, POSTPROCESS, FORTIFY, BMF, Additive Industries, nexa3D, ESSENTIUM, DigitalAlloys, SEURAT, rize, Impossible Objects, VOXELJET, ADDITIVE MANUFACTURING TECHNOLOGIES, bigrep, OPTOMEC, wematter, Fabric8Labs, Desktop Metal, ANISOPRINT, aon3D, printcb, HYBRID, Fusion3, FABRISONIC, CINCINNATI, eos, 3D SYSTEMS

Human-Robot Interaction Systems

SARGON, Veo Robotics, RB-3D

Collaborative Robots

LOGOS, rethink robotics, SEEGRID, fetch robotics, robot, MAGAZINO, SOFT ROBOTICS, Grabit, arcculus, Automata, UNIVERSAL, MIP robotics, SMART ROBOTICS

3D Printing Software

Xometry, fictiv, nTopology, AMFG, FR, inkbit, Dyndrite, LINK3D, DiManEx, Astroprint, 3DTRUST, TRIO LABS, Viridis3D, AVEVA, 3DPrinterOS

Predictive Maintenance

Cisai, AUGURY, Samotics, corrosion RADAR, senseye, ToolSense, TEND

IIoT Infrastructure

Actility, ALIEN, Preferred Networks, Ayla Networks, CROSSBAR, KONUX, everoctive, NOZOMI NETWORKS, FREEWAVE, OmniID, drishti, IoTium, another brain, ZEDEDA, AUGMATE, ORBI TECHNOLOGIES, CLEARBLADE, TEGO, Eigen, alef, SENTENAI, C&TECH, nebbiolo, XERAFY, PetaSense, RS, roy-g-biv

Industrial Robots

Bright Machines, AGILE ROBOTS, EMERGEN, JAKA, ROKAE, COBOT, PERMMON, SoftWear AUTOMATION, IAM ROBOTICS, CRP, NOVARC, HRMRO, Aripix Robotics, TITAN, HEBI ROBOTICS, inrotech, TERADYNE, SYSTEMANTICS, SASTRA, NORDBO ROBOTICS, KUKA, FANUC, HAHN GROUP

Robotic Operating Systems

CloudMinds, muJin, Symbio, MECH MIND, realtime robotics, LINKWIZ, Ascent, micropsi industries, evrobotcon, RISEYE, BITROBOTICS, ENERGID, YOUIBOT, CLEARPATH

WAN Edge Infrastructure

aviatrix, alkira, 128 TECHNOLOGY, CATO NETWORKS, Containous, aryaka, MODE, PENSANDO, zenlayer, FORWARD NETWORKS

Thank You