

# Industry 4.0 & IoT

Expertise in Manufacturing Vertical



# Digital Innovation Partner



4400+

Global Team Members

1500+

Projects Delivered

25+

IP Accelerators

170+

Clients (Long-term Relationships)



## INDUSTRY CERTIFIED

ISO

9001:2015

ISO

27001:2013

ISO

27701:2019

CMMI

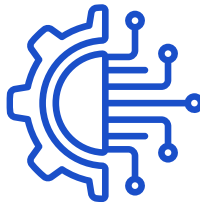
V2.0 Level 3

PCI DSS

Compliant

HIPAA

Compliant



Backed by Capital Square Partners, TA Associates, True North and CPPI



US-headquartered Tech Services firm with 100% focus on Innovation & Product Engineering

## HOW WE WORK?

### Data at Heart

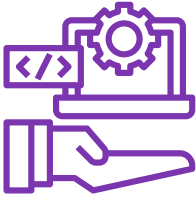
Accion Labs reimagines the possibilities for digital transformation from innovation to growth

### Digital in Thinking

Scalability, manageability, robustness, and efficiency are always our top priorities

### Innovation in Approach

Everything is planned to minute detail, ensuring high-quality deliveries to clients every time



Fastest Growing Tech Services Firm for 5 years in a row. Organic Growth & 9 Capability-centered acquisitions



Emerging Tech first approach - AI/GenAI Applications, investments in IP, Tooling and Innovation

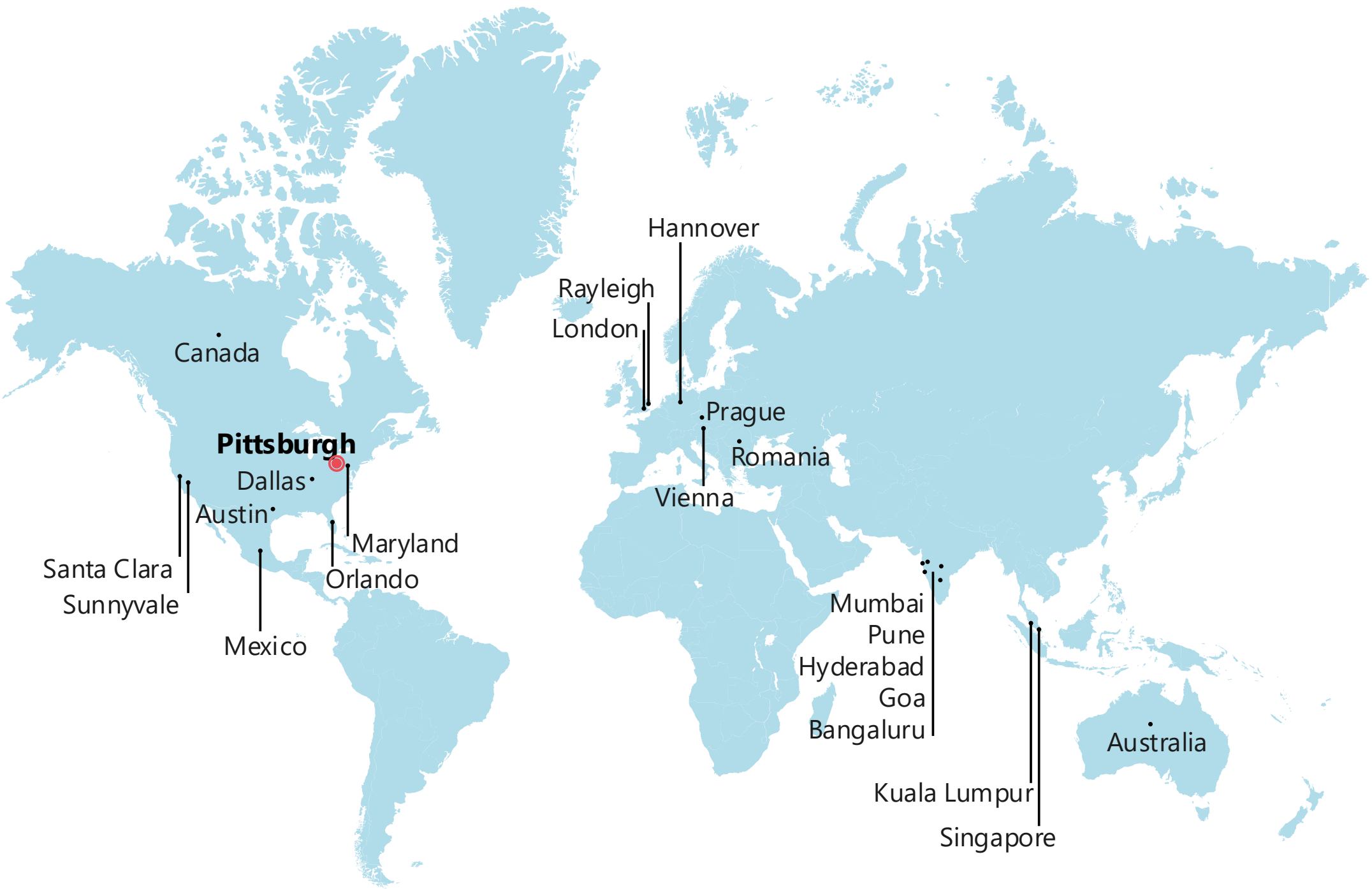


Culture of Outcome, Transparency, Work-life Balance, Innovation & Lifelong Learning



Hands-on Management with Entrepreneurial, Engaged and Value-based Leadership Style

# Global Presence and Business Overview



**4400+**  
Global Team Members

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**23+**  
Global Delivery Locations

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**41+**  
Centers of Excellence Driving Innovation

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**34+**  
Proprietary IPs Developed


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**50+**  
GenAI Implementation Delivered

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# Microsoft credentials and awards




Microsoft

Microsoft Partner

# Winner

2023 Partner of the Year

Analytics Award



# Microsoft

Solutions Partner

Data & AI

Digital & App Innovation

Infrastructure



# Fabric Featured Partner





# Microsoft Partner

Advanced Specialization

Analytics on Azure

Data Warehouse Migration to Azure

Kubernetes on Azure

Migrate Enterprise Applications to Azure

Infra and Database Migration to Azure

Amongst Top Microsoft Partners in USA



# Microsoft Partner

Gold Cloud Platform

Gold Application Development

Gold Data Analytics

Gold Data Platform

Silver Security





Microsoft Partner

# Power BI



# AWARDS FINALIST

Microsoft Partner of the Year 2020

# APPLICATION INNOVATION



# Accion's Manufacturing Expertise

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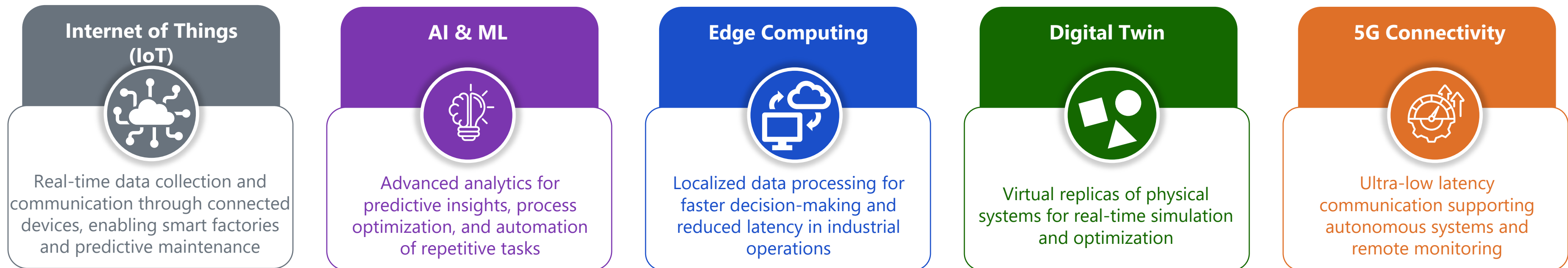
# What is Manufacturing 4.0

Manufacturing 4.0 is the application of Industry 4.0 principles specifically within the manufacturing sector, leveraging technologies such as **IoT, AI, machine learning**, and **automation** to create smart, interconnected production systems. It integrates data and feedback loops across supply chains to enhance **efficiency, agility**, and **customization**.

Central to Manufacturing 4.0 are **smart factories**, where machines, devices, and systems collect and analyze data in real time, enabling **predictive maintenance, process optimization**, and **autonomous decision-making**.

This approach allows manufacturers to adapt quickly to market demands, improve product quality, and proactively address potential issues while minimizing waste and downtime.

## Manufacturing 4.0 in 2025



## Transforming Manufacturing through AI & Innovation Powered by Microsoft Azure

### Smart Factory Use Cases

- Automate process and transform factory operations with real-time data access and AI agents
- MES Modernization with connected factory labs
- Empower sales, service, and support teams through AI knowledge assistants
- Securely integrate OT and IT data to inform decision making
- Improve operation visibility using an AI assistant to the factory floor, providing access to data through a natural language interface

### Our Offerings

#### Manufacturing Unified Data Platform Accelerator

An end-to-end, unified data platform that brings together all the data and analytics tools that organizations need using Microsoft Fabric

#### Agentic AI Automation Framework

Context-aware Agentic AI system that automate business processes, handle exceptions, and coordinate across enterprise functions

#### Knowledge Assistant Copilot Accelerator

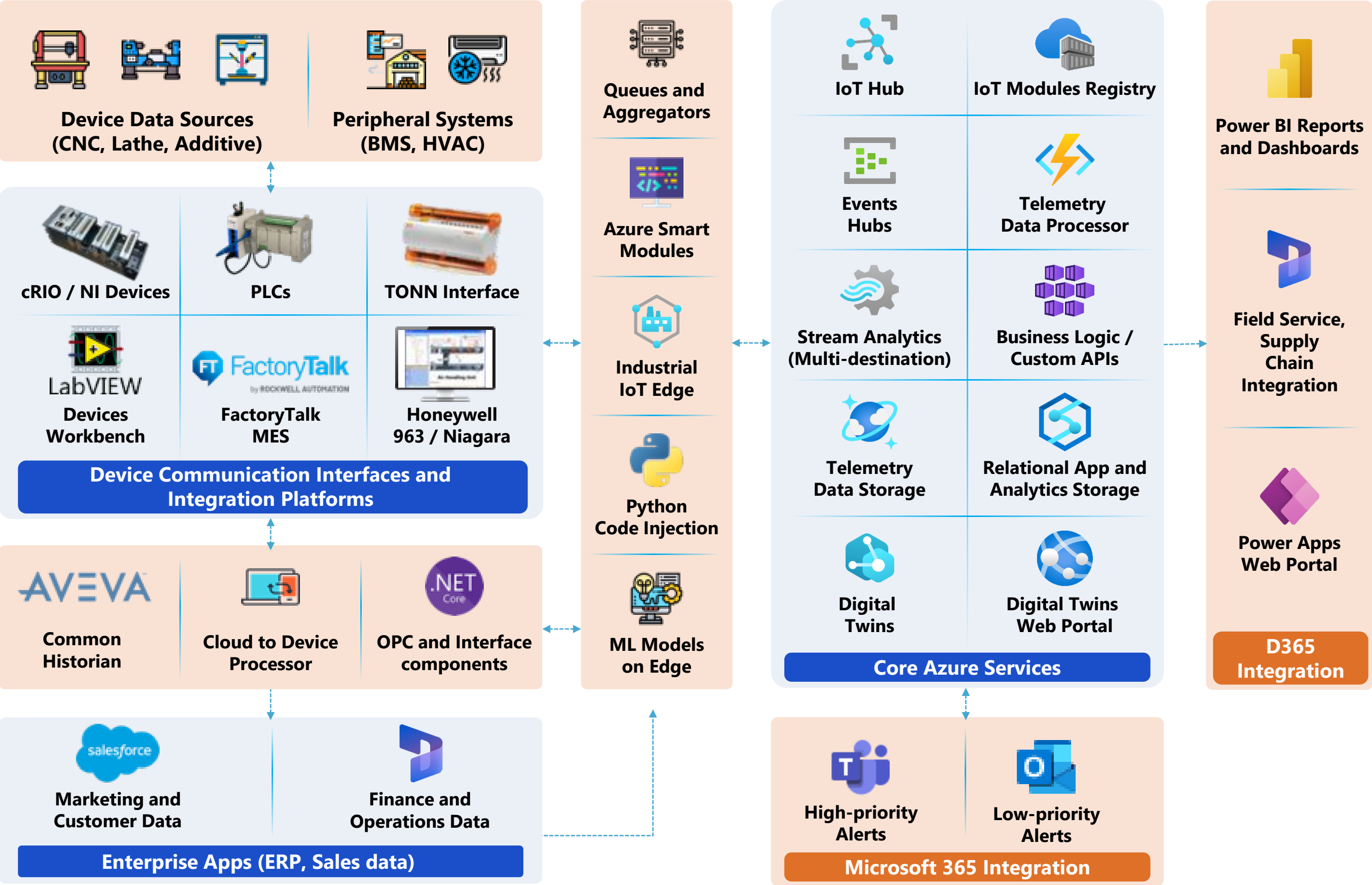
Analytics AI assistant that integrates and structures knowledge sources with semantic tagging and real-time access APIs

#### Azure IoT Accelerator

Securely integrate OT & IT data at scale with Azure IoT blueprint that ingest factory data, aggregate it in a unified platform



# Industry 4.0 and Accion Labs Expertise



## Industrial IoT

Deep experience in pulling telemetry data from devices made by National Instruments, Rockwell Automation (Allen Bradley), peripheral BMS Systems (Honeywell) and others.

Integration with Aveva Historians (OSI PI, InTouch HMI), FactoryTalk MES.

Library of modules to integrate with OPC and manage Digital Twins in Cloud.

## Systems Integration

Deep integration with Hardware manufacturer provided platforms, Dynamics 365, Microsoft 365, SaaS Platforms / Apps.

## Cloud Computing

Built natively on Azure and integrated with Microsoft 365 and Dynamics 365. Natively storing data in Azure on Cosmos DB, BLOB Storage and Azure Synapse Analytics at core.

## Big Data and Analytics

Performing Analytics at scale using Azure Synapse Analytics, Notebooks in Azure Synapse and custom code for known KPIs using Python hosted on Azure Kubernetes Service. Report model data exposed to Power BI through Azure Synapse Analytics.

## Cyber Security

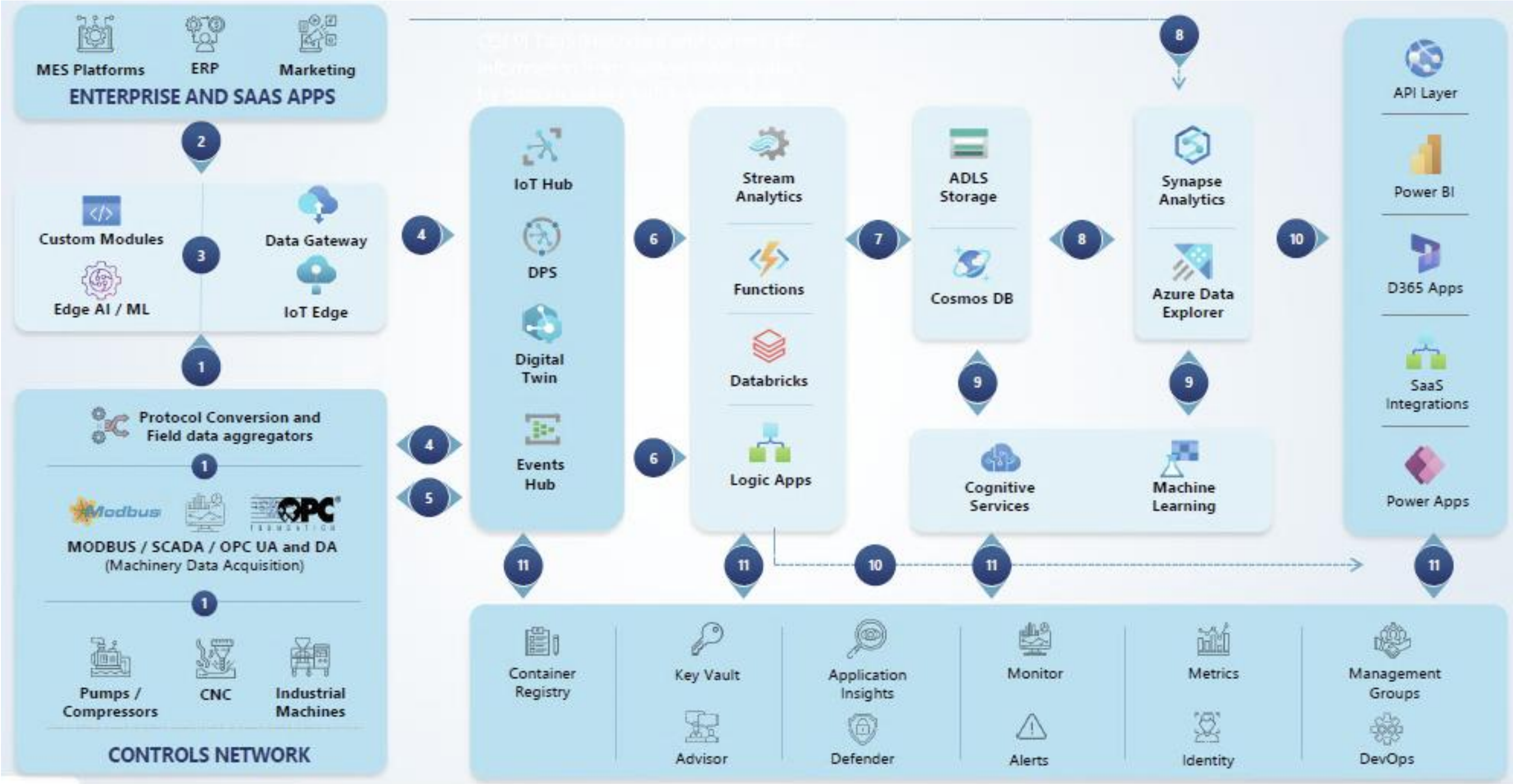
Security at heart of Azure Smart through Azure Defender for IoT, Azure Defender in Cloud, and meeting customer specific compliances using Azure Defender and Azure Policy.

## Augmented Reality

Integrated with Azure Digital Twins Explorer (latest edition). Building custom Apps in pipeline for Hololens.



# Azure Smart IoT Accelerator – Reference Implementation



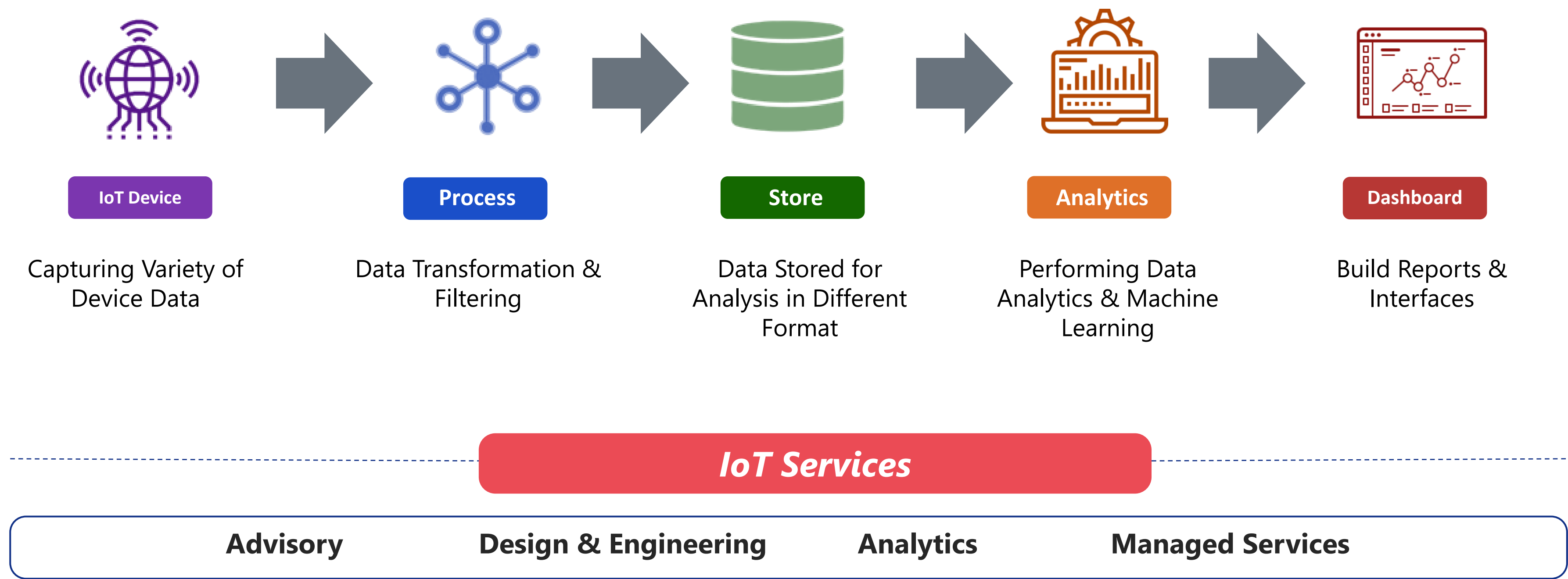


# Introduction to Industry 4.0 & IoT

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# Summary of Our IoT Services



# Our Experience in Industry 4.0

According to the BCG, 50% of IoT spending will be driven by discrete manufacturing, transportation and logistics, and utilities by 2020. Here are some IoT uses in Industry 4.0

## Production Visibility

Connecting machines, tools, and sensors in the shop floor to give process engineers and managers much-needed visibility into production

## Higher operator productivity

Increasing the productivity of the manufacturing workforce and using IoT to enable tools, operators to go through workflows faster without compromising quality

## Faster improvement cycles

IoT enabled shop floor giving Process engineers, manufacturing engineers, quality engineers, frontline engineers in the shop floor the ability to automate data collection so they have more time to spend improving processes

## Increase machine utilization

Tracking machine metrics lets manufacturers identify and fix causes of unplanned downtime, provide preventive maintenance to their equipment and thus increase machine utilization throughout the shop floor

## Better facility management

Leveraging sensors in manufacturing facilities can improve their management and therefore reduce the operational costs of a factory.

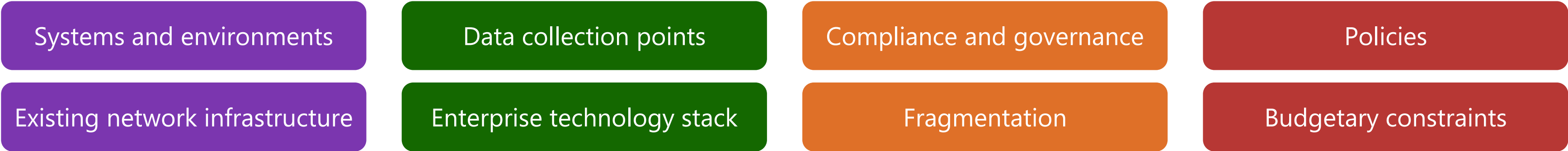
## Supply chain optimization

IoT enabled sensors to permit monitoring of events across a supply chain, providing access to real-time information by tracking inputs, equipment, and products



# Our Process of Applying IoT

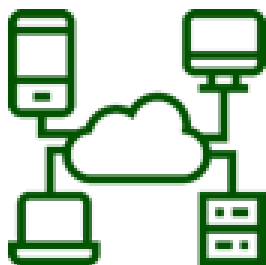
Analysis



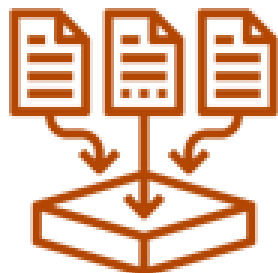
Strategy



Business roadmap



Hardware, network management

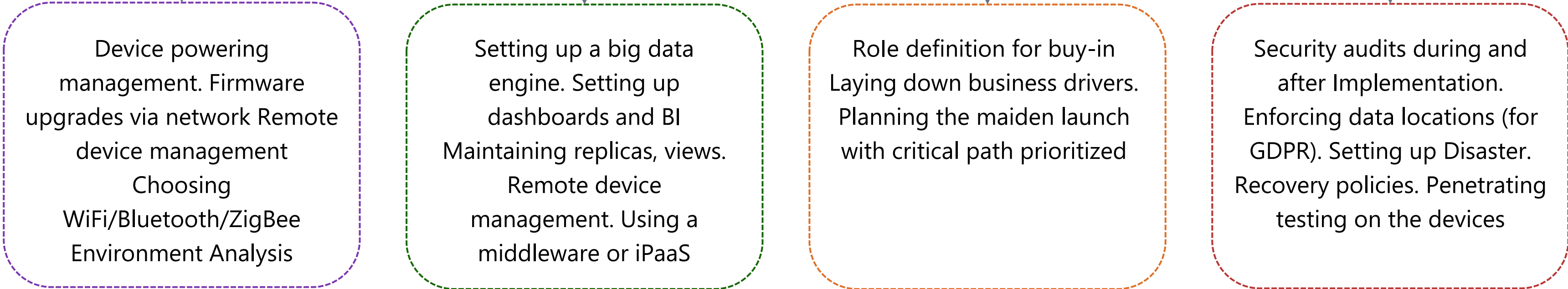


Data collection, reporting, mining



Security, Compliance and Governance

Implementation



# Case Studies

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**About Client:** Client is a US based company pioneer in innovating and manufacturing modular platforms for the enterprise market

## Situation

- Client manufactured a smart-case with cloud-connected sensors case that measure shock, vibration, temperature etc.
- Key challenge was to develop a mobile based IoT solution to host multiple sensors based on user's needs
- The data had to be captured and reported based on the device owner and their subscription at the rate of as fast as 10 records per second - implementing MQTT protocol for reliable data transfer

## Solution Approach

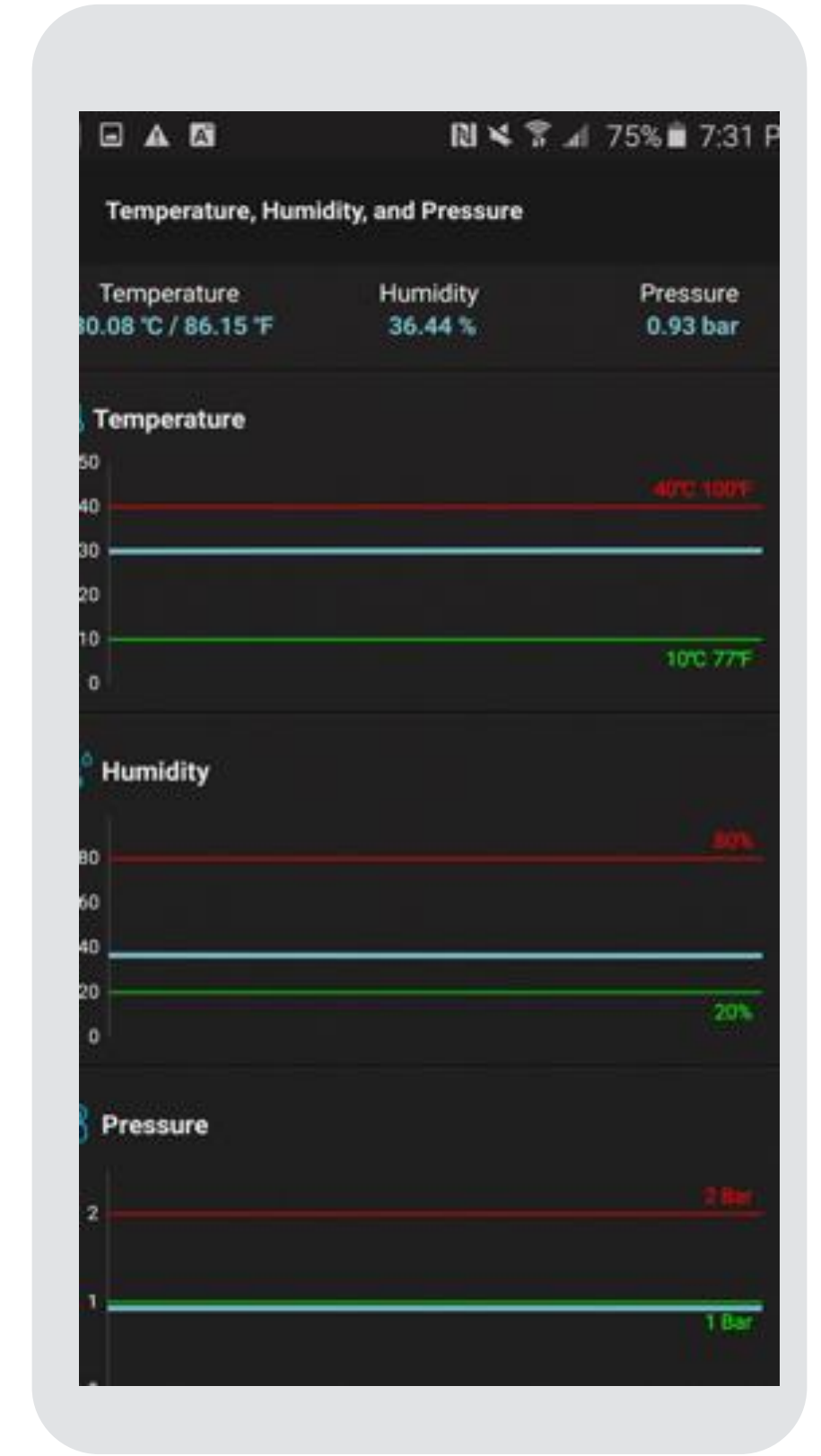
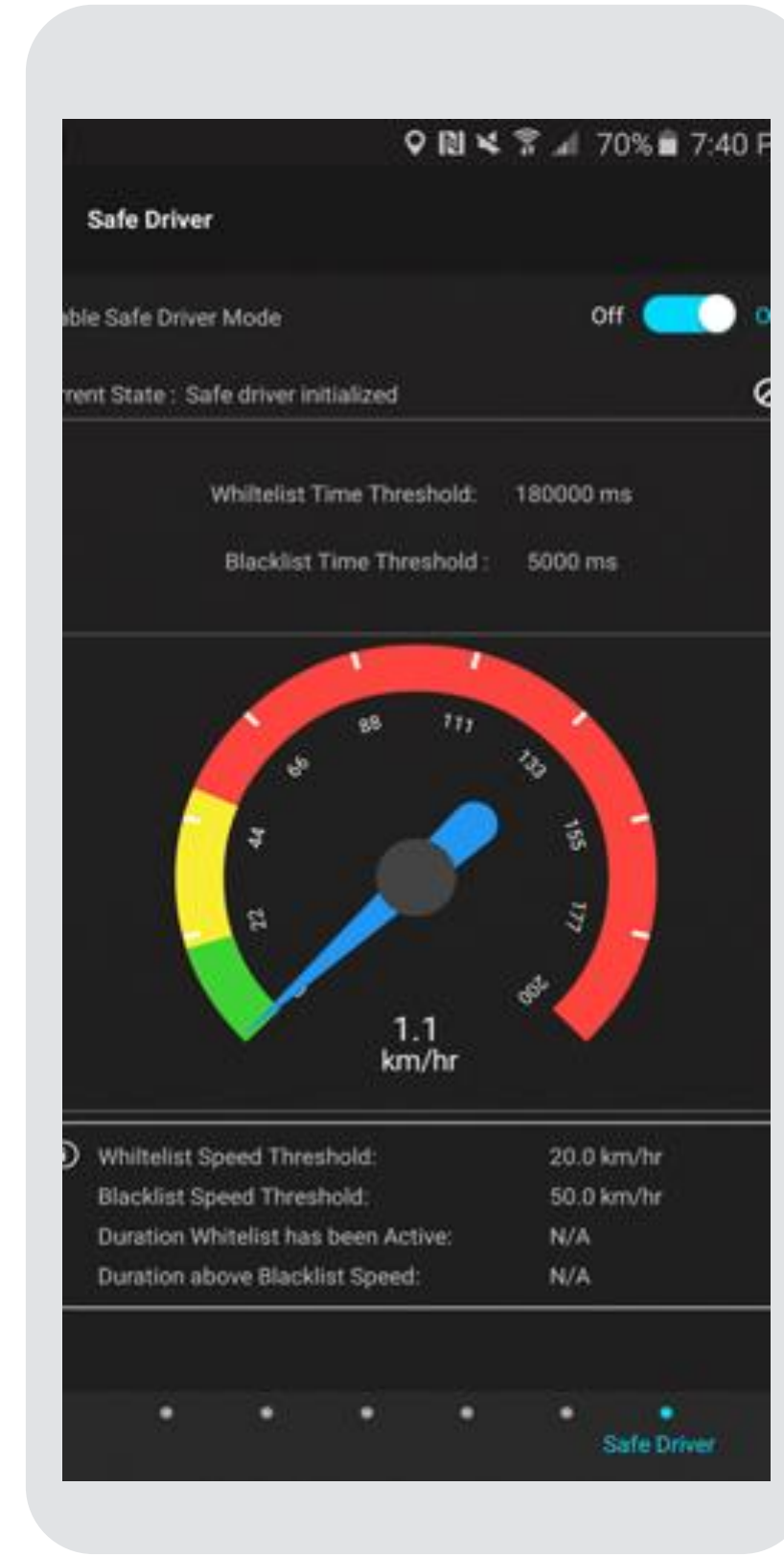
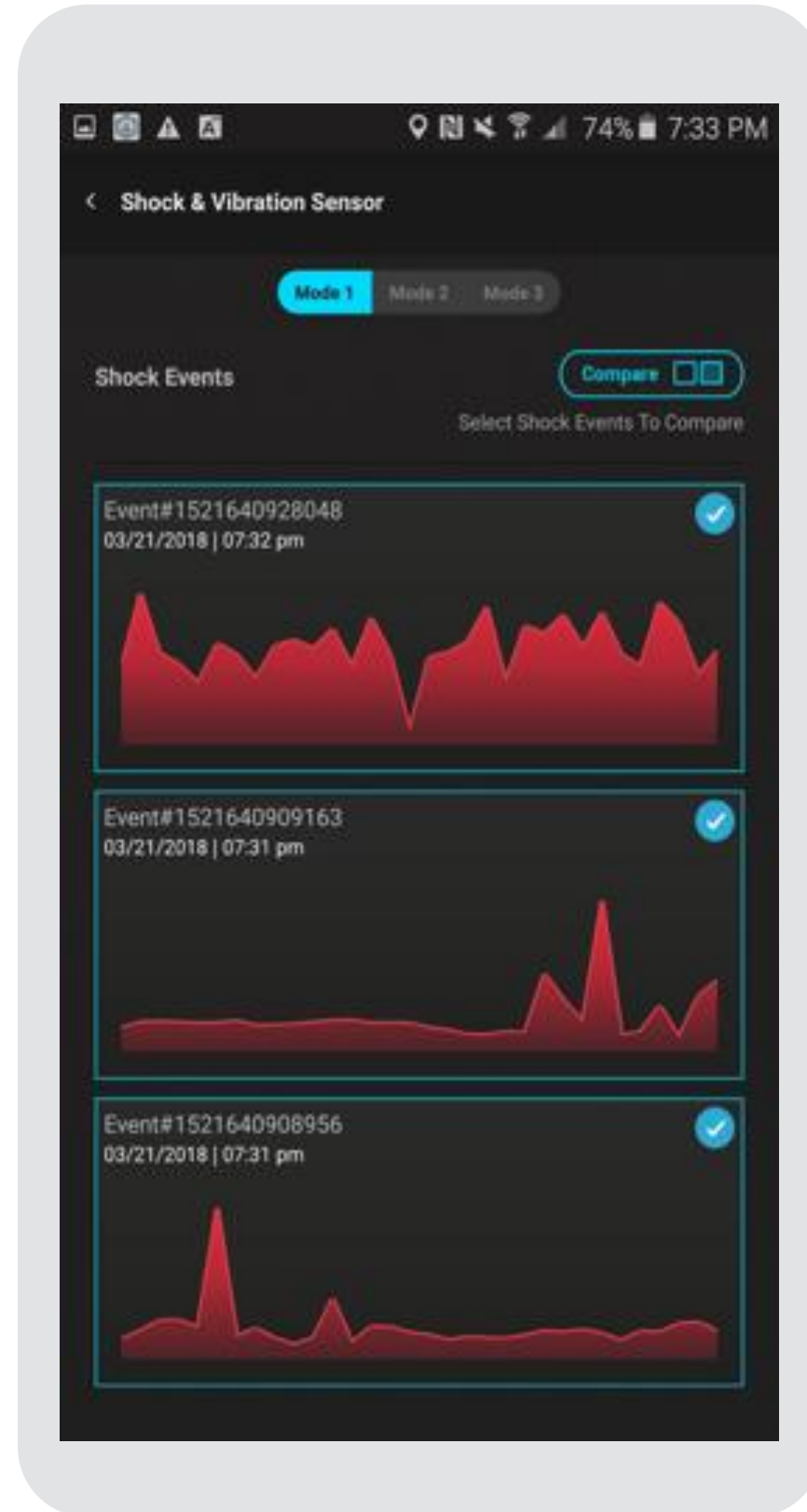
- The platform exposed a wide range of APIs that could be utilized to access the data captured by smart-case and reflected in custom web or mobile apps.
- Custom mobile apps leveraged the smart-case APIs whereas custom web apps leverage the Server REST APIs.
- SDK – Android and iOS SDK for 3rd party developers
- API development – API set for third parties to develop their custom solution
- Web App – Web based data reporting and analytics portal
- DevOps support – Defining Infrastructure architecture, deployment and maintenance

## Key value Additions & Business Benefits

- Provided a wide range of sensor data like Environmental parameters at real time
- Data encryption algorithms deployed to ensure passing / synching of all sensitive data to server securely, thus increasing security by 40%

## Technology

- Android, iOS
- Java, MySQL
- AWS cloud and Services
- Kafka, Storm
- Apache Spark, LDAP



Screens





Prevent Incidents



Maximized accuracy  
and efficiency



Automated processes  
and ensured regulatory  
compliance

## IoT Enabled connected worker safety platform

Delivered an IoT based connected worker platform by using various sensors and devices. The solution built on AWS IoT platform enables Administrator to track the complete worker flow from onboarding onto the job, tracking the workers while on job and offboarding. The platform uses ultra wide band devices to track whether the worker has entered any danger zone marked on the floor plan loaded. The Floor plans were loaded onto the Forge Viewer using BIM360 APIs. Also, multiple sensors were used to track various environmental parameters like humidity, temperature. Solutions like AWS Kinesis, IoT Rule engine, AWS Lambda and Big Data solutions were used to parallelly process the live data stream received from the IOT enabled devices. The solution helped on reducing the safety cost as it reduced the incidents at workplace and ensured regulatory compliances

# IOT Enabled Connected Worker Safety Platform

**About Client:** Client is a US Based specialized construction company

## Situation

- The client wanted an end-to-end solution right from Onboarding the workers, tracking their work and off-boarding them
- The client wanted a system to automatically notify the concerned authority in a situation where a worker could be in danger
- The key challenge was to set up the safety infrastructure with various IOT sensors and track real-time live data streams coming from the sensors

## Solution Approach

- The solution enables Administrator to track the complete worker flow from onboarding onto the job, tracking the workers while on job and off-boarding
- The platform uses ultra wide band devices to track whether the worker has entered any danger zone marked on the floor plan loaded
- Also, multiple sensors were used to track various environmental parameters like humidity , temperature
- Solutions like AWS Kinesis, IoT Rule engine, AWS Lambda and Big Data solutions were used to parallelly process the live data stream received from the IOT enabled devices

## Key value Additions & Business Benefits

- Prevented N number of incidents from causing serious casualties and monetary losses
- Maximized the accuracy in onboarding and Off-boarding
- Automated Processes and ensured regulatory compliance



A large, abstract graphic composed of many thin, overlapping, wavy lines in various colors (red, blue, green, purple) that create a sense of movement and depth across the upper half of the slide.

# Thank you.

Enhancing Lives by Transforming Businesses through Innovation



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