Avaya IoT

Digital Transformation is Accelerating

Disruptive Technology Adoption is Increasing
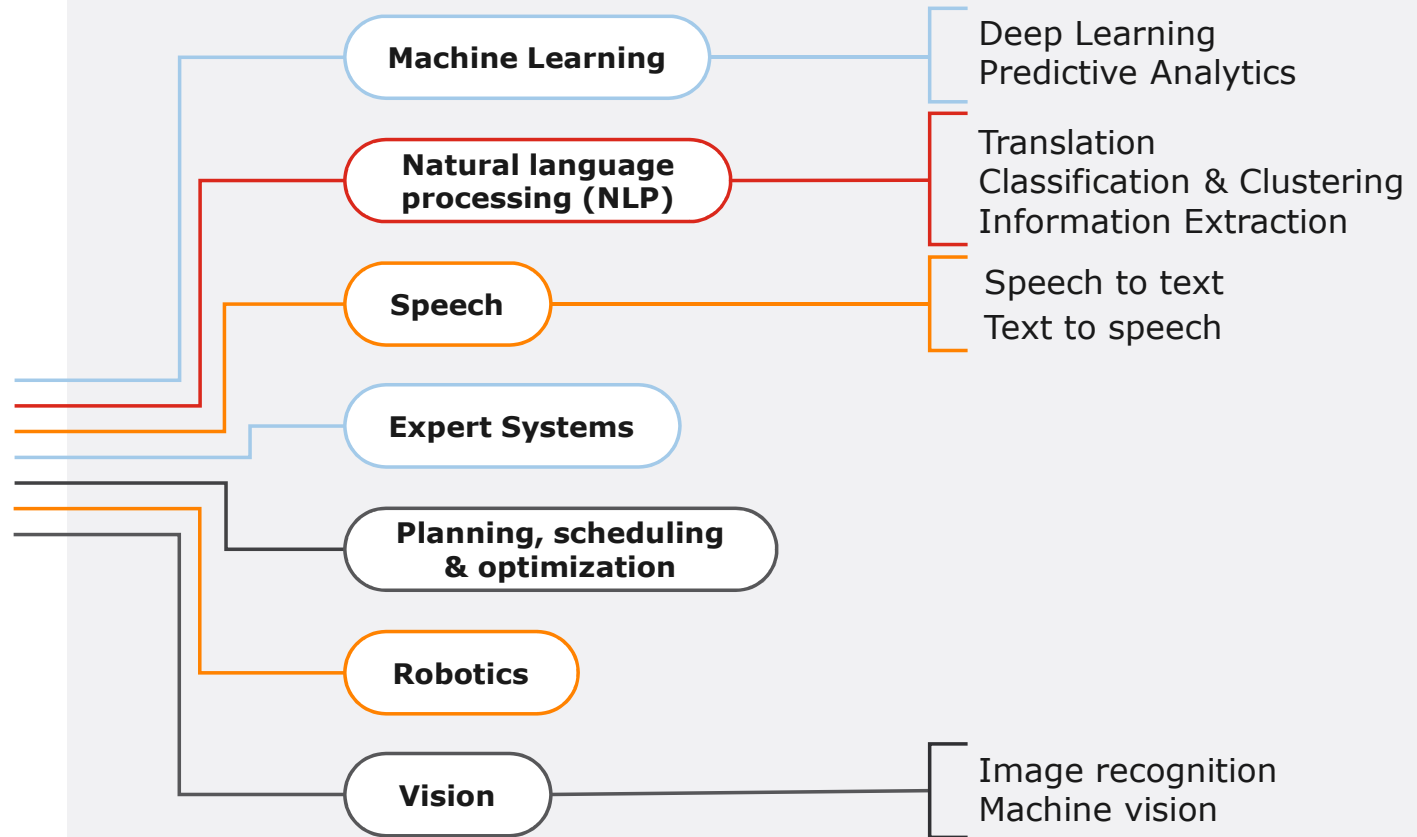
Technology	Adoption
Digital Security	71%
Internet of Things	37%
Artificial Intelligence	25%
Conventional Interfaces	21%
Virtual Reality	17%
3D Printing	17%
Smart Robots	16%
Digital Team	12%
Blockchain	9%
Autonomous Vehicles	6%
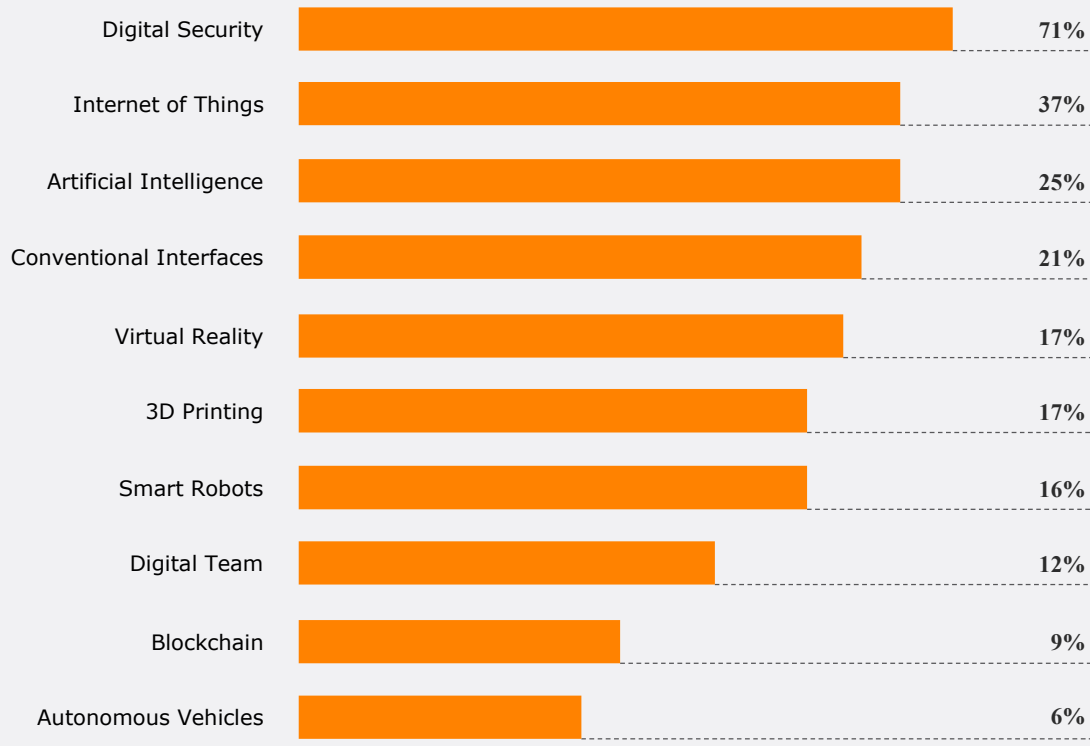
Gartner

PREDICTS

Through 2020
60% of your time and cost to build a digital platform is on **INTEGRATION**

Artificial Intelligence (AI)

- **Machine Learning**
  - Deep Learning
  - Predictive Analytics
- **Natural language processing (NLP)**
  - Translation
  - Classification & Clustering
  - Information Extraction
- **Speech**
  - Speech to text
  - Text to speech
- **Expert Systems**
- **Planning, scheduling & optimization**
- **Robotics**
- **Vision**
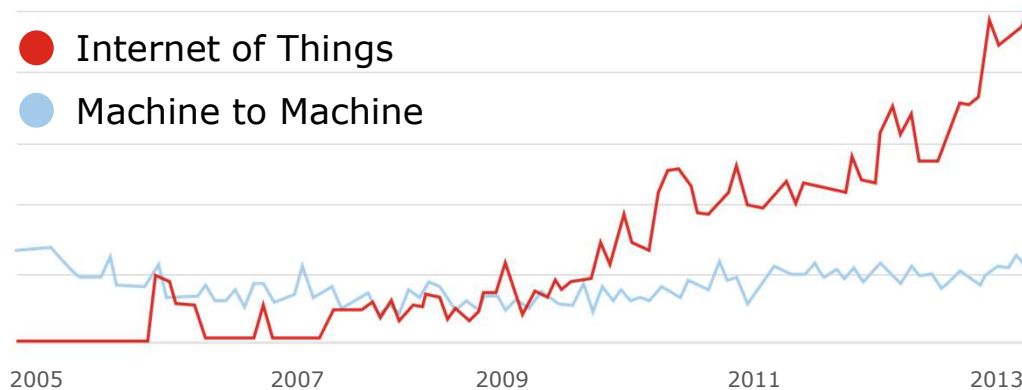 - Image recognition
  - Machine vision

Gartner predicts that by 2020, customers will manage 85% of their relationships with the enterprise without interacting with a Human

3

IoT with Ecosystem

Trends

● Internet of Things

● Machine to Machine

2005   2007   2009   2011   2013

Device — Smart — Connected — Senses — Computes ○ — **Process Automation**

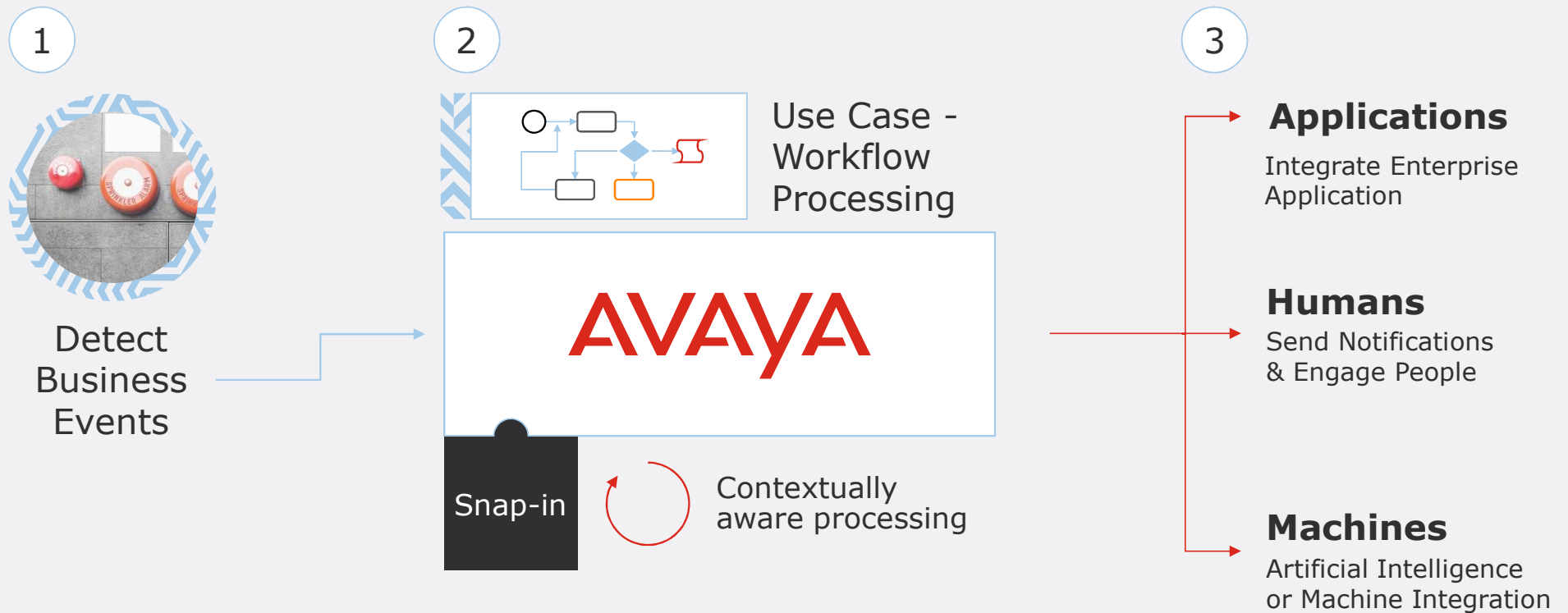IoT is about interconnecting devices with systems

The IoT Platform as enabler, **gathering** and **analyzing** the data

Real value will come applying the resulting insights to **create great IoT services**

e.g. predictive maintenance, proactive customer engagement or advanced analytical insights
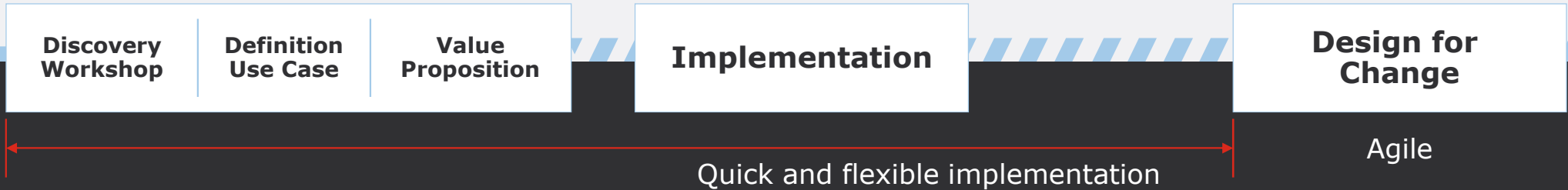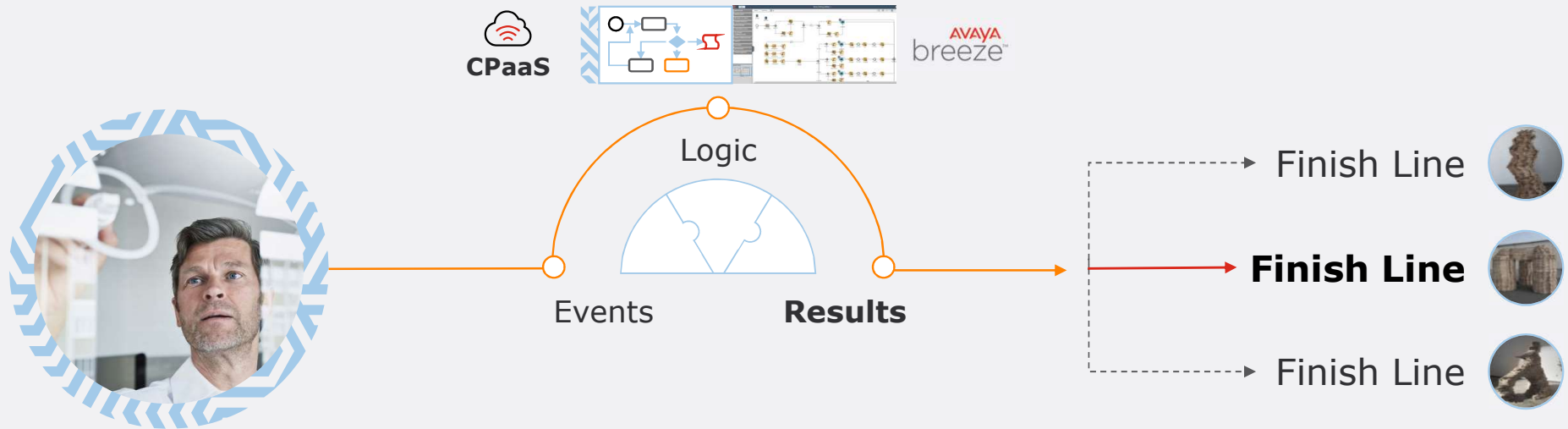
Enabler for new compelling Use Cases across key Verticals
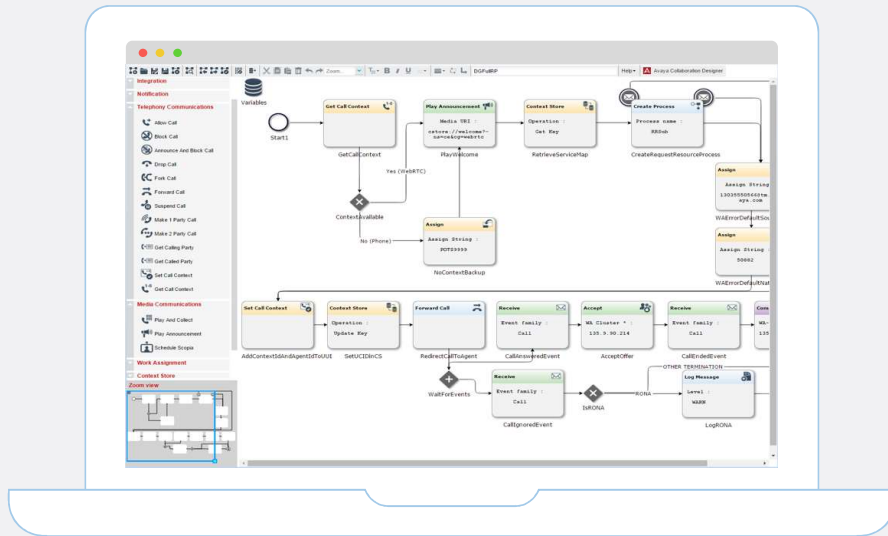
"If This Then That" 2.0 For Enterprise

1

Detect Business Events

2

Use Case - Workflow Processing

AVAYA

Snap-in

Contextually aware processing

3

→ **Applications**
Integrate Enterprise Application

→ **Humans**
Send Notifications & Engage People

→ **Machines**
Artificial Intelligence or Machine Integration

Service Automation & Orchestration

Open & Agile by Default

CPaaS

AVAYA breeze

Logic

Events

Results

Finish Line

Finish Line

Finish Line

Discovery Workshop	Definition Use Case	Value Proposition	Implementation	Design for Change

Quick and flexible implementation

Agile

AVAYA

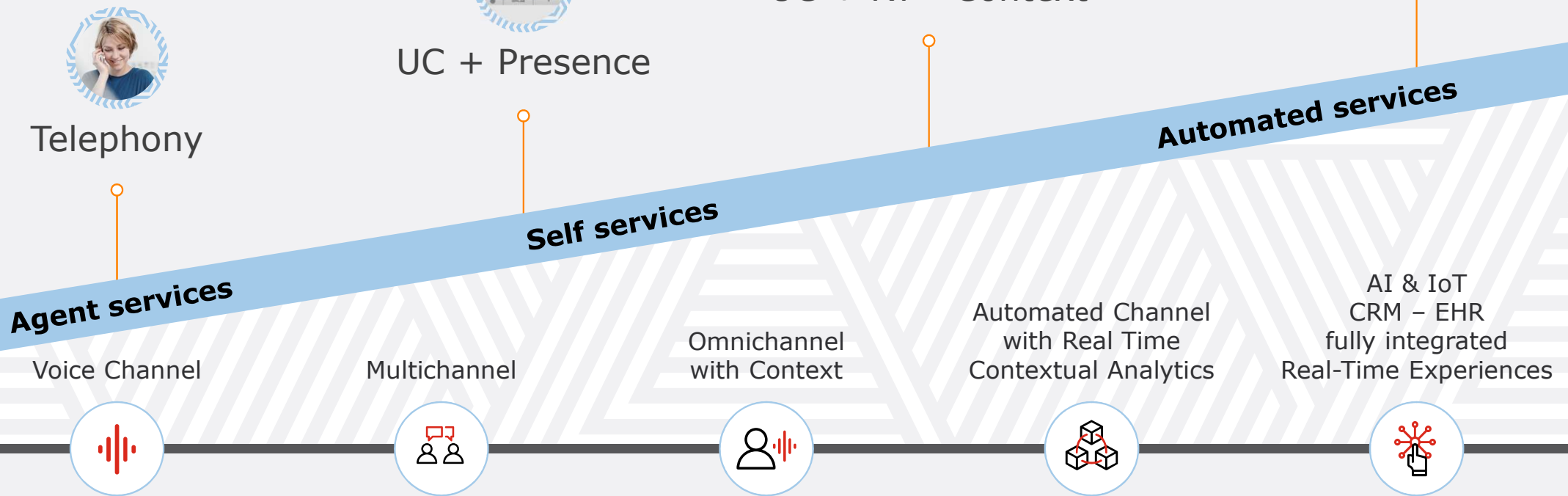# Create and Customize Workflows

Avaya Engagement Designer

Browser based visual designer for workflow design and automation

○ Quickly **create applications** with **minimal programming experience**

○ Seamless Integration into **IoT, AI and LOB Applications**

○ **Create your own task types** and dynamically incorporate them into the palette

○ **Visually** model, tailor and customize workflows

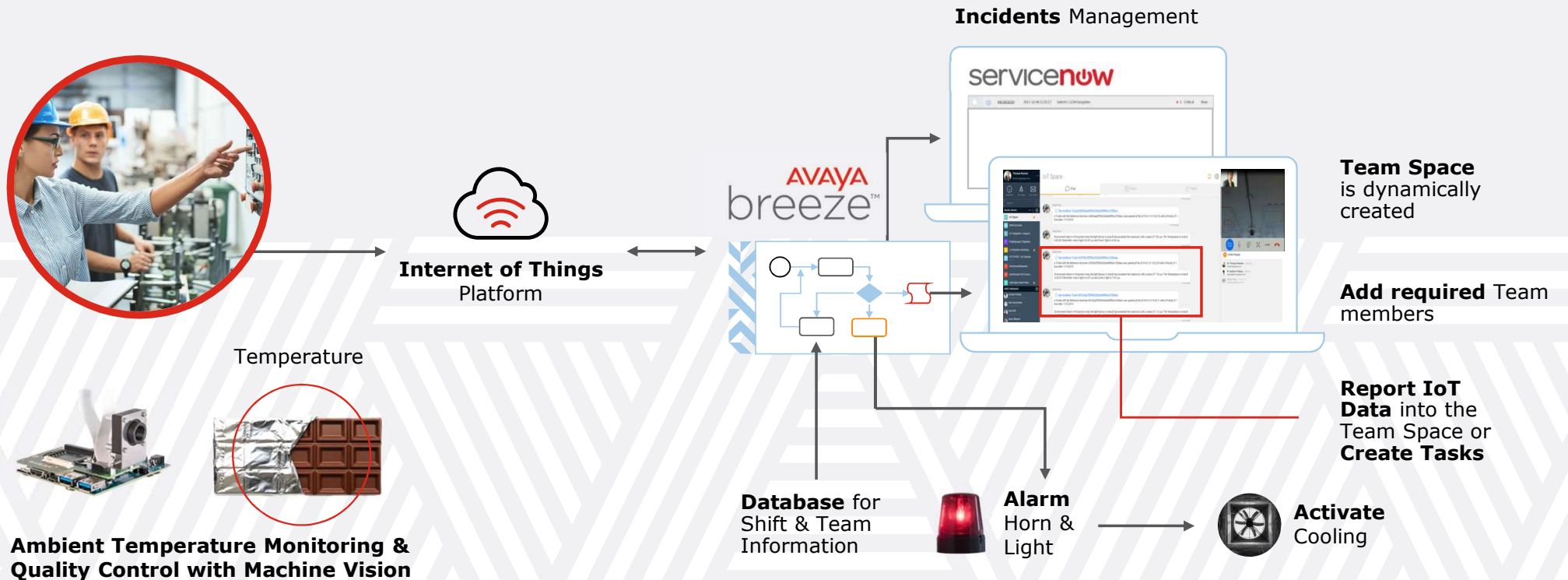**Simplify creation and control over Business Processes**
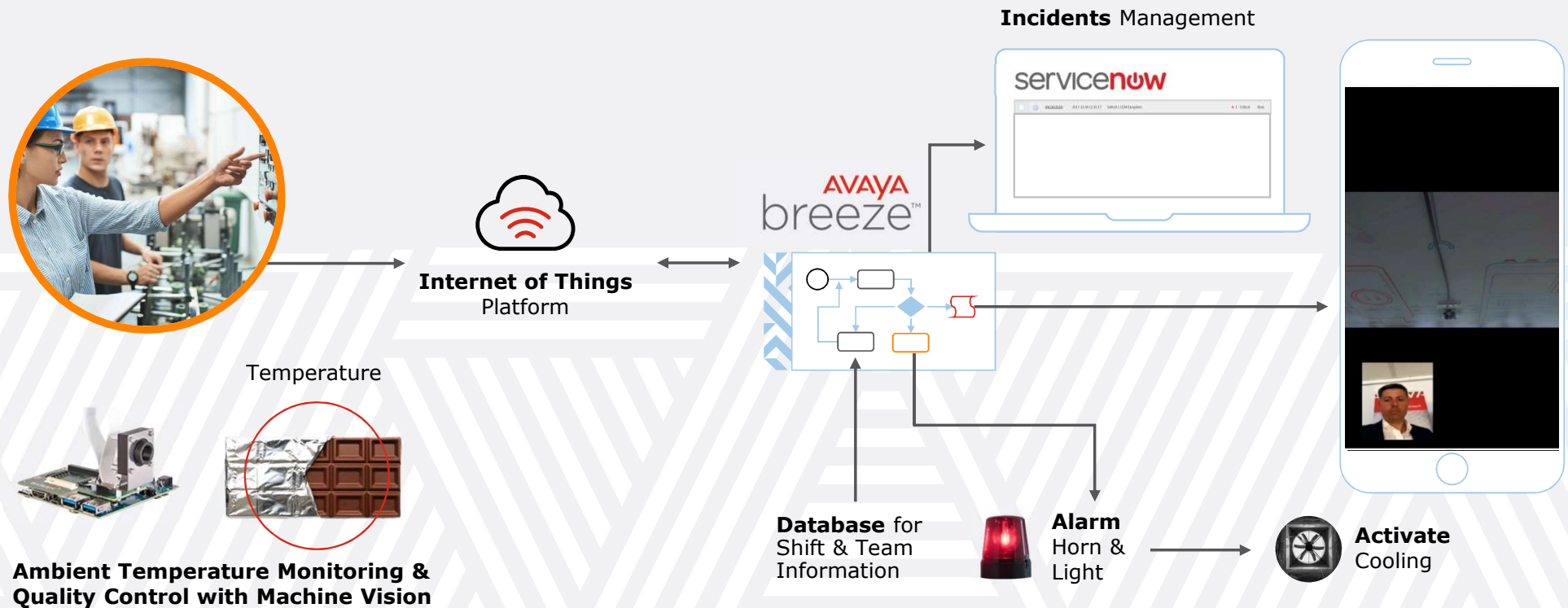
Modality of Interactions

UC Evolution

AI + IOT + UC

UC + RT - Context

UC + Presence

Telephony

Automated services

Self services

Agent services

AI & IoT
CRM – EHR
fully integrated
Real-Time Experiences

Automated Channel
with Real Time
Contextual Analytics

Omnichannel
with Context

Multichannel

Voice Channel

IoT & Collaboration

Real Time Information for Better and Faster Reactions

Incidents Management

servicenow

AVAYA breeze™

Internet of Things
Platform

Temperature

**Ambient Temperature Monitoring &
Quality Control with Machine Vision**

Database for
Shift & Team
Information

Alarm
Horn &
Light

Activate
Cooling

Team Space
is dynamically
created

Add required Team
members

**Report IoT
Data** into the
Team Space or
Create Tasks

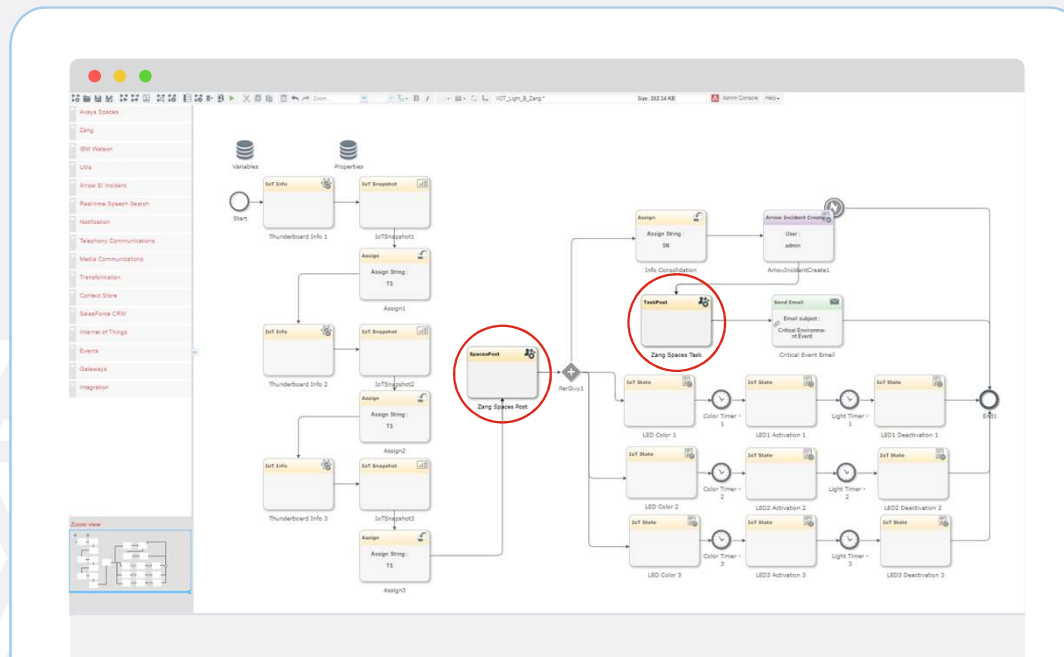# IoT & Mobile Collaboration

Real Time Information for Better and Faster Reactions

Incidents Management

Internet of Things Platform

Temperature

Ambient Temperature Monitoring & Quality Control with Machine Vision

Database for Shift & Team Information

Alarm Horn & Light

Activate Cooling

IoT & Mobile Collaboration

Real Time Information for Better and Faster Reactions

AI Chat Bot
Human to Machine Interaction

Internet of Things Platform

Temperature

Incidents Management

Ambient Temperature Monitoring & Quality Control with Machine Vision

Request additional IoT information

Machine Control

Open Indidents Ticket

Alarm Horn & Light

Activate Cooling

"Dialogflow" is the trademark of Google or its affiliates in the United States and/or other countries

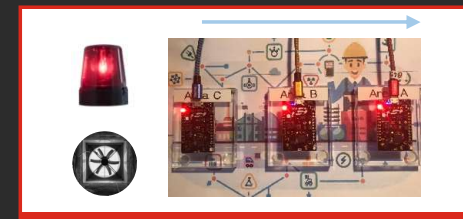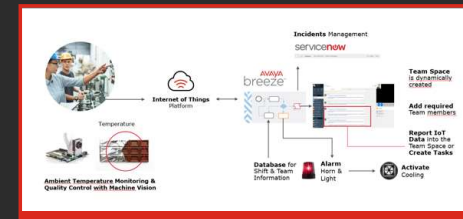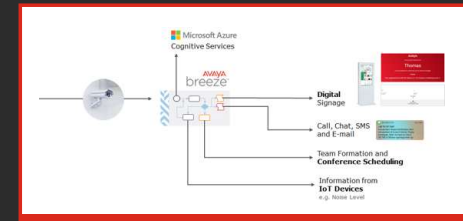# Avaya Engagement Designer

Easy!

Avaya Apps & API Cloud (OneCloud CPaaS)
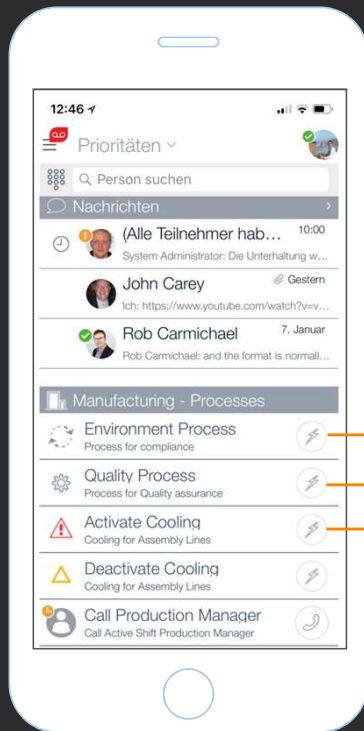
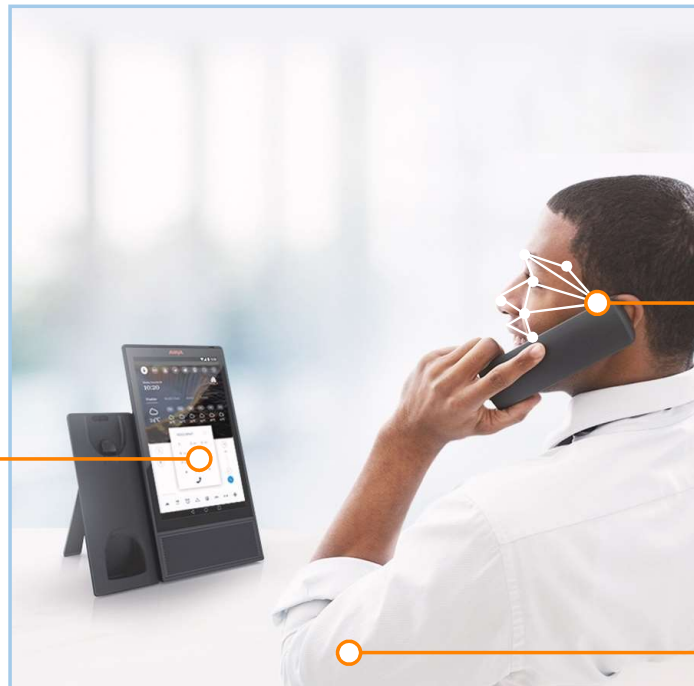Triggered **Environment Exception Process**

Triggered **Quality Assurance Process**

Manually **Activated Machine Task**

Smart Solution with Vantage

Voice Control

Room Statistics

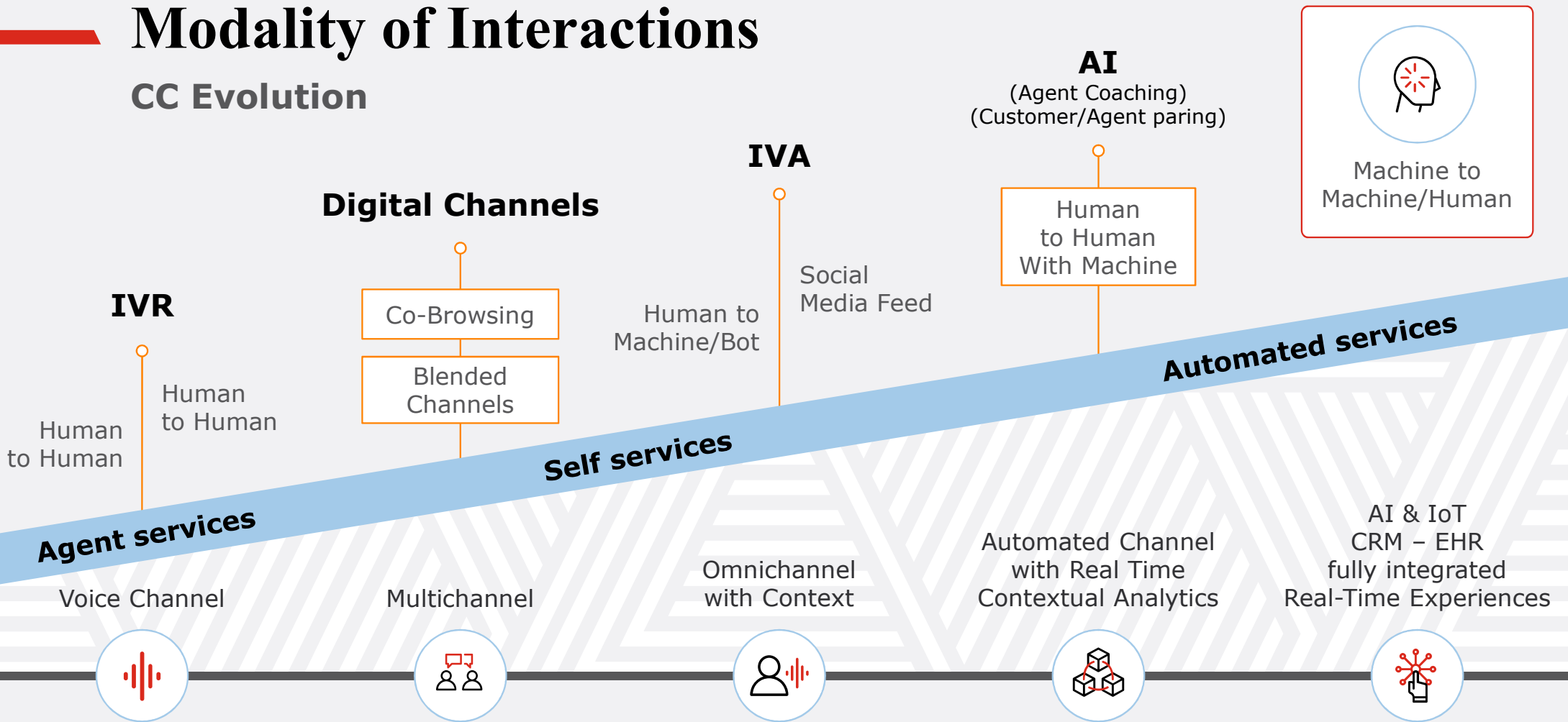**Ambient**
Preferences & Control

Appliances

Lights

Thermostat

Face Recognition
& Room Surveillance

Detect
Human Presence

Presence Detection

Personalized Ambient

Face Recognition

Room Surveillance
& motion detection

VA Ambient Control

Room statistics

Modality of Interactions

CC Evolution

AI
(Agent Coaching)
(Customer/Agent paring)

Machine to
Machine/Human

IVA

Digital Channels

Human
to Human
With Machine

Social
Media Feed

IVR

Co-Browsing

Human to
Machine/Bot

Blended
Channels

Human
to Human

Automated services

Human
to Human

Self services

Agent services

AI & IoT
CRM – EHR
fully integrated
Real-Time Experiences

Automated Channel
with Real Time
Contextual Analytics
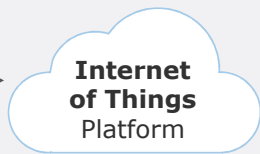
Omnichannel
with Context

Voice Channel

Multichannel

IoT & Customer Engagement

Real Time Machine Information for Better and Faster Services

Household Appliance (fridge)
below operating temperature
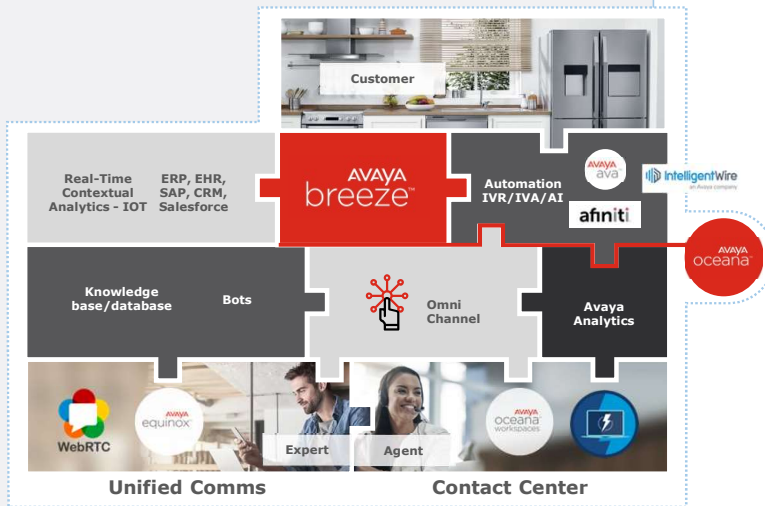
Sensor detects condition and machine sends **Telemetry & Diagnostic information to Service Center**

Internet of Things Platform

Customer

Real-Time Contextual Analytics - IOT

ERP, EHR, SAP, CRM, Salesforce

AVAYA breeze™

Automation IVR/IVA/AI

AVAYA ava

IntelligentWire
an Avaya company

afiniti

Knowledge base/database

Bots

Omni Channel

Avaya Analytics

AVAYA oceana

WebRTC

AVAYA equinox

Expert

Agent

AVAYA oceana workspaces

Unified Comms

Contact Center

- **Service Center** receives contextual information and combines them with customer **CRM** records

- **Customer** will be engaged by preferences
  BOT notification, if fridge door is open

- **Clear approach** and recommendation can be provided to the **customer**, based on correlated info
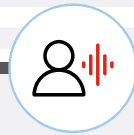
- **Customer dialog transcribed** and made available to **CRM** Application

Modality of Interactions

A Significant Change

Today – start digitally and then consume voice channels...

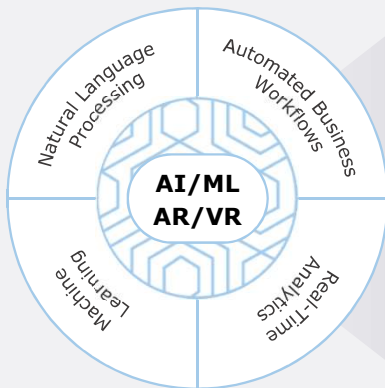The past – start with voice to use digital content

Intelligent Connections

Traditional channels

Future channels

INTEGRATION SERVICES

DATA

DATA

Intelligent Connections

Physical channels

Insights

Actions

DEVELOPMENT SERVICES

Digital channels

Emerging channels
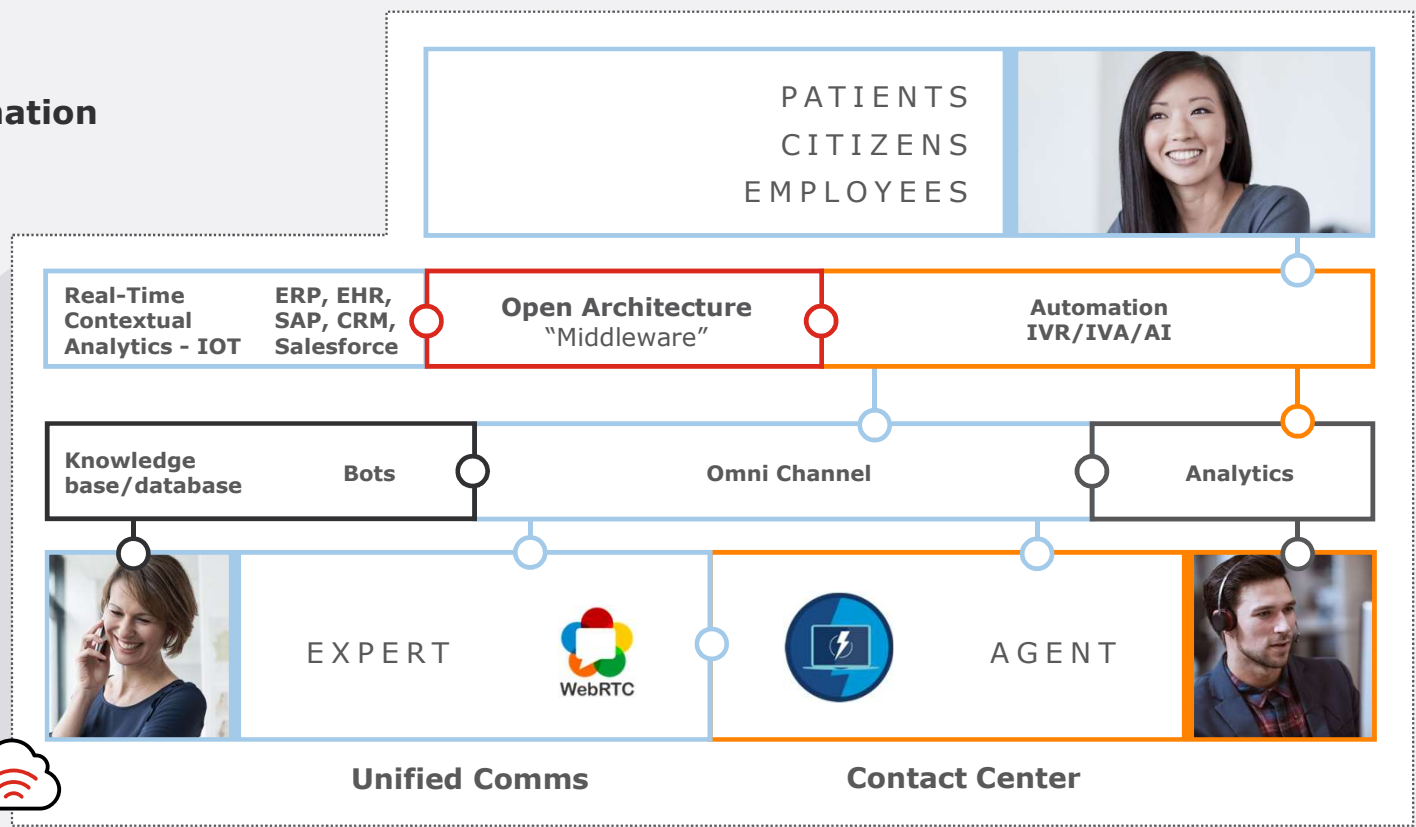
Digital Framework

An Ecosystem is Required

**Convergence of Mobile
UC & CC + Open + Automation**

Next best action
Customer – agent selection
Segmentation
Voicebots, chatbots

AI/ML AR/VR

Natural Language Processing
Automated Business Workflows
Machine Learning
Real-Time Analytics

ANY

PATIENTS
CITIZENS
EMPLOYEES

Real-Time Contextual Analytics - IOT	ERP, EHR, SAP, CRM, Salesforce	Open Architecture "Middleware"	Automation IVR/IVA/AI

Knowledge base/database	Bots	Omni Channel	Analytics

EXPERT   WebRTC   AGENT

Unified Comms   **Contact Center**

Avaya & IoT

Smart Communications for Smart Solutions

Delivers Intelligent Outcomes

Contextual Aware Processing

Agile **Workflow Automation**

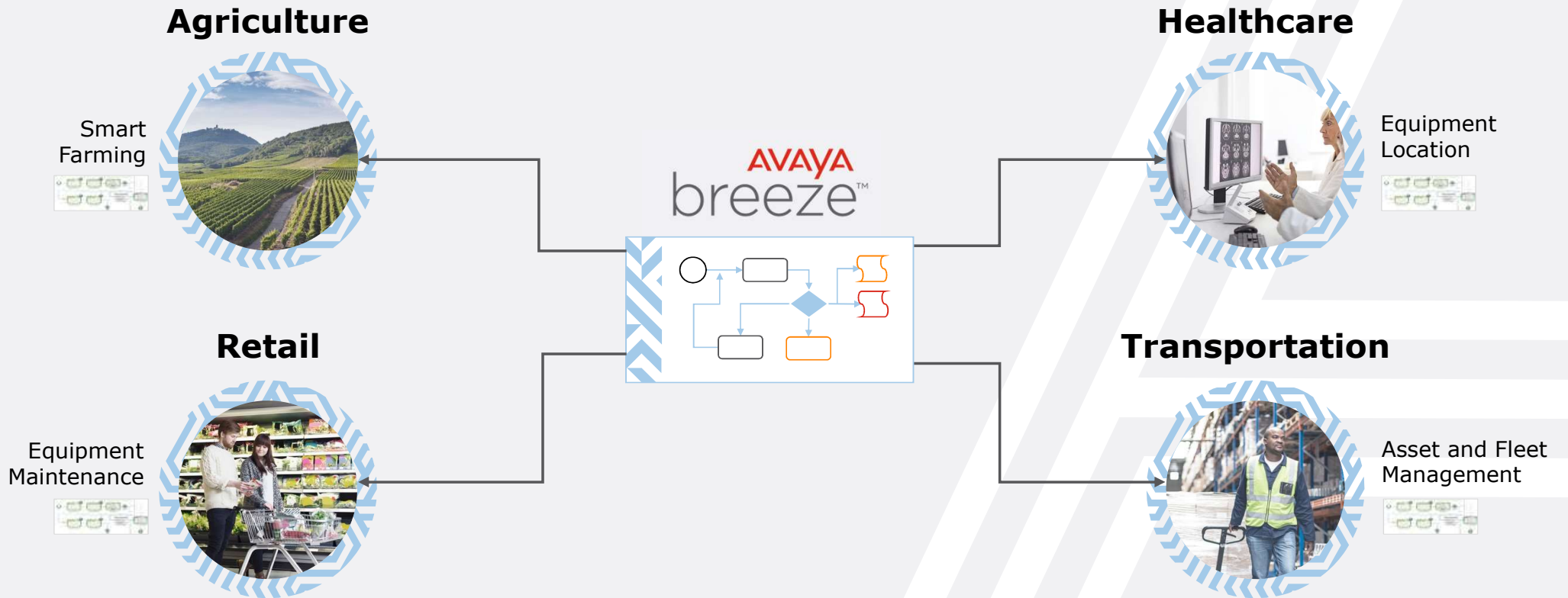Actionable **IoT Data**

Open Ecosystem for Smart Communication

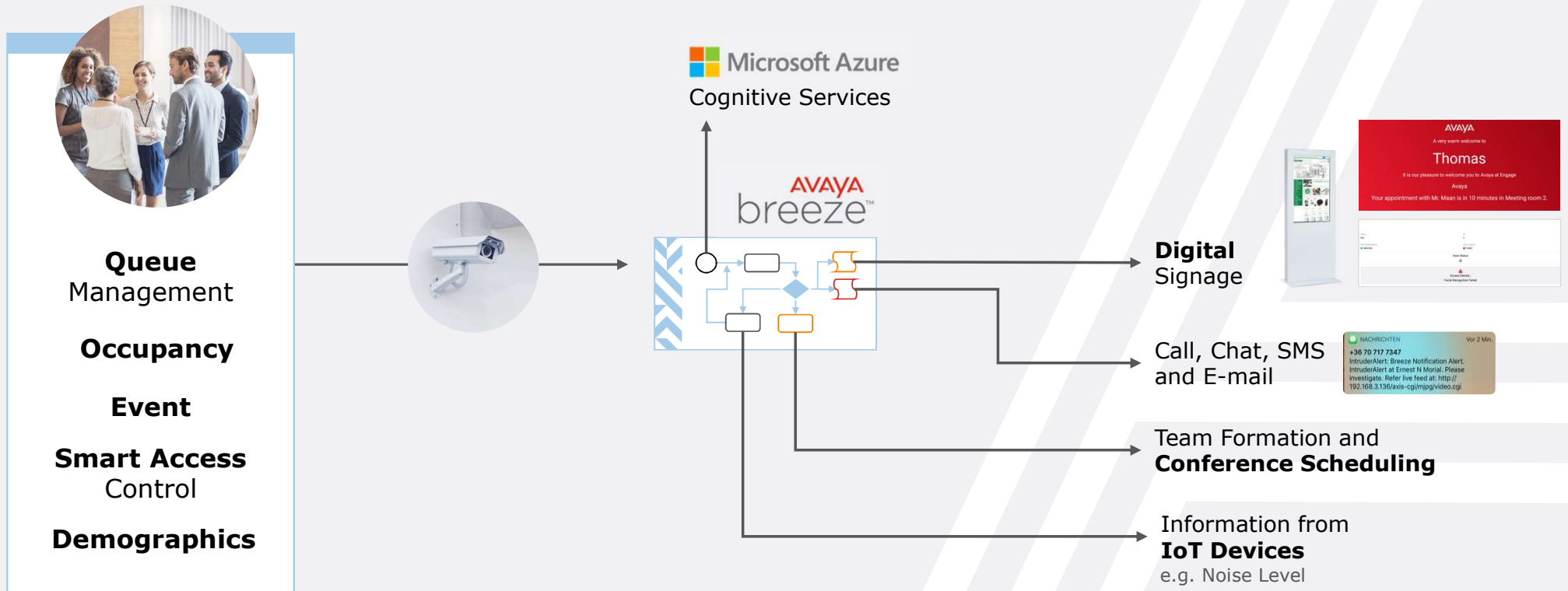**Seamless and contextual** connections between machines, humans and Line-of-business applications

Events Trigger Engagement

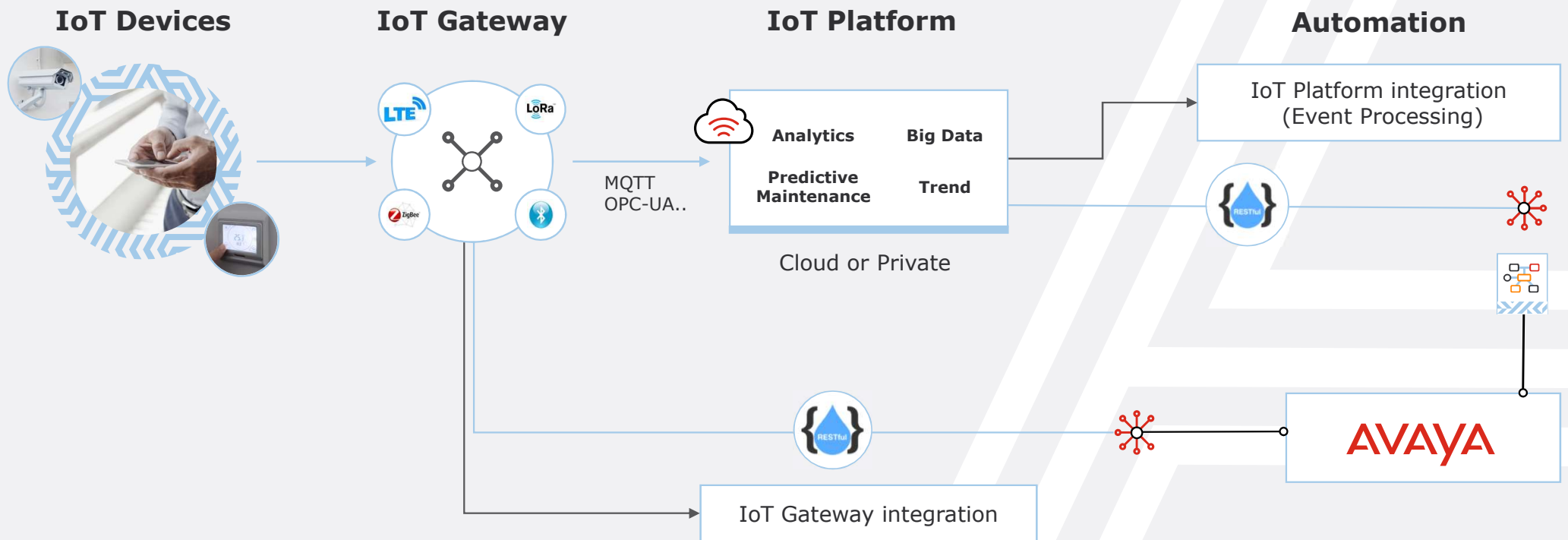**Event Triggers to Orchestrate Critical Activities with Ambient Context**

Agriculture

Smart Farming

Healthcare

Equipment Location

Retail

Equipment Maintenance

Transportation

Asset and Fleet Management

Blending Digital Into the Physical Experience

Seamless Integration of Stand-alone Technologies

Microsoft Azure
Cognitive Services

AVAYA breeze™

Queue Management

Occupancy

Event

Smart Access Control

Demographics

Digital Signage

Call, Chat, SMS and E-mail

Team Formation and **Conference Scheduling**

Information from **IoT Devices** e.g. Noise Level

Avaya IoT Reference Architecture

Open by Default

IoT Devices

IoT Gateway

IoT Platform

Automation

LTE LoRa ZigBee

MQTT
OPC-UA..

Analytics   Big Data
Predictive
Maintenance   Trend

Cloud or Private

IoT Platform integration
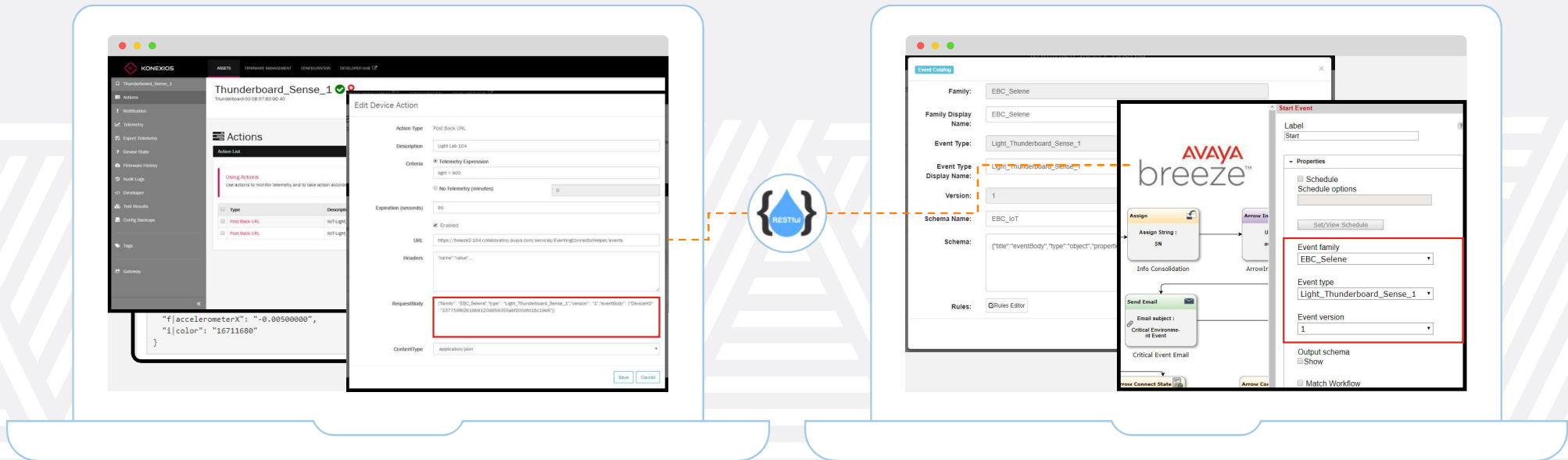(Event Processing)

IoT Gateway integration

RESTful

AVAYA

Actionable IoT Data

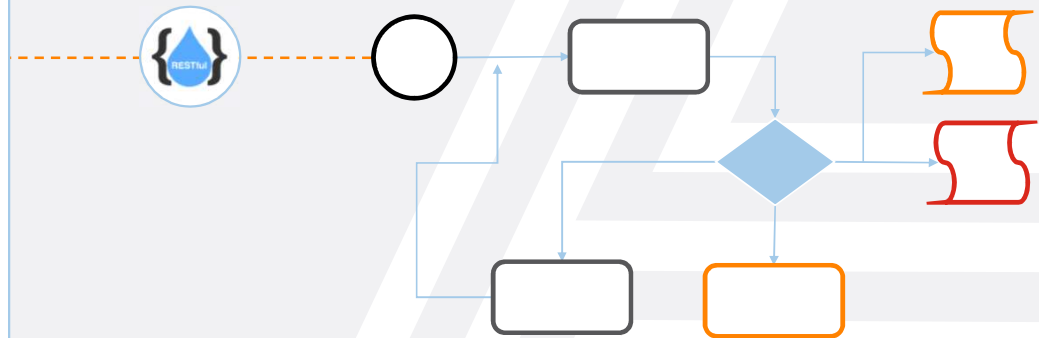**Turning IoT into Effective Business Actions**
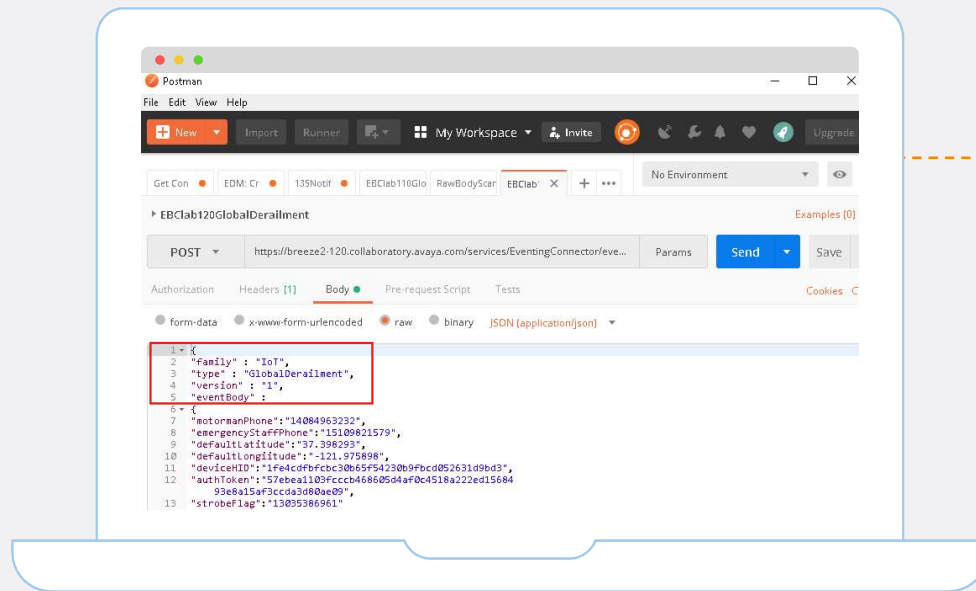
IoT Platform

Avaya Automation Platform
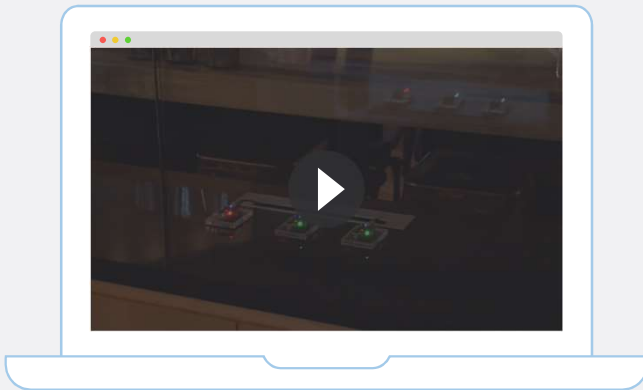
Web Service **POST** to Breeze

Simple Test Environment

○ Postman Application can trigger the postback URL directly through REST

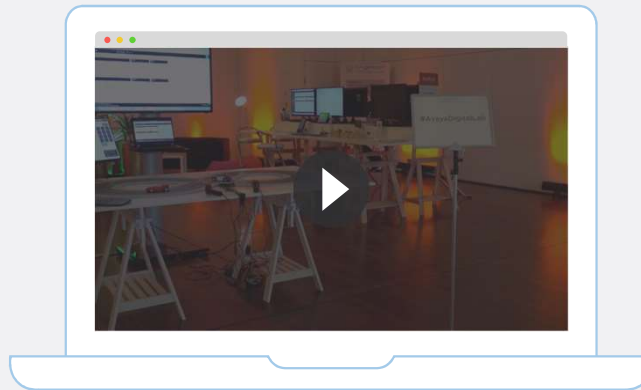○ Skipping the IoT infrastructure

YouTube Demo Videos

Industrial IoT

https://www.youtube.com/
watch?v=LFtDKVs9YHw

Smart Ordering

https://www.youtube.com/
watch?v=sKgdi5IXv7w

Quality Management

https://www.youtube.com/
watch?v=9Q1qdeZZvWU

YouTube Demo Videos

Smart Parking

https://www.youtube.com/watch?v=rd267Nwn-M0
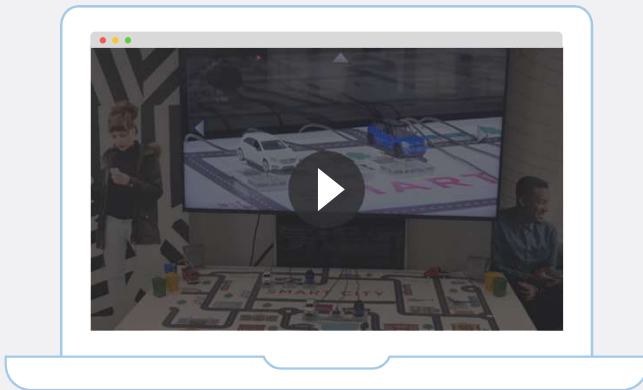
Smart Waste Management

https://www.youtube.com/watch?v=MGiLYo1j_X8

Cops & Robbers

https://www.youtube.com/watch?v=Pu1ror6r0BQ

https://youtu.be/24qBOciIOd4
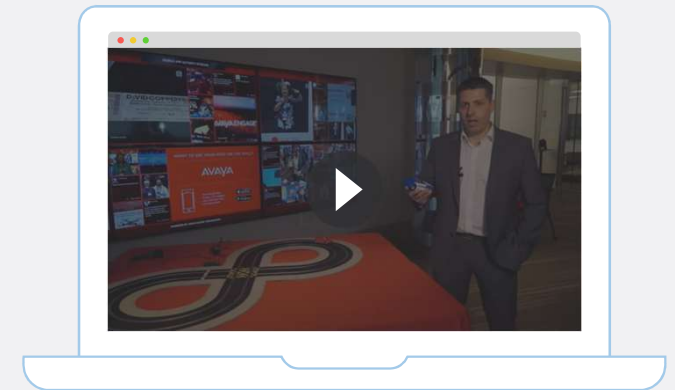
The Intelligent Experiences of a Smart City

Industry

City administrators need a smart city strategy for more sustainable development

Approximately 70% of the world's population is expected to live in cities by 2050. City administrators need a smart city strategy for more sustainable development, wiser resource management, enhanced quality of life, citizen safety, and increased economic opportunities. At the heart of this smart city is **people and communication**: intelligently connecting citizens and employees of the city administration through a smart city ecosystem.

What is a smart city?

A city is considered a smart city if it uses digital technology to manage critical infrastructure more efficiently and offer public services more interactively through intelligent connections.

How can more intelligent connections be established?

An IoT-enabled ecosystem—interconnecting devices, systems and processes—can uniquely automate processes and seamlessly connect citizens and employees city-wide (i.e. smart municipal services, smart campuses and buildings, next-gen public safety, smart healthcare, smart transport).

https://www.avaya.com/smartcity/

Turning IoT Into Effective Business Actions

Avaya seamlessly enables IoT ecosystems to communicate with any user or device with the right information in the right place at the right time.

What is IoT?

The Internet has insurmountable power for connecting people. Every minute, over 18 million text messages, 188 million emails and 41 million social media messages are sent. The Internet has revolutionized the concept of communication, and it's now taking one step further to connect the world in ways never before thought or seen.

Currently, the world is using nearly 50 billion connected devices (a.k.a. devices enabled by the Internet of Things, or IoT). In short, IoT is about connecting physical objects that surround us—everything from vehicles to refrigerators to home thermostats—into an ecosystem of information that will enrich our lives. These connected "things" send data to a system which collects and analyzes the received information—via embedded electronics, software, sensors and network connectivity—extending the power of the Internet to literally any connected object that is able to sense and exchange data. IoT is bringing more things into the digital fold each day, being projected as a multi-trillion-dollar industry in the near future.

At the enterprise level, these "things" can range from condition monitoring equipment on the factory floor for predictive maintenance to wearables for remote health monitoring for higher-quality care across a greater number of patients. Overall, 86% of enterprises have increased IoT spending in 2019, with the goal of digitally transforming their business models.

It's important to note that IoT is a major contributor to Big Data. While not the same thing, the two are closely intertwined. In short, Big Data means "all data" in the context of an organization and its ecosystem. Systems like IoT platforms are enablers of this data, gathering, analyzing and exchanging it with smart "things" or devices. Businesses collect a massive volume and variety of data from IoT devices, but an IoT solution does not provide much business value in isolation.

The underlying value of IoT technology is that it creates opportunities for businesses to realize the untapped potential of data that resides in their existing, unconnected infrastructures. In doing so, for example, they can use data analysis for cognitive services or business- relevant automation actions to extract key insights that will improve business processes and help employees drive smarter, real-time decision making.

https://www.avaya.com/IoT/

How to Get Hands-on Experience?

Use a Mobile Device or buy an **IoT Sensor**

○ Thunderboard React/Sense, Simba Pro, Sensor Puck

○ Mobile Device can be Gateway and IoT Device

Request a **Free Konexios Trial Account**

https://portal-helios.konexios.io/ - /signup

Install **Konexios Gateway** from **App store** (Google/Apple)

Sign up for **Avaya CPaaS** (Zang Cloud)

https://zang.io/
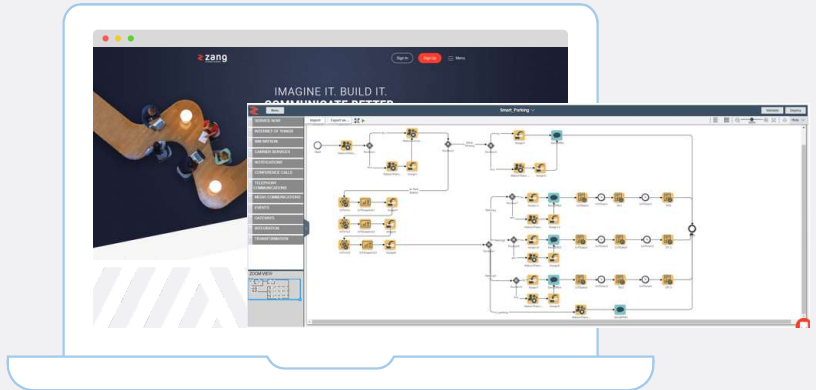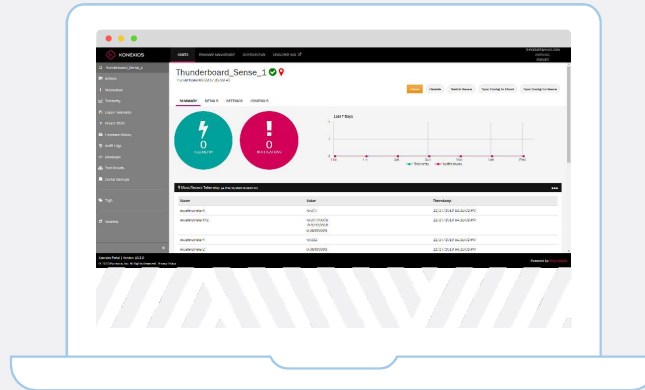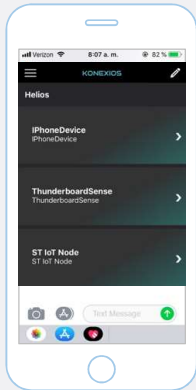
Vertical Industry Solutions

Art of the Possible

Healthcare

Hospitality

Government & Public Safety

Finance & Insurance

Manufacturing

Vertical Industry Solutions

Art of the Possible

Healthcare

Healthcare Solutions – Remote Patient Monitoring

Any IoT Device

POE IP Camera (any model)

USB Camera

Video and/or Audio Analytics detects patient event

Speakerphone two-way Audio connection to patient

Event Automation

Caregivers and Doctor Presence detection

IoT Devices integrated

Video

Audio
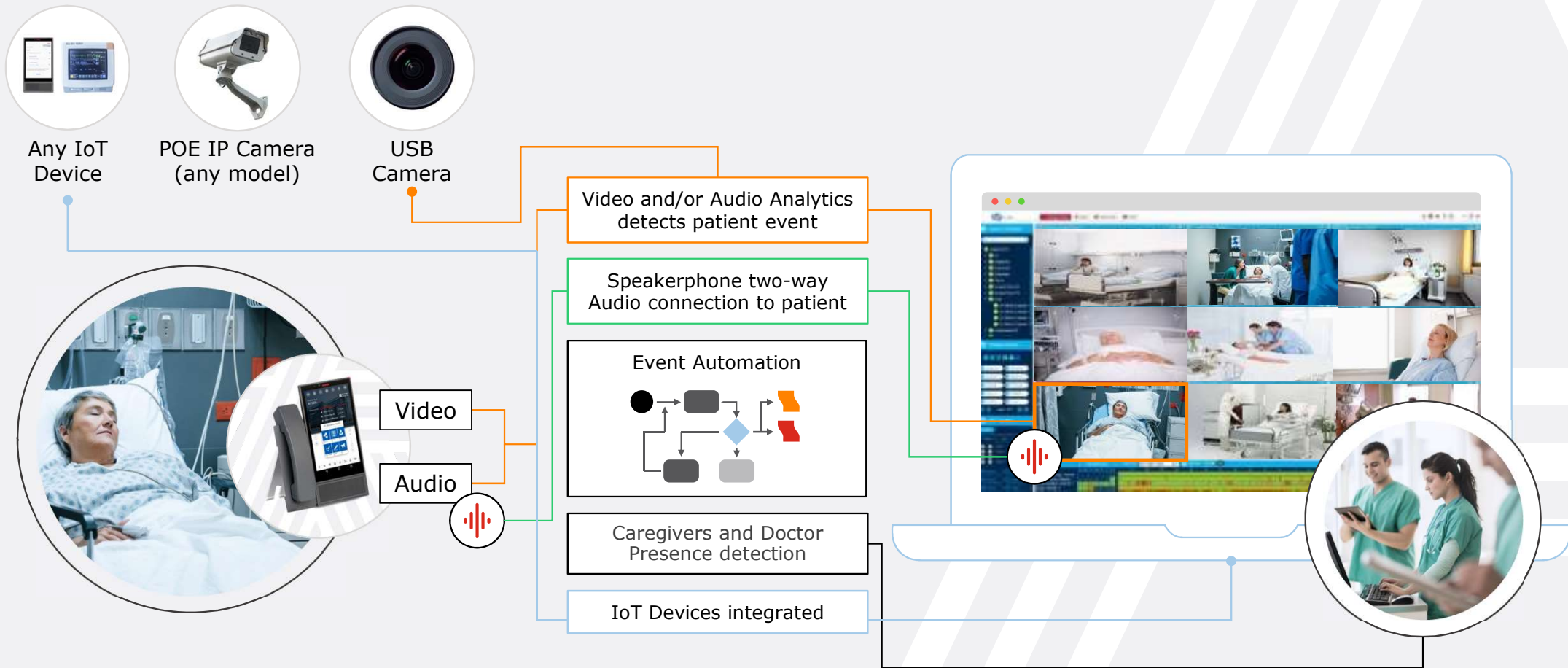
IoT Healthcare

Automation for Surgical Teams

Entering
Operation Room

Operation Room

Leaving
Operation Room

Surgical Teams **leave Mobiles** at charging station

Surgical Teams **take Mobiles** at charging station

NFC

NFC

Announcement
with Transfer
option to OR
Dispatching

NFC TAG detected in charging station

Avaya Breeze™

Call Redirection
Automatically
Enabled

Call Redirection
Automatically
Disabled

IoT Healthcare

Use Real Time Information to Make Better Decisions

IoT Clinical Wearable Monitoring Patient

Critical Patient Event

IoT Platform Initiates Alert Process with Measures

Internet of Things Platform

Avaya Breeze™

Database Lookup for Patient Information

Monitoring Team receive contextual alert

Medicine Reminders and Drug Guidelines

Patient has no Medicine left

BOT

Medicine Reminders and Drug Guidelines

Pharmacy Robot collects drug

Shipped to Patient

Relevant, Real-time Information | **Better, Faster** Decision Making | **Better** Patient Outcomes

Disinfection Dispenser Refill

Critical Event Monitoring

Location

Alarm

Staff hospital hygiene

Inventory management system

Event
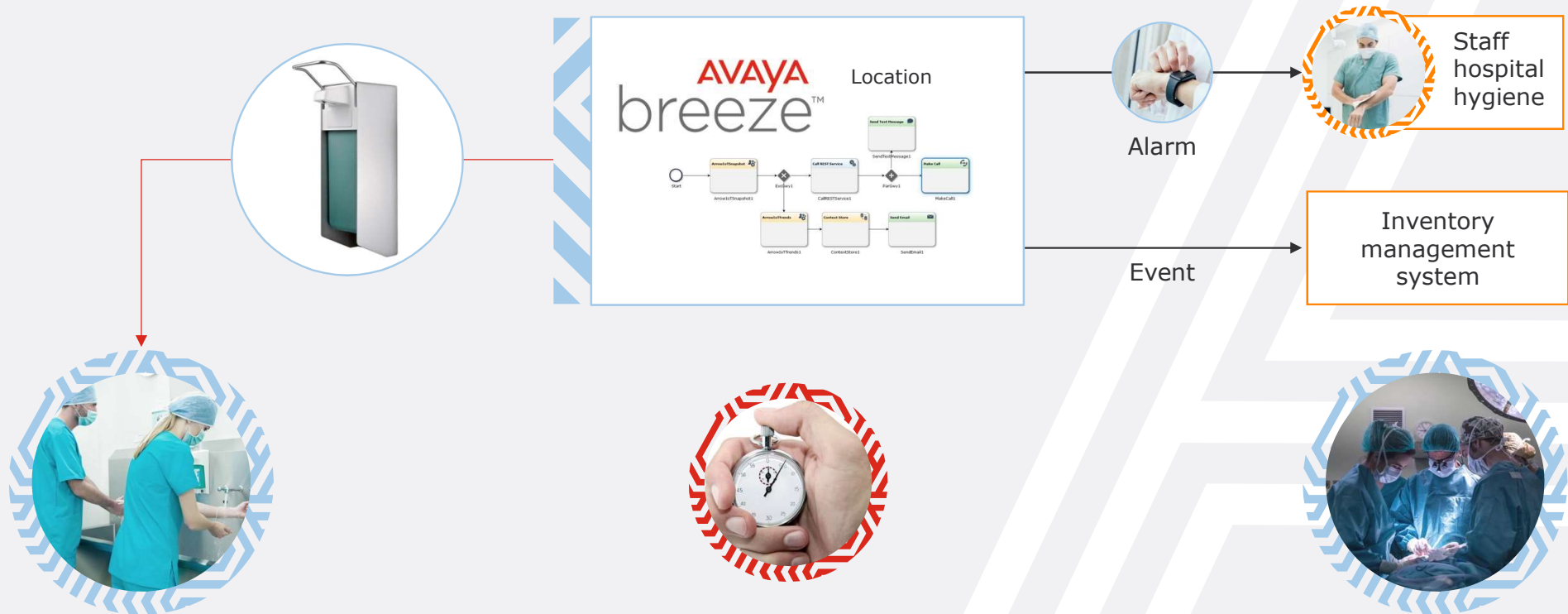
Use Case: Smart Health Care Team Space

SOLUTION

- At time of admitting a patient into the hospital, a virtual patient space is assigned
- The healthcare team and patient room is added to the Space
- Patient vital signals are monitored
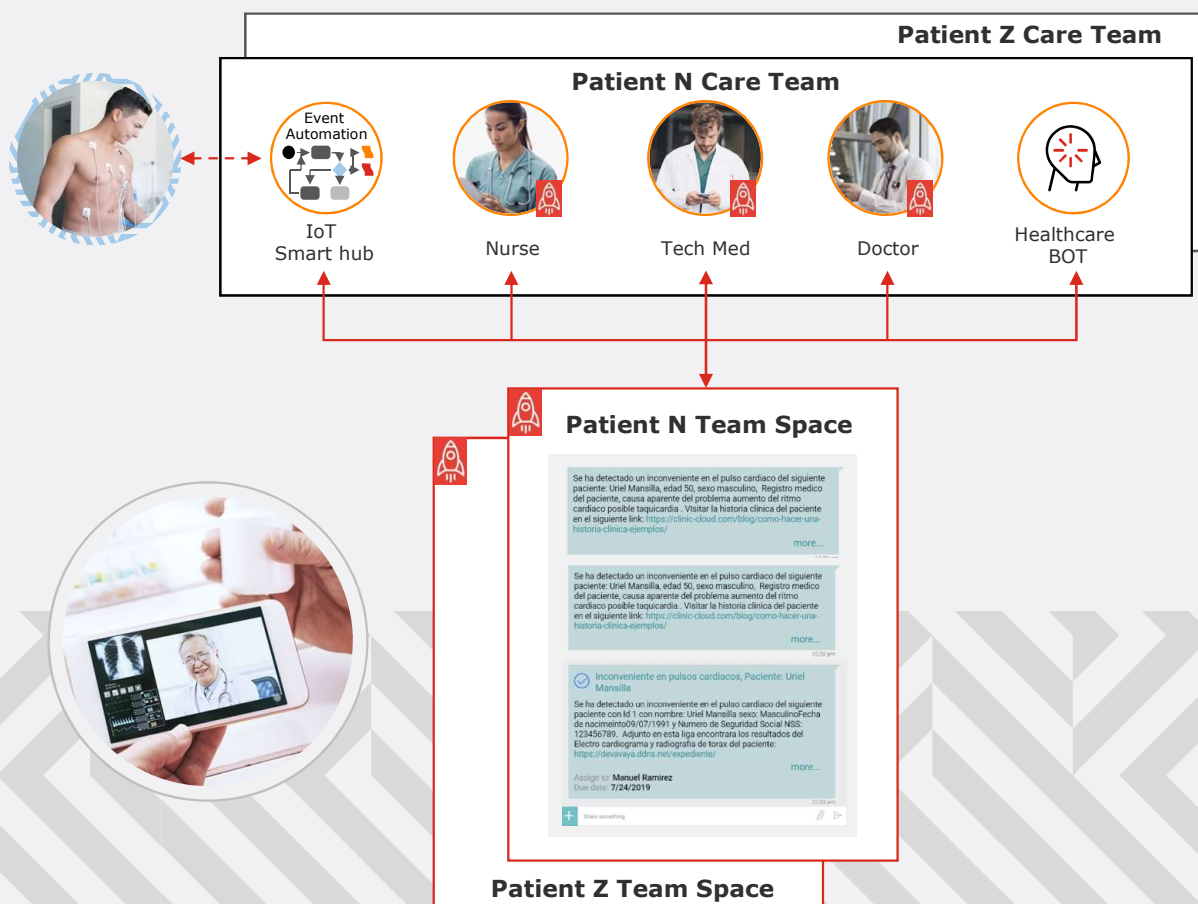- Information is sent into the Space and visible thru the mobile device, anywhere, anytime
- Bot supports the healthcare team

BENEFITS

- Patients care improvement
- Tools for healthcare team at hand
- Lower costs of operation

Patient Z Care Team

Patient N Care Team

- Event Automation
- IoT Smart hub
- Nurse
- Tech Med
- Doctor
- Healthcare BOT

Patient N Team Space

Patient Z Team Space

1. **Sensors attached to patient body send data to Avaya Automation Platform** which determine if vital signal thresholds are exceeded

2. **A task is posted** into the respective Patient Space

3. **Medical team real time collaboration**

4. **Medical questions and requests are raised to BOT**

5. **Team** can **control patient room equipment,** changing the ambient conditions, stopping, accelerating or slowing the fed of certain medicines

6. **Doctor** can **open tasks to be completed** by other members within certain period

Vertical Industry Solutions

Art of the Possible

**Government &
Public Safety**

**Finance &
Insurance**

Connected Vehicles – eCall

Improving the Most Critical Service

In the case of a **car accident, eCall automatically triggers** a call to the Emergency service

Contextual Insight - Transmitting data („MSD" Minimum Set of Data) in-band of the voice call using a modem

Breeze is creating an **eCall specific call flow** and extracts/delivers MSDN information before presenting the call to the call taker

Sensor

Crash

MSD
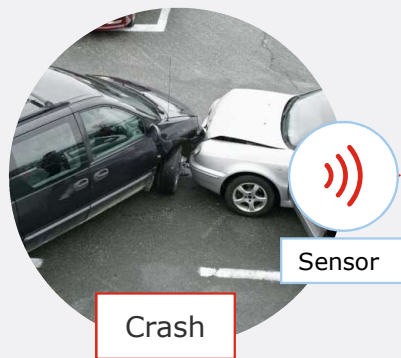
Minimum Set of Data (140 byte)

- Location: GPS latitude /longitude
- Activation: manually / automatically
- Call type: real emergency / test call
- VIN: Vehicle identification number
- …
- …

Public Safety Answering Point

Avaya Breeze™

eCall Snap-In

eCall SW Modem (Oecon)

6…10 s

modem
MSD transmission

voice call

time

Insurance - Connected Vehicles

Extended Services & Customer Loyalty

Onboard Telematics → **IoT PLATFORM PI Automation**

Car door **open**

Car light **on**

Monitoring
Car lock status & location
Owner's iPhone location
Onboard Telematics

Trigger:
Car is opened and iPhone
service light on
is not at location

AVAYA breeze™

Search

Initiate call from support center to **car owner**

Advice on problem resolution or **schedule car checkup**

Police

Insurance Company

The Flying Eye

Drones become Collaboration Endpoints in Avaya IX Spaces

Communication

Context

Collaboration

Drone Chat Bot
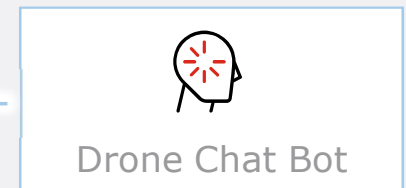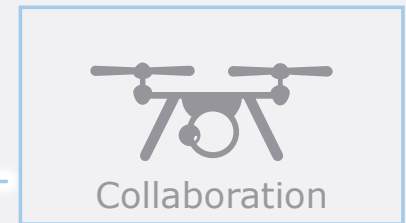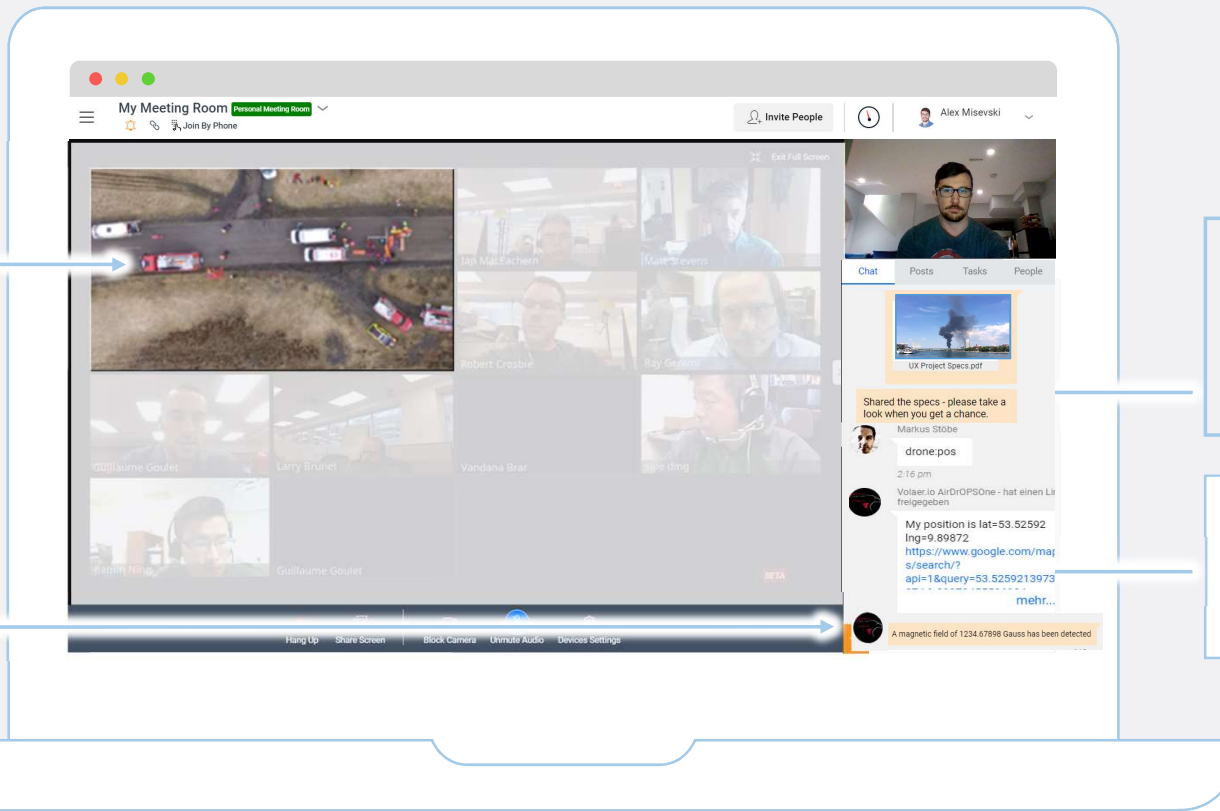
Smart Parking

Save on time, fuel costs and emissions

Area A

Area C

Smart City

Any
Modality
Language
Phrase

Internet of Things Platform

Activation of visual reservation signal

4

Area B

City Council

Smart Parking Service

AVAYA

Modality

3 | **Available parking spots** in requested area. Option for booking

3 | **Booking confirmation** and parking spot location map SMS

1 | IBM Watson

Detects language and Translates Message

Analyzes the message and assigns it to an intent

"Watson" is the trademark of IBM or its affiliates in the United States and/or other countries

Smart Parking – Automated Workflow

Avaya Communications Platform-as-a-Service (CPaaS)

Analyzes the message and **assigns** it to an intent

Detects language and **translates** message

Reservation signage activated at booked parking space

Requests sensor info from all parking spaces around the station

Requests sensor info from all parking spaces around the station

Smart Cities - Waste Management

Situational awareness for faster response time

Area A

Area B

Smart City

Area C

Internet of Things Platform

AVAYA **breeze**™

Location → salesforce
1 **Trash Container** Account & Contact Resolution (SLA)

Server →
2 **Shift Plan** Lookup

Profile →
3 **Staff notified** with SFDC Case number and address (SLA Gold)

salesforce →
1 **Garbage collection** Case opened

Smart Cities - Waste Management

Situational awareness for faster response time

Waste Management – Automated Workflow
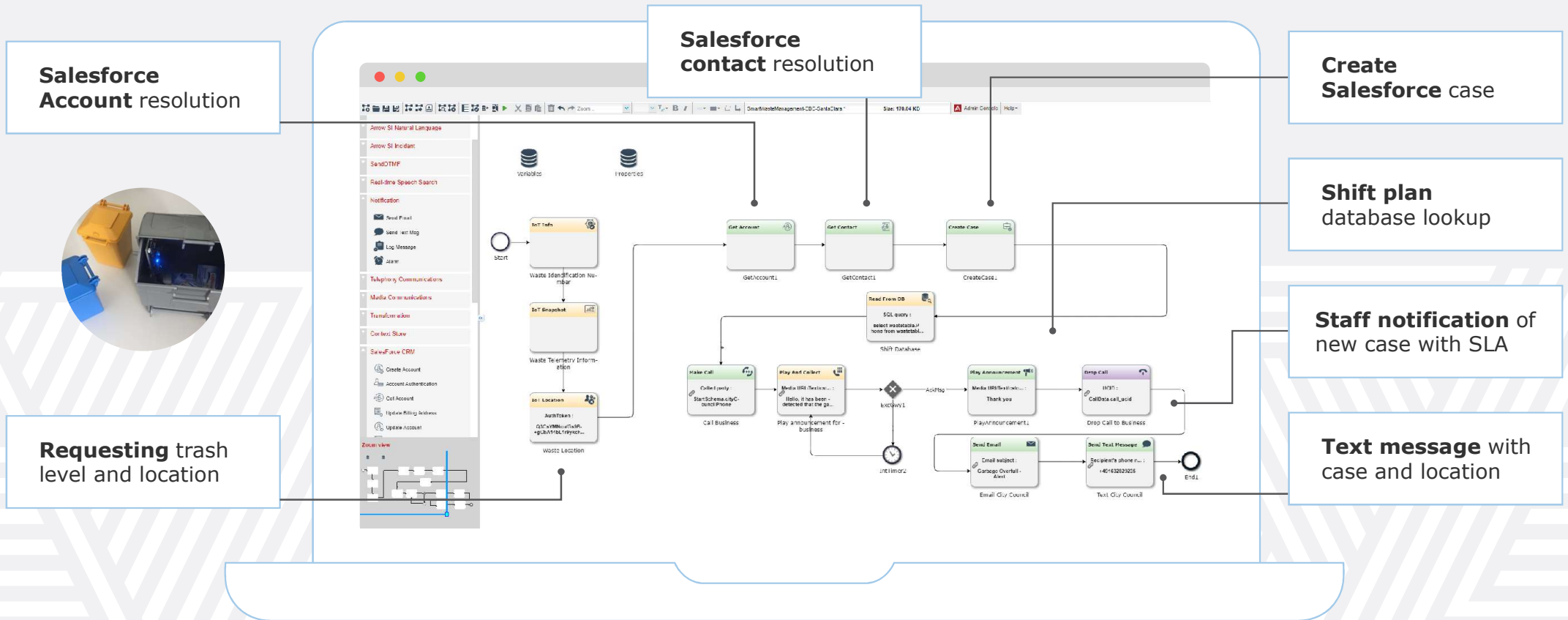
Avaya Breeze

Salesforce Account resolution

Salesforce contact resolution

Create Salesforce case

Shift plan database lookup

Staff notification of new case with SLA

Requesting trash level and location

Text message with case and location

Smart Cities - Air Pollution

Situational Awareness for Faster Response Time

Area A

Area B

Smart City

Area C

Internet of Things Platform

AVAYA breeze™

servicenow

1 **Incidents** management

2 **City council** notification

2 **Dynamic team** formation/action plan

3 **Citizen** mass notification (Action)

3 **Traffic light** control (action)

Traffic Lights
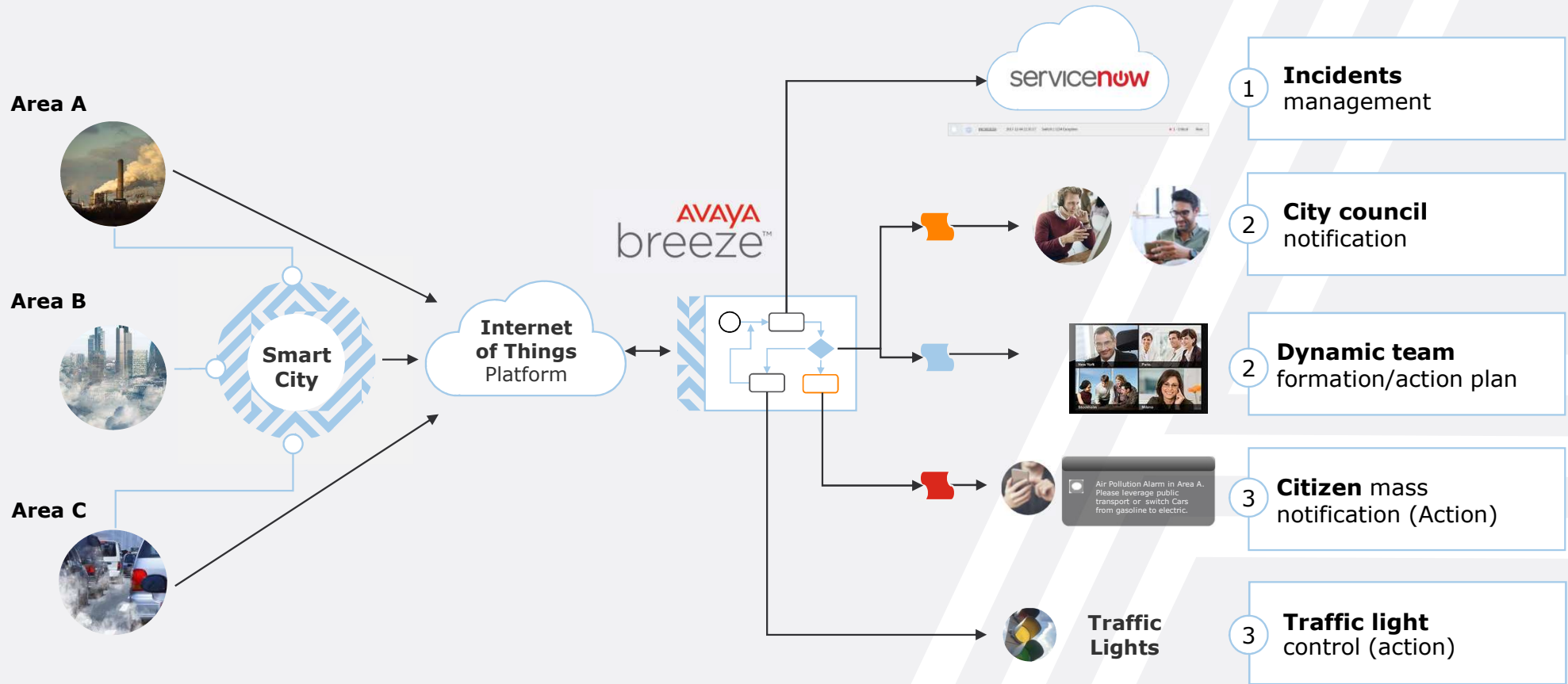
Smart Cities - Urban Noise Monitoring

Situational Awareness for Faster Response Time

Area A

Area B

Area C

Smart City

Internet of Things Platform

Location → Contact

Date → Server

Sensor

1. **Time of day** and noise source to contact resolution

2. **Notification to noise source** with confirmation request

3. **Re-requesting** noise level info

4. **City Council** connected to noise source
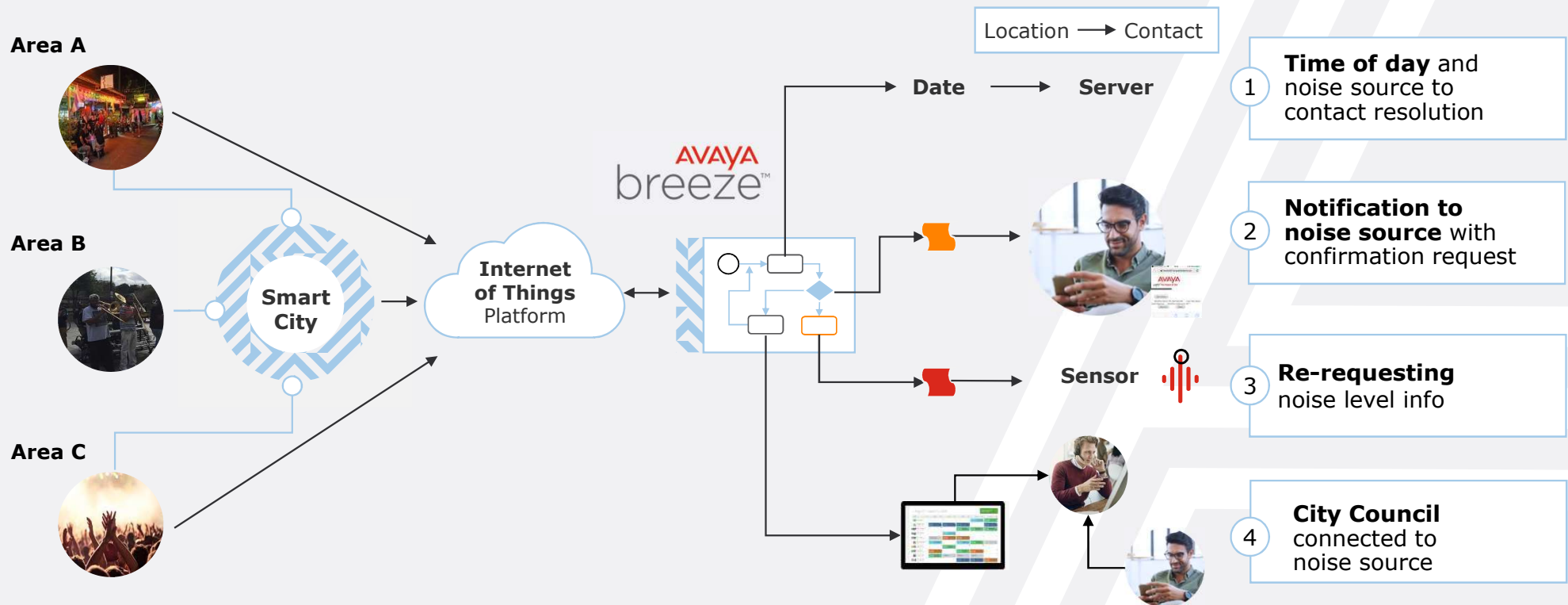
Smart Cities - On-demand Cleaning Services

Situational Awareness for Optimized Efficiency

Area A

Area B

Smart City

Internet of Things Platform

AVAYA breeze™

Area C

Location → salesforce → ① **Toilet location** resolution (SLA)

Server → ③ **Shift plan** lookup

Profile → ③ **Staff notified** with SFDC case number and address (urgency)

salesforce → ② **Cleaning service** case opened
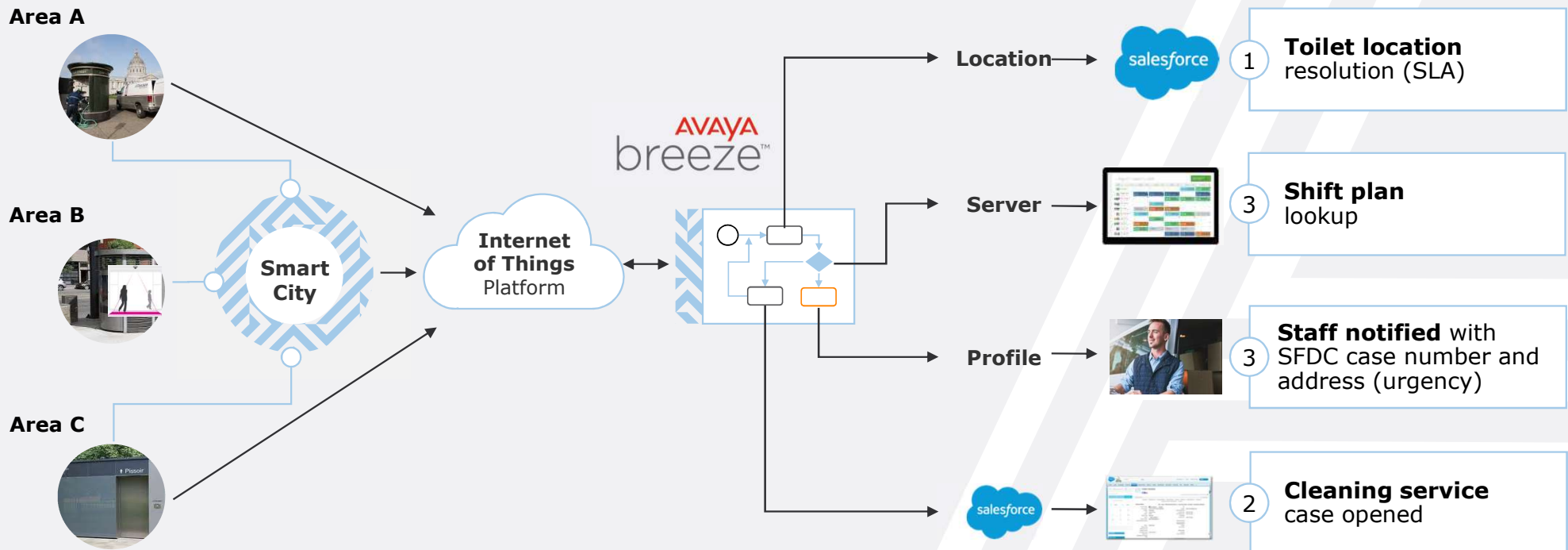
Smart Cities - Smart Metering

Creates a Win-win with IoT Data Insights

Customer transparency on energy consumption

Smarter decisions on energy usage (adjust habits)

Stay **fully informed** about the daily energy use and trends

Individual grid management combining smart home & meters to magnify energy efficiency

Any Modality Language Phrase

Transparency

AVAYA breeze™

1 Internet of Things Platform → Smart Meter

Temperature

Area A

Smart City

Area C

Utility Bill

2 **Automatic billing** and customer notification

IBM Watson

1

Analyze grid conditions in real-time

Detects language and translates message

Analyzes the message and assigns it to an intent

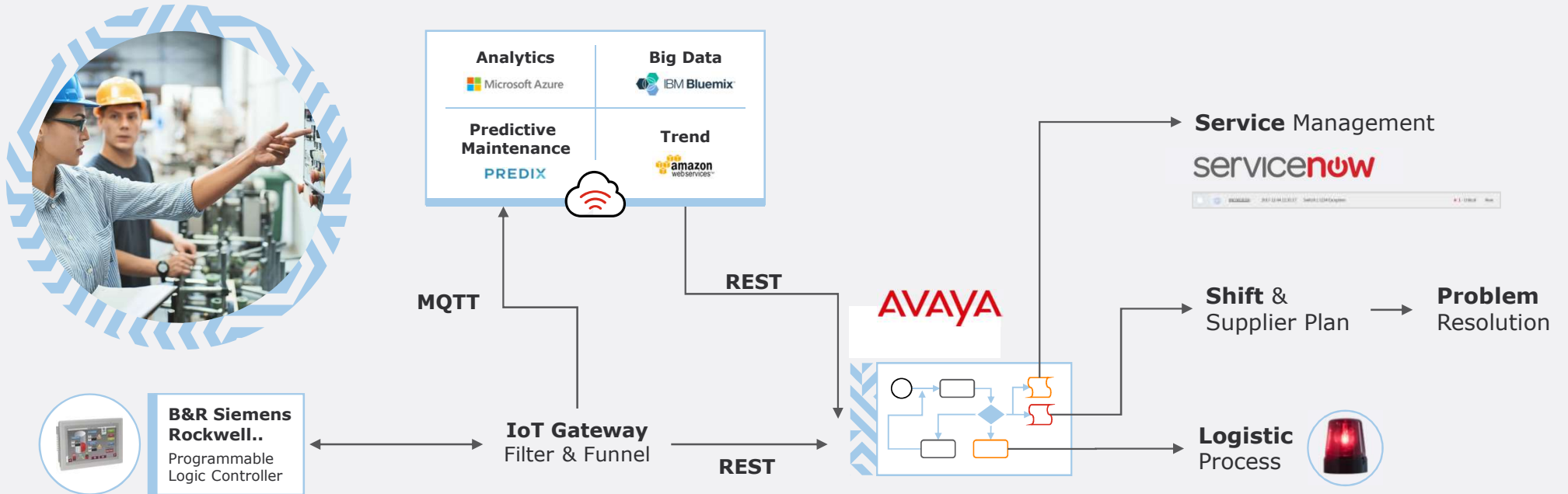# Vertical Industry Solutions

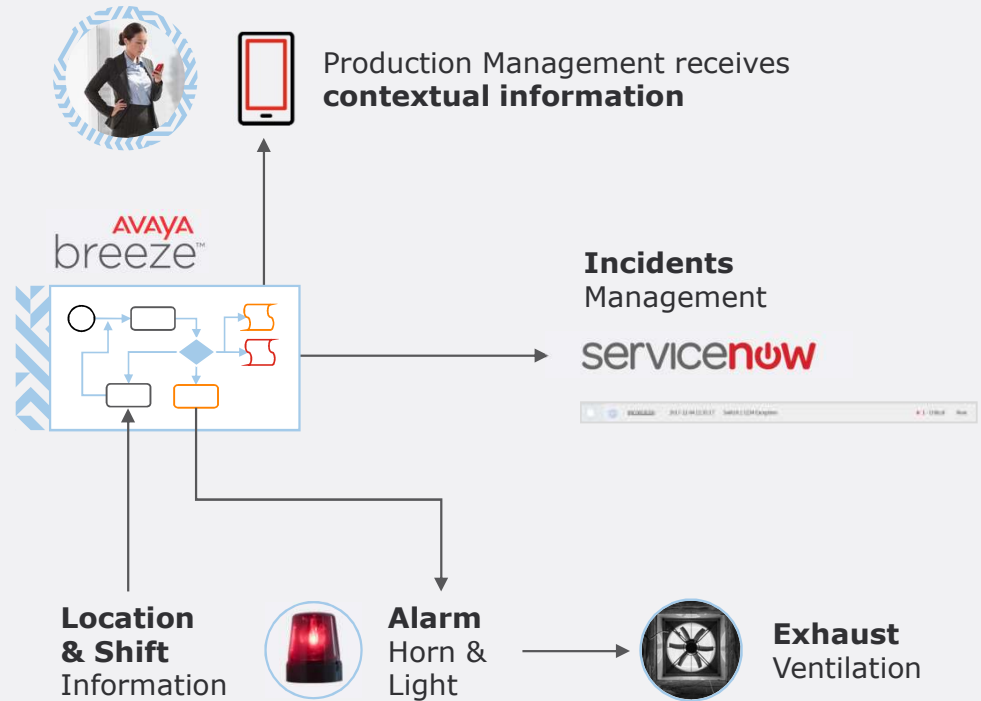**Art of the Possible**

Manufacturing

IoT Manufacturing with PLC System

Connects Machines with Humans & Shop Floor with IT

IoT Manufacturing

Real Time Information for Better and Faster Reactions

Production Management receives **contextual information**

AVAYA breeze™

Internet of Things Platform

Incidents Management

servicenow

Hazards of abnormal environmental conditions are detected when special **compliance criteria** must be met

Air Quality monitoring
Man-Down detection

Location & Shift Information

Alarm Horn & Light

Exhaust Ventilation

"Avaya provides the ability to seamlessly enable
IoT ecosystems to communicate with
any user or device **with the right information,
in the right place at the right time**."

Thank you.