

A decorative vertical bar on the left side of the slide. It features a blue background with a pattern of binary code (0s and 1s) and a vertical grey bar in the center.

Internet of Things

Uttam Kumar

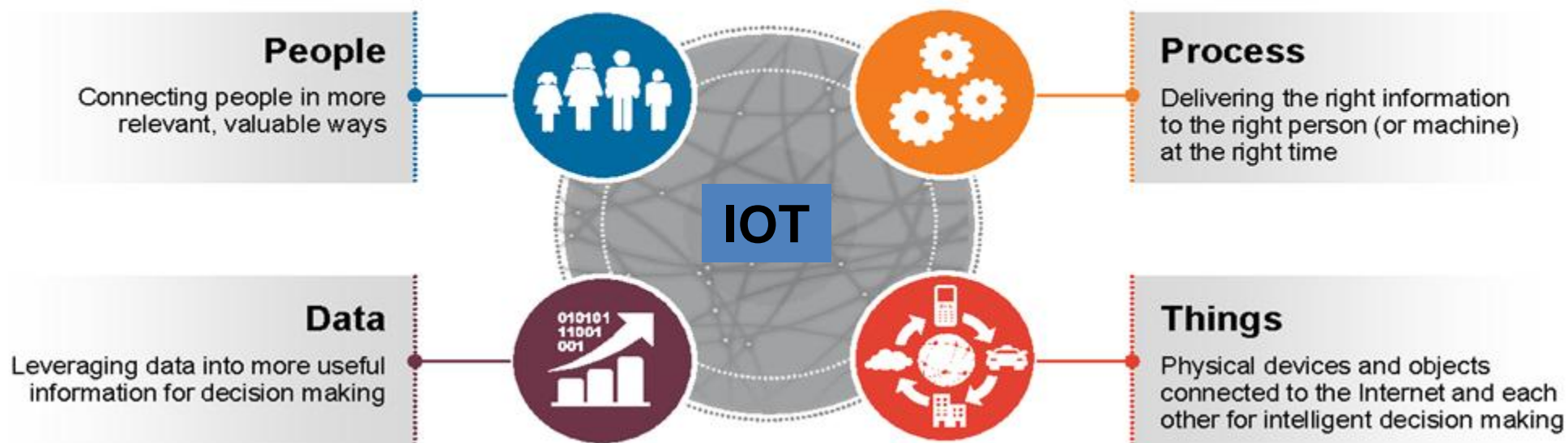
Aircel Ltd

The pace of change is accelerating. Disruptions are creating opportunity.

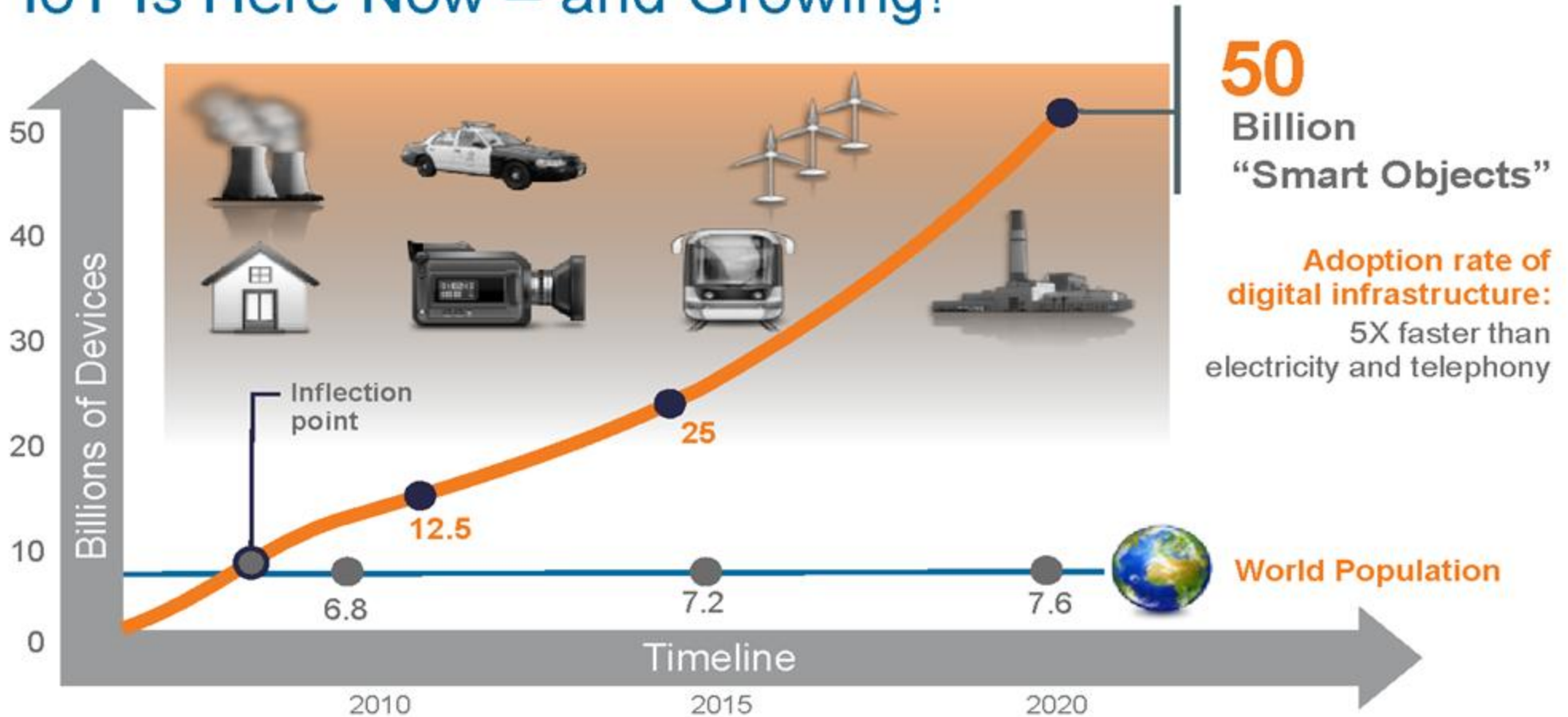


The Internet of Things is the intelligent connectivity of physical devices, driving massive gains in efficiency, business growth, and quality of life.

Networked Connection of People, Process, Data, Things



IoT Is Here Now – and Growing!



IoE Hitting Inflection Point

“ Smart, connected products are changing how value is created...will affect the trajectory of the overall economy, giving rise to the next era of IT-driven productivity growth for companies, their customers, and the global economy...”



Internet of Everything

39%
of the world
population
is connected

Technology
powers
80%
of **business**
processes

13B
connected
things

More **data** in
one year than
in previous
5000

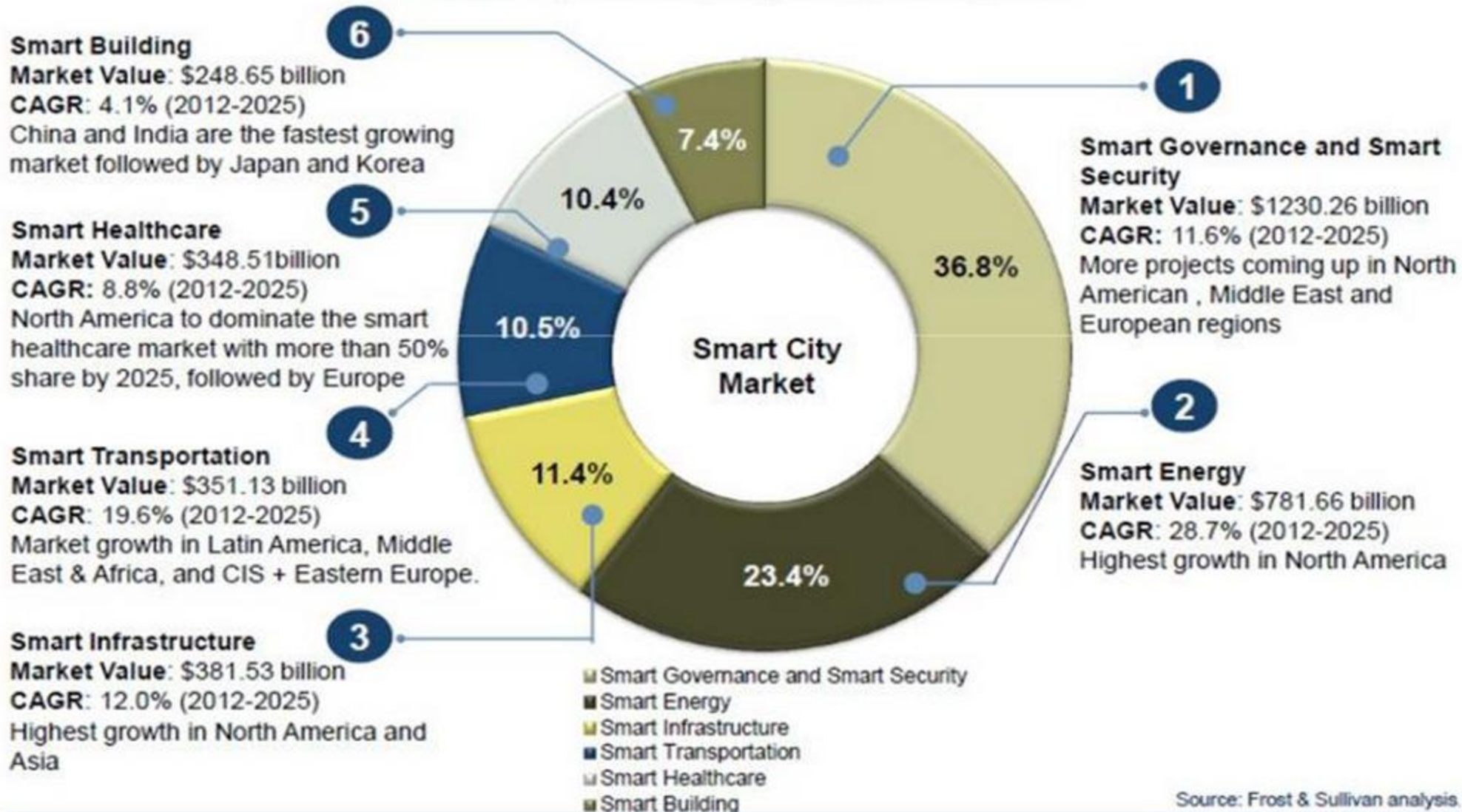


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M2M Market by Segments, Global, 2025



Projected M2M Total Industry size by 2022 is \$200 bn



IOT Solutions



Industries	Verticals	Solutions and Use Cases			
Public Sector	Connected City	SCC Infrastructure Management (City Wi-Fi, Parking, Lighting, Location, Traffic, Safety and Security)	Workspaces (Smart Spaces and REGS)		
	Connected Public Safety	Connected Schools	Connected Border	Connected Law Enforcement	Connected Defense
Manufacturing	Connected Factory	Connected Factory Energy Mgmt.	Connected Factory Wireless	Connected Factory Security	Connected Factory Automation
Energy and Minerals	Connected Utilities	Connected Mobile Workforce	Connected AMI	Connected Substation Automation	Connected Distribution Automation
	Connected Oil and Gas	Connected Pipelines	Connected Refinery	Secure Ops	Connected Oilfield
	Connected Mining	Asset Visibility and Monitoring	Connected Predictive Maintenance	Connected Mine Remote Operations	Secure Ops
Transportation	Connected Transportation	Connected Roadways	Connected Trains	Connected Stations	Connected Trackside
B2C	Connected Retail	Store-in-a-box	CMX digital Experience	Remote Expert/ Mobile Advisor	Digital Media Store Experience
	Connected Sports and Entertainment	Connected Stadium	Connected Stadium Wi-Fi	StadiumVision	StadiumVision Mobile
	Connected SP /M2M	Remote Tower Management	Fleet/Asset Management		
	Connected Health	Virtual Patient Observation	Patient Wayfinding	Patient Media Experience	Cisco Health Presence
	FSI	Omni-channel Customer Interaction	Pervasive Employee Collaboration	In-branch customer experience	Energy Management

Modi's Vision is to set up 100 smart cities over next 5 year

Government of India has allocated ₹ 70.6 billion (USD 1.2 billion) for Smart Cities in Budget 2014-15



India plans 100 new smart cities and will develop modern satellite towns around existing cities under the smart city programme

What Business Executives Think About IoT



Thank You



AIR

PAY AS YOU DRIVE (BFSI- Insurance)

Type of vehicle insurance whereby the costs are dependent upon the usage of vehicle. Measured against time, distance, behaviour and place.

SMART METER (Smart City & Govt)

Facilitate remote meter reading, self/remote diagnostics, Enable two way communication, and other value added services.

TELEMATICS (Transport & Automobiles)

Efficient fleet management, geo fencing, Driver behaviour analysis , Vehicle diagnostics.

FOS TRACKING (FMCG & Productivity)

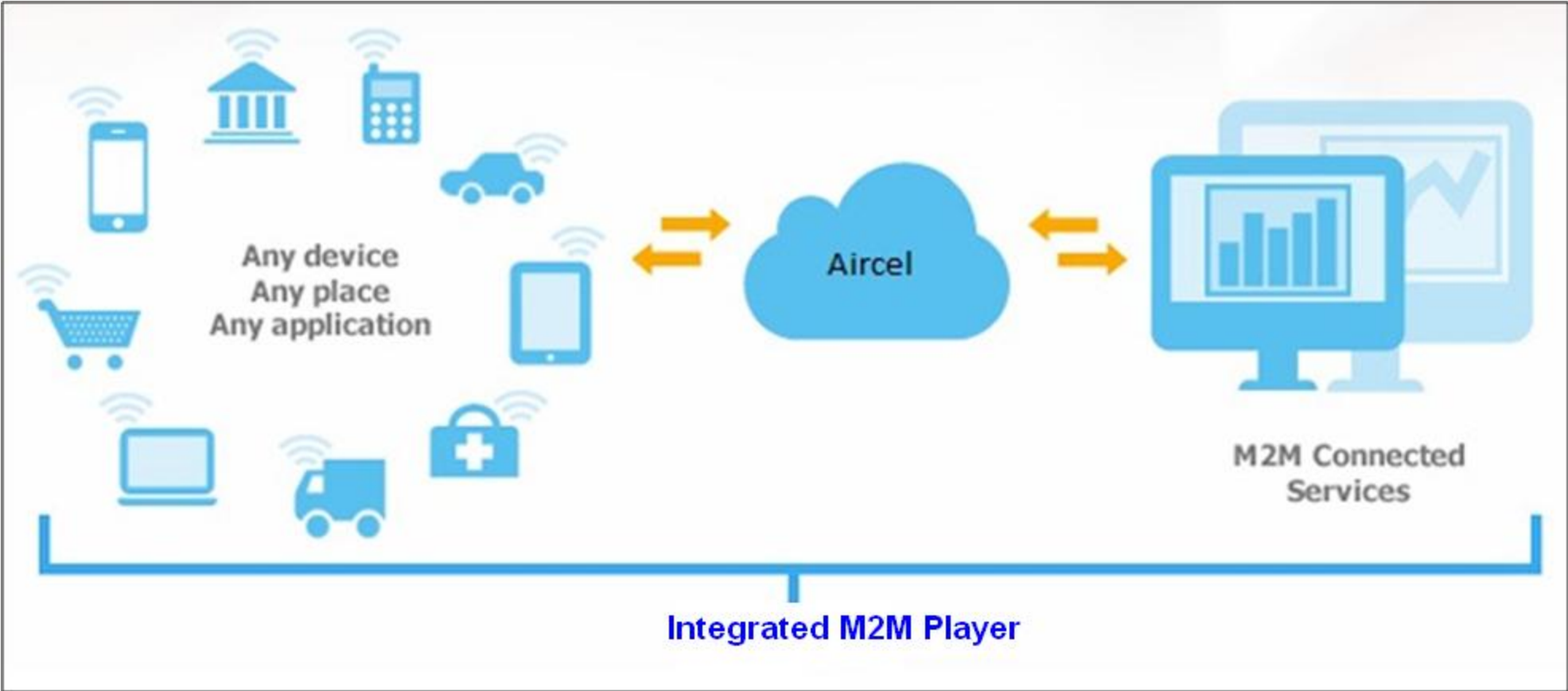
Location History and Activity Reports, Dynamic Task Planning ,Schedule & Route Planning ,Geo-Fence Based Alerts, Field Data Collection With Customized Forms, Real Time Map View of Team

SMART BUILDING (Smart Energy & Security)

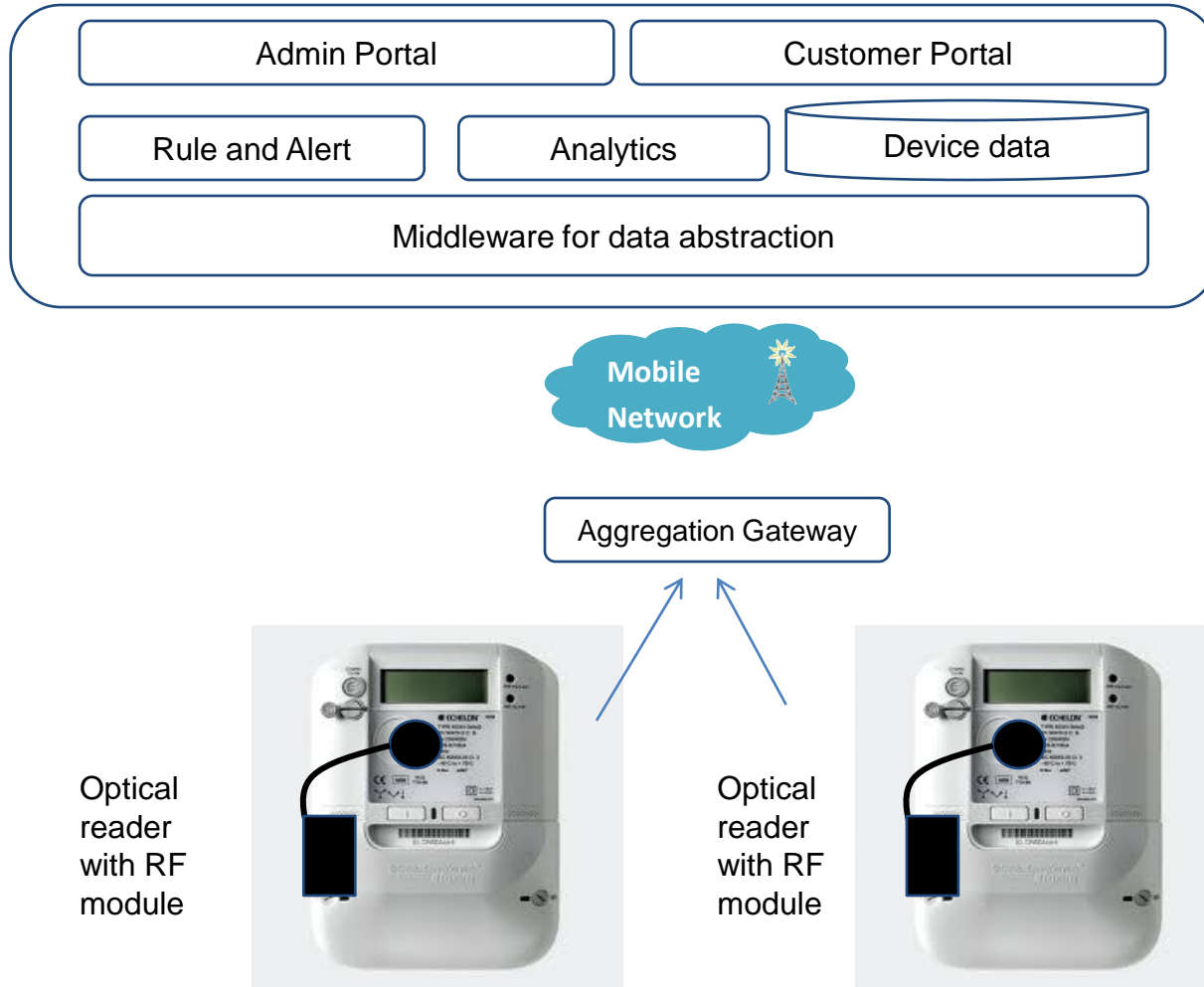
Monitoring and control of energy consuming devices in the building. Remote diagnostic and management.

SMART PARKING (Quality of Life)

Monitoring and control of parking space. Real time parking view. Provides strategic vision on smart cities



Smart Metering



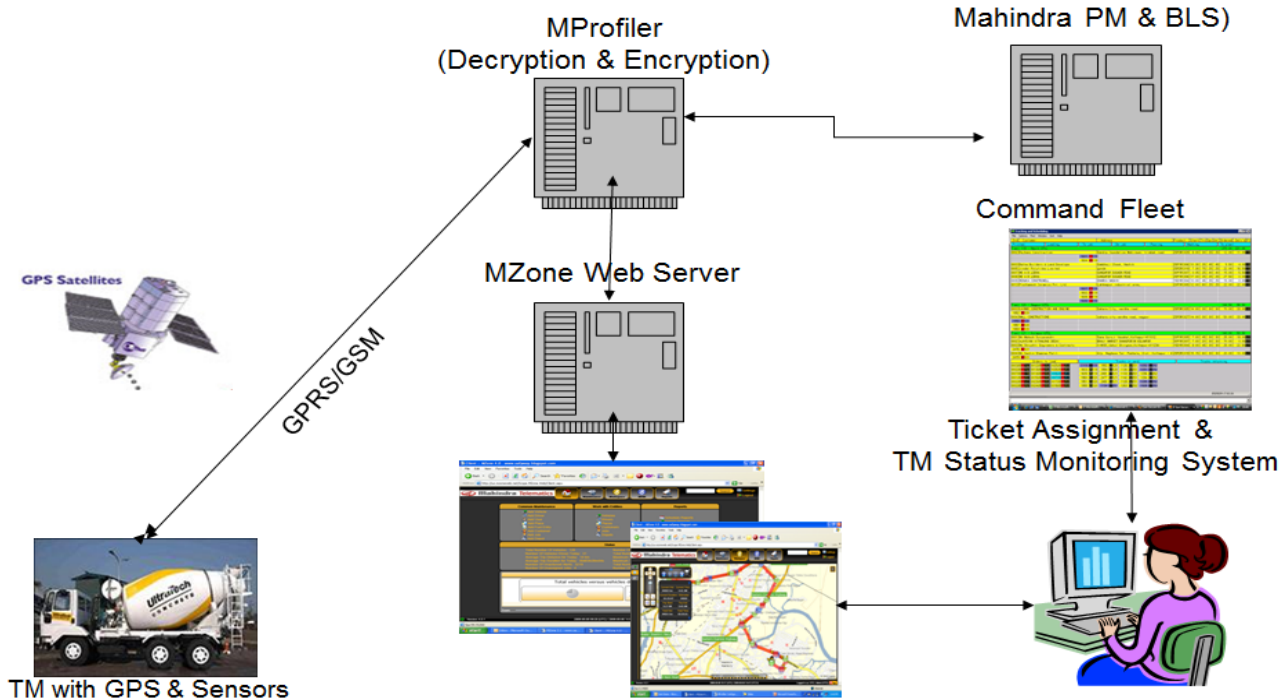
Solution Features

- Portal view of the load consumption in various areas
- Integration with the billing systems of utility
- Capability to switch off the supply in case of unpaid bills (This will need additional hardware)
- View to the end consumer on his consumption patterns.

Solution Components

- Optical Reader
- RF Module
- Aggregation Gateway

Telematics



Solution Features

- Capturing of the vehicle data
- Location tracking of Vehicles
- Geo fencing
- Driver behaviour analysis with a customizable algorithm
- Vehicle diagnostics (Only through OBD II port)
- Telematics data storage and playback of events

Solution Components

- OBD II device (2G)
- Data center hosted application

FOS Tracking



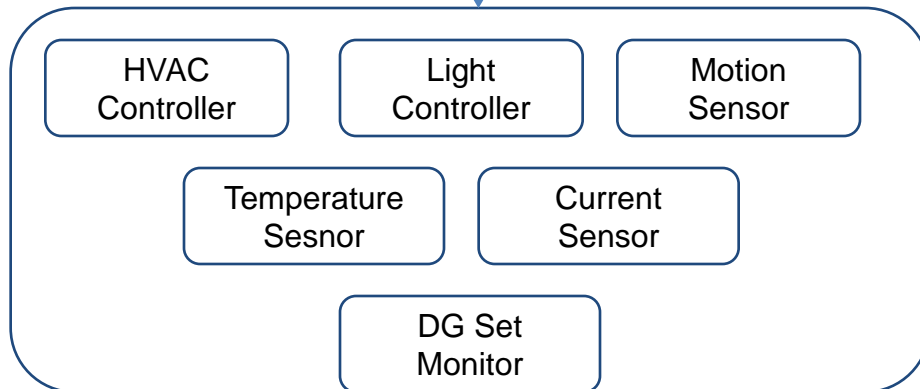
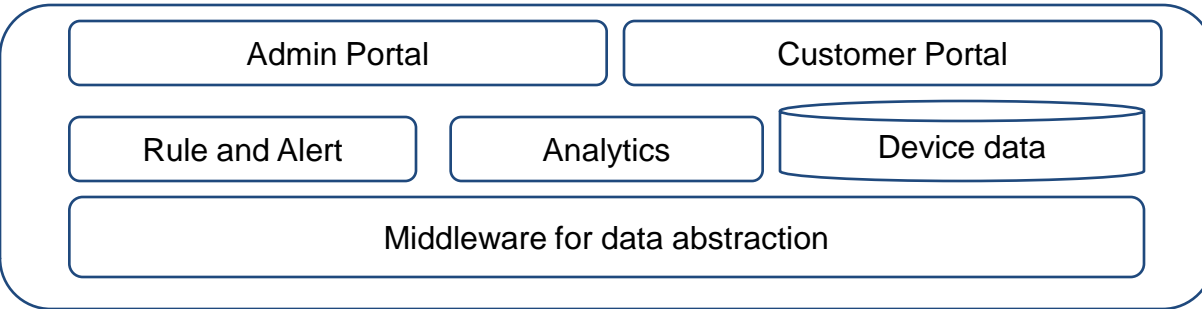
Solution Features

- Location History and Activity Reports
- Dynamic Task Planning
- Schedule & Route Planning
- Geo-Fence Based Alerts
- Field Data Collection With Customized Forms
- Real Time Map View of Team

Solution Components

- Mobile agent installed on the android handsets
- Data center hosted application

Building Energy Management



- Monitoring and control of energy consuming devices in the building
- Monitoring the health of the electric items in the circuit by predictive analysis of the current and voltage data
- Alert generation in case of devices not working properly

Solution Components

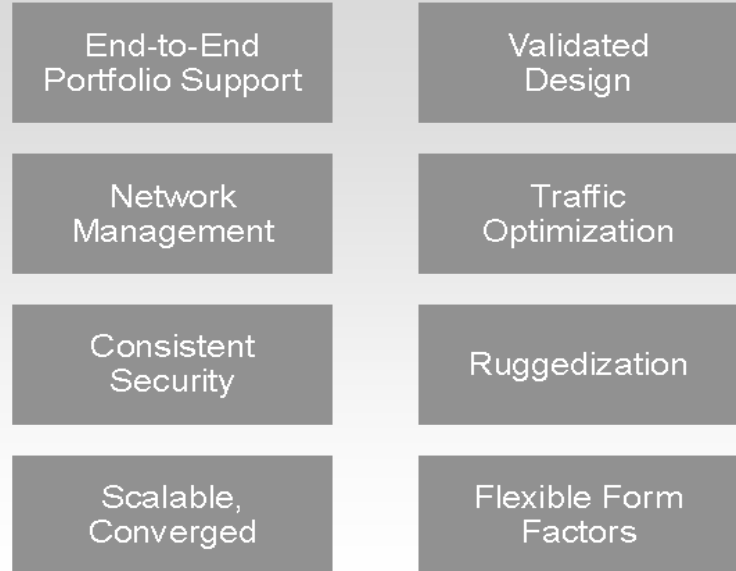
- HVAC controller
- Light Controller
- Motion sensor
- Temperature sensor
- Current sensor
- Gateway

IoT Has Unique Network Requirements

Traditional IoT Network Connectivity

- Silo'ed networks for each application
- Master-slave communication systems
- Vendor lock-in
- Limited connectivity options

Converged IoT Network Connectivity



Security Challenges

Traditional Security Challenges

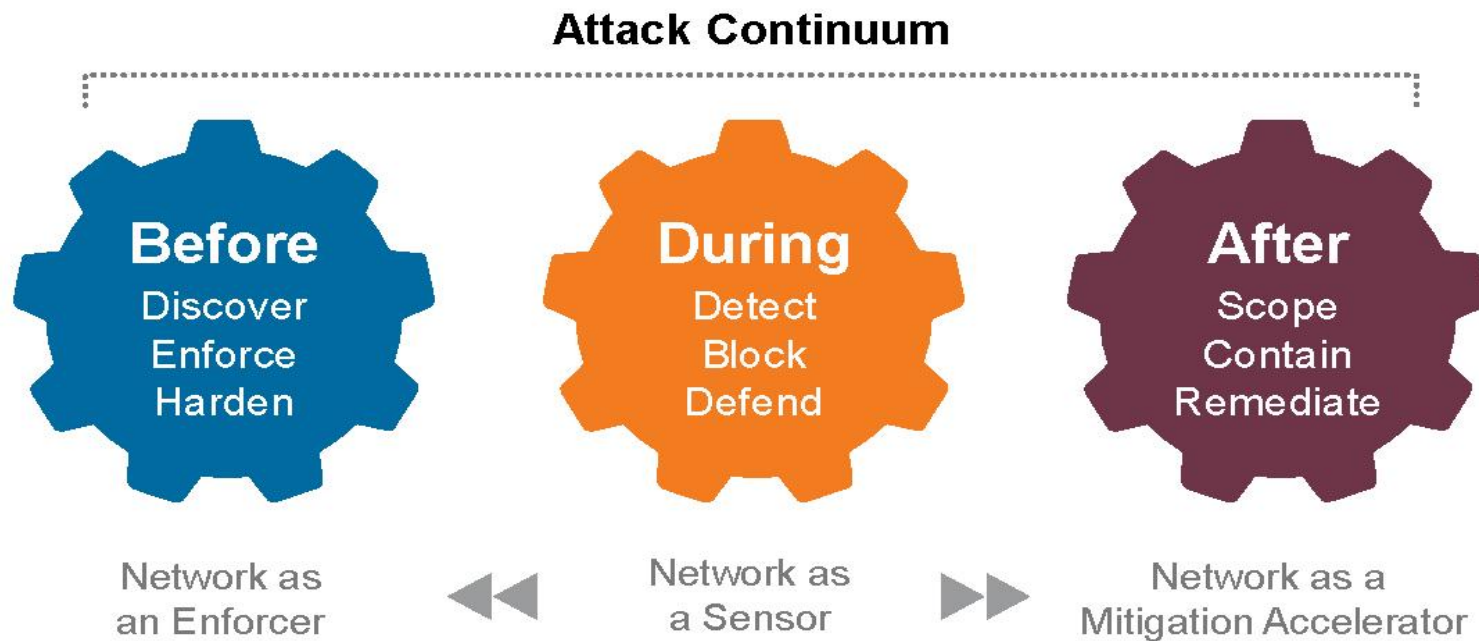
Increased Attack Surface
Information Breach
Data Privacy

Smart Objects

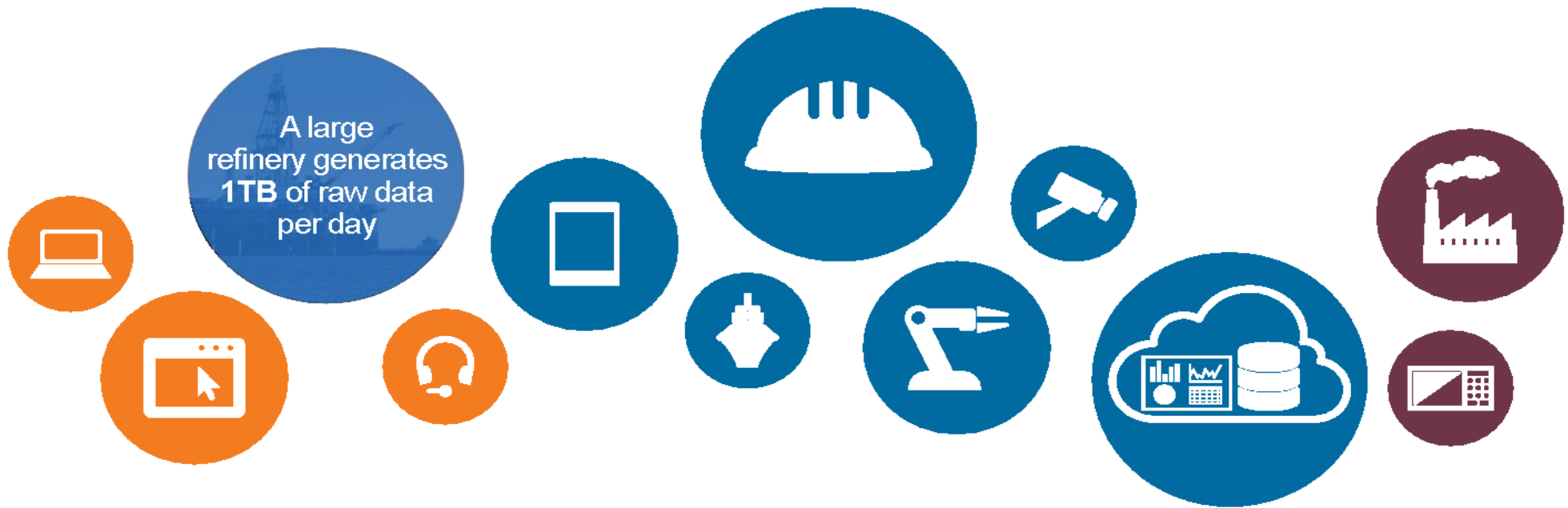
6 Devices
Per Person

130 Sensors
Per Person

Required Security Model for IoT



IoT Creates Data at Scale Never Seen Before



Analytics Are a Key Part of Value Creation in IoT

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Thank You