



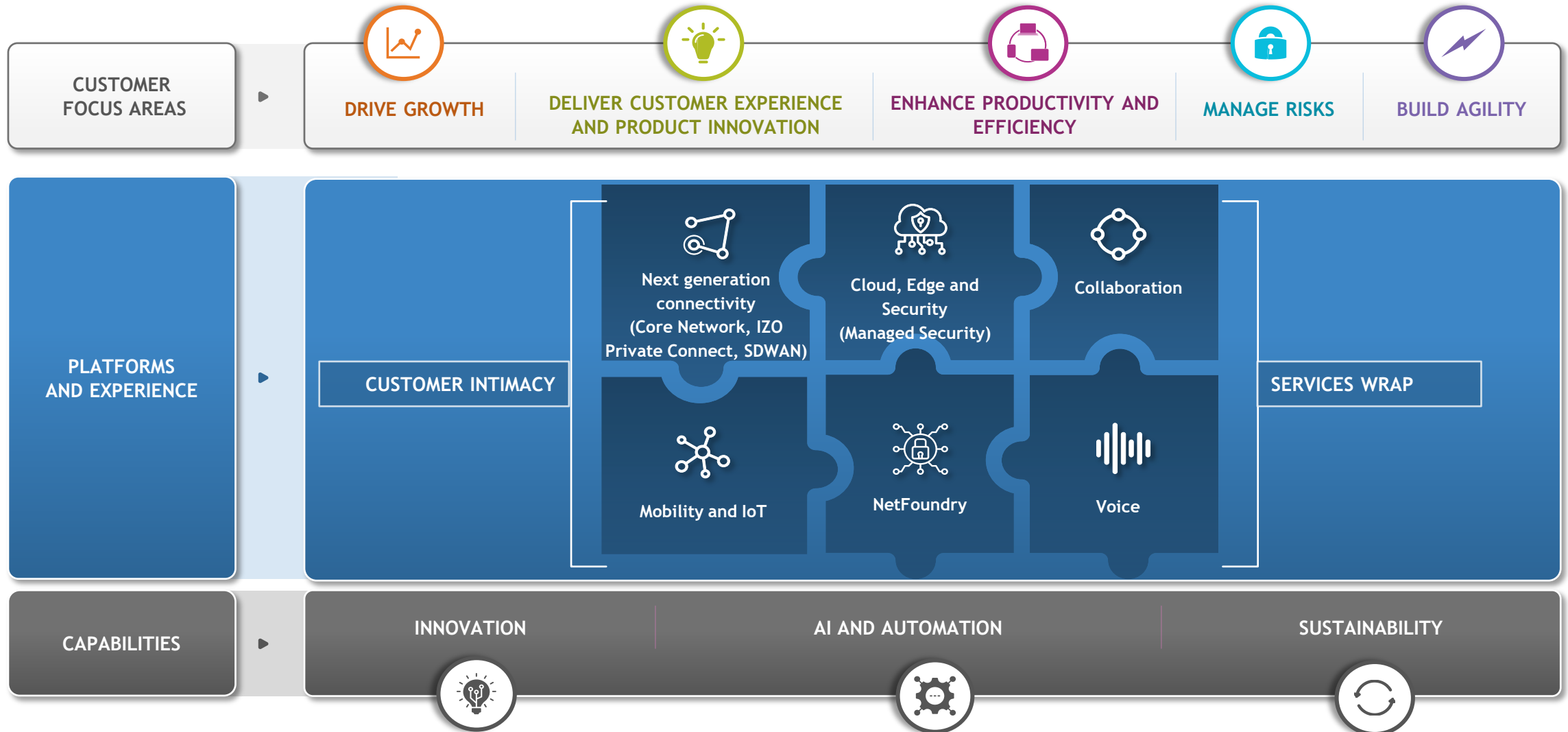
# TATA COMMUNICATIONS

## INTERNET OF THINGS

Session: Utilities for Tomorrow  
Water + Gas + Electricity  
India Smart Grid Week 2024

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IoT BU-Tata Communications  
March 15, 2024*

# WE ASSIST AND DELIVER DIGITAL TRANSFORMATION JOURNEY



# Tata Communications IoT *OEM and Digital Transformation Partner*

**16+ Cities Modernized**

facilities, cities, townships across geographies

**50+ Enterprises Transformed**

Enabling transformation across **Metals & Mining, Pharma, Oil & Gas, Cement, Chemicals** sectors globally

**600 K+**

IoT Powered Devices

**45+ Lives**

Saved through  
Connected Worker Solution

**50+ MT CO2e**

Reduced through  
Smart City Solutions

**\$30+ MM Savings**

Delivered through  
our IoT Solutions

**50+ Use cases**

Commercialized, Pilots across  
multiple sectors

**10+ Platforms, Applications, Analytics**

Across Network and Vertical use case layer

**500+ person years**

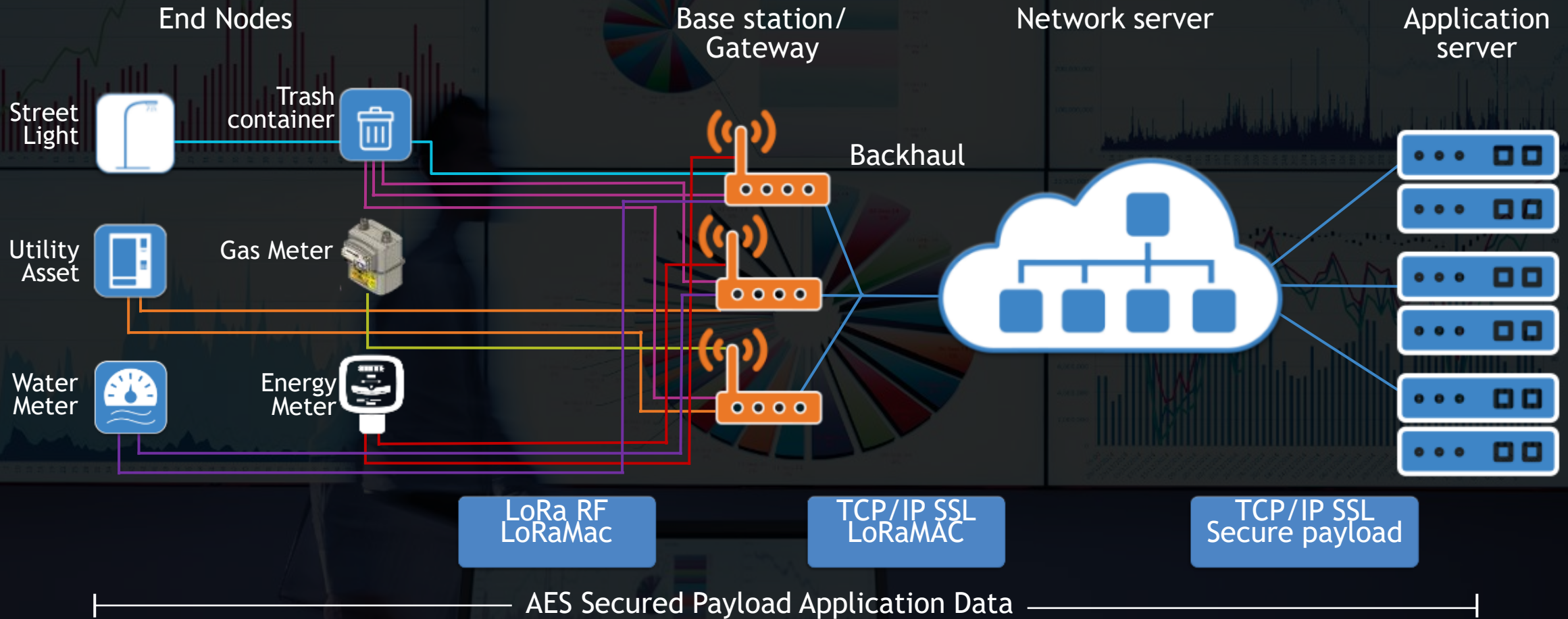
IoT Experience across H/W and F/W Development

**10+ Awards**

Industry Recognition for Excellence in IoT  
Solutions

# HIGH LEVEL ARCHITECTURE

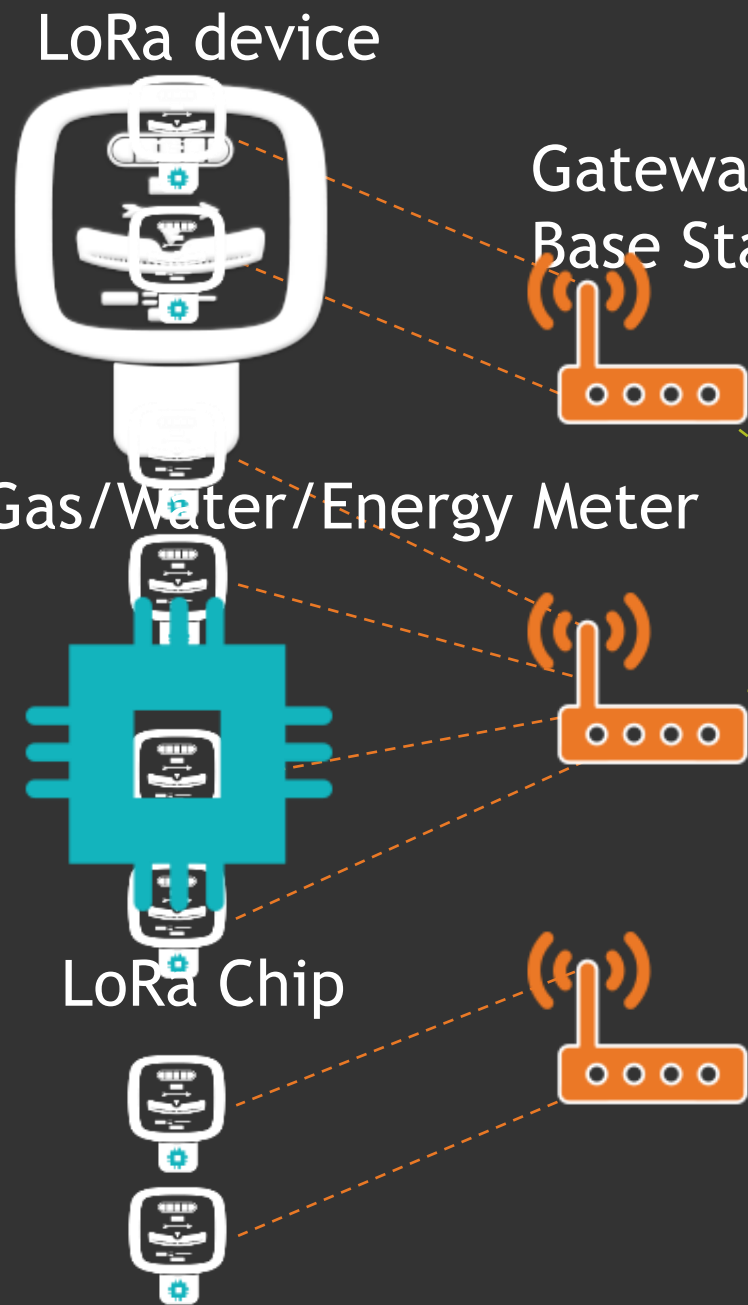
TATA COMMUNICATIONS



LoRaWAN network is designed for low power consumption and high availability

# Smart Utilities Solution

Smart meter solutions across the city







## Mobile phone



## IoT

**Communication requirement**

Person to person

Machine to machine

**Environment**

Conducive

Extreme (heat, cold, dust, pressure)

**Range requirement**

Short Range (to nearest cell tower)

Long range (to rural / industrial area as well)

**Device power requirement**

Very High

Very Low

**Device throughput**

High

Low

**IoT devices are fundamentally different**

IoT Devices

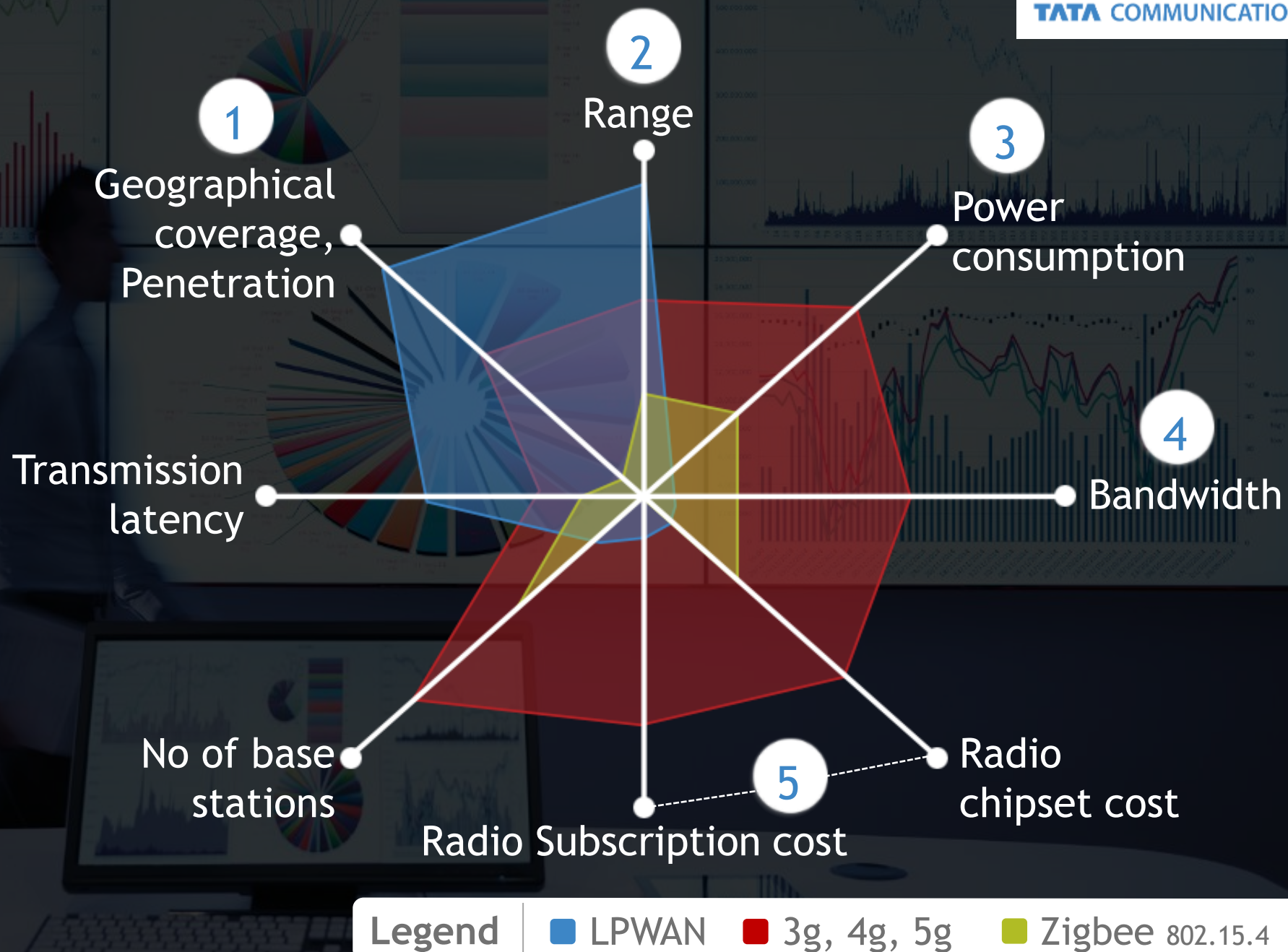
70% Battery operated

90% Low throughput

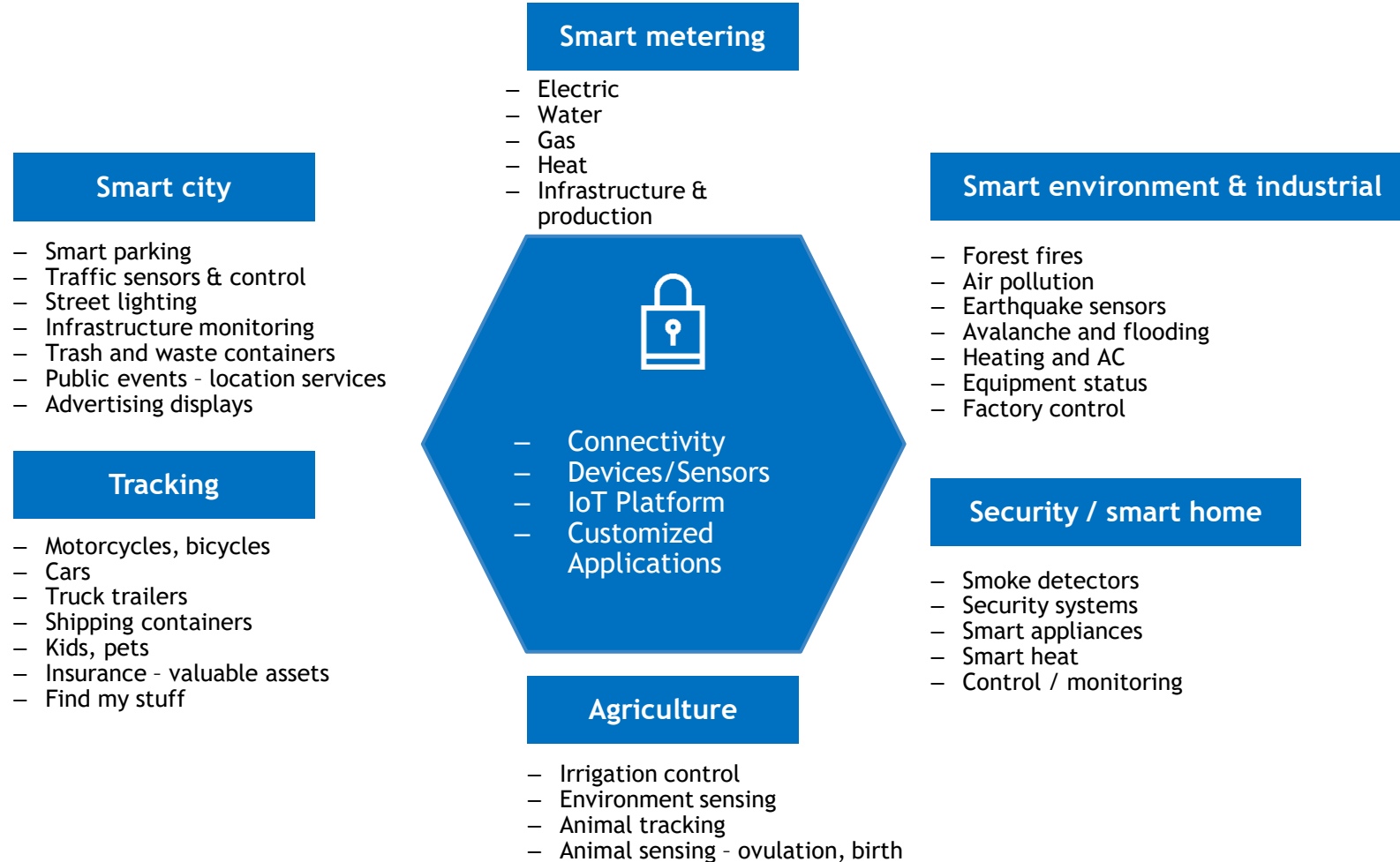


## 5 Reasons why LoRaWAN makes IoT a reality

- 1 Geographic coverage & Penetration
- 2 Highest Range
- 3 Lowest power consumption
- 4 Optimal bandwidth
- 5 Lowest cost

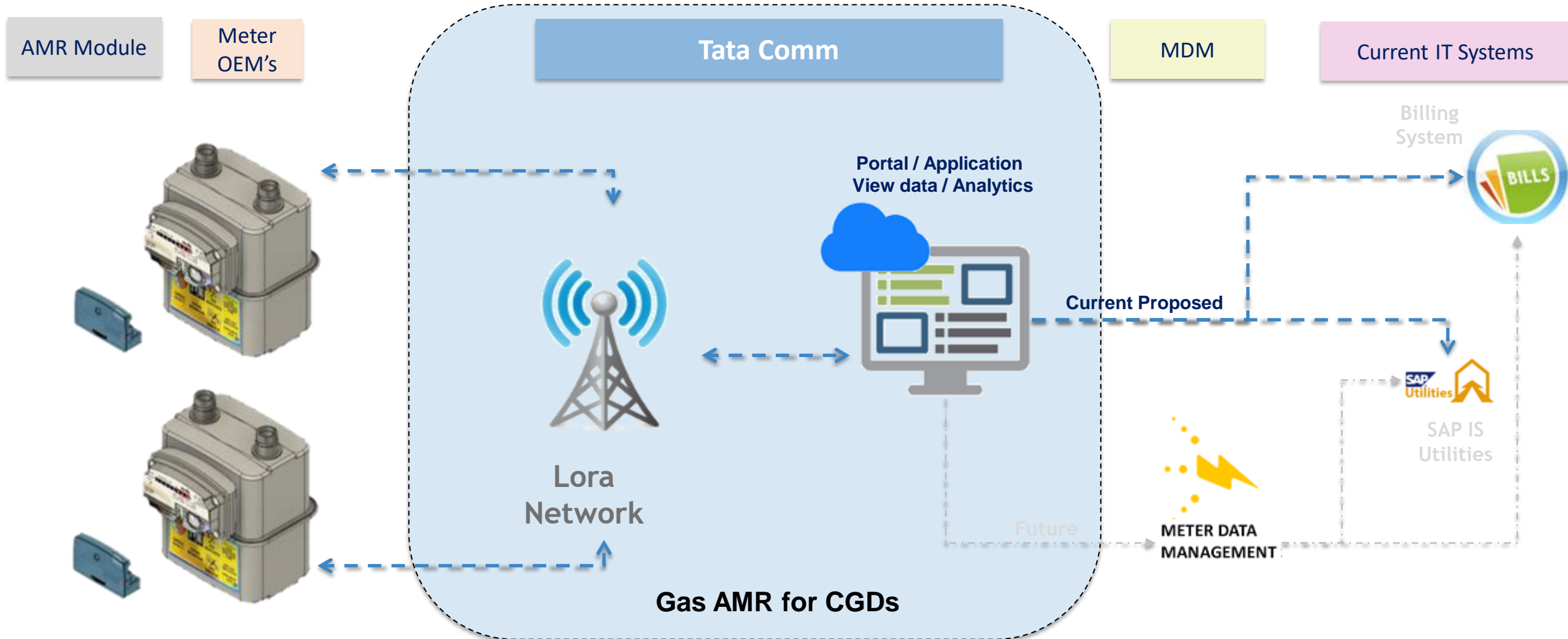


# SMART UTILITIES APPLICATIONS





# GAS METERING SOLUTION



# CHALLENGES WITH EXISTING SOLUTIONS



## Walk By/drive through:

- Only services basic automation.
- Inconsistent frequency of data
- No value added solutions like proactive maintenance



## Door to Door:

- Not scalable
- Huge manpower requirement
- Customer unavailability leading to multiple visits
- Invasion of privacy/security concern to resident/personnel



## Zigbee/Proprietary RF:

- Maintenance of multiple small network environments
- Data concentrator unit requirements:
  - ***Cost of DCU, Electricity, real estate rentals***
- Challenges in scale deployments



## GSM:

- Gas meters are non-powered while GSM based solutions drain power
- SIM Management challenges



### List of cities

- |   |                    |
|---|--------------------|
| 1 Mumbai                                  | 20 Dehradun        |
| 2 Bengaluru                               | 21 Jodhpur         |
| 3 Gurgaon, Noida<br>Faridabad, Ghaziabad) | 22 Kanpur          |
| 4 Pune                                    | 23 Amritsar        |
| 5 Bhubaneshwar                            | 24 Ludhiana        |
| 6 Ahmedabad                               | 25 Chandigarh      |
| 7 Bhopal                                  | 26 Kolkata         |
| 8 Indore                                  | 27 Hubli - Dharwad |
| 9 Gwalior                                 | 28 Mysore          |
| 10 Aurangabad                             | 29 Vijayawada      |
| 11 Nagpur                                 | 30 Hyderabad       |
| 12 Solapur                                | 31 Vishakhapatnam  |
| 13 Nasik                                  | 32 Chennai         |
| 14 Surat                                  | 33 Coimbatore      |
| 15 Baroda                                 | 34 Tiruppur        |
| 16 Jaipur                                 | 35 Kochi           |
| 17 Jamshedpur                             | 36 Thrissur        |
| 18 Lucknow                                | 37 Calicut         |
| 19 Meerut                                 | 38 Trivandrum      |

### Highways

- Delhi - Jaipur - Ahmedabad - Mumbai
- Amritsar - Delhi - Varanasi - Kolkata
- Mumbai - Hyderabad
- Mumbai - Pune - Bangalore
- Kolkata - Visakhapatnam - Chennai
- Bangalore - Chennai
- Bangalore - Hyderabad
- Mumbai - Trivandrum ( Via Bangalore & Via Hubli, Mangalore)



# THANK YOU