

## TECHNOLOGY FRONTIER

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## INDUSTRIES IN TRANSFORMATION





MOBILE INFRASTRUCTURE

OSS&BSS

SERVICES

MEDIA DELIVERY & IPTV

\$35 b.

\$5 b.

118,000

65,000

**Net Sales** 

In R&D

**Employees** 

Services professionals

Telecom



Utilities



**Transport** 



Public safety





# THE NETWORKED SOCIETY UTILITIES TRANSFORMATION



### UTILITIES TRANSFORMATION PATH



#### **Innovating operations and** consumer service enhancements

- Smart tariffs
- Demand side participation
- Consumer value creation
- Customer segmentation and tailored solutions

#### **New business and operational** models

- IT/OT convergence
- Distributed Intelligence
- Decentralization and micro grids
- Dynamic and automated operations

### **Utilities future state**

- Customer service oriented
- Efficient and sustainable
- Flexible adaptable to new market and regulatory developments
- Critical partners in emerging integrated smart societies

#### Transformation need recognized by utilities

- Consumer expectations
- Changing network utilisation

- Smart Metering (mainly) electricity)
- Smart Grid **Communications**



- Smart Grid evolutions (control and DA)
- Initial Integration of analytics and Customer Management
- Asset Management & **Protection**
- Grid Control

- Leading end-to-end transformation projects
- Distributed Intelligence **Platforms**
- Utilities Service Enablement **Platforms**
- XaaS/Cloud

- Service platforms that enable **Utility industry adaptation through** flexible ICT innovation and implementation.
- Reduced dependency on internal capabilities and large scale ICT investments
- **Expanded application of scale and** scope economies to utilities operations
- Interconnected society smart grids, cities, countries

Utility outlook Technology & market focus



### WHAT UTILITIES SAY ABOUT IOT



#### **Utilities Top Strategy Drivers**

**Utilities Top Use Cases** 



Customer Experience

86%

BEMS

Customer Engagement

Demand Management

EV



Customer Operations

77%

HEMS

Revenue Protection

**DERM** 

SM



Workforce Management 72%

Fleet Management

Asset Diagn. &

Maintan.

Remote WFM

Quality

Sensor-Based Staff Id





Asset Utilisation 70%

DA

Leakage Reduction

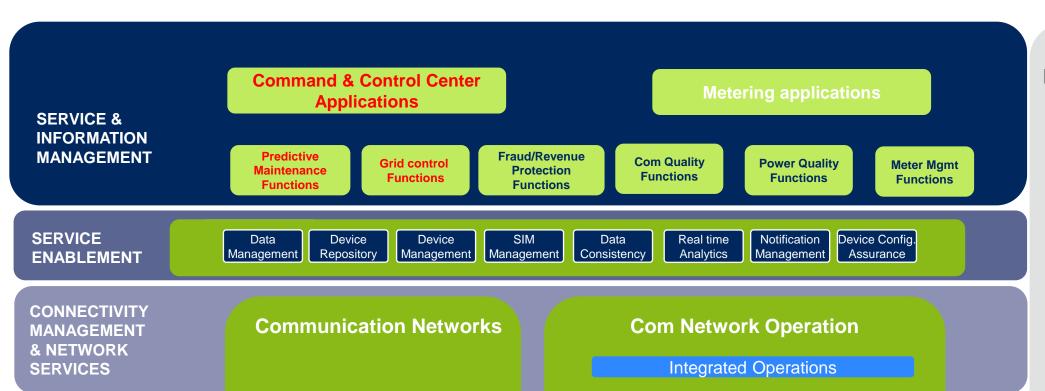
Substation
Automation

Remote
Asset Surv.

Weather Sensors

### IOT SOLUTIONS FOR UTILITIES





Cloud Platform & **Managed Operations** 

**Smart** Metering As a Service

**Smart** Grid As a Service

**Access Networks** 

**E2E IP Networks** 

**Private Virtual Network** 

Performance

QoS

Fault & Incident

**Data Integrity** 

SMART GATEWAY (SMART GRID NODE)

**PHYSICAL INFRASTRUCTURE** & ASSETS/DEVICES **PEOPLE** 

**ICT INFRASTRUCTURE** 

& BACKHAUL



Connected

cars

Connected

roads















Connected

Connected homes

Connected cities

workforce **People** 

# FIRST CONNECTIVITY SOLUTIONS DEDICATED TO IOT











NB-IoT devices support

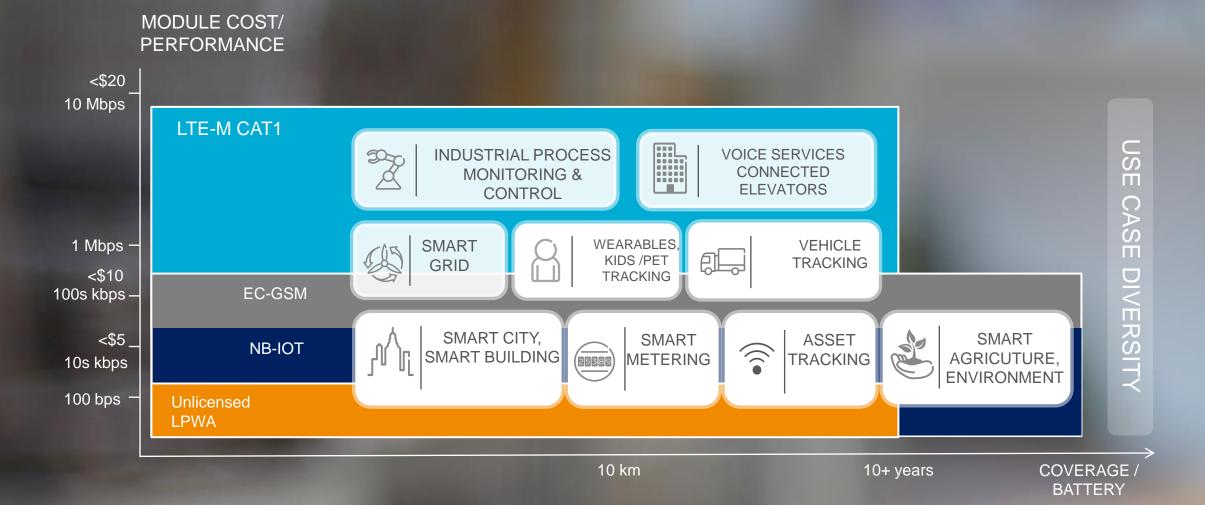
Extended life (LTE-M & NB-IoT)

Extended Coverage (NB-IoT)

Support massive number of connections per cell site

# CELLULAR LOW POWER WIDE AREA SERVES MUCH MORE





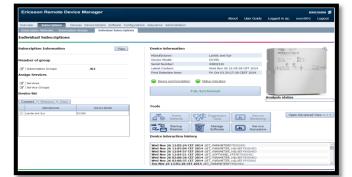
### IMPACT OF ANALYTICS SAMPLE USE CASES (PROJECT ESTONIA)



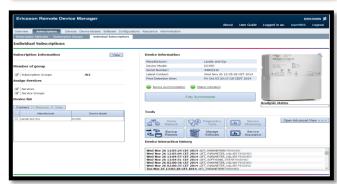
**Event** Visualization

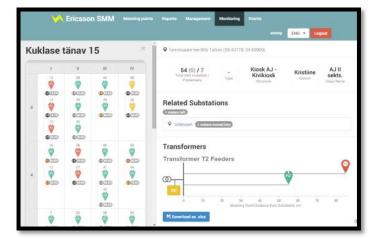


**Communication Supervision** 



**Configuration Management** 





CenterPoint Energy Rolling Blackouts Feb. 2, 2011

Power Quality Management

Outage Management Visualization

# GLOBAL UTILITY FOOTPRINT AND RELEVANT IOT REFERENCES



>50

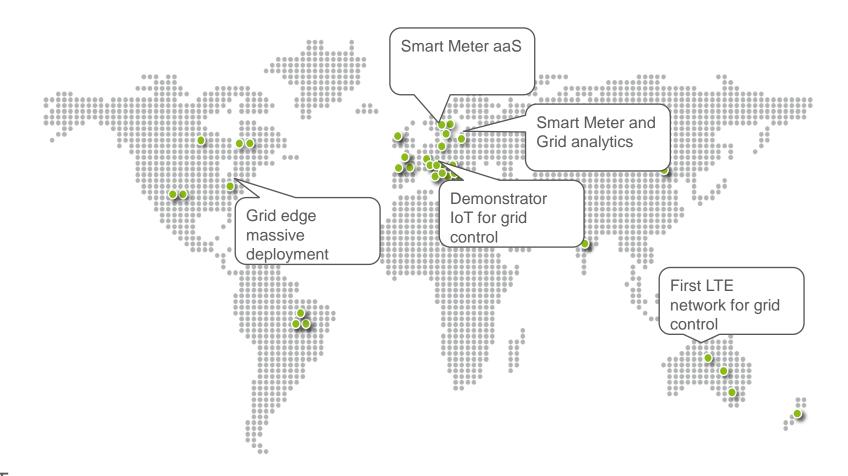
**MILLION METERS** 

- 20% TCO

FOCUS ON COMMUNICATIONS NETWORKS OPTIMISATION

## WORLD'S LARGEST

GRID EDGE NODE DEPLOYMENT



## FULL RANGE OF SOLUTIONS AVAILABLE

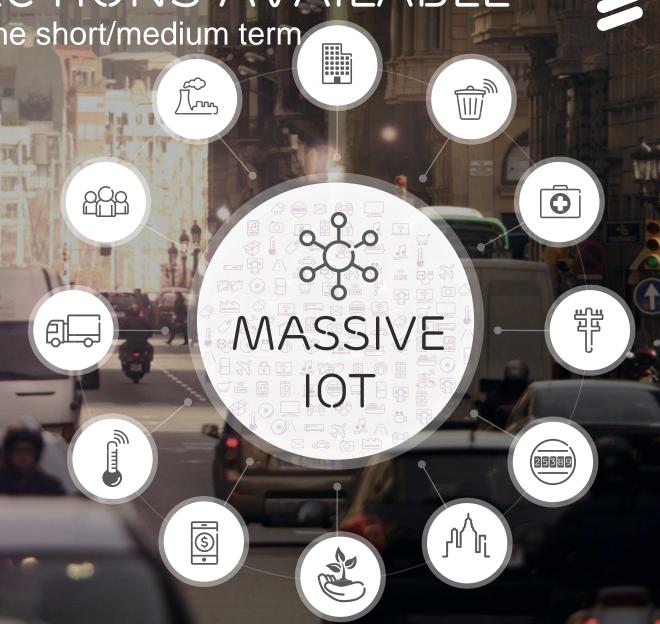
Addressing diversity of use cases in the short/medium term



Global cellular IoT for all GSM markets

LTE-M 2017 Wide range of applications

NB-IoT 2017 Ultra low-bitrate applications



IN 2030...?

Millions of people have a life expectancy of 150 years or more

Food is grown in skyscrapers

3D printing and drone delivery provides close to real time supply

New buildings generate more energy than they consume



Learning a second language is no longer necessary

You don't need to drive your car unless you want to

Actors are out of work, replaced by animated artists

Cash is digital and virtual currencies capture a large share of GDP



Mr. Hans Vestberg, CEO of Ericsson since 2010





### KEY TAKE AWAYS



UTILITIES GOING
THROUGH
DISRUPTIVE
CHANGE

HORIZONTAL AND AGILE PLATFORMS

(दुरु)

DATA DRIVEN TRANSFORMATION



IOT / SMART GRID
IS INDUSTRY
TRANSFORMATION



CONNECTIVITY EVERYWHERE



NEW BUSINESS MODELS





# ERICSSON