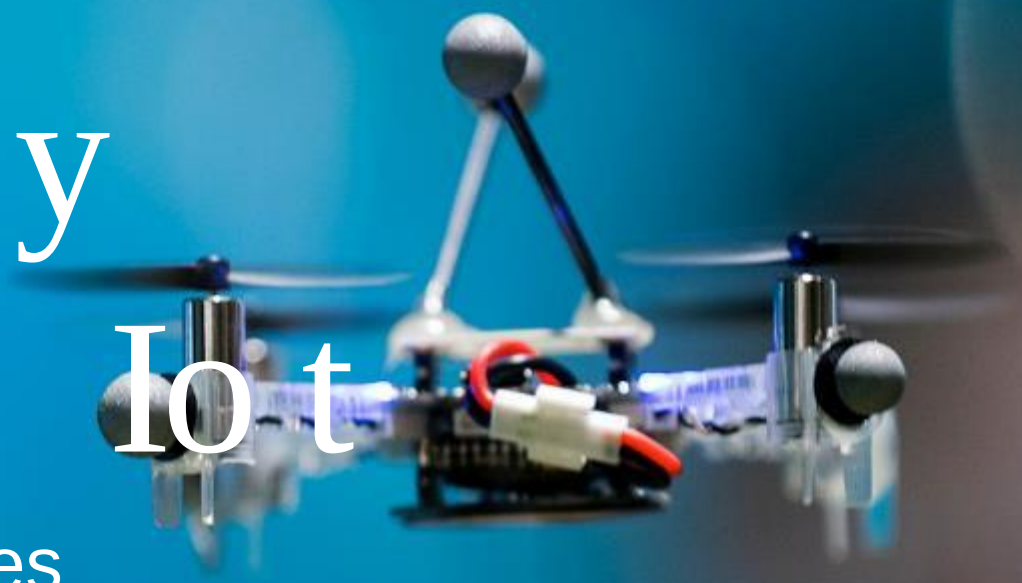
From energy metering to IoT



Unleashing New Business Opportunities

November 8th, 2017

Luis Molero Castro
IoT Business Consultant
Europe and Latin America

Industry Transformation

From silos to an ecosystem of ecosystems

M2M

IoT

Vertical Silos	Business Models	Cross-Industry
Technology Focus	Processes	Business Focus
Single-Purpose	Infrastructure	Multi-Purpose

Market With Exponential Promise

43%
ENTERPRISES ADOPTING IoT

$7.1T
GLOBAL IoT REVENUE

$11T
GLOBAL IoT ECONOMIC IMPACT

2016 2017 2020 2022 2025

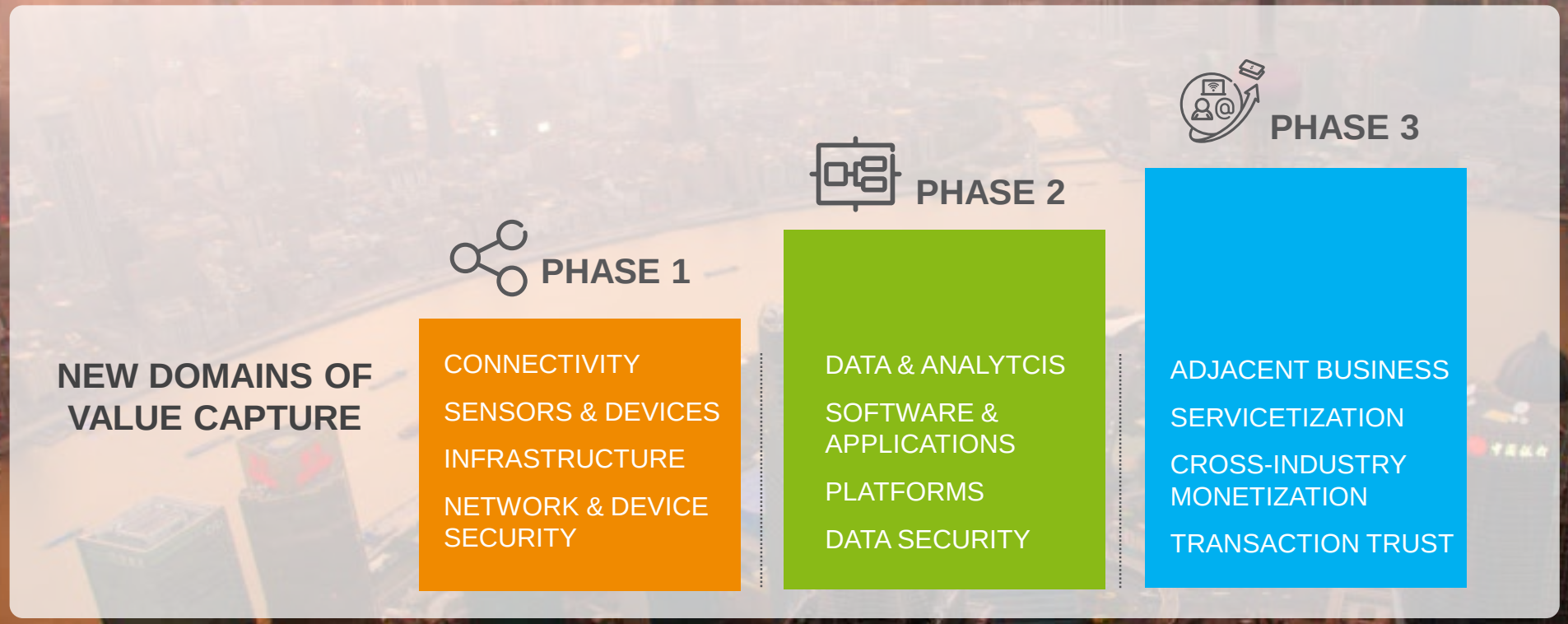
4.1M
NEW IoT DEVICES CONNECTED DAILY

18 B
GLOBAL IoT CONNECTIONS

€1T
EU28 IoT ECONOMIC VALUE

Source: Gartner, Ericsson, IDC, McKinsey, AT Kearney

IoT Market Development Stages



Network connectivity
Cellular for massive iot

IoT on LTE

NB-IoT — Low-bitrate applications with extreme coverage and low cost devices

CAT-M — Wider range of applications with low-medium bitrate, mobility and voice support

IoT on GSM

EC-GSM — GSM as fallback with improved battery life or extended coverage for the last mile

Network connectivity
Cellular for massive iot

90%
MODULE COST REDUCTION

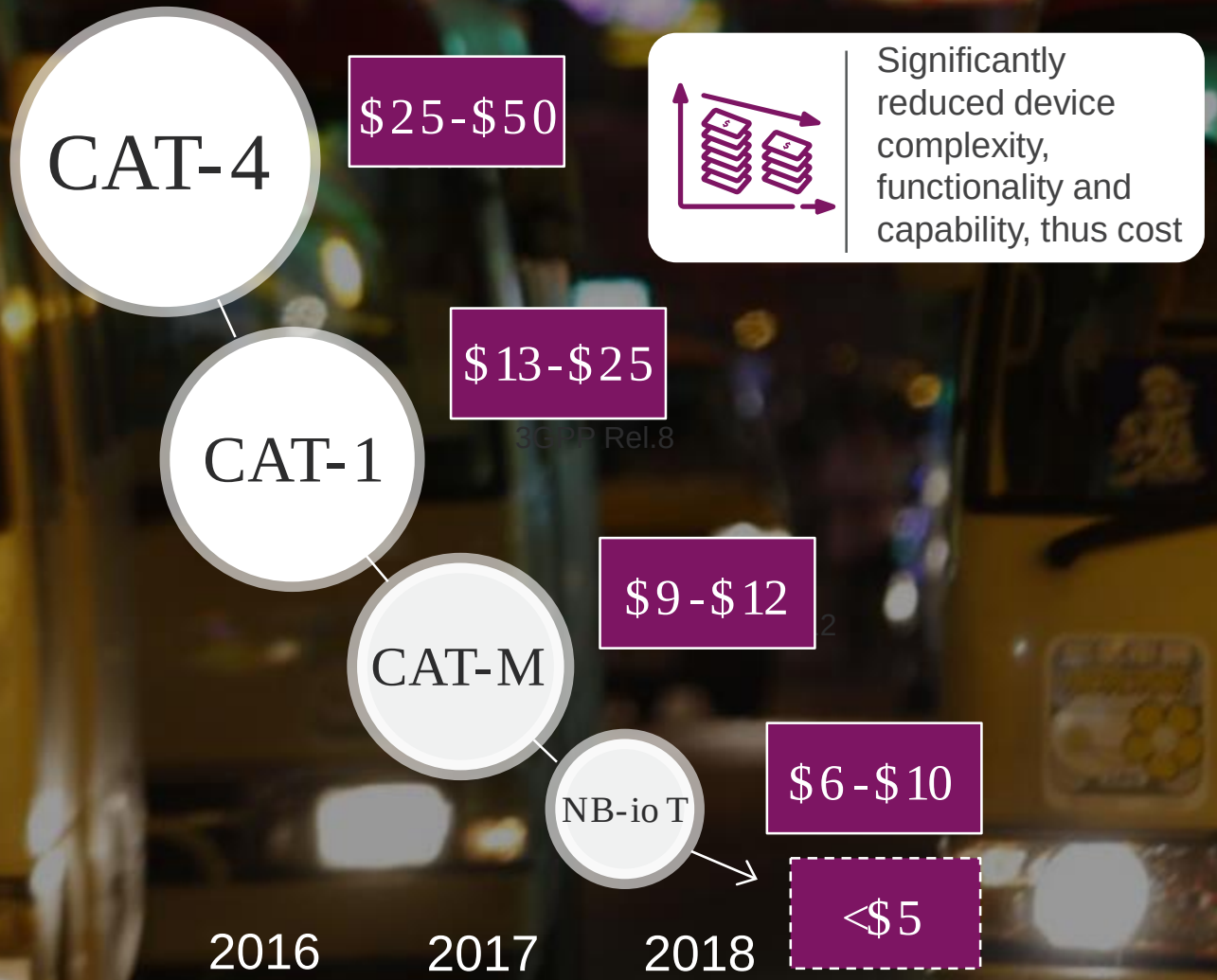
Cat-M and NB-IoT devices support

10+
YEARS BATTERY LIFE

Extended Long DRX
Power Saving Mode (PSM)

+20 dB
BETTER COVERAGE

Extended Coverage



A horizontal platform for business critical services

Industrial Applications

ERICSSON IoT ACCELERATOR

- MARKETPLACE & EXPOSURE
- ORCHESTRATION, INTEGRATION, AUTOMATION & BILLING
- DEVICE & DATA MANAGEMENT
- CONNECTIVITY MANAGEMENT

Professional Services

Network Connectivity

A horizontal platform for business critical services

Smart metering

BILLING

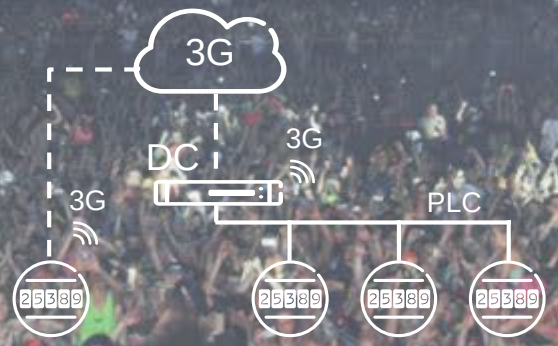
MOC

MDM

MDC

NOC

NMS



Smart home /building

BILLING & SETTLEMENT

HEMS

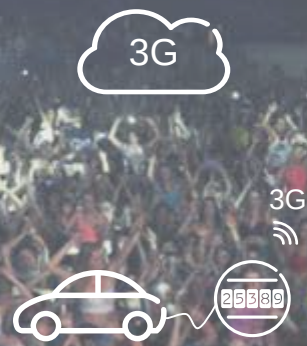
BEMS

NMS

Electric vehicle

BILLING & SETTLEMENT

EVCS



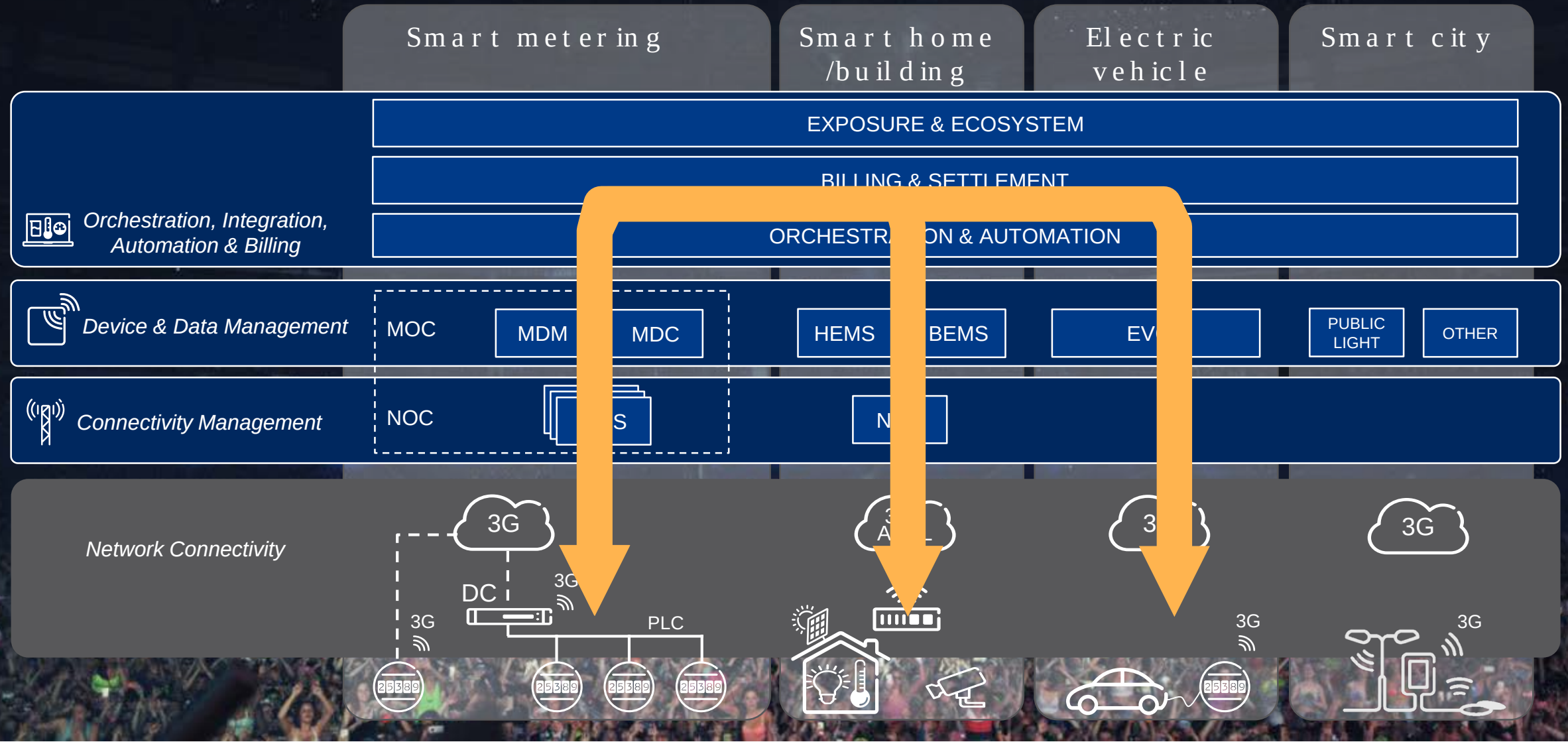
Smart city

BILLING & SETTLEMENT

PUBLIC LIGHT

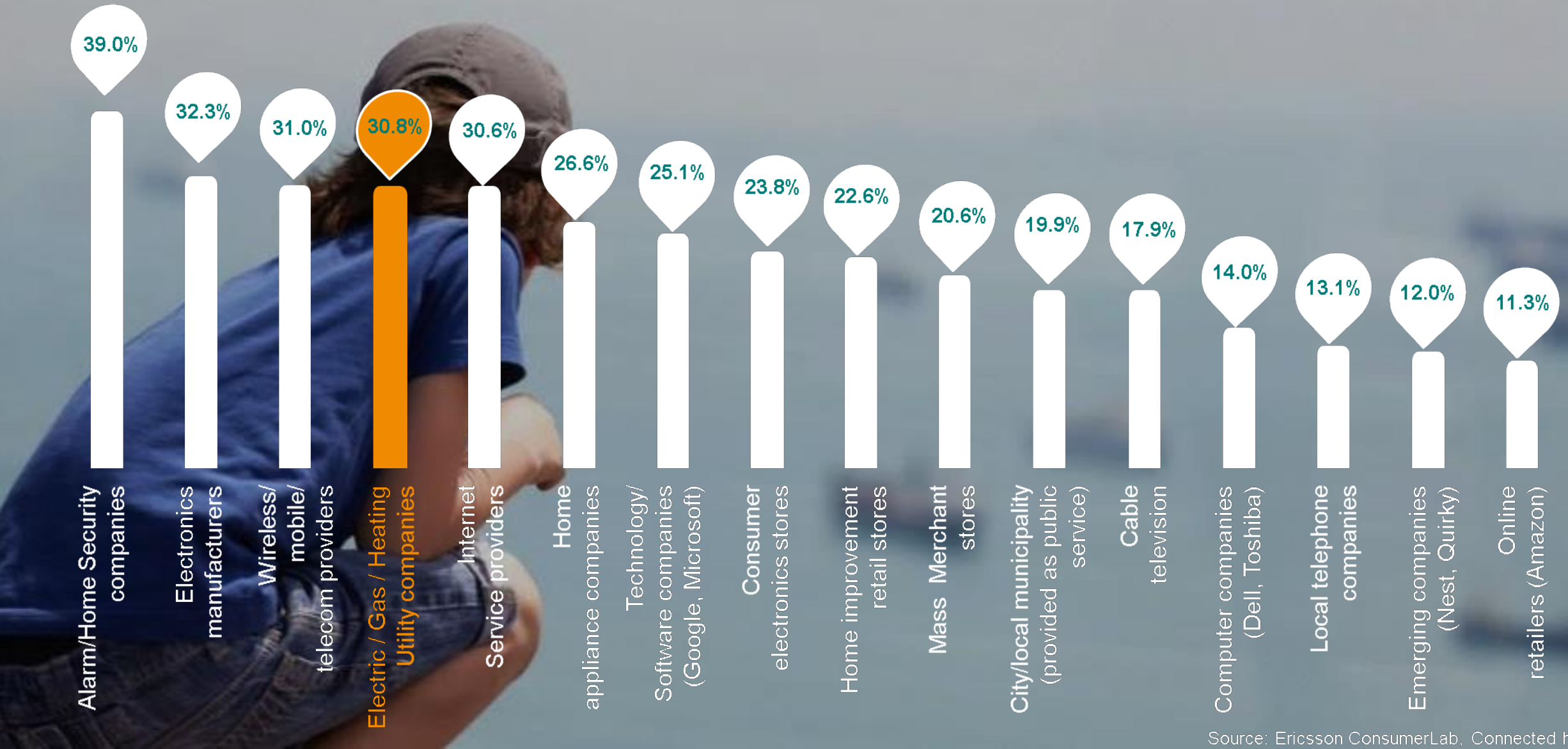
OTHER

A horizontal platform for business critical services



USE CASE #1 - SMART HOME

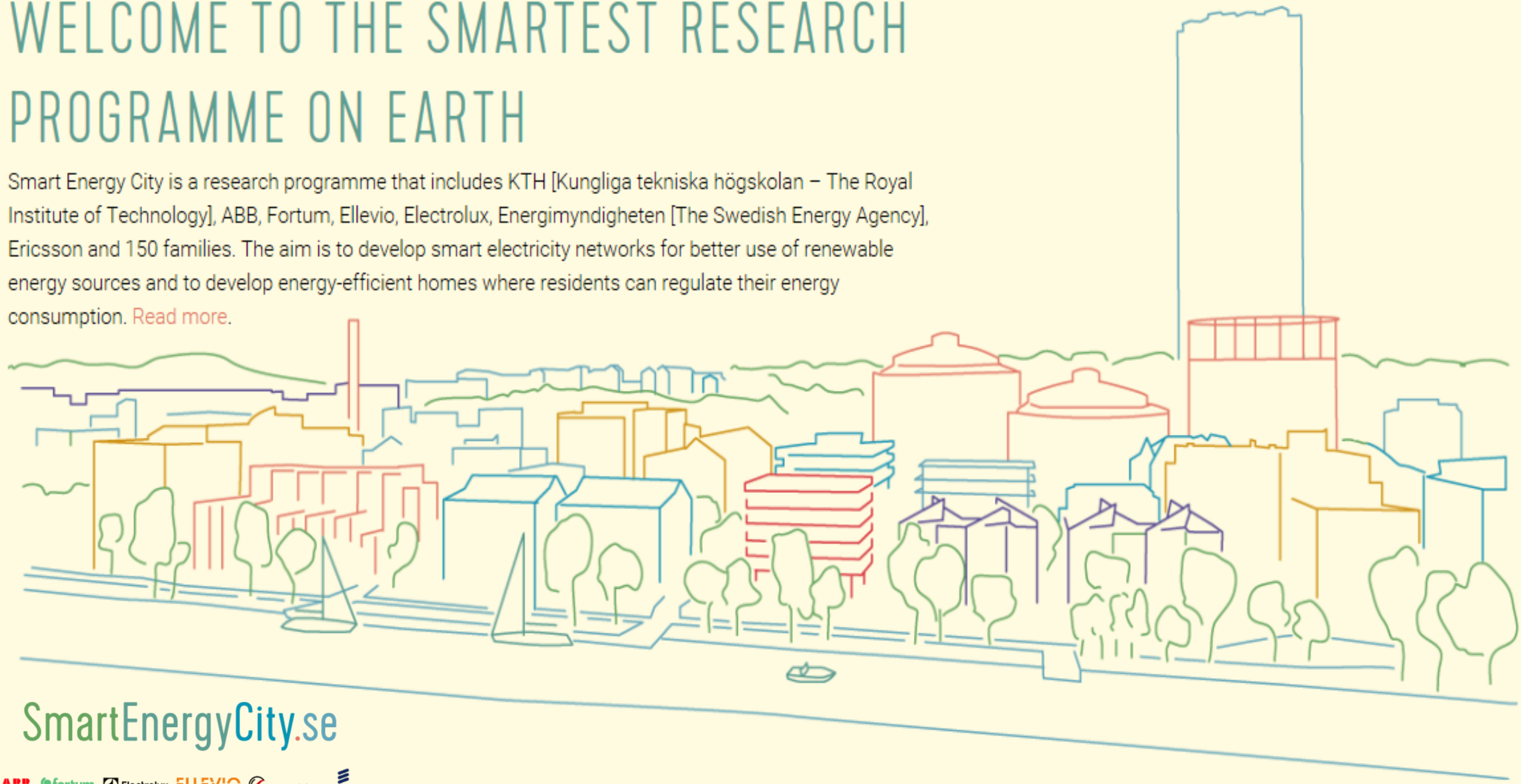
Utilities well positioned to supply integrated Connected Home solutions



Source: Ericsson ConsumerLab, Connected homes.

WELCOME TO THE SMARTEST RESEARCH PROGRAMME ON EARTH

Smart Energy City is a research programme that includes KTH [Kungliga tekniska högskolan – The Royal Institute of Technology], ABB, Fortum, Ellevio, Electrolux, Energimyndigheten [The Swedish Energy Agency], Ericsson and 150 families. The aim is to develop smart electricity networks for better use of renewable energy sources and to develop energy-efficient homes where residents can regulate their energy consumption. Read more.



SmartEnergyCity.se

ABB fortum Electrolux ELLEVIO Energimyndigheten ERICSSON

The tablet that gives control

The tablet that gives control

- Do your laundry when it suits you
- Monitor your solar installation
- Control the energy consumption of your electric plugs
- Dim your lights when you do not need them
- Set the temperature in each room
- Monitor your hourly consumption and savings, and become a greener customer

Smartenergycity.se
main conclusions ...so far

- Smart metering is a pre-condition. Sub-metering used to distribute energy costs between tenants (flats or office building)
- Data collection still ongoing. However, there are positive signs of energy efficiency and load shifting in some customer segments
- 50% use the system on a regular basis
- Sub-second latencies required for smart home services
- Main question: where is the business model?
  - Limited potential of revenue generation from energy efficiency & comfort services
  - Security and video surveillance show greater potential for revenue generation, however they are further away from traditional energy retail business

SmartEnergyCity.se

USE CASE #2 – FROM ELECTRIC VEHICLE TO SMART CITY

EV CONUNDRUM
DISTANCE ANXIETY

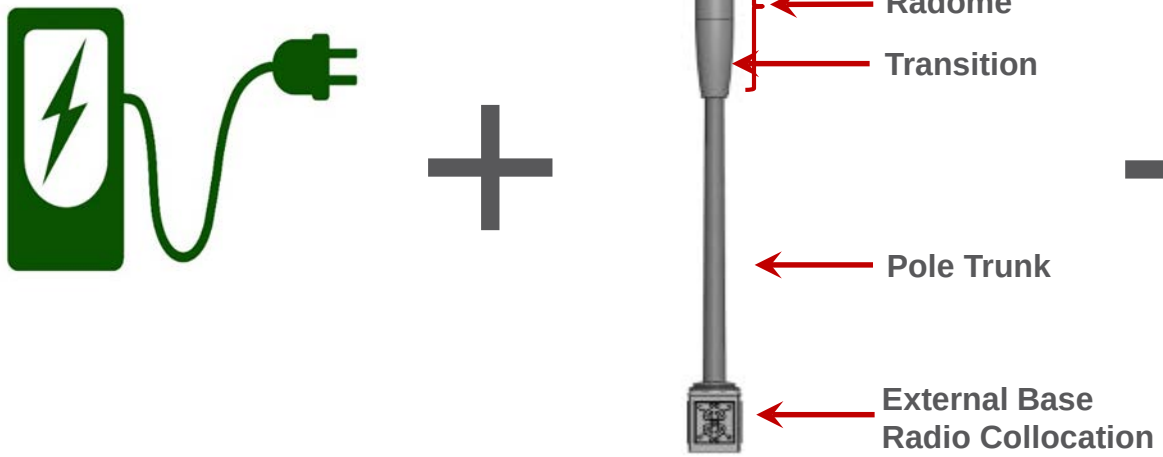
EV SUPERCHARGER STATION

FLEXGRID™ECOSYSTEM SOLUTION

EV PARTNERS

ERICSSON

GREEN ENERGY IMPROVEMENTS



CHARGING PROGRAM LOCATIONS

SMART POLE TOWERS (HIGH + LOW POWER)

FIBER READY BUILD TO SUIT CONFIGURATIONS

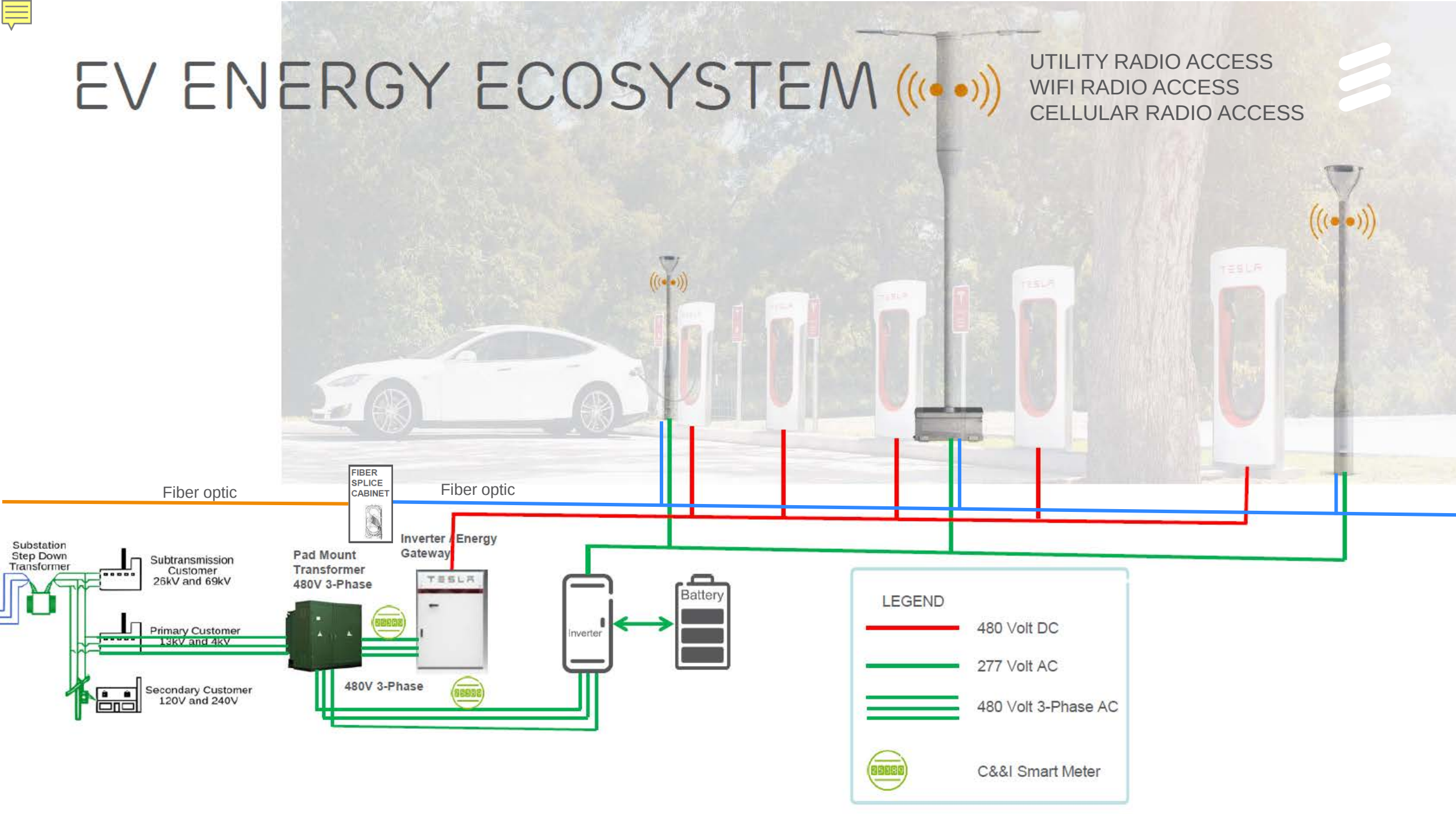
EMERGY MGMT AS A SERVICE

ERICSSON RADIO SITE SOLUTION

LANDMARK DIVIDEND

EV ENERGY ECOSYSTEM

UTILITY RADIO ACCESS
WIFI RADIO ACCESS
CELLULAR RADIO ACCESS



WIDELY ACCEPTED DEPLOYMENTS

DeployeD
City of San Jose

DeployED
City of Los Angeles

DeployED
City of MIAMI

New improved infrastructure

Benefits of the extended ev ecosystem

- Societal and environmental benefits of EV deployment
- Reduced energy consumption (>40%) through power control and peak shaving
- Sustainable multi-sided business model to justify investment in EV charging infrastructure
- Improved connectivity options provide greater value to end customers
- Grid level storage enables grid balance and load optimization, increasing the DSO operating reserve
  - In a future phase, EV battery can also be used as supplemental reserve
- Reinforcement of energy supply through the use of advanced storage

summary

1. The industry is undergoing a **profound transformation**, from silos to an ecosystem of ecosystems

2. **Internet of Things (IoT) as a key enabler** of this transformation, from connecting and collecting to analyzing and transacting

3. **Cellular technologies** will play an important role in connecting “things”

4. **Horizontal cross-domain platforms** will enable new services and multi-sided business models that will change the landscape of the energy business


ERICSSON
www.ericsson.com/iot