



ERICSSON

# 2° SMART UTILITY OPEN METER SMART METERING AND SMART CITIES

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# FROM SMART GRID TO SMART CITIES



## Smart Cities Challenges for Smart Grid Communications Infrastructure



### INNOVATION

- › Long term technology sustainability
- › Open or easy to access technologies and protocols

### EFFICIENCY

- › Use of existing infrastructure (no redundant investments)
- › Open competition on services (no lock-in with providers)
- › Economies of scale

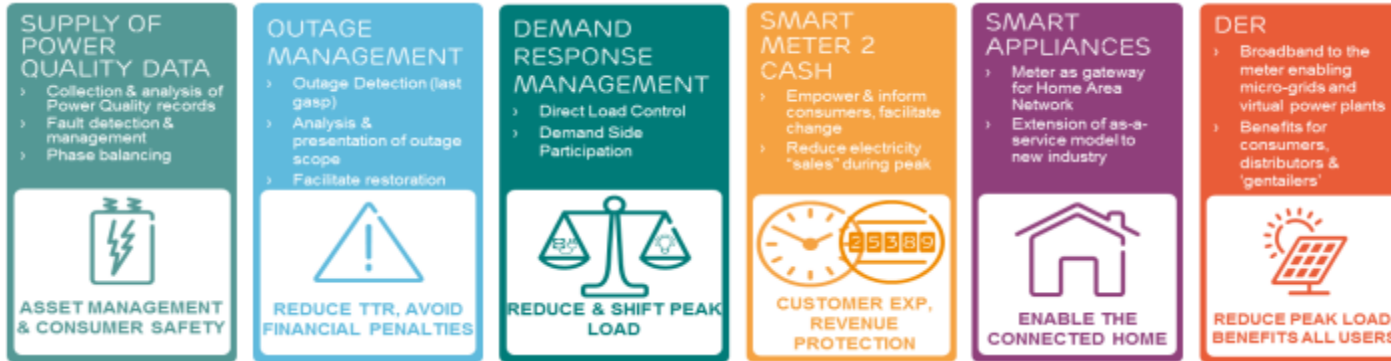
### SCALABILITY

- › Volumes, services (water, ele, waste, street lights, etc), geography scalability
- › Capable to enable smart city development

# IOT FOR SMART ENERGY CITIES



## ERICSSON APP AND SOLUTION ECOSYSTEM



- Ericsson app store with access to best of breed applications
- Flexible and scalable ecosystem
- Value creation

## Service Enablement

## M2M Connectivity

## Networks

## Terminals & Connected Devices



- Easy access to resources and capabilities for OpEx efficiency and T2M
- E2E service assurance (connectivity and services)
- Scalable on # devices and volume of data

## ERICSSON IOT AS A SERVICE

## Ericsson Transformation and Managed Service Capabilities

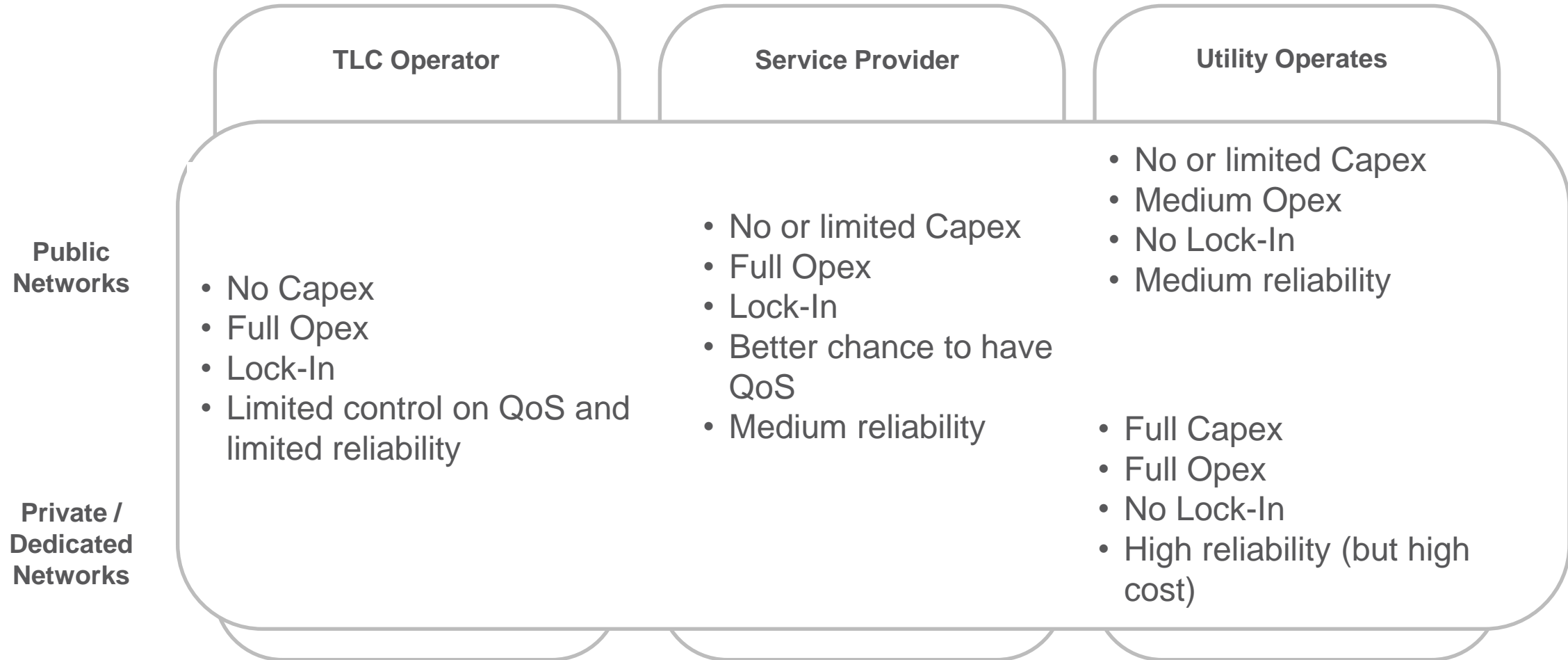


- SI and transformation capabilities
- Cloud and MS E2E offer

# SMART CITIES COMMS INFRASTRUCTURE



BUSINESS MODEL: THERE'S NO RIGHT BUSINESS MODEL...

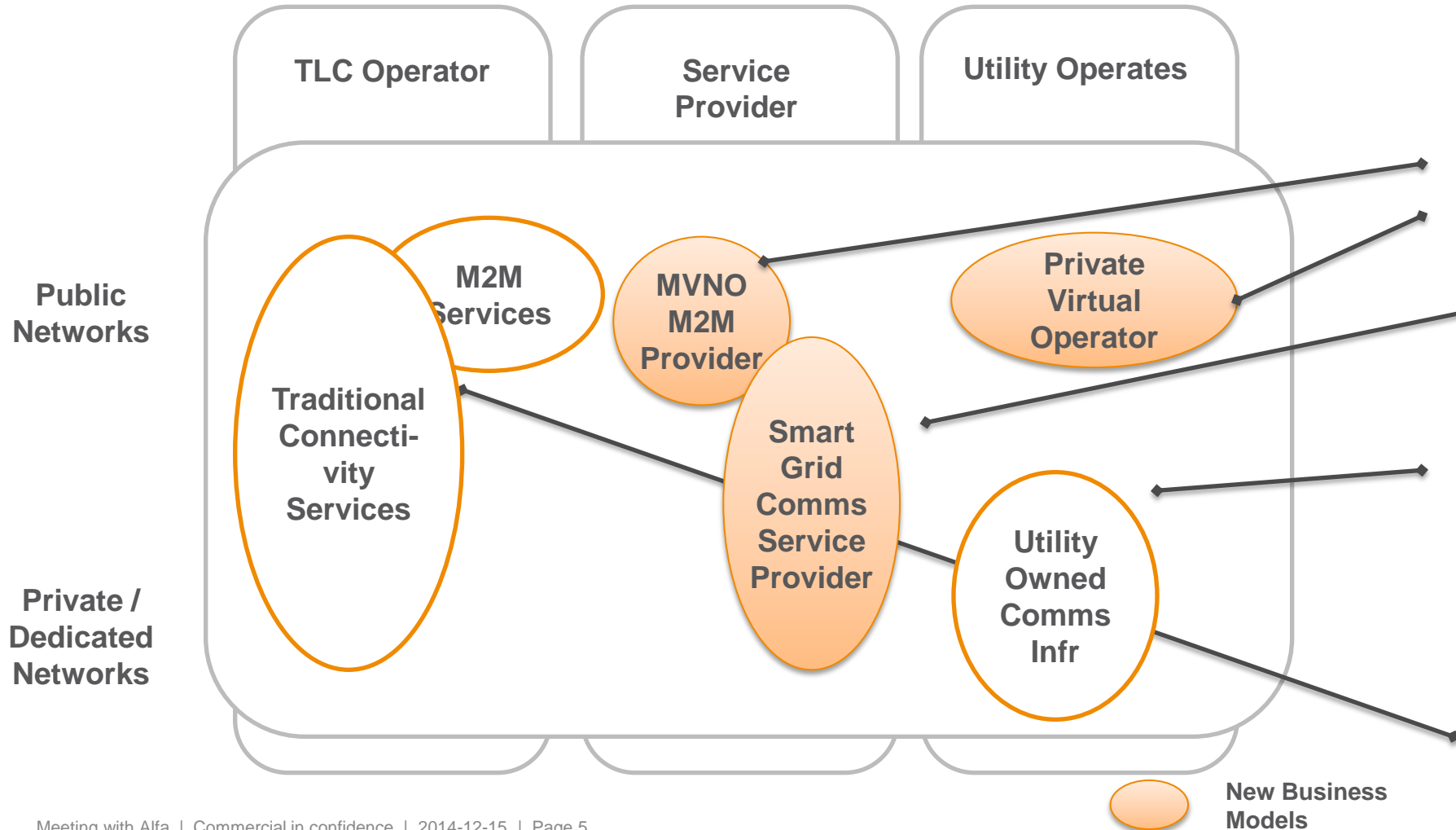




# SMART CITIES COMMS INFRASTRUCTURE



BUSINESS MODEL: NEW MODELS ARE EMERGING...



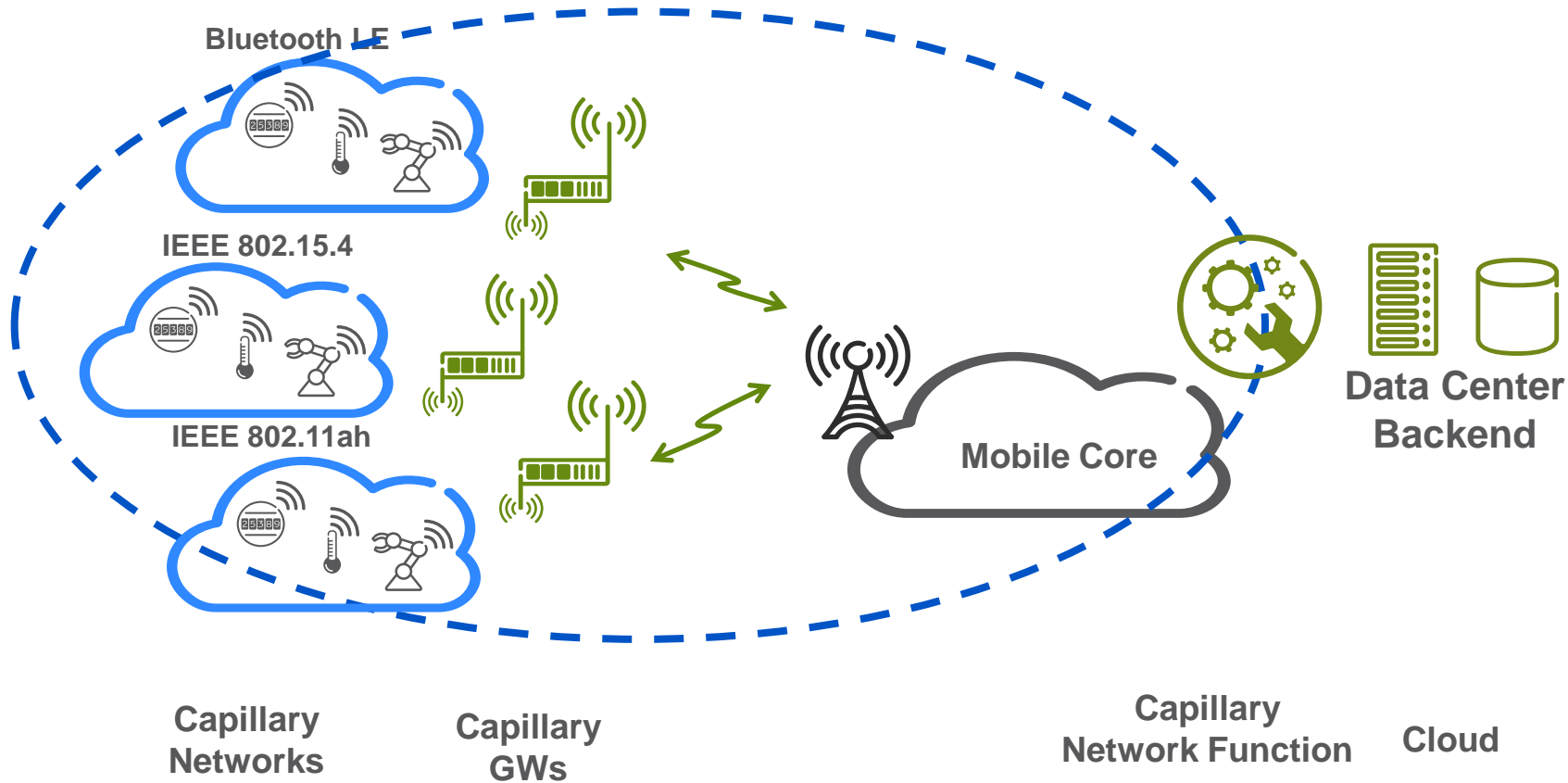
## Examples

- Netherlands issuing sub MNC codes for dedicated M2M providers. High interests from Utilities. SGaaS in Australia.
- DECC case in UK.
- Gas: 169mhz. Private LTE experimentation in Australia. Business case evaluation in some European countries. Some countries (i.e. Turkey) don't allow Utilities to own/operate any kind of TLC network
- New offering from TLC operators. Discussion on e-UICC / OTA provisioning

# SMART CITIES COMMS INFRASTRUCTURE EVOLUTION



## CAPILLARY NETWORKS – 5G – SMART GRID ACCESS NETWORKS



### FEATURES

- Bridging xAN-WAN
- Auto-configuration and Management
- Security
- Life-cycle robustness

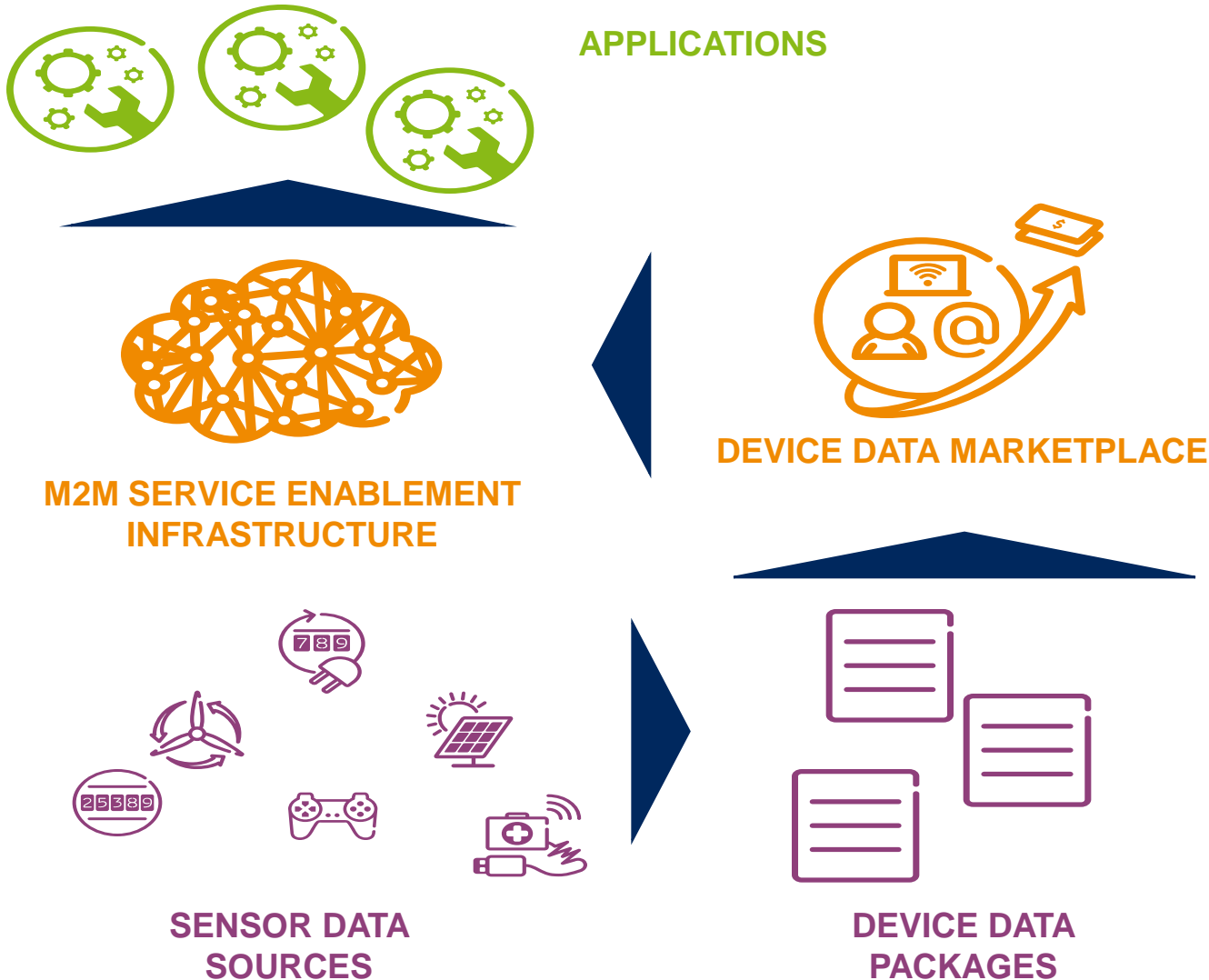
### USAGES

- Neighbourhood Area Networks
  - Buildings
  - Homes

Auto-Configuration, GBA Security, Dynamic Middleware, Dynamic GW Selection, Data & Storage

# SMART CITIES DEVICE DATA EXCHANGE

## MAIN CONCEPTS



### M2M SERVICE ENABLEMENT

The M2M Service Enablement layer guarantees a transparent access to devices, regardless of the connectivity technology, a uniform naming of such devices (usually through a URI), the exposure of a uniform API to developers, access control and secure access to devices, quality of service assurance and so on.

For the Device Data eXchange purposes, the M2M SE layer takes care of providing an API towards applications and enforcing the purchased service level conditions

### DEVICE DATA MARKETPLACE

Marketplace where device owners register the offerings (packages) they have created.

It provides the means for developers to search for suitable offerings, and payment features for purchasing offerings.

### DEVICE DATA PACKAGES

The basic data offering. They are logical grouping of data streams coming from specific sensors. They are defined by device owners for being offered through the market place, purchased by developers and used by them to create applications.

Each package must have a set of **descriptors** so that they can be searched by developers and a defined **service level** (and usually a price).

#### Descriptors

Tags defined by device owners so that developers can discover packages.

#### Service level conditions

They rule the way data coming from sensors will be offered to developers through the M2M Service Enablement infrastructure.

# ERICSSON APPROACH

## MAIN SCOPE OF WORK: AMR (LESSONS LEARNED)



### Learnings & Ericsson Value



Use Cases

- Explore integrated M2C, CEM and grid uses case
- Experience in diversified business context



Business Casing

- Holistic investigation of benefits/costs, consistently with BC
- Experience in multiple AMI projects/large programs



Interoperability

- Meters / HES/ MDM decoupling for long LC and reduced TCO
- Tech agnostic and diversified experience



E2E Architecture

- Suboptimal integration on M2M destroys most of AMR benefits
- World class SI and M2C (revenue assurance) capabilities and approach

### Learnings & Ericsson Value



Comms Planning

- No solutions fits all, most failures are in comms
- Leader in comms and experience in all SM comms techs



Piloting

- Pilots reduce risks in tech selection and increase readiness for deployment
- Solution templates on many technologies.



Roll-Out and Fine Tuning

- Mistakes in roll-out determines most of additional costs
- Team with large experience in large /complex roll out and on multiple technologies



Operations

- Fast ramp up of operations and e2e control
- Vast experience in SMaaS, with proven processes, tools and methods.



# ERICSSON TRUE GLOBAL PLAYER IN UTILITIES

## INNOVATION

Participating in several projects as GAD, Stockholm Royal Seaport, Ausgrid, Finseny/Finesce, Address, Price and Elviis

## GLOBAL

Smart metering Competences in 3 continents



## E2E Capabilities

Multi platform design, deployment and management capabilities on e2e chain for Smart Metering (comms - PLC, RF and Cellular, headend and MDM) and Smart Grid Comms

## STANDARDS

Participating in several standardization bodies for utilities such as mandates M441 and M490, ESMIG, ETSI M2M, NIST, IEEE, UTC, GWAC, etc.

42 MILLIONS

meters managed by platforms developed, operated or maintained by Ericsson

10

Utilities HAVE SELECTED ERICSSON'S SMART METERING AS A SERVICE MODEL

>20%

SAVINGS In cost of communications operation

>150

Skilled resources in Smart Metering CC in Italy, Estonia, Romania, Finland, India and Australia



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