Access Partnership

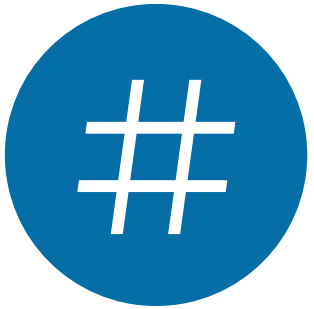
Getting IoT Regulations Right

London | Brussels | Washington | Singapore | Abu Dhabi | Johannesburg | Sydney

Regulatory Observations

Connectivity

Spectrum



Numbering and Identifiers

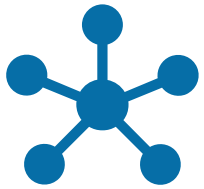
Type Approval

Privacy

Traditional Services and IoT

	TRADITIONAL SERVICES	IoT
Connected elements	People	Things
Core Service	**Connectivity**	**Application and device**
Footprint	National	Global
Connectivity ARPU	High	Low
Business Model	B2C or B2B	B2B2C or B2B2B

What is IoT?



Network/Connectivity

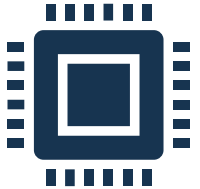
mostly public but could also be private

Data

data is transmitted by the IoT solution

Device

new or existing device



Sensor/Actuator

sensors trigger a reaction by actuators

The applications are endless and will impact our lives at all levels, making connectivity our basic world.

Forecast for IoT devices: 20 billion.

source: GSMA

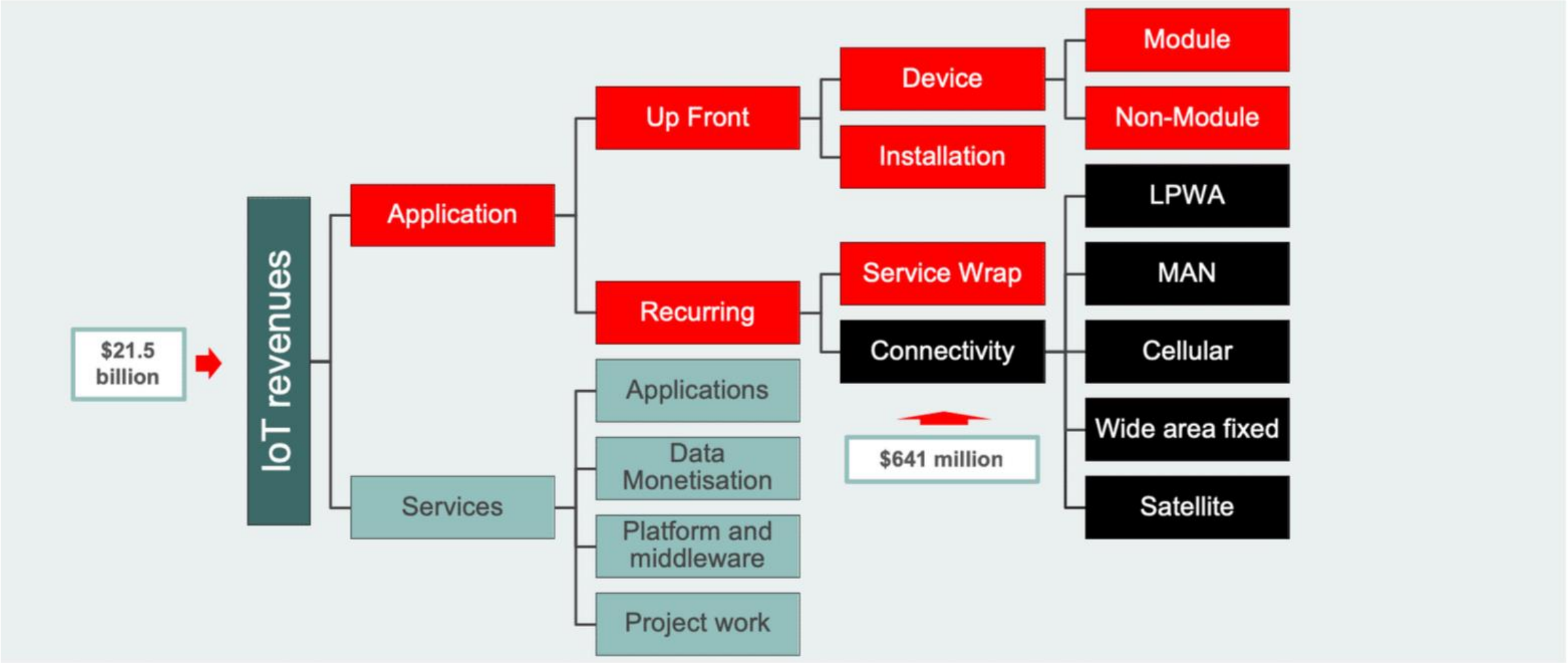
Connectivity in the IoT Value Chain

Typical role of an operator

Provided by an operator or third party

source: GSMA

Connectivity in the IoT Value Chain



Note from Gartner: IoT application forecasts are done on a bottom-up basis and relate to end users buying devices and making recurring payments for services associated directly with those devices. The IoT services forecasts are a top-down estimate of the part of the IT industry that is now focused on IoT.

source: GSMA

Regulatory Observation – **Connectivity**

	Traditional Services	IoT
Connectivity	The operator responsible for the conveyance of signal is subject to telecom licensing.	Do all players of the IoT value chain require a telecom license?

Risk: connectivity and licensing are relevant as a number of obligations are connected to the status of telecommunications service providers.

Recommended Solution: not all IoT players should need a telecom license

Network Technologies Supporting IoT

Satellite

covers continents – sensitive to obstacles and weather conditions

Traditional Cellular

up to 10 Km – penetrates buildings

LPWA

up to 40 Km – reaches devices located deep underground

Local Area IoT Network and General Local Area Network

indoor coverage – from a few metres up to 100 metres

Quality of Service is closely linked to spectrum.

Regulatory Observation – **Spectrum**

	Traditional Services	IoT
Spectrum	The use of dedicated spectrum is subject to frequency licensing.	• No harmonized spectrum for IoT • Not clear if IoT providers will have to license each device.

On Spectrum Harmonization:

- *What* – Spectrum harmonisation can help speed the growth of the global IoT market.
- *How* – Uniform allocation of radiofrequency bands under common technical and regulatory regimes across entire regions.
- *Who* – Governments can have a significant impact on the IoT ecosystem via spectrum harmonisation.

Regulatory Observation – **Numbering and Identifiers**

	Traditional Services	IoT
Numbering and Identifiers	A licence is required for the assignment and use of numbers and identifiers.	• Not specific numbering ranges for IoT • The extraterritorial use of numbers is usually restricted

Regulators should avoid barriers in terms of extraterritorial use of numbers and permanent roaming.

Regulatory Observations

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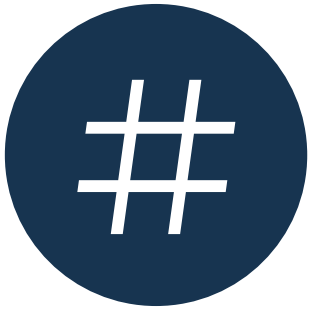

Numbering and Identifiers

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Regulatory Observation – **Type Approval**

	Traditional Services	IoT
Telecommunication Equipment Type Approval	Telecommunication equipment is subject to national type approval requirements.	IoT devices will be deployed at scale, creating a considerable challenge for providers to test them in each country of interest.

Regulators should promote international standards for IoT in order to ease the type approval requirements.

Type approval also has a security and safety element connected to it.

Regulatory Observation – **Privacy**

Why is privacy relevant?

→ Potential of the IoT to generate and collect an extensive amount of data
→ Data protection requirements extend to all players of the IoT value chain – especially manufacturers (“privacy by design”)

Challenges

- Not harmonised data protections rules
- Data localization requirements

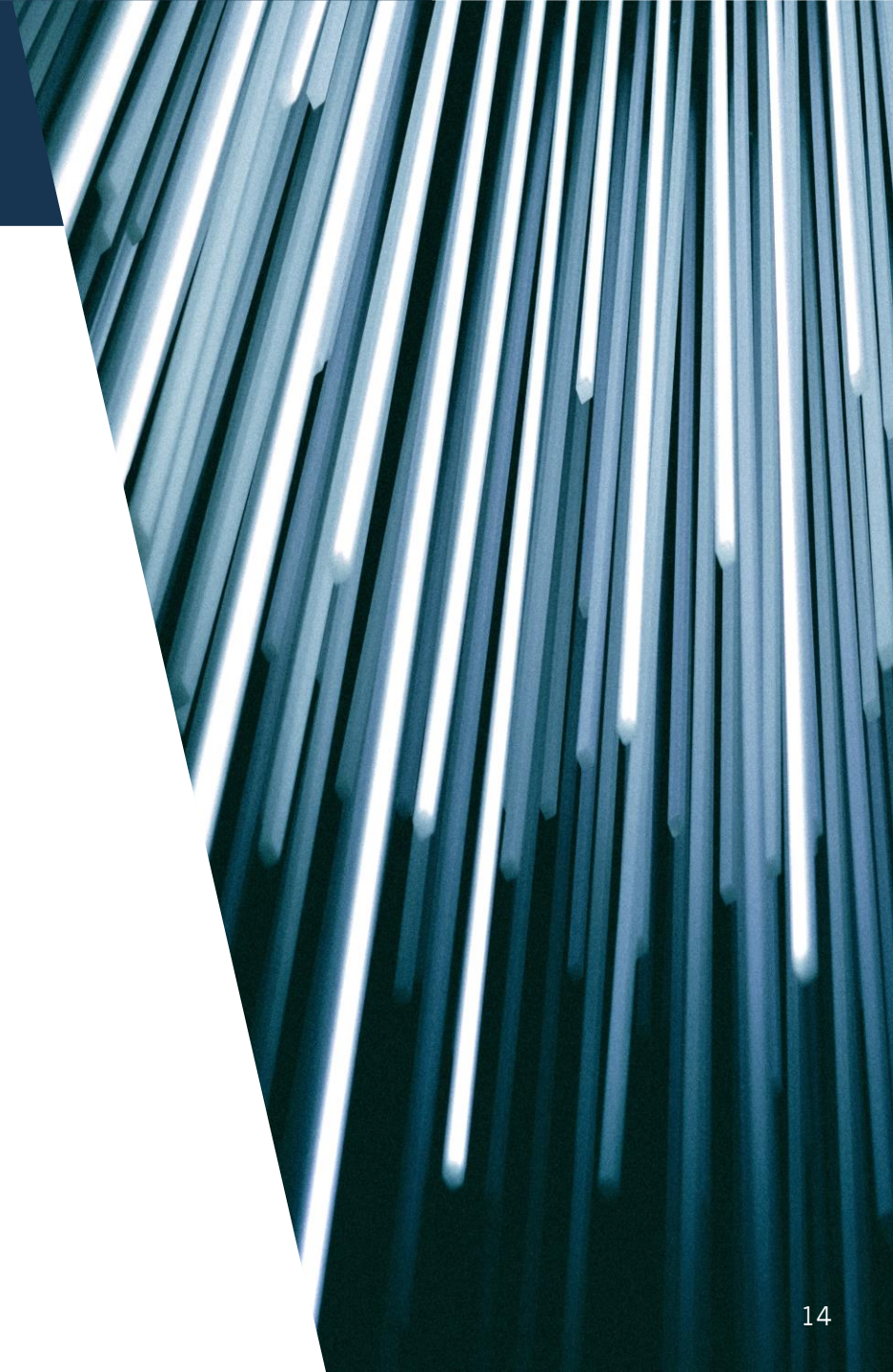
Solutions

- Ensure privacy framework are fit for the digital area
- Facilitate cross-border data flows and removing unnecessary localisation measures

Access Partnership Capabilities

Our Capabilities:

- Monitor and analyse policies and standards for their impact
- Design and implement advocacy campaigns
- Manage spectrum, numbering and addressing
- Drive outcomes of data protection and privacy debates
- Promote technology standards and development



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