IOT STANDARDS ECOSYSTEM
WHAT'S NEW?
IOT WEEK GENEVA 2017

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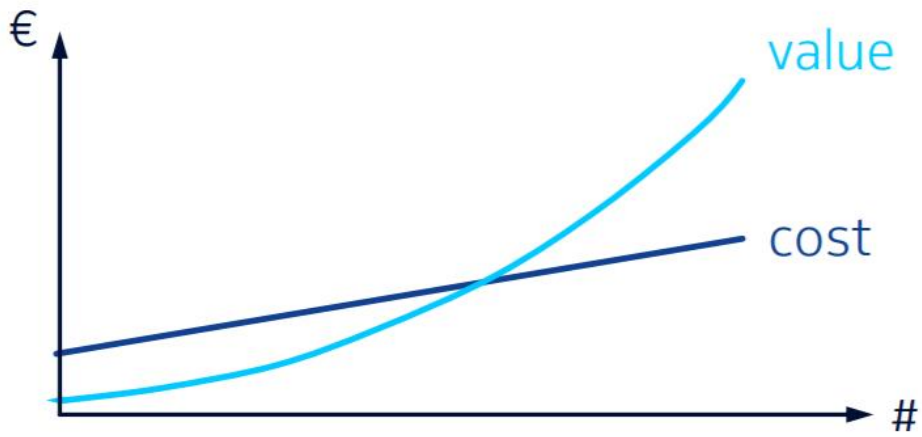
oneM2M www.oneM2M.org

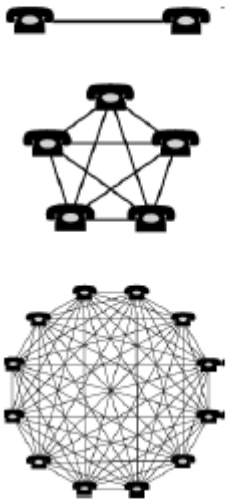
Metcalfe's law

The value of a network is proportional to the square of the number of its nodes – while the cost follows a more or less linear function



IoT value will come through Metcalfe's law, IF we solve interoperability issues

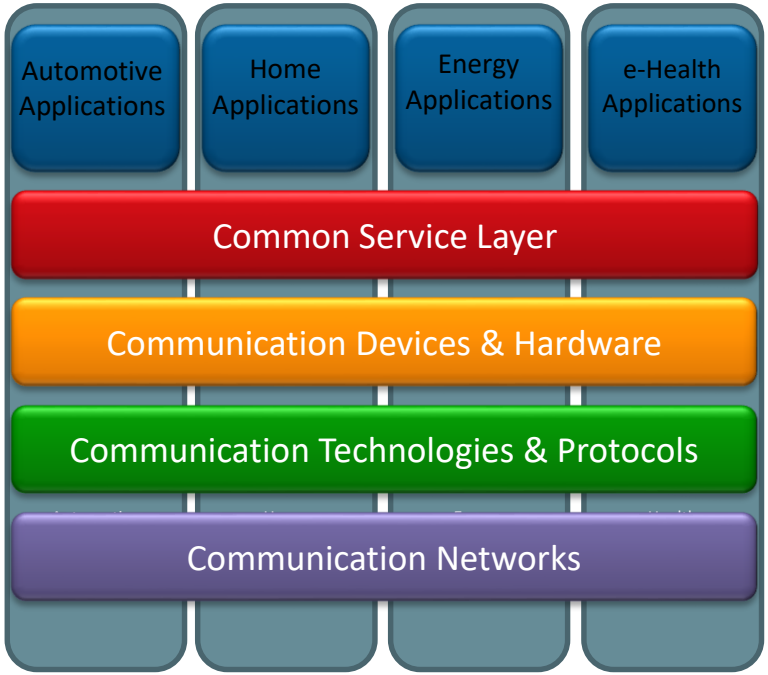
Point-to-point Integrations don't scale



Creating new integrations is unpredictable

Monocultures lock you in

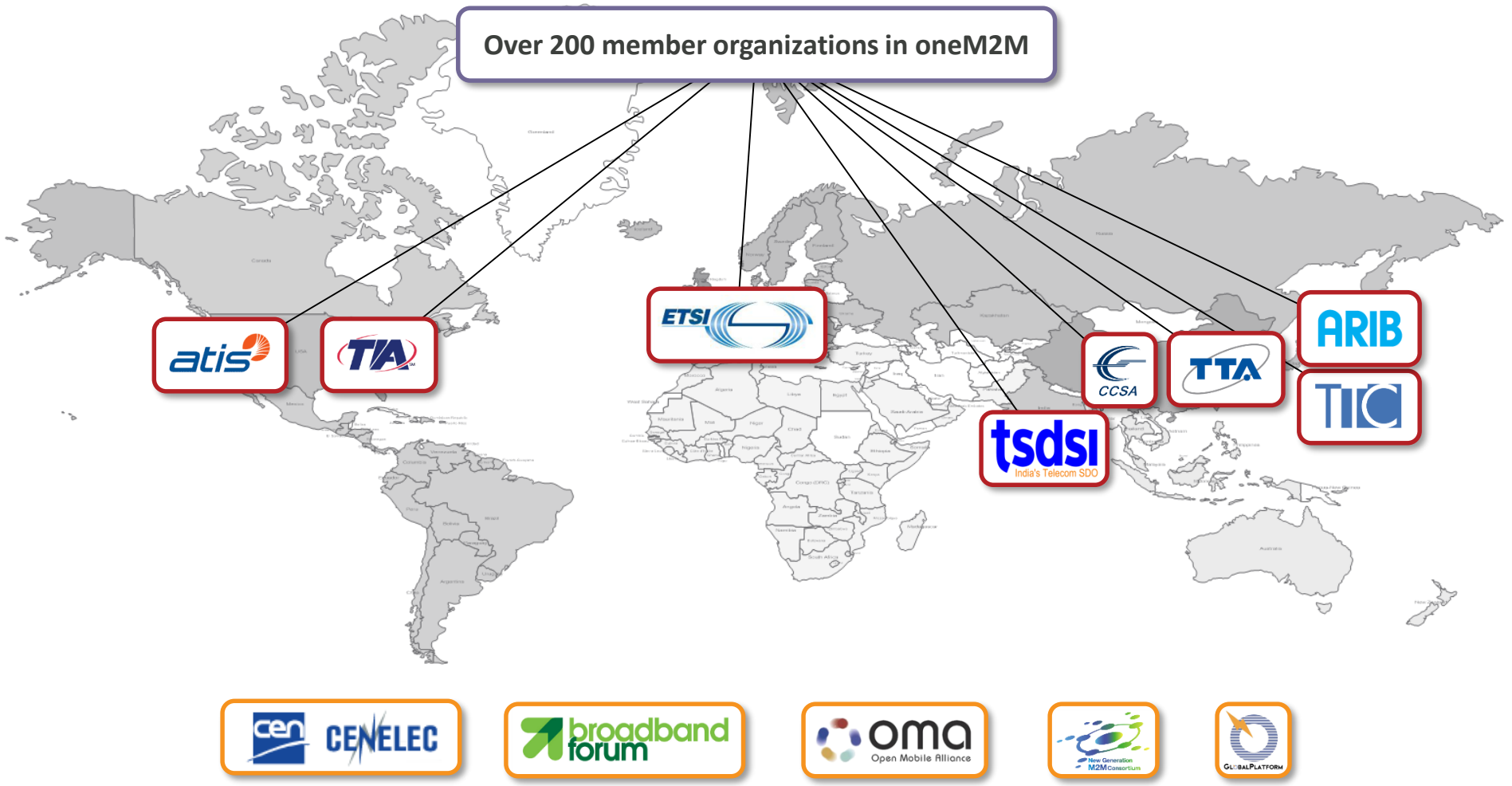
Past choices restrict present action and future vision



Platform based integration
open standards and open source are key

Source: CRYSTAL project/Philips

oneM2M Partnership Project



www.oneM2M.org

All document are publically available

M2M Common Service Layer in a nutshell

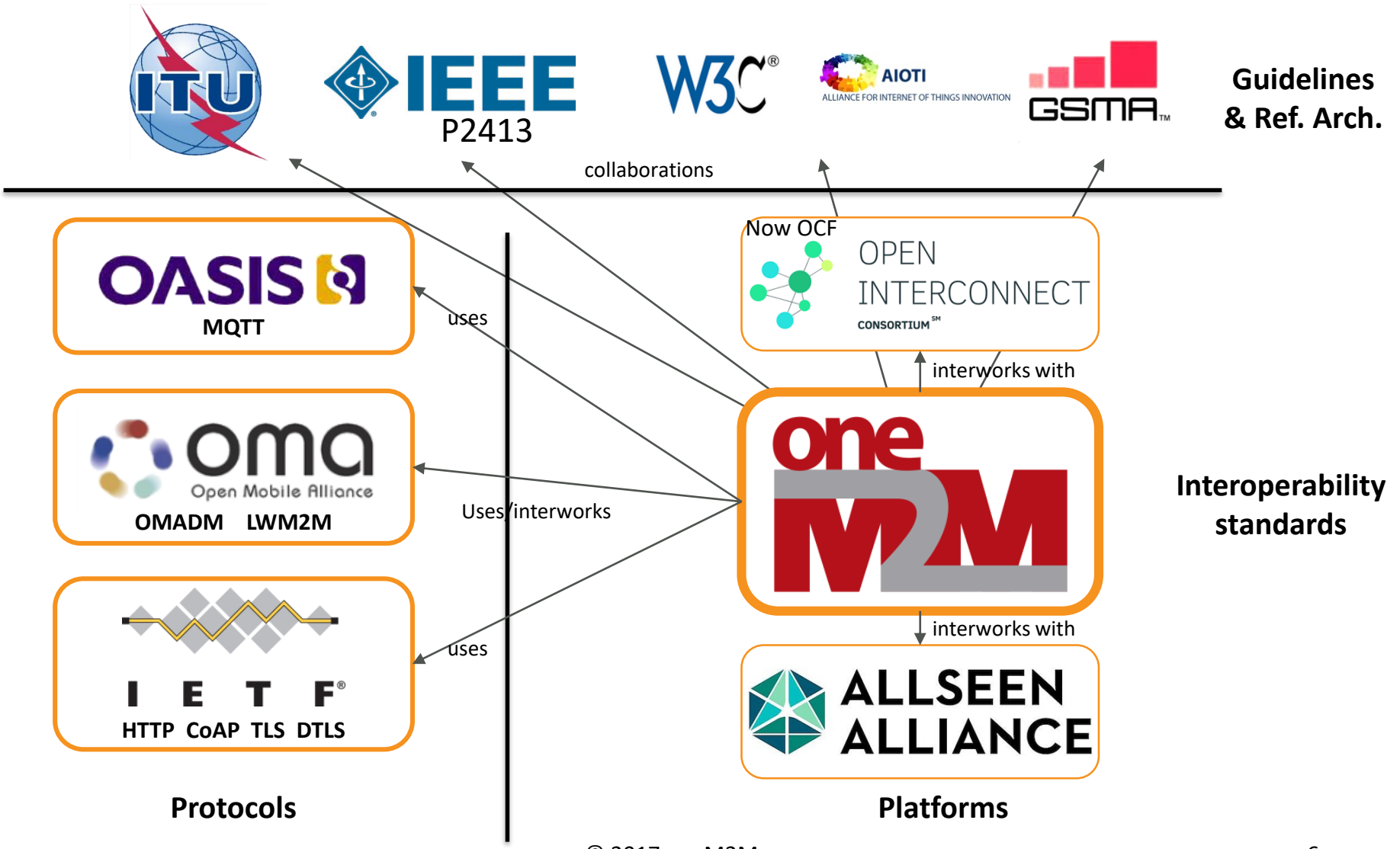
A software “framework”

Located between the M2M applications and communication HW/SW that provide connectivity

Provides functions that M2M applications across different industry segments commonly need (eg. data transport, security/encryption, remote software update...)

Like an “Android” for the Internet of Things
But it sits both on the field devices/sensors and in servers
And it is a standard – not controlled by a single private company

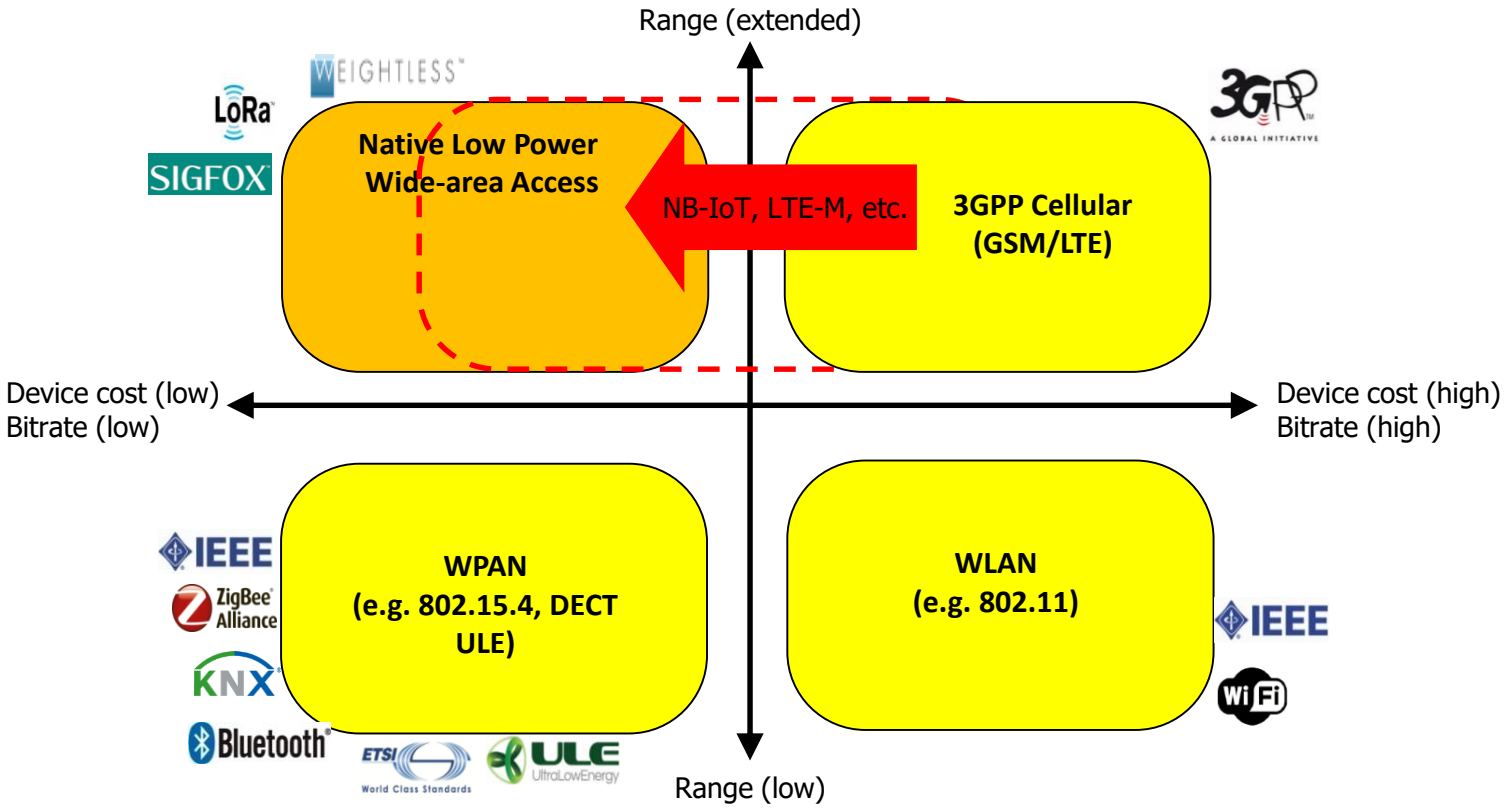
Ongoing collaborations convergence/consolidation begining to happen?



Why oneM2M? Why now?

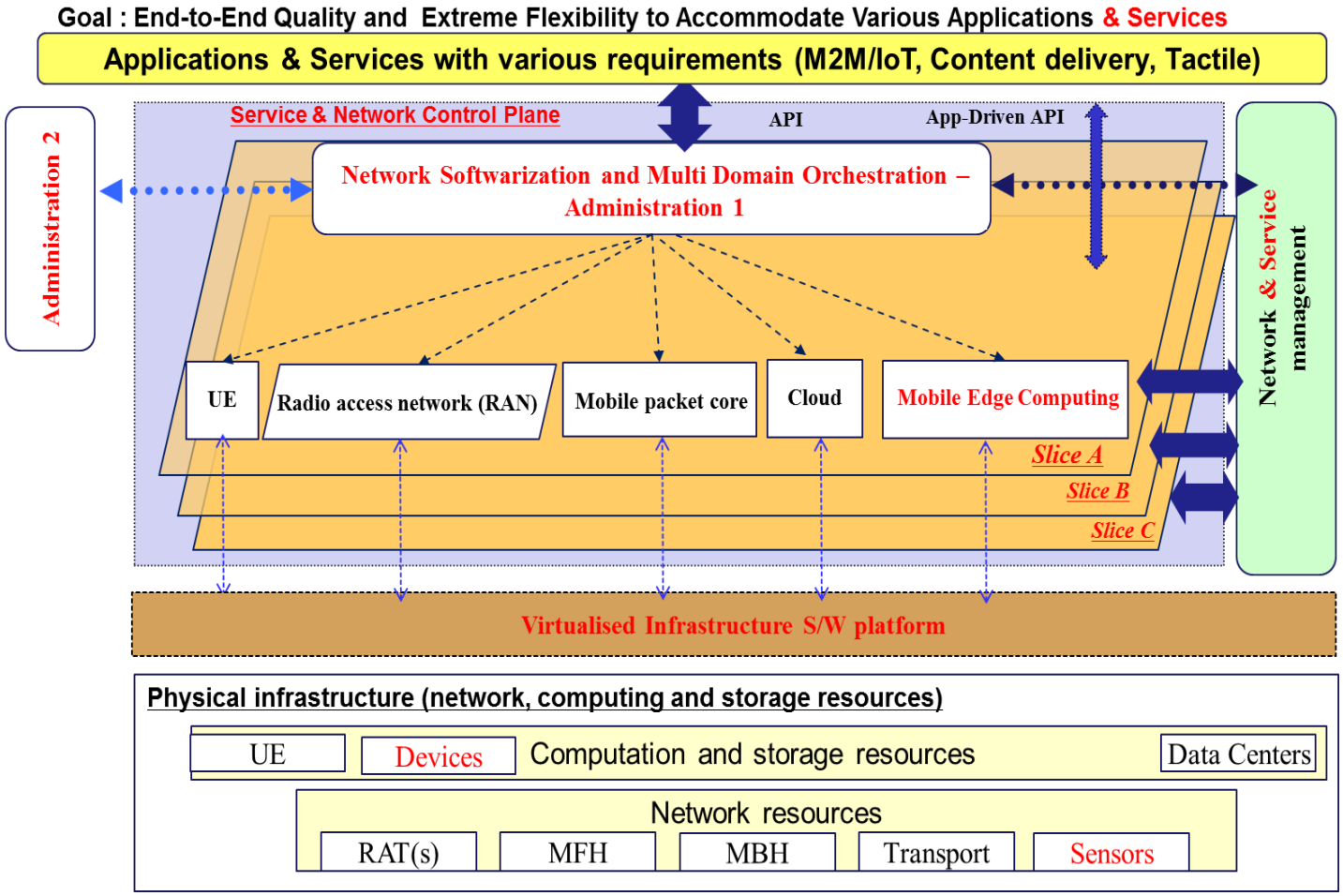
- M2M (and IoT) communications existed for so many years, e.g.:
  - SCADA systems
  - Satellite based truck tracking
- So why oneM2M?
  - *Specific standards exist* for home automation, smart factory, energy management, etc. but much larger growth will come from a fully integrated Internet of Things
  - The IoT vision will not materialize if we do not solve interoperability issues, therefore drive down integration costs and ensure time to market
- Why now?
  - Technology is ready for an *outcome based economy* for a large number of use cases, more than what one can think of

Technology 1: connectivity, plenty to chose from



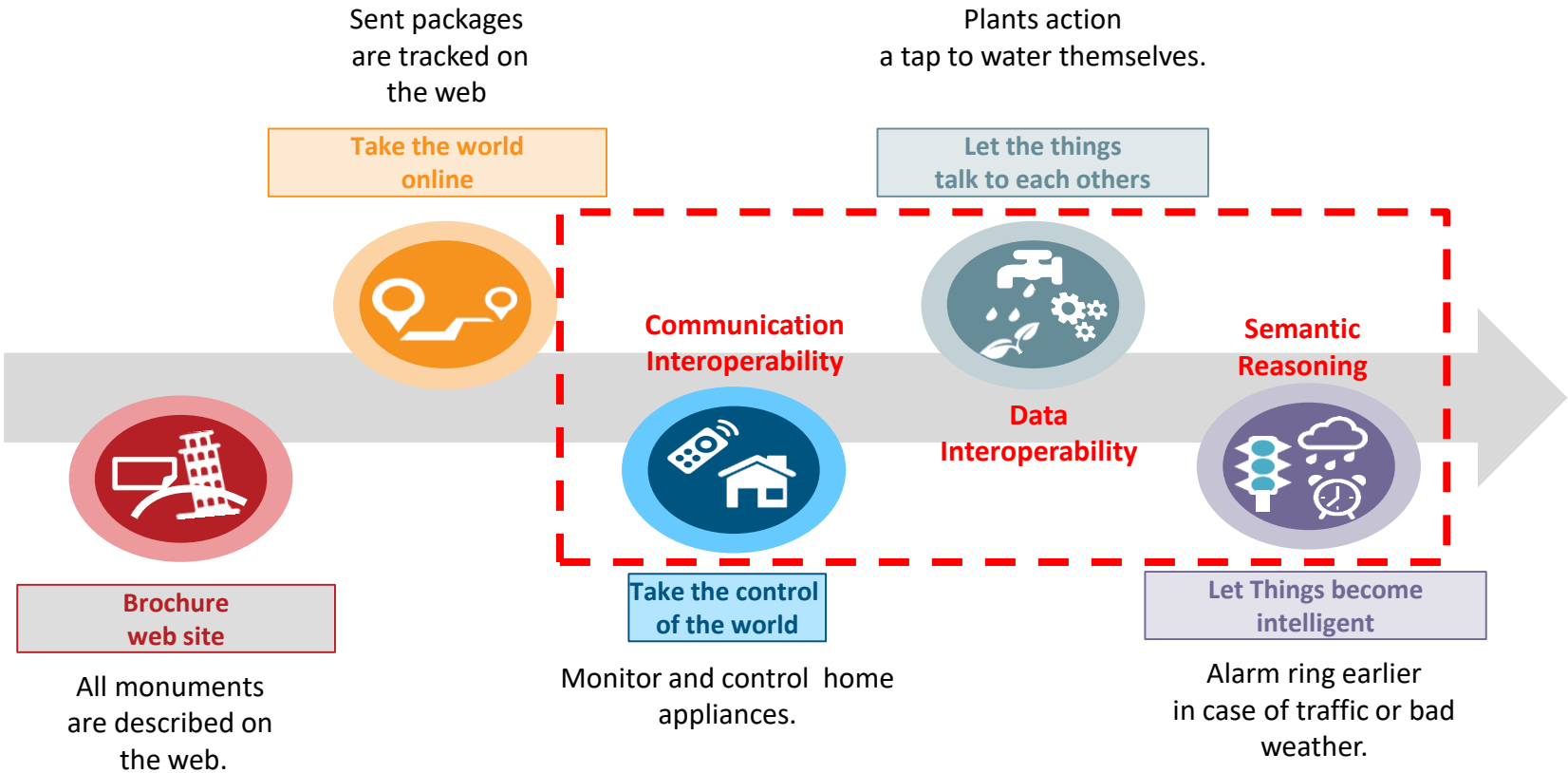
Source AIOTI, modified from an ALU contribution

Technology 2: “softwarization” and IoT virtualization mean SCALE



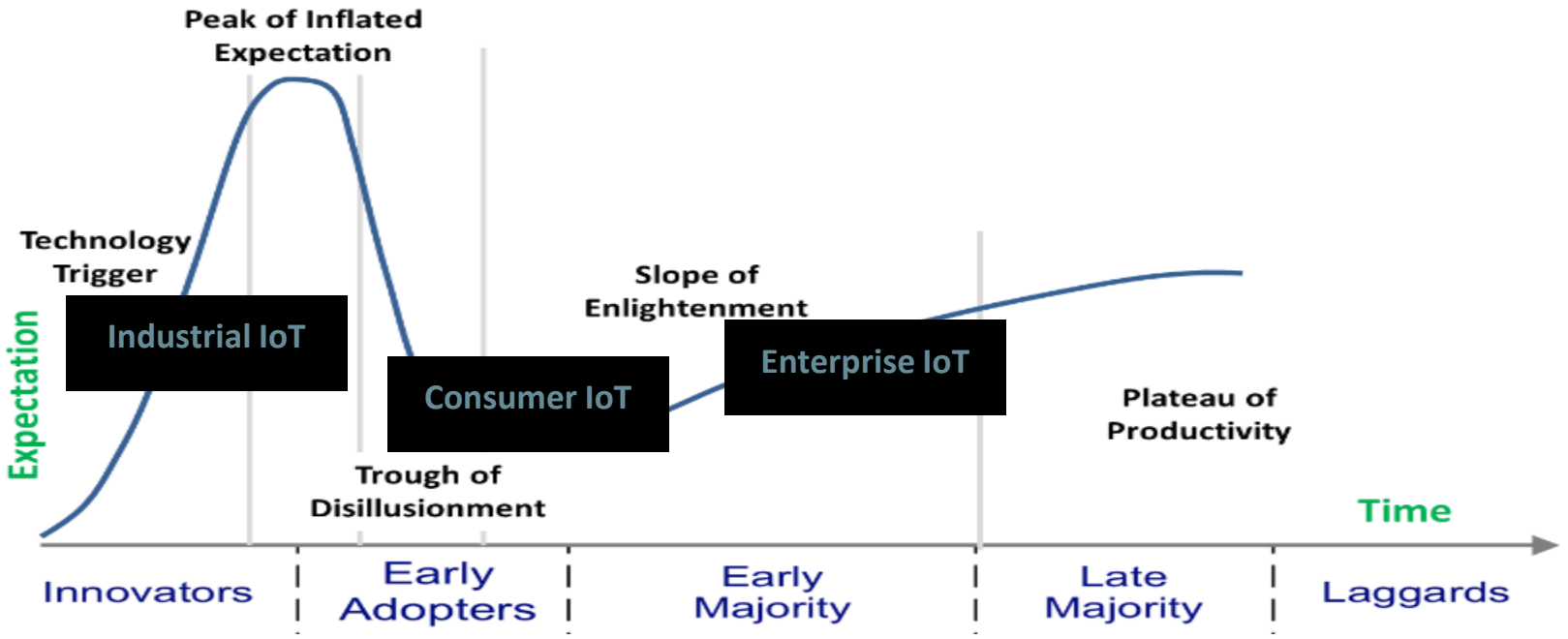
Source: ITU-T Focus Group IMT2020

Technology 3: Semantic interoperability, no longer a research syndrome?



Source: sensinov

Industrial IoT becoming a major focus area



Common requirements

Consumer IoT	• Constrained and battery operated devices, wearables • Mostly best effort communications • Limited mobility • Centralized Analytics
Enterprise IoT	• Less constrained devices • Medium to high mobility • Tracking and identification • SLA and QoS may be critical for some use cases • Distributed and centralized analytics
Industrial IoT	• Powerful devices (Machines) • High mobility • SLAs and network QoS are key • Deterministic networking • Granular timing and synchronization (time series) • Real time / largely distributed analytics

Summary of Release 3 Features

Smart City and Automotive Enablement

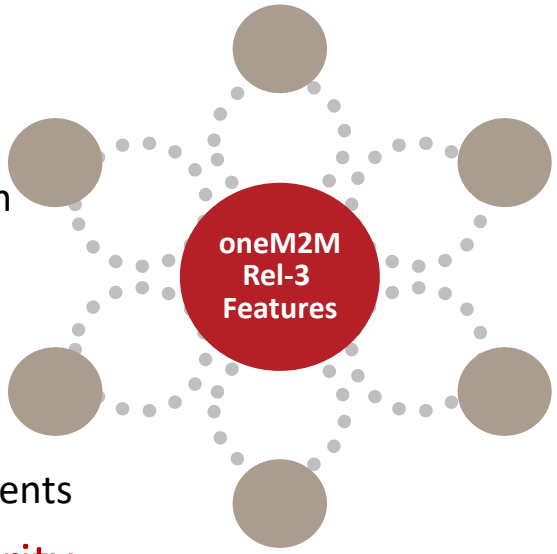
- Service Continuity
- Cross resource subscriptions

Industrial Domain Enablement

- Atomic Transactions
- Action Triggering
- Optimized Group Operations

Market Adoption

- Developer Guides
- oneM2M Conformance Test
- Feature Catalogues
- Product Profiles



Management

- M2M Application & Field Domain Component Configuration

Semantics

- Semantic Querying
- Semantic Mashups
- oneM2M Ontology Enhancements

oneM2M Interworking

- 3GPP SCEF
- OMA LWM2M
- DDS
- OPC-UA
- Modbus
- Proximal IoT
- OSGi
- W3C WoT

Security

- Enrollment & Authentication APIs
- Distributed Authorization
- Decentralized Authentication
- Interoperable Privacy Profiles
- Secure Environment Abstraction