



SYNCHRONICITY WORKSHOP: INTERNATIONAL IOT
PLATFORMS FOR SMART CITIES INITIATIVES
GENEVA JUNE 6TH 2017

Presenter: Omar Elloumi, oneM2M TP Chair, Nokia Bell-Labs and CTO group
omar.elloumi@nokia.com

oneM2M www.oneM2M.org

Nearly 40% of economic impact requires interoperability between IoT systems



Nearly 40 percent of economic impact requires interoperability between IoT systems

Potential economic impact of IoT¹

\$11.1 trillion



Value potential requiring interoperability \$ trillion	% of total value	Examples of how interoperability enhances value
Factories 1.3	36	Data from different types of equipment used to improve line efficiency
Cities 0.7	43	Video, cellphone data, and vehicle sensors to monitor traffic and optimize flow
Retail environments 0.7	57	Payment and item detection system linked for automatic checkout
Work sites 0.5	56	Linking worker and machinery location data to avoid accidents, exposure to chemicals
Vehicles 0.4	44	Equipment usage data for insurance underwriting, maintenance, pre-sales analytics
Agriculture 0.3	20	Multiple sensor systems used to improve farm management
Outside 0.3	29	Connected navigation between vehicles and between vehicles and GPS/traffic control
Home 0.1	17	Linking chore automation to security and energy system to time usage
Offices 0 ²	30	Data from different building systems and other buildings used to improve security

¹ Includes sized applications only; includes consumer surplus.

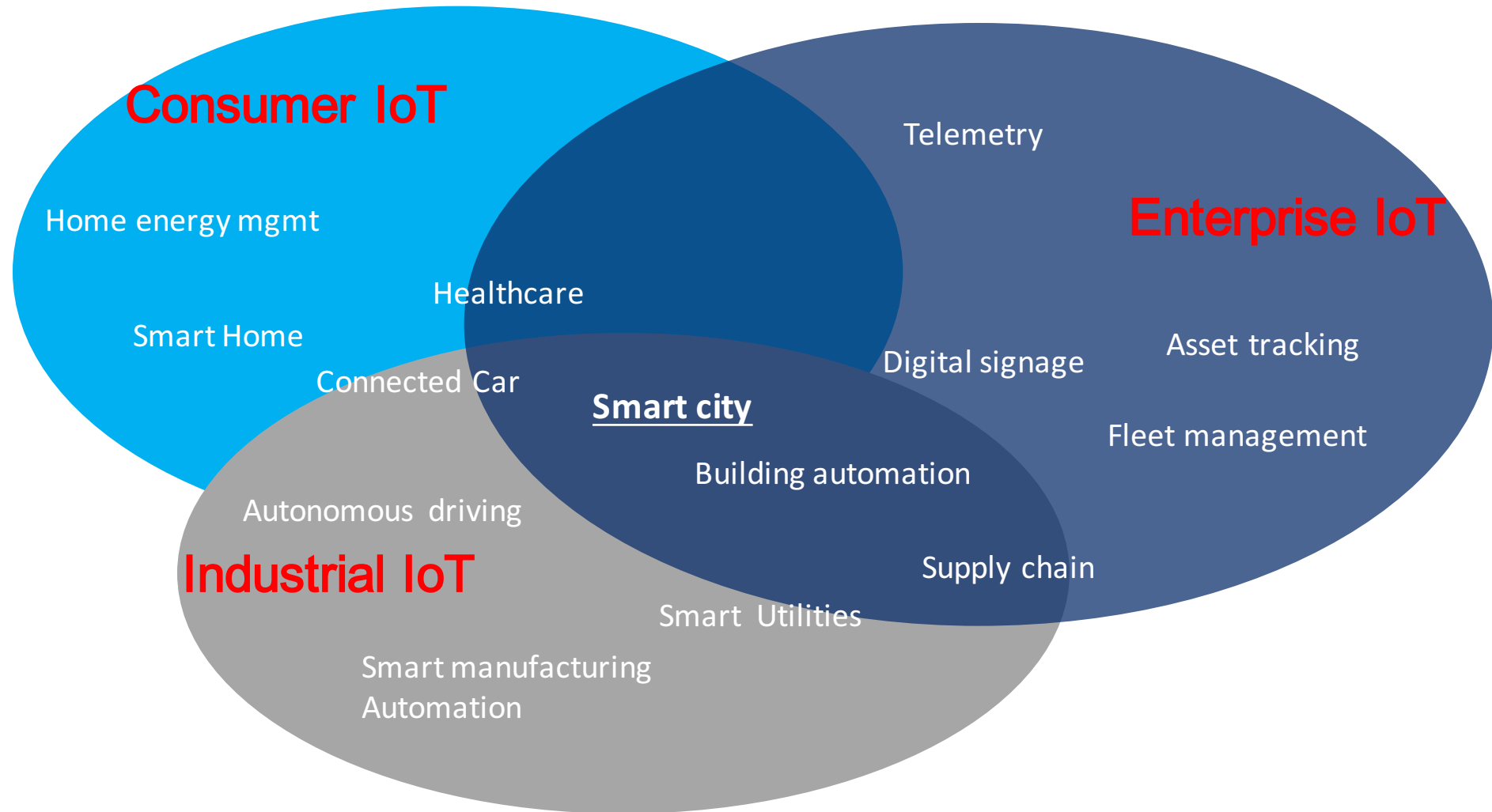
² Less than \$100 billion.

NOTE: Numbers may not sum due to rounding.

SOURCE: Expert interviews; McKinsey Global Institute analysis

Source: McKinsey

... in particular true do Smart Cities



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...)

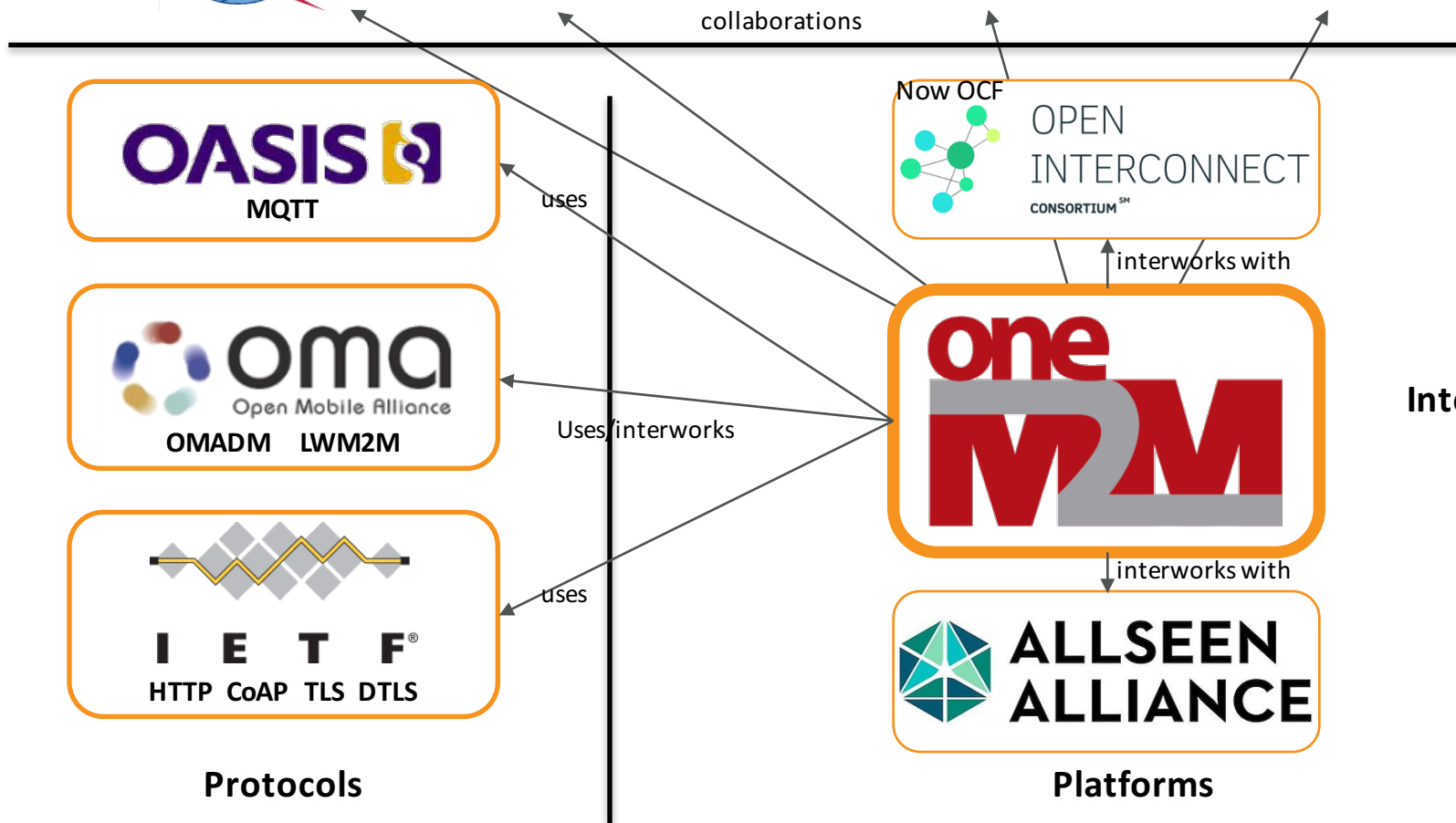
Like an “Android” for the Internet of Things
But it sits both on the field devices/sensors and in servers
And it is a standard – not controlled by a single private company

Nobody can do it alone

Ongoing collaborations



Guidelines
& Ref. Arch.



Key requirements for smart city IoT platform

Horizontal platform for new deployments

- Smart city is an **incremental and participatory** journey
- New deployments should, where possible, **leverage a converged networks and an horizontal service platform**
- **Open standards** are key to avoid lock-in and master the total cost of ownership

Existing deployments

- **Do not disrupt** existing “vertical deployment” but seek opportunities for an integration path with an horizontal approach
- **Build value** through mash-ups and open data

Participatory and innovative approach

- Surveys
- Address **needs for innovation** through app development:
 - **APIs**
 - **Access to, eventually semantically enriched, Open data** (where feasible and subject to privacy legislation/citizen consent)

Security and (device) management are key

- Despite initial focus on IoT data, there is an increased interest in security and device management (which go hand in hand).
- Need arises from security threat analysis conducted recently: e.g. “**Two researchers analyzed smart meters widely used in Spain and discovered that those can be hacked by attackers to harm the overall National power network.**”, source: <http://securityaffairs.co/wordpress/29353/security/smart-meters-hacking.html>

oneM2M answer



Cloud apps

