



The Internet's & Mobile's Third Era: “Connected Network Society”

Mahbubul Alam
Connected Industries BU
Cisco Systems Inc.

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Outline

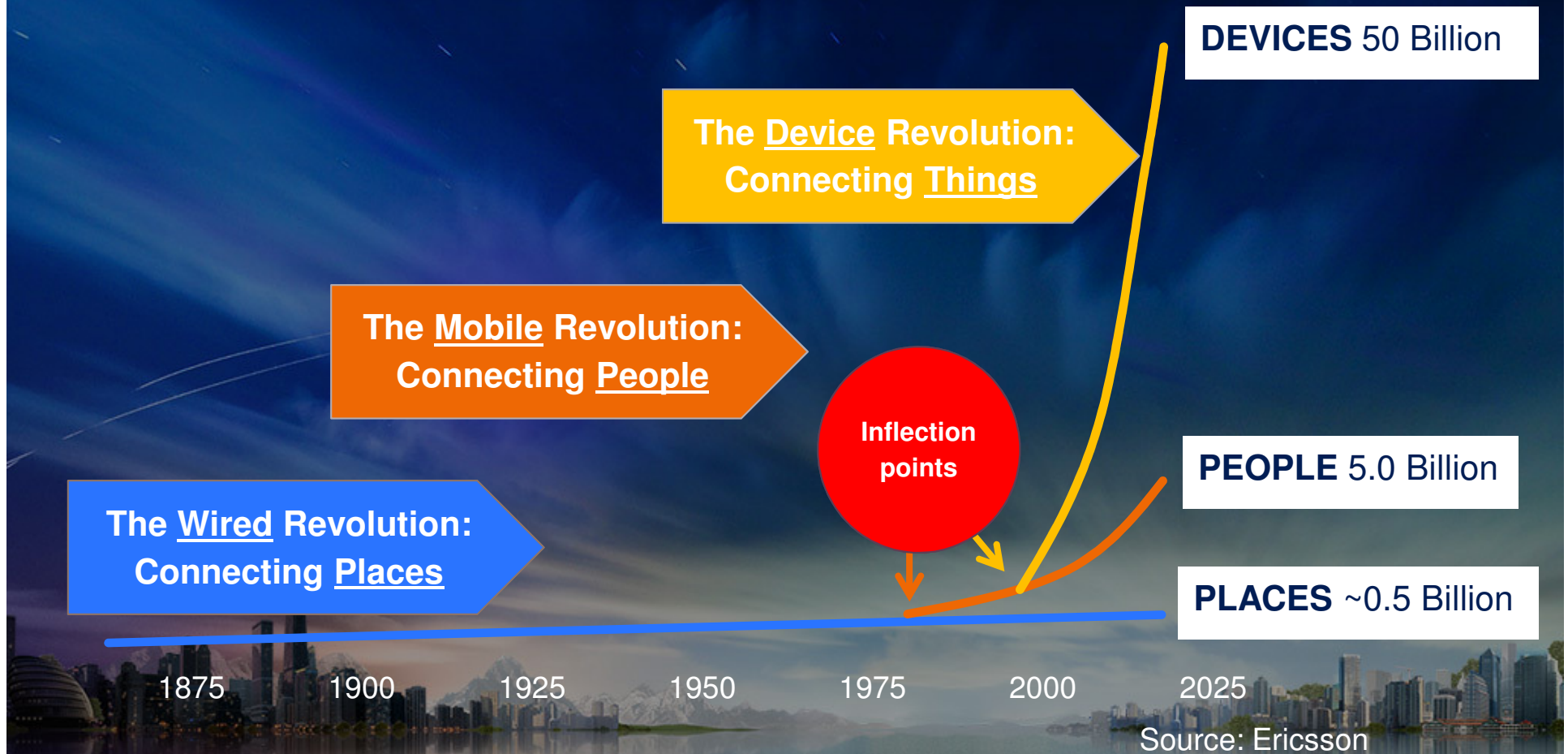
- What is Connected Network Society?
- Architecture of Internet-of-Things
- Architecture of SP Machine-to-Machine
- Sticky Technology Architecture
- Role of APIs
- Areas for Innovation
- Q&A

What is Machine to Machine Communication?

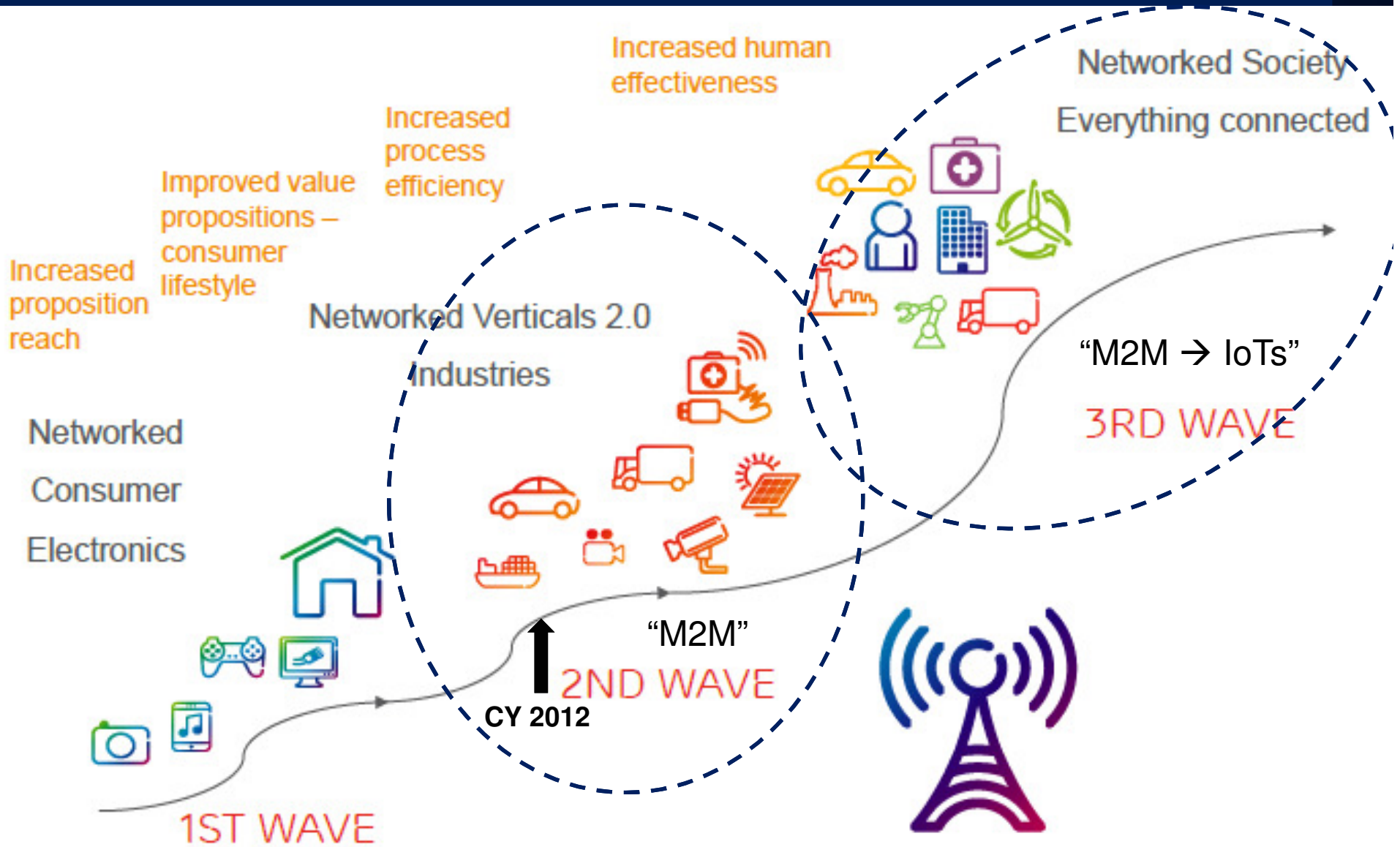


M2M

Anything that can Benefit from Connectivity will be Connected to the Internet



Improves Business Process Efficiency & Productivity



Evolution of IP and Mobile Networks

The Internet's & Mobile's Third Era

Cloud Services

**Trillion IoTs
IP End Points**

Trillion Wireless M2M

**Billion IP Device
Office & Home**

**Billion Mobile Voice,
Internet, SMS**

**Million PC /
Laptop**

Million Voice

**Connected Network Society
"Internet of People"**

**The Evolution of
IP Networks**

**The Evolution of
Mobile Networks**

Network Provides Ultimate User Experience

- It brings Consumer Electronics, Content, Communication and Cloud Services Together!



The M2M/ IoTs Hierarchical Architecture

Energy

Smart Cities

Connected Cars

Healthcare ...

Data Center

Hosting IoT analytics

IoT
NMS
Apps



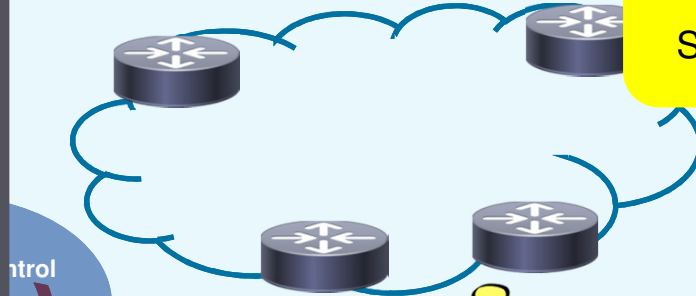
Data Center Computing, Storage, Networking
Cloud Computing
Services/Apps Delivery Support
Cisco's Apps

Core

IP/MPLS, Security, QoS, Multicast

Thousands

IoT Innovation



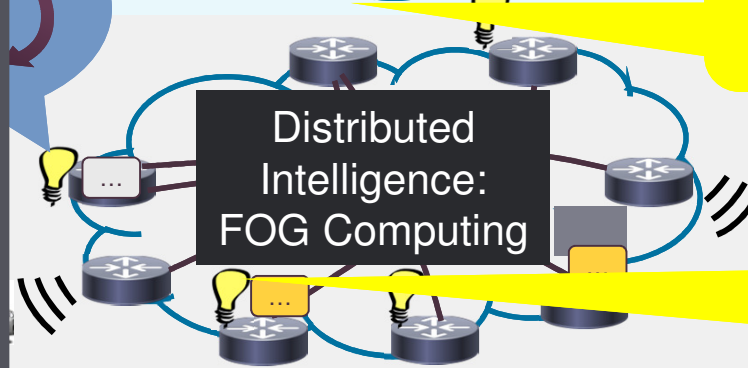
Mobility and Infrastructure Routing,
Distributed Data Center/Fog Service Delivery Support

Multi-Service Edge

3G/4G/LTE/WiFi

Million

Ruggedized Platform
Hosted App.
Distributed Intel.



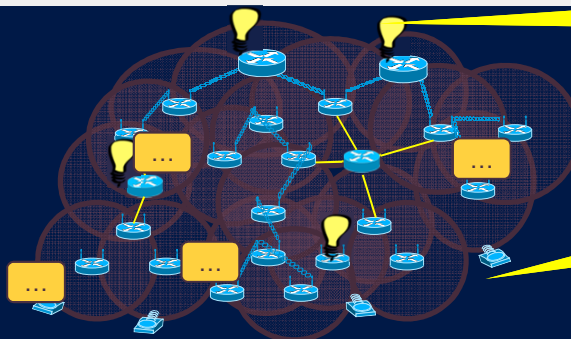
Edge Routing, Wireless/Mobile AP, Fog Computing/Storage, Industrial Ethernet

Embedded Systems and Sensors

Low power & bandwidth, smart things

Trillion

IoT Access Network
Lightweight IP + OS
Zero Touch Prov.

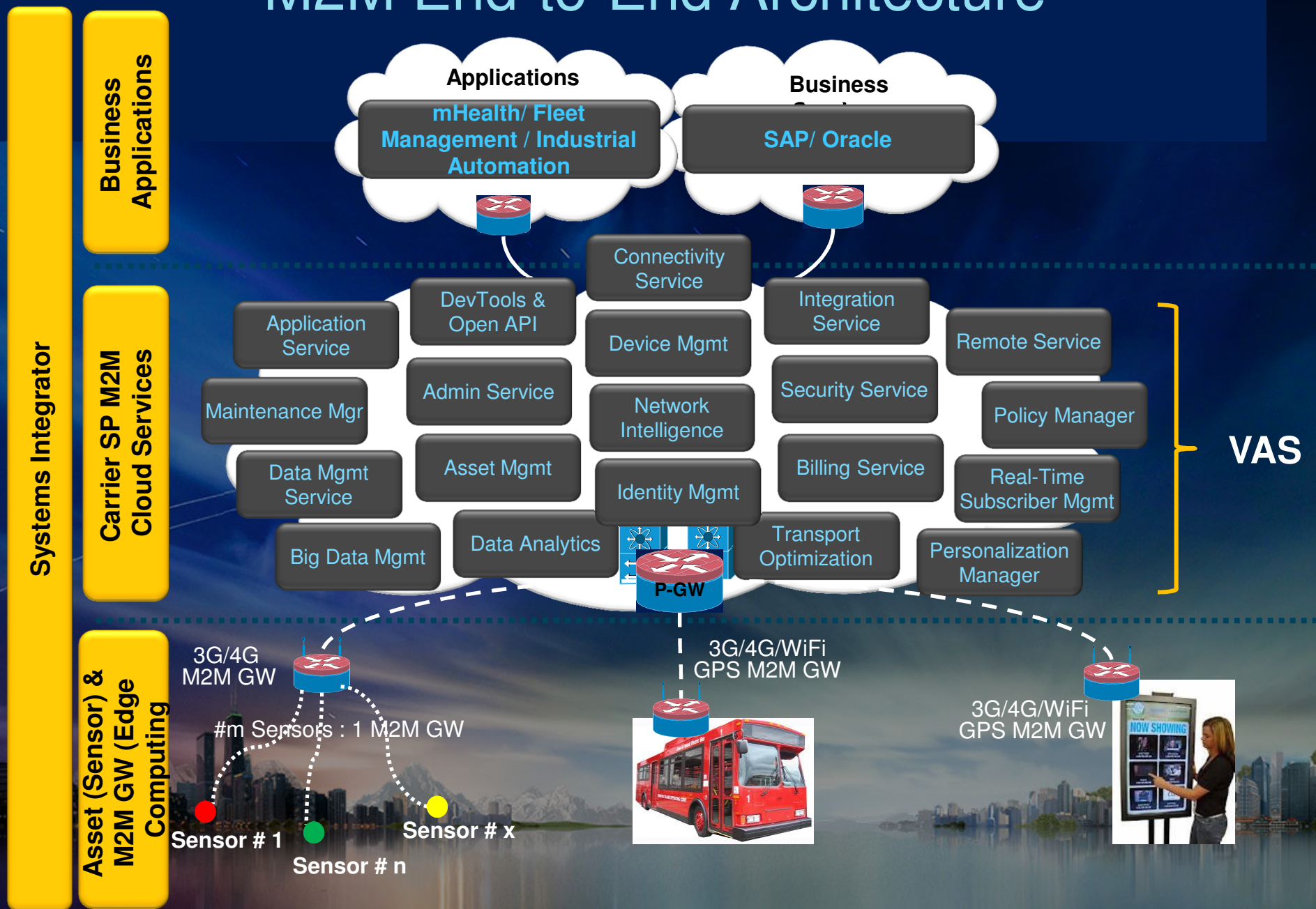


Rich (Mobile) Client

Edge Stack, Routing

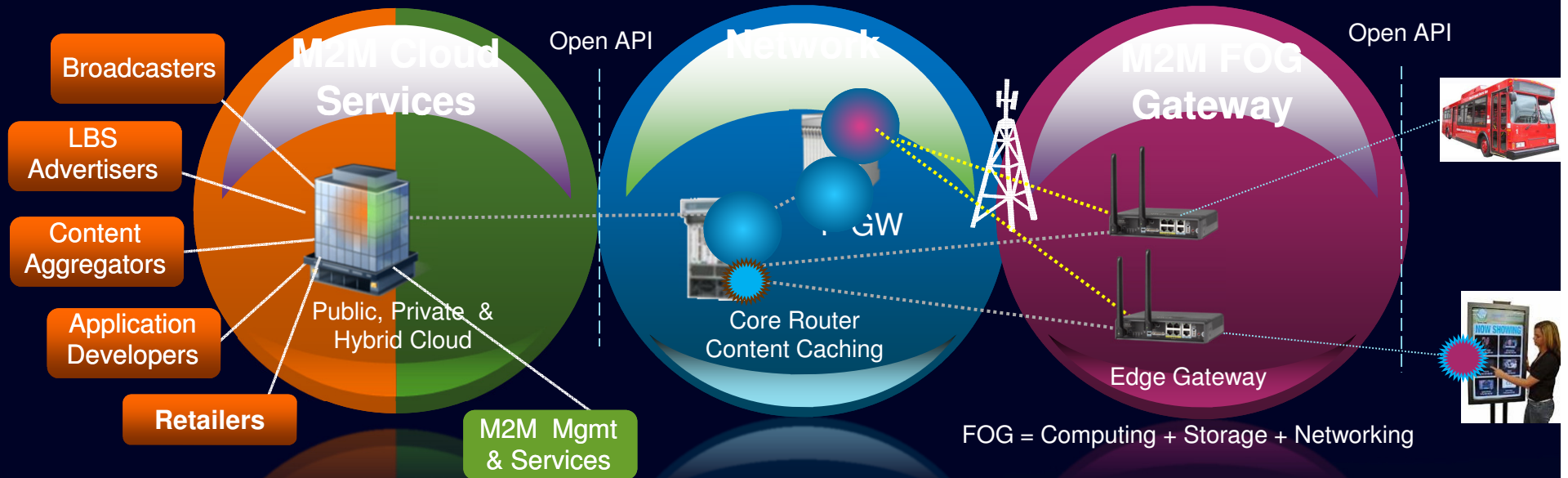
Smart Network

M2M End-to-End Architecture



Technology Architecture Stickiness

Connected Fleet & Digital Signage: mTicket, LBS, WiFi Hotspot,



Enabling New Business Architectures

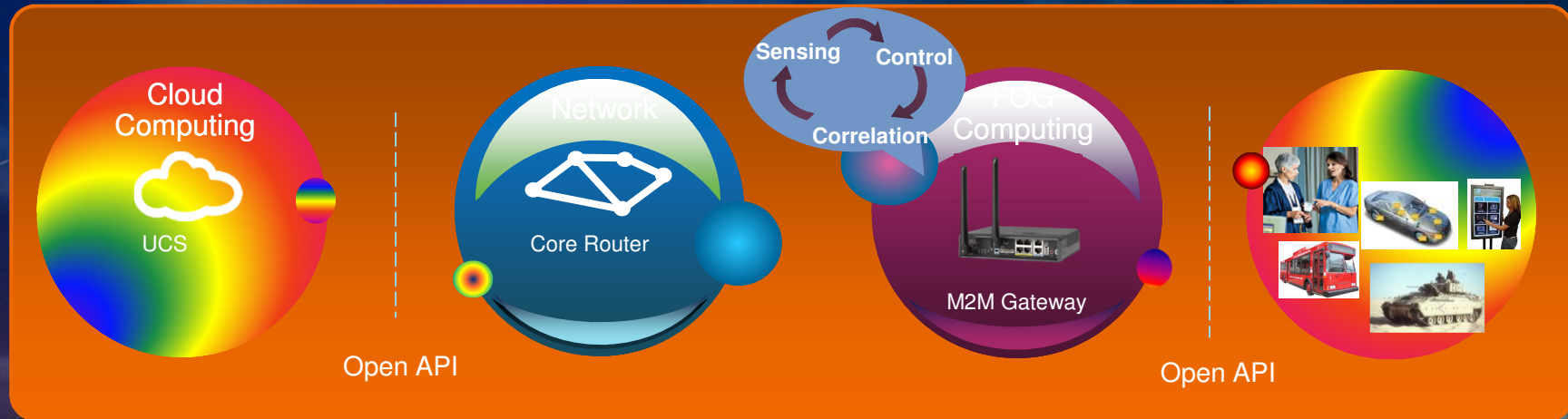
B2B2C Monetization (Revenue)	\$	\$\$	\$\$\$
Optimization savings	\$\$\$	\$\$	\$

Accelerating New Experiences and Business Models

Partners

Experience Management

Network & FOG Computing APIs Exposing Data Collected by XMPP, REST-Based, SIP/SIMPLE APIs



IETF, IEEE, GSMA & Others

Open Standards

RFCs, HTML, XML, IMS



Challenges

Areas for Innovation

1) Drive API Framework for Networking Device

- Need for common shim layer / Middleware architecture & APIs for IP networking gears!

2) E-2-E Management & Manageability

- Need comprehensive network and asset management solution for M2M/IoTs!

3) Identity Management

- Decouple HW (M2M Gateway) from Services & Billing Identity!

Areas for Innovation Continue

4) End-Point Identity & Security

- Ability to uniquely identify, mutually authenticate, authorize end points (sensors, actuators, ..) and secure communication!

5) Protect Virtual Profile - Policy Manageability

- Need governance around info collected, who and how it will be used!

Areas for Innovation Continue

6) Drive M2M/IoTs Standard

- Ability to uniquely identify, mutually authenticate, authorize end points (sensors, actuators, ..) and secure communication!

7) Need Additional Licensed/Unlicensed Spectrum

- For industries to blossom and thrive!

Big Picture: Connected Network Society

Technology


**“Internet of People”
Start thinking and start now!**

Trillion's
of Connected
Devices

Policy

Societal
Impact

together we can...



Q&A



Thank
you

- For additional questions
- Email: maalam@cisco.com



My
Blogs

- Look out for blogs from June 2012
- <http://www.myconnectedsociety.com>

