How Internet of Things will change our daily life
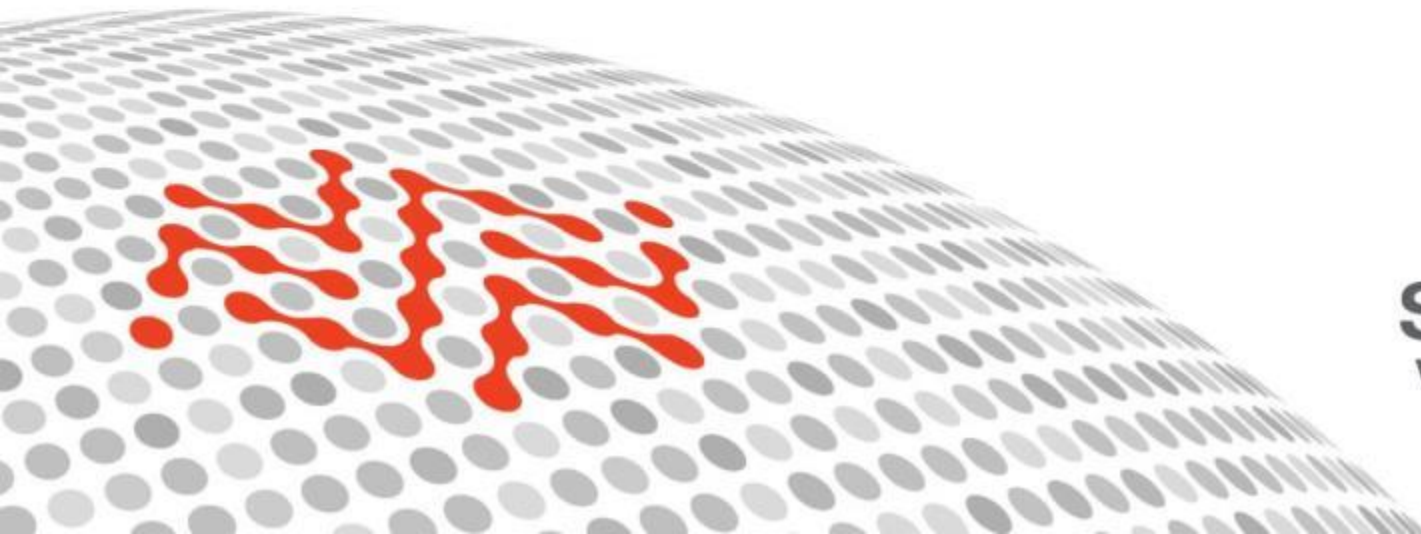
17th July 2015
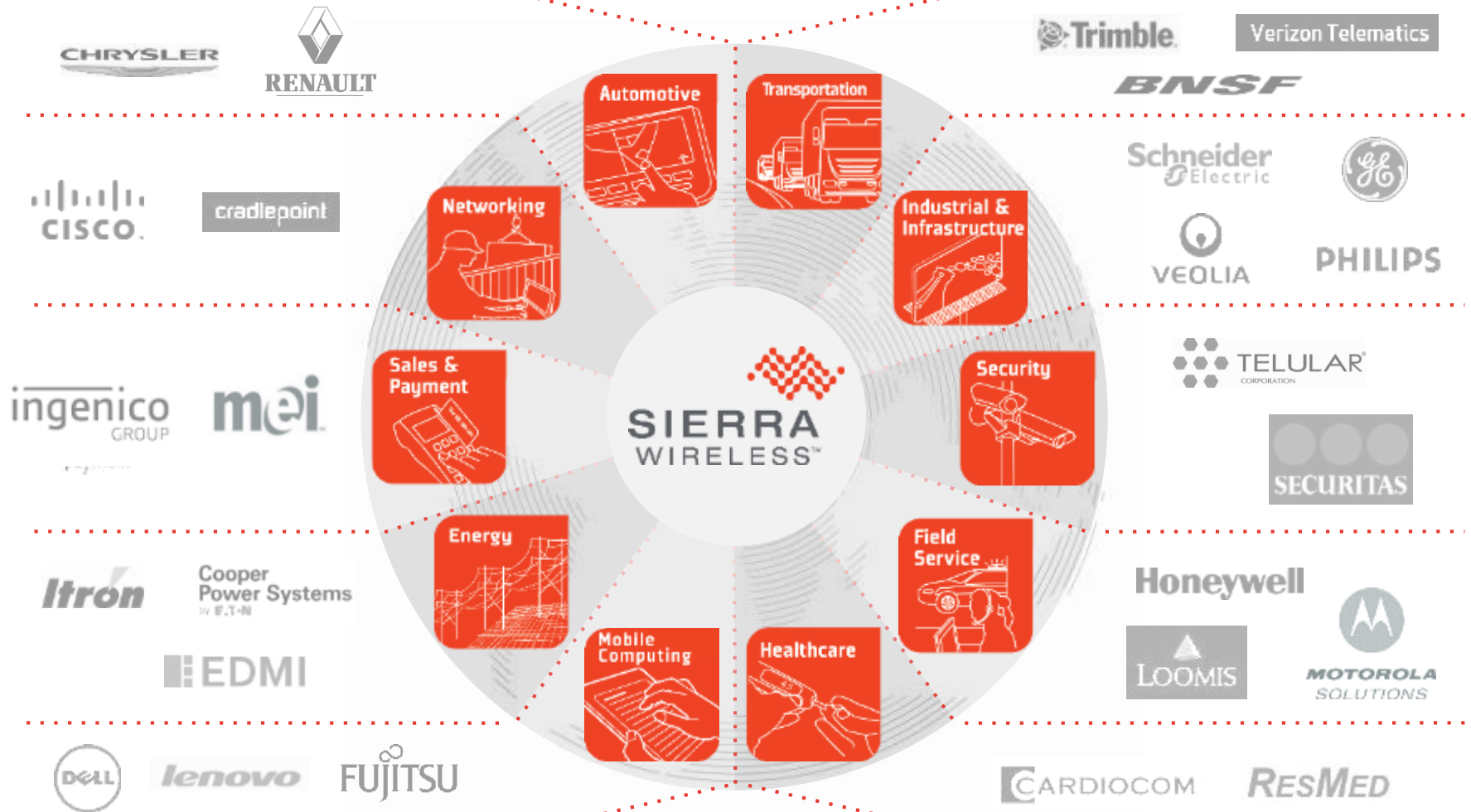
Colin CHEW, Business Management Director, Asia (excl. Japan, India)

SIERRA WIRELESS®

Agenda

- Sierra Wireless Overview

- How IoT Is Changing Our Life

  – Transport

  – Energy

  – Security

- Market Growth Drivers

- Key GSMA Activities for Market Growth

And also a large diversity of applications

About Sierra Wireless

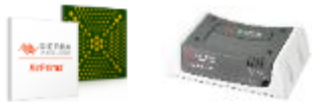| GLOBAL	OFFER	INNOVATOR	SHARE	FINANCE
The global leader in IoT devices and cloud services	Industry's most comprehensive offering: Device to Cloud	Proven technology innovators and trusted partner	#1 market share in embedded modules : 100M M2M devices connected	Financially strong: cash, no debt

Founded in 1993

2014 revenue: $550 million

Publicly listed on NASDAQ and Toronto Stock Exchange

AirVantage M2M Cloud

R&D

Head office: Vancouver, BC

R&D

R&D

950+ employees globally; customers in 130+ countries

SIERRA WIRELESS®

Connected Cars

Schneider Electric EV charging solution

Integrating Electric Vehicles into the Urban Environment

✓ EVlink Energy Management and Supervision: 24/7 efficiency

✓ **EVlink charging stations:** 100% flexibility, Get charged everywhere (at home, at work, in all Public and Private Locations)

THE BENEFITS
- **Technical**
  - Stations management improved efficiency
  - Centralized remote supervision in real time
  - Easier installation
- **Commercial**
  - Access to stations information/reservation on consumer smartphones/tablets
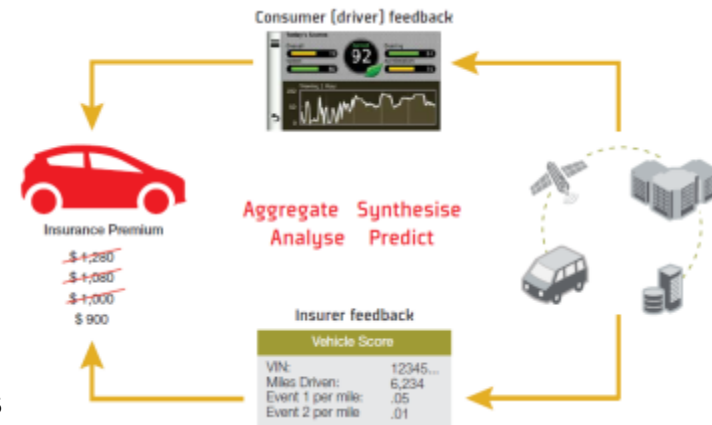
UBI: User Based Insurance pricing

- Insurance telematics provides **accurate risk profile** based **on real driving behavior**

- Represents a **disruption in the auto insurance market**
- **Benefits** to the insurance companies:
  – Reduces fraud (better claims assessment)
  – Attracts low risk drivers (can offer lower cost insurance)
  – Deepens customer relationship through additional services

- **Insurance regulations are pushing towards UBI adoption**
  – Legacy 'risk pooling' methods under pressure with new laws (e.g. EU Gender ruling - Dec 2012), UK Equality Act -May 2012)
  – Italy Monti law (March 2012) – telematics mandatory in new cars to counter fraudulent insurance claims for whiplash
  – US NHTSA (National Highway Traffic Safety Administration) proposition to mandate EDRs (Events Data Recorders)
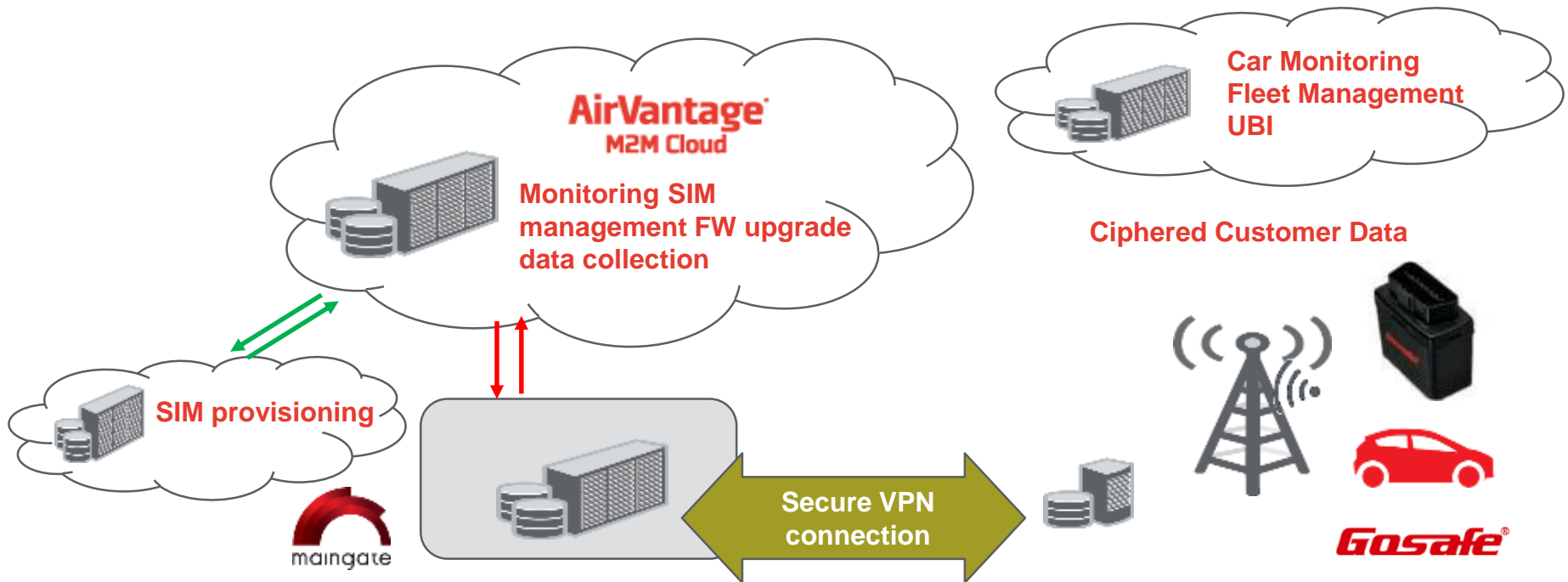
- **Brings both Insurers & Drivers benefits in countries with high premium & Regulations**

Insurance Telematics benefits for Drivers & Insurers
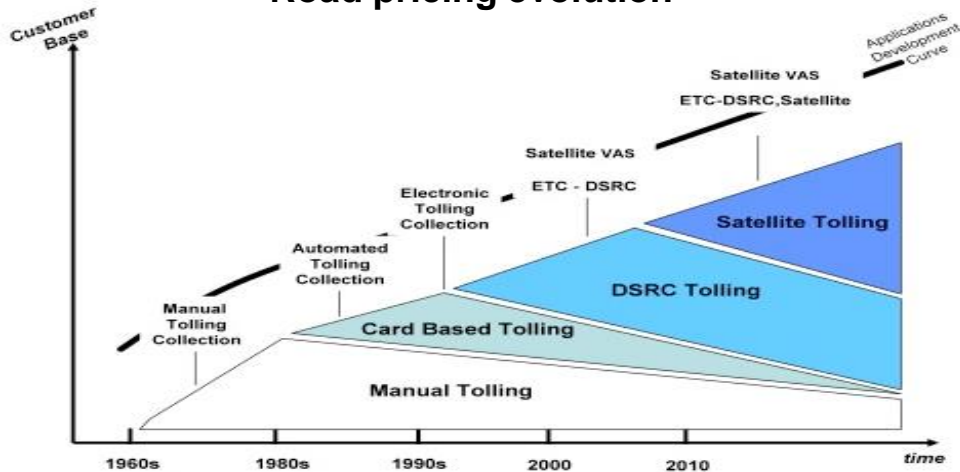
Gosafe OBD solution

- 2G & 3G OBD Dongle solution

- Well known OBD solution across global markets.

- Mature UBI business with leading Insurance companies

- Over 300Ku shipments in 2014

Strategy partner between Gosafe & Sierra Wireless
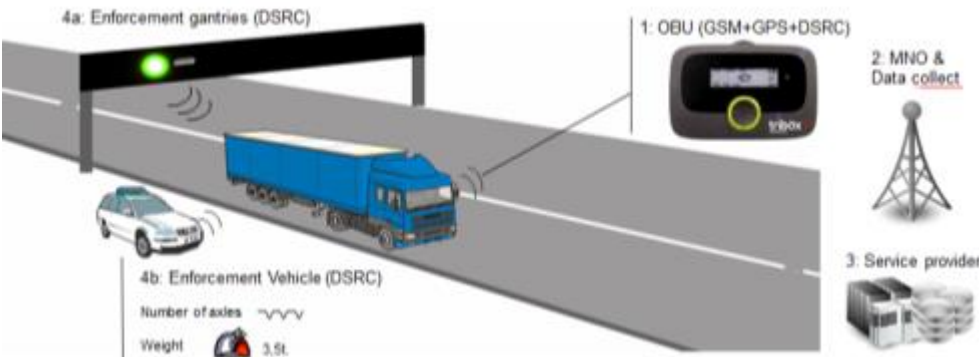
ETC – Electronic Toll Collect

Road pricing evolution

ETC principles

From Manual to Electronic Road Pricing (ERP)

- ERP with ETC: 4th gen of Toll solutions

- Benefits for public authorities: full flexibility to define roads pricing policy, adding new toll roads without any infrastructure to be deployed, managing traffic and financing new roads with virtual toll gates.

- Principles:

  – Cellular OBU in the vehicle with GNSS (to manage virtual toll gantries locations, and generate toll invoice if the vehicle drives through a virtual toll gantry)

  – Some gantries deployed only for enforcement (check if the vehicle is well equipped with OBU, based on DSRC)

Smart Grid solutions

Critical Customer Challenges:

- Balancing environmental and market needs to meet peak demand

- Contributing to energy efficiency, reducing the transmission or distribution losses, and the carbon footprint

- Integrating decentralized and renewable energy sources into the grid (Wind, Solar)

- Managing new consumption patterns and new user services connected to the grid (ie EV)

- Ensuring a secure and self healing network

Solution

AirPrime® wireless modules in smart meters

AirLink® gateways in concentrators

AirVantage® cloud platforms for monitoring

Benefits

- Allow costs control by customers

- Provide power quality with a more reliable and secure supply through fewer and shorter outage

- Proactively diagnose potential equipment faults with preventive maintenance to avoid interruption or large geographical outage

- Flatten demand for electricity at peak times with predictive Demand Respond

- Integrate and operate efficiently renewable sources of energy into the local grid

EDMI Smart Meters solutions

Deployment

- Deployments (**1M+ units**) in UK (O2), New Zealand (Vodafone), Australia, South East Asia, Africa

Solution

- EDMI embeds an AirPrime wireless modules in each of their meters to offer GPRS/EDGE point-to-point connection.

- Application Framework to embedded software (specific protocols) into the modem

- Management Services to allow scalable and secure mechanism to upgrade the modem once deployed in the field
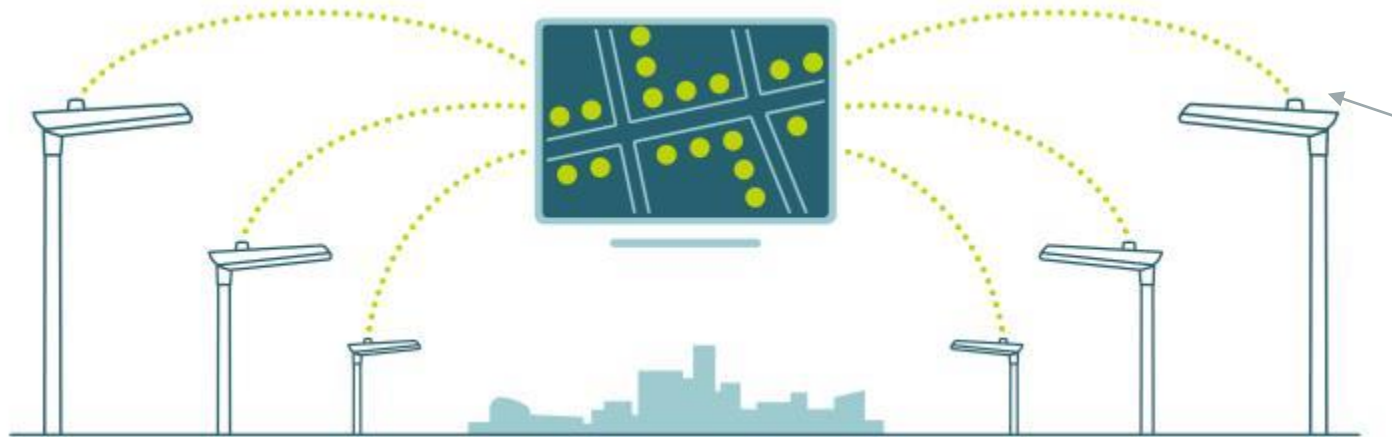
Benefits

- Cost effective 2G point-to-point connectivity
- Flexibility to customize software application
- Capability to offer scalable device management

GLOBAL MOBILE AWARDS 2011

Best innovation for Utilities

Philips CityTouch Lighting Solutions

Simple web apps to manage and monitor lights
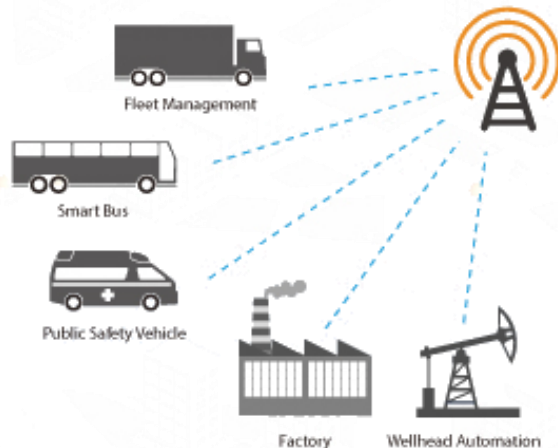
CityTouch Ready Fixtures

- World's first plug and play solution for connected lighting

- Automatic failure notifications from street lights

- Web-based remote lighting management (analytics and workflow management)

- CityTouch Ready powered by **Sierra Wireless AirPrime®** modules for direct connectivity over the cellular network

- **Lower your City's Energy Consumption**

Billion & BEC 4G/LTE CPE Technologies

BEC Technologies is the largest outdoor LTE fixed wireless solution provider in the USA in 2014. Comprehensive network solutions serve a great variety of network applications and vertical markets:

- LTE ODU supports superior LTE performance for service coverage
- Ruggedized Industrial-grade design LTE M2M Router
- Cloud-based Management System
- Over 42 years of expertise in the development of advanced networking
- solutions for mission-critical and vertical markets

4G / LTE M2M
Series

Fleet Management

Smart Bus

Public Safety Vehicle

Factory

Wellhead Automation

IPv6 Support   VPN Security   Dual LTE   EWAN

Looking forward: Market Growth Drivers

Connected Vehicles

- **Regulatory initiatives**: eCall, ERA-Glonass, Toll collect
- **New Technology** adoption: LTE, LTE-A
- **New Services** (UBI, car sharing, diagnostic, others)

Connected Industries & Infrastructure

- Many **critical industrial assets** are connected to improve operating efficiency and service
- **Smart Cities** initiatives are driving infrastructure monitoring deployments and reduce energy costs

Connected Enterprise

- Large adoption of LTE to connect **mobile workforce** and **remote offices** for productivity and flexibility
- Growing adoption connectivity in **Retail Sector for Point Of Sale, Kiosk, Vending**

Connected Consumer

- **Home Security** moving toward LTE
- **Patient monitoring** (sleep apnea, glucose, cardio monitoring) is driving part of the healthcare market
- High interest in **wearables** but still very early stage

SIERRA WIRELESS®

Key GSMA activities for market growth

- Low Power Working Group
  - LTE-M as the cellular industry answer to embrace Internet Of Things market

- Security working Group
  - Devices security
  - Network security

- Embedded SIM / eUICC / Remote SIM provisioning
  - Full interoperability
  - Billing work group
  - eUICC to address Consumer Devices as well

- Sierra Wireless expanded position in the M2M value chain
  - Adding connectivity services to device-to-cloud offering
  - Roaming/Billing topics are crucial

IoT applications are almost unlimited!