Intel Connected Transportation

Advancing the connection of vehicles, devices, and the cloud

November 2014

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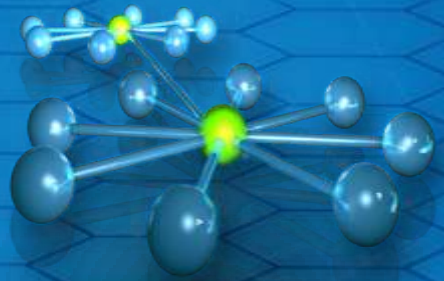
The Internet of Things: A Technological Revolution

"Things"

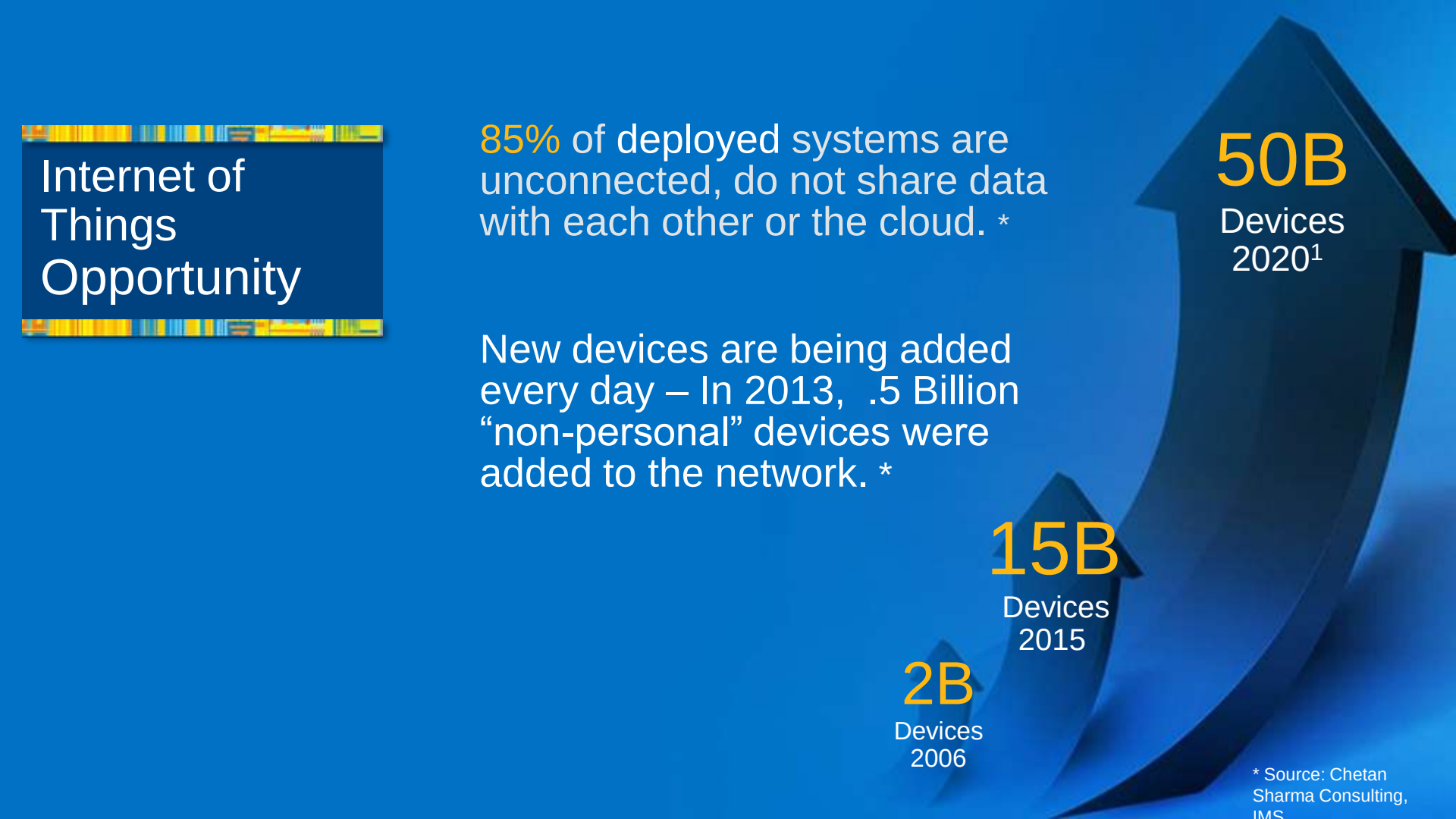


Network Infrastructure

Internet of Things Opportunity

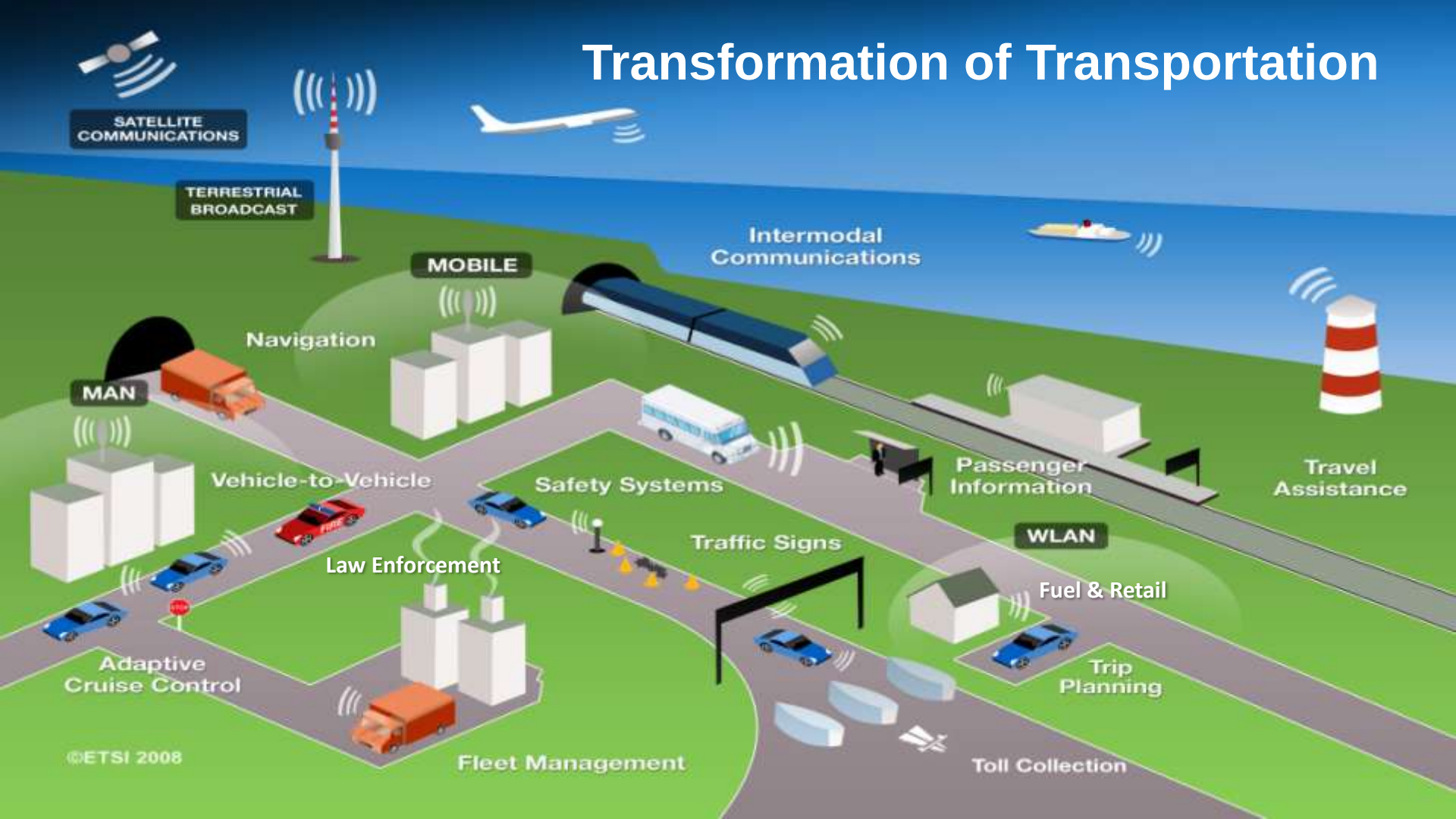
85% of deployed systems are unconnected, do not share data with each other or the cloud. *

New devices are being added every day – In 2013, .5 Billion “non-personal” devices were added to the network. *



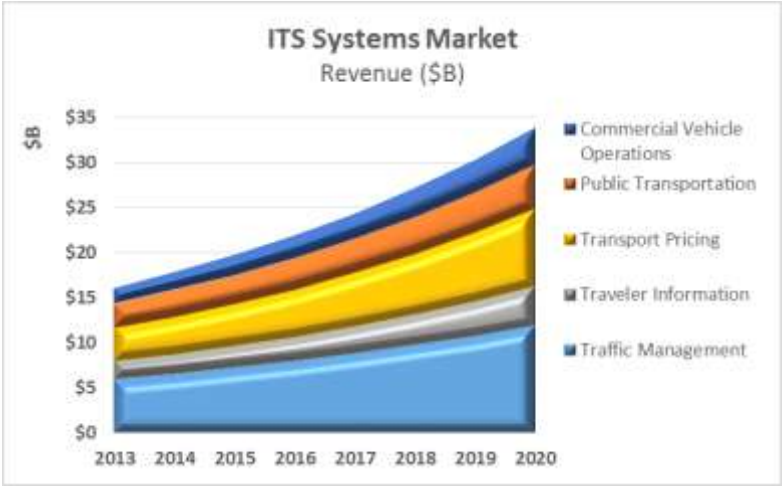
* Source: Chetan Sharma Consulting, IMS

Transformation of Transportation



Transportation Market

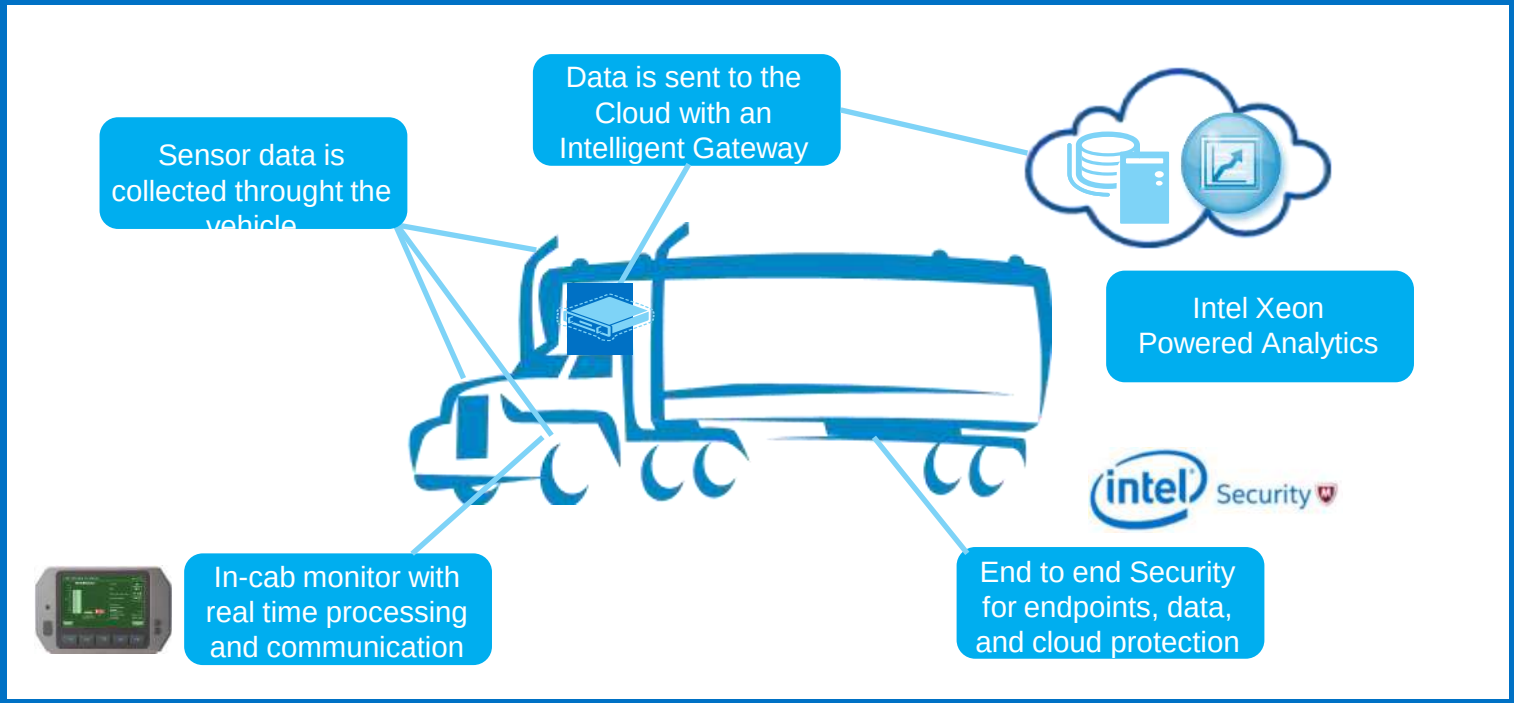
- Transportation contributes 5-10% of GDP of most countries
  - Highest growth in developing countries
- Cities adopting clean & connected transport systems
  - Radically changes as smart devices & travelers are identifiable
  - Ticketing based on RFID already widely available
- Cloud-based Fleet Management Systems growing rapidly ->major disruptor



Source: Market & Markets, 2014

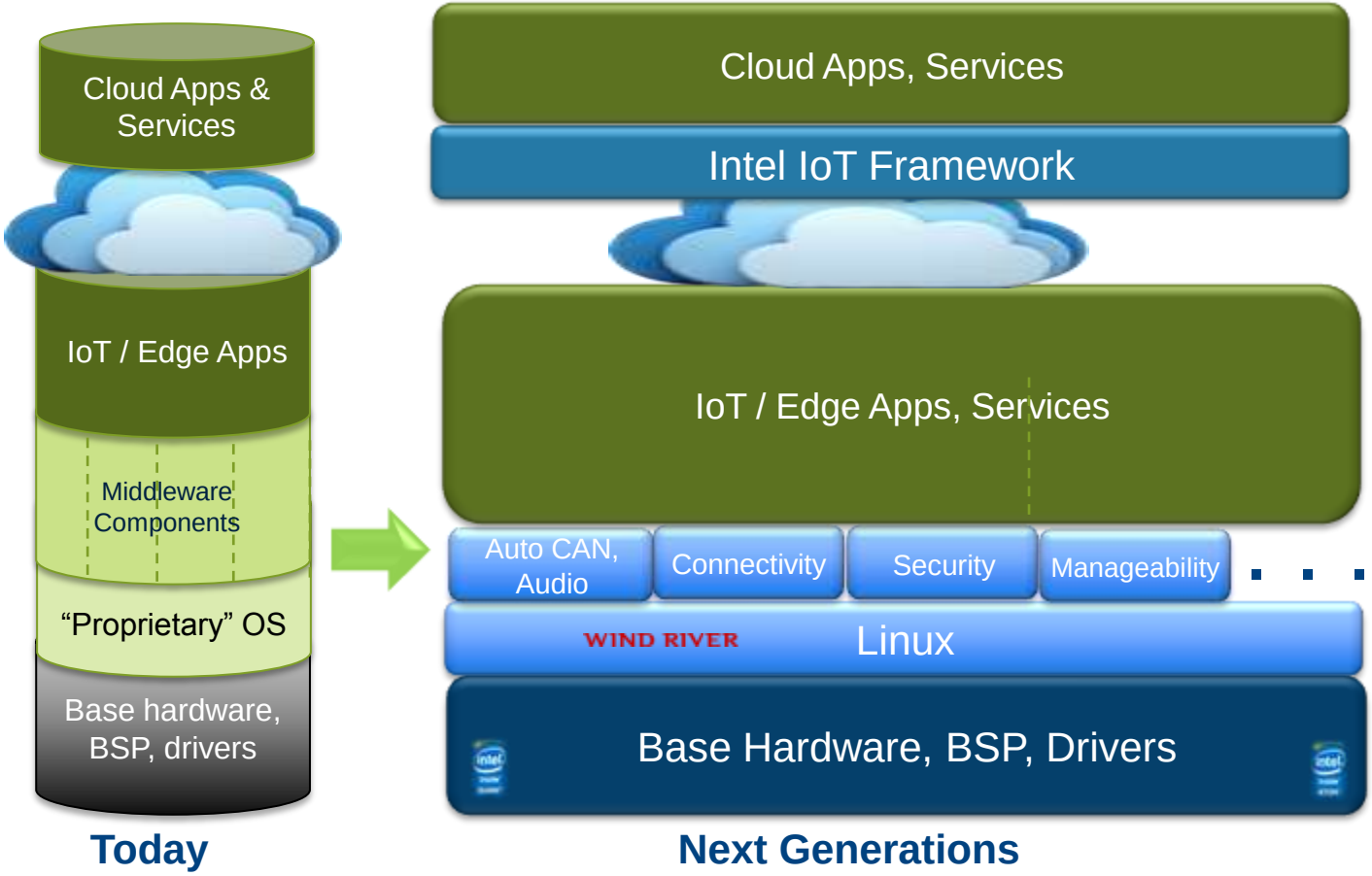
Connect sensors, vehicles, transportation / city infrastructure and people through conglomerate of technologies, computes and networks

Fleet Management



- Reduced Pollution Emissions
- Increased Fuel Efficiency
- Reduced Maintenance Costs
- Improved Driver Safety

Common Platform: Focus on Apps, Services



Enabling the IoT for 30 years

Manufacturing/ Industrial/Energy Sector

- System Consolidation
- Secure & Trusted Data
- Optimized Factory

Transportation Sector

- IVI
- Advanced Driving
- Self-Driving

Retail Sector

- Retail Mobility
- Responsive Store
- Personalized Shopping

Smart Home & Building Sector

- Entertainment
- Home Health
- Security & Automation
- Utilities

CONNECTED ▪ MANAGED ▪ SECURED ▪ DATA ANALYTICS ▪ SAFETY

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Shift Towards Greater Compute and Connectivity

In-Vehicle Infotainment

IVI is a critical differentiator of in-vehicle experiences.

Devices are becoming more interconnected and interdependent.

ADAS & Self Driving

Automakers are adding more safety-related features. The autonomous car will be a platform with multiple systems that can communicate and collaborate.

Development will be shaped by IoT, regulations and consumer readiness.

Connected Transportation

The cloud, communications networks, devices, data, and services create a spiral that drives the need for greater compute capabilities, security, and privacy.

Why Intel in Transportation?

Intel helps companies in the transportation industry **accelerate innovation and TTM** with proven technology for next-generation driving experiences & infrastructure.

In-Vehicle Certified silicon, State-of-the-art graphics, Leading-edge processors/manufacturing

Inform

- Camera and sensor technology
- Wired, wireless, optical technologies (Ethernet, 4G, LTE, Thunderbolt)
- Cloud connectivity
- Analytics

Assist

- Ability to scale segments and generations with high compute
- Integrated security technologies (Wind River*, McAfee*)
- Mission-critical computing solutions

Intel® Architecture is a natural fit for Transportation

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INTEL: A LONG HISTORY IN TRANSPORTATION

Investing in breakthrough innovations to fuel technology leadership in the transportation industry

PRODUCT INVESTMENTS

VEHICLE CONNECTIVITY

ADAS & AUTONOMOUS

ECOSYSTEM INVESTMENTS

$100M CONNECTED CAR FUND

INDUSTRY PARTNERSHIPS

RESEARCH INVESTMENTS

Advanced HMI Design Solutions

Connected Transportation Experiences & Solutions

Advanced Driving Technologies Development

Intel® Gateway Solutions for IoT

Family of scalable gateway platforms:
Intel® Quark™ -> Atom™ SoCs

Connect and aggregate data sources and secure hardware, applications and data

WIND RIVER

Integrated, validated solution with McAfee* and Wind River* SW

Unified software licensing model and Intel support

Optimized to meet specific vertical markets

Open platform integrates with ecosystem applications and services

Gateway Program Update

- **Launched at IDF Shenzen April 2014**
- **>10 ODMs launching >20 systems in Q3 and Q4**

GIGABYTE, EUROTECH (Imagine. Build. Succeed.), ADLINK TECHNOLOGY INC., iEi, SUPERMICRO, kontron, NEXCOM, avalue Technology Inc., bcm, congatec, Portwell, FDI ENGINEERING, ADVANTECH (Enabling an Intelligent Planet), ECS ELITEGROUP

- **First OEM's launching pilots and services in Q3**

Benefits of Intel Gateway Solutions

Connectivity

- Pre-integrated connected capabilities enable rich network options to save development time and costs.
- Provides an extensive network of connectivity
  - Wired
  - Wireless
  - Cellular
  - Short-range

Security

- Protect devices for trust and control
- Protect the Device
- Protect the application
- Protect the data at rest and in flight

Manageability

- Enable common provisioning frameworks
- Enable remote, secure upgrades
- Provide web-based configuration utilities

Internet of Things Opportunity

Internet of Things Solutions

Solutions for Every Point in the IoT:

We have industry leading products spanning from devices to the cloud, enabling rapid deployment of end to end IoT Solutions

Things:

- Personal devices
- Cars, Home automation
- Manufacturing equip
- ...

Gateways:

- Home: Puma
- Industrial: Moon Island

Network:

- ONP: Open Networking Platform
- NFV: Network Function Virtualization

THINGS

INDUSTRIAL GATEWAY

NETWORK INFRASTRUCTURE

DATA CENTER/ CLOUD

Cloud

- Intel Data Center Manager
- Intel Data Platform
- Software Defined Infrastructure

Services & Solutions

- API Management
- API Orchestration
- Intel Express Gateway & Tokenization
- Intel Security Solutions
- Wind River Systems

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Summary

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