



Driving the FUTURE

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Infrastructure REVOLUTION

1.0

Steam and coal
Railways
Factories
Printing press –
mass education

1760s.....

2.0

Electrification, comms,
oil, combustion engine
New materials
Automobiles
Mass production

1860s.....

3.0

Automation
Connectivity
Productivity
Molecular Biology
Renewable energy

1990s.....

4.0

Synthetic biology
3D printing
Digital Medicine
Robotics
Smart “everything”
Artificial Intelligence

2010 >>>

**We are still at the dawning of the fourth era...
...a new economic narrative is being written**

*The Third Industrial Revolution: How Lateral Power is Transforming Energy, the Economy, and the World by Jeremy Rifkin, president of the Foundation on Economic Trends



New Era of Computing

19B+ connected devices by 2016*

INTERNET OF THINGS

Cloud Systems

Data Analytics

Connected Device

*Source: Cisco® Visual Networking Index (VNI) Forecast (2011-2016)



VIRTUOUS CYCLE of Computing

... and so on



DEVICES



DATACENTER

DEVICES



SERVICES



Other brands and names are the property of their respective owners.



“Every two days, we create as much information as we did from the dawn of civilization up until 2003” – Eric Schmidt, former Google CEO

7.9 ZB in 2015
3x more bits in digital universe than stars in the physical universe



450 Bn
Business transactions per day by 2020 (IDC)



>5 Billion
People calling, texting, tweeting and browsing on cell phones



209 Billion
RFID tags sale in 2021: from 12 billion in 2011



90% of Data
In the world was created in the last 2 years



200PB
Storage of a Smart City project in China



\$800B
in personal location data within 10 years



\$600B/year
US healthcare saving from Big Data



100 years
Worth of video uploaded to YouTube every 10 days

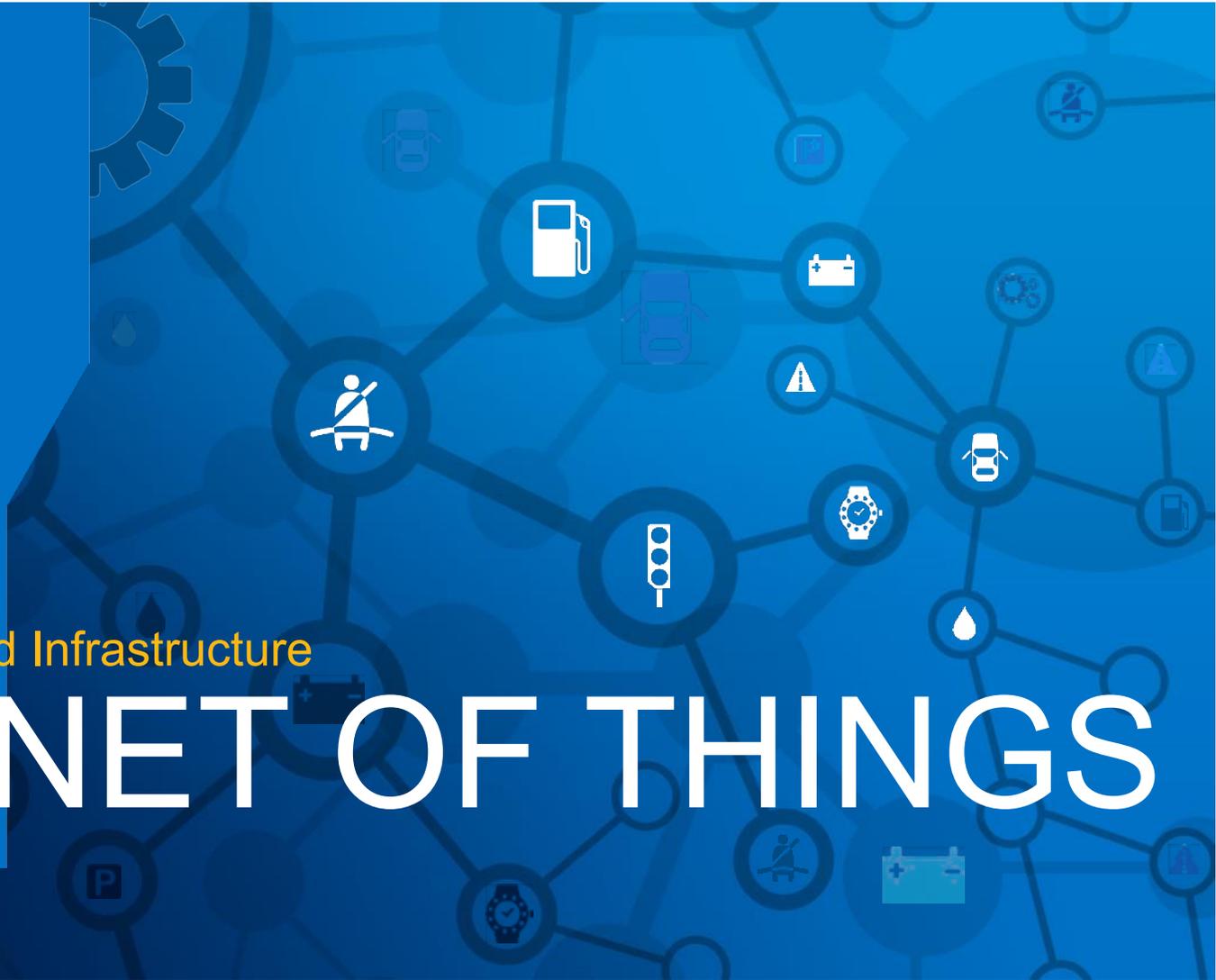




New Era of
Computing

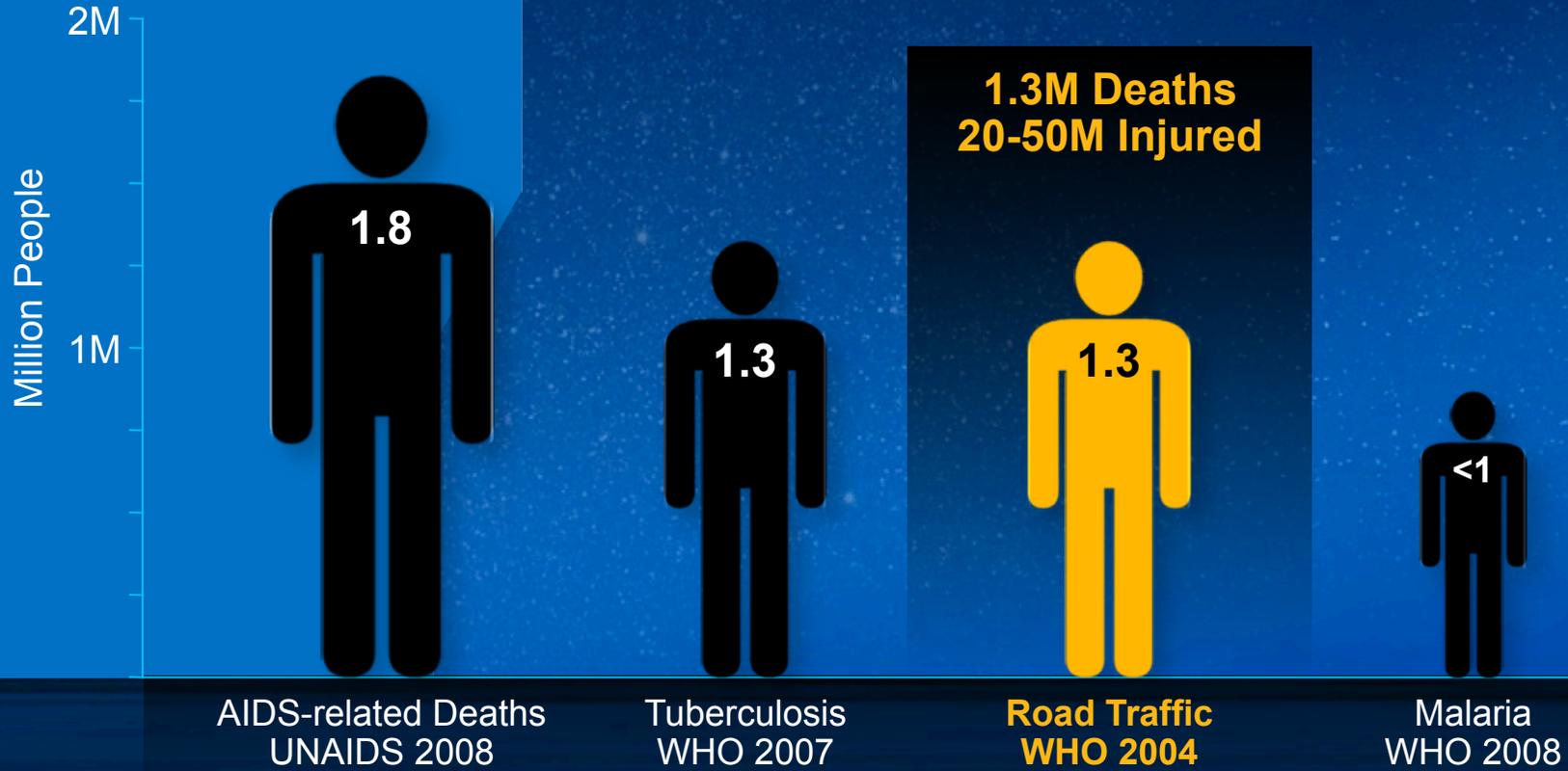
Transportation and Infrastructure

INTERNET OF THINGS





Road Traffic Deaths: THE FACTS



*Source: WHO and NHTSA



Global Transportation Challenges



Safety

Car crashes cost the U.S economy **\$230B**/year

4M adults drink and drive each year



Efficiency

4.2B hours wasted in traffic each year (one work week for every traveler)

Traffic congestions costs U.S economy **\$87.2B**/year



Environment

22% of CO2 emissions comes from cars and trucks

2.8B gallons of wasted fuel each year due to traffic congestions



Accessibility

By 2050 there will be an estimated **44M** people >75

Self driving cars will provide mobility for those who have difficulty driving safely



Transforming Transportation

Transportation

Multi-Modal





Deriving
Value from

DATA

Car monitors its own health

Consults with OEM
databases/diagnostics

Monitors its internal and
external environments

Tailors the environment to
the occupants

Context-based services





Leading the evolution of Connected Intelligent Systems and Infrastructure with breakthrough IA platforms. Implementing secure, managed solutions performing state of the art analytics.

Internet of Things VISION

INTELLIGENT DEVICES

Smart secure edge data acquisition and data filtering

INTELLIGENT SYSTEM OF SYSTEMS

Billions of smart-devices sharing data intelligently and securely, supporting legacy and new environments

E2E ANALYTICS

End-to-end customer value





Unlock the Data at the EDGE





GATEWAY

Platform

The car becomes an increasingly intelligent node on the network





IoT and Big Data Strategic Pillars of TRANSFORMATION

Internet of Things: Devices



INTELLIGENT DEVICES

- Acquire data securely
- Local analytics and filtering
- Root of big data

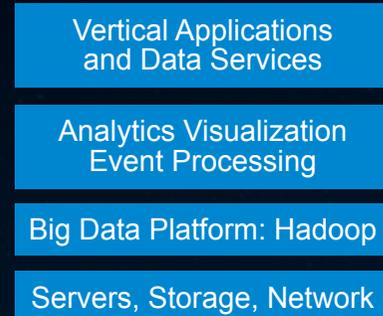
Gateway



INTELLIGENT SYSTEM OF SYSTEMS

- Enable seamless interfaces
- Ensure interoperability between edge systems
- Secure and federate data between cloud and edge for analytics

Datacenter



E2E ANALYTICS

- Create value from data
- Provide horizontal building blocks for vertical end-end analytics
- Distribute analytics at edge systems and in datacenter



Car is the
Mobile Device
of the Future

OPPORTUNITY

With technology we can access intelligence
in the car to entertain, inform, and assist
without distracting



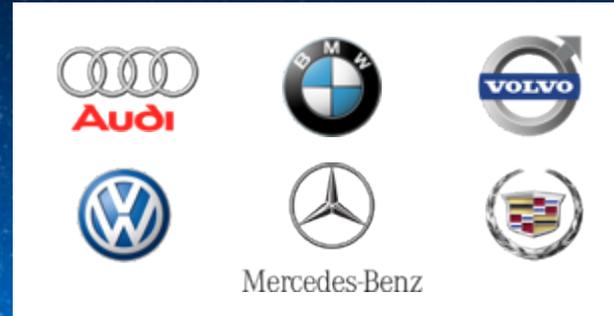


The Next Thing is Happening **NOW**

Today, >30% of US Consumers* Would be Comfortable with Self-driven Vehicles



and



1 Revolutionary Path
Influencing market
on possibilities

2 Evolutionary Path
Industry research

*Source: "Self-driving Cars: The Next Revolution" by KPMG and CAR



ROADBLOCKS

to Innovation

Fragmented
applications

Infrastructure

Resources





Call to ACTION

Data standards

Multi-modal
transportation

Acceleration of V2X

Collaboration –
public and private
partnerships

