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IoT: A grand vision getting 'consensus'

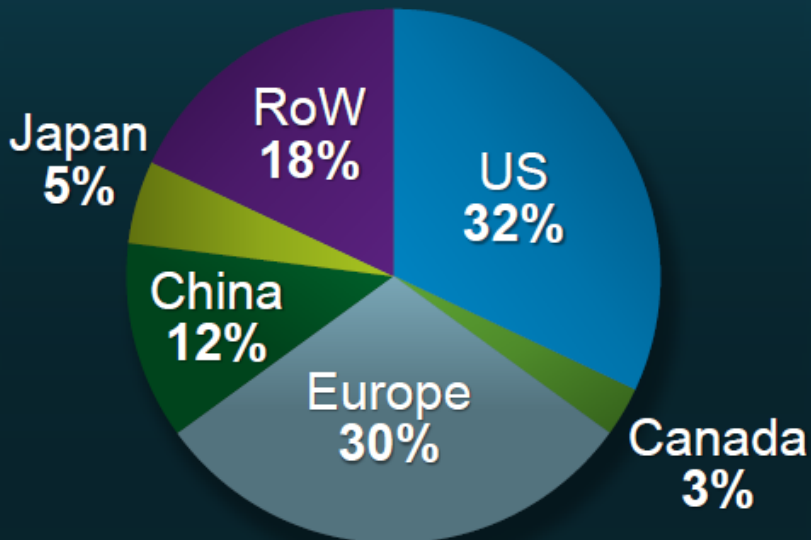


- **About 1400 attendees in Chicago (~800 in Barcelona)**
- **Hosted by Cisco, sponsored by Rockwell, Schneider, Intel, IBM, Freescale, AGT, Zebra**
- **IoT = IoE = Industrial Internet; it will probably deploy in the industry before deploying for consumers**
- **Security is felt as the first impediment**
- **Price erosion as a major enabler**
- **Cisco, Intel, & IBM proposes a reference model**
- **IoT creates a continuum between OT, IT, and CT**
- **IoT produces data , Analytics transform data into information then knowledge**

Market Size (Cisco)

Value at Stake ~ \$14.4T

Initial Top 6 Contributing Verticals



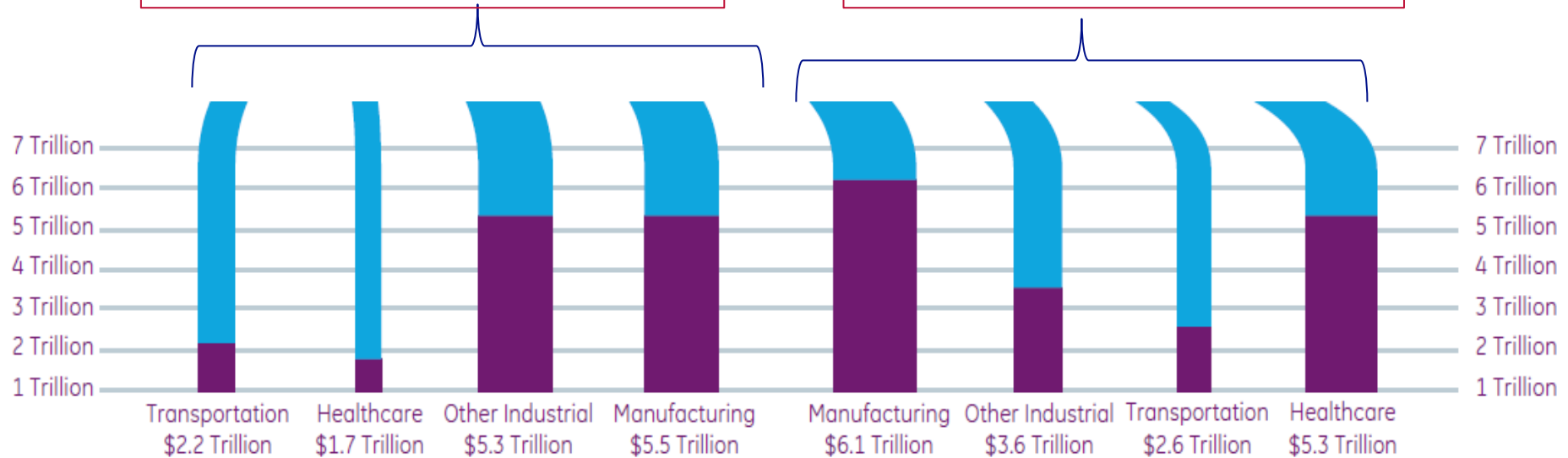
Manufacturing	27%
Retail Trade	11%
Information	9%
Finance / Insurance	9%
Healthcare (private sector only)	7%
Education Service (private sector only)	6%

Source: Cisco IBSG, 2013

Market Size (GE)

Developing Economies (29T\$)

Advanced Economies (41T\$)



Industrial Internet opportunity (\$32.3 Trillion) 46% share of global economy today

Source: World Bank, 2011 and General Electric

Saving 1%

What if... Potential Performance Gains in Key Sectors

Industry	Segment	Type of Savings	Estimated Value Over 15 Years <small>(Billion nominal US dollars)</small>
Aviation	Commercial	1% Fuel Savings	\$30B
Power	Gas-fired Generation	1% Fuel Savings	\$66B
Healthcare	System-wide	1% Reduction in System Inefficiency	\$63B
Rail	Freight	1% Reduction in System Inefficiency	\$27B
Oil & Gas	Exploration & Development	1% Reduction in Capital Expenditures	\$90B

Marketing Research firms

- **IDC** : a transformation is underway that will see the worldwide market for IoT solutions grow from \$1.9 trillion in 2013 to \$7.1 trillion in 2020.
- **Gartner** : "The Internet of Things will include 26 billion units installed by 2020. IoT product and service suppliers will generate incremental revenue exceeding \$300 billion, mostly in services, in 2020. It will result in \$1.9 trillion in global economic value-add through sales into diverse end markets."
- **Estimated growth rate between 15-20%**

Internet of Everything

“The Internet of Everything brings together **people, process, data** and **things** to make **networked connections** more **relevant and valuable** than ever before - turning information into actions that create **new capabilities, richer experiences** and **unprecedented economic opportunity** for businesses, individuals and countries.”





Reference Models

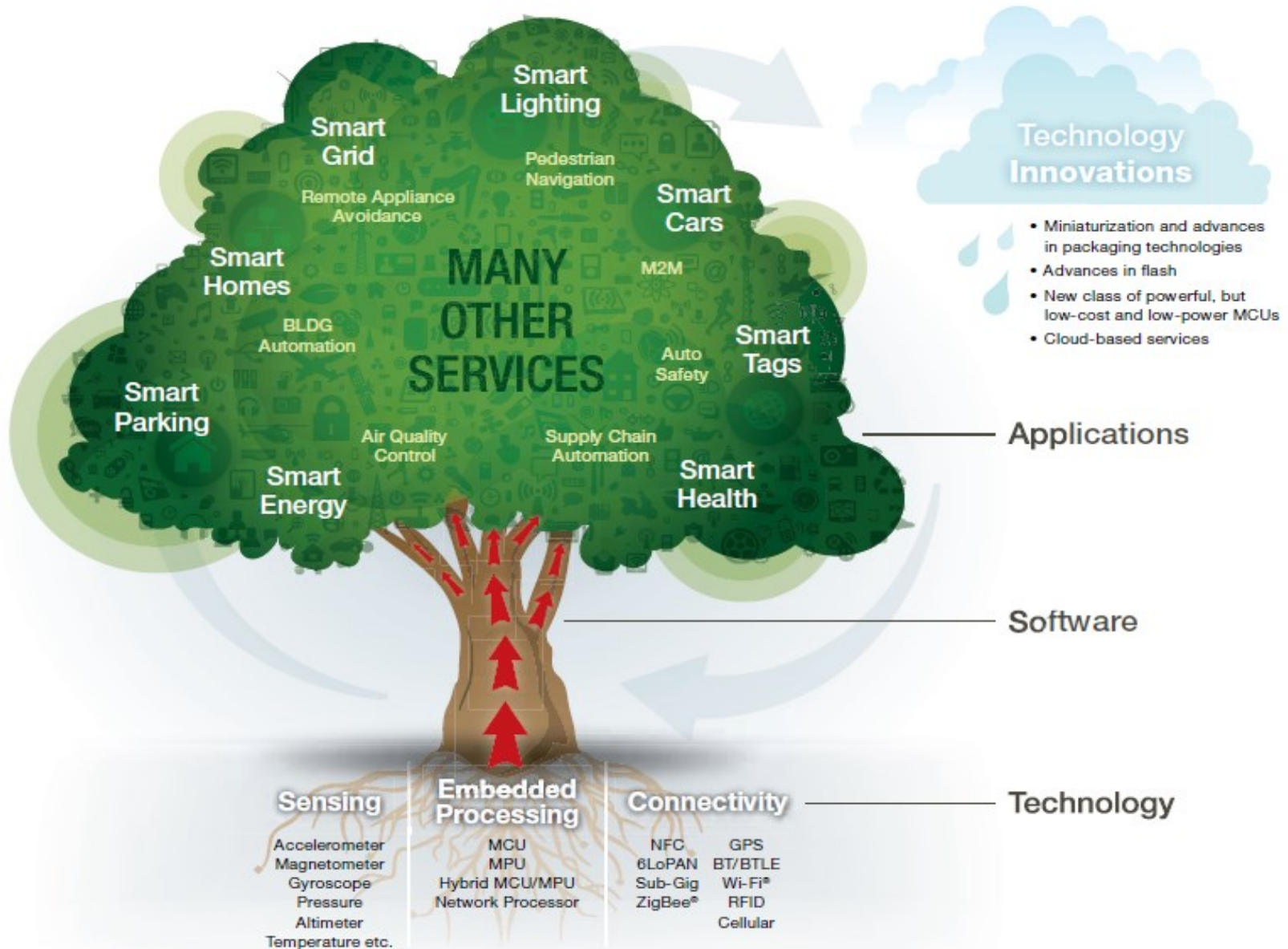
IOT-A, FP7

Alcatel Lucent (BE, FR),
CEA (FR),
CFR (IT),
CSE (GR),
FhG IML (DE),
Hitachi (UK),
IBM (CH),
NEC (UK),
NXP (DE, BE),
SAP (DE),
Siemens (DE),
Sapienza University of Rome (IT),
University of St. Gallen (CH),
University of Surrey (UK),
University of Würzburg (DE),
VDI/VDE-IT (DE),
VTT (FI)



Freescal + ARM Reference Model

The IoT: Different Services, Technologies, Meanings for Everyone



Cisco-Intel-IBM IoT Reference Model

