IoT Roadmap to AoT-Automation of Things

*(BW, Latency, HA)

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Roadmap to AoT/IoT (Automation of Everything)

SIVCA

Source: IMEX Research

Automation - AoT/IoT

Automatically Maintains Application Service Level Agreements' Objectives (Self-Configuration, Self-Healing®[IMEX], Self-Acctg Charges etc)

Cloudization

On-Premises > Private Clouds > Public Clouds Converts DC to Cloud-Aware Infrastructure & Applications. Federation with Service Provider/Public Clouds. Cascaded migration of Applications

Virtualization

Pools Resources. Provisions, Optimizes, Monitors and shuffles Resources to optimize Delivery of various Business Services

Integration/Consolidation

Integrates physical infrastructure to meet CAPSIMS guidelines: Cost, Availability, Performance, Scalability, Inter-operability, manageability & Security

Standardization

Choosing Standardized IT Infrastructure to leverage Volume Economics HW (Servers, Storage, Networking Devices and **System Software** (OS, Middleware & Data Mgmt SW)

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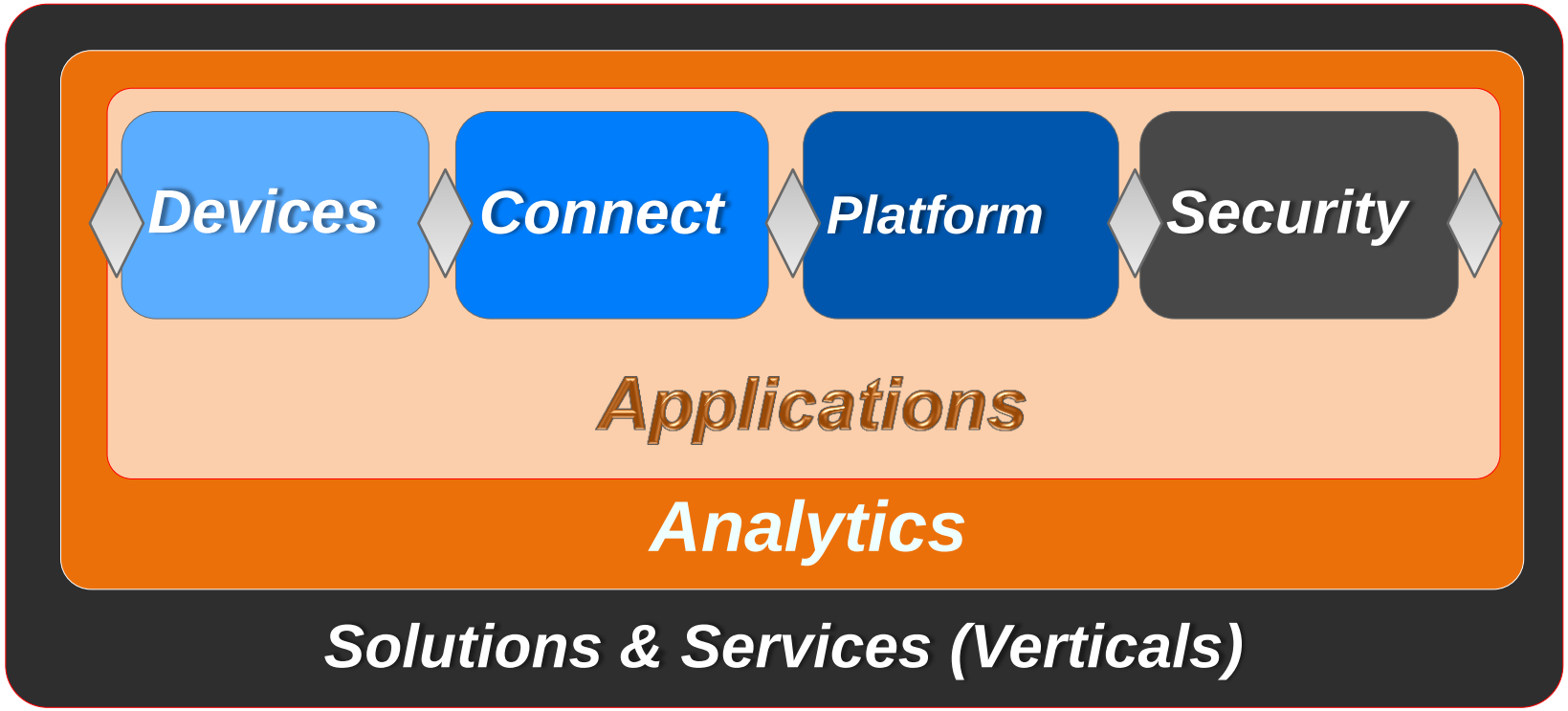
IoT Ecosystem – Sensors to Services



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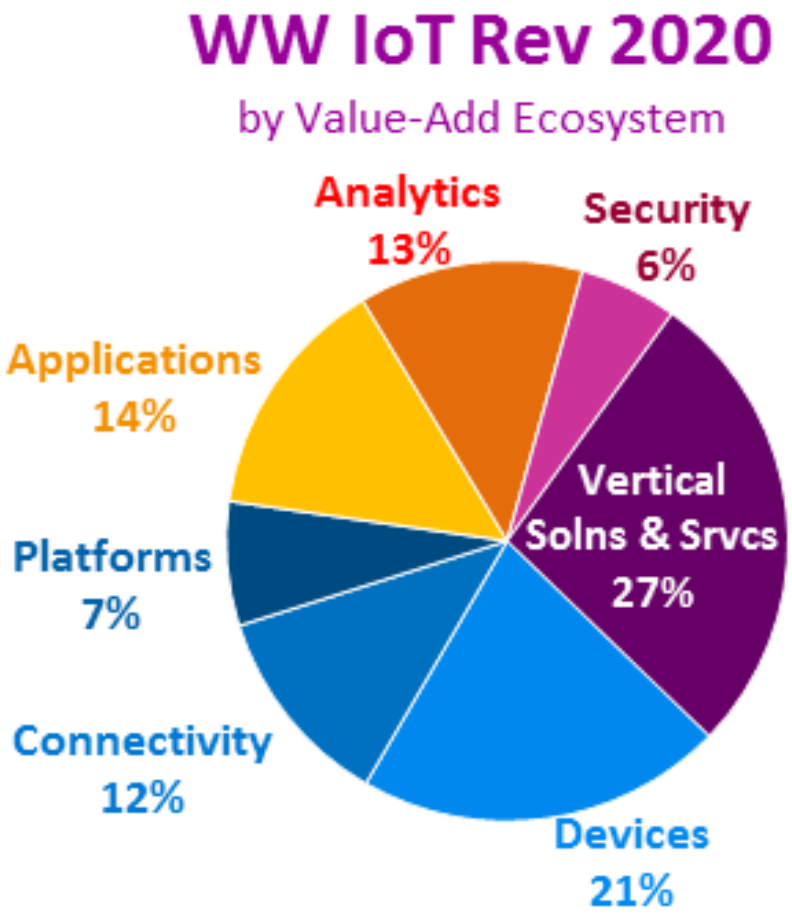
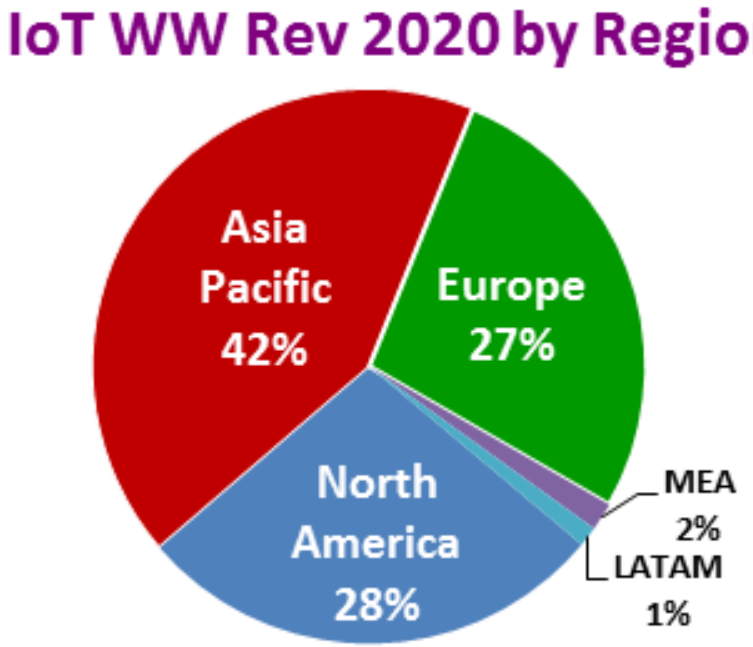
IoT WW Revenues 2020 by Ecosystem





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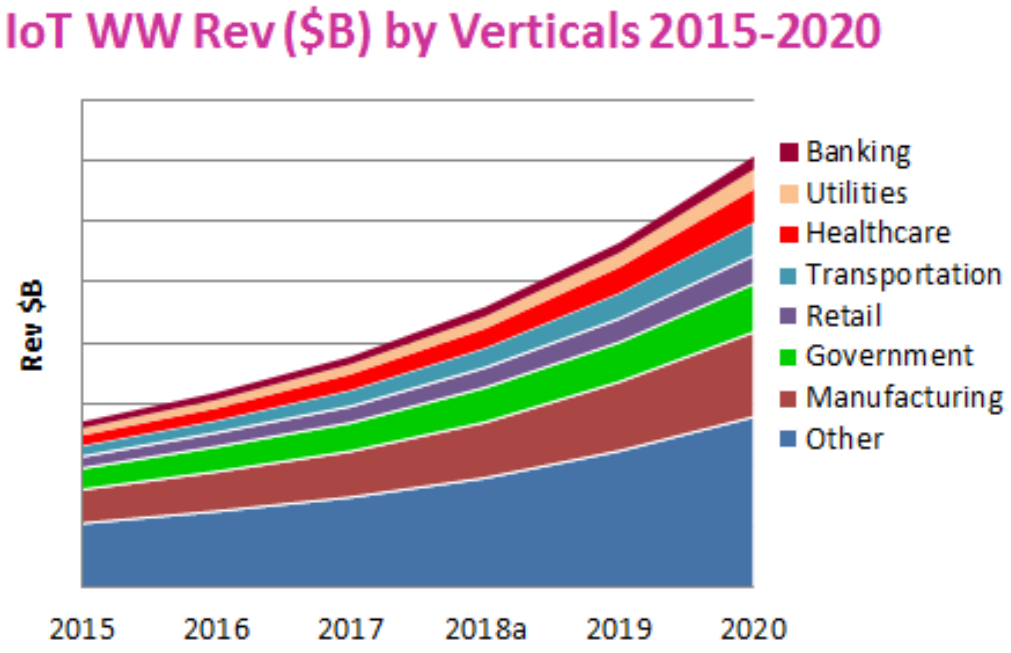
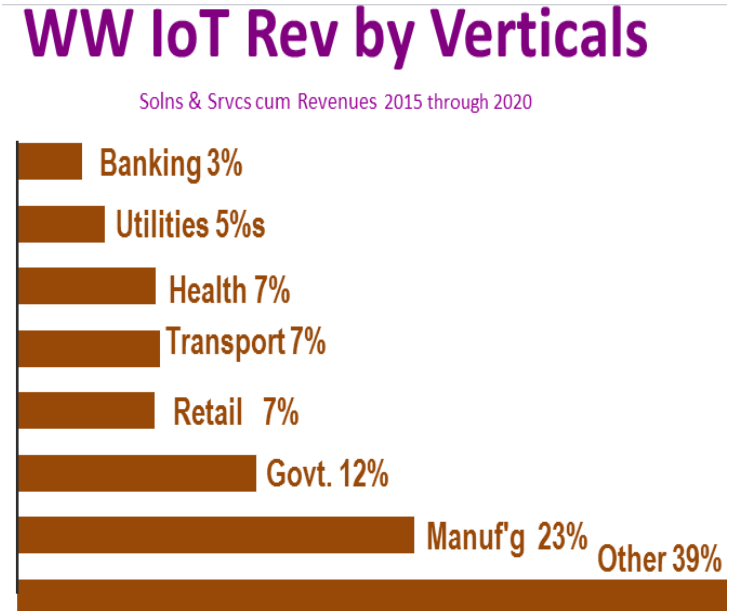
IoT WW Revenues 2020 by Verticals





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IoT by End User Market Segments

Consumers

- Home Climate
- Health/Fitness
- Entertainment
- Vehicles
- Shopping
- Surveillance

Governments

- Emergency Srvcs.
- Education
- eHealth
- Utilities/Energy
- Surveillance Analy.
- Traffic/Transport

Enterprises

Commercial

- EU Services
- Retail/Financials
- Value Chain etc.

Industrial

- Manufacturing
- Energy/Oil/Gas
- Transportation etc.
-

	Consumers	Governments	Enterprises
	5.1B Devices Installed By 2020	**7.7B Devices** Installed By 2020	**11.2B Devices** Installed By 2020
	$0.9B Spent (2015-2020) by 2010	**$2.1B Spent** (2015-2020) by 2010	**$3.0B Spent** (2015-2020) by 2010
	$0.4B ROI (2015-2020) by 2010	**$4.7B ROI** (2015-2020) by 2010	**$7.6B ROI** (2015-2020) by 2010

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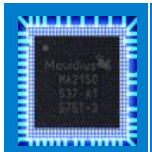
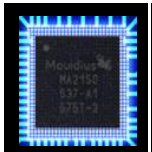
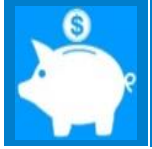
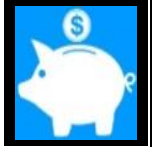
IoT Investments & ROI 2015-20

Consumers	Governments	Enterprises
5.1B Devices *Installed* **By 2020**	 **7.7B Devices** *Installed* **By 2020**	 **11.2B Devices** *Installed* **By 2020**
$0.9B Spent **(2015-2020)** *by 2010*	**$2.1B Spent** **(2015-2020)** *by 2010*	**$3.0B Spent** **(2015-2020)** *by 2010*
$0.4B ROI **(2015-2020)** *by 2010*	 **$4.7B ROI** **(2015-2020)** *by 2010*	 **$7.6B ROI** **(2015-2020)** *by 2010*

Major IoT Investors – VCs/Investment Bankers/IT Cos

Accel Partners	Foundation Capital	Kleiner Perkins	Qualcomm Ventures	SoftBank Capital
Andreessen Horowitz	GE Ventures	Caufield & Byers	Sutter Hill Ventures	SV Angel
Bessemer VPs	Google Ventures	Marc Benioff	Redpoint Ventures	Trident Capital
Cisco	Greylock Partners	Menlo Ventures	Robert Bosch Venture	Trident Capital
Citi	Index Ventures	Mitsui & Co. Ltd	Capital GmbH	True Ventures
Crosslink Capital	Institutional VPs (IVP)	NEA	SAP Ventures	Venrock
DCM Ventures	Intel Capital	New Venture Partners	Sequoia Capital	Crosslink Capital
DFJ Esprit	Khosla Ventures	Norwest VPs	Shasta Ventures	Xiaomi

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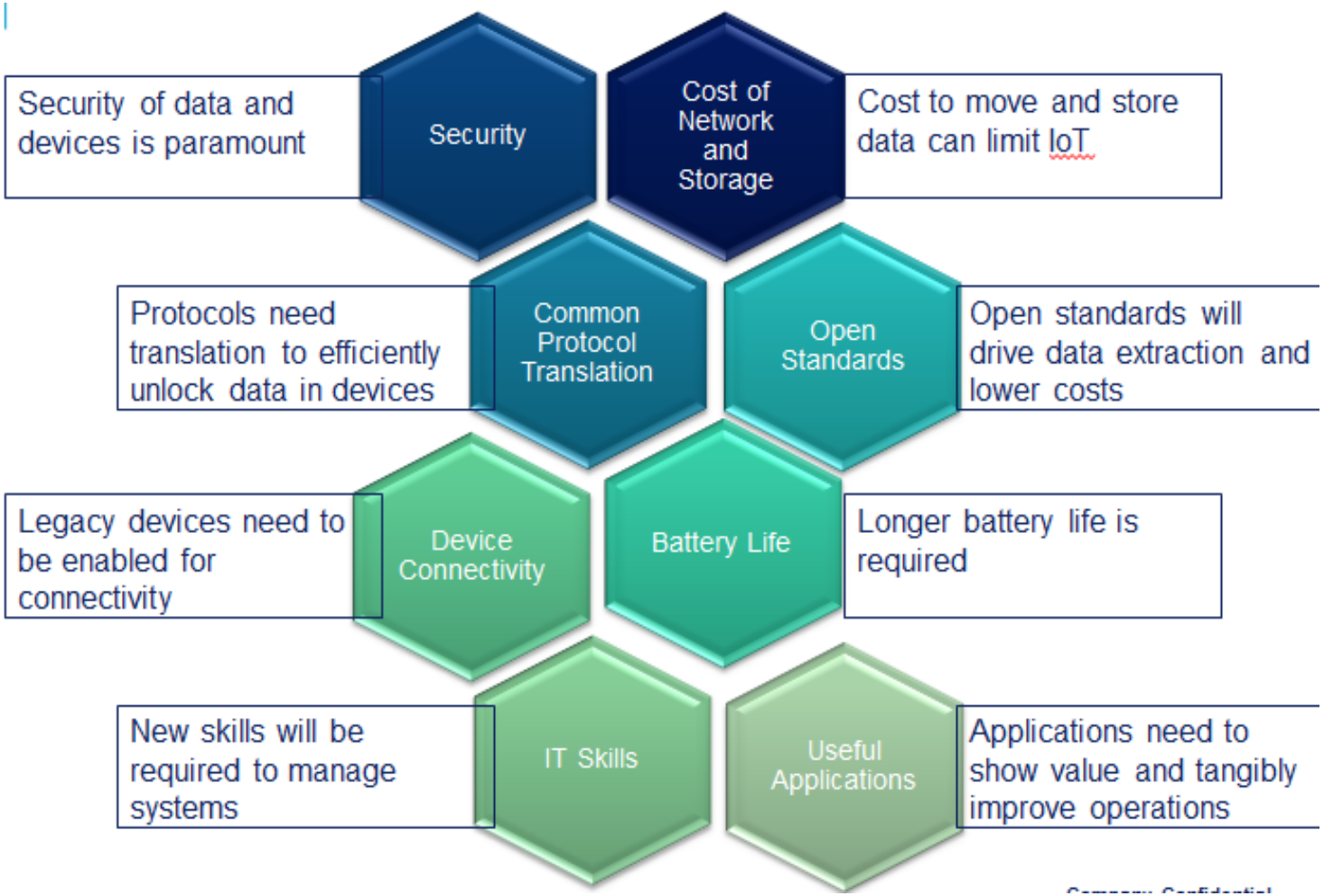
IoT Market Challenges



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IoT Major Participants 2015

Major IT Companies in IoT - 2015

Start-Ups – 540 Companies by Market/Product Segments

*See **IMEX Research - IoT Industry Report 2016** – Co. Profiles by Targeted Market Segments/Competitive Products Positioning/End User Customer Wins/Key Management and VC/Corporate Funding*

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IoT Analytics - Optimized DB Product

Product Metric	IoT Analytics	Columnar DBs	Row-Based DBs	Value Stores	Hadoop Batch	Hadoop Streaming
	Ideal	HP Vertica, AWS RedSh	Oracle, Informix	Cassandra, MongoDB	Cloudera, Hortonwrks	Spark/Shark, Storm
BIG DATA Capacity	o	o		o	o	o
FAST DATA Import	o			o	o	o
EDGE Analytics	o					
REAL-TIME Insights	o					
INTEGRTD Platform	o	o	o			
STG DATA Structure	o		o	o		

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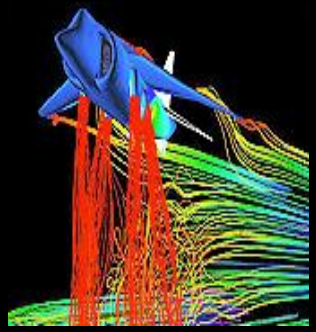
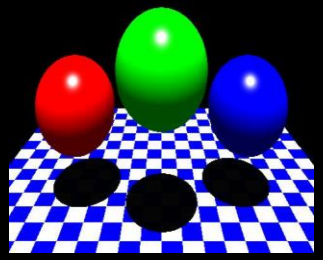
IoT's Reach: Resources > eHealth > Wall St > Hollywood ….

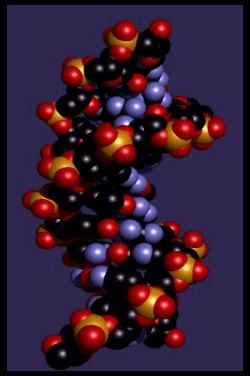
Earth Resources Oil & Gas …

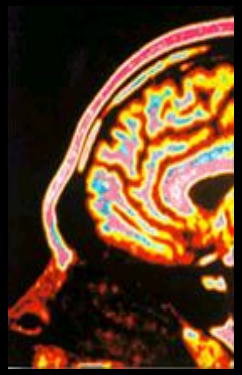


Manufacturing 3D Printing

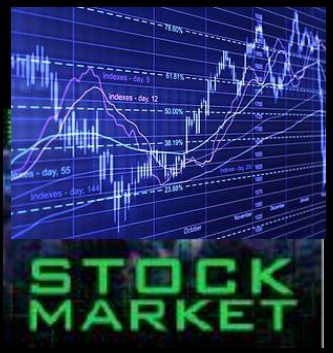


Bioinformatics eHealth

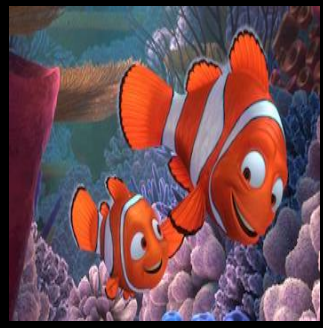




Wall Street/ Banking…



Entertainment



Data: IMEX Research & Panasas

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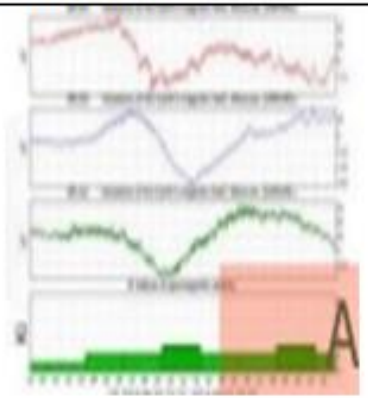
IoT Use Case – Health Care

Body Sensors	IoT Connect Monitors	Medical Data Bases

Machine Learning	Big Data Usage	Prediction	Recommendations
			

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		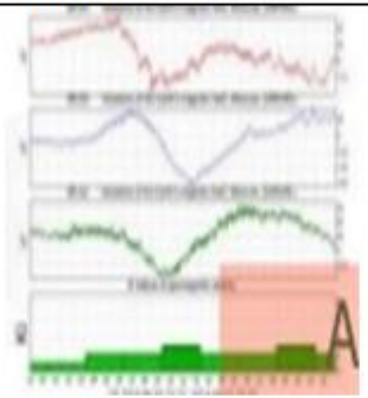	

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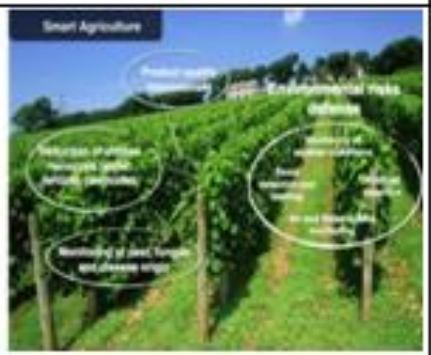
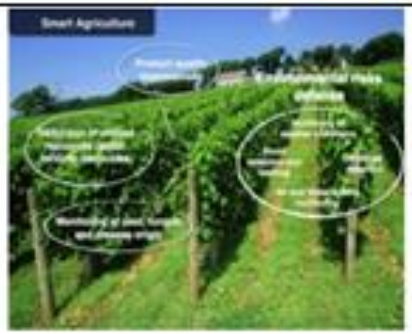
FDA IoT Driven Food Contamination Tracking

Smart Agri-Sensors	Universal ID	Global Access	Processed Food
			
Track Tracing	**Govt. Smart Srvcs**	**Recall**	**Fix Contamination**
			

Global IT Spending $B

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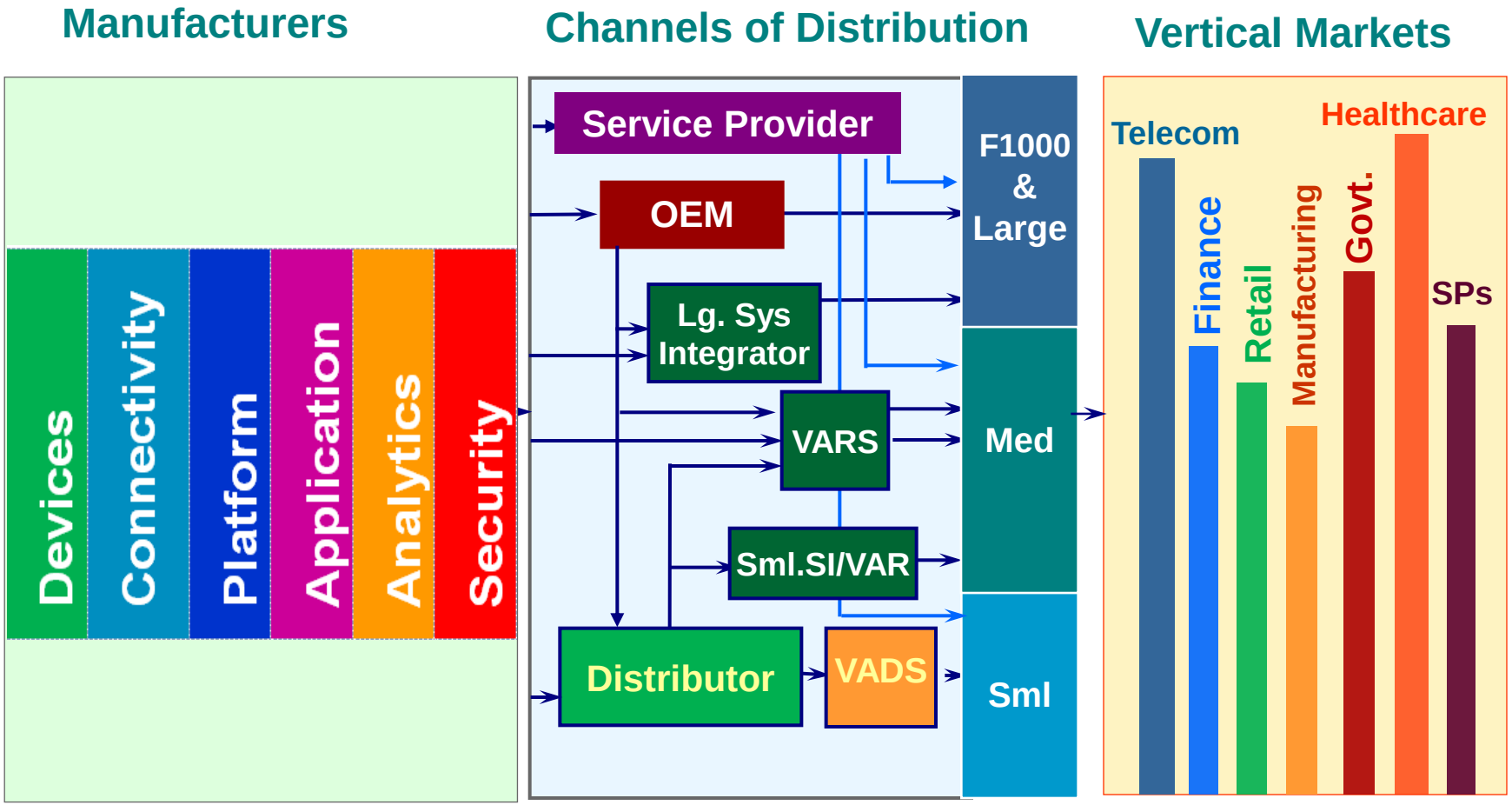
IoT Industry Structure - Ecosystem



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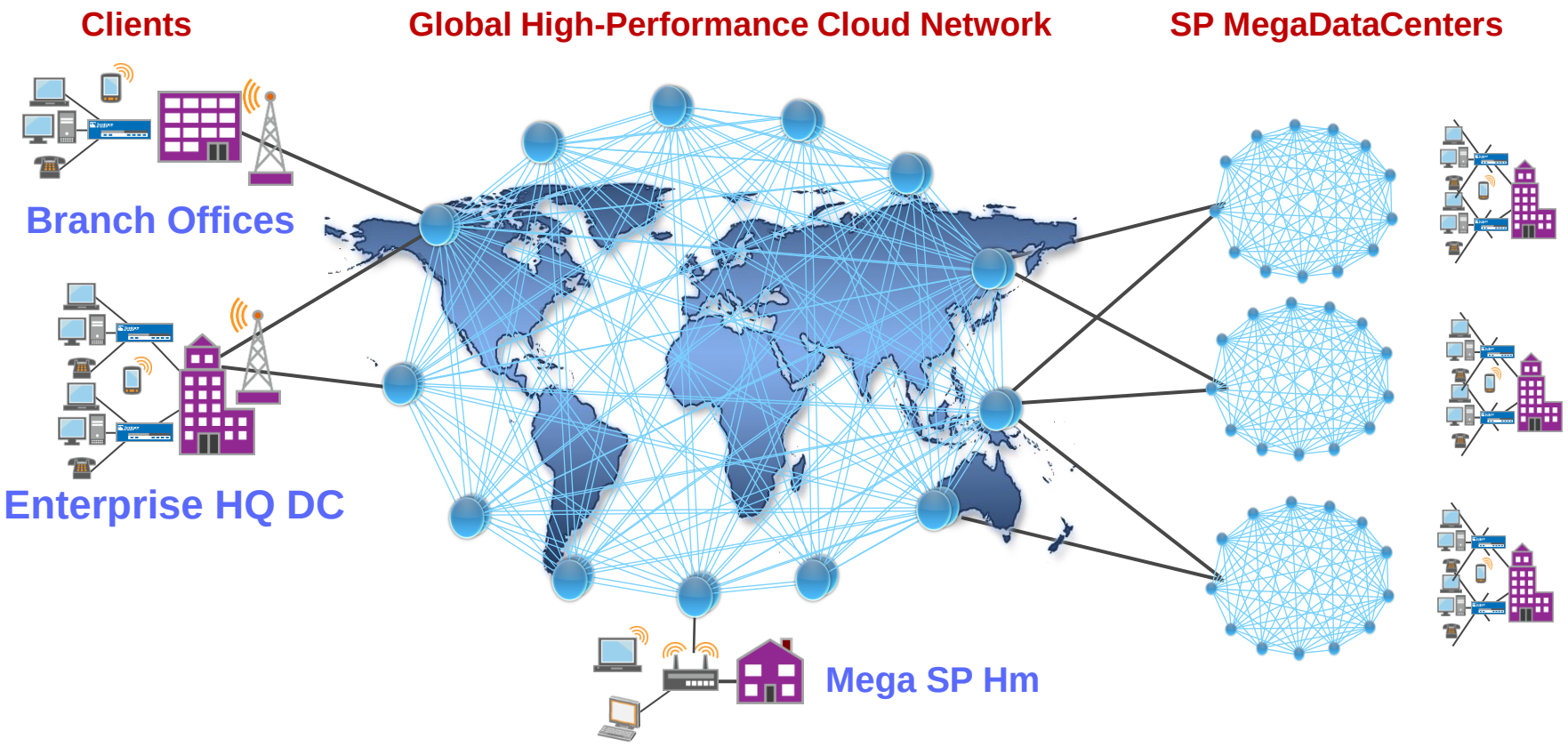
The IoT Interconnected World



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