DNV·GL

ENERGY

IoT for everyone!

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28 November 2018

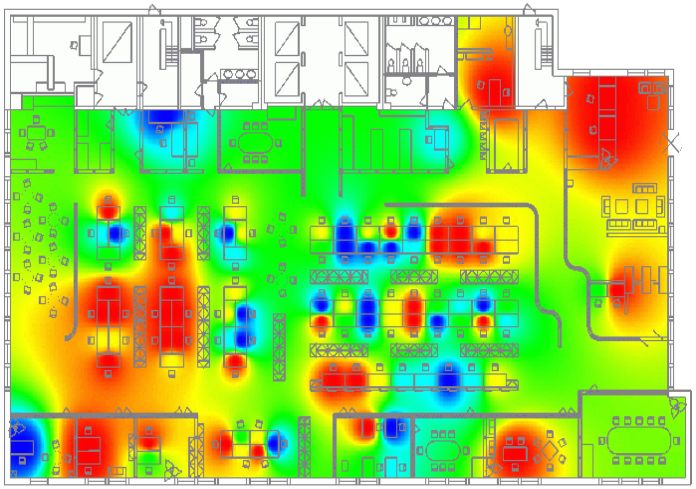
Three perspectives on IoT

36,000ft – Definition and trends

10,000ft – Impact on the built environment

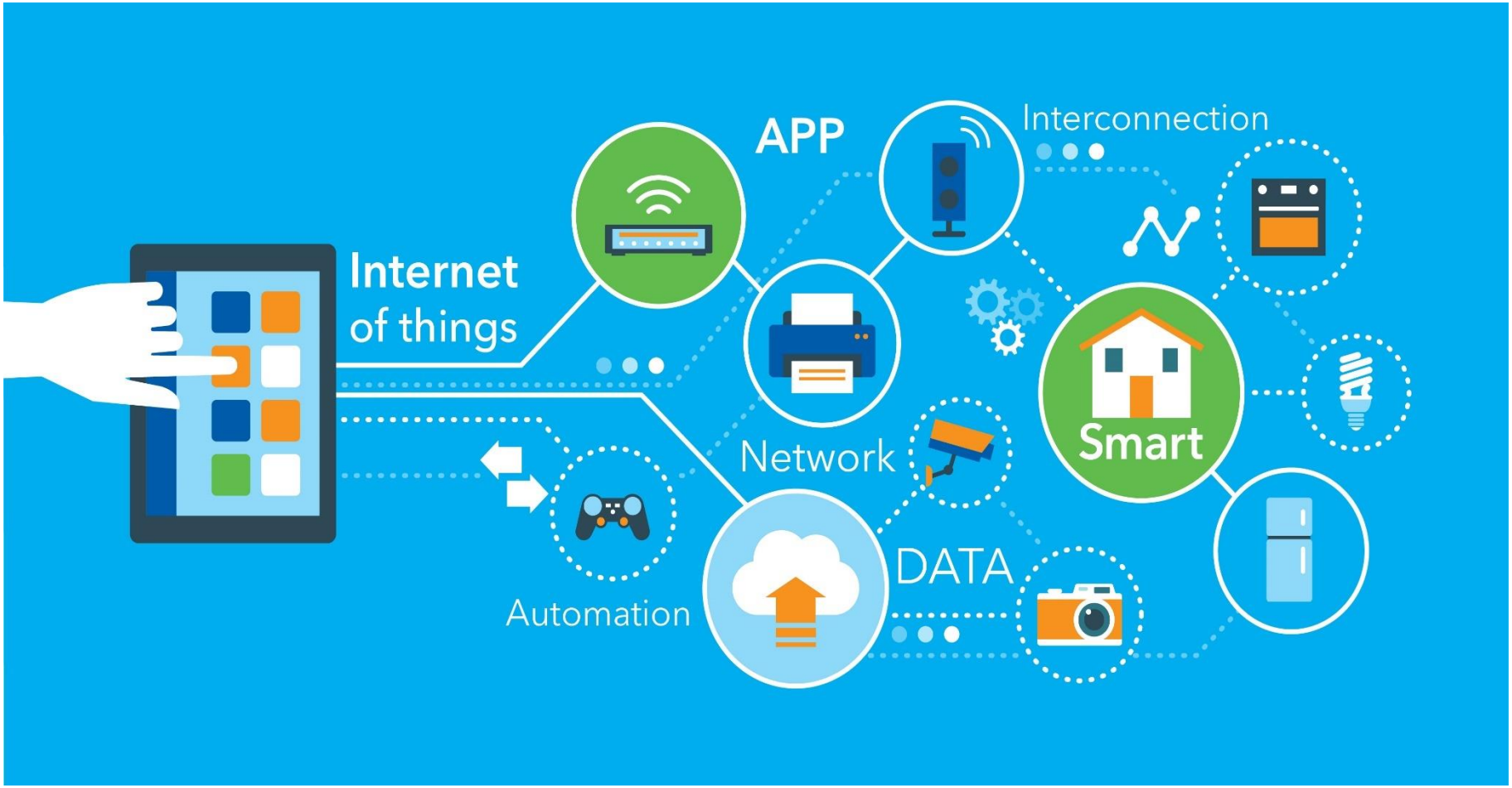
100ft – Smart buildings and IoT execution

Introduction

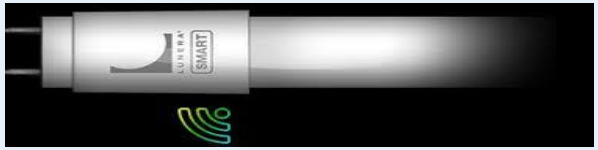


Sources: Leviton, IoT Solutions

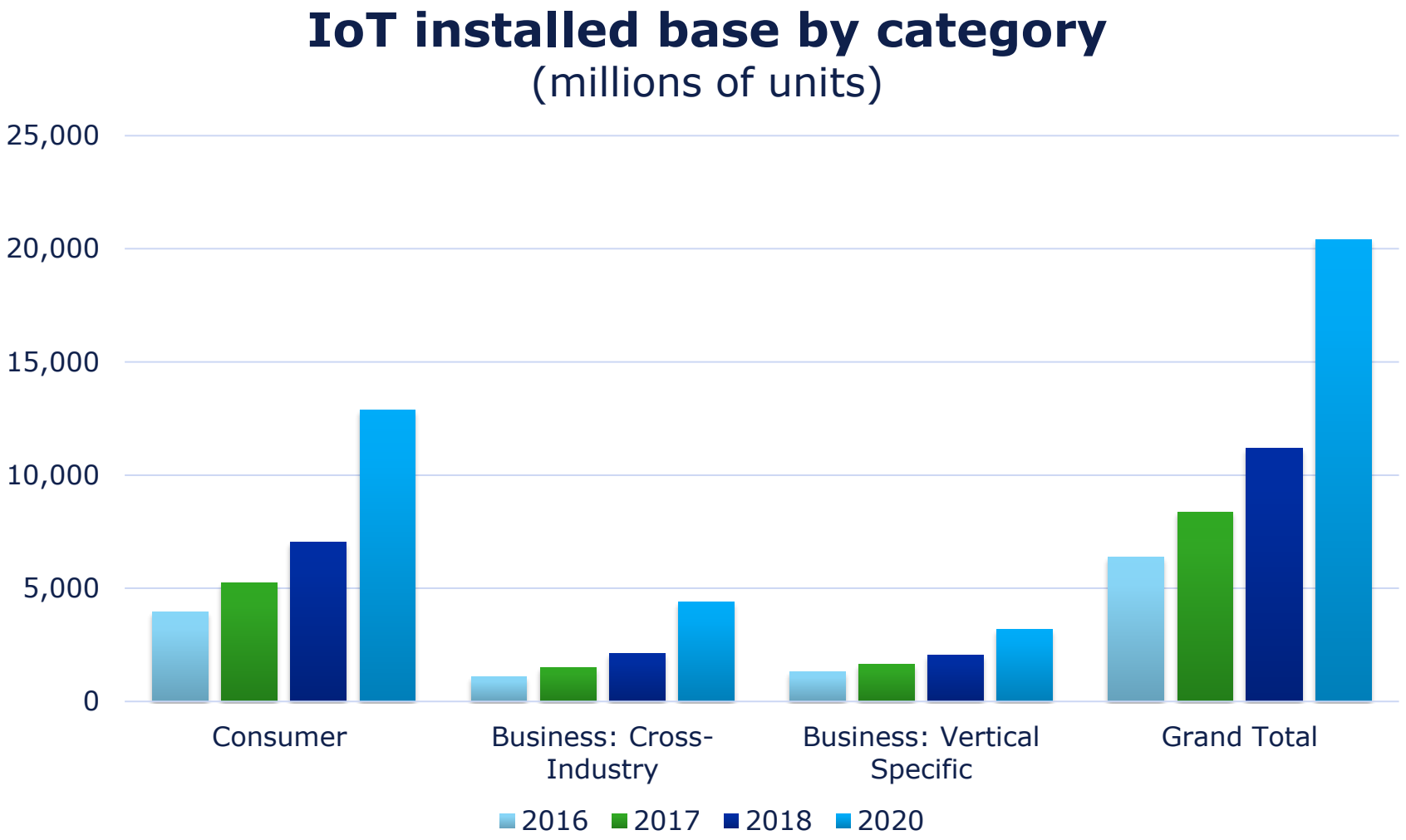
What is IoT?


Internet
of things
APP
Interconnection
Network
Smart
Automation
DATA

IoT device overview

Device Type	Building System	Example
Rooftop Unit / Chiller	HVAC	SMART EQUIPMENT Johnson Controls
LED Linear Lamp	Lighting	
Lock	Security	RemoteLOCK
Video Surveillance	Security	
Power Strip	Plug Loads	

IoT market analysis – devices



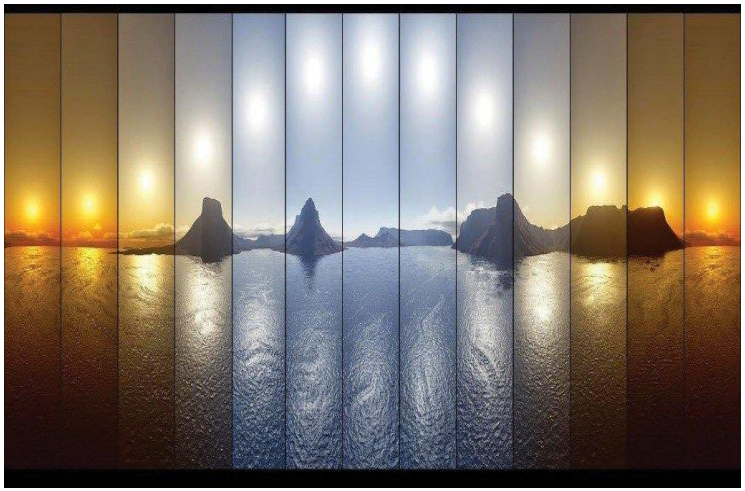
Source: Gartner

Impact on the built environment

Source: Dribble.com

Enhancing occupant comfort

90% **of our time is spent in enclosed spaces!**



Sources: Glumac, CBRE

71% of participants felt more energized

76% of participants felt happier

50% of participants felt healthier

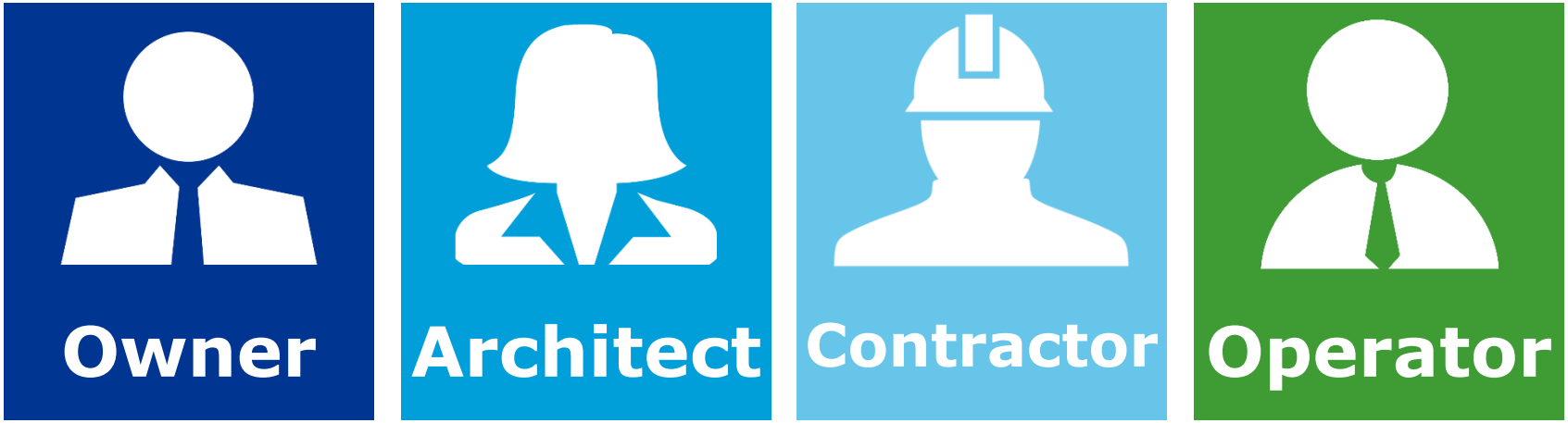
Smart building design

Integrated design approach

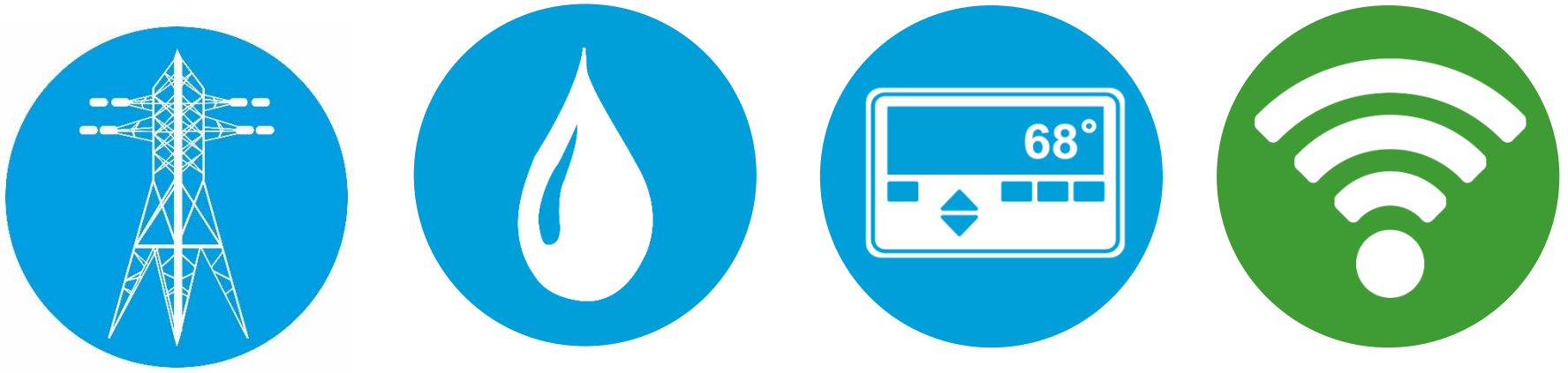
- Bringing together multiple building specialist to increase awareness of overall design goals

Integrated team process

- A derivative of the design process where the team works together during the various construction phases

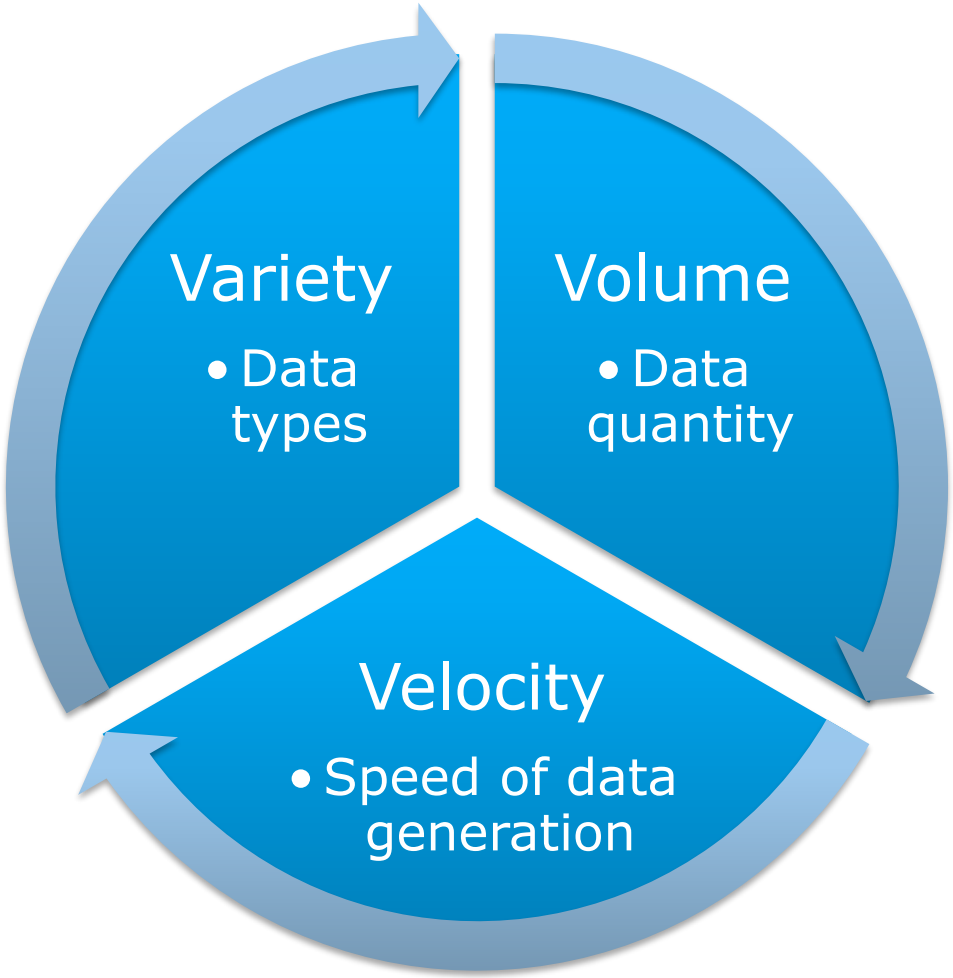


The internet as the fourth utility



Electricity **Water** **Gas** **Network**

The three V's of big data

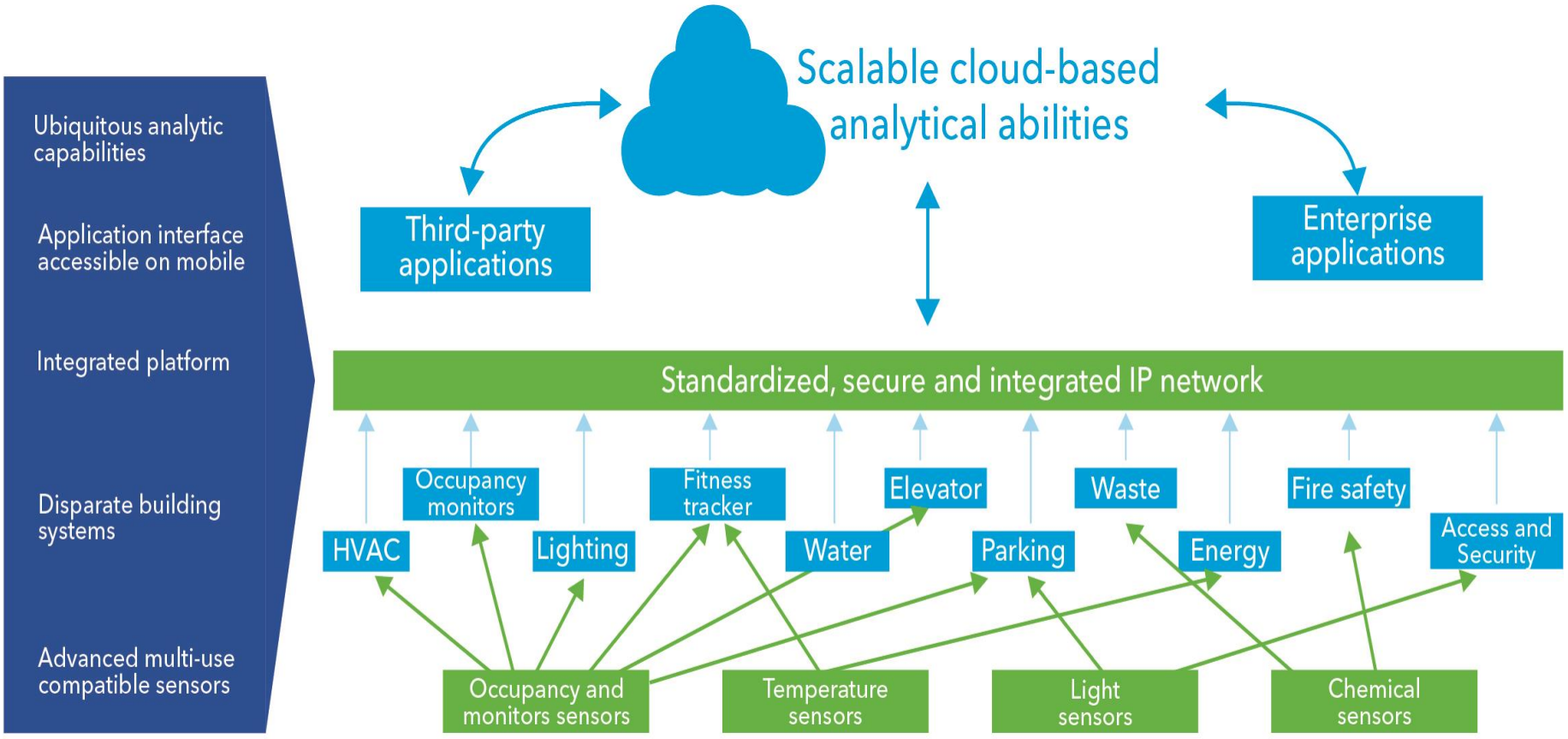


Role of ‘The Cloud’

Source: meship.com

What about data security?

IoT value stack for the smart building



Source: Jim Young, "BIoT- BUILDING Internet of Things™, Realcomm, January 23,2014; Deloitte Center for Financial Service analysis.

Taking it home – What does this mean for EE and energy codes?

Proactively identify energy code impacts

Pilot big ideas

Factor in the NEIs / Value Add

Questions?

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