Are you ready for IoT to change our buildings?

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CEO, Optigo Networks Inc.
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OPTiGO NETWORKS

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Agenda

- Why the Internet of Things in Buildings?
- IoT: The 4th Industrial Revolution
- Reshaping Commercial Real Estate
- How Does IoT Affect Us? IT and OT in Smart Buildings
- Cybersecurity and IoT

Why the Internet of Things in Buildings?

Lifetime Cost of Buildings

Maintenance 40%
Energy 40%
Construction 20%

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IoT: The 4th Industrial Revolution

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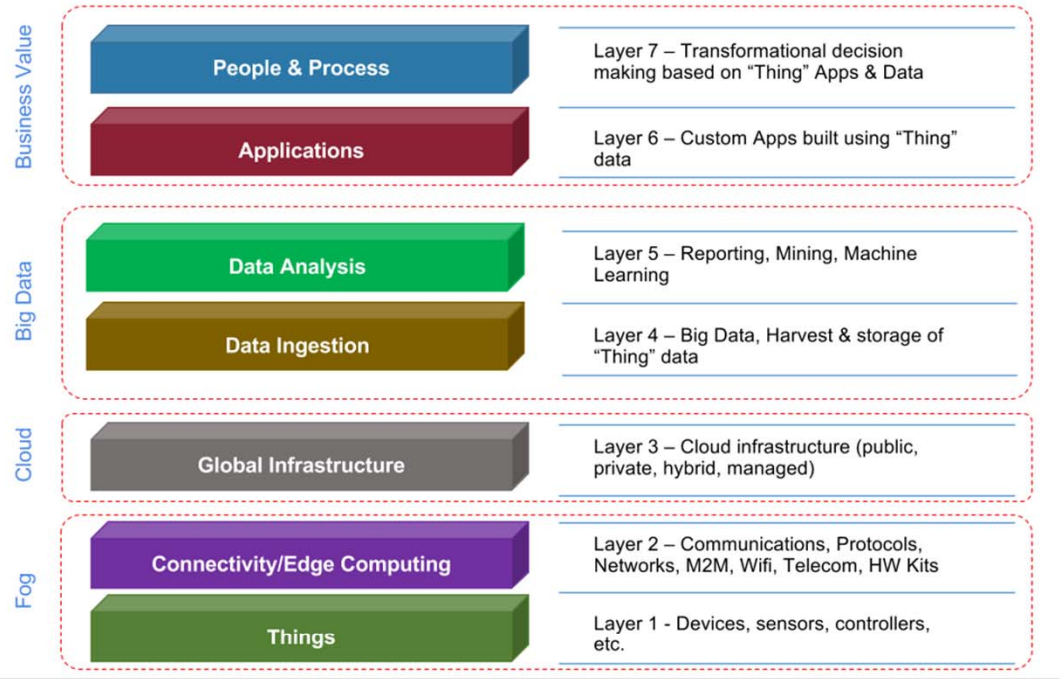
7 Layers of the Internet of Things (IoT)



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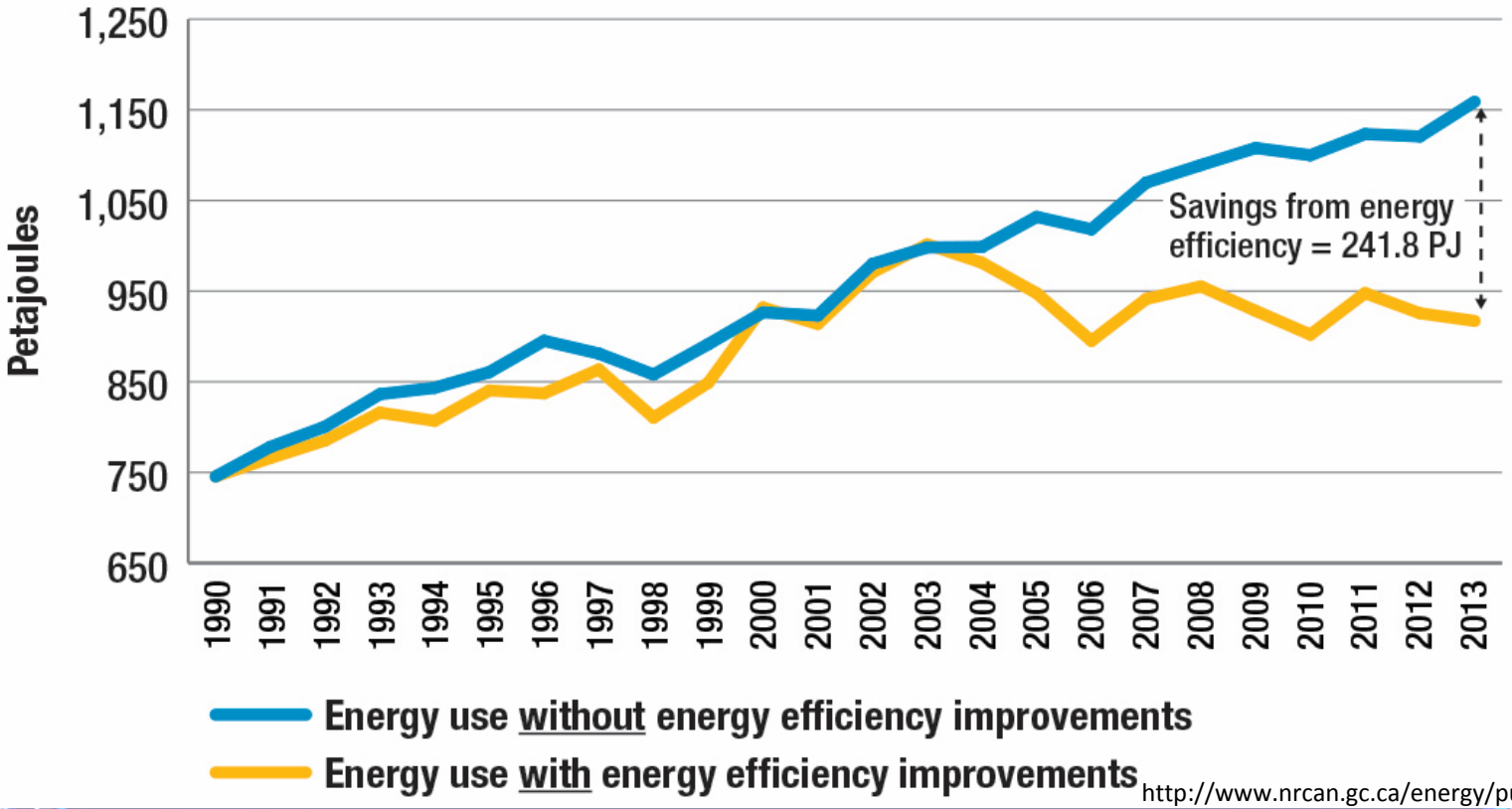
Connected “Things” Forecast:

6.4 Billion in 2016

21 Billion in 2020

https://www.cnbc.com/2016/02/01/an-internet-of-things-that-will-number-ten-billions.html

Reshaping Commercial Real Estate



http://www.nrcan.gc.ca/energy/publications/19030

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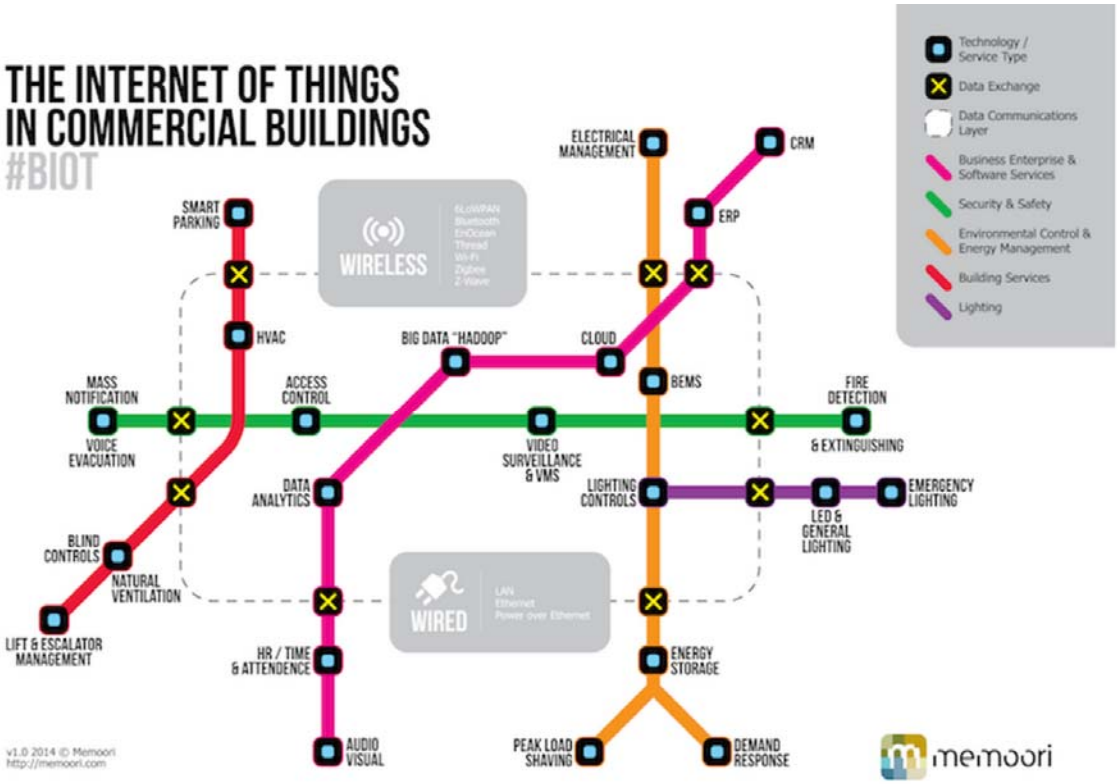

http://www.memoori.com/global-market-internet-things-smart-buildings-will-rise-85bn-2020/

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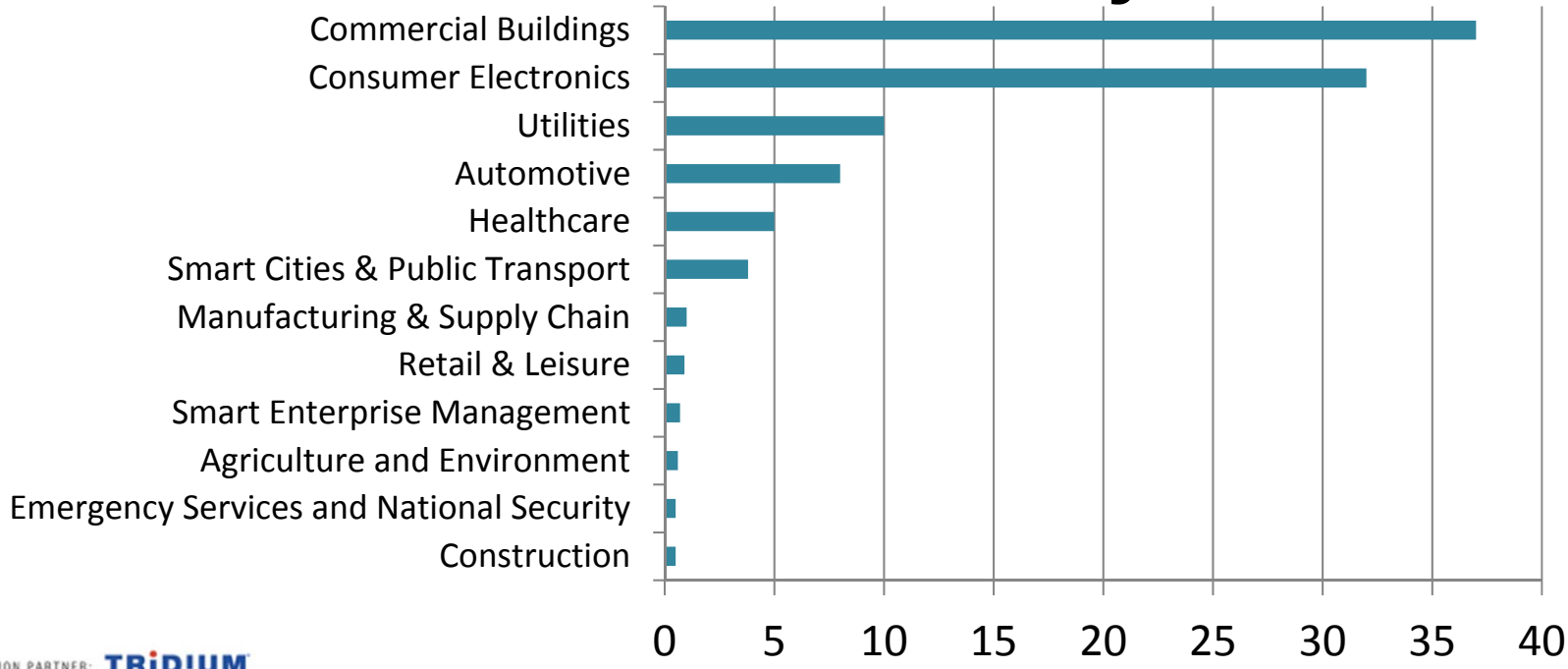
“Global Market for the Internet of Things in Smart Buildings will rise to over $85 Billion by 2020”

– Memoori

http://www.memoori.com/global-market-internet-things-smart-buildings-will-rise-85bn-2020/

Connected Devices by 2022



EDUCATION PARTNER: TRIDIUM

Source: Machina Research 2012

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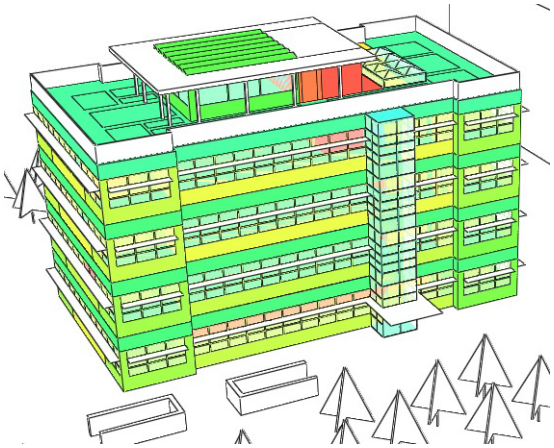

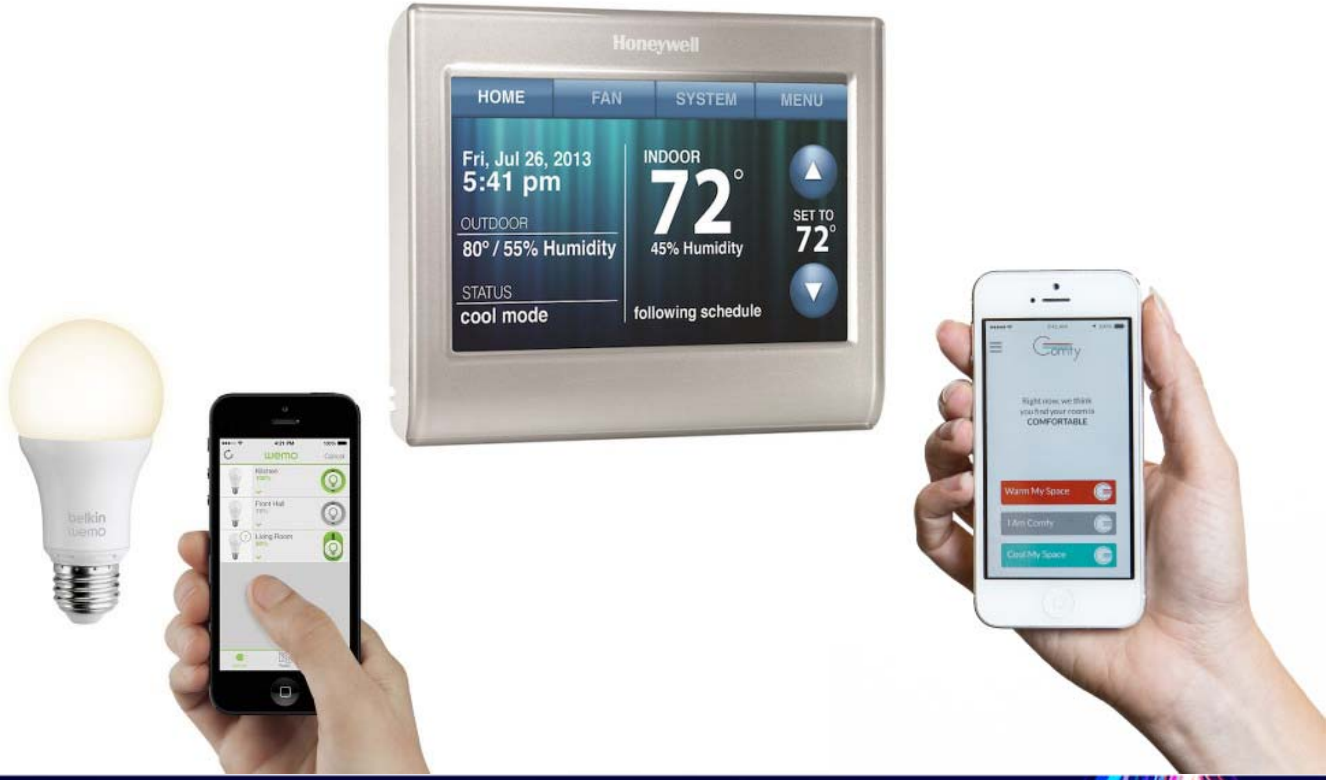

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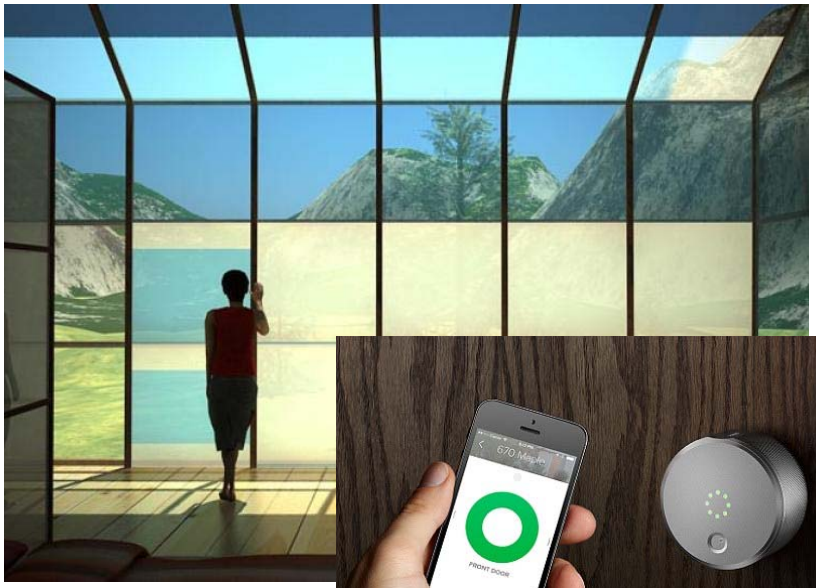

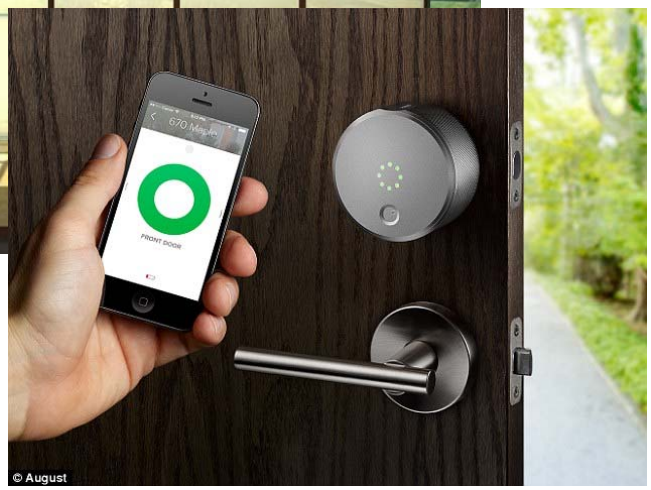

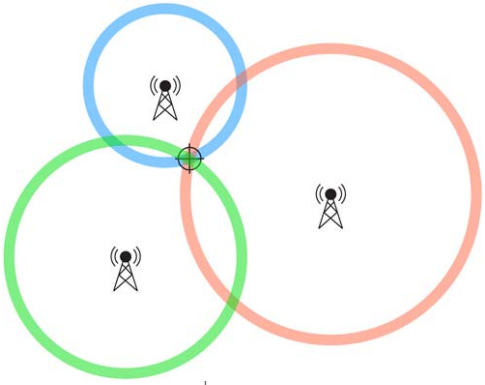

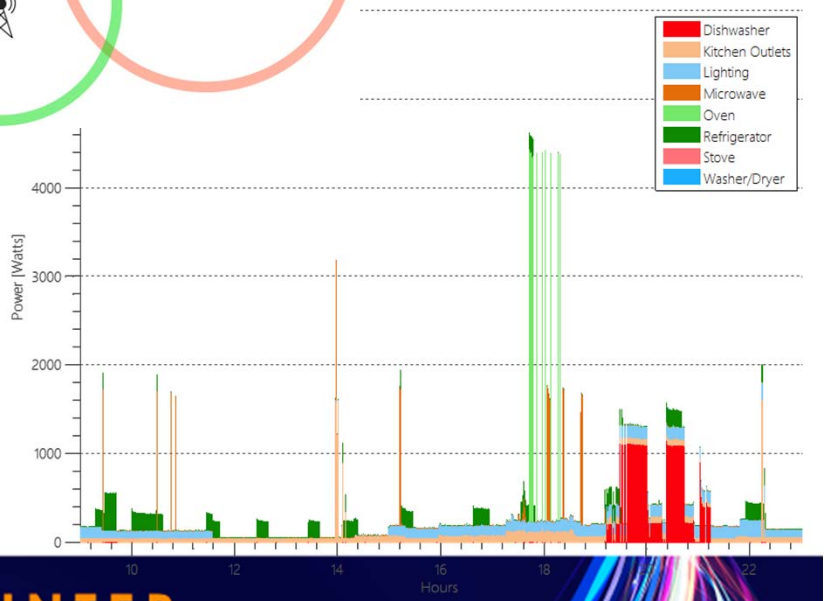

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LiFi

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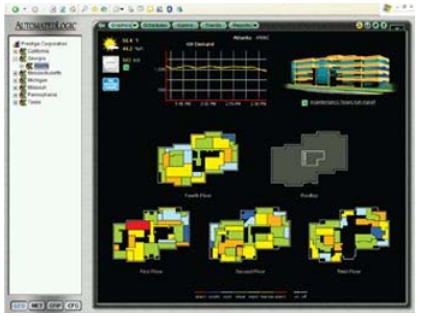

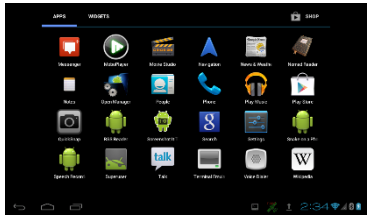

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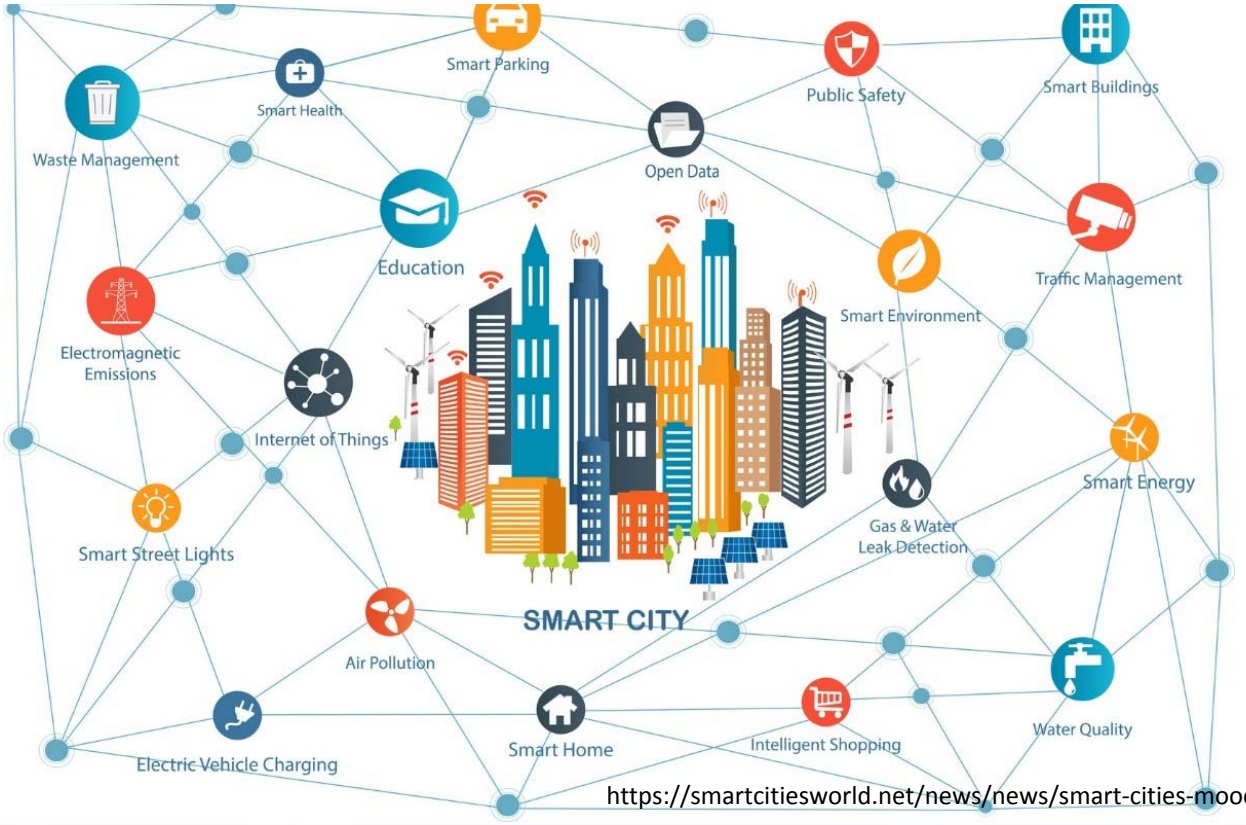

https://smartcitiesworld.net/news/news/smart-cities-mooc-open-for-registration-1519

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How Does IoT Affect Us?
IT and OT in Smart Buildings

New skills:

- IP Networking
- General IT
- Software coding
- Vendor Management
- Industry Specialization
- Privacy & Security

http://maxpixel.freegreatpicture.com/Building-Employee-Builder-Worker-Professional-2762236
https://www.flickr.com/photos/dfataustralianaid/10729848585

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Information Technology

Operational Technology

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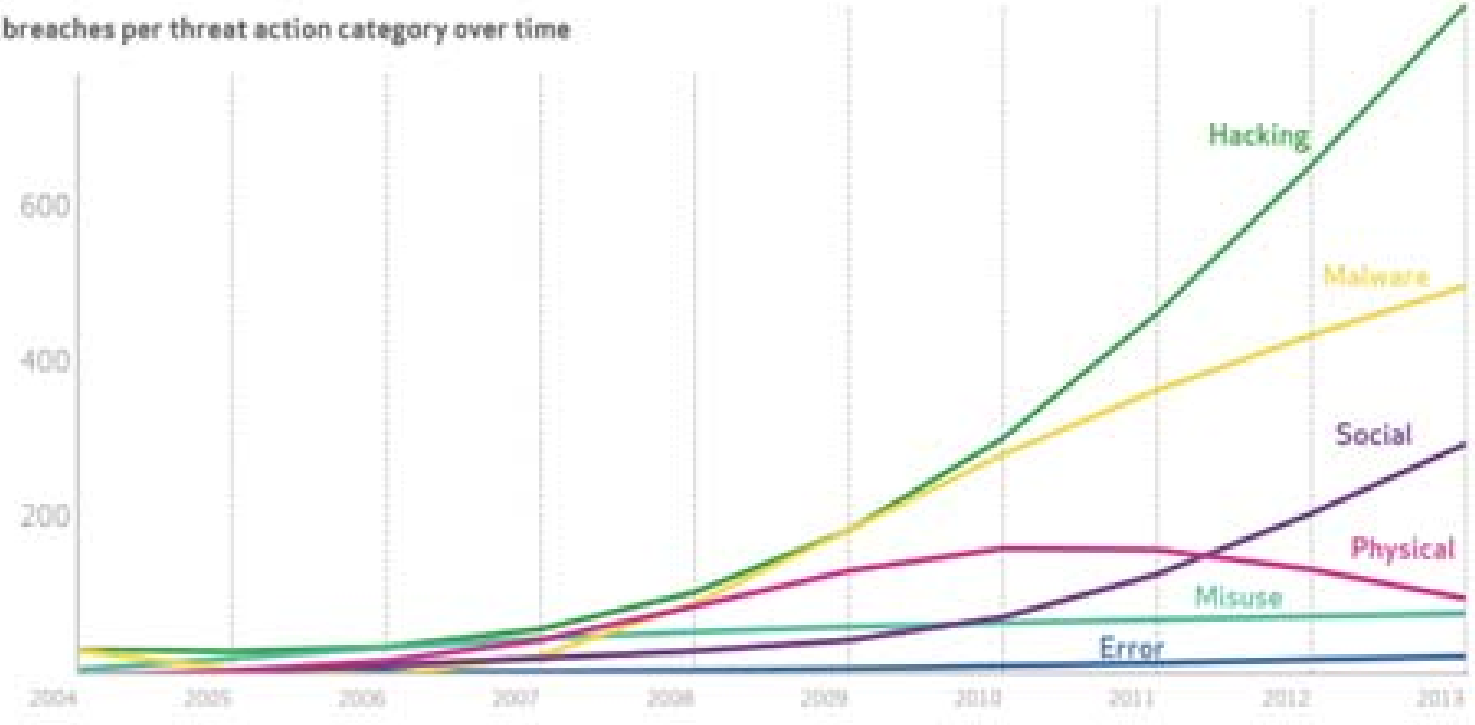
	Service	Bandwidth	Device Churn	Internet?	Traffic Pattern
OT	Surveillance/CCTV	Significant	Replace-on-fail	Typically No	Planned
	Access Control	Very Low	None	No	Predictable
	Lighting	Very Low	Replace-on-fail	No	Predictable
	Elevator	Very Low	None	No	Predictable
	HVAC	Very Low	None	No	Predictable
	Power Metering	Low	None	Single destination	Predictable
IT	Email	Variable	High	Yes	Sporadic
	File Sharing	Variable	High	Yes	Sporadic
	Video Conference	High/Variable	Medium	Yes	On / Off
	Enterprise Apps	Low/Medium	Medium	Varies	Sporadic

Cybersecurity and IoT

“Cybersecurity Market Reaches $75 Billion in 2015; Expected to Reach $170 Billion by 2020”

http://www.forbes.com/sites/stevemorgan/2015/12/20/cybersecurity%E2%80%8B-%E2%80%8Bmarket-reaches-75-billion-in-2015%E2%80%8B%E2%80%8B-%E2%80%8Bexpected-to-reach-170-billion-by-2020/#35bcbe692191

Figure 8.
Number of breaches per threat action category over time



VERIZON 2014 DATA BREACH INVESTIGATIONS REPORT

http://resources.infosecinstitute.com/2013-data-breaches-need-know/

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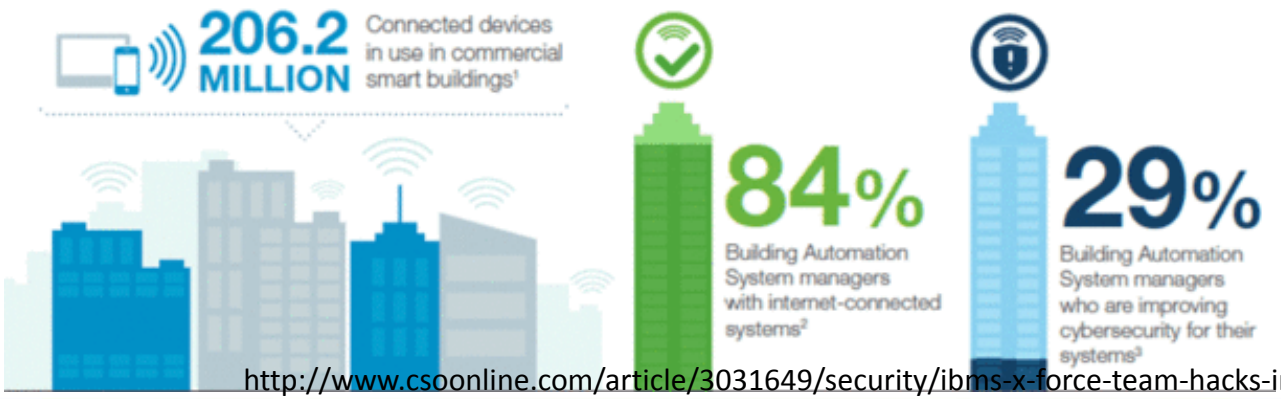
Smart Buildings
A Back Door for Hackers?

Connected Building Systems Fly under the Cybersecurity Radar, Creating "Shadow IoT"



http://www.csoonline.com/article/3031649/security/ibms-x-force-team-hacks-into-smart-building.html

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https://nvd.nist.gov/

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Summary

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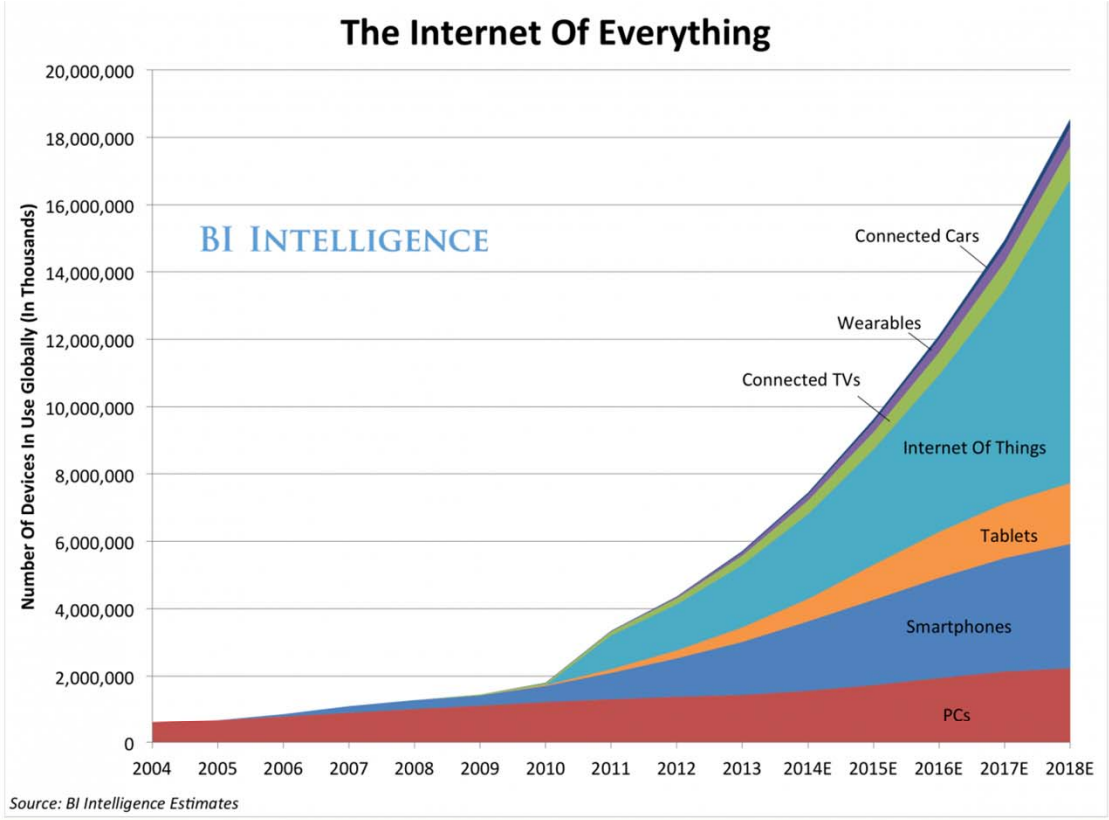

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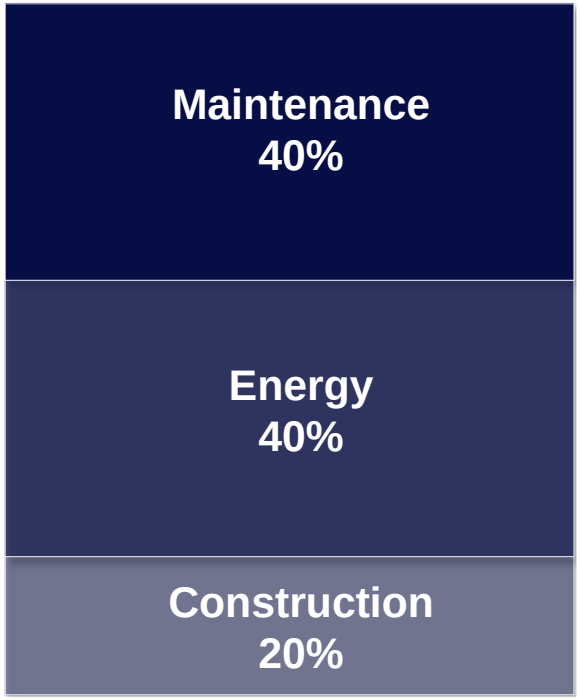
Lifetime Cost of Buildings



Building IoT to improve:

- Tenant happiness
- Energy efficiency
- Maintenance costs
- Security

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Thank you.

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