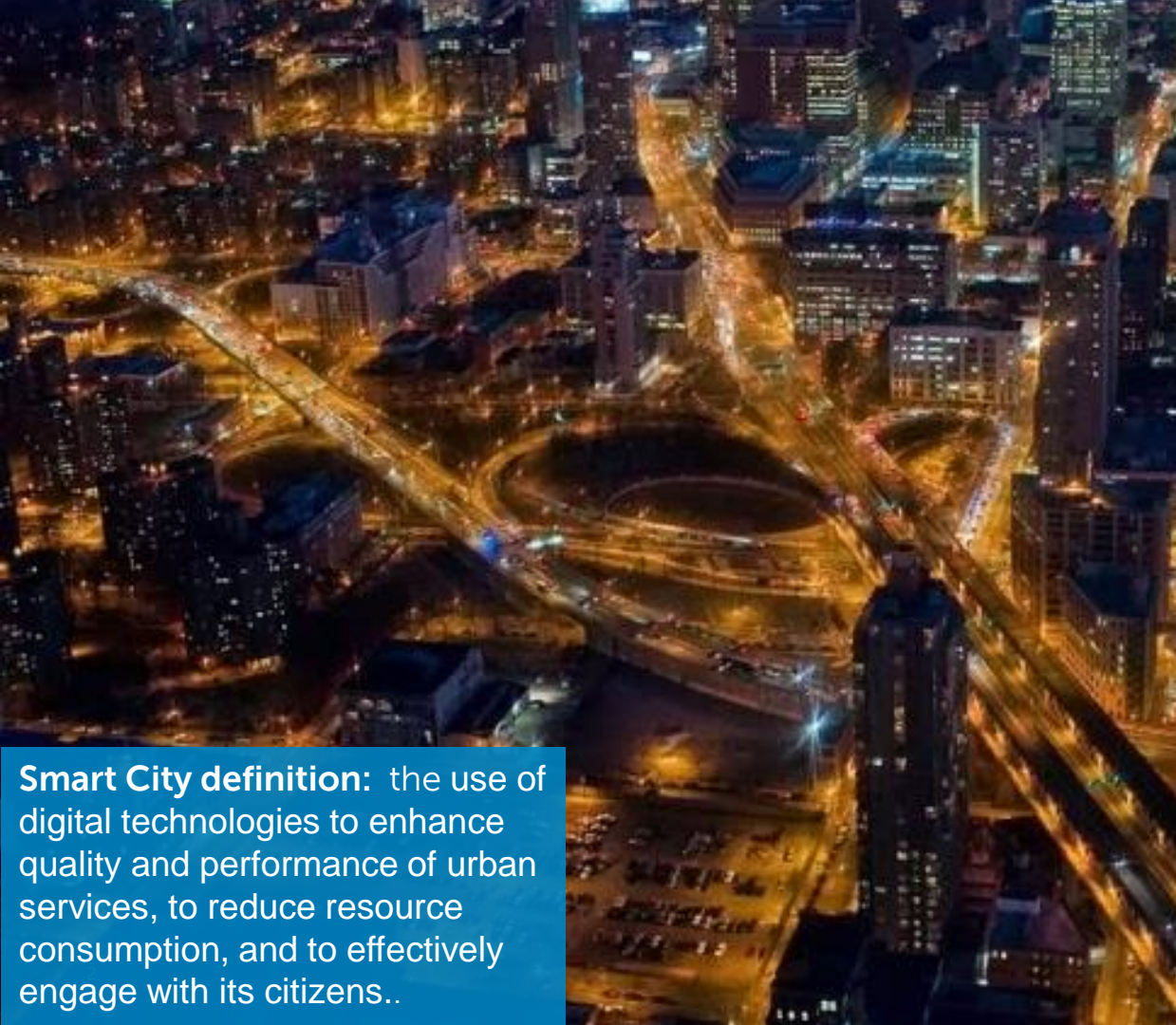

*Start with a building,
to grow a city....*



Glenn Wintrich



Smart City definition: the use of digital technologies to enhance quality and performance of urban services, to reduce resource consumption, and to effectively engage with its citizens..



Smart Cities & buildings are possible due to the advancement in technology that finally provide cost and scale opportunities

Smart Cities/Buildings Management and Services

Sensing and
data gathering

Internet of
Things (IoT)

Data transport
and storage

Information &
Communications
Technology (ICT)

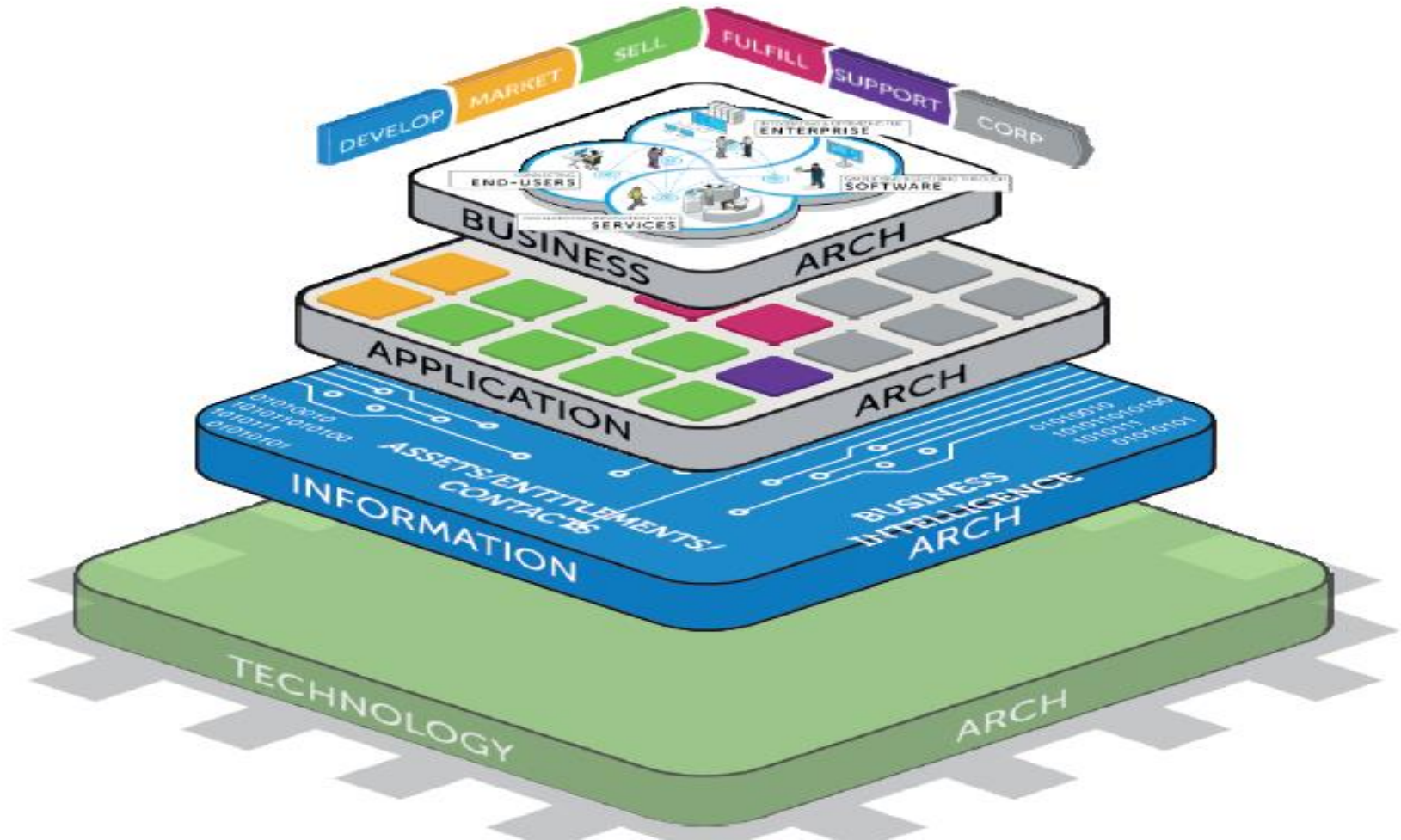
Data analysis
and
optimization

Big Data / Data
Analysis

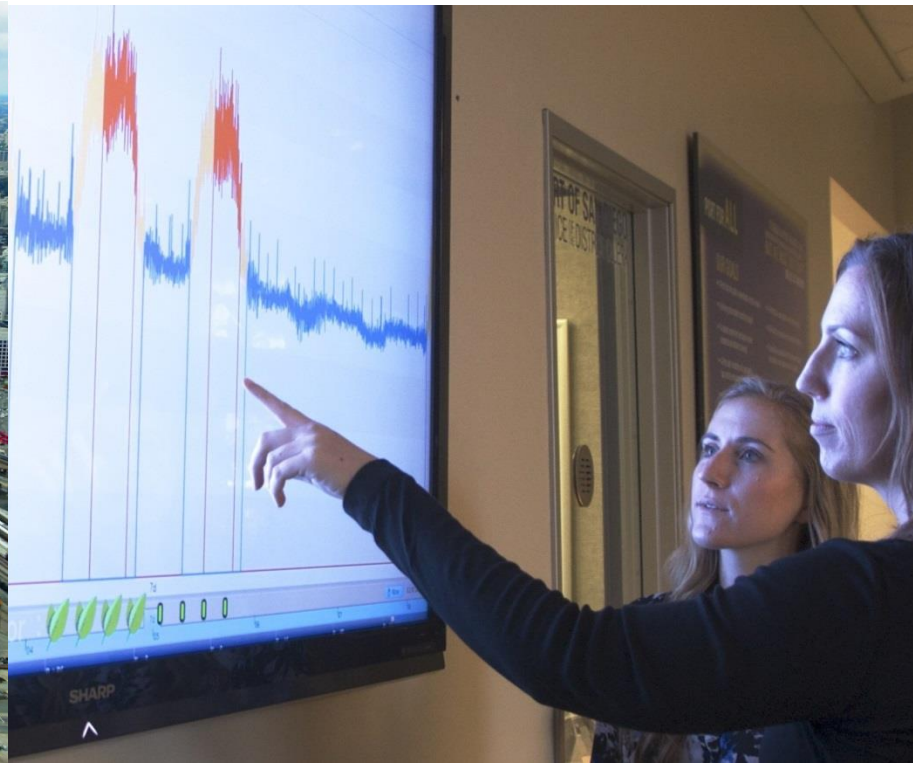
Services

Cloud

City Enterprise Architecture (future state)

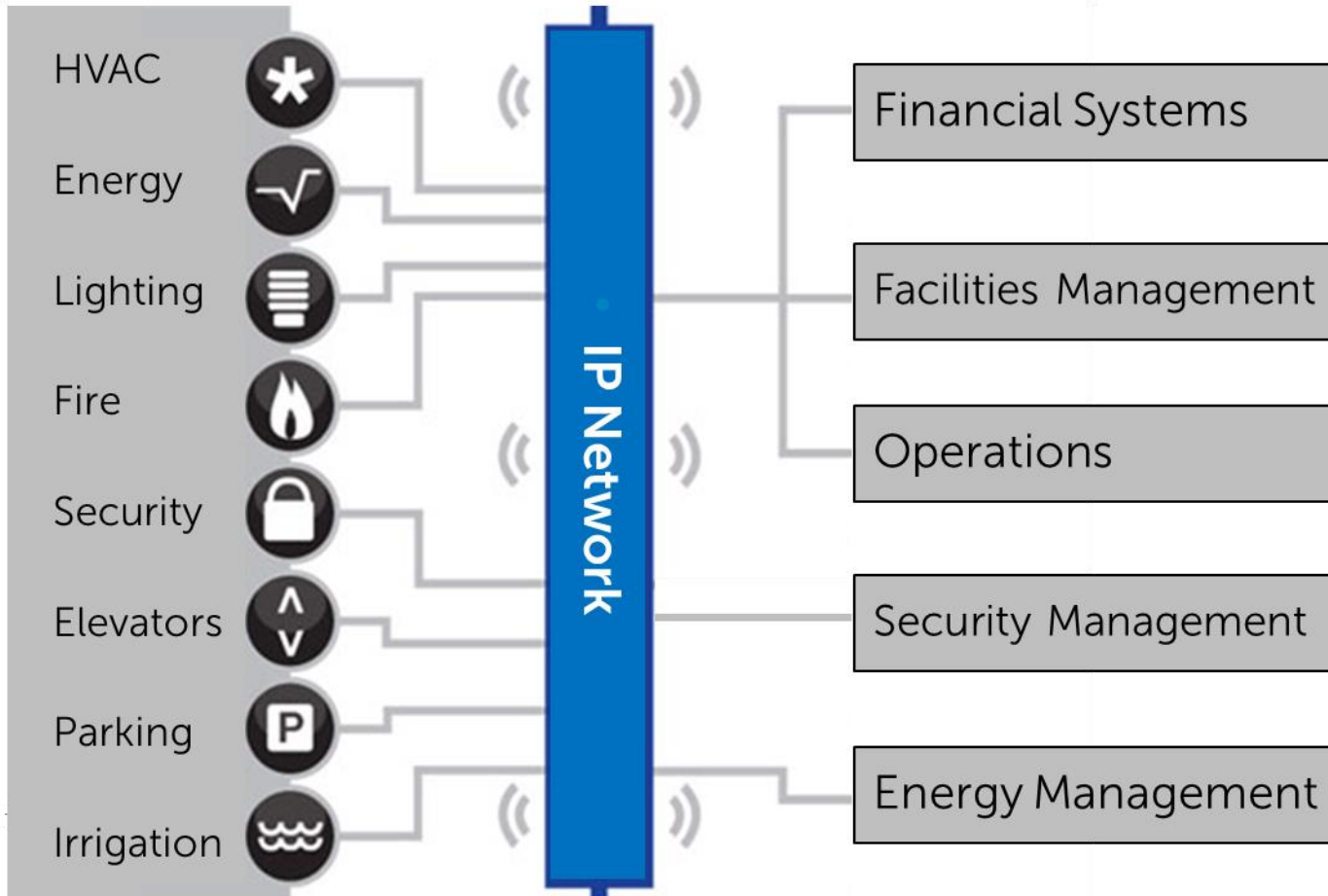


Port of San Diego, Pioneering Technology for Energy & Cost Savings



<http://cleantechsandiego.org/port-san-diego-pioneers-technology-energy-cost-savings/>

Understanding the bigger picture....



Case study for Smart Buildings – San Diego

Challenge

A large historic hotel was interested in understanding whether the addition of sensors, connectivity and simple analytics could drive a reduction in utilities spend.

Solution

Sensors and data gateways were added to existing HVAC boilers, pumps and tanks to measure the performance of the HVAC system.

Through a pilot of gateways and an analytics dashboard, cost savings (\$60k/year) equal to 3x the investment were identified within the first weeks of deployment.

Technical contribution

Customized gateways that collect and transmit sensor data integrated with analytics. “Start small and grow solutioning.” Now the solution will grow...



This is not where IT normally treads.....



Hot water tank output, installed temp sensor



Dual water pump system with digital control, installed current sensor.



Three boiler system in basement, supplies entire 270 room hotel.

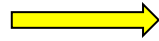
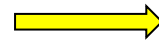


Electrical industrial boiler control, installed current sensor.

The journey and challenges from buildings to cities

Buildings

- A hand full of stakeholders with varying priorities
- Integration of multiple operating systems and services
- Creating synergies across capabilities for unexpected wins
- Creating one team from facilities and IT services
- A few new business models to justify spend
- POCs have minor risks



Cities

- 100s of stakeholders with countless priorities
- Integration of dozens of siloed services and operating systems
- Integration of city services creating greater wins
- Engagement of dozens of independent capability teams
- Primary shift in business models development to fund projects
- POCs can create an avalanche of unexpected outcomes



Challenges & Barriers



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