

Cloud Services for Smart Grid

CSR

Push every boundary.™

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October 15th 2013

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Outline

- Evolution of the Smart Home
- Smart Grid & Smart Home
- Communication Technologies
- A Common Platform for M2M Application
- Enable Quick Time to Market

World and US Energy - Dashboard

Figure 18. World net electricity generation by energy source, 2010-2040

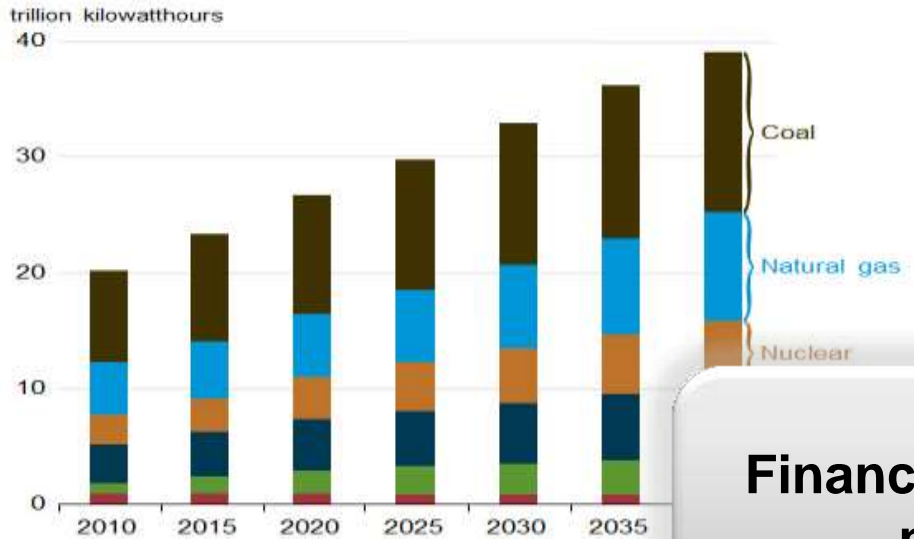
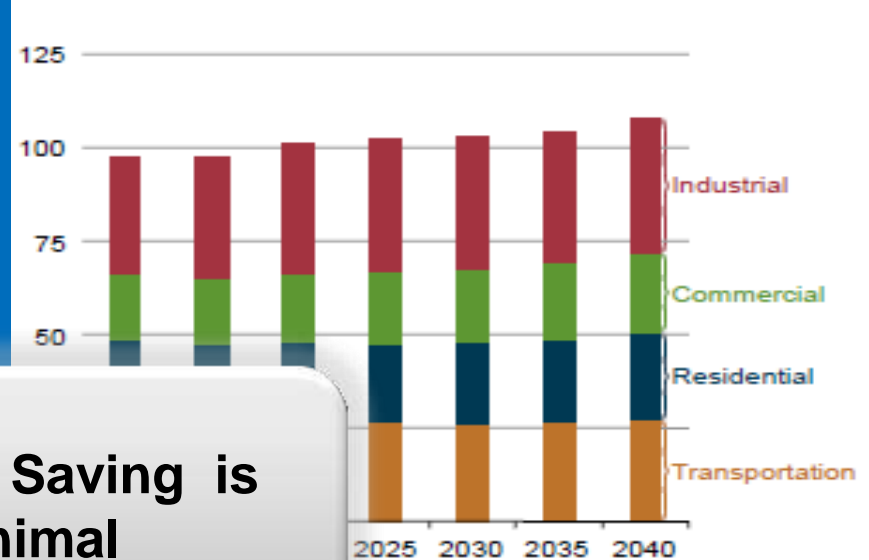
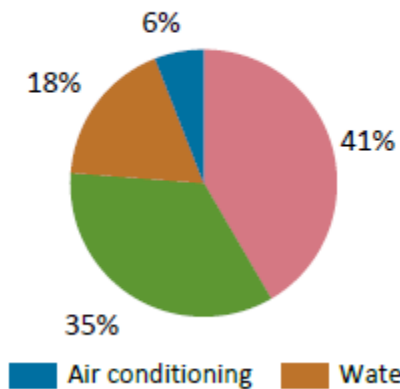


Figure 53. Primary energy use by end-use sector, 2011-2040 (quadrillion Btu)

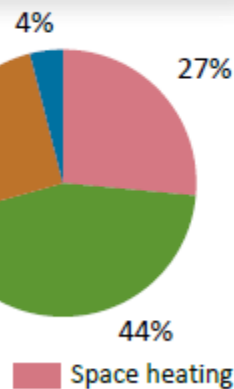
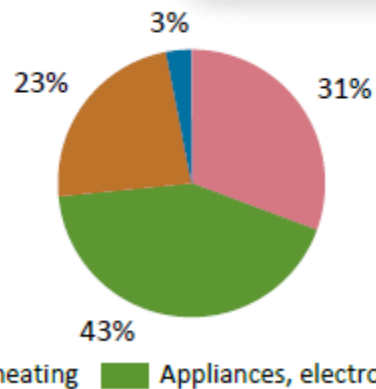


Financial Saving is minimal

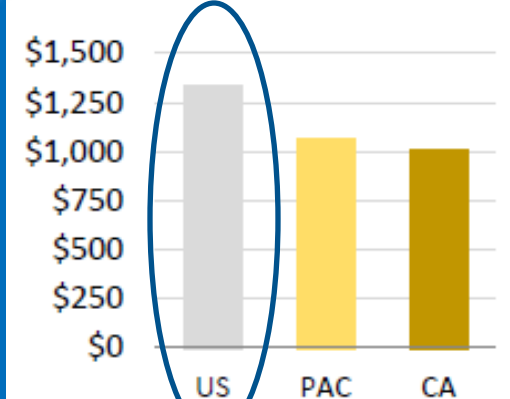
US



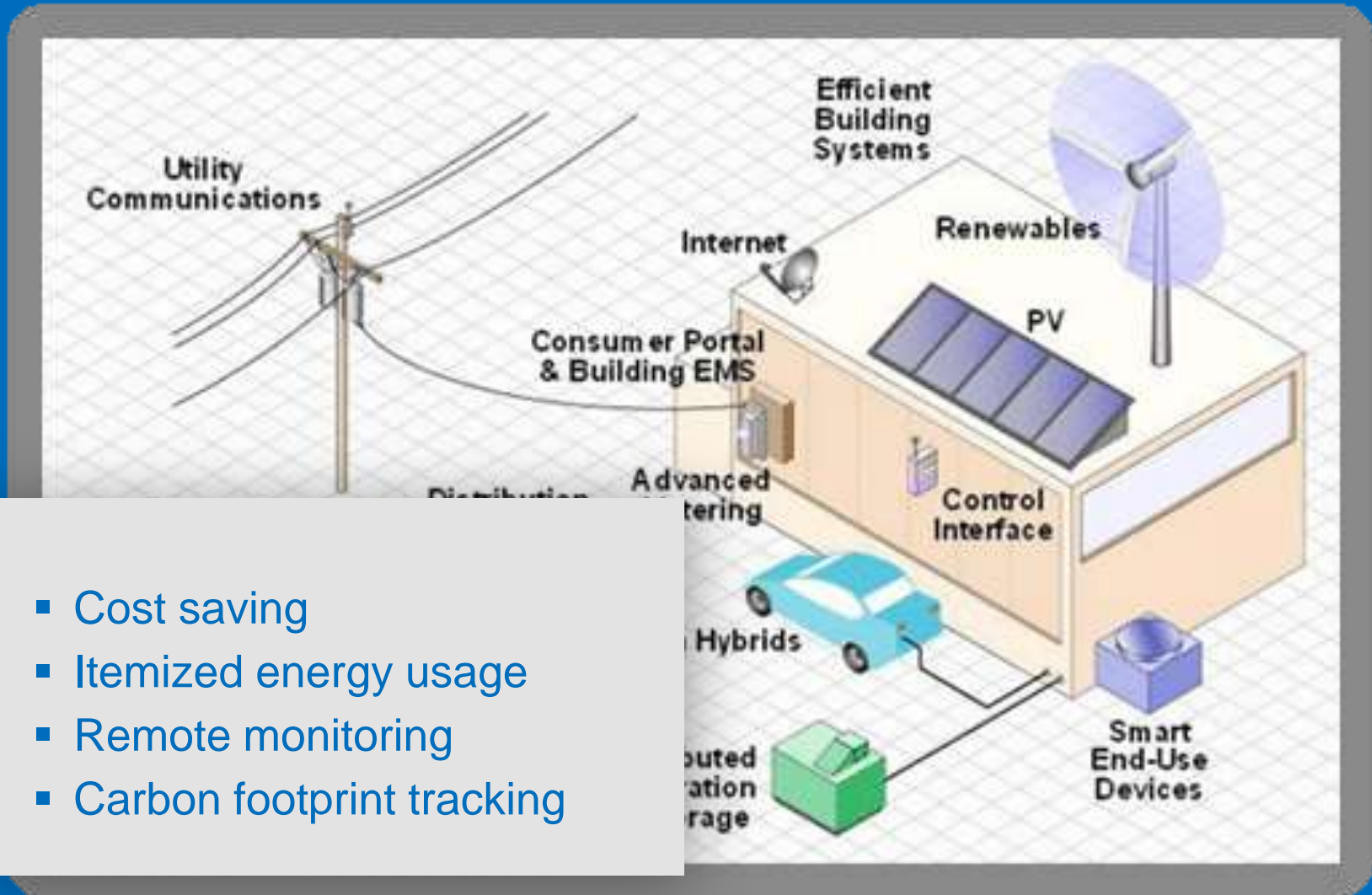
PAC



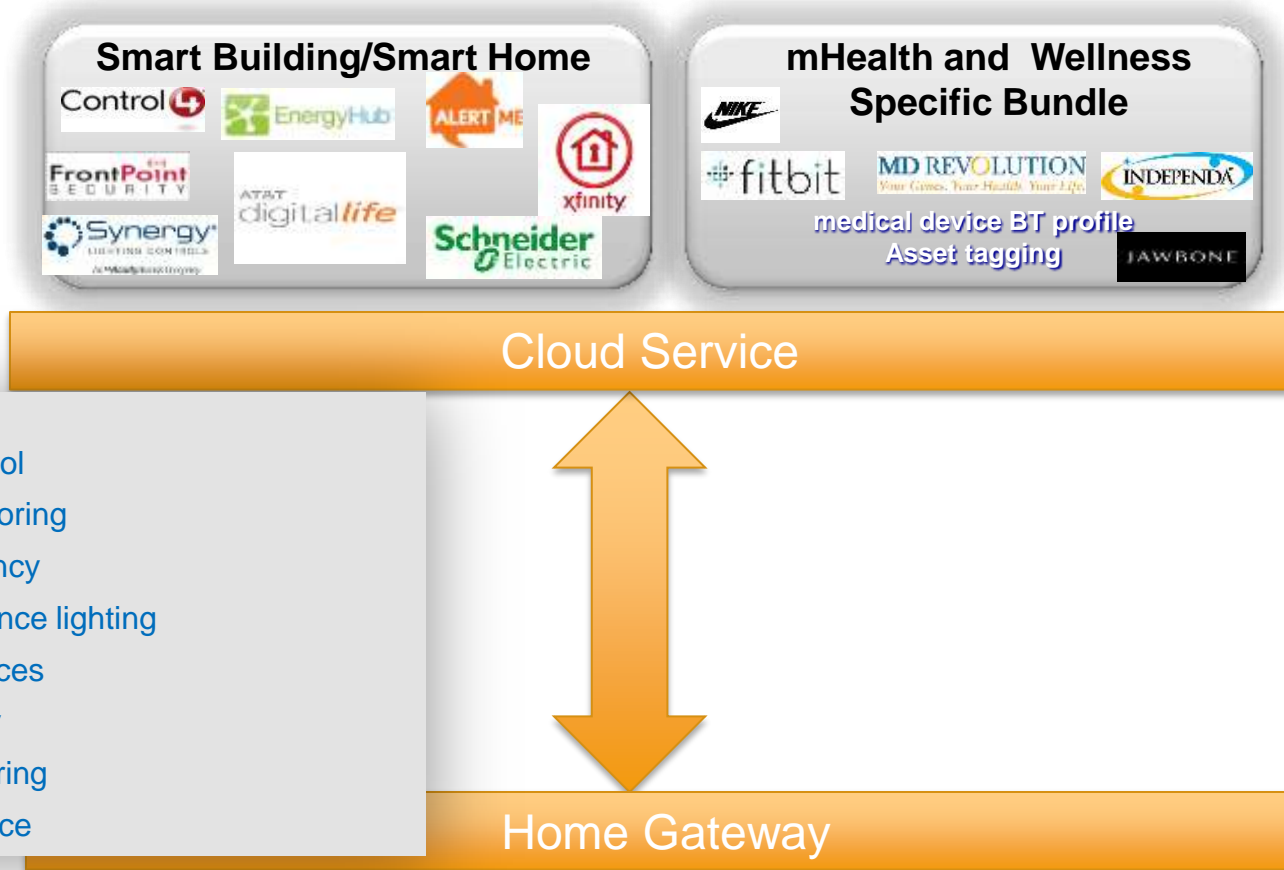
Expenditures dollars



Smart Grid Network



- Cost saving
- Itemized energy usage
- Remote monitoring
- Carbon footprint tracking

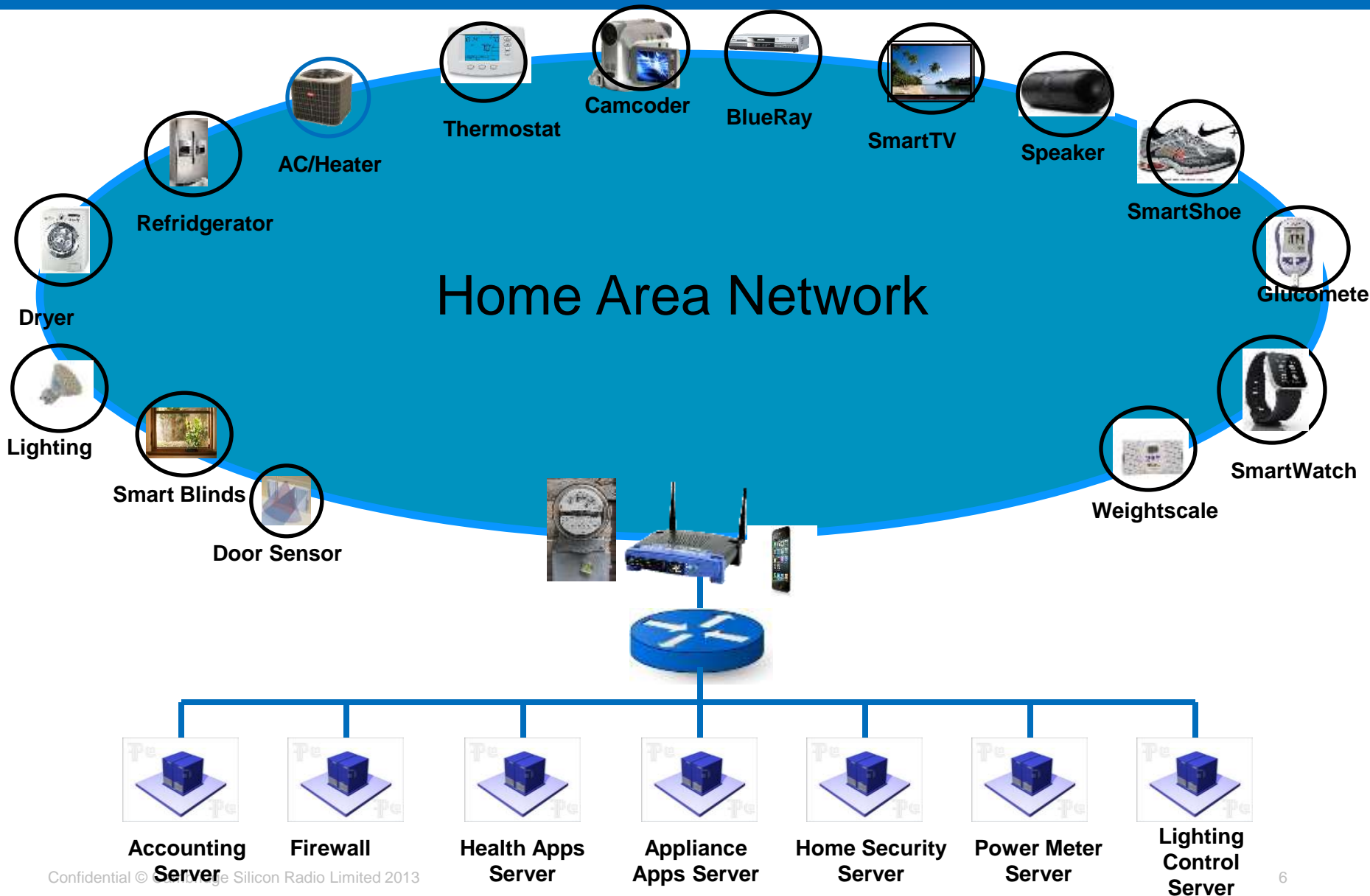


- Wireless control
- Remote monitoring
- Energy efficiency
- Mood & presence lighting
- Smart appliances
- Home security
- Health monitoring
- In home hospice



Smart Grid & Smart Home Network

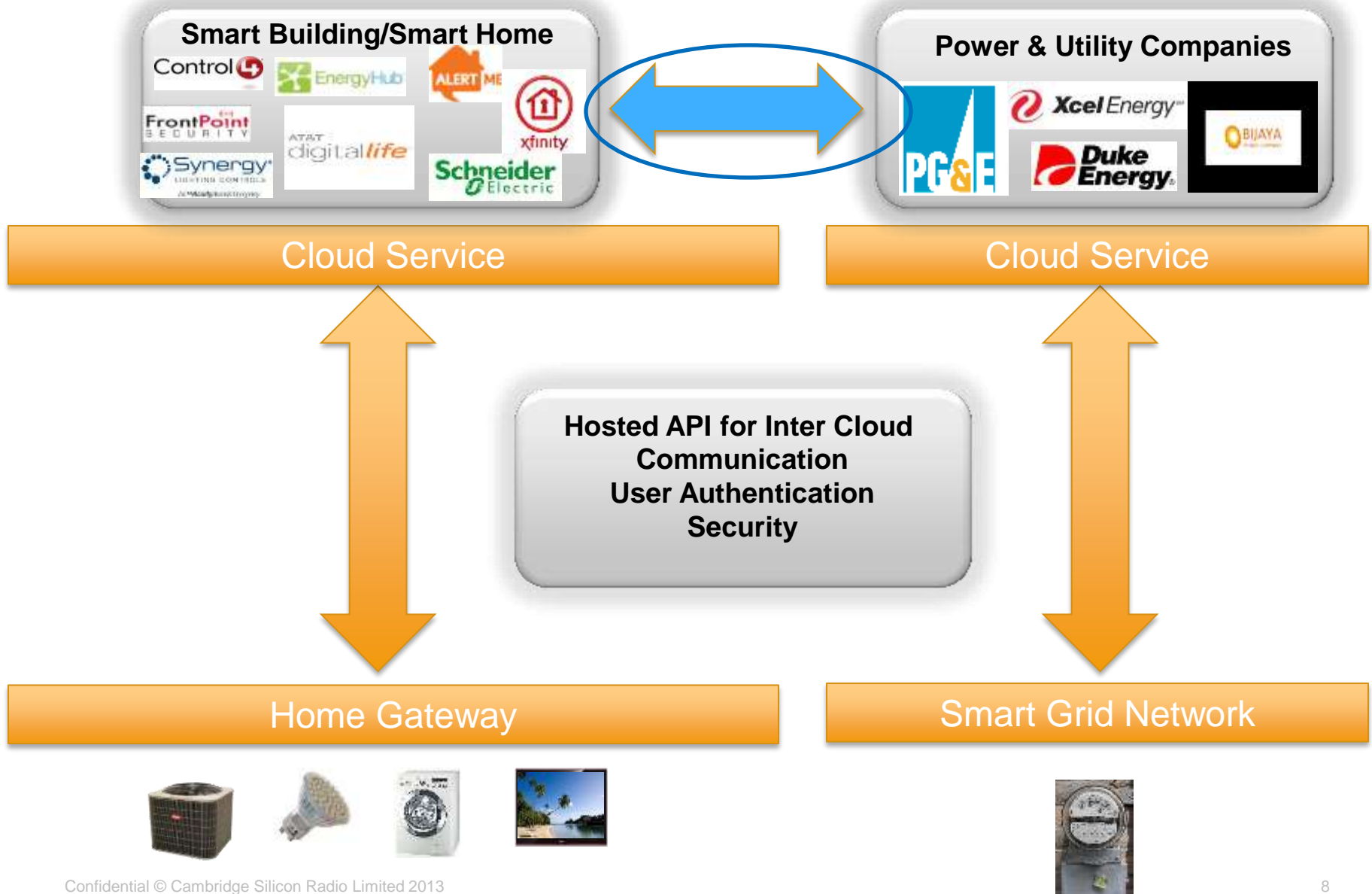
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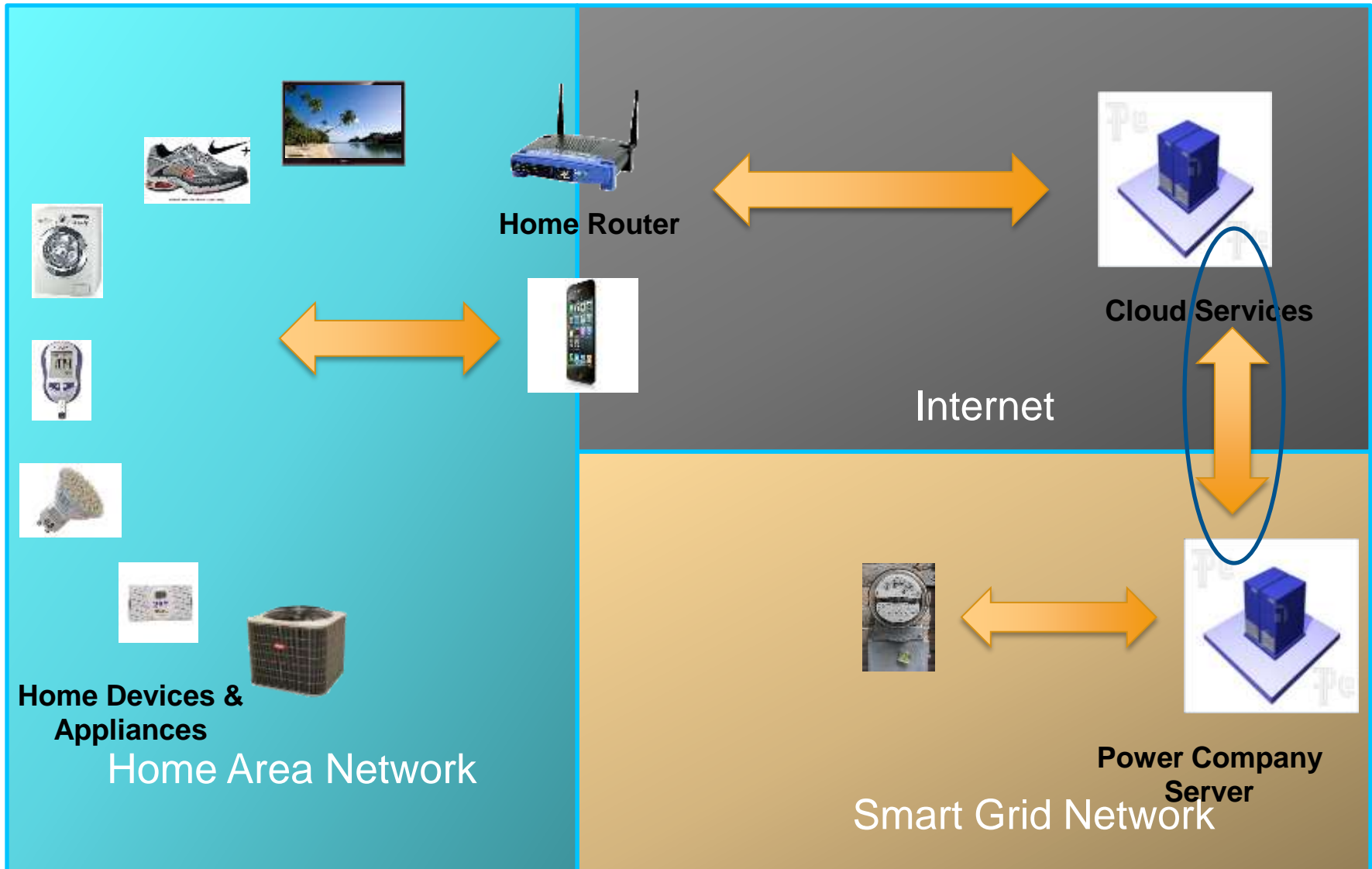
What if we could deploy the smart grid and add more value to the consumer.

Merge Smart Grid Technology with Smart Home => “Smarter” Smart Grid

Architecture for the “Smarter” Smart Grid



Interaction in the Home Area Network

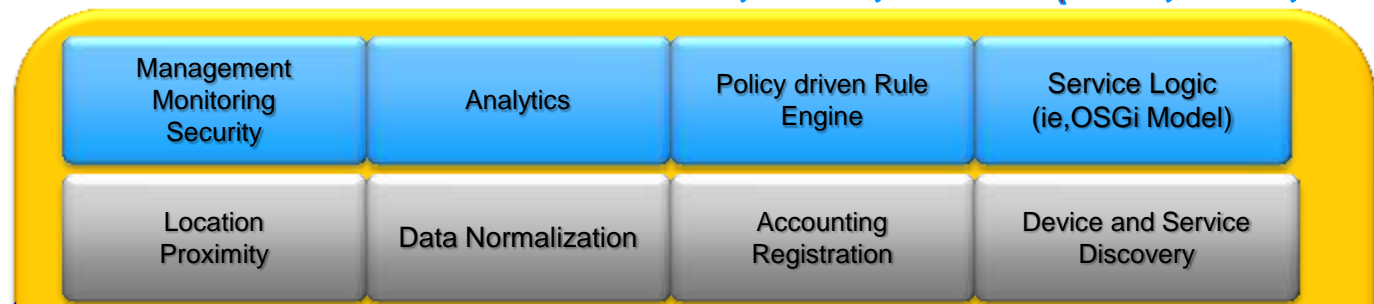


Multi-Purpose Service Gateway Functional Architecture **CSR**

Smart Building/Smart Home

mHealth and Wellness Specific Bundle

North bound API – Internet Centric – Web, Cloud, Internet (HTTP, REST, TCP/IP)



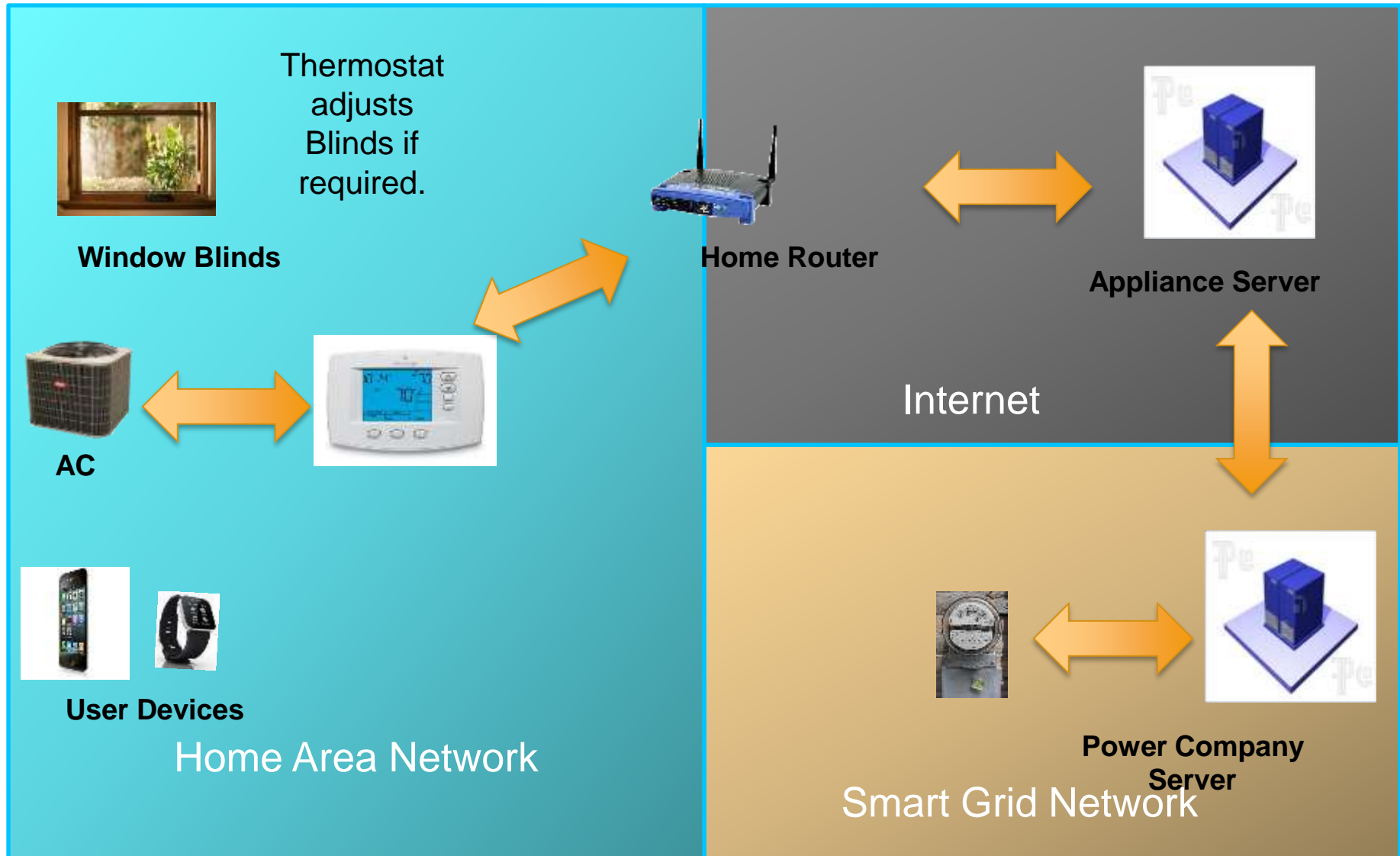
Virtualization



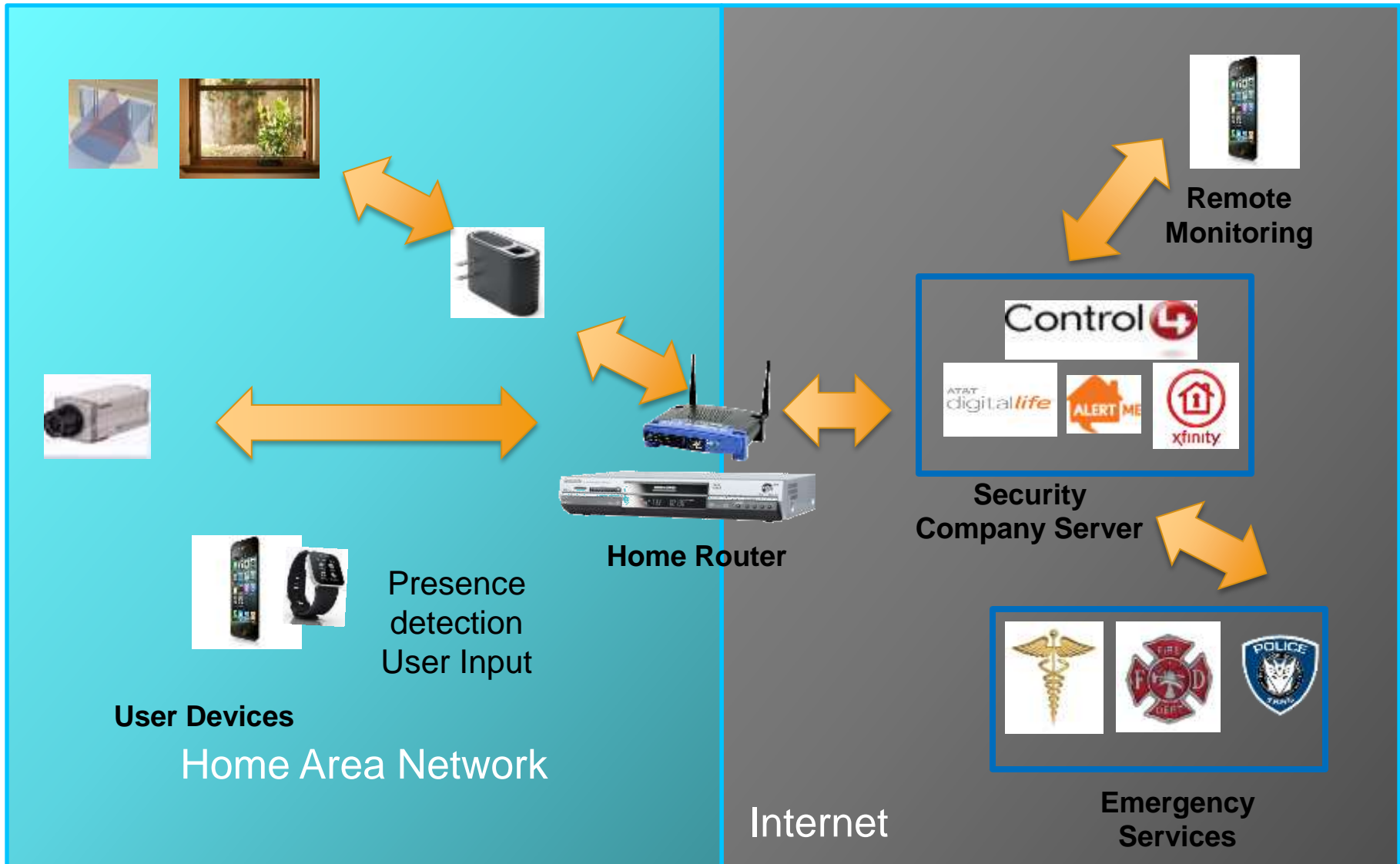
Southbound APIs - IoT and Devices Centric



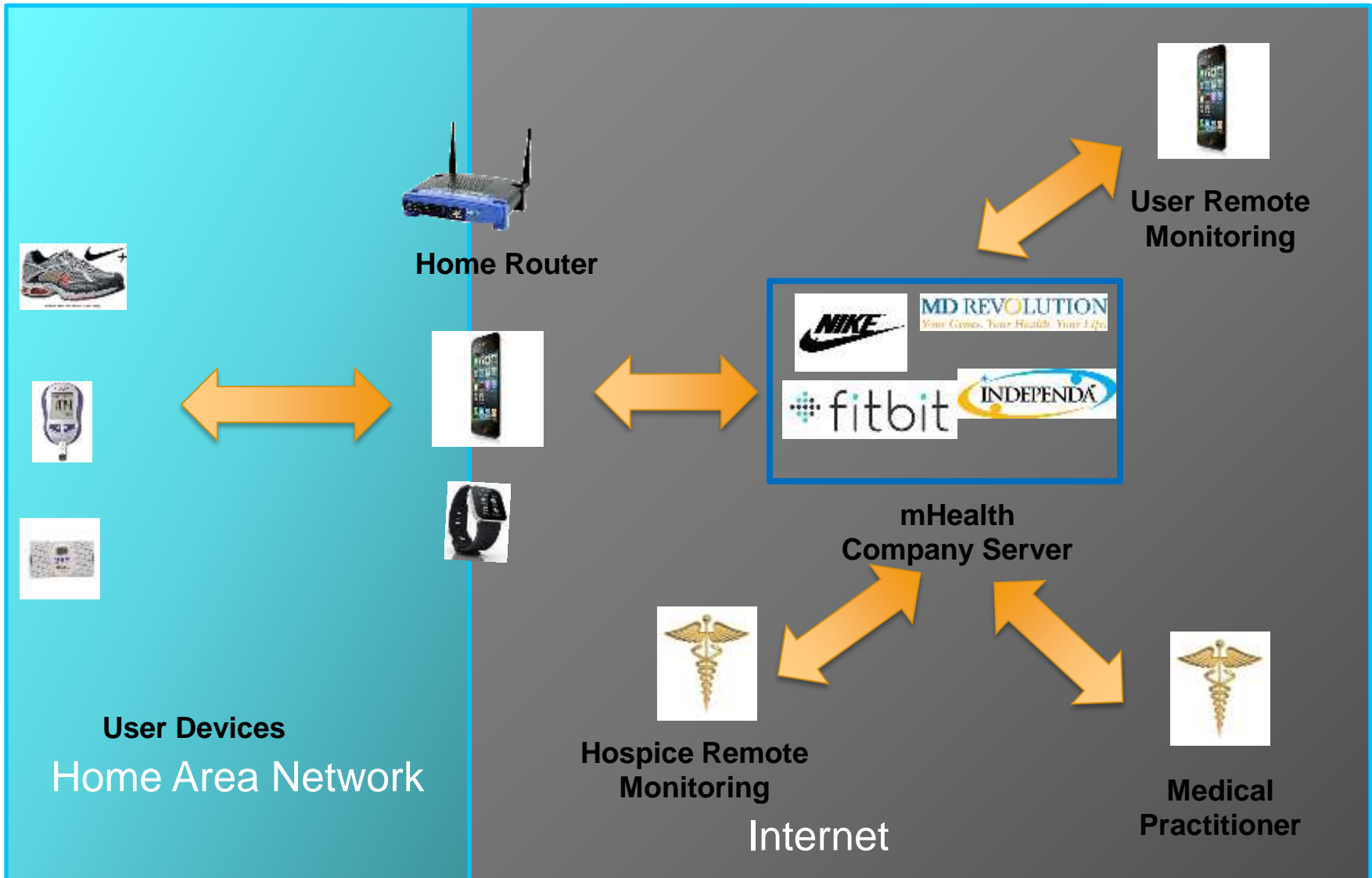
Use Case 1: Smart Heating/Cooling



Use Case 2: Home Security



Use Case 3: Personal Health Monitoring



The “Smarter” Smart Grid

Smart

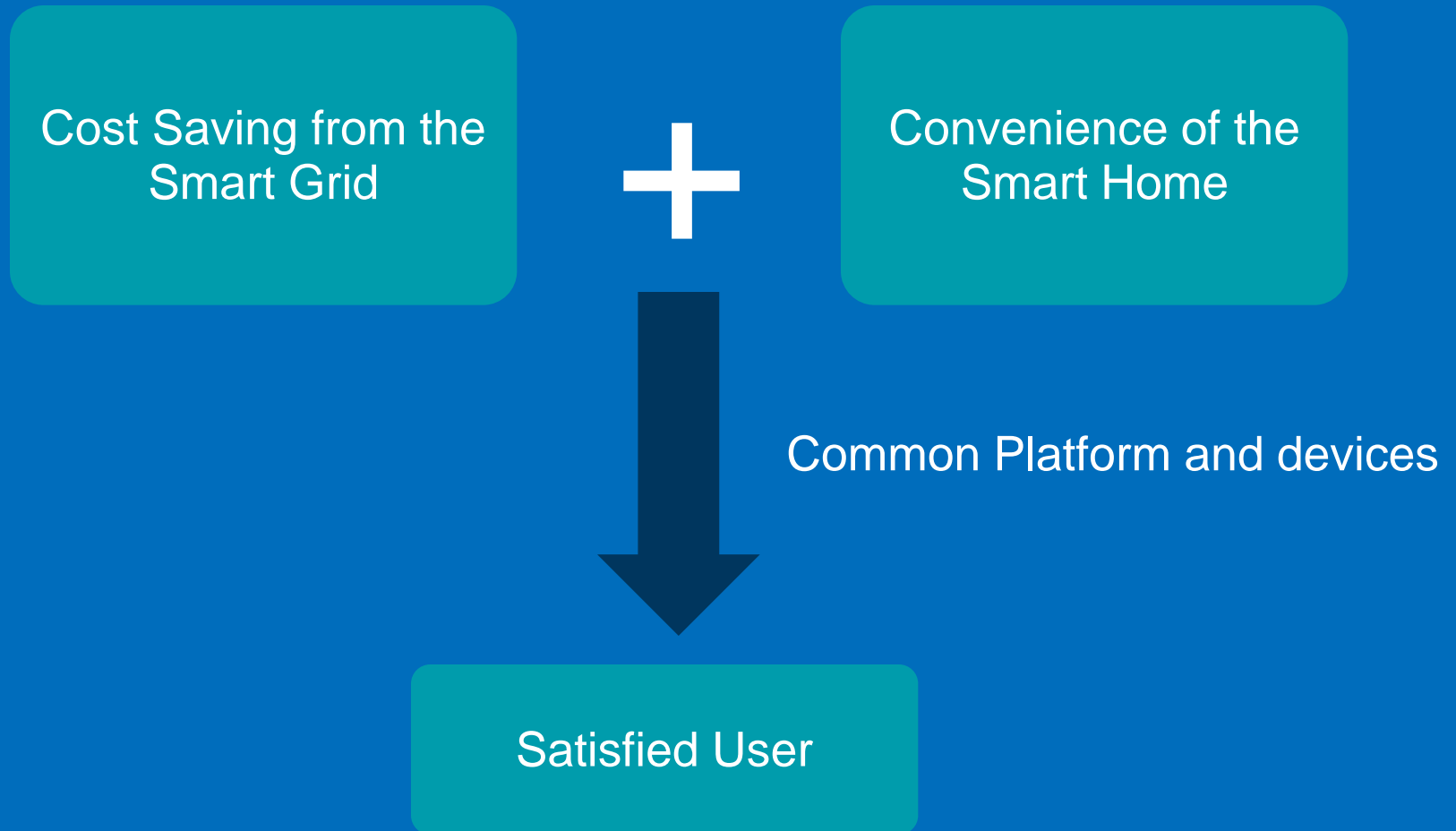
- Detailed usage
- Cost saving
- Itemized energy
- Remote monitoring
- Carbon footprint

“Smarter” Smart Grid

- Detailed usage pattern.
- Cost saving
- Itemized energy usage
- Remote monitoring
- Carbon footprint tracking
- Wireless control
- Remote monitoring
- Energy efficiency
- Mood & presence lighting
- Smart appliances
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- Health monitoring
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Home

- Detailed usage
- Cost saving
- Itemized energy
- Remote monitoring
- Carbon footprint
- Wireless control
- Remote monitoring
- Energy efficiency
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References

- [Annual energy outlook – 2013 eia](#)
- [State fact sheet of household energy use - eia](#)