U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

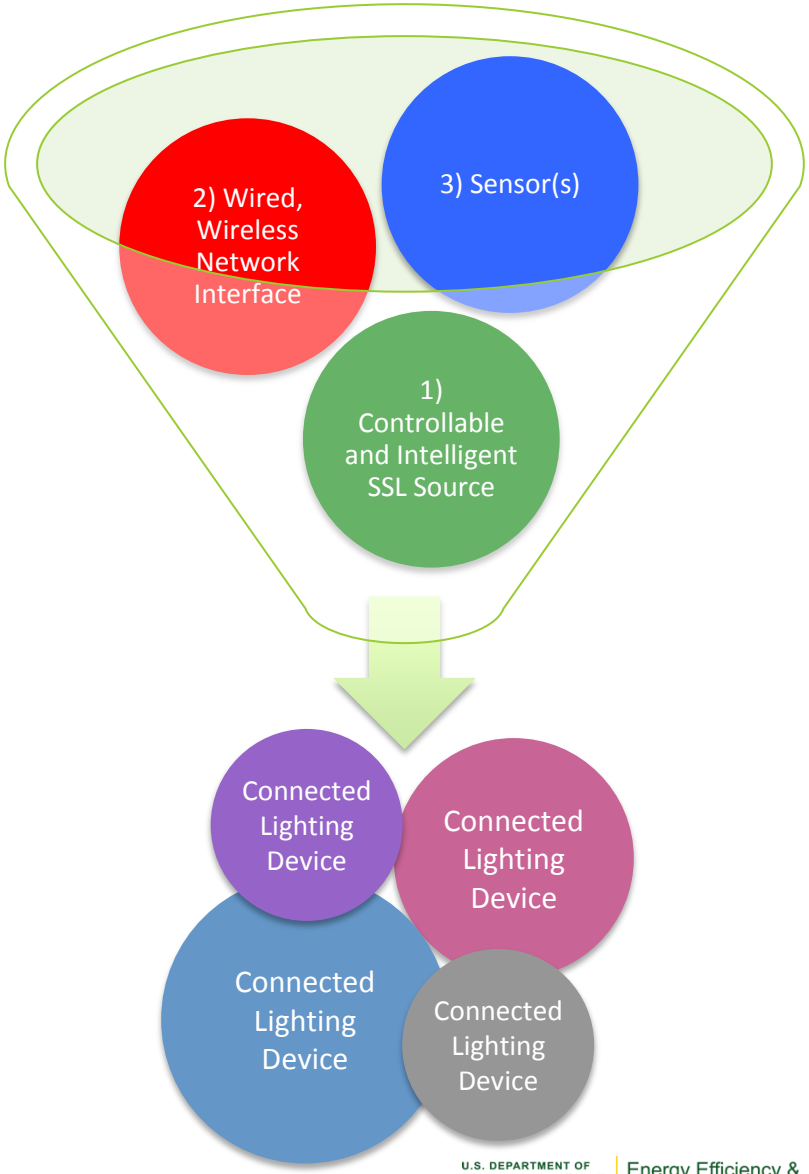
# DOE Focus Areas and Panel Introduction

DOE SSL Program Connected Lighting Meeting
November 16, 2015

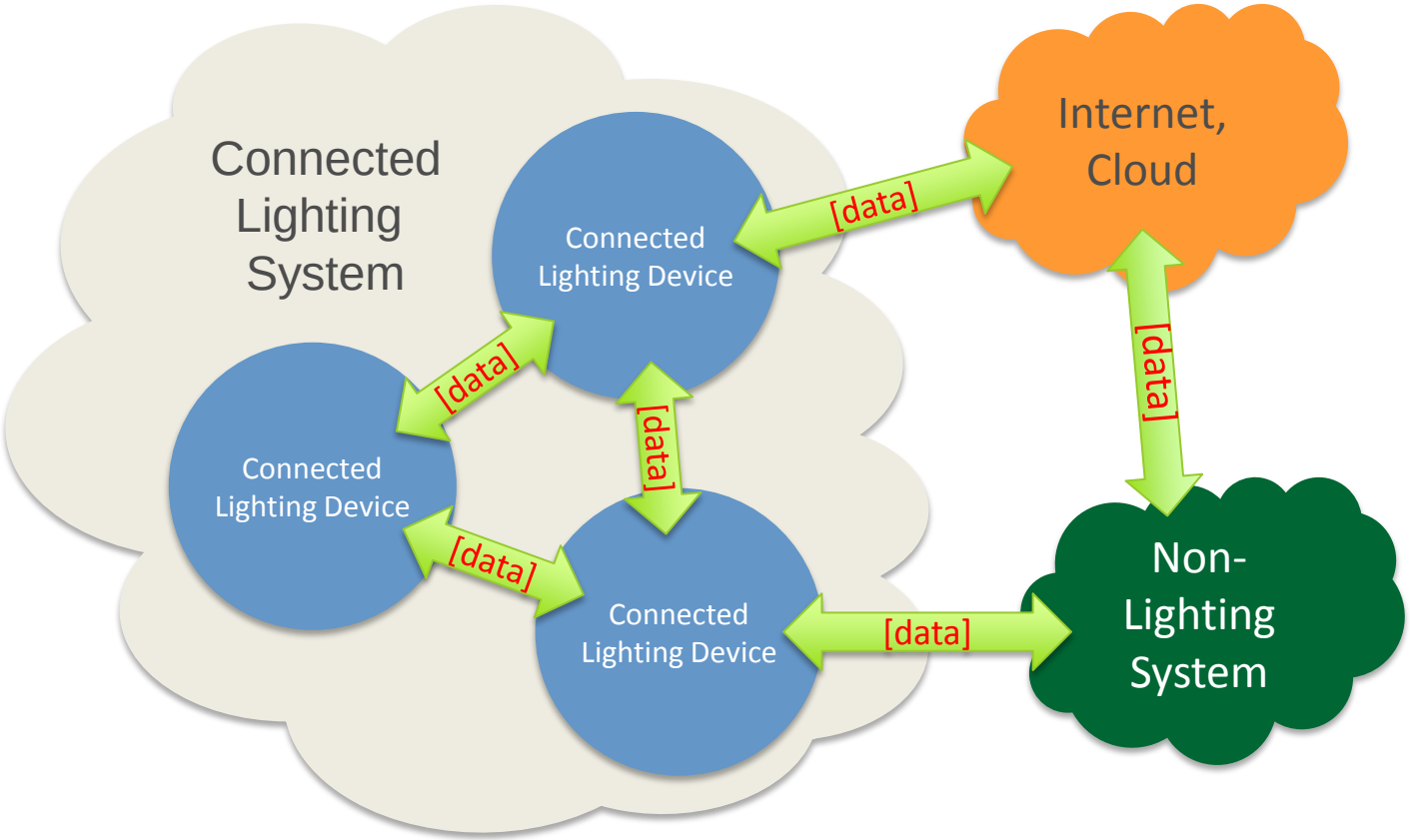
Michael Poplawski, PNNL

# The emergence of Connected Lighting

- Solid-State Lighting
- Significant technology trends driving performance improvements and cost reductions
  - Computing
  - Mobile
  - Intelligence (i.e. microcontrollers), network interfaces, and sensors
- Cloud storage, computing, analytics as a service
- IoT focus on systems and data



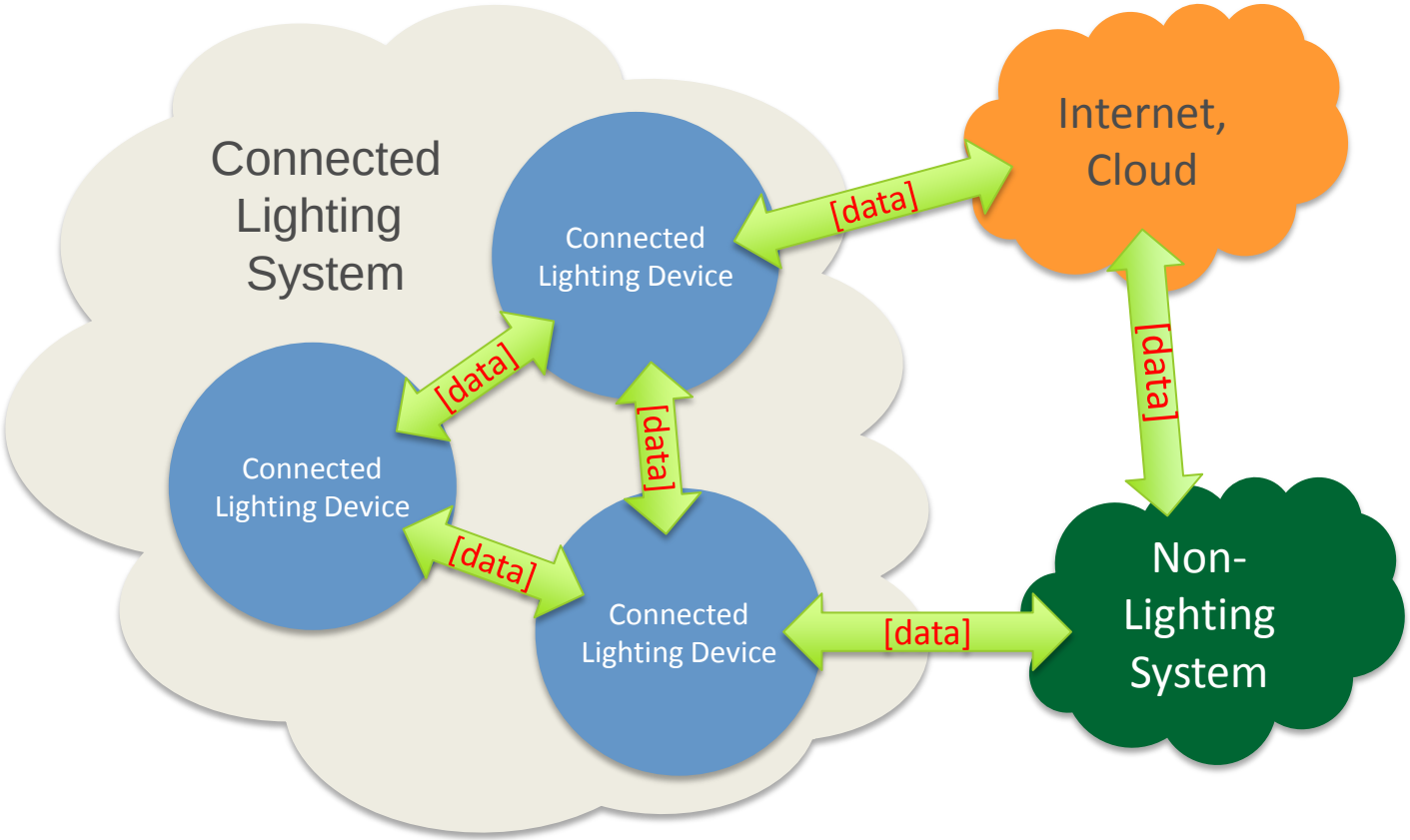
# Connected Lighting Systems and the Internet-of-Things



# Connected Lighting Systems impact

## Opportunity

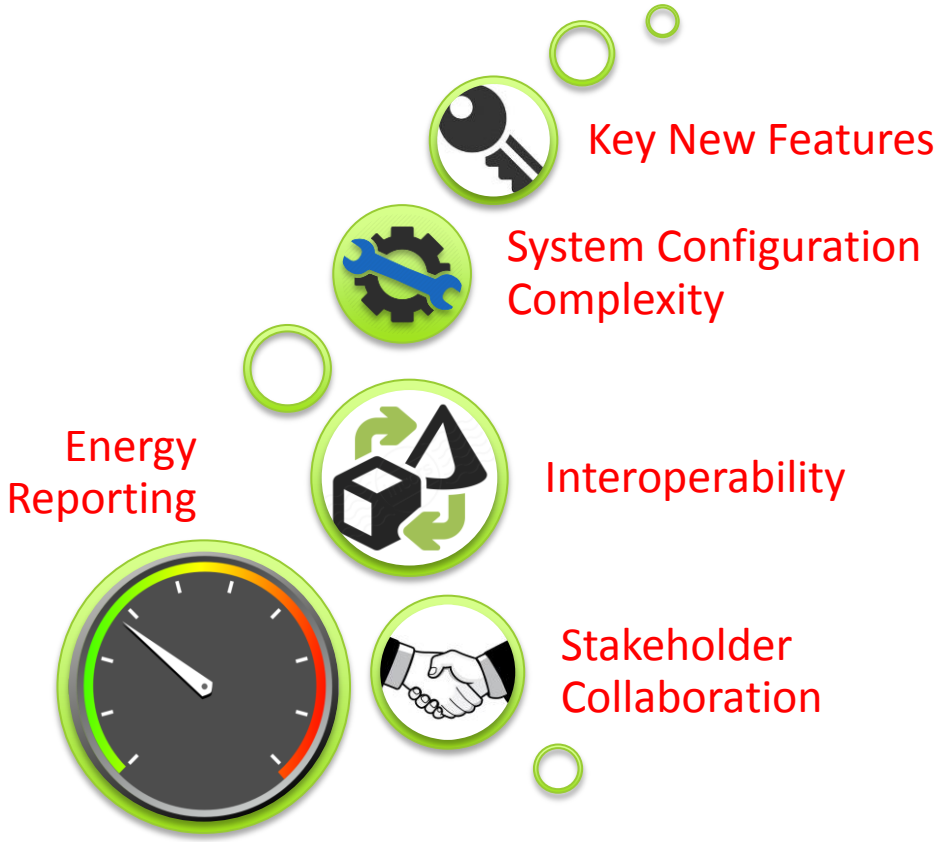
Enabling intelligent lighting devices with (the right type and amount of) data can result in reduced energy consumption and improved lighting performance




The collected data may enable other revenue streams that compete with lighting and energy performance.

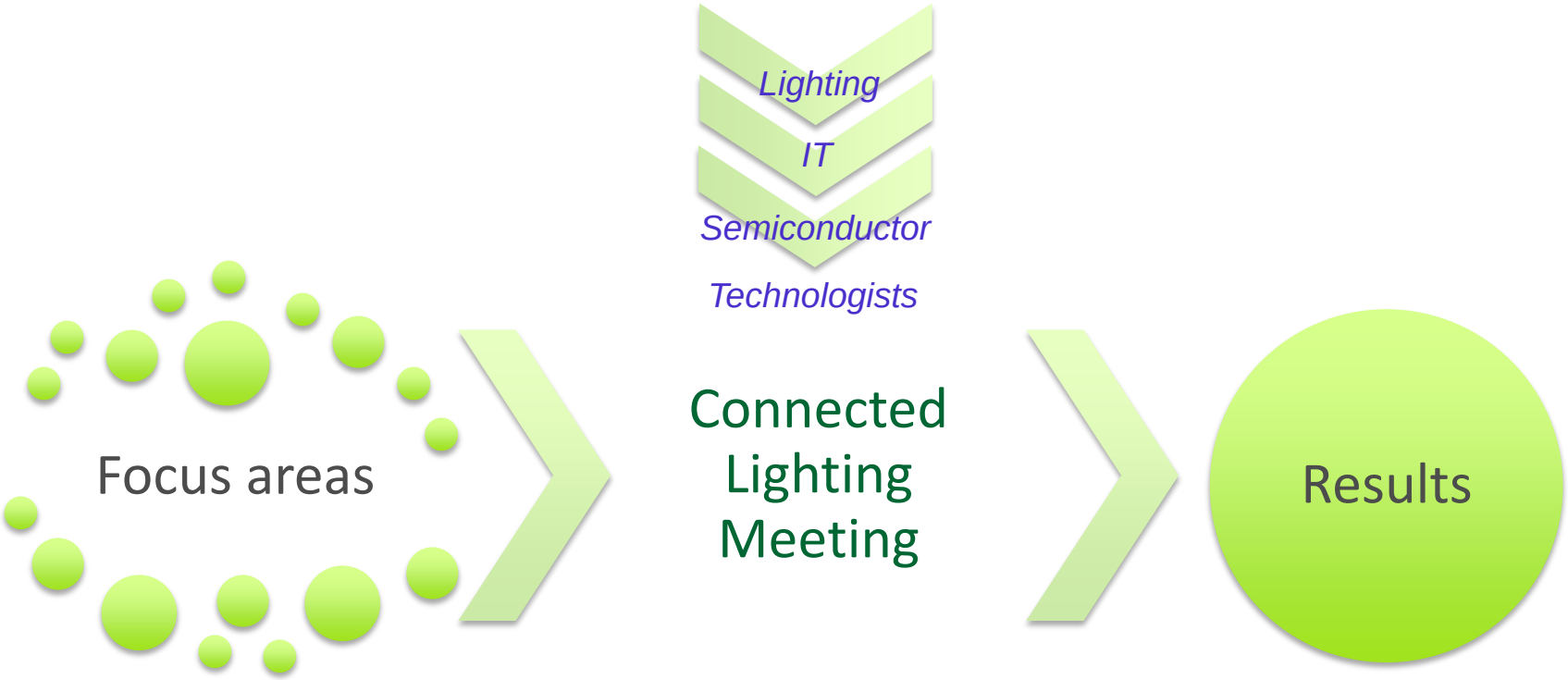
## Threat

# DOE SSL Program Connected Lighting Strategy




- Same for indoor and outdoor applications
- Ongoing dialogue with various stakeholder groups
- New emphasis on input from system integrators
- Connected Lighting Meeting

# Strategy refinement




- Energy reporting
- Interoperability
- Configuration complexity
- Key new features

- Panel discussions
- Stakeholder Q&A
- Stakeholder interaction

- Industry updates
- High value use cases
- Stakeholder collaboration
- Focus area refinement
- Competition, study ideas

# Why focus on energy reporting?

You can't (effectively) manage what you can't measure

Reduce Energy Consumption

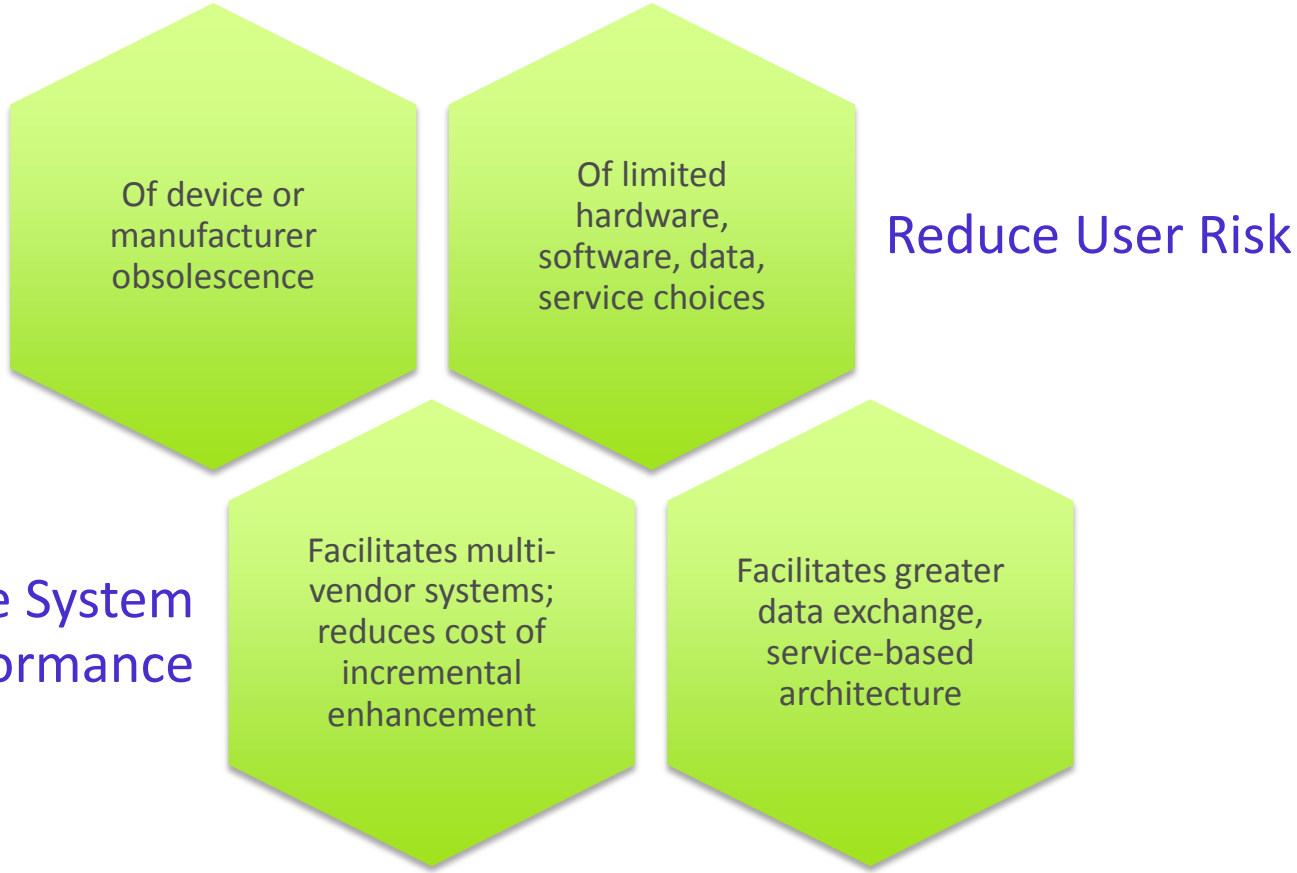
- Transactive Energy Markets
- Data Driven Energy Management

Enable New Market Opportunities

- Pay-for-performance energy efficiency incentives
- Energy billing for devices currently on flat-rate tariffs
- Verified delivery of utility incented energy transactions e.g. peak and other demand response
- Lower cost, more accurate energy savings validation for service-based business models
- Self-characterization of available (i.e. marketable) "building energy services"

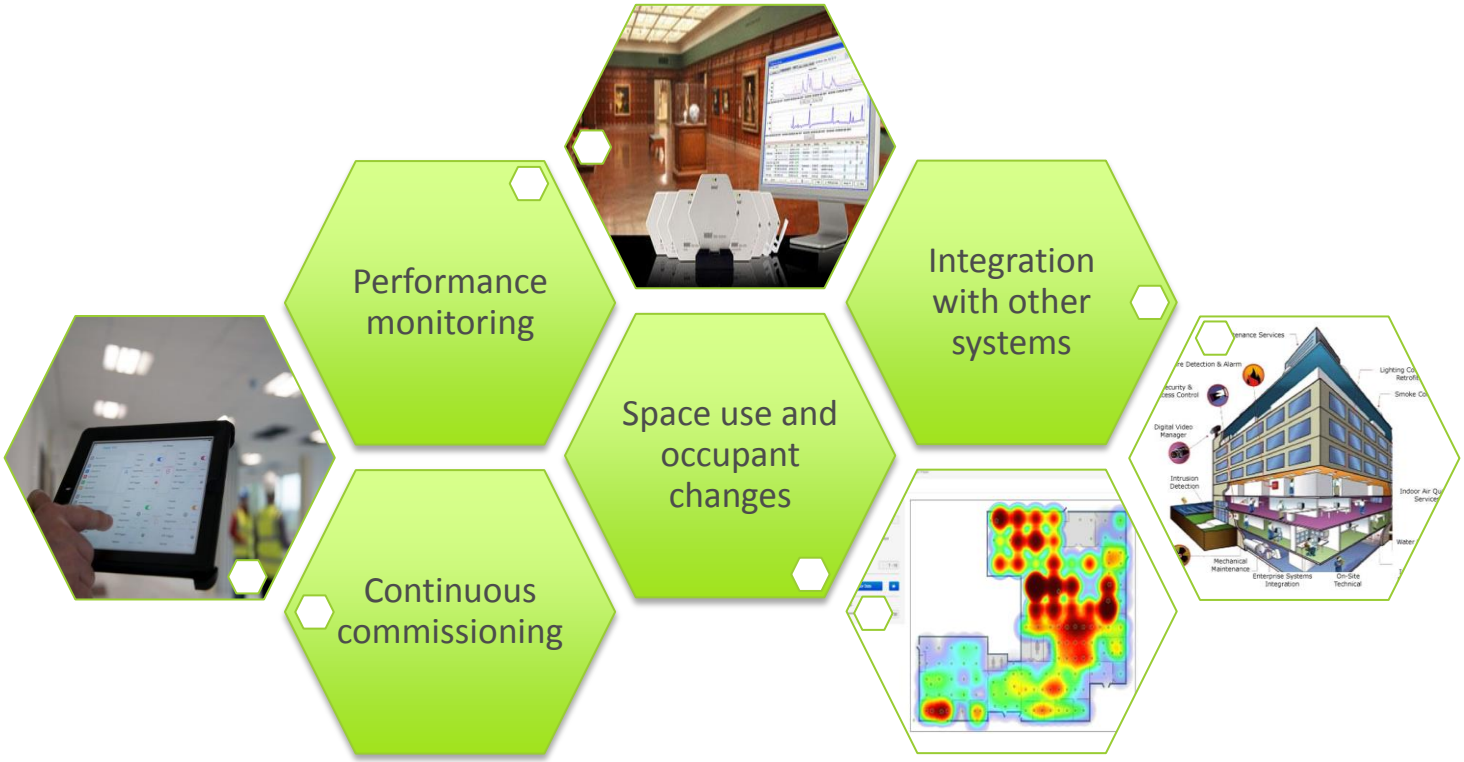
# Why focus on interoperability?

System performance is dependent not just on constituent device capabilities, but also on the ability of those devices to work together.



# Why focus on configuration complexity?

Systems that are overly complicated and time-consuming to configure have historically delivered less than ideal performance.




Broad deployment of connected lighting systems will require system configuration complexity to be well-matched to owner/occupant capabilities, or greatly simplified, or effectively removed.

# Why focus on key new features?

Connected lighting systems hold the potential to deliver not only improved energy performance and lighting quality, but also a growing list of other benefits

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# On to the panels…

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