# EnergyWise

Tadas Urmonas

# Why Energy Management?

## Reduce Costs

- Measurable Return On Investment
- Reduce energy costs
- Reduce Total Cost of Ownership

## Compliance

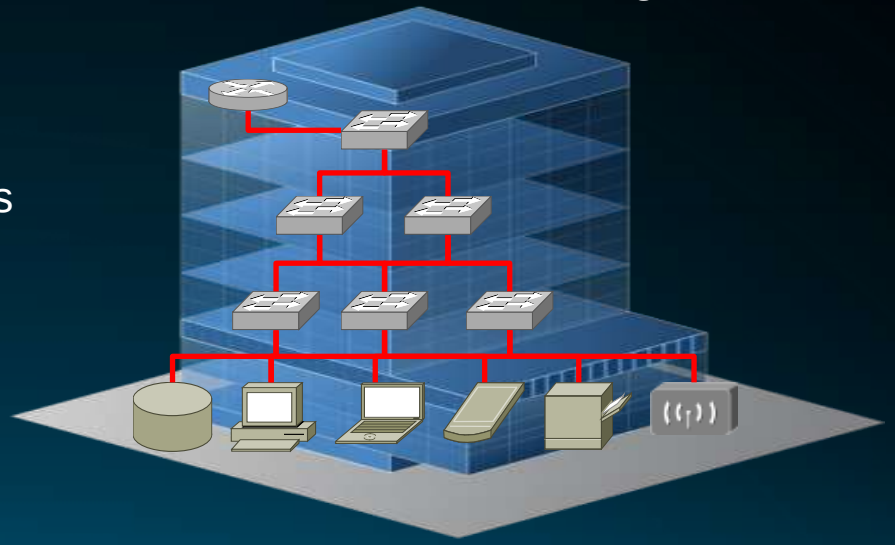
- Track to ensure targets are met
- Comply with regulations
- Meet organization's sustainability goals

# What is EnergyWise?

- Energy management through the network
- EnergyWise delivers:
  - Monitoring
  - Control
- Broad adoption across:
  - Cisco switches and routers
  - EW partners: IT management applications
  - EW partners: IT end devices
- Borderless Networks service
- Solutions:
  - Enterprise IT
    - Campus
    - Branch
  - Data Center
  - Smart Grid

*EnergyWise Network*

*Unifies Device Coverage*

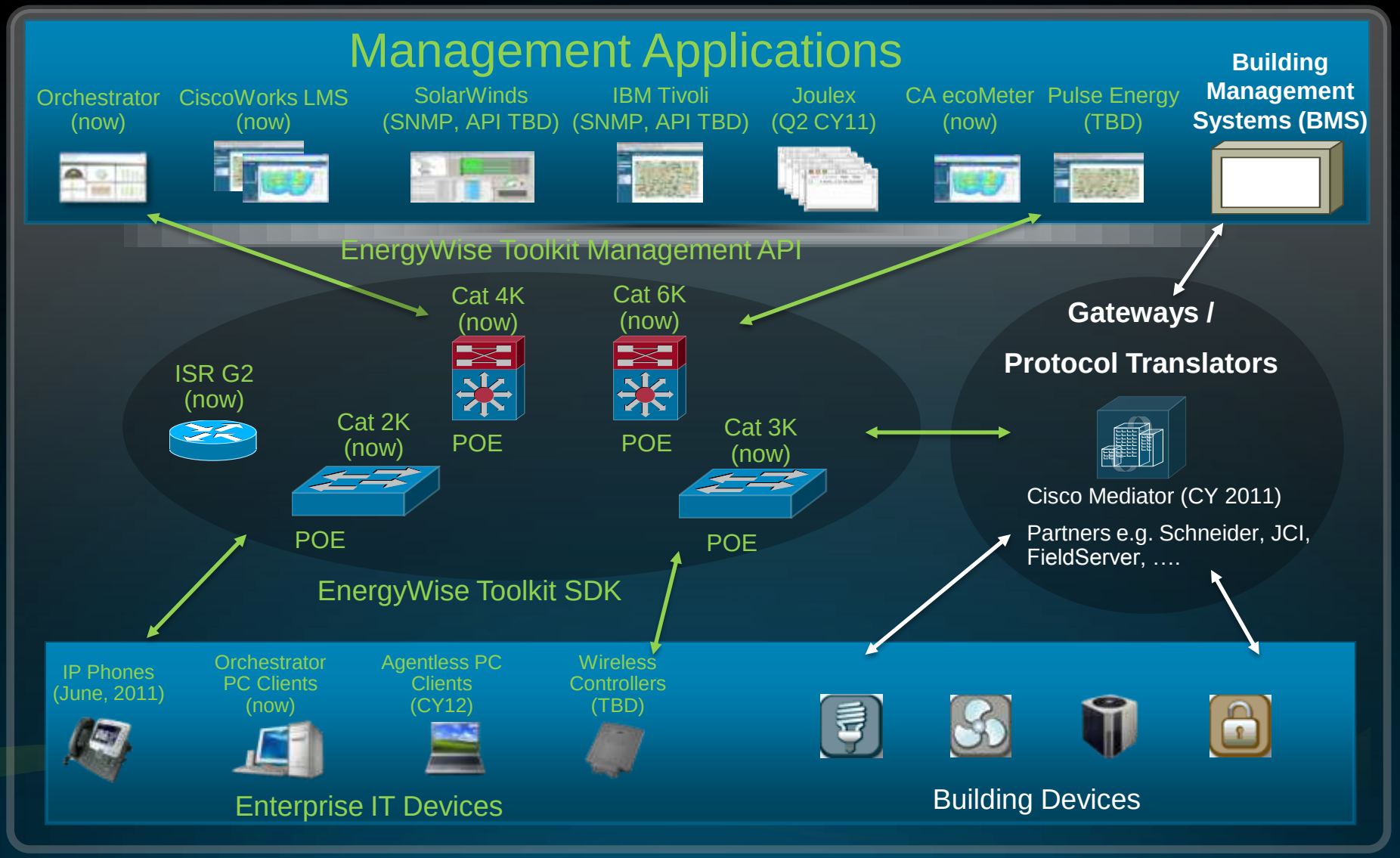


*IT End-point Devices*

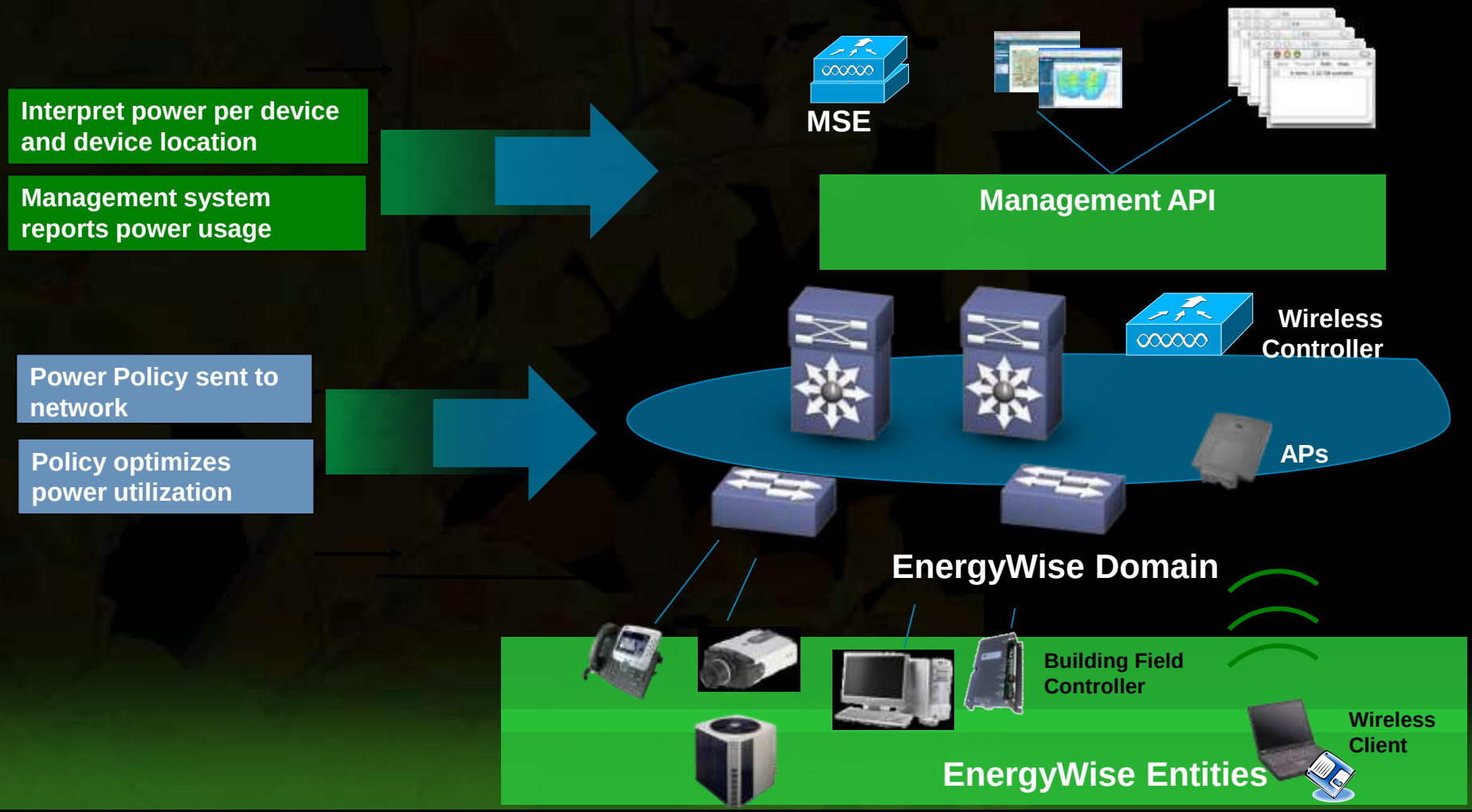
*Network opens energy management to all IT device types*

# EnergyWise Architecture

Open Framework Provides Solutions for Every Scenario!

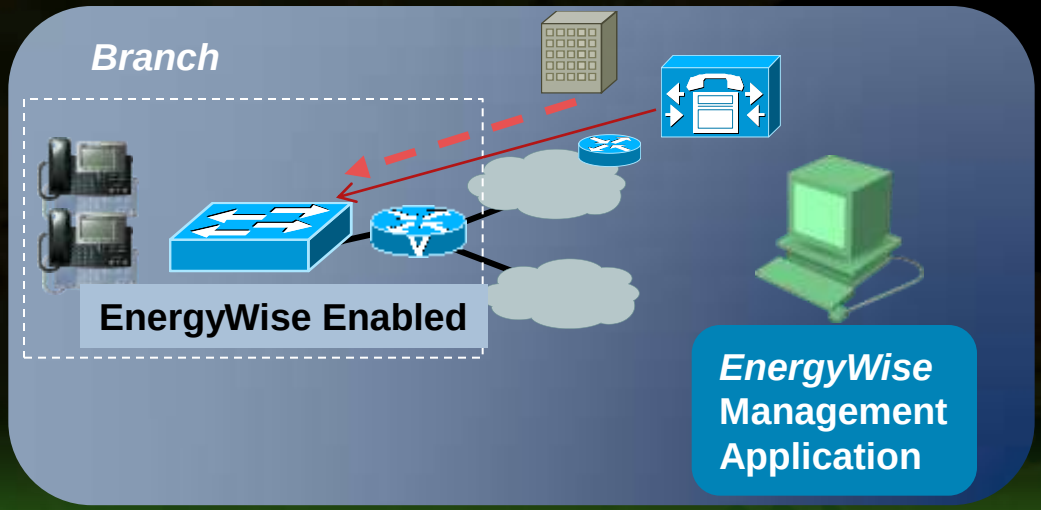


# EnergyWise Policy and Reporting



# EnergyWise: Time-of-Day Power Control

- Bank customer branch office
- Operations run 9 to 5
- Power off phones after hours
- Power on next day




Turn off power at 7 PM

↓

Policy added to network

↓

Policy communicated across switches

↓

Time is 7PM switch executes policy

↓

Switch turns off port power

↓

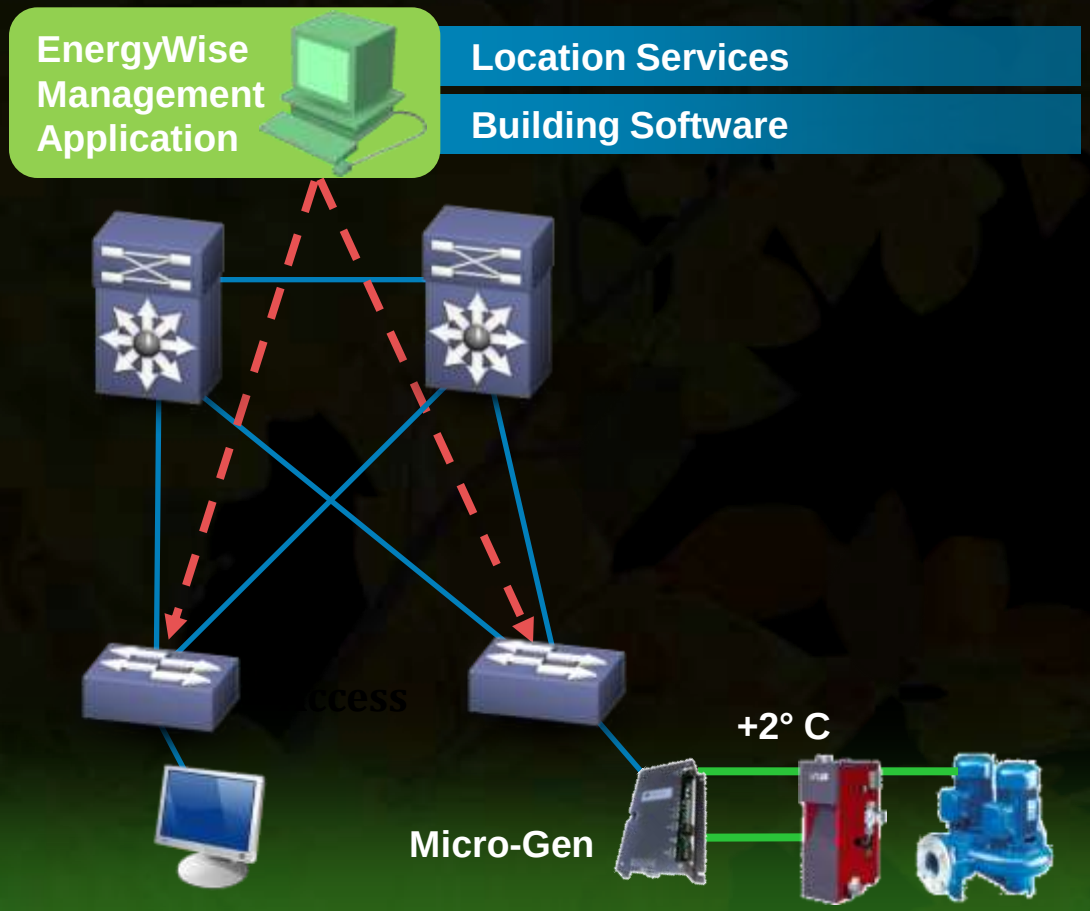
Time is 7AM switch executes policy

↓

Switch turns on port power

# EnergyWise: Peak Power Monitoring

- Peak power reached – smooth & time-shift power use




EnergyWise monitors power

↓

Peak Power Alert

↓

Policy added and distributed to network

↓

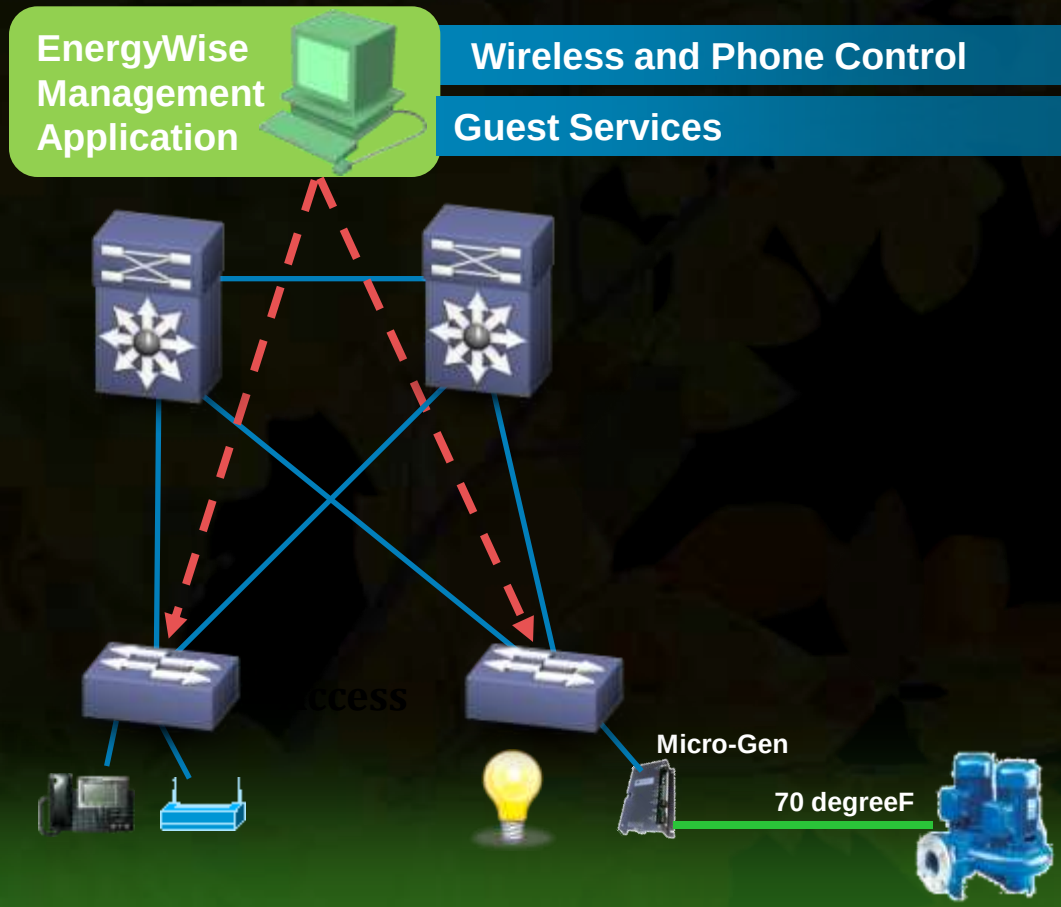
Identify eligible phones, laptops, building HVAC

↓

- Laptop to battery power
- Eligible phones night sleep mode
- Building temperature increased

# EnergyWise: Hotel Room Power Control

- Hotel guest room control
- Room settings customized for frequent guest




EnergyWise notified guest arrives

Policy added and distributed to network

Identify Room Phones, AP, Building HVAC, Lights

Room power up

- Phones power up
- Wireless coverage assured
- Room temperature setting
- Lights on

# EnergyWise Value Proposition

| Value Proposition | Key Components |
|---|---|
| **1. Device coverage** | • Switches, IP Phones, AP's, PC's, Other PoE, iPDUs and printers |
| **2. Ease of deployment** | • Network already present; built into Cisco IOS/NX-OS<br>• No software deployments on end points<br>• Supported on most energy management applications |
| **3. Additional cost savings** | • Wake-on-LAN<br>• Stackpower integration |
| **4. Ease of management** | • Standardized behaviour across end points<br>• Flexible and unified policy management across device and vendor type<br>• Comprehensive information on end point s to enable holistic decision |
| **5. Security** | • Integrated with Cisco network security |
| **6. Scalability/Performance** | • Network approach more efficient and scalable than single server method |

# Cisco EnergyWise Product Portfolio Roadmap

Current

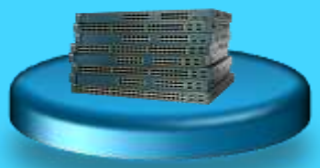
Future

Catalyst 2960-S

Catalyst 2960 & 2975

Orchestrator

CiscoWorks LMS



Catalyst 3560-E & 3560

Catalyst 3750-E & 3750

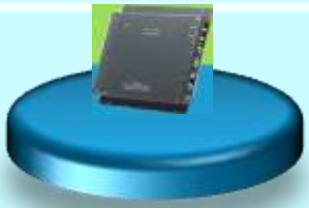
Catalyst 3750-X & 3560-X

Catalyst 4500 & 4900

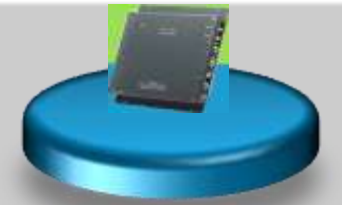
Catalyst 6500

Integrated Services Routers (ISR i.e. 1900/2900/3900) G2

Cisco IP Phones – June 2011



Cisco Building Mediator (API Only) – Q2 CY12



Cisco Building Mediator (SDK Only) – TBD?

Cisco Nexus 7000 – 1H CY 2012

Cisco Nexus 5000 – TBD 2H CY12?

Cisco Unified Computing System – TBD CY13?



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# Smart PDUs using EnergyWise Enhanced SDK

- **Accurate power monitoring and control down to plug outlet level!**
- **Ideal for wiring closet, data center, lab and enterprise room monitoring of all devices!**







Others
Digital Watt (FCS Q2 CY11)
Emerson (FCS TBD)
Geist (FCS TBD)
Panduit (FCS TBD)

- SDK+ released Apr, 2010 as part of EnergyWise 2.5 release

# Cisco IP Phone EnergyWise Support

## Now:

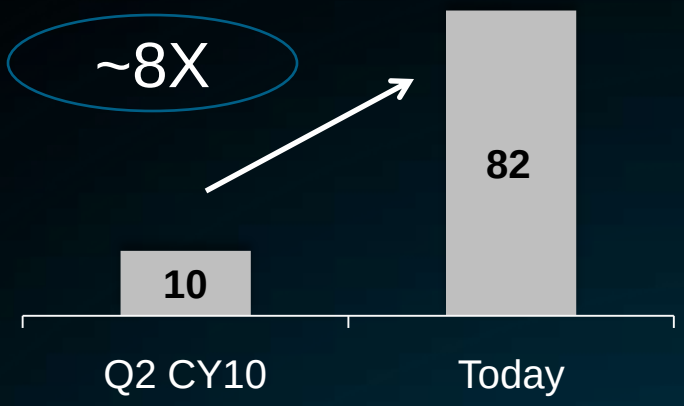
- IP Phones supported via POE on/off

## Upcoming firmware release (FCS ETA June, 2011):

- EnergyWise with Power Save Plus mode for 69xx, 89xx, 99xx and 3rd generation non-SIP 79xx phones
- Supported on the 30 new IP Phone SKUs (includes “power on“ button and video)
- EnergyWise keywords automatically created with phone extension and MAC address upon initialization
- Two standby modes: Power Save and Power Save Plus.
  - Power Save (existing, will be integrated into EnergyWise) leaves the switch active and the LED screen turned off, POE port is still active.
  - Power Save Plus (new EnergyWise feature) deeper sleep, phone’s PC port isn’t active.

# Partner Program for Devices and Applications is Growing Rapidly

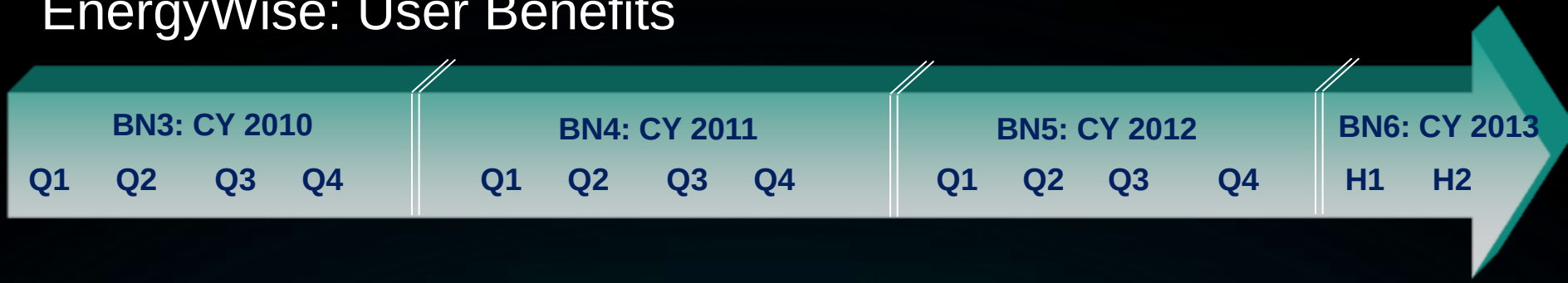
*Total number of partners*




- Schneider BMS solution (FCS June)
- JCI Building gateway (integration in progress)
- FieldServer (FCS February)
- Lenovo PC client (FCS May)
- Joulex energy application (now)
- IBM Tivoli application (integration in progress)
- CA ecoMeter data center application (now)

EC | CC | PLAN

# EnergyWise: User Benefits




## Phase 2.0 – Cisco Network and POE

**Value Prop:**

- Reduce energy costs via managing policies and power levels on POE ports

**IT Specifics:**

- Easy deployment by configuring policies for groups of devices
- Ochestrator and LMS provides management app interface

## Phase 2.5 – IP Phones & PDU monitoring

**Value Prop:**

- Comprehensive monitoring for all data center rack devices
- Complete IP Phones energy management functionality

**IT Specifics:**

- Monitor any data center or lab devices power consumption
- Place IP Phones into either of 2 sleep modes, power on/off

## Phase 2.8 –PCs/Desktops & Building

**Value Prop:**

- Manage PCs, highest power consuming IT device
- Increased energy efficiency in wiring closet switches

**IT Specifics:**

- PCs: Lenovo, Orchestrator 2.5 client and Wake-on-LAN
- Building: Schneider, Johnson Controls Inc (JCI), FieldServer, Mediator

## Phase 3.0 –Agentless PCs, Printers & Servers

**Value Prop**

- Broader coverage of PCs
- Printer device integration
- Easy deployment for large server data center environments

**IT Specifics:**

- PCs: agentless PC protocol/API
- Switching: StackPower integration
- Cisco Nexus and UCS

Enterprise

Building

Data Center

Smart Grid

# Standards Bodies - IETF

IETF

EMAN (Energy Management) Working Group

https://datatracker.ietf.org/wg/eman/charter/

Co-Chair Benoit Claise (NSSTG Distinguished Engineer)

Power Monitoring MIB drafts

http://tools.ietf.org/html/draft-claise-energy-monitoring-mib-05

Primary Author John Parello (ESTG EW Technical Leader)

Power Monitoring MIB drafts are based on EW End-Device monitoring!

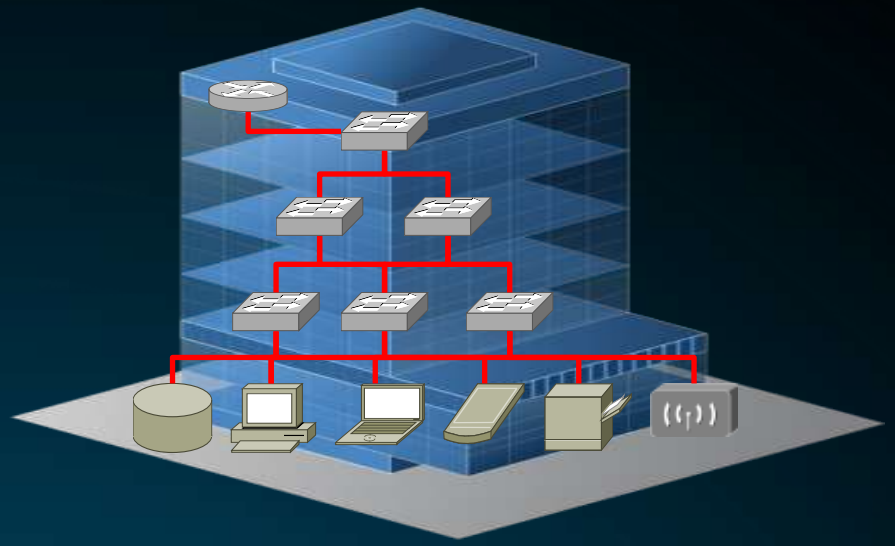
ODVA (world's leading automation companies, based on Common Industrial Protocol (CIP™))

ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)

Green Sigma coalition (IBM, Johnson Controls, Honeywell, ABB, Eaton, ESS, Cisco, Siemens, Schneider and SAP)

# EnergyWise Summary

- EnergyWise:
  - Available now on core Cisco platforms
  - Cisco platforms increasing
  - Partner program rapidly growing
  - Basis for IETF standard
  - Immediate Device Solutions:
    - Enterprise IT:
      - Campus
      - Branch



- *Cisco is leading another major network convergence:*

  *Network is the building's central nervous system!*