



Cisco Energy Management for Retail

Reduce energy usage with a Networked Energy Management System

At-A-Glance



Going Green! Lowering the Cost of Energy Usage

Retailers are looking at their carbon footprint in stores, their supply chains and in the manufacturing of their products. There are many ways to lower energy costs and improve their brand image with consumers.

A number of Retailers have already taken steps to lower energy usage in stores. There are a range of proprietary systems, such as Building Automation Systems and black boxes that can be attached to specific energy consuming systems that have made promises to lower energy costs by 10 – 20 %. Some of these systems have achieved the promises of their manufacturer, others have not.

A Networked Energy Management System provides a range of benefits that translate into lowered energy usage and lowered costs that are not available in any of the proprietary systems. It is a game changer!

Extending Benefits through a Networked Energy Management System

A Networked Energy Management System can:

1. Connect to a wide range of systems that consumes energy in the store
2. Monitor, measure, analyze and manage those systems to lower energy costs
3. Relay the data from those systems to application in a data center or a Network Operations Center (NOC) for further analysis, correlations between systems, fault detection and diagnosis and a Scoreboard to enable greater control of energy usage and costs

The variety of ways a Networked Energy Management System can lower energy usage and costs in stores is described below.

Networked Access to Energy Utilizing Systems in the Stores

Most systems in the store that use energy have proprietary interfaces—data transmission protocols and data formats for the data that can be accessed. Each of these interfaces is different, both in protocol and data format. A Networked Energy Management System has been developed to be able to connect to these systems and normalize the data they transmit. Once the data is read and normalized it can be analyzed and instructions can be sent back to the system to control it.

Proprietary Building Automation Systems and black boxes can provide access to one or a subset of the energy utilizing systems in the store. When new systems are added they are not generally accessible to the Building Automation System, or require a new black box to manage their energy use.

A Networked Energy Management System can access, monitor, and manage existing systems and enable you to add or replace systems into the energy management system easily. The more systems that can be accessed, monitored and managed, the more opportunities for lowering energy usage. If a black box claims to lower energy usage by 10 – 20% extend that savings across all the store energy consuming systems.

How many devices and subsystems in your store can have lowered energy usage through a Networked Energy Management System?

Application Access to a Full Range of Data from the Stores

Connecting to energy consuming systems in the store is only half the battle. Having an open interface to applications that can further capture and correlate data to increase potential savings and lower energy usage provides an additional dimension to a Networked Energy Management System.

The ability to connect to any device is limited if you are not able to take the information to applications that can:

- Provide a scorecard that illustrates energy usage and patterns
- Correlate between systems so that, for example, heating and cooling systems that are juxtaposed can be optimized
- Correlate historical data on systems so you can act before the systems start to deteriorate to lower energy usage and extend the life of the system

If you only add systems or devices to a black box or a BAS you won't be able to use their information in the ways described above.

What are the possibilities for energy savings in your stores through this expanded use of information?

Ability to More Easily Integrate New Systems

Solar panels are increasing in efficiency. There are new breakthroughs in efficiency in Energy Star ratings for multiple systems.

Do you have a barrier today adding new systems to your existing Building Automation System? How much easier is the decision to buy these new systems if you know you can integrate them into a Networked Energy Management System and start managing their energy usage.

How much faster could you acquire and start using more energy efficient devices and systems if you knew they could be easily integrated into a Networked Energy Management System?



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Ability to Correlate Information Between Systems

When a door is opened on a winter day impacting multiple thermostats, when fog is on display windows or a stove is near a refrigerator—there are many examples of how correlating information between systems can lower energy costs.

What scenarios in your store would benefit from being able to provide this correlation and then manage the systems accordingly to lower energy use?

Ability to Correlate Historical Information

When a heating subsystem, HVAC or other major subsystem, starts to deteriorate it is often not detected until a maintenance cycle or an alarm is sent. These systems can have slow deterioration that both increases energy usage and decreases the life span of this expensive equipment. By regularly detecting and analyzing the energy usage and other key data from these systems they can be diagnosed and maintained in ways that improve energy usage and extends their usefulness.

How much lower would your energy usage be and how much more value could you get from your building subsystems through effective fault detection and diagnosis due to the ability to correlate patterns of efficiency?

Reduce or Eliminate the Use of Local Controllers and Black Boxes

Some Building Automation Systems require you to purchase system or device specific controllers so that they can monitor these systems or devices. Other manufacturers provide black boxes for systems or devices to control and lower the energy usage of these systems. With an Networked Energy Management System you can eliminate the black boxes and many of the controllers as the Networked Energy Management System can access these systems without the added cost of controllers and black boxes. A Networked Energy Management System can also do more with the data from the systems and devices to further decrease their energy use.

How many black boxes and controllers, and their costs, can be eliminated with a Networked Energy Management System?

Take Greater Advantage of Demand Response Programs with Utility Companies

Utility companies offer their largest customers credit and other remunerations for lowering their energy usage during peak times. Retail stores can be one of these large users. Benefitting from these Demand Response programs provides significant costs savings. A Networked Energy Management System provides much greater access and flexibility to lowering energy usage, through greater control of energy utilizing systems in the store.

Flexibility and greater access can provide inclusion in these programs and greater flexibility in gaining these costs savings.

Run on a Secure and Reliable Network

It can be a challenge running a new system on an existing network. The IT team and the Facilities team are best served understanding the bandwidth, security and reliability capabilities of the network that a Networked Energy Management System will use.

Cisco, being the leader in networking provides secure and reliable networks, as well as WAN optimization capabilities to ensure the energy management information traversing the WAN does not impact the performance of other IT functions.

Security of this data is also a key concern. Again Cisco provides solutions to guard against any security breach, as well as having network designs that provide the reliability needed.

Future Proof Your Energy Decisions

When new systems come to market or you are ready to harness an alternative energy source, such as solar or wind power, or the legislative requirements change due to a carbon cap or some other requirement, will you be ready and able?

With a Networked Energy Management System you will be able to determine your energy usage, find new ways to reduce energy usage, find new ways to reduce costs and be flexible to meet the changes the future will bring.

Energy Management for Retail products:

- **Integrated Services Router (ISR):** Scalable, multi-purpose functionality enables a Networked Energy Management System to run on a secure, reliable network
- **Network Building Mediator:** Enables two-way communication over an IP network between applications and all of the sensors, devices, and other energy consuming systems within a store or facility. For more information, visit www.cisco.com/go/buildings

Cisco Partners and Services

Cisco works with a range of partners who provide solutions for planning, designing, and deploying Networked Energy Management Systems.

Learn More Today

For more information, visit www.cisco.com/go/retail.