



# Embracing Technology for an Advantage in Facility Management: The Business Case for Building Automation

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Today's buildings incorporate a wide array of new technologies that enable owners and property managers to achieve cost-effective operations, reduced capital equipment and operational expenses, remote management capabilities, enhanced comfort and security features, and energy savings. Intelligent buildings not only offer a professional appearance, they can help corporations to save money, energy and time, providing a competitive edge.

Intelligent device networks facilitate the exchange of real-time information between remote devices and mission-critical applications and building systems. These "smart" devices have the ability to communicate with each other over wireless or wireline communications pathways, including existing power lines. Increasingly, property owners, architects, and developers are realizing the value of a single, non-proprietary Building Automation System (BAS). Some of these benefits, as we will examine, include: the freedom for the system to grow and expand with corporate needs, enabling remote monitoring and repair, flexibility to extrapolate data for a single site or view information on the whole, the ability to set company standards across a portfolio of properties, etc. Why should corporations and building managers consider open building automation systems?



## Greater efficiency, cost savings and energy automation

Building Automation Systems not only "look nice", they provide many business benefits to corporations that adopt them. By networking everyday devices—such as lighting, AV equipment, security systems, air conditioning and other systems—corporations can gain greater efficiency throughout headquarters and satellite buildings. Devices can be programmed at certain levels, to turn on only when required, to shut off after hours, to interact with other devices for increased conservation, etc.,

etc. Open building automation systems provide cost savings and a professional atmosphere and improved work environment. With limited resources on the planet, corporate conservation is becoming increasingly important, and more often expected by outside groups.

## Remote monitoring and repair

Frequently accessible through the Internet, an intelligent device network gives owners and facility managers a real-time, detailed view of every system throughout the building or campus—from HVAC and lighting, to security and landscaping irrigation—24 hours a

day, 7 days a week from any location. Alarms indicating fluctuations in equipment performance often enable managers to anticipate problems before the system fails. Scheduled repairs, and even repairs done remotely through the network, replace costly breakdowns. As a result, systems are maintained with minimal disruption to tenants. Adjustments to air handlers, lighting, and heating or cooling can often be done online. Improved preventive maintenance leads to longer equipment life, again reducing costs.

### **Greater efficiency**

This ability to remotely access real-time information through device networks allows building operations to be far more efficient. The operator can be at the building site or at a remote location and access the devices via the Internet using a PC. This remote control is enabled by an Internet Protocol (IP)

backbone to route the building's subsystems data to the remote operator. It allows for the management of critical functions like energy management, security, lighting, and inventory control from corporate headquarters, or even using a laptop with mobile Internet access.

With immediate access to information on a single building or a fleet of stores, property managers can be far more efficient. No longer must each system be monitored and managed individually. One manager can effectively and efficiently manage a portfolio of sites with millions of square feet — across the US or around the world. This reduces labor costs by allowing building management companies, such as KENMARK to bundle service agreements and efficiently deploy maintenance teams and outside contractors. In turn, building owners experience lower ongoing operating expenses and

increased ROI and can ensure greater consistency in temperature and lighting across a campus and/or offices, ensuring a better atmosphere for owners and employees alike.

### **Universal controls**

The ability to share more information makes possible many long sought-after applications, including integrated energy control systems. For example, in response to access control reader data and daylight illumination sensors, the HVAC and lighting systems can automatically adjust the comfort and illumination levels in different work areas based on individual preferences to reduce energy costs. Lighting can be adjusted on an office-by-office basis to adjust for peak daylight and weather changes— either automatically or through commands entered from a user's PC via the corporate LAN. Heating and air conditioning can be

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## ***"Intelligent device networks facilitate the exchange of real-time information between remote devices and mission-critical applications and building systems."***

similarly tailored.

### **Better business processes**

As more and more disparate systems are tied together, building owners and property managers can gain other benefits of efficiency and integration. When devices are able to communicate with one another, information can be captured and aggregated to better analyze energy costs, fostering greater understanding of requirements and procedures to reduce costs. Fuji Electric recently announced their commitment to help corporations achieve these efficiencies by creating a business that uses a leading control network platform to tie automation systems with enterprise applications like MRP, ERP, CRM, etc.

### **Flexibility, growth and expansion**

A non-proprietary control system (as opposed to a proprietary or closed system) provides an open network to which many systems can be integrated. As new portions of a building are upgraded, building managers and corporations themselves are free to select products and services based on performance, features, and costs from vendors they choose. New devices and functions can be added and integrated more easily than with closed systems.

### **Greater marketability for building owners**

The marketability and appeal of properties can become a major concern for building owners when demand softens and vacancy rates rise. An intelligent control system gives tenants more control over their environment and also monitors and automatically adjusts energy consumption to minimize operating expenses. Building operators can create customized tenant profiles for the delivery of basic and enhanced building automation services and track the costs of energy, maintenance, etc. in order to properly bill tenants and/or corporate departments for their individually requested services. Enhanced comfort and security features and the potential for energy savings that make the prop-

erty more desirable and cost effective.

A case in point, is the corporate headquarters for Echelon Corporation, the creator of the LonWorks® platform, one such building automation system. The ability to monitor and control lighting, security, HVAC, elevators, and many other functions, are all automated in the company's San Jose building. The operator can be at the building site or at a remote location and access the devices via the Internet using a PC. The benefits of this system are obvious: If at 3 a.m. one of the roof-top units goes down, not only are facility operators notified, but data, on the operation of the system, can be quickly obtained and building managers can react right away. Add several buildings with similar open systems and a building management company can monitor a portfolio of properties 24/7 with even greater efficiency. This open network-enabled system contrasts with the way facility monitoring has been done in the past and the way that some companies still do it today, which requires a separate software package for each building system. That traditional method means several PCs might be needed, resulting in greater complexity and less efficiency for the building manager. The advantage of open systems stems from the ability to link products from different manufacturers together into one unified network.

The applications for companies in diverse industries to use open, intelligent device networks to increase productivity and cut costs are numerous.

Italian Utility Company Enel is using control networks for automation and energy conservation. The company plans to eliminate the need for meter readers and expensive data collection, while empowering customers with information on personal electricity use and conservation.

St. Charles Parish Waterworks tracks

filter runs, monitors breakdowns and determines more efficient backwashing procedures for more than 40,000 people that it provides water to from plants on both sides of the Mississippi River. Plants, such as St. Charles Parish, can save 30 percent on installation and 50 percent on cabling using open systems.

MST Measurement systems uses intelligent device networks to help semiconductor companies better manage power, monitor and control hazardous gas leaks, and collect more detailed information, such as status of the alarm, sensor cells, general system status and concentration levels. With control systems, MST can save these companies 40 percent in installation costs.

### **Conclusion**

Open networking standards and turnkey, end-to-end control systems are changing the way building owners and managers monitor critical operations by enabling this information to be easily and readily accessed through a Web browser and modified in real-time. Better ways of managing heating and refrigeration, lighting and air conditioning, and the ability to monitor and adjust this information across the board can provide a corporation with a competitive edge. Costs of these systems often pay for themselves many times with savings that are achieved through automation and conservation. In the future, intelligent device networks will become increasingly more mainstream to reduce energy costs, improve efficiency and operating margins and facilitate overall decision-making processes. ■

### **About the Author**

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