

cuttingedge

Green Technologies SOLUTIONS

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INTELLIGENCE IS GREEN

Thermal power generation plants produce a significant amount of greenhouse gases. These gases are the root cause of global warming. By reducing the consumption of electrical energy, we can reduce the emission of greenhouse gases in the environment. But how do we reduce or optimise energy consumption? The answer lies in Intelligent Building Management System (IBMS).

For example, the buildings in France consume maximum amount of energy, thus accounting for 43 percent of the country's annual energy expenditure. Similarly in a fast growing economy like India, infrastructure for shopping complexes, malls, multiplexes, hypermarkets, housing societies, etc. consumes huge chunks of energy. To reduce energy usage and save money, an eco-friendly building automation system is essential that can help intelligently and effectively manage a building's energy usage.

Buildings have a large number of subsystems such as lighting, security (video surveillance and access control), elevators, power, safety and HVAC connected on control networks. These systems are crucial for efficient functioning of a building. But most of them operate separately or, at best, are connected through a series of costly, hard-to-maintain gateways having a single human-machine interface. Such conventional systems are proprietary and difficult to optimise for energy efficiency and management.



Today, the designs of IBMS favour open platforms that allow for systems and components from different manufacturers to integrate and share information on a common platform. Open systems are created using products from multiple vendors that conform to uniform industry standards, enabling full interoperability across a unified network. With an open standard system in place, as new portions of a building are upgraded or entirely new buildings are added to a campus, users can pick products and services with lower life cycle costs from any vendor they wish to choose.

IBMS effectively centralises important building functions with shared information, increasing safety and improving efficiency since fewer people and systems are required to completely manage the overall infrastructure.

Integration between different systems having dissimilar functions poses design challenges for systems integrators. Interoperability (ability to exchange and use information) between different systems is an important factor in a modern building. This is because modern buildings are a combination of various systems that must work together seamlessly for optimum performance and safety.

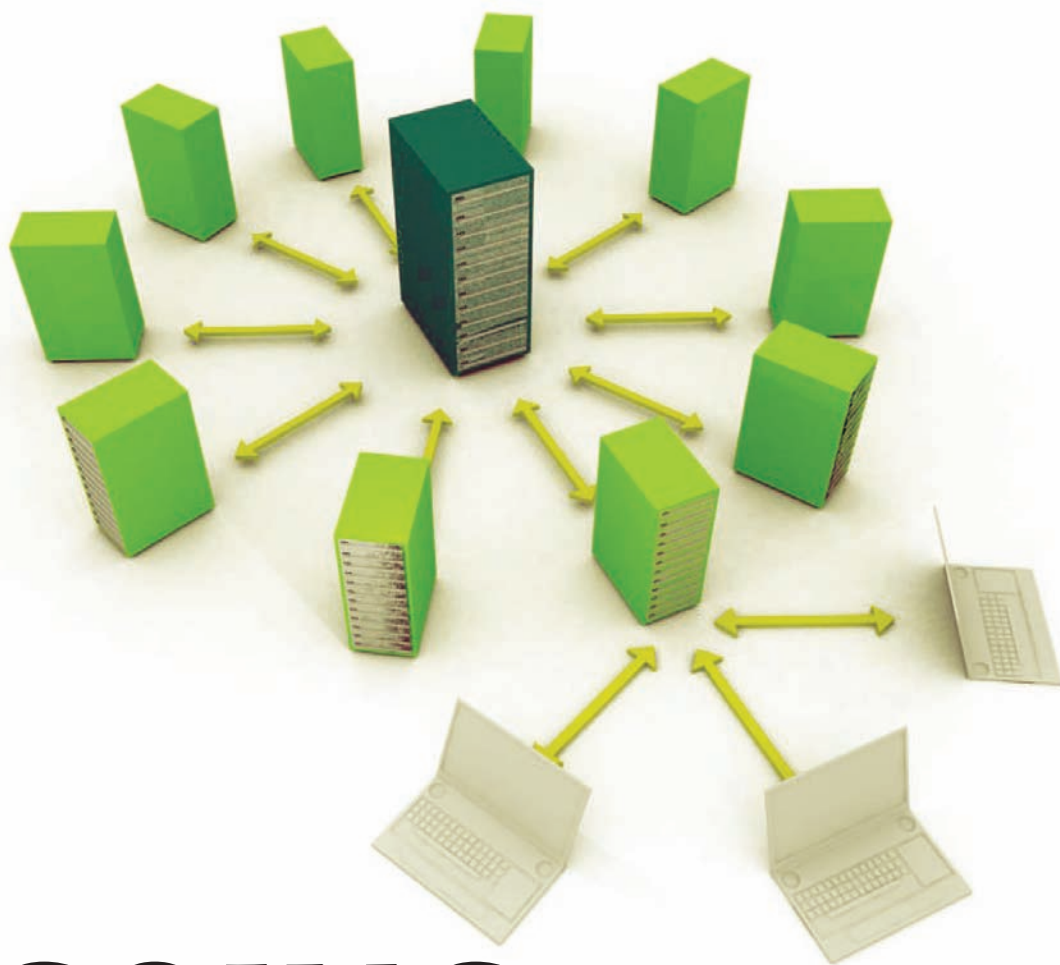
For example, when a building is on fire, communication between different systems is crucial for safe evacuation. Interoperability allows the infrastructure to function smoothly by initiating measures such as altering ventilation to prevent fire from spreading, deactivating access control systems for urgent evacuation and activating alarms.

Another example would be the integration of building and office systems that allows communication between systems such as hotel management system and HVAC and lighting equipment. When a conference room is reserved for a particular date and time, the lighting and air conditionings are switched on when the room is scheduled to be occupied.

By using Open Standard systems, which can interoperate with other devices in the same control network, one can significantly reduce the energy usage in buildings.

IBMS can be used to control the lighting and the heating, ventilation, and air conditioning (HVAC) subsystems. Motion and occupancy sensors installed throughout the building will help control HVAC and lighting according to the number of people present in the building, time of day, as well as external conditions such as available natural light and outside temperature. Each system can be integrated together using open standard framework. This integration will help control various systems from the central command centre. Information captured by one system can be used to trigger an action on another system. For example, you can configure motion detection to control the lights and air conditioning. You can control Venetian blinds and lighting system together to optimise the luminous intensity inside the room. You can optimise the usage of elevators based on the time of day, pre-configured schedule or motion detection system. You can control the level of cooling by counting the number of people present in the room using video surveillance systems. Thus, IBMS also provides optimal comfort conditions in the building.

Since IBMS precisely monitors energy use, we can better manage its consumption and improve the efficiency of the usage. There are examples when up to 30% energy savings was achieved using IBMS. Most of the newer buildings are built on these principles often known as green buildings or environment friendly buildings.



GOING GREEN WITH CLOUD COMPUTING

This article elaborates on the potential of cloud computing as an eco-friendly option that also serves to reduce effectively the upfront expenditure for an SME

The dramatic economic meltdown over the past few months has proved to be a veritable tsunami for the Small and Medium enterprises (SMEs). However, the turn of events has induced the SMEs to revisit their existing business models that had helped them to survive and grow in the past.

In the process of achieving this objective, Information Technology (IT) has emerged as one of the most critical elements of growth. The era of 'making-do' with an

accounting package, a payroll application, and a bunch of spreadsheets populated with unreliable and irrelevant data, from a management perspective, has now ended. In today's scenario, real-time information based on transactional data being captured at an operational level across functions and locations, triggers and alerts from the management's dashboard, and re-designed business processes and workflows that are enabled electronically are all becoming essential in order to survive and grow.

The IT budgets for SMEs have been increasing significantly over the past few years. However, large portions of these budgets have been earmarked to procure 'tangible' products like PCs, servers and networking hardware. SME offices and factories have undergone tremendous change from their previously traditional 'paper-and-files' formats to an upgraded 'Monitor-Key-board-Mouse' environment. Furthermore, open offices have now transformed into an air-conditioned maze of cubicles.

SME would need to invest in providing simple, low-cost, low-carbon footprint internet access devices (also called thin-clients, net-books, etc.).

Affordable options for SMEs

Instead of incurring capital expenditure for procuring servers and software, and then incurring additional revenue expenditure for managing these on-premise installations, customers would now be required to pay only for accessing this software as a subscription on a pay-per-use basis. The offering

would not only obviate the need for an SME to incur any capital expenditure, but also eliminate the need for recruiting, training, and retaining expensive IT professionals. This "sachetisation" of access to IT-with the resultant 'pay-per-use' affordable pricing-is expected to enhance IT penetration in the SME segment positioned at the bottom-of-the-pyramid.

Environment-friendly for the SMEs

From an environmental perspective, the low-cost devices that the SME would need to procure would each need only 10 to 50 W of power as compared to 150W+ required for a typical PC. As these devices would have no moving parts and would not become obsolete in a couple of years, the resultant increased lifetime would mean phenomenal reductions in potential e-waste generation. In addition, as end-users could access their data from anywhere and at anytime, the amount of commuting and travelling that information workers are required to do could reduce dramatically.

Environment-friendly at the data centre

The preclusion of millions of power-hungry servers, and the resulting reduction in additional air-conditioners and UPS/Battery combinations will significantly reduce the impact on the environment. Significant R&D in server technology-blade servers, multi-core processors, developments in basic semi-conductor design that

Green Solutions INTELLIGENT BUILDING MANAGEMENT SYSTEMS (IBMS)



How long will you continue to suffer crippling energy costs?



Intelligent buildings are, well, intelligent!

They know when to turn on the air-conditioning and when to turn down the lights.

The IBMS system provides cutting edge safety and security and even records data. Brilliant? It gets better...

Video Surveillance & Access control, Lighting, HVAC, Elevators, Power and Safety all on a single system!

The Intelligent Building Management System

... All the HUGE little things that add up... And save you a lot of money!

Allied Digital is an ISO 9001: 2000 certified company
Pan India (135 locations) and Pan USA presence (44 states)

To find out more on how you can manage energy and cut costs by deploying Open Standard technologies in IBMS, contact us:

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