

Intelligent Buildings: Facts vs. Myths

By Tom Shircliff and Rob Murchison, Intelligent Buildings

With all the information and misinformation about “intelligent” and “green” buildings, it’s sometimes hard to understand what innovation really means in relation to your enterprise. If building systems are more IT-centric, how do we involve IT departments and IT vendors in evaluating building systems? If new technologies save energy and enable more efficient facility management, how does the Facilities Department influence design? If I merge the communications backbone for these systems, how will that affect the service process?

The answers to these questions lead to “Design Thinking,” that is, looking at the project as a whole rather than analyzing, treating, or dissecting it into parts. In an article about Design Thinking in the June, 2008 issue of Harvard Business Review, Tim Brown states: “Along with business and technology considerations, innovation should factor in human behavior, needs and preferences.”

When applied to the real estate industry, this might be translated to mean that we should consider how intelligent-building innovation affects management and service personnel, the overall occupant experience, as well as operational flexibility.

While considering operations is paramount, the first step in developing intelligent buildings, projects, or even cities, is to examine the design and construction of each system and its relationship to other systems. However, many architects and engineers follow a traditional, non-IT approach and, often, are averse to change. This problem is compounded by the accelerated pace of buyouts and mergers of companies that result in product changes, so that it is far from certain that property owners/managers are getting “current-day” specifications and technologies for new buildings or retrofit projects.

The net effect is that organizational alignment and cross-discipline collaboration of internal and external resources are crucial for modern building development and retrofitting. This can be as simple as forming cross-departmental committees. Jim Patterson, Regional Property Manager, Childress Klein Properties (Developer and Property Management Company for the 1.4 million square foot Wachovia Corporate Center) says, “We have developed a progressive vision for development and property management that we are applying to all our departments and vendor partners. The response has been much more positive than expected, as the internal and external teams have



worked together to create an “intelligent building” that has added value for our client.”

To justify initiating such efforts, we must establish the need for and benefits of developing intelligent buildings by explaining the facts, the myths, and the process surrounding the current development environment.

The Facts

- Technology in buildings is not an option. While convergence and interoperability might be debatable strategies, the question of high-tech buildings has already been answered. Almost every building system such as HVAC, lighting, vertical transportation, parking, and others use IT networking for management and control. These systems can be divided into traditional IT categories described as: “edge devices”, such as VAV boxes, lights, security cameras; “aggregation devices”, such as floor-level HVAC controllers and BACnet routers; and “management devices”, such as servers for hosting control software. So, even if you don’t have a technology or convergence strategy, the manufacturing of systems, today, dictates that you are buying “high-tech” systems.
- Building system communication technology is proven and reliable. The technology for networking, converging, and managing building systems is proven and reliable and might even be called “simplistic” when you consider that fiber optics and copper cabling, switching, servers, and storage are the main components. While these features might be newer to some building-controls systems, they are not “new” in the IT world. “We have found that working with the design team and the vendors to apply IT standards to building system networks will increase reliability and up-time and greatly simplify the management process,” states Ryan Allbaugh, Director of IT, Childress Klein Properties.

The Myths

Three myths about “intelligent buildings” are:

- **It’s more expensive.** “Intelligent” buildings that use standards and convergence will achieve higher asset utilization and improved cost structure and increased productivity. With proper design and specifications, the same or lesser capital investment can provide significant operational savings, more efficient property management, and greater future flexibility.
- **It takes a super integrator to put it all together.** While it contradicts conventional wisdom, it’s not true that we are all waiting for a super integrator that can install and manage dozens of different systems and combine them all into a single dashboard and service contract. There is no substitute for localized, trusted expertise.

continued on page 30

continued from page 28

With coordination and a well designed strategy, you can use your existing resources and mitigate risks.

- **It is highly disruptive to the design and construction process.**

Even with the involvement of your IT Department and IT vendors, the basic design and construction process stays the same. The experts in each area are still responsible for doing what they do best. They simply respond to the requirements of the strategy and the resulting performance specifications for the most up-to-date versions of each system along with adjustments for the reduced networking requirements of each system that uses the common backbone.

The Process

What is an “intelligent building” and how do we develop it?

There is no one definition of an “intelligent building.” We think of “intelligent building” as an approach not a specific list of criteria. Your project might use one, two, or all three of the following steps - it’s not an “all-or-nothing” process:

- **Require openness of all building system protocols.**

Even in silos, you should ensure that you are getting current-day technology in the form of open protocols (Internet protocol and industry-segment-specific protocols) and other IT characteristics, such as power over Ethernet (POE), storage area networks (SANS) and switched communications.

- **Eliminate overlapping infrastructure.**

A single, planned, backbone, blade or virtual server; and combined storage and business continuity planning can save capital expenses and provide a more reliable platform.

- **Converge operations and management.**

Software that enables you to create dashboards, manage energy, integrate back-office processes, and cross-system and multi-property controls can save significant operational expenses. Given the facts, the myths, and the process combined with the “mega trends” of increased energy costs, sustainability, and security, in addition to basic building costs, in general, and their impact on almost every aspect of an organization, there is no responsible way to approach a project without considering all components such as, IT, financial, legal, HR, and facilities “Design Thinking.”

Very few organizations have cross-departmental communications sufficient to the task. It becomes even more disjointed when you add in the many vendors and consultants such as the A&E, A/V, security, GC, et al. Good companies and institutions have high-quality resources available internally and externally (trusted vendors and consultants). However, when these resources operate in silos, critical knowledge might be inadvertently withheld from others in the enterprise.

Your company or institution should evaluate the broad impact of today’s real estate technology and initiate steps to deal with it. This process takes education, strategy, and a roadmap. A new project, retrofit, or green strategy can provide a catalyst for enlightening and productive cross-departmental communications and organizational alignment.

About the authors: Tom Shircliff and Rob Murchison are co-founders of Intelligent Buildings, Inc. Intelligent Buildings provides strategic technology consulting for real estate development and management in commercial, institutional, and corporate environments.