Kenmark Real Estate attributes data sharing and tenant-level control as key factors influencing the growth of the building automation and control industry

Interview with Kenmark Real Estate executives Mark Kendall, president, and Wayne Wiebe, vice president, Technology

Interview conducted by Ron Bernstein, chief ambassador, LonMark International

About Kenmark Real Estate

Kenmark Real Estate provides a comprehensive range of services from master systems integration to application development and marketing. Based in San Francisco, California, Kenmark has helped countless organizations reduce energy costs and maximize their assets based on innovative integration and demand response programs. The company's philosophy is to provide clients the full spectrum of real estate from general contracting to the selection, installation and management of the technologies that enable efficient building automation. Kenmark has embraced open systems and LonWorks technology as a way for clients to actively participate in their own control strategies to save energy, money and resources.

RB: Kenmark has taken a leadershiprole in the real estate and controls industry. In respect to buildings-related technologies such as smart grid, demand response, energy efficiency and cloud computing, where do you think our industry will be in the five years?

MK: Building controls have become almost commonplace, to the extent that they are relatively inexpensive now compared to where they were ten years ago. The options are much greater, especially with open systems. So with the base technology available in so many buildings, I believe in five years the greater focus will be controlling the cost of operations. Whether that's through demand response, the fine, granular tuning of controls, or light harvesting, the tenants and the occupants of building five years from now will not only be demanding their building management control costs, they'll be expecting it.

For example, when our building set out recycling bins five years ago, many tenants thought it was a hassle and an inconvenience. Now, if we took those away, they'd be screaming at us. I think the same thing will be true in five years when the tenant views their role as being part of the solution because they understand how their actions directly impact their pocketbook as well as personal experience. In other words, if a building does not have a control strategy for energy savings or sustainability, then that's a building they don't want to be a part of.

RB: What is Kenmark doing specifically today to help clients control the cost of operations?

WW: With so many device and system options available these days facility managers are getting more and more data, but less and less value from that data. Therefore, when it comes to controls, the most important we can do is find the value of that data.The profusion of controls allows us to gather more data while the cloud allows us to process that data quickly in a sort of public domain in order to analyze it and make better decisions.

What I see in the market today are targeted energy consumption models that take all the control data and provide very accurate predictions about how each building should behave. What this allows us to do is find equipment that is performing less than optimal, which in a typical building can be worth 10% of energy consumption. We also anticipate energy load and energy demand, so when we have a hot or cold day, we can determine how to efficiently reduce our consumption. To summarize, all this data leads to models, and the

models lead us to the ability to shape our consumption and demand curves. We can then fit these models in with the electrical rate structure and the result is a lower energy bill.

RB: How does cloud computing fit into what Kenmark is offering? How does it factor in to the sales process and overall value of what Kenmark can bring to the table?

MK: Cloud computing allows us access to the client'sdata so we can support the decision to install EMS systems that can react to demand response or finer-grain control. So with access to greater data, it's like any other part of the sales process: there's always got to be an ROI analysis, tenant/enduser/occupant acceptance, and installing a system that has a tenant retention or a customer satisfaction quotient for the occupants.

RBHow does a cloud computing environment help with your efficiency when you're managing a multitude of properties?

WW: Many large corporations have a portfolio of properties across the world, and they have an energy manager whose job is to normalize consumption across the world and find out where there may be inconsistencies. Once again, with great modeling of each individual building you can figure out the issue. Perhaps it's geography related and weather patterns are to blame, or maybe there has been some sort of systemic or structural change to the building that is leading to an energy event. Once again,computing power and data analysis is what I think leads to this ability to find out the best performers. It's the ability to take this data model and duplicate their processes to obtain maximum energy efficiency.

RB: Let's take a look at the issues and concerns of cloud computing such as security and reliability. Are there any security concerns you're dealing with?

WW: I think the security concerns are very real; everybody is reading about how the next war will not be fought with bullets it will be fought with bits. And the ability to hack into the electric grid is more harmful to a country than the ability of a country to shoot down a fighter jet. There are security standards that everybody should have at a basic level such as 128-bit encoding; this basic level should always be practiced when it comes to putting information over public lines.In regards to physical security issues with servers, you need to investigate yourcloud service provider and be comfortable with what kind of security they're deploying. This is like having a remote data center; it's very important to find out how important they value security.

MK: Security is obviously a very big concern and needs to be addressed. From a technology standpoint, the same security protocols apply to not just building systems, but to IT infrastructure and access to servers. The whole world has to deal with security issues. When it comes to building controls, the threat of cyber terrorism cannot be something that causes us to not embrace moving forward. We have to go about our lives, be smart about it, and follow the standards of security protocols we have in place. We cannot afford to stop the progress of controls and their ultimate value in controlling energy consumption by the sheer fact that we say there's a security issue. If we did that, we wouldn't have online banking, the cloud, everything we embrace and use today.

RB: Do you see any benefits for building owners in regards to data mining? There are some obvious benefits of accessing data from outside the building envelope such as maintenance and troubleshooting, but what benefits do you see that may not be as clear cut?

WW: I think the advantage of data mining is theconfluence of different data streams. What you'll end up with is a data stream from monitored points in the buildings and building systems, a data stream provided by the utility, a data stream that provides you with current and projected weather conditions, and ideally a data

stream for occupancy schedules and trends. All this data is put into an algorithm and results in an outline for how the building will behave over the course of a week. So if the building doesn't behave the way expected, there's a reason for that. Maybe the reason is detectable from the data stream from the building systems. The bottom line is you can use the data to pinpoint the issue, whether it's simply a compressor that's out or perhaps a larger issue.

RB: There are some facility managers that don't want anybody outside their facility to touch their data, and there are others who will allow service providers to look at their piece of the puzzle. There has to be some sort of happy medium between security reliabilityversus operational efficiency. Any thoughts where the common ground there is?

WW: I think that's a larger issue for each individual enterprise. I think that by sharing data we make everyone better and therefore some level of anonymous sharing is very important for anyone responsible for taking care of buildings. And this does occur to a certain extent; it's what Energy Star and other government programs are about. I also understand the hesitancy of sharing data. For technology companies, sharingdata may reveal corporate trends. For example, increased occupancy may be a sign that a new product is about to be released and they don't want that information to come out without a proper control structure around it. There's always going to be exceptions to the rule.

I advocate sharing what you're comfortable with. Overall it makes energy conservation easier and it makes for a better, more successful industry.

RB: When looking at the industry from a 10,000 ft. view, there is a model that says software is either going to be sold per license and run the local server, or as a cloud-based service where the software and enabling technologies are maintained and updated automatically. How does this choice influence your ability to implement technology solutions?

MK: I think it's a decision point based on what benefits are available for that control system, such as Demand Response, load shedding, etc. It also depends on our ability to work with a building investor or owner to assure them that the system maintenance will be on the cloud and continuous versus having to individually upgrade software that runs on local servers, a system maintenance task that involves far more staff and resources than people want to think about. I think that's always a surprise point of cost, so it's up to us to show that that maintenance and technological advancement of cloud access makes sense fora control system to grow. Cloud computing model is usually to the client's advantage as it's more cost effective and more likely to result in a better functioning system with more opportunities for control and energy savings.

RB: Let's take that one step further and discuss the new model of the computing world and how it is converging into smart, mobile applications such as iTunes. Can you envision going to a control application store to download the latest app in order to receive live data from your customer's facilities and being able to use the data for reporting, trending, etc?

MK: I absolutely see that model. I also see it reaching down into the multi-tenant building market, which is obviously a huge consumer of electricity. If that kind of app can reach down to the individual tenant level, people would be very surprised. If individuals have more control and capability in controlling their own energy costs within their suite, I think you'd find there'd be a much more aggressive approach in managing energy costs. When tenants finally get that level of control they will grab hold of that fully because then you'll have people within the office cross-checking each other. For example, when everyone goes to lunch in an office building, no one ever turns the lights out. People make sure to do this in their homes because they pay the electricity bill and they want to be part of the solution. But in an office space, NOBODY does that. Right now, there's no energy management manually.

RB: That brings up this vision of the future where a control system provides the occupant greater control of their schedule. Can you foresee an occupant adjusting theirenvironment to save energy as part of their daily routine, a new habitthat doesn't take any more time that simply hitting a button on their smart phone or desktop?

WW: I've heard of people trying to integrate an Outlook- or Google-based schedule that would determineoccupancy levels and adjust the cooling for that in advance. I think this would be a great application that would show a double digit percent energy savings.

MK: Take our downtown buildings in San Francisco for example, we have hours of operation are 7:30 a.m. to 10:00 p.m.At 7:30 a.m. the entire building is fired up whether someone is in it or now. This needs to be the tenant's responsibility at this level. Speaking from abuilding manager's perspective, we've tried occupancy sensors and they tend to be too finicky. So we're not going to know who out of the 2,000 tenants in a 200,000 sq ft bldg. is there or not. But the tenant with that GPS application or a simple on/off app can be in control of that.

RB: It's an exciting thing that can happen in the next few years. Let's talk about that from the standpoint of how to make that work. What's lacking out there today in terms of standards and interfaces? Where do these fit into the grand scheme of enterprise control systems?

MK: One of the reasons we've embraced open systems is to have the power of the app we're talking about, and I believe the barrier is the proprietary system.

I have three boys all in their 20s, and we always have the conversation that leads to them asking me how I survived growing up without computers.I say, 'Tell me what you see and use today that your kids are going to ask you about…you actually used a landline phone, or a keyboard? I think in the future, their kids will say, 'Weren't you able to just control your energy and costs with your GPS application without having to be there?' Simple tasks such as that can only be achieved with open systems and with technology that is standardized. It has to be open to the world. It's Apple's iPhone. If you think of the millions of apps that have been created, they've been created because there was a standard and an open platform for anyone to jump on.

WW: I think that as moreand more data is placed in a common area—the cloud—where it can be cross-referenced, we are going to be astounded with the conclusions we can derive. The important thing is that we don't know what technologies are going to happen farther into the future, or what existing devices or technologies are going to be used to make sense of this confluence of new data, or for that matter what type of conclusions we can make from it.

RB: So that leads to the obvious question regarding education. How do we educate the market? What are the needs? How do we educate the potential app suppliers and vendors to embrace a more open approach?

WW: The sharing of knowledge is what's important in the education, and what I like to do is keep my pulse on the energy and controls community here in the Bay Areaand find out what people are doing that is interesting. This could mean participating in studies, and by doing so, this was how Kenmark became one of the first clients of a demand management startup. It's also important to find out where people can make connections. Human contact, idea contact; this is where I think this education is going to provide dividends.

MK: Education is necessary for the general public to be aware of the control possibilities, and by this I mean the ability for the building owner or end user all the way down to the individual tenant in a single office to have control over their energy consumption and comfort. I think message of openneeds to be pushed as hard

as possible, and the makers of non-proprietarysystems will react and make more open options available. America is an amazing place for innovation and opportunity, and if you put that opportunity out to more and more people, it will light its own path. I think we're at that point in the controls business where things are opening up and people are becoming more engaged in wanting to be part of the solution; they want to have control and they want to reduce costs. This is the level of education that must happen on a basic level. It's also saying that we need to reach beyond the building engineer and controls engineer; we need to reach down to the end user to explain what is possible.

RB: In regards to that, there's a responsibility that the users have to influence change. How do you see the end user helping to make those changes, either through education, improved specifications or simply demanding something new and different? Do you see that as a valid option for big end users?

WW: I do see it as a valid option, but these options must have ROI; it has to be simple, easily maintained, and pay for itself. To a certain extent we have that, but to another extentcompanies are now providing these solutions as a product for end users to buy. I would also caution some baby steps; these solutions need to develop in the market a bit before they are available widespread on the market.

RB: We've been talking a lot about the market. What do you see as the next steps for the future? What would make the most difference?

WW: Many companies today are utilizing the cloud environment to collect usage data from the control systems, weather service providers, utilities, occupancy data andscheduling from which they will make valuable predictions. They're going to provide a monthly service, and it's going to make the job of managing your consumption profiles much easier. You're going to reduce your utility costs by taking more data and doing more with it.

MK: Where I'd like to see is for LonMark to reach out to other organizations such as BOMA, a great organization of facility and property managers that gather and work together very hard to make their buildings better and more profitable places. By working together with groups like this even on simple things like controlling vacant suite energy consumption, we can develop apps, standards, and solutions that are effectively a simple on/off switch. These simple steps can be pushed down to the manager level and then down to the tenant level. And if it's kept at a very simple and basic level—a simple on/off switch—then we will see a massive pull in acceptance.

RB: What would you tell the world about Kenmark and the Kenmark vision?

MK: When it comes to building controls, follow our lead. It's not that hard to embrace the technology of building controls as a real estate company anymore. It was ground breaking when we did it ten years ago because we really had to dig into some complex systems and analysis, but it's not that difficult now. Evenat the property manager level and the office manager level of individual tenants, jump in the water, you can be part of the solution and not part of the problem.

WW: Design, implementation, and control system construction are opportunities that building owners should spent a lot more time focusing on with the help of an independent third party who can harvest a lot more value out of their installation and controls money. Kenmark has helped very large organizations and projects, and we have seen a lot of success. I encourage anybody having trouble with their controls, or if you're putting in new controls, to call us. We can help you find the right products and get a better ROI.